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HAROLD L. ICKES, Secretary
GEOLOGICAL SURVEY
W. E. WRATHER, Director

Water-Supply Paper 954

# SURFACE WATER SUPPLY *of the* UNITED STATES 1942

## PART 4

## ST. LAWRENCE RIVER BASIN

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In cooperation with the States of
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## ILLUSTRATION

## SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of stage and flow made on streams, lakes, and reservoirs in the United States during the water year ending September 30, 1942. The work was begun in 1888 in connection with special studies relating to irrigation. Measurements of the flow of streams and of the stage and contents of lakes and reservoirs have been made at about 9,400 gaging stations in the United States and also at many gaging stations in Alaska and Hawaii. In July 1942, 4,970 gaging stations were being maintained by the Geological Survey and cooperating organizations. Miscellaneous discharge measurements were made at many other points.

In the execution of the work many State and private organizations have cooperated, either by furnishing data or by assisting in collecting data. Cooperation of the first kind is acknowledged in connection with the description of each station affected; cooperation of the second kind is acknowledged on page 11 .

## DEFINITION OF TERMS

The units in which stream-flow data are presented in this report and other terms used herein are defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"Run-off in inches" is the depth to which an area would be covered if all the water draining from it in a given period were uniformly distributed on its surface. It is used for comparing run-off with rainfall, which is usually expressed in inches.

An "acre-foot" is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet. The term is commonly used in connection with storage for irrigation.

"Second-foot-day" is the volume of water represented by a flow of 1 second-foot for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons and represents a run-off of 0.0372 inch from 1 square mile.

"Stage-discharge relation" is an abbreviation for the term "relation between gage height and discharge."

"Control" is a term used to designate a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural section, a reach of the channel, or an artificial structure.

## EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the records of stage and discharge

measurements in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. Typical structures in use at gaging stations are shown on plate 1.

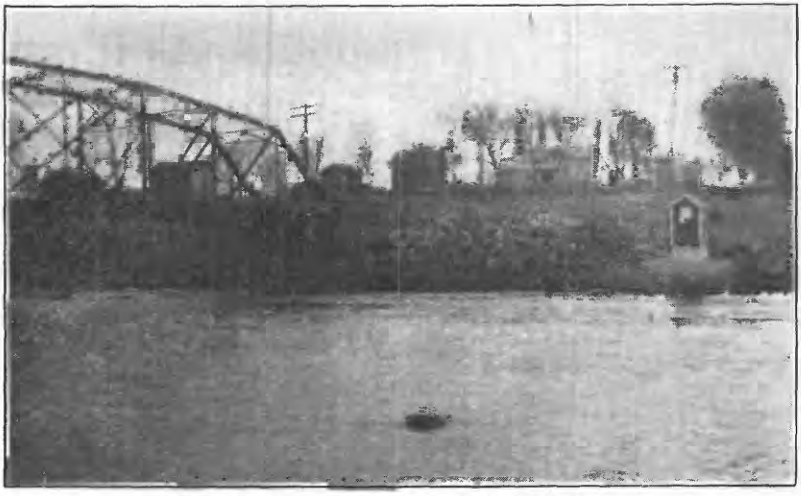
Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the daily mean gage height to these rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the "shifting-control method," in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. At times the stage-discharge relation for a station may be temporarily changed by the presence of aquatic growth or debris on the control. For such times the daily mean discharge is computed by what is essentially the "shifting-control" method, described above.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources, which necessitates the use of the "slope method," in which the slope or fall in a reach of the stream is a factor in the determination of discharge. Information requisite for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage, and for them the rate of change of stage is used as a factor in the determination of discharge.

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during the winter, which makes it impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for stations in the same or nearby basins. The days included in the periods of ice effect and the days during the winter period on which discharge measurements were made are indicated in the table by symbols referring to footnotes or are given in a general note following the table.

For most of the gaging stations on streams in the area covered by this report the data presented comprise a description of the station, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and run-off. Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the year was determined by the shifting-control method, the slope method, or other special methods.

The description of the station gives the type of gage, its latitude and longitude determined from the best available maps, and information in regard to diversions that decrease the flow at the gage, artificial regulation from pondage or storage and the accuracy of the records. Under "Average discharge" is given the average discharge for the number of years indicated. It is given only for stations for which there are 10 or more



*A*. LITTLE WOLF RIVER AT ROYALTON, WIS.

*B*. BLACK RIVER NEAR BOONVILLE, N. Y.

GAGING-STATION STRUCTURES.

complete years of record. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). Unless otherwise qualified, the maximum discharge corresponds to the crest stage, obtained by use of a water-stage recorder or a nonrecording gage read at the time of the crest. Likewise the minimum discharge represents the lowest stage, unless otherwise qualified. Selected peak discharges with the times of their occurrence are given below the table of monthly discharge for some stations. This supplementary information is generally omitted for stations having drainage areas of less than 10 square miles or more than 10,000 square miles or if the peak discharges usually exceed the corresponding mean discharges for the day by less than 10 percent.

For stations equipped with nonrecording gages, the table of daily discharge gives the discharge in second-feet corresponding to once-daily readings of the gage or the mean of twice-daily readings. For flashy floods the daily mean discharge is determined from gage-height graphs based on gage readings made once or twice daily or oftener, as stated in the station description. For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing as an essential element a curve representing the stage-discharge relation at the station.

In the table of monthly discharge the column headed "Second-foot-days" gives the sum for each month of the figures given in the table of daily discharge. The column headed "Maximum" gives the maximum daily discharge and not the momentary discharge when the water surface was at crest stage. Likewise, in the column headed "Minimum" the quantity given is the minimum daily discharge. The column headed "Mean" gives the average flow in cubic feet per second during the month.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents is given. A skeleton table of capacity at given stages is usually given in the first report in which data for a station are published but is omitted from succeeding reports.

## TIME BASIS

At 2 a.m. on February 9, 1942, as an emergency measure, the Nation shifted from standard time to "war time," and clock time in the several zones of the country was moved ahead 1 hour, or to 3 a.m. This made February 9 a 23-hour day. Time prior to 2 a.m. February 9 as given herein refers to standard time; time after 2 a.m. February 9 refers to war time. To convert war time to standard time, subtract 1 hour.

Records of daily discharge prior to February 9, 1942, published herein have been computed on the basis of standard time. Records subsequent to that date have been computed

on the basis of war time. The discharge given for February 9 is the mean for 23 hours. The mean discharge and run-off for the month of February have been computed from the total second-foot-days for the month without adjustment for the fact that February 9 was a 23-hour day. The small error resulting from this procedure has been disregarded.

## ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily on (1) the permanency of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements and (2) the accuracy of observations of stage, measurements of flow, and interpretation of records.

The station description gives a statement in regard to the general accuracy of the records. "Excellent" indicates that, in general, the daily records are accurate within 5 percent; "good," within 10 percent; "fair," within 15 percent; and "poor," within 20 or a higher percent. The records of monthly and yearly mean discharge and run-off are, in general, more accurate than the daily records.

Yield at some stations as indicated by monthly means may vary widely from natural yield, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or other factors. For such stations figures of "second-feet per square mile" and "run-off in inches" are not published unless storage or diversion records are included indicating the extent of the regulation or diversion or unless satisfactory adjustments can be made for changes in contents of reservoirs or for other changes incident to use and control. Figures of second-feet per square mile and run-off in inches are also omitted if the drainage area includes large noncontributing areas or if the average annual rainfall over the drainage area is less than 20 inches.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and therefore the discharge recorded does not show the water supply available for further development, as prior appropriations below the station must first be satisfied.

The table of monthly discharge presents in summary the distribution of the flow past the station. The table of daily discharge affords opportunity for more detailed studies of the variation in flow. As further observations in each succeeding year may be expected to throw new light on data previously published, it should be borne in mind that such data are subject to revision in succeeding water-supply papers.

## PUBLICATIONS

The results of stream-flow measurements are now published annually in 14 parts, each part covering an area whose boundaries coincide with natural drainage features as indicated below:

Part 1. North Atlantic slope basins (St. John River to York River).
2. South Atlantic slope and eastern Gulf of Mexico basins (James River to Mississippi River).
3. Ohio River Basin.
4. St. Lawrence River Basin.
5. Hudson Bay and upper Mississippi River basins.
6. Missouri River Basin.
7. Lower Mississippi River Basin.
8. Western Gulf of Mexico basins.

9. Colorado River Basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. Pacific slope basins in Washington and upper Columbia River Basin.
13. Snake River Basin.
14. Pacific slope basins in Oregon and lower Columbia River Basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be obtained or consulted as explained below.

1. Copies may be purchased at nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D. C., who will, on application, furnish lists giving prices.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Sets are available for consultation in the local offices of the water-resources branch of the Geological Survey as follows:

East of the Mississippi River:
Albany, N. Y., 528 Federal Building.
Asheville, N. C., 220 Post Office Building.
Atlanta, Ga., 3 North Rhodes Center, N. W.
Augusta, Maine, Statehouse.
Baton Rouge, La., 124 Geology Building, Louisiana State University.
Boston, Mass., 939 Post Office Building.
Charleston, W. Va., 408 Union Building.
Charlottesville, Va., House G, Dawson Row, University of Virginia.
Chattanooga, Tenn., 442 Post Office Building.
College Park, Md., 105 Engineering Building, University of Maryland
Columbia, S. C., 119 United States Courthouse.
Columbus, Ohio, 404 Engineering Experiment Station, Ohio State University.
Harrisburg, Pa., 490 Education Building.
Hartford, Conn., 203 Federal Building.
Indianapolis, Ind., 205 Underwriters Building
Jackson, Miss., 208 Millsaps Building.
Knoxville, Tenn., 337 Post Office Building.
Louisville, Ky., 531 Federal Building.
Madison, Wis., 666 State Office Building.
Montgomery, Ala., 507 Post Office Building.
New Philadelphia, Muskingum Watershed Conservancy District Building
Ocala, Fla., 302 Post Office Building.
Pittsburgh, Pa., 438-M New Federal Building
St. Paul, Minn., 1427 New Post Office Building.
Trenton, N. J., 228 Federal Building.
Urbana, Ill., 14 Post Office Annex, Elm Street.
Williamsburg, Ky., Kentucky Highway Building

West of the Mississippi River:
Austin, Tex., 302 West 15th Street.
Boise, Idaho, 429 Federal Building.
Denver, Colo., 230 Customhouse.
Fort Smith, Ark., 6 Post Office Building.
Helena, Mont., 408 Federal Building.
Honolulu, Hawaii, 225 Federal Building.
Idaho Falls, Idaho, 204 Federal Building.
Iowa City, Iowa, 508 Hydraulic Laboratory, University of Iowa.
Lincoln, Nebr., 1404 Statehouse.
Los Angeles, Calif., 529-H United States Post Office and Courthouse.
Oklahoma City, Okla., 303 Capital Office Building.
Portland, Oreg., 606 Post Office Building.
Rolla, Mo., Missouri Geological Survey Building, Missouri School of Mines and Metallurgy.
St. Louis, Mo., 1002 New Federal Building.
Salt Lake City, Utah, 303 Federal Building.
San Francisco, Calif., 625 Market Street Building.
Santa Fe, N. Mex., 204 United States Courthouse.
Tacoma, Wash., 207 Federal Building.
Topeka, Kans., 305 Federal Building.
Tucson, Ariz., 210 Post Office Building.

A list of the Geological Survey publications may be obtained by applying to the Director, Geological Survey, Washington, D. C.

Early records of the flow of streams in the United States are published in the reports listed below:

Stream-flow data for the years 1884-1901, in reports of the Geological Survey

(A = Annual Report; B = Bulletin; W = Water-Supply Paper)

| Report | Character of data | Year |
|---|---|---|
| 10th A, pt. 2 | Descriptive information only. | |
| 11th A, pt. 2 | Monthly discharge and descriptive information..... | 1884 to Sept. 1890. |
| 12th A, pt. 2 | ....do..... | 1884 to June 30, 1891. |
| 13th A, pt. 3 | ....do..... | 1884 to Dec. 31, 1892. |
| 14th A, pt. 2 | Monthly discharge (long-time records, 1871-93)..... | 1888 to Dec. 31, 1893. |
| B 131..... | Descriptions, measurements, gage heights, and ratings..... | 1893-94. |
| 16th A, pt. 2 | Descriptive information only. | |
| B 140..... | Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years). | 1895. |
| W 11..... | Gage heights (also gage heights for earlier years)..... | 1896. |
| 18th A, pt. 4 | Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years). | 1895-96. |
| W 15..... | Descriptions, measurements, and gage heights of streams east of the Mississippi River and Missouri River and tributaries above Kansas River. | 1897. |
| W 16..... | Descriptions, measurements, and gage heights of streams west of the Mississippi River except Missouri River and tributaries above Kansas River. | 1897. |
| 19th A, pt. 4 | Descriptions, measurements, ratings, and monthly discharge (also some long-time records). | 1897. |
| W 27..... | Measurements, ratings, and gage heights of streams east of the Mississippi River and Missouri River and tributaries. | 1898. |
| W 28..... | Measurements, ratings, and gage heights of streams west of the Mississippi River except Missouri River and tributaries. | 1898. |
| 20th A, pt. 4 | Monthly discharge (also for many earlier years)..... | 1898. |
| W 35 to 39... | Descriptions, measurements, gage heights, and ratings..... | 1899. |
| 21st A, pt. 4 | Monthly discharge..... | 1899. |
| W 47 to 52... | Descriptions, measurements, gage heights, and ratings..... | 1900. |
| 22d A, pt. 4 | Monthly discharge..... | 1900 |
| W 65, 66..... | Descriptions, measurements, gage heights, and ratings..... | 1901. |
| W 75..... | Monthly discharge..... | 1901. |

Papers on surface water supply containing records from 1899 to date, grouped by years and drainage basins, are listed by number on page 7. The data for any particular station will, in general, be found in the reports covering the years during which the station was maintained. For example, the data for 1910 to 1920 for any station in the area covered by part 3 are published in Water-Supply Papers 283, 303, 323, 353, 403, 433, 453, 473, 503, which contain records for the Ohio River Basin for those years.

The records at most of the stations discussed in these reports extend over a series of years. Miscellaneous measurements at many points other than regular gaging stations have been made each year and are published under "Miscellaneous discharge measurements" at the end of each report, the streams and points of measurement listed appearing in the same relative order as the streams and gaging stations in the body of the report. An index of the records obtained prior to 1904 has been published in Water-Supply Paper 119.

Each of the reports on surface water supply for the year 1939, issued as Water-Supply Papers 871 to 884 (see table on p. 7), contains a summary of yearly discharge at gaging stations in the area covered by that report. Gaging stations at which 10 or more complete years of record have been collected are represented. These summaries are available also as separate reprints.

Numbers of water-supply papers containing results of stream measurements, 1899-1942

(For basins included see p. 4)

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1899 a... | 35 | b35, 36 | 36 | 36 | 36 | c35, 37 | 37 | 37 | d37, 38 | 38, e39 | 38, f39 | 38 | 38 | 38 |
| 1900 g... | 47, h48 | 48 | 48, 149 | 49 | 49 | 49, j50 | 50 | 60 | 50 | 61 | 51 | 51 | 51 | 51 |
| 1901..... | 66, 75 | 65, 75 | 65, 75 | 65, 75 | k65, 66, 75 | 66, 75 | k65, 66, 75 | 66, 75 | 66, 75 | 66, 75 | 66, 75 | 66, 75 | 66, 75 | 66, 75 |
| 1902..... | 82 | b82, 83 | 83 | m82, 83 | k83, 85 | 84 | k83, 84 | 84 | 85 | 65 | 86 | 85 | 85 | 85 |
| 1903..... | 97 | b97, 98 | 98 | 97 | k98, 99, n100 | 99 | k98, 99 | 99 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1904..... | o124, p125, q126 | q126, 127 | 128 | 129 | k128, 130 | 130, r131 | k128, 131 | 132 | 133 | 133, s134 | 134 | 135 | 135 | 135 |
| 1905..... | o166, p166, q167 | q167, 168 | 169 | 170 | 171 | 172 | k169, 173 | 174 | 175, t177 | 176, s177 | 177 | 178 | 178 | u177, 178 |
| 1906..... | o201, p202, q203 | q203, 204 | 206 | 206 | 207 | 208 | k206, 209 | 210 | 211, t213 | 212, s213 | 213 | 214 | 214 | 214 |
| 1907-8... | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250, s251 | 251 | 252 | 252 | 252 |
| 1909..... | 261 | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 | 270, s271 | 271 | 272 | 272 | 272 |
| 1910..... | 281 | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 290 | 291 | 292 | 292 | 292 |
| 1911..... | 301 | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311 | 312 | 312 | 312 |
| 1912..... | 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331 | 332-A | 332-B | 332-C |
| 1913..... | 351 | 352 | 353 | 364 | 355 | 356 | 357 | 358 | 359 | 360 | 361 | 362-A | 362-B | 362-C |
| 1914..... | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | 391 | 392 | 393 | 394 |
| 1915..... | 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 |
| 1916..... | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 | 441 | 442 | 443 | 444 |
| 1917..... | 451 | 452 | 453 | 454 | 465 | 456 | 457 | 458 | 459 | 460 | 461 | 462 | 463 | 464 |
| 1918..... | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 |
| 1919-20.. | 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 |
| 1921..... | 521 | 522 | 523 | 524 | 525 | 526 | 527 | 528 | 529 | 530 | 531 | 532 | 533 | 534 |
| 1922..... | 541 | 542 | 543 | 544 | 545 | 546 | 547 | 548 | 549 | 550 | 551 | 552 | 553 | 554 |
| 1923..... | 561 | 562 | 563 | 564 | 565 | 566 | 567 | 568 | 569 | 570 | 571 | 572 | 573 | 574 |
| 1924..... | 581 | 582 | 583 | 584 | 585 | 586 | 587 | 588 | 589 | 590 | 591 | 592 | 593 | 594 |
| 1925..... | 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 |
| 1926..... | 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 |
| 1927..... | 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 |
| 1928..... | 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 |
| 1929..... | 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 |
| 1930..... | 696 | 697 | 698 | 699 | 700 | 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 |
| 1931..... | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 | 721 | 722 | 723 | 724 |
| 1932..... | 726 | 727 | 728 | 729 | 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 |
| 1933..... | 741 | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751 | 752 | 753 | 754 |
| 1934..... | 756 | 757 | 758 | 759 | 760 | 761 | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 |
| 1935..... | 781 | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791 | 792 | 793 | 794 |
| 1936..... | 801 | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 810 | 811 | 812 | 813 | 814 |
| 1937..... | 821 | 822 | 823 | 824 | 825 | 826 | 827 | 828 | 829 | 830 | 831 | 832 | 833 | 834 |
| 1938..... | 851 | 852 | 853 | 854 | 855 | 856 | 857 | 858 | 859 | 860 | 861 | 862 | 863 | 864 |
| 1939..... | 871 | 872 | 873 | 874 | 875 | 876 | 877 | 878 | 879 | 880 | 881 | 882 | 883 | 884 |
| 1940..... | 891 | 892 | 893 | 894 | 895 | 896 | 897 | 898 | 899 | 900 | 901 | 902 | 903 | 904 |
| 1941..... | 921 | 922 | 923 | 924 | 925 | 926 | 927 | 928 | 929 | 930 | 931 | 932 | 933 | 934 |
| 1942..... | 951 | 952 | 953 | 954 | 955 | 956 | 957 | 958 | 959 | 960 | 961 | 962 | 963 | 964 |

a Rating tables and index to Water-Supply Papers 35-39 contained in Water-Supply Paper 39. Tables of monthly discharge for 1899 in 21st Annual Report, part 4.
b James River only.
c Gallatin River.
d Green and Gunnison Rivers and Colorado River above Gunnison River.
e Mojave River only.
f Kings and Kern Rivers and south Pacific slope basins.
g Rating tables and index to Water-Supply Papers 47-52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52. Monthly discharge for 1900 in 22d Annual Report, part 4.
h Wissahickon and Schuylkill Rivers to James River.
i Scioto River.
j Loup, Platte, and Elkhorn Rivers and tributaries below Platte River.
k Tributaries of Mississippi River from east.
m Lake Ontario and tributaries to St. Lawrence River proper.
n Hudson Bay only.
o New England rivers only.
p Hudson River to Delaware River, inclusive.
q Susquehanna River to Yadkin River, inclusive.
r Platte and Kansas Rivers.
s The Great Basin in California, except Truckee and Carson River Basins.
t Below mouth of Gila River.
u Rogue, Umpqua, and Siletz Rivers only.

From time to time reports have been published that are compilations of records for various areas, usually a single State or drainage basin. These reports contain records previously published (some of which have been revised), as well as some records not contained in the annual series of water-supply papers. The following table gives the numbers and titles of these reports, arranged in alphabetical order by States and drainage basins.

Reports containing compilation of discharge by States and drainage basins

| Water-supply Paper | Period | State or drainage basin and title |
|---|---|---|
| | | STATE |
| 107 | 1895-1903 | Alabama, Water powers of, with an appendix on stream measurements in Mississippi. |
| 298 | 1887-1912 | California, Water resources of, part 1, Stream measurements in Sacramento River Basin. |
| 299 | 1878-1912 | California, Water resources of, part 2, Stream measurements in San Joaquin River Basin. |
| 300 | 1891-1912 | California, Water resources of, part 3, Stream measurements in the Great Basin and Pacific Coast river basins. |
| 477 | 1890-1918 | California, southern, Surface water supply of Pacific slope of. |
| 597-E | 1895-1927 | California, Surface water supply of Sacramento River Basin. |
| 636-D | 1895-1927 | California, Surface water supply of San Joaquin River Basin. |
| 636-E | 1894-1927 | California, southern, Surface water supply of Pacific slope basins in. |
| 637-A | 1895-1927 | California, Surface water supply of minor San Francisco Bay, northern Pacific, and Great basins in. |
| 74 | 1884-1900 | Colorado, Water resources of. |
| 197 | 1895-1905 | Georgia, Water resources of. |
| 415 | 1845-1915 | Massachusetts, Surface waters of. |
| 230 | 1894-1906 | Nebraska, Surface water supply of. |
| 370 | 1878-1910 | Oregon, Surface water supply of. |
| 850 | 1898-1937 | Texas, Summary of records of surface waters of. |
| 424 | 1875-1916 | Vermont, Surface waters of. |
| 492 | 1878-1919 | Washington, Summary of hydrometric data in. |
| 870 | 1919-35 | Washington, Summary of records of surface waters of. |
| 156 | 1895-1905 | Wisconsin, northern, Water powers of. |
| 469 | 1894-1921 | Wyoming, Surface waters of, and their utilization. |
| | | DRAINAGE BASIN |
| 395 | 1888-1914 | Colorado River (Ariz., Colo., N. Mex., Utah, Wyo.) and its utilization. |
| 617 | 1897-1927 | Colorado River, upper (Colo., Utah), and its utilization. |
| 517 | 1889-1920 | Great Salt Lake Basin, Water powers of. |
| 618 | 1894-1926 | Green River (Utah, Wyo.) and its utilization. |
| 198 | 1890-1906 | Kennebec River Basin (Maine), Water resources of. |
| 491 | 1898-1917 | Milk River. See St. Mary and Milk Rivers. |
| 536 | 1895-1920 | New Kanawha River Basin (N. C., Va., W. Va.), Surface water supply of. |
| 279 | 1904-9 | Penobscot River Basin (Maine), Water resources of. |
| 192 | 1895-1906 | Potomac River Basin (D. C., Md., W. Va.) |
| 358 | 1898-1913 | Rio Grande Basin (Colo., N. Mex., Tex.), Water resources of, 1888-1913. |
| 491 | 1898-1917 | St. Mary and Milk Rivers (Mont., Canada), Water supply of. |
| 109 | 1890-1904 | Susquehanna River Basin (Pa., Md.), Hydrography of. |

Records of discharge have been published also in State reports. Some of these are not contained in the publications of the Geological Survey or are revisions of records previously published in its water-supply papers. The following table contains a list of these reports.

State reports containing compilation of records of discharge

| State | Period | Report | Issued by |
|---|---|---|---|
| Alabama..... | 1895-1915 | Bull. 17, Water powers of Alabama..... | Geological Survey of Alabama. |
| Arkansas.... | 1857-1928 | Stream-gaging Rept. 1..... | Arkansas Geological Survey. |
| Colorado.... | 1881-1935 | Water resources of Colorado, Appendix 2, Data on stream-gaging stations of Colorado.[1] | State Planning Commission, Water Conservation Board, State engineer. |
| Do..... | 1881-1938 | Water resources of Colorado, Appendix 3, vols. 1 and 2, Stream-flow data of Colorado. | Do. |
| Connecticut. | 1900-1927 | Bull. 44, Water resources of Connecticut. | State Geological and Natural History Survey. |
| Do..... | 1912-33 | 5th biennial report[2]..... | Connecticut State Water Commission. |
| Georgia..... | 1895-1906 | Bull. 16, Water powers of Georgia..... | Geological Survey of Georgia. |
| Do..... | 1907-19 | Bull. 38, Water powers of Georgia..... | Do. |
| Illinois.... | 1908-11 | Water resources of Illinois..... | Rivers and Lakes Commission. |
| Do..... | 1900-1934 | Stream-flow data of Illinois..... | Division of Waterways. |

1 Contains records of yearly discharge only.
2 Contains records of monthly discharge in second-feet per square mile.

State reports containing compilation of records of discharge--Continued

| State | Period | Report | Issued by |
|---|---|---|---|
| Indiana..... | 1923-27 | Pub. 72, Surface water supply of Indiana. | Department of Conservation. |
| Do..... | 1927-30 | Pub. 112, Surface water supply of Indiana. | Do. |
| Iowa..... | 1873-1932 | Stream-flow records of Iowa..... | Iowa State Planning Board. |
| Do..... | 1873-1940 | Summaries of flow relating to Iowa streams. | Iowa Geological Survey. |
| Kansas..... | 1895-1919 | Surface waters of Kansas..... | Kansas Water Commission. |
| Do..... | 1919-24 | ....do..... | Do. |
| Do..... | 1924-28 | ....do..... | Kansas State Board of Agriculture. |
| Do..... | 1928-35 | Stream-flow data of Kansas..... | Do. |
| Do..... | 1935-39 | ....do..... | Do. |
| Kentucky.... | 1910-20 | Surface waters of Kentucky..... | Kentucky Geological Survey. |
| Louisiana... | 1903-38 | Geol. Bull. 16, Surface water supply of Louisiana. | Department of Conservation. |
| Maine..... | 1887-1920 | 1st annual report[2]..... | Maine Water Power Commission. |
| Maryland.... | 1929-37 | Flow data and draft storage curves for major streams in Maryland. | State Planning Commission and Water Resources Commission. |
| Minnesota... | 1909-12 | Water-resources investigation of Minnesota. | State Drainage Commission. |
| Missouri.... | 1857-1926 | Vol. 20, 2d series, Water resources of Missouri. | Missouri Geological Survey and Water Resources. |
| Do..... | 1927-39 | Vol. 28, 2d series, Surface waters of Missouri. | Do. |
| Montana..... | 1889-1911 | 5th biennial report..... | Office of the State engineer. |
| Do..... | 1881-1938 | Special Rept. 10, vols. 1-4, Water resources of Montana. | Montana Agricultural Experiment Station. |
| Nebraska.... | 1894-1914 | 1st hydrographic report..... | Bureau of Water Power, Irrigation, and Drainage. |
| Do..... | 1914-28 | 2d hydrographic report..... | Do. |
| New Jersey.. | 1891-1928 | Bull. 33, Surface water supply of New Jersey. | Department of Conservation and Development. |
| Do..... | 1928-34 | Special Rept. 5, Surface water supply of New Jersey. | State Water Policy Commission. |
| New Mexico.. | 1888-1925 | Surface water supply of New Mexico..... | Office of the State Engineer. |
| North Carolina. | 1889-1923 | Bull. 34, Discharge records of North Carolina streams.[3] | Department of Conservation and Development. |
| Do..... | 1889-1936 | Bull. 39, Discharge records of North Carolina streams.[4] | Do. |
| North Dakota | 1919-21 | Report to Governor of North Dakota on flood control. | State chief engineer. |
| Do..... | 1882-1938 | Surface water in North Dakota..... | State Planning Board. |
| Ohio..... | 1898-1921 | Bull. 73, Ohio stream flow..... | Engineering Experiment Station, Ohio State University. |
| Do..... | 1902-39 | Bull. 200, Compilation of stream-flow records of Ohio. | Department of Agriculture, Division of Conservation and Natural Resources. |
| Do..... | 1898-1939 | Bull. 3, Ohio stream-drainage areas and flow-duration tables. | Engineering Experiment Station, Ohio State University. |
| Oregon..... | 1878-1914 | Bull. 4, Water resources of the State of Oregon. | Office of the State Engineer. |
| Do..... | 1914-24 | Bull. 7, Water resources of the State of Oregon. | Do. |
| Do..... | 1924-30 | Bull. 8, Water resources of the State of Oregon. | Do. |
| Do..... | 1930-36 | Bull. 9, Water resources of the State of Oregon. | Do. |
| Pennsylvania | 1890-1911 | Report of the Water Supply Commission of Pennsylvania. | Water Supply Commission of Pennsylvania. |
| Do..... | 1928-32 | Stream-flow records of Pennsylvania..... | Department of Forests and Waters. |
| Rhode Island | 1929-41 | 7th annual report..... | Department of Public Works. |
| Tennessee... | 1874-1924 | Bull. 34, Water resources of Tennessee. | Department of Education. |
| Do..... | 1920-30 | Bull. 40, Surface Waters of Tennessee.[5] | Do. |
| Utah..... | 1889-1905 | 5th biennial report, State engineer..... | Office of the State Engineer. |
| Do..... | 1906-10 | 7th biennial report, State engineer..... | Do. |
| Do..... | 1911-1916 | 10th biennial report, State engineer.... | Do. |
| Virginia.... | 1895-1927 | Bull. 31, Water resources of Virginia... | Conservation Commission. |
| Washington.. | 1878-1933 | Bull. 5, Monthly and yearly summaries of hydrometric data. | Department of Conservation and Development. |
| Wisconsin... | 1888-1914 | 1st report of Railroad Commission of Wisconsin to Legislature on water powers. | Railroad Commission of Wisconsin. |
| Do..... | 1914-23 | 2d report of Railroad Commission of Wisconsin to Legislature on water powers. | Do. |

2 Contains records of monthly discharge in second-feet per square mile.
3 Contains records of weekly discharge.
4 Contains records of maximum and minimum daily, weekly, and monthly discharge and yearly mean discharge.

Note.- In addition to the records contained in the reports listed above, the following States have issued annual or biennial reports in which are contained records of discharge: California, Colorado, Connecticut, Idaho, Indiana, Maine, Missouri, Montana, Nebraska, Nevada, New Mexico, New York (also New York City Board of Water Supply and city of Rochester), North Dakota, Oregon, Pennsylvania, Washington, and Wyoming.

The reports listed in the foregoing tables contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey. The more recent of these reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier noteworthy floods. The following list gives the numbers and titles of these reports.

| Water-Supply Paper | Title |
|---|---|
| 88 | The Passaic flood of 1902. |
| 92 | The Passaic flood of 1903. |
| 96 | Destructive floods in the United States in 1903. |
| 147 | Destructive floods in the United States in 1904. |
| 162 | Destructive floods in the United States in 1905. |
| 334 | The Ohio Valley flood of March-April 1913. |
| 426 | Southern California floods of January 1916. |
| 487 | The Arkansas River flood of June 3-5, 1921. |
| 488 | The floods in central Texas in September 1921. |
| 520-G | Some floods in the Rocky Mountain region. |
| 636-C | Ths New England flood of November 1927. |
| 771 | Floods in the United States, magnitude and frequency. |
| 773-E | The New York State flood of July 1935. |
| 796-B | Flood on Republican and Kansas Rivers, May and June 1935. |
| 796-C | Flood in La Canada Valley, Calif., January 1, 1934. |
| 796-G | Major Texas floods of 1935. |
| 798 | The floods of March 1936, part 1, New England Rivers. |
| 799 | The floods of March 1936, part 2, Hudson River to Susquehanna River region. |
| 800 | The floods of March 1936, part 3, Potomac, James, and upper Ohio Rivers. |
| 816 | Major Texas floods of 1936. |
| 836-A | Stages and flood discharges of the Connecticut River at Hartford, Conn. |
| 838 | Floods of Ohio and Mississippi Rivers, January-February 1937. |
| 842 | Floods in Canadian and Pecos River Basins of New Mexico, May and June 1937. |
| 843 | Floods of December 1937 in northern California. |
| 844 | Floods of March 1938 in southern California. |
| 847 | Maximum discharges at stream-measurement stations through September 1938. |
| 867 | Hurricane floods of September 1938. |
| 869 | Flood of August 1935 in Muskingum River Basin, Ohio. |
| 914 | Texas floods of 1938 and 1939. |

## RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The following table contains a list of gaging stations for the area covered by this report at which records of discharge were collected during the water year October 1941 to September 1942 by agencies other than the Geological Survey. The records for these stations are not contained in publications of the Geological Survey.

Records of discharge collected by agencies other than the Geological Survey

| Stream | Location | Period | Collected by |
|---|---|---|---|
| Cayuga Lake Outlet..... | Lock 1 (Mud lock), N. Y..... | 1926-42 | State Department of Public Works, Albany, N. Y. |
| Clyde River..... | Clyde, N. Y..... | 1924-42 | Do. |
| Indian River..... | Theresa, N. Y..... | 1934-42 | Central New York Power Corporation, Syracuse, N. Y. |
| New York Barge Canal†. | Brewerton, N. Y..... | 1925-42 | State Department of Public Works, Albany, N. Y. |
| Oneida River..... | Caughdenoy, N. Y..... | 1929-42 | Oswego River Watershed Corporation, Fulton, N. Y. |
| Oswegatchie River, East Branch of. | Browns Falls, N. Y..... | 1934-42 | Central New York Power Corporation, Syracuse, N. Y. |
| Oswego River..... | Lower Dam, Fulton, N. Y..... | 1928-42 | Oswego River Watershed Corporation, Fulton, N. Y. |
| Raquette River..... | Colton, N. Y..... | 1934-42 | Central New York Power Corporation, Syracuse, N. Y. |
| St. Regis River, West Branch of. | Parishville, N. Y..... | 1934-42 | Do. |
| Salmon River..... | Bennetts Bridge, near Altmar, N. Y. | 1934-42 | Do. |
| Saranac River..... | Kents Falls, N. Y..... | 1934-42 | System Properties, Inc., New York, N. Y. |
| Seneca River..... | Baldwinsville, N. Y..... | 1928-42 | Oswego River Watershed Corporation, Fulton, N. Y. |
| Do..... | Jacks Reef, near Baldwinsville, N. Y. | 1933-42 | State Department of Public Works, Albany, N. Y. |

† Diversion around station on Oneida River at Caughdenoy, N. Y.

Note.- Records for the stations given in the above table are unpublished but are available at the office of the organization by which the station was operated. In addition to the records listed in the above table, the Soil Conservation Service (beginning in 1940) has collected records of run-off from three areas of less than 5 acres each near East Lansing, Mich.

The work in the several States was done under cooperative agreements with the organizations listed below.

Illinois: Department of Public Works and Buildings, W. A. Rosenfield, director, through Division of Waterways, T. B. Casey, acting chief engineer.

Indiana: State Department of Conservation, Frank N. Wallace, acting commissioner prior to October 31, succeeded by H. A. Barnhart, commissioner, through Division of Engineering, Denzil Doggett, State engineer, succeeded by C. E. Bechert; State Highway Commission, J. D. Adams, chairman, succeeded by S. C. Hadden, and M. R. Keefe, chief engineer, succeeded by Ray Bowers; and city of Fort Wayne Filtration Plant, L. R. Matthews, superintendent.

Michigan: State Department of Conservation, P. J. Hoffmaster, director, through Division of Geology, Dr. R. A. Smith, State geologist, and Division of Fish and Fisheries, F. A. Westerman, division head; Michigan Stream Control Commission, M. P. Adams, executive secretary-engineer; and State Highway Department, G. D. Kennedy, commissioner.

Minnesota: State Department of Conservation, Division of Water Resources and Engineering, W. S. Olson, director.

New York: State Department of Conservation, Lithgow Osborne, commissioner; State Department of Public Works, A. W. Brandt, superintendent; Board of Black River Regulating District, E. S. Cullings, chief engineer; Commission for the Improvement of Oswegatchie River and the Hydraulic Power Thereon, J. J. Wallace, chairman; Buffalo Sewer Authority, D. H. McCarriagher, chairman; Water Department, city of Auburn, A. J. Adams, chief engineer; and Department of Public Works, village of Lancaster, Harold J. Huber, superintendent.

Ohio: State Cooperative Topographic Survey, W. E. Owens, inspector-director; State Water Supply Board, Wilber Stout, chairman.

Vermont: State of Vermont, William H. Wills, Governor.

Wisconsin: Public Service Commission of Wisconsin, George P. Steinmetz, chief engineer.

Financial assistance was furnished by the Corps of Engineers, United States Army, in the operation of 32 gaging stations, of which 4 were in Michigan, 10 in New York, 14 in Ohio, 1 in Vermont, and 3 in Wisconsin.

Financial assistance was also furnished by the Fish and Wildlife Service, United States Department of the Interior, and by the United States Department of State.

Full cooperation exists between the Geological Survey, United States Department of the Interior, and the Dominion Water and Power Bureau, Department of Mines and Resources, Canada. On waters adjacent to the international boundary certain stations are maintained jointly by the United States and Canada under the terms of the Boundary Waters Treaty of 1909, and others are maintained under a subsequent agreement between the two Governments. The records from all these stations are obtained in such a manner as to be equally acceptable and available in both countries. These stations are designated international gaging stations.

Assistance in collecting records was also rendered by the following municipalities, organizations, corporations, and individuals:

Michigan: Presque Isle County Board of Supervisors, cities of Allegan and Battle Creek, Copper District Power Co., Dow Chemical Co., and Michigan Gas & Electric Co.

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New York: City of Syracuse, F. J. McArdell, city engineer, Central New York Power Corporation, International Paper Co., Cornell University, New York & Pennsylvania Co., Associated Gas & Electric System, Rochester Gas & Electric Corporation, and Deer River Power Co.

Wisconsin: Wisconsin Michigan Power Co. and Lake Superior District Power Co.

## DIVISION OF WORK

The stream-gaging work was conducted by the water resources branch of the Geological Survey, Glenn L. Parker, chief hydraulic engineer, Carl G. Paulsen, assistant chief hydraulic engineer, and Rudolph G. Kasel, chief of the division of surface waters. The data for the stations in the several States were collected and prepared for publication under the supervision of district engineers as follows: In Illinois, J. H. Morgan; in Indiana, D. M. Corbett; in Minnesota, P. R. Speer; in New York, A. W. Harrington; in Ohio, C. V. Youngquist; in Vermont, H. B. Kinnison; in Wisconsin, F. C. Christopherson.

The records were reviewed and the manuscript prepared for publication under the direction of B. J. Peterson, engineer in charge, and J. W. Gambrell, assistant engineer, section of reports.

## ST. LAWRENCE RIVER MAIN STEM

### Niagara River at Buffalo, N. Y.

Location.- Lat. 42°52'40", long. 78°53'25", at head of Niagara River at Buffalo. Flow computed by means of several U. S. Lake Survey gages on the river.

Drainage area.- 263,500 square miles.

Records available.- January 1905 to September 1942 (prior to October 1935 monthly discharge only).

Average discharge.- 37 years, 190,000 second-feet (not including diversions from Lakes Michigan and Erie).

Extremes.- Maximum daily discharge during year, 226,000 second-feet Sept. 24; minimum daily, 137,000 second-feet Jan. 13.
1905-42: Maximum monthly mean discharge, 242,000 second-feet May 1929; minimum monthly, 117,000 second-feet February 1936.

Remarks.- Records do not include flow diverted from Lake Michigan by Chicago Sanitary & Ship Canal and from Lake Erie by Welland Canal in Ontario, and Black Rock and New York State Barge (old Erie) Canals at Buffalo.

Cooperation.- Records of daily discharge furnished by Corps of Engineers, U. S. Army.

Discharge, in thousands of second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 170 | 191 | 165 | 165 | 177 | 163 | 187 | 192 | 197 | 203 | 205 | 197 |
| 2 | 167 | 197 | 165 | 220 | 164 | 162 | 186 | 194 | 198 | 201 | 214 | 199 |
| 3 | 174 | 175 | 167 | 174 | 162 | 165 | 180 | 196 | 199 | 205 | 205 | 193 |
| 4 | 170 | 174 | 165 | 172 | 159 | 164 | 182 | 200 | 201 | 206 | 206 | 198 |
| 5 | 179 | 158 | 177 | 186 | 160 | 165 | 184 | 197 | 200 | 205 | 197 | 199 |
| 6 | 170 | 157 | 188 | 195 | 153 | 164 | 181 | 187 | 199 | 204 | 199 | 192 |
| 7 | 179 | 212 | 165 | 185 | 153 | 162 | 182 | 203 | 199 | 211 | 196 | 194 |
| 8 | 180 | 202 | 189 | 170 | 161 | 161 | 180 | 196 | 195 | 206 | 200 | 194 |
| 9 | 168 | 182 | 189 | 171 | 150 | 213 | 161 | 196 | 196 | 200 | 205 | 201 |
| 10 | 186 | 182 | 179 | 158 | 142 | 173 | 182 | 192 | 199 | 200 | 206 | 202 |
| 11 | 176 | 188 | 167 | 185 | 157 | 166 | 196 | 190 | 200 | 205 | 202 | 197 |
| 12 | 181 | 180 | 155 | 142 | 158 | 169 | 194 | 198 | 202 | 204 | 200 | 199 |
| 13 | 167 | 178 | 164 | 137 | 158 | 156 | 190 | 190 | 203 | 205 | 198 | 197 |
| 14 | 178 | 172 | 187 | 148 | 162 | 165 | 192 | 194 | 199 | 207 | 201 | 197 |
| 15 | 175 | 176 | 182 | 160 | 162 | 161 | 193 | 193 | 200 | 204 | 202 | 197 |
| 16 | 169 | 166 | 184 | 145 | 163 | 161 | 187 | 207 | 196 | 204 | 205 | 198 |
| 17 | 165 | 164 | 168 | 144 | 173 | 183 | 194 | 197 | 201 | 208 | 203 | 195 |
| 18 | 174 | 169 | 178 | 154 | 167 | 185 | 193 | 195 | 202 | 210 | 203 | 195 |
| 19 | 165 | 168 | 171 | 154 | 173 | 180 | 194 | 197 | 204 | 212 | 203 | 200 |
| 20 | 165 | 181 | 168 | 160 | 162 | 173 | 195 | 195 | 200 | 207 | 206 | 192 |
| 21 | 166 | 182 | 158 | 159 | 164 | 174 | 194 | 194 | 204 | 204 | 205 | 193 |
| 22 | 170 | 169 | 165 | 158 | 167 | 190 | 193 | 198 | 203 | 202 | 210 | 203 |
| 23 | 176 | 174 | 164 | 166 | 166 | 184 | 193 | 210 | 211 | 204 | 203 | 198 |
| 24 | 181 | 175 | 184 | 160 | 165 | 171 | 194 | 205 | 208 | 203 | 199 | 226 |
| 25 | 172 | 180 | 165 | 145 | 168 | 169 | 194 | 199 | 202 | 198 | 195 | 196 |
| 26 | 170 | 194 | 161 | 156 | 165 | 165 | 192 | 198 | 200 | 200 | 198 | 194 |
| 27 | 177 | 181 | 183 | 161 | 166 | 164 | 192 | 196 | 201 | 204 | 202 | 204 |
| 28 | 168 | 163 | 169 | 150 | 166 | 170 | 194 | 197 | 201 | 205 | 199 | 200 |
| 29 | 163 | 174 | 168 | 146 | - | 166 | 192 | 198 | 200 | 202 | 195 | 195 |
| 30 | 168 | 164 | 166 | 143 | - | 172 | 192 | 199 | 206 | 201 | 195 | 192 |
| 31 | 156 | - | 168 | 163 | - | 173 | - | 193 | - | 211 | 197 | - |

| Month | Thousands of second-foot-days | Thousands of second-feet | | | Per square mile† | Run-off in inches |
|---|---|---|---|---|---|---|
| | | Maximum | Minimum | Mean | | |
| October | 5,325 | 186 | 156 | 172 | 0.653 | 0.75 |
| November | 5,328 | 212 | 157 | 178 | .676 | .75 |
| December | 5,327 | 189 | 158 | 172 | .653 | .75 |
| Calendar year 1941 | 65,187 | 219 | 154 | 179 | .679 | 9.19 |
| January | 5,032 | 220 | 137 | 162 | .615 | .71 |
| February | 4,543 | 177 | 142 | 162 | .615 | .64 |
| March | 5,289 | 213 | 156 | 171 | .649 | .75 |
| April | 5,663 | 196 | 161 | 189 | .717 | .80 |
| May | 6,096 | 210 | 187 | 197 | .748 | .86 |
| June | 6,026 | 211 | 195 | 201 | .763 | .85 |
| July | 6,341 | 212 | 198 | 205 | .778 | .89 |
| August | 6,254 | 214 | 195 | 202 | .767 | .88 |
| September | 5,937 | 226 | 192 | 198 | .751 | .84 |
| Water year 1941-42 | 67,161 | 226 | 137 | 184 | .698 | 9.47 |

† Expressed in second-feet.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## St. Lawrence River at Ogdensburg, N. Y.

Location.- Lat. 44°41'55", long. 75°30'15". Flow computed by means of several U. S. Lake Survey gages on the river.

Drainage area.- Above Ogdensburg, 298,100 square miles.

Records available.- January 1919 to September 1942 (prior to October 1935, monthly discharge only).

Average discharge.- 23 years, 217,500 second-feet (does not include diversion from Lake Michigan).

Extremes.- Maximum daily discharge during year, 245,000 second-feet July 7; minimum daily, 177,000 second-feet Jan. 26.
1919-41: Maximum monthly mean discharge, 289,000 second-feet June 1929; minimum monthly discharge, 152,000 second-feet February 1936.

Remarks.- Records do not include flow diverted from Lake Michigan by Chicago Sanitary and Ship Canal. Water diverted from Lake Erie and Niagara River by Black Rock and New York State Barge (old Erie) Canals, except that lost by seepage and evaporation, is discharged into Lake Ontario at Oswego and at several points between Niagara River and Irondequoit Bay.

Cooperation.- Records of daily discharge furnished by Corps of Engineers, U. S. Army.

Discharge, in thousands of second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 205 | 194 | 190 | 192 | 194 | 189 | 220 | 227 | 232 | 240 | 234 | 226 |
| 2 | 199 | 204 | 195 | 215 | 189 | 188 | 220 | 228 | 235 | 240 | 236 | 228 |
| 3 | 202 | 201 | 197 | 192 | 184 | 183 | 214 | 229 | 235 | 238 | 236 | 220 |
| 4 | 198 | 199 | 195 | 194 | 187 | 191 | 216 | 233 | 236 | 241 | 234 | 225 |
| 5 | 204 | 194 | 194 | 202 | 184 | 190 | 221 | 231 | 237 | 238 | 233 | 225 |
| 6 | 196 | 182 | 206 | 202 | 187 | 190 | 214 | 228 | 236 | 241 | 233 | 223 |
| 7 | 201 | 199 | 194 | 203 | 187 | 189 | 213 | 224 | 236 | 245 | 231 | 224 |
| 8 | 206 | 207 | 192 | 198 | 193 | 190 | 220 | 228 | 235 | 241 | 230 | 220 |
| 9 | 197 | 202 | 200 | 199 | 187 | 192 | 214 | 230 | 236 | 236 | 231 | 222 |
| 10 | 201 | 201 | 199 | 198 | 188 | 207 | 212 | 230 | 236 | 235 | 233 | 228 |
| 11 | 201 | 202 | 192 | 200 | 186 | 192 | 220 | 230 | 237 | 240 | 232 | 223 |
| 12 | 197 | 195 | 189 | 200 | 188 | 202 | 225 | 229 | 237 | 238 | 231 | 225 |
| 13 | 198 | 196 | 186 | 193 | 185 | 198 | 226 | 229 | 238 | 239 | 229 | 227 |
| 14 | 206 | 197 | 198 | 198 | 186 | 197 | 228 | 229 | 234 | 242 | 228 | 224 |
| 15 | 205 | 198 | 197 | 194 | 188 | 201 | 226 | 229 | 236 | 237 | 230 | 225 |
| 16 | 197 | 196 | 200 | 193 | 188 | 200 | 221 | 233 | 234 | 235 | 232 | 227 |
| 17 | 196 | 193 | 193 | 196 | 191 | 208 | 230 | 232 | 234 | 234 | 232 | 225 |
| 18 | 197 | 197 | 198 | 193 | 188 | 216 | 227 | 230 | 238 | 237 | 232 | 224 |
| 19 | 193 | 198 | 195 | 191 | 192 | 215 | 224 | 232 | 237 | 242 | 232 | 226 |
| 20 | 196 | 202 | 186 | 194 | 185 | 212 | 225 | 232 | 237 | 236 | 237 | 221 |
| 21 | 198 | 205 | 190 | 192 | 188 | 210 | 226 | 229 | 237 | 237 | 232 | 220 |
| 22 | 199 | 196 | 187 | 193 | 191 | 221 | 228 | 229 | 238 | 236 | 237 | 225 |
| 23 | 198 | 198 | 189 | 196 | 190 | 218 | 229 | 236 | 241 | 237 | 234 | 219 |
| 24 | 198 | 196 | 191 | 192 | 189 | 216 | 228 | 238 | 241 | 237 | 229 | 235 |
| 25 | 197 | 201 | 198 | 179 | 189 | 215 | 228 | 235 | 240 | 234 | 230 | 226 |
| 26 | 197 | 207 | 190 | 177 | 190 | 213 | 224 | 234 | 237 | 231 | 228 | 224 |
| 27 | 203 | 193 | 197 | 191 | 190 | 211 | 225 | 233 | 237 | 235 | 229 | 227 |
| 28 | 196 | 194 | 194 | 185 | 189 | 209 | 226 | 233 | 237 | 236 | 228 | 226 |
| 29 | 193 | 194 | 195 | 181 | - | 213 | 231 | 235 | 236 | 231 | 223 | 225 |
| 30 | 194 | 190 | 194 | 187 | - | 216 | 228 | 233 | 240 | 232 | 228 | 223 |
| 31 | 190 | - | 194 | 186 | - | 214 | - | 228 | - | 236 | 226 | - |

| Month | Thousands of second-foot-days | Thousands of second-feet | | | Per square mile† | Run-off in inches |
|---|---|---|---|---|---|---|
| | | Maximum | Minimum | Mean | | |
| October | 6,158 | 206 | 190 | 199 | 0.668 | 0.77 |
| November | 5,931 | 207 | 182 | 198 | .664 | .74 |
| December | 6,015 | 206 | 186 | 194 | .651 | .75 |
| Calendar year 1941 | 76,391 | 241 | 175 | 209 | .701 | 9.54 |
| January | 6,005 | 215 | 177 | 194 | .651 | .75 |
| February | 5,273 | 194 | 184 | 188 | .631 | .66 |
| March | 6,306 | 221 | 183 | 203 | .681 | .79 |
| April | 6,691 | 231 | 212 | 223 | .748 | .83 |
| May | 7,156 | 238 | 224 | 231 | .775 | .89 |
| June | 7,100 | 241 | 232 | 237 | .795 | .89 |
| July | 7,357 | 245 | 231 | 237 | .795 | .92 |
| August | 7,168 | 237 | 223 | 231 | .775 | .89 |
| September | 6,738 | 228 | 219 | 225 | .755 | .84 |
| Water year 1941-42 | 77,898 | 245 | 177 | 213 | .715 | 9.72 |

† Expressed in second-feet.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Pigeon River at Middle Falls, below International Bridge, Minn.

(International gaging station)

Location.- Water-stage recorder, lat. 48°00'44", long. 89°36'58", in NE¼ sec. 24, T. 64 N., R. 6 E., 400 feet upstream from Middle Falls, 3½ miles upstream from mouth, and 5¾ miles downstream from International Bridge. Datum of gage is 789.58 feet above mean sea level, datum of 1929.
Drainage area.- 604 square miles.
Records available.- October 1940 to September 1942. April 1924 to September 1940 at site at International Bridge 5¾ miles upstream, published as Pigeon River at International Bridge, Minn. October 1923 to September 1932 in House Document 92, 73d Congress, 1st Session. June 1921 to September 1923 in reports of Dominion Water and Power Bureau, Department of Mines and Resources, Canada.
Average discharge.- 19 years (1923-42), 472 second-feet.
Extremes.- Maximum discharge during year, 4,140 second-feet Apr. 16 (gage height, 7.17 feet); minimum, 59 second-feet Aug. 23, 24.
1923-42: Maximum discharge observed, 11,000 second-feet May 5, 1934 (gage height, 7.6 feet, site and datum then in use), from rating table extended above 7,000 second-feet; minimum, 30 second-feet Feb. 11 to Mar. 5, 1926.
Remarks.- Records good except those for periods affected by ice or logs and those for periods of no gage-height record, which are fair.
Cooperation.- This station is one of the international gaging stations maintained by the United States under agreement with Canada.

**Rating table, water year 1941-42, except periods of ice effect and period of backwater from logs (gage height, in feet, and discharge, in second-feet)**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.4 | 54 | 1.5 | 273 | 3.0 | 780 | 5.0 | 2,010 |
| .7 | 90 | 2.0 | 422 | 3.5 | 1,020 | 6.0 | 2,920 |
| 1.0 | 144 | 2.5 | 585 | 4.0 | 1,300 | 6.7 | 3,620 |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 720 | 370 | 200 | 130 | 110 | 90 | 600 | 3,420 | 1,200 | 420 | 162 | 162 |
| 2 | 680 | 358 | 220 | 120 | 110 | 85 | 650 | 3,620 | 1,100 | 400 | 158 | 221 |
| 3 | 700 | 325 | 220 | 120 | 110 | 85 | 750 | 2,820 | 1,100 | 380 | 151 | 192 |
| 4 | 760 | *316 | 220 | 110 | 100 | 85 | 800 | 1,930 | 1,100 | 360 | 134 | 156 |
| 5 | 720 | 305 | 240 | 110 | a100 | 85 | 900 | 2,050 | 1,000 | 340 | 126 | 124 |
| 6 | 640 | 296 | 200 | 110 | a95 | 80 | 1,000 | 2,350 | 1,200 | 320 | 120 | 108 |
| 7 | 1,390 | 288 | 190 | 100 | 95 | 80 | 900 | 2,220 | 1,100 | 320 | 119 | 98 |
| 8 | 1,810 | 270 | 180 | 100 | 95 | 85 | 800 | 1,970 | 1,000 | 300 | 117 | 90 |
| 9 | 1,460 | 262 | *170 | 110 | 95 | 85 | 750 | 1,810 | 850 | 280 | 113 | 84 |
| 10 | 1,180 | 251 | 160 | 110 | a95 | 80 | 800 | 1,810 | 800 | 280 | 86 | 79 |
| 11 | 995 | 245 | 160 | 110 | a90 | 85 | 750 | 1,770 | 750 | 280 | 75 | 76 |
| 12 | 870 | 240 | 160 | 110 | a90 | 85 | 650 | 1,660 | 700 | 260 | 74 | 79 |
| 13 | 780 | 240 | 170 | *120 | a85 | 85 | *1,000 | 1,700 | 700 | 240 | 72 | 77 |
| 14 | 760 | 240 | 170 | 120 | 85 | 85 | 1,400 | 2,720 | 650 | 208 | 72 | 76 |
| 15 | 720 | 226 | 170 | 120 | 85 | 85 | 2,200 | 3,020 | 600 | 190 | 70 | 72 |
| 16 | 660 | 220 | 160 | 120 | 85 | 85 | *3,520 | 2,820 | 550 | 177 | 70 | 69 |
| 17 | 602 | 221 | 160 | 120 | *85 | 95 | 3,520 | 2,440 | 550 | 170 | 71 | 66 |
| 18 | 568 | 218 | 170 | 120 | 85 | 90 | 2,620 | 2,440 | 550 | 167 | 69 | 72 |
| 19 | 550 | 229 | 160 | 120 | 85 | *90 | 1,970 | 2,530 | 550 | 182 | 66 | 74 |
| 20 | 534 | 265 | 140 | 120 | 85 | 95 | 1,740 | 2,440 | 600 | 195 | 64 | 76 |
| 21 | 568 | 262 | 150 | 120 | 80 | 100 | 1,660 | 2,090 | 550 | 205 | 62 | 76 |
| 22 | 568 | 240 | 150 | 120 | 60 | 100 | 1,700 | 1,810 | 500 | 208 | 62 | 72 |
| 23 | 550 | 170 | 160 | 120 | 85 | 120 | 1,700 | 1,810 | 480 | 200 | 60 | 76 |
| 24 | 517 | 160 | 150 | 120 | 85 | 140 | 1,660 | 1,740 | 550 | 180 | 60 | 100 |
| 25 | 485 | 220 | 150 | 120 | 85 | 170 | 1,890 | 1,630 | 550 | 172 | 69 | 115 |
| 26 | 469 | 220 | 150 | 120 | 85 | 190 | 1,770 | 1,560 | 500 | 167 | 75 | 120 |
| 27 | 453 | 220 | 150 | 120 | 85 | 240 | 1,630 | 1,600 | 480 | 167 | 77 | 111 |
| 28 | 422 | 220 | 140 | 120 | 90 | 300 | 1,520 | 1,560 | 460 | 165 | 77 | 104 |
| 29 | 406 | 200 | 140 | 120 | - | 340 | 2,090 | 1,490 | 440 | 160 | 76 | 100 |
| 30 | 391 | 200 | 140 | 120 | - | 440 | 2,620 | 1,400 | 420 | 158 | 83 | 95 |
| 31 | 382 | - | 130 | 120 | - | 500 | - | 1,200 | - | 160 | 86 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 22,310 | 1,810 | 382 | 720 | 1.19 | 1.37 |
| November | 7,517 | 370 | 160 | 251 | .416 | .46 |
| December | 5,230 | 240 | 130 | 169 | .280 | .32 |
| Calendar year 1941 | 195,190 | 5,240 | 50 | 535 | .886 | 11.99 |
| January | 3,620 | 130 | 100 | 117 | .194 | .22 |
| February | 2,540 | 110 | 80 | 90.7 | .150 | .16 |
| March | 4,360 | 500 | 80 | 141 | .233 | .27 |
| April | 45,760 | 3,520 | 600 | 1,525 | 2.52 | 2.82 |
| May | 65,430 | 3,620 | 1,200 | 2,111 | 3.50 | 4.03 |
| June | 21,580 | 1,200 | 420 | 719 | 1.19 | 1.33 |
| July | 7,411 | 420 | 158 | 239 | .396 | .46 |
| August | 2,776 | 162 | 60 | 89.5 | .148 | .17 |
| September | 3,020 | 221 | 66 | 101 | .167 | .19 |
| Water year 1941-42 | 191,554 | 3,620 | 60 | 525 | .869 | 11.80 |

Peak discharge.- Oct. 8 (1 to 2 p.m.) 1,930 sec.-ft.; Apr. 16 (3 p.m.) 4,140 sec.-ft.; May 1 (11:45 p.m.) 3,720 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Nov. 12-14, 16, Nov. 22 to Apr. 15. Backwater from logs May 30 to July 13; discharge computed on basis of three discharge measurements, gage heights, and engineers' notes.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Poplar River at Lutsen, Minn.

Location.- Water-stage recorder and concrete control, lat. 47°38', long. 90°42', in sec. 33, T. 60 N., R. 3 W., 350 feet upstream from concrete bridge on U. S. Highway 61 at Lutsen, and 1,650 feet upstream from mouth. Datum of gage is 697.89 feet above mean sea level.

Drainage area.- 138 square miles.

Records available.- May to November 1911 (gage heights only), August 1912 to September 1917, July 1928 to February 1929, March 1930 to September 1942.

Average discharge.- 15 years (1913-17, 1930-32, 1933-42), 108 second-feet.

Extremes.- Maximum discharge during year, 835 second-feet May 15 (gage height, 4.84 feet); minimum, 3.3 second-feet Dec. 6 (gage height, 1.82 feet).
1912-17, 1928-42: Maximum discharge observed, 1,390 second-feet Apr. 25, 1916, from rating curve extended above 750 second-feet; maximum gage height observed, 10.02 feet May 1, 1937, site and datum then in use; minimum discharge, 2.3 second-feet Dec. 3, 1939 (gage height, 1.73 feet).

Remarks.- Records good except those for periods of ice effect and periods of no gage-height record, which are fair.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2.3 | 13 | 2.6 | 30 | 3.2 | 121 | 4.0 | 440 |
| 2.4 | 18 | 2.8 | 48 | 3.4 | 199 | 4.3 | 565 |
| 2.5 | 23 | 3.0 | 77 | 3.7 | 319 | 4.7 | 760 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 75 | 69 | 57 | b20 | 36 | 26 | b65 | 635 | 223 | 64 | 26 | 101 |
| 2 | 74 | 67 | 53 | b20 | 35 | 26 | b85 | 710 | 199 | 57 | 36 | 101 |
| 3 | 92 | 67 | 54 | b20 | 34 | 27 | b90 | 685 | 191 | 58 | 31 | 74 |
| 4 | 106 | 72 | 60 | b20 | 33 | 27 | b100 | 565 | 187 | 56 | 24 | 54 |
| 5 | 94 | *72 | 47 | b19 | 32 | 28 | b120 | 473 | 223 | 52 | 23 | 45 |
| 6 | 90 | 71 | b20 | b18 | 32 | 28 | b110 | 415 | 279 | 49 | 33 | 39 |
| 7 | 259 | b65 | a20 | b18 | 32 | 29 | *b110 | 371 | 239 | 45 | 36 | 35 |
| 8 | 279 | b50 | a25 | b18 | 32 | 30 | b100 | 343 | 215 | 41 | 30 | 32 |
| 9 | 211 | b65 | a25 | b19 | 32 | 30 | b100 | 303 | 191 | 40 | 30 | 29 |
| 10 | 175 | 60 | *b36 | 20 | 32 | 29 | b100 | 271 | 175 | 41 | 33 | 26 |
| 11 | 148 | 58 | b34 | 22 | 32 | 29 | b95 | 259 | 163 | 38 | 31 | 25 |
| 12 | 129 | 57 | b38 | *22 | 32 | 28 | a120 | 251 | 163 | 35 | 26 | 29 |
| 13 | 116 | 61 | b40 | 23 | 32 | 28 | a150 | 303 | 144 | 33 | 24 | 25 |
| 14 | 108 | 58 | b40 | 25 | 32 | 27 | *b190 | 710 | 125 | 30 | 26 | 22 |
| 15 | 98 | 61 | b40 | 26 | 32 | 27 | *295 | 760 | 116 | 28 | 26 | 21 |
| 15 | 88 | 58 | b40 | 26 | b32 | 28 | 395 | 610 | 108 | 26 | 23 | 20 |
| 17 | 83 | 58 | b40 | 25 | b30 | *29 | 432 | 493 | 106 | 27 | 24 | 19 |
| 18 | 81 | 58 | b40 | 26 | *b30 | 30 | 359 | 456 | 132 | 29 | 22 | 20 |
| 19 | 77 | 69 | b38 | 28 | b30 | 29 | 319 | 444 | 140 | 29 | 20 | 22 |
| 20 | 85 | 81 | b38 | 29 | b30 | 29 | 307 | 403 | 125 | 29 | 19 | 19 |
| 21 | 106 | 74 | b38 | 29 | b30 | 31 | 327 | 363 | 116 | a28 | 18 | 19 |
| 22 | 98 | b65 | b40 | 29 | 29 | 31 | 339 | 335 | 104 | a27 | 17 | 17 |
| 23 | 90 | b60 | b40 | 28 | 29 | 31 | 351 | 303 | 96 | a26 | 14 | 22 |
| 24 | 83 | 61 | b38 | 28 | 29 | 32 | 351 | 267 | 90 | 25 | 13 | 36 |
| 25 | 79 | 72 | b36 | 28 | 28 | 33 | 339 | 255 | 85 | 25 | 14 | 29 |
| 26 | 77 | 67 | b32 | 29 | 27 | b34 | 351 | 251 | 81 | 32 | 18 | 27 |
| 27 | 74 | 61 | b30 | 29 | 26 | b36 | 379 | 243 | 77 | 32 | 27 | 29 |
| 28 | 71 | 60 | b30 | 29 | 26 | b38 | 379 | 231 | 74 | 26 | 25 | 28 |
| 29 | 66 | 58 | b26 | 29 | - | b48 | 343 | 219 | 72 | 24 | 40 | 26 |
| 30 | 69 | 60 | b24 | 31 | - | b50 | 506 | 215 | 71 | 24 | 72 | 24 |
| 31 | 67 | - | b22 | 34 | - | b55 | - | 215 | - | 26 | 77 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 3,348 | 279 | 66 | 108 | 0.783 | 0.90 |
| November | 1,915 | 81 | 50 | 63.8 | .462 | .52 |
| December | 1,141 | 60 | 20 | 36.8 | .267 | .31 |
| Calendar year 1941 | 34,650 | 800 | 11 | 94.9 | .688 | 9.36 |
| January | 767 | 34 | 18 | 24.7 | .179 | .21 |
| February | 866 | 36 | 26 | 30.9 | .224 | .23 |
| March | 983 | 55 | 26 | 31.7 | .230 | .26 |
| April | 7,307 | 506 | 65 | 244 | 1.77 | 1.97 |
| May | 12,357 | 760 | 215 | 399 | 2.89 | 3.33 |
| June | 4,310 | 279 | 71 | 144 | 1.04 | 1.16 |
| July | 1,102 | 64 | 24 | 35.5 | .257 | .30 |
| August | 878 | 77 | 13 | 28.3 | .205 | .24 |
| September | 1,015 | 101 | 17 | 33.8 | .245 | .27 |
| Water year 1941-42 | 35,989 | 760 | 13 | 98.6 | .714 | 9.70 |

Peak discharge.- May 2 (1 p.m.) 810 sec.-ft.; May 15 (2 a.m.) 835 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Baptism River near Beaver Bay.
b Stage-discharge relation affected by ice.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Baptism River near Beaver Bay, Minn.

Location.- Water-stage recorder, lat. 47°20', long. 91°12', in sec. 15, T. 56 N., R. 7 W., 260 feet upstream from highway bridge and 6 miles northeast of village of Beaver Bay. Datum of gage is 609.97 feet above mean sea level.

Drainage area.- 136 square miles.

Records available.- July 1928 to January 1929, March 1930 to September 1942.

Average discharge.- 12 years (1930-42), 154 second-feet.

Extremes.- Maximum discharge during year, 2,320 second-feet Apr. 16 (gage height, 5.00 feet); minimum daily, 2.2 second-feet Jan. 10; minimum gage height, 1.87 feet Aug. 25. 1928-29, 1930-42: Maximum discharge, 9,350 second-feet Aug. 9, 1939 (gage height, 8.11 feet), from rating curve extended above 2,600 second-feet; minimum daily, 0.3 second-foot Jan. 5, 6, 1940.

Remarks.- Records good except those for periods of ice effect, which are fair.

Rating table, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 14, 15, May 14-24, July 18-30, Sept. 6-11)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1.5 | 1.7 | 1.8 | 5.1 | 2.6 | 57 | 3.8 | 440 |
| 1.6 | 2.8 | 2.0 | 10 | 3.0 | 115 | 4.2 | 890 |
| 1.7 | 3.9 | 2.3 | 28 | 3.4 | 225 | 4.8 | 1,950 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 160 | 97 | 60 | 16 | 24 | 15 | 36 | 1,700 | 138 | 49 | 30 | 125 |
| 2 | 148 | 96 | 62 | 14 | 24 | 15 | 48 | 1,480 | 131 | 49 | 27 | 117 |
| 3 | 169 | 99 | 65 | 10 | 22 | 15 | 65 | 954 | 123 | 59 | 24 | 99 |
| 4 | 190 | *111 | 72 | 9.5 | 22 | 16 | 260 | 702 | 125 | 54 | 19 | 73 |
| 5 | 184 | 108 | 73 | 7.0 | 22 | 16 | 220 | 491 | 237 | 49 | 16 | 57 |
| 6 | 184 | 101 | 50 | 5.0 | 22 | 17 | 260 | 377 | 440 | 45 | 20 | 43 |
| 7 | 358 | 96 | 40 | 4.2 | 20 | 17 | *150 | 318 | 358 | 40 | 26 | 34 |
| 8 | 426 | 86 | 36 | 3.4 | 20 | 18 | 180 | 279 | 274 | 34 | 27 | 27 |
| 9 | 370 | 88 | 34 | 2.4 | 19 | 18 | 220 | 245 | 214 | 31 | 29 | 24 |
| 10 | 307 | 81 | *30 | 2.2 | 19 | 18 | 245 | 214 | 169 | 29 | 41 | 21 |
| 11 | 257 | 79 | 28 | 2.4 | 19 | 18 | 265 | 194 | 196 | 24 | 37 | 19 |
| 12 | 222 | 74 | 30 | *2.4 | 19 | 18 | 329 | 175 | 356 | 21 | 31 | 40 |
| 13 | 197 | 76 | 34 | 2.8 | 18 | 18 | 370 | 326 | 214 | 18 | 26 | 35 |
| 14 | 181 | 74 | 36 | 3.6 | 18 | 18 | 700 | 1,550 | 166 | 15 | 25 | 26 |
| 15 | 163 | 74 | 36 | 4.4 | 18 | 18 | *1,400 | 1,350 | 135 | 13 | 21 | 22 |
| 16 | 145 | 73 | 40 | 6.0 | 19 | 18 | 1,820 | 1,020 | 111 | 12 | 17 | 19 |
| 17 | 133 | 74 | 44 | 7.5 | 18 | 20 | 1,630 | 720 | 110 | 45 | 15 | 16 |
| 18 | 125 | 79 | 50 | 16 | *17 | *19 | 970 | 620 | 145 | 64 | 13 | 20 |
| 19 | 119 | 106 | 50 | 20 | 16 | 19 | 654 | 520 | 125 | 56 | 13 | 23 |
| 20 | 142 | 127 | 50 | 20 | 15 | 20 | 508 | 430 | 110 | 54 | 11 | 22 |
| 21 | 184 | 119 | 44 | 22 | 16 | 21 | 448 | 360 | 102 | 64 | 9.9 | 20 |
| 22 | 184 | 102 | 55 | 24 | 16 | 21 | 433 | 300 | 85 | 56 | 8.6 | 20 |
| 23 | 163 | 64 | 55 | 26 | 17 | 22 | 433 | 245 | 78 | 46 | 7.4 | 25 |
| 24 | 148 | 65 | 44 | 26 | 16 | 24 | 426 | 210 | 70 | 64 | 6.9 | 39 |
| 25 | 131 | 70 | 42 | 28 | 16 | 24 | 377 | 175 | 63 | 52 | 6.7 | 48 |
| 26 | 123 | 65 | 36 | 30 | 15 | 25 | 377 | 163 | 61 | 58 | 7.7 | 54 |
| 27 | 115 | 70 | 34 | 30 | 15 | 26 | 384 | 148 | 59 | 52 | 12 | 55 |
| 28 | 102 | 65 | 30 | 28 | 15 | 27 | 353 | 135 | 58 | 43 | 12 | 53 |
| 29 | 94 | 60 | 28 | 28 | - | 26 | 312 | 125 | 59 | 36 | 61 | 50 |
| 30 | a98 | 60 | 24 | 26 | - | 22 | 1,070 | 131 | 56 | 31 | 129 | 47 |
| 31 | 102 | - | 20 | 26 | - | 28 | - | 145 | - | 34 | 121 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 5,624 | 426 | 94 | 181 | 1.33 | 1.54 |
| November | 2,539 | 127 | 60 | 84.6 | .622 | .69 |
| December | 1,332 | 73 | 20 | 43.0 | .316 | .36 |
| Calendar year 1941 | 70,843.2 | 6,610 | 6.9 | 194 | 1.43 | 19.37 |
| January | 452.8 | 30 | 2.2 | 14.6 | .107 | .12 |
| February | 517 | 24 | 15 | 18.5 | .136 | .14 |
| March | 617 | 28 | 15 | 19.9 | .146 | .17 |
| April | 14,943 | 1,820 | 36 | 498 | 3.66 | 4.09 |
| May | 15,802 | 1,700 | 125 | 510 | 3.75 | 4.32 |
| June | 4,568 | 440 | 56 | 152 | 1.12 | 1.25 |
| July | 1,297 | 64 | 12 | 41.8 | .307 | .35 |
| August | 850.2 | 129 | 6.7 | 27.4 | .201 | .23 |
| September | 1,273 | 125 | 16 | 42.4 | .312 | .35 |
| Water year 1941-42 | 49,815.0 | 1,820 | 2.2 | 136 | 1.00 | 13.61 |

Peak discharge.- Apr. 16 (11:30 p.m.) 2,320 sec.-ft.; May 1 (1:30 a.m.) 1,950 sec.-ft.; Mar 14 (1 to 2 p.m.) 1,720 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 25 to Dec. 1, Dec. 6 to Feb. 20, Apr. 1-9.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## St. Louis River near Aurora, Minn.

Location.- Chain gage, lat. 47°29'30", long. 92°14'20", in SW¼ sec. 22, T. 58 N., R. 15 W., at highway bridge three-quarters of a mile downstream from Partridge River and 1½ miles south of Aurora.

Drainage area.- 312 square miles.

Records available.- August to September 1942.

Extremes.- Maximum discharge observed during period, 88 second-feet Aug. 9 (gage height, 1.42 feet); minimum observed, 32 second-feet Aug. 23-25 (gage height, 0.96 foot).

Remarks.- Records good. Gage read once daily.

Discharge, in second-feet, 1942

| Day | Aug. | Sept. | Day | Aug. | Sept. | Day | Aug. | Sept. | Day | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | 59 | 9 | 82 | 38 | 17 | 49 | 38 | 25 | 32 | 47 |
| 2 | - | 57 | 10 | 76 | 36 | 18 | 43 | 43 | 26 | 38 | 45 |
| 3 | - | 55 | 11 | 67 | 40 | 19 | 43 | 43 | 27 | 40 | 47 |
| 4 | - | 52 | 12 | 64 | 40 | 20 | 36 | 38 | 28 | 36 | 47 |
| 5 | 69 | 45 | 13 | 62 | 38 | 21 | 40 | 42 | 29 | 53 | 47 |
| 6 | 64 | 40 | 14 | 57 | 38 | 22 | 40 | 43 | 30 | 57 | 52 |
| 7 | 64 | 43 | 15 | 49 | 36 | 23 | 32 | 45 | 31 | 64 | - |
| 8 | 66 | 38 | 16 | 47 | 36 | 24 | 32 | 45 | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| August 5-31 | 1,402 | 82 | 32 | 51.9 | 0.166 | 0.17 |
| September | 1,313 | 59 | 36 | 43.8 | .140 | .16 |
| Water year | - | - | - | - | - | - |

Time basis: Central war time. To convert war time to standard time, subtract 1 hour.

## Partridge River near Aurora, Minn.

Location.- Staff gage, lat. 47°31'00", long. 92°11'20", on line between secs. 12 and 13, T. 58 N., R. 15 W., at highway bridge, 1 mile downstream from unnamed tributary, 1½ miles east of Aurora, and 2½ miles upstream from St. Louis River.

Drainage area.- 156 square miles.

Records available.- August to September 1942.

Extremes.- Maximum discharge observed during period, 28 second-feet Aug. 6 (gage height, 1.52 feet); minimum observed, 7.4 second-feet Aug. 24, 25 (gage height, 0.98 foot).

Remarks.- Records fair. Gage read once daily.

Discharge, in second-feet, 1942

| Day | Aug. | Sept. | Day | Aug. | Sept. | Day | Aug. | Sept. | Day | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | 17 | 9 | 24 | 13 | 17 | 13 | 8.8 | 25 | 7.8 | 17 |
| 2 | - | 17 | 10 | 22 | 13 | 18 | 12 | 12 | 26 | 11 | 19 |
| 3 | - | 16 | 11 | 21 | 12 | 19 | 12 | 11 | 27 | 12 | 21 |
| 4 | - | 15 | 12 | 19 | 13 | 20 | 10 | 9.8 | 28 | 12 | 22 |
| 5 | 26 | 15 | 13 | 19 | 12 | 21 | 9.8 | 9.8 | 29 | 18 | 24 |
| 6 | 28 | 14 | 14 | 18 | 12 | 22 | 9.3 | 12 | 30 | 17 | 26 |
| 7 | 27 | 14 | 15 | 16 | 11 | 23 | 7.8 | 12 | 31 | 16 | - |
| 8 | 25 | 14 | 16 | 13 | 10 | 24 | 7.4 | 16 | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| August 5-31 | 433.1 | 28 | 7.4 | 16.0 | 0.103 | 0.10 |
| September | 438.4 | 26 | 8.8 | 14.6 | .094 | .10 |
| Water year | - | - | - | - | - | - |

Time basis: Central war time. To convert war time to standard time, subtract 1 hour.

## Embarrass River at Embarrass, Minn.

Location.- Chain gage, lat. 47°39'30", long. 92°11'50", in NW¼ sec. 25, T. 60 N., R. 15 W., at highway bridge in Embarrass, 75 feet upstream from railway bridge.
Drainage area.- 93.8 square miles.
Records available.- August to September 1942.
Extremes.- Maximum discharge observed during period, 35 second-feet Sept. 25 (gage height, 1.32 feet); minimum observed, 6.7 second-feet Aug. 23 (gage height, 0.72 foot).
Remarks.- Records good except those below 16 second-feet, which are fair. Gage read once daily.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | - | 21 |
| 2 | | | | | | | | | | | - | 22 |
| 3 | | | | | | | | | | | - | 19 |
| 4 | | | | | | | | | | | - | 17 |
| 5 | | | | | | | | | | | - | 15 |
| 6 | | | | | | | | | | | 17 | 12 |
| 7 | | | | | | | | | | | 16 | 12 |
| 8 | | | | | | | | | | | 15 | 11 |
| 9 | | | | | | | | | | | 13 | 10 |
| 10 | | | | | | | | | | | 12 | 9.7 |
| 11 | | | | | | | | | | | 12 | 10 |
| 12 | | | | | | | | | | | 11 | 9.7 |
| 13 | | | | | | | | | | | 10 | 9.0 |
| 14 | | | | | | | | | | | 10 | 9.0 |
| 15 | | | | | | | | | | | 9.7 | 8.4 |
| 16 | | | | | | | | | | | 9.0 | 7.8 |
| 17 | | | | | | | | | | | 8.4 | 7.8 |
| 18 | | | | | | | | | | | 8.4 | 12 |
| 19 | | | | | | | | | | | 7.8 | 12 |
| 20 | | | | | | | | | | | 7.8 | 9.7 |
| 21 | | | | | | | | | | | 7.3 | 11 |
| 22 | | | | | | | | | | | 7.3 | 13 |
| 23 | | | | | | | | | | | 6.7 | 15 |
| 24 | | | | | | | | | | | 7.3 | 26 |
| 25 | | | | | | | | | | | 8.4 | 33 |
| 26 | | | | | | | | | | | 9.0 | 32 |
| 27 | | | | | | | | | | | 9.7 | 30 |
| 28 | | | | | | | | | | | 10 | 28 |
| 29 | | | | | | | | | | | 15 | 24 |
| 30 | | | | | | | | | | | 16 | 24 |
| 31 | | | | | | | | | | | 17 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| August 6-31 | 280.8 | 17 | 6.7 | 10.8 | 0.115 | 0.11 |
| September | 478.1 | 33 | 7.8 | 15.9 | .170 | .19 |
| Water year | - | - | - | - | - | - |

Time basis: Central war time. To convert war time to standard time, subtract 1 hour.

## Amnicon Lake near South Range, Wis.

Location.- Staff gage, lat. 46°29', long. 92°04', in sec. 12, T. 46 N., R. 14 W., in northwest corner of lake, 15 miles southwest of South Range. Datum of gage is 1,188.00 feet above mean sea level (State Highway Commission levels). Gage readings have been reduced to elevation above mean sea level.
Drainage area.- 5 square miles.
Records available.- August 1936 to September 1942 (fragmentary).
Extremes.- Maximum elevation observed during year, 1,197.28 feet Oct. 18; minimum, 1,196.44 feet Aug. 22.
1937-42: Maximum elevation observed, 1,197.92 feet June 7, 1941; minimum, 1,196.04 feet Aug. 24, Oct. 3, 1936.
Remarks.- Lake has natural outlet.

**Elevation, in feet, water year October 1941 to September 1942**

| Date | Elevation | Date | Elevation | Date | Elevation | Date | Elevation |
|---|---|---|---|---|---|---|---|
| Oct. 4 | 7.10 | Apr. 8 | 6.82 | May 27 | 7.02 | Aug. 1 | 6.68 |
| 11 | 7.00 | 11 | 6.80 | 30 | 7.06 | 8 | 6.60 |
| 18 | 7.28 | 18 | 6.78 | June 6 | 7.04 | 15 | 6.50 |
| 25 | 7.00 | 25 | 6.78 | 10 | 7.00 | 22 | 6.44 |
| Nov. 1 | 6.80 | May 2 | 7.12 | 13 | 6.94 | 29 | 6.56 |
| 8 | 6.76 | 5 | 7.22 | 20 | 6.86 | Sept. 5 | 6.60 |
| 15 | 6.74 | 9 | 7.20 | 27 | 6.78 | 12 | 6.72 |
| 22 | 6.70 | 12 | 7.16 | July 4 | 6.72 | 19 | 6.86 |
| 29 | 6.72 | 16 | 7.20 | 11 | 6.72 | 26 | 6.82 |
| Dec. 6 | 6.74 | 20 | 7.14 | 18 | 6.66 | | |
| Apr. 4 | 6.80 | 23 | 7.10 | 25 | 6.64 | | |

Note.- Add 1,190 feet to obtain elevation above mean sea level.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; Central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Montreal River near Saxon, Wis.

Location.- Water-stage recorder, lat. 46°32', long. 90°23', in NW¼ sec. 23, T. 48 N., R. 49 W., 2 miles upstream from mouth and 3½ miles north of Saxon.

Drainage area.- 281 square miles.

Records available.- September 1938 to September 1942.

Extremes (regulated).- Maximum discharge during year, 5,700 second-feet July 18 (gage height, 6.93 feet); minimum, 46 second-feet Sept. 7 (gage height, 1.67 feet).
1938-42: Maximum discharge, that of July 18, 1942; minimum, 2 second-feet Sept. 21, Oct. 8, 1939.

Remarks.- Records good except those for periods of ice effect, which are fair. Diurnal fluctuation caused by Saxon Falls power plant 1½ miles upstream. Flow regulated since Apr. 1, 1941, by Gile Reservoir on West Branch of Montreal River (capacity, 1.29 billion cubic feet).

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.8 | 67 | 3.2 | 697 | 5.0 | 2,870 |
| 2.0 | 115 | 3.4 | 847 | 5.5 | 3,600 |
| 2.3 | 218 | 3.7 | 1,110 | 6.0 | 4,350 |
| 2.6 | 355 | 4.0 | 1,450 | 6.5 | 5,100 |
| 3.0 | 566 | 4.5 | 2,140 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 243 | 704 | 188 | 250 | 163 | 120 | 663 | 833 | 879 | 188 | 218 | 188 |
| 2 | 210 | 824 | 191 | 220 | 160 | 130 | 1,110 | 1,840 | 855 | 170 | 184 | 184 |
| 3 | 210 | 824 | 188 | 170 | 160 | 140 | 1,390 | 1,840 | 610 | 166 | 191 | 199 |
| 4 | 226 | 871 | 199 | 150 | 163 | 140 | 1,920 | 2,280 | 520 | 136 | 184 | 162 |
| 5 | 326 | 734 | 239 | 125 | 165 | 140 | 1,840 | 1,990 | 629 | 139 | 170 | 159 |
| 6 | 549 | 629 | 239 | 90 | 165 | 140 | 1,330 | 1,190 | 808 | 166 | 166 | 89 |
| 7 | 677 | 532 | 311 | 130 | 165 | 139 | 994 | 888 | 639 | 184 | 184 | 74 |
| 8 | 871 | 496 | 345 | 160 | 155 | 138 | 755 | 472 | 748 | 180 | 191 | 188 |
| 9 | 793 | 451 | 345 | 160 | 152 | 135 | 726 | 472 | 643 | 173 | 184 | 166 |
| 10 | 741 | 420 | 330 | 165 | 150 | 133 | 824 | 451 | 375 | 176 | 203 | 152 |
| 11 | 656 | 380 | 300 | 167 | 145 | 130 | 712 | 405 | 340 | 173 | 180 | 130 |
| 12 | 509 | 340 | 285 | 166 | 135 | 130 | 656 | 370 | 274 | 159 | 162 | 326 |
| 13 | 405 | 355 | 270 | 170 | 125 | 140 | 961 | 355 | 239 | 162 | 162 | 274 |
| 14 | 604 | 385 | 255 | 170 | 120 | 150 | 1,600 | 572 | 199 | 152 | 166 | 252 |
| 15 | 643 | 405 | 245 | 170 | *129 | *155 | 2,660 | 683 | 170 | 136 | 170 | 176 |
| 16 | 420 | 420 | 240 | 170 | 140 | 160 | 2,330 | 566 | 152 | 139 | 105 | 222 |
| 17 | 370 | 405 | 237 | 170 | 138 | 162 | 3,130 | 472 | 94 | 3,820 | 121 | 355 |
| 18 | 330 | 385 | 234 | 172 | 125 | 165 | 3,140 | 1,190 | 166 | 4,950 | 159 | 904 |
| 19 | 306 | 520 | 232 | 178 | 115 | 160 | 2,550 | 1,570 | 166 | 4,280 | 156 | 1,280 |
| 20 | 340 | 778 | 230 | 180 | 110 | 163 | 1,450 | 779 | 162 | 3,460 | 159 | 985 |
| 21 | 549 | 629 | 245 | 170 | 115 | 168 | 874 | 549 | 170 | 2,650 | 170 | 712 |
| 22 | 467 | 555 | 283 | 150 | 118 | 172 | 425 | 441 | 145 | 1,120 | 874 | 616 |
| 23 | 375 | 415 | 436 | 140 | 119 | 200 | 390 | 390 | 139 | 498 | 656 | 579 |
| 24 | 330 | 390 | 477 | *132 | 120 | 350 | 350 | 321 | 156 | 365 | 579 | 598 |
| 25 | 292 | 350 | 425 | 142 | 130 | 697 | 311 | 301 | 166 | 292 | 395 | 719 |
| 26 | 239 | 274 | 365 | 155 | 140 | 980 | 278 | 311 | 173 | 252 | 265 | 677 |
| 27 | 813 | 218 | 330 | 160 | 135 | 1,710 | 260 | 306 | 173 | 226 | 214 | 636 |
| 28 | 741 | 191 | 320 | 160 | 130 | 1,010 | 252 | 265 | 159 | 210 | 195 | 610 |
| 29 | 778 | 195 | 305 | 160 | - | 824 | 306 | 260 | 173 | 203 | 191 | 585 |
| 30 | 690 | 191 | 285 | 165 | - | 591 | 247 | 488 | 226 | 191 | 207 | 538 |
| 31 | 636 | - | 265 | 165 | - | 488 | - | 855 | - | 214 | 239 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 15,339 | 871 | 210 | 495 | 1.76 | 2.03 |
| November | 14,268 | 871 | 191 | 476 | 1.69 | 1.89 |
| December | 8,839 | 477 | 188 | 285 | 1.01 | 1.16 |
| Calendar year 1941 | 128,366 | 3,070 | 40 | 352 | 1.25 | 16.97 |
| January | 5,034 | 250 | 90 | 162 | .577 | .67 |
| February | 3,887 | 165 | 110 | 139 | .495 | .52 |
| March | 10,060 | 1,710 | 120 | 325 | 1.16 | 1.34 |
| April | 34,454 | 3,140 | 247 | 1,148 | 4.09 | 4.56 |
| May | 23,705 | 2,280 | 260 | 765 | 2.72 | 3.14 |
| June | 10,548 | 879 | 94 | 352 | 1.25 | 1.40 |
| July | 25,330 | 4,950 | 136 | 817 | 2.91 | 3.36 |
| August | 7,400 | 874 | 105 | 239 | .851 | .98 |
| September | 12,735 | 1,280 | 74 | 424 | 1.51 | 1.68 |
| Water year 1941-42 | 171,599 | 4,950 | 74 | 470 | 1.67 | 22.73 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 11-21, Dec. 28 to Mar. 24.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

Big Lake near Land O'Lakes, Wis.

Location.- Staff gage, lat. 46°11', long. 89°27', in lot 4, Sec. 23, T. 43 N., R. 8 E., 15 miles west of village of Land O'Lakes.
Drainage area.- 32 square miles.
Records available.- June 1938 to September 1942 (fragmentary).
Extremes.- Maximum gage height observed during year, 6.52 feet July 20; minimum, 5.74 feet Apr. 15.
1938-42: Maximum gage height observed, 652 feet Sept. 17, 1941, and July 20, 1942; minimum, 4.40 feet Apr. 13, 1940, and Apr. 8, 1941.

Gage height, in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | - | 5.84 | 5.92 | 5.80 | 5.88 | 5.92 |
| 2 | | | | | | | - | 5.84 | 5.90 | 5.80 | 5.86 | 5.88 |
| 3 | | | | | | | - | 5.86 | 5.90 | 5.80 | 5.84 | 5.86 |
| 4 | | | | | | | - | 5.88 | 5.90 | 5.80 | 5.82 | 5.84 |
| 5 | | | | | | | - | 5.90 | 5.86 | 5.80 | 5.82 | 5.82 |
| 6 | | | | | | | - | 5.86 | 6.10 | 5.80 | 5.82 | 5.82 |
| 7 | | | | | | | - | 5.84 | 6.10 | 5.80 | 5.82 | 5.82 |
| 8 | | | | | | | - | 5.84 | 6.08 | 5.80 | 5.82 | 5.82 |
| 9 | | | | | | | - | 5.84 | 6.04 | 5.80 | 5.82 | 5.82 |
| 10 | | | | | | | - | 5.82 | 6.00 | 5.80 | 5.82 | 5.82 |
| 11 | | | | | | | - | 5.82 | 6.02 | 5.80 | 5.82 | 5.82 |
| 12 | | | | | | | - | 5.82 | 6.00 | 5.80 | 5.82 | 5.82 |
| 13 | | | | | | | - | 5.82 | 5.96 | 5.80 | 5.82 | 5.82 |
| 14 | | | | | | | - | 5.86 | 5.86 | 5.80 | 5.82 | 5.82 |
| 15 | | | | | | | 5.74 | 5.84 | 5.84 | 5.80 | 5.84 | 5.84 |
| 16 | | | | | | | 5.80 | 5.82 | 5.84 | 5.80 | 5.82 | 5.88 |
| 17 | | | | | | | 5.82 | 5.84 | 5.82 | 6.30 | 5.82 | 5.92 |
| 18 | | | | | | | 5.86 | 5.84 | 5.80 | 6.42 | 5.82 | 6.02 |
| 19 | | | | | | | 5.84 | 5.90 | 5.80 | 6.48 | 5.82 | 6.12 |
| 20 | | | | | | | 5.86 | 5.90 | 5.78 | 6.52 | 5.82 | 6.06 |
| 21 | | | | | | | 5.84 | 5.88 | 5.80 | 6.46 | 5.82 | 5.98 |
| 22 | | | | | | | 5.80 | 5.86 | 5.80 | 6.38 | 5.92 | 6.04 |
| 23 | | | | | | | 5.80 | 5.84 | 5.80 | 6.30 | 5.92 | 6.02 |
| 24 | | | | | | | 5.80 | 5.84 | 5.80 | 6.24 | 5.86 | 6.00 |
| 25 | | | | | | | 5.80 | 5.86 | 5.80 | 6.16 | 5.82 | 5.98 |
| 26 | | | | | | | 5.80 | 5.88 | 5.80 | 6.14 | 5.82 | 5.96 |
| 27 | | | | | | | 5.86 | 5.84 | 5.80 | 6.12 | 5.82 | 5.96 |
| 28 | | | | | | | 5.84 | 5.84 | 5.80 | 6.10 | 5.82 | 5.96 |
| 29 | | | | | | | 5.84 | 5.86 | 5.80 | 6.00 | 5.82 | 5.94 |
| 30 | | | | | | | 5.84 | 5.90 | 5.80 | 5.94 | 5.82 | 5.94 |
| 31 | | | | | | | - | 5.90 | - | 5.92 | 5.82 | - |

Time basis: Central war time. To convert war time to standard time, subtract 1 hour.

STREAMS TRIBUTARY TO LAKE MICHIGAN

South Manistique Lake Outlet at Curtis, Mich.

Location.- Staff gage, lat. 46°12'20", long. 85°44'10", in sec. 18, T. 44 N., R. 11 W., 1,000 feet downstream from South Manistique Lake, a quarter of a mile east of Curtis, and three-quarters of a mile upstream from Black Creek.
Drainage area.- 44 square miles.
Records available.- May to September 1942.
Extremes.- Maximum discharge observed during period, 75 second-feet June 12 (gage height, 2.48 feet); practically no flow July 14 (gage height, 0.40 foot).
Remarks.- Records good except those below 3 second-feet, which are fair. Flow regulated by South Manistique Lake. Gage read once daily.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | May | June | July | Aug. | Sept. | Day | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | 12 | 0.8 | 0.5 | 2.3 | 16 | - | 58 | 0.1 | 0.5 | 10 |
| 2 | - | 12 | 1.2 | .5 | 5.8 | 17 | - | 55 | .2 | .8 | 7.9 |
| 3 | - | 33 | .9 | .4 | 19 | 18 | - | 54 | .3 | 3.5 | 20 |
| 4 | - | 16 | .4 | .4 | 17 | 19 | - | 52 | .2 | 19 | 27 |
| 5 | - | 7.4 | .3 | .4 | 14 | 20 | - | 51 | .2 | 3.7 | 28 |
| 6 | - | 8.1 | .3 | .4 | 13 | 21 | - | 48 | .2 | 3.7 | 27 |
| 7 | - | 7.9 | .3 | .6 | 12 | 22 | - | 12 | .3 | 4.2 | 24 |
| 8 | - | 7.7 | .2 | .6 | 12 | 23 | 55 | 6.0 | .3 | 2.9 | 26 |
| 9 | - | 7.7 | .1 | .6 | 12 | 24 | 53 | 5.5 | .2 | 3.2 | 27 |
| 10 | - | 7.0 | .1 | .7 | 12 | 25 | 53 | 6.2 | .3 | 3.3 | 27 |
| 11 | - | 6.2 | .3 | .9 | 12 | 26 | 51 | 6.2 | .5 | 2.6 | 28 |
| 12 | - | 55 | .3 | .9 | 11 | 27 | 26 | 3.5 | .5 | 2.4 | 29 |
| 13 | - | 63 | .3 | .9 | 11 | 28 | 14 | 3.3 | .5 | 2.2 | 30 |
| 14 | - | 58 | .1 | .9 | 11 | 29 | 13 | 5.8 | .5 | 2.0 | 30 |
| 15 | - | 60 | .1 | .6 | 11 | 30 | 11 | 1.5 | .5 | 2.2 | 29 |
| | | | | | | 31 | 11 | - | .6 | 2.2 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| May 23-31 | 287 | 55 | 11 | 31.9 | 0.725 | 0.24 |
| June | 729.0 | 63 | 1.5 | 24.3 | .552 | .62 |
| July | 11.1 | 1.2 | .1 | .36 | .0082 | .01 |
| August | 67.7 | 19 | .4 | 2.18 | .050 | .06 |
| September | 545.0 | 30 | 2.3 | 18.2 | .414 | .46 |

Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Manistique River at Germfask, Mich.

Location.- Water-stage recorder, lat. 46°14'00", long. 85°55'40", in SE¼ sec. 4, T. 44 N., R. 13 W., 1 mile south of Germfask and 1½ miles upstream from Grays Creek.

Drainage area.- 341 square miles.

Records available.- March 1938 to September 1942.

Extremes.- Maximum discharge during year, 1,110 second-feet Apr. 6; maximum gage height, 5.95 feet Jan. 5 (affected by ice); minimum discharge, 205 second-feet Sept. 13.
1938-42: Maximum discharge observed, 2,130 second-feet Apr. 1, 1938 (gage height, 8.50 feet, site and datum then in use); minimum observed, 184 second-feet Aug. 27, 29, 30, Sept. 6, 1938.

Remarks.- Records excellent except those for periods of ice effect, which are fair.

Cooperation.- Observer's services Oct. 1 to June 30 furnished by Fish and Wildlife Service.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | |
|---|---|---|---|
| 1.3 | 194 | 3.5 | 705 |
| 2.0 | 338 | 4.9 | 1,090 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 395 | 678 | 539 | 560 | 400 | 360 | 786 | 588 | 479 | 316 | 273 | 228 |
| 2 | 407 | 786 | 527 | 540 | 400 | 360 | 896 | 575 | 467 | 316 | 269 | 222 |
| 3 | 407 | 786 | 527 | 530 | 420 | 360 | 952 | 563 | 467 | 336 | 256 | 221 |
| 4 | 431 | 759 | *527 | 520 | 400 | 360 | 1,000 | 575 | 455 | 360 | 246 | 217 |
| 5 | 503 | 759 | 539 | 510 | 400 | 360 | *1,090 | 575 | 443 | 349 | 240 | 217 |
| 6 | 651 | 732 | 539 | 500 | 400 | 370 | 1,090 | 563 | 467 | 338 | 240 | 219 |
| 7 | 678 | 678 | 527 | 490 | 400 | 370 | 1,090 | 539 | 503 | 327 | 240 | 217 |
| 8 | 732 | 651 | 527 | 480 | 390 | 370 | 1,060 | 527 | 503 | 316 | 238 | 219 |
| 9 | 769 | 638 | 515 | 470 | 380 | 370 | 1,030 | 515 | 467 | 316 | 234 | 224 |
| 10 | 759 | 625 | 491 | 470 | 380 | 370 | 952 | 503 | 443 | 316 | 230 | 222 |
| 11 | 759 | 612 | 479 | 470 | 380 | 372 | 924 | 491 | 431 | 327 | 232 | 221 |
| 12 | 732 | 588 | 470 | 470 | 370 | 380 | 868 | 491 | 455 | 305 | 232 | 213 |
| 13 | 678 | 588 | 470 | 460 | 370 | 400 | 840 | 503 | 455 | 294 | 226 | 213 |
| 14 | 705 | 575 | 470 | 460 | 370 | 420 | 813 | 625 | 431 | 284 | 222 | 222 |
| 15 | 705 | 588 | 480 | 460 | 370 | 431 | 813 | 678 | 407 | 284 | 222 | 226 |
| 16 | 651 | 600 | 490 | 450 | 360 | 443 | 840 | 678 | 395 | 273 | 222 | 240 |
| 17 | 625 | 612 | 500 | 450 | 360 | 455 | 840 | 678 | 383 | 284 | 224 | 256 |
| 18 | 588 | 600 | 510 | 450 | 350 | 479 | 840 | 678 | 383 | 305 | 222 | 294 |
| 19 | 563 | 600 | 520 | 450 | *340 | 491 | 840 | 678 | 372 | 305 | 221 | 338 |
| 20 | 527 | 600 | 539 | 450 | 340 | 503 | 813 | 651 | 372 | 294 | 213 | 349 |
| 21 | 527 | 612 | 600 | 450 | 350 | 515 | 786 | 612 | 372 | 294 | 211 | 338 |
| 22 | 527 | 600 | 612 | 450 | 350 | 515 | 732 | 588 | 372 | 294 | 226 | 349 |
| 23 | 515 | 600 | 625 | 450 | 350 | 515 | 705 | 563 | 372 | 284 | 267 | 372 |
| 24 | 491 | 612 | 759 | 450 | 350 | 503 | 678 | 527 | 372 | 273 | 284 | 395 |
| 25 | 479 | 588 | 786 | 450 | 350 | 527 | 651 | 503 | 360 | 273 | 260 | 419 |
| 26 | 467 | 575 | 760 | 440 | 360 | 551 | 625 | 503 | 349 | 269 | 244 | 431 |
| 27 | 575 | 575 | 720 | 430 | 360 | 575 | 612 | 515 | 338 | 267 | 240 | 443 |
| 28 | 638 | 563 | 690 | 430 | 360 | 638 | 600 | 503 | 338 | 271 | 238 | 443 |
| 29 | 638 | 563 | 660 | 430 | - | 664 | 575 | 491 | 327 | 267 | 242 | 443 |
| 30 | 638 | 551 | 630 | 420 | - | 678 | 575 | 479 | 327 | 262 | 238 | 431 |
| 31 | 638 | - | 580 | 400 | - | 705 | - | 491 | - | 271 | 232 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 18,388 | 759 | 395 | 593 | 1.74 | 2.01 |
| November | 18,894 | 786 | 551 | 630 | 1.85 | 2.06 |
| December | 17,608 | 786 | 470 | 568 | 1.67 | 1.92 |
| Calendar year 1941 | 159,915 | 868 | 200 | 438 | 1.28 | 17.44 |
| January | 14,440 | 560 | 400 | 466 | 1.37 | 1.57 |
| February | 10,410 | 420 | 340 | 372 | 1.09 | 1.14 |
| March | 14,410 | 705 | 360 | 465 | 1.36 | 1.57 |
| April | 24,916 | 1,090 | 575 | 831 | 2.44 | 2.72 |
| May | 17,449 | 678 | 479 | 563 | 1.65 | 1.90 |
| June | 12,305 | 503 | 327 | 410 | 1.20 | 1.34 |
| July | 9,272 | 360 | 262 | 299 | .877 | 1.01 |
| August | 7,384 | 284 | 211 | 238 | .698 | .81 |
| September | 8,842 | 443 | 213 | 295 | .865 | .96 |
| Water year 1941-42 | 174,318 | 1,090 | 211 | 478 | 1.40 | 19.01 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 12-19, Dec. 26 to Mar. 10, Mar. 12-14.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Manistique River near Blaney, Mich.

Location.- Water-stage recorder, lat. 46°05'05", long. 86°03'35", in NE¼ sec. 33, T. 43 N., R. 14 W., half a mile downstream from Duck Creek and 7 miles southwest of Blaney.
Drainage area.- 704 square miles.
Records available.- March 1938 to September 1942.
Extremes.- Maximum discharge during year, 4,160 second-feet Apr. 6 (gage height, 17.57 feet); minimum discharge, 242 second-feet Sept. 13, 14 (gage height, 5.78 feet).
1938-42: Maximum discharge observed, 9,300 second-feet Apr. 1, 1938 (gage height, 19.42 feet); minimum, 234 second-feet Aug. 19-24, 1941; minimum gage height, 5.63 feet Aug. 23, 1941.
Remarks.- Records good except those for periods of ice effect, which are fair.
Cooperation.- Observer's services Oct. 1 to June 30 furnished by Fish and Wildlife Service.

Rating tables, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 5-6)

| Oct. 1 to Nov. 4 | | Nov. 5 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 7.9 | 686 | 5.8 | 242 | 13.0 | 2,000 |
| 9.0 | 940 | 7.5 | 568 | 16.5 | 3,450 |
| 11.0 | 1,480 | 9.5 | 1,020 | 17.5 | 4,070 |
| 13.2 | 2,210 | 11.5 | 1,550 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 686 | 1,570 | 1,020 | 1,100 | 720 | 680 | 1,900 | 1,040 | 806 | 446 | 313 | 259 |
| 2 | 708 | 1,970 | 970 | 1,050 | 710 | 680 | 2,300 | 995 | 784 | 436 | 322 | 259 |
| 3 | 708 | 2,180 | 970 | 1,000 | 700 | 680 | 2,700 | 945 | 784 | 456 | 304 | 250 |
| 4 | 731 | 2,210 | 970 | 980 | 690 | 680 | 3,120 | 945 | 784 | 486 | 295 | 250 |
| 5 | 823 | 2,080 | *970 | 960 | 700 | 680 | 3,650 | 945 | 762 | 496 | 286 | 250 |
| 6 | 1,240 | 1,940 | 995 | 920 | 710 | 680 | *4,070 | 921 | 784 | 496 | 277 | 250 |
| 7 | 1,510 | 1,820 | 970 | 910 | 720 | 680 | 3,990 | 898 | 875 | 476 | 277 | 250 |
| 8 | 1,730 | 1,700 | 945 | 900 | 700 | 680 | 3,840 | 875 | 875 | 456 | 277 | 250 |
| 9 | 1,730 | 1,640 | 898 | 890 | 670 | 680 | 3,650 | 852 | 806 | 436 | 268 | 250 |
| 10 | 1,770 | 1,580 | 806 | 870 | 640 | 680 | 3,400 | 806 | 740 | 436 | 268 | 250 |
| 11 | 1,830 | 1,520 | 800 | 860 | 660 | 700 | 3,120 | 806 | 696 | 456 | 259 | 250 |
| 12 | 1,870 | 1,460 | 790 | 850 | 670 | 710 | 2,880 | 784 | 674 | 456 | 268 | 250 |
| 13 | 1,830 | 1,400 | 780 | 840 | 670 | 730 | 2,560 | 784 | 674 | 426 | 259 | 242 |
| 14 | 1,730 | 1,340 | 780 | 830 | 670 | 760 | 2,280 | 921 | 631 | 398 | 259 | 250 |
| 15 | 1,800 | 1,340 | 800 | *820 | 670 | 780 | 2,040 | 1,100 | 610 | 369 | 259 | 259 |
| 16 | 1,700 | 1,340 | 820 | 810 | 670 | 820 | 1,940 | 1,140 | 589 | 350 | 250 | 277 |
| 17 | 1,600 | 1,340 | 840 | 800 | 670 | 860 | 2,000 | 1,170 | 568 | 360 | 250 | 304 |
| 18 | 1,510 | 1,320 | 860 | 800 | *650 | 920 | 2,040 | 1,140 | 547 | 378 | 250 | 350 |
| 19 | 1,390 | 1,270 | 900 | 820 | 620 | 920 | 1,940 | 1,100 | 547 | 388 | 250 | 426 |
| 20 | 1,270 | 1,300 | 950 | 820 | 620 | 960 | 1,820 | 1,100 | 547 | 378 | 250 | 506 |
| 21 | 1,270 | 1,300 | 1,020 | 820 | 640 | 1,000 | 1,700 | 1,100 | 547 | 369 | 242 | 476 |
| 22 | 1,270 | 1,270 | 1,100 | 820 | 660 | 1,020 | 1,580 | 1,020 | 547 | 360 | 250 | 476 |
| 23 | 1,240 | 1,220 | 1,200 | 820 | 670 | 1,040 | 1,490 | 970 | 526 | 350 | 295 | 526 |
| 24 | 1,190 | 1,140 | 1,400 | 810 | 680 | 1,060 | 1,430 | 898 | 526 | 340 | 322 | 610 |
| 25 | 1,120 | 1,100 | 1,700 | 800 | 680 | 1,100 | 1,320 | 852 | 526 | 331 | 322 | 652 |
| 26 | 1,090 | 1,100 | 1,700 | 780 | 690 | 1,150 | 1,240 | 829 | 506 | 322 | 295 | 674 |
| 27 | 1,300 | 1,100 | 1,600 | 770 | 690 | 1,200 | 1,170 | 806 | 486 | 322 | 277 | 696 |
| 28 | 1,510 | 1,120 | 1,500 | 760 | 680 | 1,300 | 1,100 | 784 | 466 | 313 | 277 | 718 |
| 29 | 1,540 | 1,100 | 1,400 | 740 | - | 1,400 | 1,040 | 806 | 466 | 313 | 277 | 718 |
| 30 | 1,510 | 1,040 | 1,300 | 710 | - | 1,500 | 1,040 | 806 | 456 | 313 | 277 | 696 |
| 31 | 1,510 | - | 1,200 | 710 | - | 1,700 | - | 806 | - | 313 | 268 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 42,716 | 1,870 | 686 | 1,378 | 1.96 | 2.26 |
| November | 43,810 | 2,210 | 1,040 | 1,460 | 2.07 | 2.31 |
| December | 32,954 | 1,700 | 780 | 1,063 | 1.51 | 1.74 |
| Calendar year 1941 | 301,938 | 2,210 | 234 | 827 | 1.17 | 15.96 |
| January | 26,370 | 1,100 | 710 | 851 | 1.21 | 1.39 |
| February | 18,920 | 720 | 620 | 676 | .960 | 1.00 |
| March | 28,430 | 1,700 | 680 | 917 | 1.30 | 1.50 |
| April | 68,350 | 4,070 | 1,040 | 2,278 | 3.24 | 3.61 |
| May | 28,944 | 1,170 | 784 | 934 | 1.33 | 1.53 |
| June | 19,135 | 875 | 456 | 638 | .906 | 1.01 |
| July | 12,225 | 496 | 313 | 394 | .560 | .65 |
| August | 8,543 | 322 | 242 | 276 | .392 | .45 |
| September | 11,374 | 718 | 242 | 396 | .562 | .63 |
| Water year 1941-42 | 342,271 | 4,070 | 242 | 938 | 1.33 | 18.08 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 11 to Apr. 3.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Manistique River near Manistique, Mich.

Location.- Water-stage recorder, lat. 46°01'50", long. 86°09'40", in SE¼ sec. 15, T. 42 N., R. 15 W., 1 mile downstream from West Branch and 6 miles northeast of Manistique.
Drainage area.- 1,100 square miles.
Records available.- March 1938 to September 1942.
Extremes.- Maximum discharge during year, 6,190 second-feet Apr. 7 (gage height, 10.54 feet); minimum, 363 second-feet Sept. 13, 14; minimum gage height, 1.14 feet Sept. 13. 1938-42: Maximum discharge observed, 9,720 second-feet Apr. 1, 1938 (gage height, 12.70 feet, site and datum then in use); minimum, that of Sept. 13, 14, 1942.
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair.
Cooperation.- Observer's services Oct. 1 to June 30 furnished by Fish and Wildlife Service.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 6)

| Oct. | | Nov. 6 | | Nov. 6 to Sept. 30 | |
|---|---|---|---|---|---|
| 3.1 | 1,060 | 1.1 | 350 | 6.0 | 2,370 |
| 4.5 | 1,680 | 2.0 | 618 | 8.0 | 3,630 |
| 6.0 | 2,500 | 3.0 | 970 | 9.5 | 4,990 |
| 7.4 | 3,490 | 4.0 | 1,370 | 10.5 | 6,190 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,060 | 2,570 | 1,670 | 1,800 | 960 | 920 | 3,150 | 1,770 | a1,150 | 700 | 493 | 404 |
| 2 | 1,100 | 2,890 | 1,570 | 1,700 | 950 | 930 | 3,490 | 1,670 | a1,140 | 666 | 493 | 390 |
| 3 | a1,100 | 3,250 | 1,520 | 1,600 | 930 | 930 | 4,030 | 1,620 | a1,130 | 683 | 478 | 390 |
| 4 | a1,150 | 3,490 | 1,520 | 1,500 | 920 | 930 | 4,580 | 1,620 | a1,130 | 733 | 478 | 376 |
| 5 | a1,300 | 3,490 | *1,520 | 1,440 | 930 | 940 | 5,100 | 1,570 | a1,120 | 750 | 448 | 376 |
| 6 | a1,700 | 3,210 | 1,520 | 1,380 | 930 | 940 | 5,800 | 1,570 | a1,120 | 750 | 433 | 376 |
| 7 | a2,200 | 3,030 | 1,520 | 1,340 | 940 | 950 | *6,190 | 1,520 | a1,200 | 733 | 433 | 376 |
| 8 | a2,400 | 2,910 | 1,470 | 1,280 | 940 | 960 | 6,190 | 1,420 | a1,300 | 716 | 433 | 376 |
| 9 | 2,630 | 2,730 | 1,470 | 1,240 | 900 | 970 | 5,930 | 1,370 | a1,300 | 683 | 433 | 376 |
| 10 | 2,760 | 2,610 | 1,290 | 1,200 | 870 | 970 | 5,680 | 1,290 | a1,200 | 666 | 418 | 376 |
| 11 | 2,890 | 2,490 | 1,280 | 1,180 | 870 | 970 | 5,320 | 1,250 | a1,160 | 666 | 418 | 376 |
| 12 | 2,960 | 2,430 | 1,270 | 1,160 | 880 | 970 | 4,780 | 1,210 | 1,130 | 666 | 404 | 376 |
| 13 | 2,960 | 2,320 | 1,280 | 1,150 | 880 | 980 | 4,300 | 1,210 | 1,130 | 650 | 404 | 363 |
| 14 | 2,890 | 2,270 | 1,300 | *1,140 | 880 | 1,030 | 3,870 | 1,290 | 1,130 | a620 | 404 | 363 |
| 15 | 2,890 | 2,220 | 1,300 | 1,140 | 880 | 1,080 | 3,630 | 1,570 | 1,050 | a580 | 404 | 390 |
| 16 | 2,830 | 2,220 | 1,300 | 1,130 | 880 | 1,140 | 3,420 | 1,670 | 990 | a540 | 390 | 404 |
| 17 | 2,630 | 2,220 | 1,300 | 1,120 | 850 | 1,200 | 3,420 | 1,770 | 930 | a550 | 390 | 448 |
| 18 | 2,500 | 2,220 | 1,350 | 1,120 | 870 | 1,260 | 3,490 | 1,770 | 890 | a570 | 390 | 508 |
| 19 | 2,380 | 2,170 | 1,400 | 1,120 | *850 | 1,320 | 3,560 | 1,720 | 872 | 586 | 390 | 618 |
| 20 | 2,200 | 2,220 | 1,450 | 1,120 | 830 | 1,400 | 3,560 | 1,720 | 872 | 586 | 390 | 733 |
| 21 | 2,090 | 2,220 | 1,500 | 1,120 | 840 | 1,450 | 3,350 | 1,670 | 855 | 570 | 376 | 768 |
| 22 | 2,040 | 2,170 | 1,600 | 1,120 | 860 | 1,500 | 3,090 | 1,570 | 855 | 555 | 390 | a760 |
| 23 | 2,040 | 2,120 | 1,800 | 1,110 | 880 | 1,550 | 2,850 | 1,470 | 855 | 555 | 418 | a800 |
| 24 | 1,980 | 2,070 | 2,000 | 1,100 | 900 | 1,600 | 2,610 | 1,370 | 855 | 540 | 463 | a900 |
| 25 | 1,880 | 1,920 | 2,400 | 1,080 | 900 | 1,650 | 2,430 | 1,290 | 820 | 524 | 493 | 970 |
| 26 | 1,830 | 1,920 | 2,700 | 1,060 | 910 | 1,750 | 2,270 | 1,250 | 802 | 508 | 463 | 1,050 |
| 27 | 1,980 | 1,820 | 2,600 | 1,050 | 910 | 1,850 | 2,120 | 1,250 | 768 | 493 | 448 | 1,090 |
| 28 | 2,260 | 1,820 | 2,450 | 1,040 | 920 | 2,000 | 1,970 | 1,210 | 750 | 493 | 433 | 1,130 |
| 29 | 2,440 | 1,770 | 2,300 | 1,020 | - | 2,200 | 1,870 | 1,210 | 733 | 493 | 418 | 1,130 |
| 30 | 2,500 | 1,720 | 2,100 | 970 | - | 2,400 | 1,770 | 1,210 | 716 | 493 | 418 | 1,130 |
| 31 | 2,500 | - | 1,950 | 950 | - | 2,400 | - | 1,170 | - | 493 | 418 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 68,070 | 2,960 | 1,060 | 2,196 | 2.00 | 2.30 |
| November | 72,510 | 3,490 | 1,720 | 2,417 | 2.20 | 2.45 |
| December | 51,700 | 2,700 | 1,270 | 1,668 | 1.52 | 1.75 |
| Calendar year 1941 | 491,711 | 4,210 | 371 | 1,347 | 1.22 | 16.61 |
| January | 37,480 | 1,800 | 950 | 1,209 | 1.10 | 1.27 |
| February | 25,090 | 960 | 830 | 896 | .815 | .85 |
| March | 41,440 | 2,700 | 920 | 1,337 | 1.21 | 1.40 |
| April | 113,820 | 6,190 | 1,770 | 3,794 | 3.45 | 3.85 |
| May | 45,270 | 1,770 | 1,170 | 1,460 | 1.33 | 1.53 |
| June | 29,953 | 1,300 | 716 | 998 | .907 | 1.01 |
| July | 18,811 | 750 | 493 | 607 | .552 | .64 |
| August | 13,262 | 493 | 376 | 428 | .389 | .45 |
| September | 18,123 | 1,130 | 363 | 604 | .549 | .61 |
| Water year 1941-42 | 535,529 | 6,190 | 363 | 1,467 | 1.33 | 18.11 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station near Blaney.
Note.- Stage-discharge relation affected by ice Dec. 11 to Mar. 31.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## North Manistique Lake Outlet at Helmer, Mich.

Location.- Staff gage, lat. 46°16'30", long. 85°42'40", in sec. 20, T. 45 N., R. 11 W., at bridge on State Highway 98 a quarter of a mile downstream from Helmer Creek, half a mile upstream from Manistique Lake, and half a mile northeast of Helmer.
Drainage area.- 15 square miles.
Records available.- August to September 1942.
Extremes.- Maximum discharge observed during period, 16 second-feet Sept. 26 (gage height, 1.18 feet); minimum observed, 1.8 second-feet Sept. 2, 3, 12 (gage height, 0.64 foot).
Remarks.- Records good above 5 second-feet, fair below. Gage read once daily.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Aug. | Sept. | Day | Aug. | Sept. | Day | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|
| 1 | - | 2.9 | 11 | - | 2.7 | 21 | - | 8.3 |
| 2 | - | 2.0 | 12 | - | 1.8 | 22 | 8.6 | 8.3 |
| 3 | - | 1.8 | 13 | - | 2.7 | 23 | 5.1 | 9.2 |
| 4 | - | 2.5 | 14 | - | 2.7 | 24 | 3.6 | 12 |
| 5 | - | 2.9 | 15 | - | 5.6 | 25 | 3.3 | 14 |
| 6 | - | 2.9 | 16 | - | 6.7 | 26 | 3.1 | 16 |
| 7 | - | 3.1 | 17 | - | 6.4 | 27 | 3.1 | 16 |
| 8 | - | 3.1 | 18 | - | 6.1 | 28 | 3.1 | 15 |
| 9 | - | 3.1 | 19 | - | 9.4 | 29 | 3.1 | 14 |
| 10 | - | 3.1 | 20 | - | 10 | 30 | 3.1 | a13 |
| | | | | | | 31 | 3.1 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| August 22-31 | 39.2 | e.6 | 3.1 | 3.92 | 0.261 | 0.10 |
| September | 207.3 | 16 | 1.8 | 6.91 | .461 | .51 |
| Water year | - | - | - | - | - | - |

a No gage-height record; discharge computed on basis of weather records.

## Fox River at Seney, Mich.

Location.- Staff gage, lat. 46°20'35", long. 85°57'05", in sec. 32, T. 46 N., R. 13 W., on Duluth, South Shore & Atlantic Railroad bridge in Seney, 8 miles upstream from East Branch.
Drainage area.- 107 square miles.
Records available.- May to September 1942.
Extremes.- Maximum discharge observed during period, 179 second-feet Sept. 25 (gage height, 2.82 feet); minimum observed, 108 second-feet Aug. 12-14, Sept. 7 (gage height, 2.24 feet).
Remarks.- Records good. Gage read once daily.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | May | June | July | Aug. | Sept. | Day | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | 158 | 122 | 120 | 113 | 16 | - | 137 | 116 | 113 | 119 |
| 2 | - | 158 | 122 | 117 | 111 | 17 | - | 136 | 115 | 111 | 122 |
| 3 | - | 156 | 136 | 114 | 111 | 18 | - | 137 | 125 | 108 | 158 |
| 4 | - | 153 | 130 | 112 | 112 | 19 | - | 137 | 130 | 108 | 160 |
| 5 | - | 148 | 127 | 111 | 113 | 20 | - | 136 | 128 | 108 | 146 |
| 6 | - | 166 | 127 | 111 | 110 | 21 | - | 137 | 123 | a110 | 148 |
| 7 | - | 172 | 126 | 111 | 110 | 22 | - | 136 | 120 | a140 | 158 |
| 8 | - | 158 | 123 | 112 | 113 | 23 | - | 135 | 120 | 134 | 166 |
| 9 | - | 150 | 122 | 113 | 113 | 24 | - | 136 | 117 | 122 | 179 |
| 10 | - | 148 | 126 | 112 | 113 | 25 | 165 | 131 | 115 | 119 | 179 |
| 11 | - | 153 | 126 | 112 | 113 | 26 | 172 | 127 | 116 | 117 | 179 |
| 12 | - | 160 | 123 | 110 | 114 | 27 | 172 | 127 | 121 | 117 | 179 |
| 13 | - | 156 | 121 | 107 | 115 | 28 | 166 | 126 | 121 | 116 | 172 |
| 14 | - | 146 | 117 | 108 | 113 | 29 | 165 | 125 | 117 | 115 | 166 |
| 15 | - | 141 | 116 | 111 | 115 | 30 | 163 | 123 | 117 | 115 | 162 |
| | | | | | | 31 | 162 | - | 119 | 114 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| May 25-31 | 1,165 | 172 | 162 | 166 | 1.55 | 0.40 |
| June | 4,309 | 172 | 123 | 144 | 1.35 | 1.51 |
| July | 3,784 | 136 | 115 | 122 | 1.14 | 1.31 |
| August | 3,548 | 140 | 107 | 114 | 1.07 | 1.23 |
| September | 4,082 | 179 | 110 | 136 | 1.27 | 1.42 |
| Water year | - | - | - | - | - | - |

a No gage-height record; discharge computed on basis of weather records and records for East Branch of Fox River near Germfask.
Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## East Branch of Fox River near Germfask, Mich.

Location.- Chain gage, lat. 46°16'30", long. 85°50'50", in sec. 19, T. 45 N., R. 12 W., on bridge 1½ miles upstream from mouth and 4 miles east of Germfask.
Drainage area.- 104 square miles.
Records available.- May to September 1942.
Extremes.- Maximum discharge observed during period, 172 second-feet Sept. 29 (gage height, 4.22 feet); minimum observed, 70 second-feet Aug. 21 (gage height, 1.96 feet).
Remarks.- Records good. Gage read once daily.

Discharge, in second-feet, of East Branch of Fox River near Germfask, Mich., water year October 1941 to September 1942

| Day | May | June | July | Aug. | Sept. | Day | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | 118 | 78 | 84 | 78 | 16 | - | 94 | 75 | 72 | 86 |
| 2 | - | 114 | 76 | 80 | 78 | 17 | - | 90 | 76 | 74 | 90 |
| 3 | - | 114 | 84 | 76 | 76 | 18 | - | 90 | 84 | 74 | 98 |
| 4 | - | 111 | 100 | 74 | 75 | 19 | - | 90 | 84 | 72 | 118 |
| 5 | - | 106 | 94 | 72 | 75 | 20 | - | 92 | 82 | 72 | 126 |
| 6 | - | 111 | 90 | 72 | 76 | 21 | - | 90 | 82 | 70 | 131 |
| 7 | - | 141 | 86 | 74 | 76 | 22 | - | 90 | 80 | 76 | 136 |
| 8 | - | 141 | 82 | 74 | 78 | 23 | - | 92 | 78 | 96 | 141 |
| 9 | - | 121 | 82 | 72 | 80 | 24 | - | 90 | 76 | 98 | 151 |
| 10 | - | 106 | 80 | 74 | 78 | 25 | - | 88 | 75 | 88 | 161 |
| 11 | - | 102 | 82 | 74 | 78 | 26 | - | a86 | 74 | 82 | 161 |
| 12 | - | 121 | 80 | 75 | 76 | 27 | - | a84 | 75 | 82 | 172 |
| 13 | - | 121 | 78 | 74 | 78 | 28 | - | 82 | 76 | 82 | 172 |
| 14 | - | 104 | 76 | 72 | 78 | 29 | - | 80 | 75 | 82 | 172 |
| 15 | - | 98 | 75 | 72 | 80 | 30 | - | 80 | 75 | 82 | 166 |
| | | | | | | 31 | 124 | - | 78 | 80 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| June | 3,047 | 141 | 80 | 102 | 0.981 | 1.09 |
| July | 2,488 | 100 | 74 | 80.3 | .772 | .89 |
| August | 2,401 | 98 | 70 | 77.5 | .745 | .86 |
| September | 3,241 | 172 | 75 | 108 | 1.04 | 1.16 |

a No gage-height record; discharge interpolated.

## Holland Creek near Seney, Mich.

Location.- Staff gage, lat. 46°20'45", long. 86°03'00", in NW¼ sec. 34, T. 46 N., R. 14 W., 4½ miles west of Seney.
Drainage area.- 13 square miles (watershed indeterminate because of swamps).
Records available.- May 1938 to June 1942 (discontinued).
Extremes.- 1941-42: Maximum discharge during period October to June, 246 second-feet Apr. 2 (gage height, 2.72 feet, from graph based on gage readings); minimum observed, 5.6 second-feet June 26 (gage height, 0.19 foot).
1938-42: Maximum discharge observed, 572 second-feet Apr. 24, 1939 (gage height, 4.25 feet); minimum observed, 0.8 second-feet Aug. 24, 1939; minimum gage height observed, that of June 26, 1942.
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Gage read once daily prior to May 1; occasional readings thereafter.
Cooperation.- Observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22 | 61 | 25 | a28 | a12 | a9.0 | 121 | - | - | | | |
| 2 | 20 | a72 | *25 | 26 | 12 | 9.3 | 221 | - | - | | | |
| 3 | 24 | 84 | 26 | 24 | 12 | 8.6 | 221 | - | - | | | |
| 4 | 36 | 78 | 28 | 22 | 12 | 9.3 | 233 | 12 | - | | | |
| 5 | a70 | 64 | 27 | 20 | 12 | 9.3 | *233 | - | 8.1 | | | |
| 6 | 106 | 54 | 25 | 19 | 12 | 9.3 | a180 | - | - | | | |
| 7 | 123 | 48 | a24 | 18 | 12 | 9.3 | a130 | - | - | | | |
| 8 | 106 | 43 | 23 | 17 | a12 | a9.2 | 101 | - | - | | | |
| 9 | 90 | a46 | 22 | 16 | 11 | a9.0 | 86 | - | - | | | |
| 10 | 78 | 51 | 22 | 15 | 11 | 8.4 | 73 | - | - | | | |
| 11 | 65 | 49 | 21 | 15 | 10 | 8.4 | a60 | 7.0 | - | | | |
| 12 | a55 | 47 | 21 | 15 | 10 | 9.0 | a50 | - | - | | | |
| 13 | 50 | 44 | 21 | 14 | 10 | 10 | 44 | - | - | | | |
| 14 | 84 | 44 | 21 | 14 | 10 | 12 | 42 | - | - | | | |
| 15 | 60 | 55 | 21 | 13 | a10 | 14 | 41 | - | - | | | |
| 16 | 45 | a58 | 21 | 14 | 10 | 16 | a40 | - | - | | | |
| 17 | 36 | 55 | 21 | *14 | 10 | 18 | a42 | - | - | | | |
| 18 | 32 | 53 | 23 | 15 | 10 | 19 | 39 | - | - | | | |
| 19 | a28 | 52 | 25 | 15 | 10 | 21 | a34 | - | - | | | |
| 20 | 24 | 55 | 27 | a16 | *10 | 25 | 28 | - | - | | | |
| 21 | 41 | a52 | a30 | 16 | 10 | 28 | 25 | 16 | - | | | |
| 22 | 36 | 47 | 34 | 16 | a10 | a30 | 22 | - | - | | | |
| 23 | 34 | a40 | 73 | 17 | 9.9 | 35 | 21 | - | - | | | |
| 24 | 28 | 34 | 100 | 17 | 9.9 | 30 | 18 | - | - | | | |
| 25 | 25 | 31 | a70 | 16 | 9.3 | 28 | 16 | - | - | | | |
| 26 | a40 | 31 | 58 | 15 | 9.9 | 30 | a15 | - | 5.6 | | | |
| 27 | 71 | 30 | 45 | 14 | 9.3 | 34 | 14 | 11 | - | | | |
| 28 | 65 | 30 | a40 | 14 | 8.6 | 51 | 12 | - | - | | | |
| 29 | 55 | 29 | 38 | 13 | - | a62 | a11 | - | - | | | |
| 30 | 52 | a26 | 35 | 12 | - | 70 | a12 | - | - | | | |
| 31 | 47 | - | 31 | 12 | - | 73 | - | - | - | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,648 | 123 | 20 | 53.2 | | |
| November | 1,463 | 84 | 26 | 48.8 | | |
| December | 1,023 | 100 | 21 | 33.0 | | |
| Calendar year 1941 | 7,911.0 | 128 | 1.5 | 21.7 | | |
| January | 512 | 28 | 12 | 16.5 | | |
| February | 294.9 | 12 | 8.6 | 10.5 | | |
| March | 714.1 | 73 | 8.4 | 23.0 | | |
| April | 2,185 | 233 | 11 | 72.8 | | |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Dec. 10-20, Jan. 2-19, 29, 30, Feb. 2, 3, 9-11, 16-21, Mar. 10-18, 23.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Driggs River near Seney, Mich.

Location.- Staff gage, lat. 46°20'45", long. 86°07'30", in N½ sec. 36, T. 46 N., R. 15 W., 2 miles upstream from Walsh Creek and 8½ miles west of Seney.

Drainage area.- 70 square miles.

Records available.- March 1938 to June 1942 (discontinued).

Extremes.- 1941-42: Maximum discharge during period October to June, 199 second-feet Apr. 5 (gage height, 8.70 feet, from graph based on gage readings); minimum daily, 46 second-feet Mar. 10.
1938-42: Maximum discharge observed, 518 second-feet Apr. 27, 1939 (gage height, 11.08 feet); minimum observed, 28 second-feet Mar. 29, 1941 (gage height, 6.98 feet).

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Gage read once daily prior to May 1; occasional readings thereafter.

Cooperation.- Observer's services furnished by Fish and Wildlife Service.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 64 | 96 | 82 | a90 | a74 | a62 | 96 | - | - | | | |
| 2 | 64 | a110 | *82 | 78 | 72 | 64 | a105 | - | - | | | |
| 3 | 64 | 120 | 82 | 84 | 72 | 64 | 115 | - | - | | | |
| 4 | 69 | 115 | 82 | 86 | 70 | 60 | 125 | 96 | - | | | |
| 5 | a95 | 110 | 87 | 88 | 69 | 60 | 166 | - | 69 | | | |
| 6 | 135 | 105 | 87 | 90 | 69 | 60 | a190 | - | - | | | |
| 7 | 135 | 100 | a82 | 88 | 69 | 56 | a160 | - | - | | | |
| 8 | 125 | 100 | 82 | 86 | a68 | 50 | 145 | - | - | | | |
| 9 | 115 | a100 | 82 | 84 | 68 | 48 | 145 | - | - | | | |
| 10 | 115 | 100 | 78 | 84 | 66 | 46 | *145 | - | - | | | |
| 11 | 110 | 100 | 80 | 84 | 66 | 48 | a140 | 78 | - | | | |
| 12 | a100 | 96 | 82 | 84 | 66 | a50 | a135 | - | - | | | |
| 13 | 96 | 96 | 82 | 84 | 64 | a50 | 135 | - | - | | | |
| 14 | 105 | 96 | a80 | 84 | 64 | 52 | 135 | - | - | | | |
| 15 | 105 | 100 | 78 | 82 | a62 | a60 | 155 | - | - | | | |
| 16 | 96 | a105 | 78 | 80 | 60 | 69 | a160 | - | - | | | |
| 17 | 92 | 110 | 78 | *78 | 64 | 69 | a165 | - | - | | | |
| 18 | 87 | 110 | 78 | a80 | 69 | 69 | 166 | - | - | | | |
| 19 | a84 | 115 | 82 | 82 | 66 | 74 | a155 | - | - | | | |
| 20 | 82 | 120 | 69 | 82 | *65 | 74 | 145 | - | - | | | |
| 21 | 87 | a120 | a74 | 78 | 64 | 74 | 135 | 82 | - | | | |
| 22 | 87 | 115 | 82 | 78 | 64 | a66 | 125 | - | - | | | |
| 23 | 82 | a105 | 96 | 78 | 64 | 60 | 120 | - | - | | | |
| 24 | 78 | 96 | 120 | 78 | 60 | 64 | 120 | - | - | | | |
| 25 | 78 | 100 | a130 | a76 | 60 | 74 | 115 | - | - | | | |
| 26 | a84 | 96 | 125 | 74 | 60 | 74 | a110 | - | 56 | | | |
| 27 | 100 | 92 | 120 | 74 | 60 | 74 | 105 | 82 | - | | | |
| 28 | 105 | 87 | a110 | 74 | 62 | 87 | 100 | - | - | | | |
| 29 | 96 | 87 | 96 | 72 | - | a87 | a95 | - | - | | | |
| 30 | 92 | a84 | 96 | 74 | - | 87 | a110 | - | - | | | |
| 31 | 92 | - | 96 | 74 | - | 87 | - | - | - | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,919 | 135 | 64 | 94.2 | 1.34 | 1.55 |
| November | 3,086 | 120 | 84 | 103 | 1.47 | 1.64 |
| December | 2,758 | 130 | 69 | 89.0 | 1.27 | 1.47 |
| Calendar year 1941 | 25,283 | 221 | 28 | 69.3 | .990 | 13.44 |
| January | 2,508 | 90 | 72 | 80.9 | 1.16 | 1.33 |
| February | 1,839 | 74 | 60 | 65.7 | .939 | .98 |
| March | 2,019 | 87 | 46 | 65.1 | .930 | 1.07 |
| April | 4,018 | 190 | 95 | 134 | 1.91 | 2.13 |
| May | - | - | - | - | - | - |
| June | - | - | - | - | - | - |
| July | - | - | - | - | - | - |
| August | - | - | - | - | - | - |
| September | - | - | - | - | - | - |
| Water year | - | - | - | - | - | - |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Dec. 11, 12, Jan. 3-17, 29, 30, Feb. 2-4, 9-12, 19-28, Mar. 7-11.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Walsh Creek near Seney, Mich.

Location.- Staff gage, lat. 46°20'45", long. 86°10'40", in NW¼ sec. 34, T. 46 N., R. 15 W., 3½ miles upstream from mouth and 11 miles west of Seney.

Drainage area.- 12 square miles.

Records available.- March 1938 to June 1942 (discontinued).

Extremes.- 1941-42: Maximum discharge during period October to June, 246 second-feet Apr. 5 (gage height, 5.55 feet, from graph based on gage readings); minimum observed, 5.0 second-feet June 26 (gage height, 0.76 foot).
1938-42: Maximum discharge observed, 598 second-feet Apr. 25, 1939 (gage height, 7.35 feet); minimum observed, 0.7 second-foot Sept. 3, 1939 (gage height, 0.38 foot).

Remarks.- Records good, except those for periods of ice effect or no gage-height record, which are fair. Gage read once daily prior to May 1; occasional readings thereafter.

Cooperation.- Observer's services furnished by Fish and Wildlife Service.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | 40 | 16 | a22 | a10 | a8.5 | 53 | - | - | | | |
| 2 | 14 | a50 | *16 | 20 | 10 | 8.5 | a80 | - | - | | | |
| 3 | 20 | 65 | 16 | 18 | 10 | 8.5 | 109 | - | - | | | |
| 4 | 26 | 61 | 18 | 17 | 10 | 8.5 | 169 | 15 | - | | | |
| 5 | a55 | 51 | 20 | 16 | 9.8 | 8.4 | 235 | - | 90 | | | |
| 6 | 123 | 42 | 22 | 15 | 9.8 | 8.5 | a200 | - | - | | | |
| 7 | 130 | 38 | a20 | 14 | 9.7 | 8.7 | a150 | - | - | | | |
| 8 | 103 | 35 | 18 | 13 | a9.5 | a9.0 | 109 | - | - | | | |
| 9 | 75 | a36 | 17 | 12 | 9.3 | a10 | 97 | - | - | | | |
| 10 | 65 | 36 | 17 | 11 | 9.2 | 13 | 75 | - | - | | | |
| 11 | 49 | 35 | 16 | 11 | 9.0 | 11 | a60 | 9.3 | - | | | |
| 12 | a40 | 32 | 15 | 11 | 9.0 | a10 | a55 | - | - | | | |
| 13 | 36 | 31 | 15 | 11 | 8.8 | a9.5 | 51 | - | - | | | |
| 14 | 49 | 34 | a14 | 11 | 8.7 | 9.2 | 53 | - | - | | | |
| 15 | 43 | 43 | 14 | 11 | a8.7 | a9.0 | 61 | - | - | | | |
| 16 | 34 | a50 | 14 | 11 | 8.7 | 10 | a70 | - | - | | | |
| 17 | 29 | 53 | 14 | *11 | 8.5 | 12 | a65 | - | - | | | |
| 18 | 26 | 51 | 17 | a11 | 8.7 | 13 | 61 | - | - | | | |
| 19 | a22 | 44 | 18 | 12 | 9.0 | 14 | a50 | - | - | | | |
| 20 | 21 | 46 | 16 | 12 | *8.7 | 14 | 40 | - | - | | | |
| 21 | 31 | a44 | a16 | 12 | 8.7 | 16 | 35 | 15 | - | | | |
| 22 | 29 | 39 | 20 | 12 | a8.7 | a16 | 30 | - | - | | | |
| 23 | 24 | a32 | 36 | 12 | 8.7 | 16 | 26 | - | - | | | |
| 24 | 22 | 28 | 85 | 12 | 8.5 | 17 | 22 | - | - | | | |
| 25 | 20 | 22 | a100 | a12 | 8.5 | 18 | 21 | - | - | | | |
| 26 | a22 | 21 | 65 | 12 | 8.5 | 21 | a19 | - | 5.0 | | | |
| 27 | 43 | 21 | 57 | 11 | 8.5 | 24 | 17 | 12 | - | | | |
| 28 | 49 | 20 | a46 | 11 | 8.4 | 32 | 15 | - | - | | | |
| 29 | 43 | 20 | 36 | 11 | - | a34 | a14 | - | - | | | |
| 30 | 39 | a18 | 30 | 11 | - | 36 | a15 | - | - | | | |
| 31 | 35 | - | 24 | 10 | - | 42 | - | - | - | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,332 | 130 | 14 | 43.0 | 3.58 | 4.13 |
| November | 1,138. | 65 | 18 | 37.9 | 3.16 | 3.53 |
| December | 848 | 100 | 14 | 27.4 | 2.28 | 2.63 |
| Calendar year 1941 | 6,979.8 | 156 | 1.2 | 19.1 | 1.59 | 21.64 |
| January | 396 | 22 | 10 | 12.8 | 1.07 | 1.23 |
| February | 253.6 | 10 | 8.4 | 9.06 | .755 | .79 |
| March | 475.3 | 42 | 8.4 | 15.3 | 1.28 | 1.47 |
| April | 2,057 | 235 | 14 | 68.6 | 5.72 | 6.37 |
| May | - | - | - | - | - | - |
| June | - | - | - | - | - | - |
| July | - | - | - | - | - | - |
| August | - | - | - | - | - | - |
| September | - | - | - | - | - | - |
| Water year | - | - | - | - | - | - |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Jan. 2-17, Mar. 10, 11.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Marsh Creek near Shingleton, Mich.

Location.- Staff gage, lat. 46°20'45", long. 86°14'20", in NW¼ sec. 31, T. 46 N., R. 15 W., 11 miles east of Shingleton.

Drainage area.- 20 square miles (watershed indeterminate because of swamps).

Records available.- March 1938 to June 1942 (discontinued).

Extremes.- 1941-42: Maximum discharge during period October to June, 135 second-feet Apr. 3 (gage height, 3.68 feet, from graph based on gage readings); minimum observed, 0.5 second-foot June 26 (gage height, 1.18 feet).
1938-42: Maximum discharge observed, 268 second-feet Mar. 31, 1938 (gage height, 4.20 feet); no flow at times during 1938-41.

Remarks.- Records good except those for periods of ice effect or no gage-height record or those below 5 second-feet, which are fair. Gage read once daily prior to May 1; occasional readings thereafter.

Cooperation.- Observer's services furnished by Fish and Wildlife Service.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.2 | 32 | 13 | 13 | 4.0 | 2.8 | 34 | - | - | | | |
| 2 | 9.5 | a42 | *12 | 12 | 4.0 | 2.8 | a80 | - | - | | | |
| 3 | 13 | 44 | 13 | 11 | 4.0 | 2.8 | 126 | - | - | | | |
| 4 | 15 | 38 | 14 | 10 | 3.9 | 2.8 | 110 | 8.8 | - | | | |
| 5 | a40 | 34 | 14 | 9.0 | 3.7 | 2.8 | *117 | - | 1.9 | | | |
| 6 | 56 | 30 | 15 | 8.5 | 3.7 | 2.8 | a100 | - | - | | | |
| 7 | 78 | 27 | a14 | 8.0 | 3.5 | 3.0 | a86 | - | - | | | |
| 8 | 74 | 25 | 13 | 7.5 | 3.5 | 3.2 | 74 | - | - | | | |
| 9 | 59 | a26 | 12 | 7.0 | 3.5 | 3.4 | 66 | - | - | | | |
| 10 | 49 | 26 | 11 | 6.5 | 3.5 | 4.0 | 59 | - | - | | | |
| 11 | 41 | 24 | 10 | 6.0 | 3.4 | 3.6 | a50 | 3.8 | - | | | |
| 12 | a34 | 24 | 9.5 | 5.8 | 3.3 | 3.4 | a44 | - | - | | | |
| 13 | 30 | 25 | 9.5 | 5.6 | 3.3 | 3.4 | 38 | - | - | | | |
| 14 | 36 | 26 | 9.5 | 5.4 | 3.0 | 3.4 | 36 | - | - | | | |
| 15 | 32 | 26 | 9.5 | 5.2 | 3.0 | 3.4 | 36 | - | - | | | |
| 16 | 26 | a28 | 9.0 | 5.0 | 3.1 | 3.4 | a36 | - | - | | | |
| 17 | 22 | 32 | 9.0 | *4.9 | 3.2 | 3.6 | a44 | - | - | | | |
| 18 | 19 | 30 | 9.0 | 4.8 | 3.2 | 3.8 | 52 | - | - | | | |
| 19 | a16 | 28 | 9.5 | 4.8 | 3.1 | 4.0 | a44 | - | - | | | |
| 20 | 15 | 30 | 10 | 4.8 | *3.0 | 4.2 | 34 | - | - | | | |
| 21 | 19 | a28 | 12 | 4.6 | 3.0 | 4.5 | 27 | 6.4 | - | | | |
| 22 | 20 | 28 | 14 | 4.6 | 3.0 | 4.8 | 27 | - | - | | | |
| 23 | 19 | a26 | 24 | 4.7 | 3.0 | 5.2 | 19 | - | - | | | |
| 24 | 17 | 22 | 34 | 4.6 | 3.0 | 5.6 | 16 | - | - | | | |
| 25 | 16 | 18 | a30 | 4.5 | 2.8 | 6.4 | 14 | - | - | | | |
| 26 | a20 | 17 | 25 | 4.4 | 2.8 | 7.5 | a12 | - | .5 | | | |
| 27 | 28 | 15 | 22 | 4.4 | 2.8 | 8.8 | 10 | 3.4 | - | | | |
| 28 | 32 | 15 | 18 | 4.4 | 2.8 | 11 | 8.8 | - | - | | | |
| 29 | 30 | 14 | 16 | 4.3 | - | a12 | a8.0 | - | - | | | |
| 30 | 27 | a14 | 15 | 4.2 | - | 13 | a9.0 | - | - | | | |
| 31 | 25 | - | 14 | 4.1 | - | 17 | - | - | - | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 926.7 | 78 | 9.2 | 29.9 | | |
| November | 794 | 44 | 14 | 26.5 | | |
| December | 449.5 | 34 | 9.0 | 14.5 | | |
| Calendar year 1941 | 4,417.5 | 122 | 0 | 12.1 | | |
| January | 193.6 | 13 | 4.1 | 6.25 | | |
| February | 92.1 | 4.0 | 2.8 | 3.29 | | |
| March | 162.4 | 17 | 2.8 | 5.24 | | |
| April | 1,416.8 | 126 | 8.0 | 47.2 | | |
| May | - | - | - | - | | |
| June | - | - | - | - | | |
| July | - | - | - | - | | |
| August | - | - | - | - | | |
| September | - | - | - | - | | |
| Water year | - | - | - | - | | |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Dec. 9-22, Dec. 26 to Mar. 26.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Duck Creek near Blaney, Mich.

Location.- Water-stage recorder, lat. 46°06'50", long. 86°04'50", in SE¼ sec. 17, T. 43 N., R. 14 W., 3 miles upstream from mouth and 7 miles west of Blaney.

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

Records available.- March 1938 to September 1942.

Extremes.- Maximum discharge during year, 1,190 second-feet Apr. 5 (gage height, 10.41 feet); minimum, 7.0 second-feet Sept. 11 (gage height, 1.59 feet).
1938-42: Maximum discharge observed, 1,740 second-feet Apr. 26, 1939 (gage height, 11.70 feet, site and datum then in use); minimum, 6.0 second-feet Aug. 21, 1941 (gage height, 1.52 feet).

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Records include flow from Walsh Creek and Marsh Creek, which originates upstream from line between R. 14 W. and R. 15 W. and is diverted to Duck Creek through drainage canal about 3 miles upstream from station.

Rating tables, water year 1941-42, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 11, 12, Apr. 9-23)

| Oct. 1-10 | | Oct. 11 to Sept. 30 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2.9 | 70 | 1.6 | 7.2 | 2.3 | 31 | 5.5 | 313 | 10.0 | 1,010 |
| 3.3 | 104 | 1.7 | 9.5 | 2.6 | 47 | 7.0 | 488 | 10.3 | 1,140 |
| 4.4 | 214 | 1.8 | 12 | 3.0 | 73 | 9.0 | 766 | | |
| 5.5 | 335 | 1.9 | 15 | 3.8 | 142 | 9.5 | 864 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 72 | 291 | 124 | 108 | 66 | 54 | 550 | 107 | 62 | 28 | 21 | 10 |
| 2 | 71 | 346 | 120 | 104 | 64 | 56 | 649 | 96 | 62 | 27 | 19 | 10 |
| 3 | 72 | 379 | 115 | 100 | 62 | 56 | 798 | 95 | 65 | 34 | 18 | 10 |
| 4 | 79 | 403 | 115 | 98 | 62 | 56 | 1,010 | 102 | 65 | 38 | 16 | 9.3 |
| 5 | 115 | 379 | *120 | 94 | 62 | 56 | 1,140 | 95 | 62 | 35 | 15 | 9.5 |
| 6 | 204 | 346 | 124 | 90 | 60 | 56 | 1,090 | 87 | 77 | 36 | 15 | 10 |
| 7 | 252 | 324 | 124 | 88 | 60 | 56 | 920 | 82 | 91 | 31 | 15 | 9.0 |
| 8 | 302 | 302 | 120 | 86 | 58 | 58 | *798 | 77 | 80 | a25 | 14 | 9.0 |
| 9 | 324 | 281 | 115 | 84 | 56 | 58 | 706 | 74 | 69 | a22 | 14 | 9.3 |
| 10 | 335 | 271 | 110 | 82 | 54 | 58 | 607 | 69 | 61 | 26 | 13 | 9.0 |
| 11 | 324 | 261 | 108 | 80 | 54 | 56 | 527 | 65 | 59 | 45 | 14 | 8.8 |
| 12 | 302 | 251 | 106 | 78 | 54 | 58 | 463 | 66 | 66 | 39 | 13 | 8.4 |
| 13 | 281 | 246 | 104 | 76 | 52 | 60 | 403 | 67 | 58 | 32 | 12 | 8.6 |
| 14 | 281 | 241 | 102 | 76 | 52 | 60 | 357 | 99 | 54 | 28 | 12 | 9.0 |
| 15 | 281 | 231 | 102 | *76 | 52 | 62 | 324 | 110 | 50 | 25 | 12 | 13 |
| 16 | 281 | 226 | 100 | 74 | 52 | 64 | 302 | 120 | 46 | 23 | 12 | 14 |
| 17 | 271 | 221 | 100 | 72 | 52 | 70 | 302 | 128 | 42 | 23 | 12 | 17 |
| 18 | 246 | 216 | 104 | 72 | *52 | 74 | 281 | 124 | 41 | 32 | 11 | 27 |
| 19 | 221 | 216 | 108 | 74 | 50 | 78 | 271 | 128 | 43 | 30 | 11 | 36 |
| 20 | 201 | 216 | 110 | 76 | 50 | 82 | 251 | 115 | 41 | 28 | 11 | 37 |
| 21 | 206 | 211 | 112 | 76 | 50 | 88 | 231 | 102 | 40 | 26 | 10 | 31 |
| 22 | 201 | 206 | 116 | 74 | 52 | 94 | 211 | 93 | 39 | 25 | 14 | 32 |
| 23 | 196 | 201 | 140 | 72 | 54 | 100 | 191 | 84 | 45 | 23 | 21 | 36 |
| 24 | 181 | 191 | 170 | 72 | 54 | 110 | 171 | 75 | 42 | 22 | 18 | 44 |
| 25 | 166 | 171 | 190 | 70 | 54 | 130 | 156 | 69 | 38 | 21 | 16 | 43 |
| 26 | 166 | 161 | 180 | 68 | 54 | 150 | 142 | 71 | 35 | 20 | 16 | 43 |
| 27 | 226 | 156 | 160 | 68 | 54 | 180 | 128 | 72 | 33 | 21 | 15 | 47 |
| 28 | 251 | 146 | 140 | 68 | 54 | 220 | 120 | 67 | 31 | 22 | 14 | 47 |
| 29 | 271 | 142 | 130 | 66 | - | 270 | 110 | 64 | 31 | 21 | 13 | 45 |
| 30 | 291 | 133 | 120 | 64 | - | 350 | 109 | 65 | 29 | 20 | 12 | 40 |
| 31 | 281 | - | 114 | 64 | - | 420 | - | 65 | - | 21 | 11 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 6,951 | 335 | 71 | 224 | | |
| November | 7,365 | 403 | 133 | 246 | | |
| December | 3,803 | 190 | 100 | 123 | | |
| Calendar year 1941 | 38,748.8 | 516 | 6.2 | 106 | | |
| January | 2,450 | 108 | 64 | 79.0 | | |
| February | 1,550 | 66 | 50 | 55.4 | | |
| March | 3,340 | 420 | 54 | 108 | | |
| April | 13,318 | 1,140 | 109 | 444 | | |
| May | 2,733 | 128 | 64 | 88.2 | | |
| June | 1,557 | 91 | 29 | 51.9 | | |
| July | 854 | 45 | 20 | 27.5 | | |
| August | 440 | 21 | 10 | 14.2 | | |
| September | 681.9 | 47 | 8.4 | 22.7 | | |
| Water year 1941-42 | 45,042.9 | 1,140 | 8.4 | 123 | | |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Manistique River near Blaney.
Note.- Stage-discharge relation affected by ice Dec. 10 to Apr. 1.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## West Branch of Manistique River near Manistique, Mich.

Location.- Water-stage recorder, lat. 46°05'20", long. 86°09'40", in SE¼ sec. 27, T. 43 N., R. 15 W., 300 feet downstream from Stutts Creek and 10 miles northeast of Manistique.

Drainage area.- 322 square miles.

Records available.- April 1938 to September 1942.

Extremes.- Maximum discharge during year, 1,930 second-feet Apr. 7 (gage height, 8.27 feet); minimum, 102 second-feet Aug. 22 (gage height, 1.91 feet).
1938-42: Maximum discharge observed, 5,300 second-feet Apr. 29, 1939 (gage height, 12.9 feet); minimum observed, 100 second-feet Aug. 30, 1938.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair.

Cooperation.- Observer's services Oct. 1 to June 30 furnished by Fish and Wildlife Service.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | |
|---|---|---|---|
| 1.9 | 100 | 5.0 | 770 |
| 2.2 | 146 | 6.5 | 1,220 |
| 3.0 | 288 | 8.2 | 1,890 |
| 4.0 | 500 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 318 | 740 | 625 | 560 | 290 | 280 | 665 | 680 | 338 | 207 | 143 | 115 |
| 2 | 316 | 800 | 512 | 520 | 280 | 280 | 600 | 638 | 338 | 202 | 140 | 115 |
| 3 | 318 | 830 | 500 | 500 | 280 | 280 | 950 | 612 | 338 | 216 | 140 | 115 |
| 4 | 328 | 860 | *488 | 480 | 280 | 280 | 1,100 | 588 | 336 | 218 | 135 | 110 |
| 5 | 358 | 890 | 486 | 460 | 280 | 280 | 1,410 | 562 | 336 | 218 | 135 | 110 |
| 6 | 432 | 690 | 488 | 440 | 280 | 290 | 1,730 | 538 | 348 | 216 | 130 | 110 |
| 7 | 525 | 860 | 477 | 420 | 280 | 290 | 1,690 | 512 | 368 | 207 | 130 | 110 |
| 8 | 650 | 600 | 477 | 400 | 280 | 300 | 1,850 | 488 | 389 | 202 | 125 | 110 |
| 9 | 755 | 755 | 466 | 380 | 270 | 300 | *1,770 | 466 | 369 | 194 | 125 | 110 |
| 10 | 860 | 725 | 421 | 360 | 260 | 300 | 1,650 | 443 | 368 | 192 | 120 | 110 |
| 11 | 920 | 710 | 400 | 360 | 260 | 300 | 1,530 | 421 | 338 | 190 | 120 | 105 |
| 12 | 920 | 695 | 420 | 360 | 260 | 300 | 1,410 | 410 | 338 | 180 | 118 | 105 |
| 13 | 890 | 680 | 420 | 350 | 260 | 310 | 1,330 | 400 | 348 | 173 | 116 | 110 |
| 14 | 890 | 665 | 420 | 350 | 260 | 310 | 1,250 | 443 | 358 | 166 | 115 | 115 |
| 15 | 890 | 650 | 420 | 350 | 260 | 310 | 1,190 | 466 | 348 | 161 | 114 | 125 |
| 16 | 830 | 650 | 420 | 340 | 250 | 310 | 1,190 | 477 | 328 | 156 | 112 | 140 |
| 17 | 800 | 680 | 420 | 340 | *250 | 320 | 1,220 | 477 | 298 | 170 | 112 | 153 |
| 18 | 770 | 710 | 420 | 340 | 250 | 330 | 1,330 | 454 | 286 | 175 | 110 | 161 |
| 19 | 710 | 725 | 440 | 340 | 250 | 340 | 1,530 | 454 | 278 | 177 | 109 | 180 |
| 20 | 665 | 740 | 460 | 330 | 260 | 350 | 1,490 | 443 | 276 | 173 | 105 | 200 |
| 21 | 638 | 725 | 480 | 330 | 270 | 360 | 1,370 | 421 | 278 | 170 | 103 | 225 |
| 22 | 625 | 725 | 500 | 330 | 280 | 380 | 1,220 | 410 | 269 | 168 | 116 | 223 |
| 23 | 612 | 725 | 562 | 320 | 280 | 400 | 1,130 | 389 | 269 | 163 | 127 | 228 |
| 24 | 600 | 680 | 680 | 320 | 280 | 420 | 1,040 | 378 | 260 | 158 | 144 | 240 |
| 25 | 588 | 680 | 755 | 320 | 280 | 440 | 950 | 368 | 260 | 151 | 146 | 260 |
| 26 | 575 | 638 | 740 | 320 | 280 | 470 | 890 | 358 | 250 | 148 | 138 | 280 |
| 27 | 612 | 600 | 700 | 310 | 280 | 500 | 800 | 358 | 241 | 148 | 130 | 300 |
| 28 | 638 | 575 | 660 | 300 | 280 | 540 | 770 | 358 | 230 | 146 | 125 | 320 |
| 29 | 665 | 550 | 640 | 290 | - | 562 | 740 | 348 | 225 | 146 | 120 | 320 |
| 30 | 710 | 538 | 620 | 290 | - | 575 | 710 | 348 | 216 | 144 | 120 | 320 |
| 31 | 710 | - | 600 | 290 | - | 600 | - | 348 | - | 146 | 120 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 20,120 | 920 | 318 | 649 | 2.02 | 2.32 |
| November | 21,491 | 890 | 538 | 716 | 2.22 | 2.48 |
| December | 16,019 | 755 | 400 | 517 | 1.61 | 1.85 |
| Calendar year 1941 | 150,880 | 1,610 | 109 | 413 | 1.28 | 17.42 |
| January | 11,400 | 560 | 290 | 368 | 1.14 | 1.32 |
| February | 7,570 | 290 | 250 | 270 | .839 | .87 |
| March | 11,307 | 600 | 280 | 365 | 1.13 | 1.31 |
| April | 36,905 | 1,690 | 665 | 1,230 | 3.82 | 4.26 |
| May | 14,046 | 680 | 348 | 453 | 1.41 | 1.62 |
| June | 9,250 | 389 | 216 | 308 | .957 | 1.07 |
| July | 5,481 | 218 | 144 | 177 | .550 | .63 |
| August | 3,843 | 146 | 103 | 124 | .385 | .44 |
| September | 5,225 | 320 | 105 | 174 | .540 | .60 |
| Water year 1941-42 | 162,657 | 1,890 | 103 | 446 | 1.39 | 18.77 |

* Winter discharge measurement made on this day.
Note.- No gage-height record Aug. 2-10, 20, Aug. 28 to Sept. 16, Sept. 19-21, 24-30; discharge computed on basis of records for Manistique River near Manistique and weather records. Stage-discharge relation affected by ice Dec. 12-22, Dec. 26 to Mar. 28 (no gage-height record Jan. 8-15).
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Creighton River near Shingleton, Mich.

Location.- Staff gage, lat. 46°20'45", long. 86°16'35", in NW¼ sec. 35, T. 46 N., R. 16 W., 8 miles upstream from mouth and 9½ miles east of Shingleton.

Drainage area.- 35 square miles.

Records available.- March 1938 to June 1942 (discontinued).

Extremes.- 1941-42: Maximum discharge during period October to June, 310 second-feet Apr. 18 (gage height, 5.60 feet from graph based on gage readings); minimum daily, 24 second-feet Feb. 17, 28, Mar. 1, 10-15.
1938-42: Maximum discharge observed, 552 second-feet Apr. 26, 1939 (gage height, 6.10 feet); minimum observed, 4 second-feet Aug. 30, 1938 (gage height, 2.22 feet).

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Gage read once daily prior to May 1; occasional readings thereafter.

Cooperation.- Observer's services furnished by Fish and Wildlife Service.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 50 | 97 | 50 | 46 | 29 | a24 | 102 | - | - | | | |
| 2 | 50 | a110 | *48 | 46 | 29 | 25 | a125 | - | - | | | |
| 3 | 56 | 127 | 50 | 44 | 29 | 25 | 141 | - | - | | | |
| 4 | 61 | 134 | 61 | 42 | 29 | 26 | 150 | 68 | - | | | |
| 5 | a92 | 127 | 61 | 40 | 29 | 26 | 206 | - | 35 | | | |
| 6 | 170 | 114 | 64 | 38 | 28 | 26 | a230 | - | - | | | |
| 7 | 206 | 102 | a64 | 38 | 28 | 26 | a206 | - | - | | | |
| 8 | 220 | 92 | 56 | 36 | a28 | a26 | 170 | - | - | | | |
| 9 | 220 | a88 | 53 | 36 | 28 | a25 | 159 | - | - | | | |
| 10 | 206 | 88 | 50 | 36 | 28 | 24 | *141 | - | - | | | |
| 11 | 181 | 92 | 46 | 36 | 27 | 24 | a135 | 45 | - | | | |
| 12 | a160 | 92 | 44 | 36 | 27 | a24 | a130 | - | - | | | |
| 13 | 134 | 92 | 42 | 35 | 27 | a24 | 120 | - | - | | | |
| 14 | 134 | 92 | 40 | 34 | 27 | 24 | 120 | - | - | | | |
| 15 | 114 | 92 | 40 | 34 | a28 | a24 | 150 | - | - | | | |
| 16 | 97 | a100 | 40 | 34 | 28 | 27 | a190 | - | - | | | |
| 17 | 84 | 108 | 41 | *33 | 24 | 28 | a250 | - | - | | | |
| 18 | 73 | 114 | 46 | a32 | 26 | 30 | 310 | - | - | | | |
| 19 | a65 | 114 | 50 | 32 | 26 | 30 | a290 | - | - | | | |
| 20 | 64 | 114 | 70 | 32 | *27 | 36 | 206 | - | - | | | |
| 21 | 73 | a120 | a68 | 34 | 27 | 39 | 170 | 49 | - | | | |
| 22 | 73 | 120 | 50 | 34 | 26 | a32 | 152 | - | 26 | | | |
| 23 | 70 | a120 | 67 | 35 | 25 | 27 | 136 | - | - | | | |
| 24 | 67 | 114 | 108 | 35 | 25 | 39 | 129 | - | - | | | |
| 25 | 58 | 80 | a110 | a34 | 25 | 38 | 123 | - | - | | | |
| 26 | a70 | 73 | 90 | 34 | 25 | 43 | a115 | - | - | | | |
| 27 | 97 | 67 | 70 | 35 | 25 | 53 | 102 | 45 | - | | | |
| 28 | 102 | 64 | 60 | 34 | 24 | 70 | 94 | - | - | | | |
| 29 | 108 | 61 | 54 | 32 | - | a76 | a86 | - | - | | | |
| 30 | 102 | a56 | 50 | 30 | - | 80 | a80 | - | - | | | |
| 31 | 92 | - | 48 | 29 | - | 88 | - | - | - | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 3,349 | 220 | 50 | 108 | 3.09 | 3.56 |
| November | 2,964 | 134 | 56 | 98.8 | 2.82 | 3.15 |
| December | 1,791 | 110 | 40 | 57.8 | 1.65 | 1.90 |
| Calendar year 1941 | 20,102.9 | 378 | 6.1 | 55.1 | 1.57 | 21.37 |
| January | 1,106 | 46 | 29 | 35.7 | 1.02 | 1.18 |
| February | 754 | 29 | 24 | 26.9 | .769 | .80 |
| March | 1,109 | 88 | 24 | 35.8 | 1.02 | 1.18 |
| April | 4,718 | 310 | 80 | 157 | 4.49 | 5.01 |
| May | - | - | - | - | - | - |
| June | - | - | - | - | - | - |
| July | - | - | - | - | - | - |
| August | - | - | - | - | - | - |
| September | - | - | - | - | - | - |
| Water year | - | - | - | - | - | - |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Dec. 10-16, Dec. 26 to Jan. 17, Jan. 28 to Feb. 5, Feb. 9-11, 17-24, Mar. 10, 11.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Indian River near Manistique, Mich.

Location.- Water-stage recorder, lat. 45°59'30", long. 86°17'15", in NE¼ sec. 34, T. 42 N., R. 16 W., above Indian Lake Outlet, 2 miles northwest of Manistique. Prior to July 9, 1942, chain gage at same site and datum.

Drainage area.- 302 square miles.

Records available.- March 1938 to September 1942.

Extremes.- Maximum discharge observed during year, 618 second-feet Apr. 12-21; maximum gage height, 5.31 feet Apr. 16-18; minimum discharge observed, 144 second-feet July 3; minimum gage height, 3.72 feet Mar. 6.
1938-42: Maximum discharge observed, 1,000 second-feet Apr. 30, 1939 (gage height, 6.48 feet); minimum discharge observed, 106 second-feet Aug. 6, 7, 1939; minimum gage height, 3.30 feet Mar. 25, 1940.

Remarks.- Records good. Stage of Indian Lake regulated at times by board obstruction on spillway. Gage read once daily prior to July 9.

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 19, May 28 to Sept. 30)

| | | | |
|---|---|---|---|
| 2.5 | 139 | 4.0 | 378 |
| 3.0 | 210 | 5.3 | 618 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 381 | 474 | 486 | 504 | 396 | 336 | 423 | 542 | 327 | 284 | 202 | 190 |
| 2 | 381 | 474 | 486 | 504 | 387 | 336 | 450 | 542 | 327 | 210 | 202 | 190 |
| 3 | 381 | 494 | 486 | 504 | 387 | 336 | 468 | 542 | 336 | 144 | 202 | 184 |
| 4 | 381 | 534 | 486 | 486 | 387 | 336 | 486 | 523 | 336 | 149 | 195 | 184 |
| 5 | 399 | 534 | 486 | 486 | 387 | 336 | 504 | 523 | 336 | 151 | 194 | 180 |
| 6 | 399 | 555 | 486 | 486 | 378 | 327 | 542 | 523 | 344 | 153 | 194 | 176 |
| 7 | 417 | 534 | 468 | 486 | 378 | 336 | 561 | 523 | 336 | 156 | 194 | 174 |
| 8 | 417 | 555 | 468 | 468 | 378 | 336 | 580 | 504 | 336 | 158 | 192 | 170 |
| 9 | 455 | 576 | 450 | 468 | 370 | 336 | 599 | 504 | 336 | 160 | 192 | 170 |
| 10 | 474 | 599 | 450 | 468 | 370 | 336 | 599 | 504 | 336 | 163 | 194 | 166 |
| 11 | 494 | 599 | 450 | 450 | 361 | 344 | 599 | 486 | 336 | 170 | 189 | 165 |
| 12 | 494 | 580 | 441 | 441 | 361 | 336 | 618 | 486 | 336 | 172 | 189 | 166 |
| 13 | 474 | 580 | 441 | 441 | 361 | 336 | 618 | 468 | 336 | 173 | 188 | 159 |
| 14 | 494 | 580 | 441 | 441 | 361 | 344 | 618 | 468 | 327 | 173 | 188 | 165 |
| 15 | 494 | 561 | 441 | 432 | 352 | 336 | 618 | 468 | 327 | 169 | 192 | 167 |
| 16 | 474 | 561 | 432 | 432 | 361 | 336 | 618 | 468 | 327 | 167 | 188 | 170 |
| 17 | 474 | 561 | 432 | 423 | 361 | 336 | 618 | 450 | 327 | 182 | 189 | 184 |
| 18 | 494 | 561 | 432 | 423 | 361 | 344 | 618 | 450 | 318 | 186 | 186 | 195 |
| 19 | 494 | 542 | 432 | 414 | 361 | 352 | 618 | 450 | 318 | 195 | 192 | 284 |
| 20 | 494 | 542 | 432 | 414 | 352 | 352 | 618 | 450 | 318 | 188 | 190 | 387 |
| 21 | 494 | 542 | 441 | 405 | 352 | 361 | 618 | 450 | 310 | 192 | 190 | 387 |
| 22 | 494 | 523 | 450 | 405 | 352 | 361 | 599 | 450 | 310 | 195 | 202 | 387 |
| 23 | 494 | 523 | 450 | 405 | 352 | 361 | 599 | 441 | 310 | 202 | 195 | 378 |
| 24 | 494 | 523 | 468 | 396 | 352 | 352 | 599 | 432 | 302 | 202 | 190 | 396 |
| 25 | 494 | 523 | 468 | 396 | 344 | 361 | 580 | 423 | 302 | 202 | 192 | 387 |
| 26 | 494 | 504 | 486 | 396 | 344 | 370 | 580 | 423 | 293 | 202 | 189 | 387 |
| 27 | 494 | 504 | 486 | 396 | 336 | 378 | 580 | 423 | 293 | 202 | 192 | 387 |
| 28 | 494 | 504 | 486 | 396 | 336 | 387 | 561 | 378 | 284 | 202 | 189 | 387 |
| 29 | 474 | 486 | 486 | 396 | - | 405 | 561 | 327 | 293 | 202 | 190 | 378 |
| 30 | 474 | 486 | 504 | 396 | - | 414 | 561 | 336 | 293 | 195 | 190 | 378 |
| 31 | 474 | - | 504 | 396 | - | 423 | - | 336 | - | 202 | 190 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 14,339 | 494 | 381 | 463 | 1.53 | 1.77 |
| November | 16,114 | 599 | 474 | 537 | 1.78 | 1.98 |
| December | 14,355 | 504 | 432 | 463 | 1.53 | 1.77 |
| Calendar year 1941 | 141,470 | 599 | 146 | 388 | 1.28 | 17.44 |
| January | 13,554 | 504 | 396 | 437 | 1.45 | 1.67 |
| February | 10,178 | 396 | 336 | 364 | 1.21 | 1.25 |
| March | 10,940 | 423 | 327 | 353 | 1.17 | 1.35 |
| April | 17,211 | 618 | 423 | 574 | 1.90 | 2.12 |
| May | 14,293 | 542 | 327 | 461 | 1.53 | 1.76 |
| June | 9,610 | 344 | 284 | 320 | 1.06 | 1.18 |
| July | 5,701 | 284 | 144 | 184 | .609 | .70 |
| August | 5,961 | 202 | 186 | 192 | .636 | .73 |
| September | 7,678 | 396 | 159 | 256 | .848 | .95 |
| Water year 1941-42 | 139,934 | 618 | 144 | 383 | 1.27 | 17.23 |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Menominee River at Twin Falls, near Iron Mountain, Mich.

Location.- Lat. 45°52', long. 88°04', in sec. 12, T. 40 N., R. 31 W., at power plant of Wisconsin Michigan Power Co., 3 miles upstream from Pine River and 3½ miles north of city of Iron Mountain.

Drainage area.- 1,790 square miles.

Records available.- January 1914 to September 1942.

Average discharge.- 28 years, 1,771 second-feet.

Extremes (regulated).- Maximum daily discharge during year, 5,460 second-feet June 7; minimum daily, 1,160 second-feet Jan. 4.
1914-42: Maximum daily discharge, 16,700 second-feet Apr. 23, 24, 1916; minimum daily, 154 second-feet Aug. 9, 1925.

Remarks.- Records good. Discharge determined from power-plant records. Flow regulated by power plant at which station is located and also by plant on Brule River, 5 miles upstream, where drainage area is 58 percent of that at station.

Cooperation.- Records of daily discharge computed by Wisconsin Michigan Power Co., on basis of load-discharge rating of hydroelectric units as developed by Geological Survey in 1932-33 and checked within one percent by two discharge measurements made in September 1939.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,850 | 3,400 | 2,110 | 1,280 | 1,550 | 1,510 | 1,530 | 3,090 | 3,850 | 1,700 | 1,710 | 1,670 |
| 2 | 1,860 | 3,990 | 2,100 | 1,510 | 1,640 | 1,790 | 1,870 | 3,310 | 3,490 | 1,660 | 1,290 | 1,840 |
| 3 | 1,900 | 4,180 | 2,100 | 1,400 | 1,830 | 1,870 | 1,960 | 3,480 | 3,150 | 1,520 | 1,460 | 2,020 |
| 4 | 1,540 | 3,820 | 2,090 | 1,160 | 1,750 | 1,930 | 2,230 | 4,680 | 3,770 | 1,340 | 1,530 | 1,960 |
| 5 | 1,730 | 3,680 | 2,130 | 1,470 | 1,820 | 1,830 | 2,350 | 4,450 | 3,440 | 1,410 | 1,310 | 1,830 |
| 6 | 2,230 | 3,680 | 1,910 | 1,500 | 2,000 | 1,640 | 3,990 | 4,650 | 4,140 | 1,540 | 1,330 | 1,880 |
| 7 | 1,880 | 3,580 | 1,540 | 1,560 | 2,010 | 1,640 | 3,680 | 4,630 | 5,460 | 1,430 | 1,320 | 1,430 |
| 8 | 2,130 | 3,450 | 1,690 | 1,630 | 1,840 | 1,530 | 3,020 | 3,840 | 5,440 | 1,580 | 1,290 | 1,760 |
| 9 | 2,390 | 2,640 | 2,320 | 1,530 | 1,820 | 1,510 | 2,740 | 3,210 | 4,540 | 1,520 | 1,170 | 1,890 |
| 10 | 2,400 | 2,990 | 2,110 | 1,320 | 1,720 | 1,530 | 2,710 | 3,560 | 3,780 | 1,340 | 1,420 | 2,000 |
| 11 | 2,420 | 2,620 | 2,030 | 1,290 | 2,070 | 1,600 | 3,090 | 3,090 | 3,110 | 1,370 | 1,420 | 1,740 |
| 12 | 2,480 | 2,620 | 1,960 | 1,430 | 2,130 | 1,570 | 2,970 | 2,240 | 2,890 | 1,220 | 1,340 | 1,580 |
| 13 | 2,520 | 2,620 | 1,560 | 1,470 | 1,850 | 1,590 | 2,480 | 2,410 | 2,740 | 1,230 | 1,340 | 1,360 |
| 14 | 2,550 | 2,590 | 1,520 | 1,650 | 1,630 | 1,410 | 2,610 | 4,400 | 2,470 | 1,280 | 1,230 | 1,600 |
| 15 | 2,570 | 2,540 | 1,960 | 1,620 | 1,520 | 1,300 | 3,830 | 3,950 | 2,470 | 1,250 | 1,480 | 1,770 |
| 16 | 2,630 | 1,890 | 2,240 | 1,660 | 1,610 | 1,650 | 5,280 | 3,820 | 2,250 | 1,220 | 1,240 | 1,850 |
| 17 | 2,370 | 2,270 | 2,270 | 1,700 | 1,640 | 1,700 | 5,450 | 3,430 | 2,270 | 2,080 | 1,430 | 1,940 |
| 18 | 2,010 | 2,030 | 2,140 | 1,680 | 1,680 | 1,650 | 5,430 | 4,120 | 2,040 | 4,110 | 1,390 | 2,160 |
| 19 | 1,380 | 2,150 | 2,250 | 1,730 | 1,600 | 1,610 | 5,030 | 4,240 | 2,060 | 5,350 | 1,430 | 3,690 |
| 20 | 1,630 | 2,150 | 2,130 | 1,680 | 1,530 | 1,740 | 3,640 | 4,020 | 1,900 | 4,430 | 1,440 | 3,730 |
| 21 | 2,150 | 2,460 | 1,940 | 1,830 | 1,430 | 1,640 | 2,580 | 3,830 | 1,840 | 4,210 | 1,480 | 3,660 |
| 22 | 2,580 | 2,450 | 2,120 | 1,910 | 1,210 | 1,580 | 2,990 | 3,380 | 2,080 | 3,810 | 1,910 | 3,880 |
| 23 | 2,640 | 2,060 | 2,330 | 1,910 | 1,640 | 1,660 | 2,440 | 3,580 | 2,200 | 2,570 | 2,060 | 3,450 |
| 24 | 2,560 | 2,030 | 2,370 | 1,760 | 1,760 | 1,470 | 2,440 | 3,180 | 1,690 | 2,590 | 2,360 | 3,580 |
| 25 | 2,550 | 2,190 | 2,410 | 1,660 | 1,770 | 1,540 | 2,260 | 2,620 | 1,990 | 2,610 | 2,310 | 3,890 |
| 26 | 2,700 | 2,310 | 2,380 | 1,960 | 1,830 | 1,640 | 2,230 | 2,940 | 1,940 | 2,140 | 2,180 | 3,830 |
| 27 | 3,340 | 2,180 | 2,430 | 1,950 | 1,870 | 2,170 | 2,520 | 3,200 | 1,710 | 2,310 | 2,190 | 2,490 |
| 28 | 3,520 | 2,270 | 2,370 | 1,970 | 1,760 | 2,500 | 2,700 | 2,630 | 1,610 | 2,440 | 2,190 | 3,460 |
| 29 | 3,660 | 1,700 | 2,150 | 2,170 | - | 2,440 | 3,250 | 2,510 | 1,880 | 2,070 | 1,870 | 3,670 |
| 30 | 3,460 | 1,820 | 2,080 | 2,330 | - | 2,480 | 3,200 | 3,130 | 1,830 | 2,020 | 1,540 | 3,490 |
| 31 | 3,190 | - | 1,890 | 2,220 | - | 2,150 | - | 3,420 | - | 1,840 | 1,670 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 74,820 | 3,660 | 1,380 | 2,414 | 1.35 | 1.56 |
| November | 80,360 | 4,180 | 1,700 | 2,679 | 1.50 | 1.67 |
| December | 64,850 | 2,430 | 1,520 | 2,092 | 1.17 | 1.35 |
| Calendar year 1941 | 600,452 | 4,180 | 765 | 1,645 | .919 | 12.48 |
| January | 51,940 | 2,330 | 1,160 | 1,675 | .936 | 1.08 |
| February | 48,510 | 2,130 | 1,210 | 1,732 | .968 | 1.01 |
| March | 53,870 | 2,500 | 1,300 | 1,738 | .971 | 1.12 |
| April | 92,550 | 5,450 | 1,530 | 3,085 | 1.72 | 1.92 |
| May | 109,040 | 4,680 | 2,240 | 3,517 | 1.96 | 2.26 |
| June | 84,230 | 5,460 | 1,610 | 2,080 | 1.57 | 1.75 |
| July | 67,190 | 5,350 | 1,220 | 2,167 | 1.21 | 1.40 |
| August | 49,330 | 2,380 | 1,170 | 1,591 | .889 | 1.02 |
| September | 75,100 | 3,890 | 1,360 | 2,503 | 1.40 | 1.56 |
| Water year 1941-42 | 851,790 | 5,460 | 1,160 | 2,334 | 1.30 | 17.70 |

Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Pine River at Pine River power plant, near Florence, Wis.

Location.- Lat. 45°49', long. 88°15', in sec. 28, T. 39 N., R. 18 E., at power plant of Wisconsin Michigan Power Co., 4 miles downstream from Popple River and 6½ miles south of Florence.

Drainage area.- 543 square miles.

Records available.- October 1923 to September 1942. January 1914 to September 1923 at site 4 miles upstream (drainage area, 511 square miles).

Average discharge.- 19 years (1923-42), 438 second-feet.

Extremes (regulated).- Maximum daily discharge during year, 3,230 second-feet July 18; minimum daily, 117 second-feet Jan. 11.
1923-42: Maximum daily discharge, 4,380 second-feet Apr. 9, 1929; no flow at times in 1924, 1926, 1927, 1930, 1931, 1933, 1940.

Remarks.- Records good except those for high stages, which are fair. Discharge determined from power-plant records. Flow regulated by power plant at station, but pondage is small and monthly discharge is very nearly natural flow.

Cooperation.- Records of daily discharge computed by Wisconsin Michigan Power Co. on basis of load-discharge rating of hydroelectric units as developed by Geological Survey in 1931-32 and revised in 1939 on basis of two discharge measurements made in September 1939.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 509 | 894 | 356 | 312 | 312 | 135 | 611 | 945 | 1,440 | 484 | 611 | 357 |
| 2 | 552 | 1,040 | 401 | 312 | 208 | 285 | 784 | 1,010 | 1,540 | 424 | 589 | 343 |
| 3 | 511 | 1,100 | 418 | 312 | 208 | 208 | 864 | 1,100 | 1,520 | 447 | 500 | 356 |
| 4 | 598 | 1,060 | 415 | 312 | 299 | 207 | 967 | 1,290 | 1,390 | 533 | 470 | 328 |
| 5 | 683 | 971 | 434 | 160 | 208 | 216 | 1,260 | 1,340 | 1,330 | 520 | 461 | 358 |
| 6 | 558 | 780 | 501 | 176 | 208 | 216 | 1,300 | 1,260 | 1,230 | 508 | 402 | 312 |
| 7 | 1,090 | 807 | 342 | 192 | 294 | 221 | 1,200 | 1,030 | 1,290 | 487 | 434 | 312 |
| 8 | 1,310 | 744 | 513 | 203 | 143 | 219 | 1,070 | 931 | 1,010 | 392 | 561 | 345 |
| 9 | 1,170 | 744 | 418 | 166 | 312 | 208 | 1,020 | 838 | 984 | 364 | 390 | 404 |
| 10 | 1,090 | 744 | 322 | 173 | 208 | 296 | 984 | 698 | 727 | 346 | 481 | 539 |
| 11 | 1,080 | 664 | 289 | 117 | 312 | 208 | 984 | 719 | 798 | 341 | 355 | 517 |
| 12 | 1,010 | 624 | 301 | 202 | 216 | 208 | 944 | 598 | 722 | 302 | 377 | 489 |
| 13 | 846 | 624 | 303 | 186 | 220 | 208 | 864 | 585 | 638 | 299 | 359 | 598 |
| 14 | 861 | 611 | 643 | 182 | 220 | 208 | 864 | 1,660 | 530 | 299 | 360 | 598 |
| 15 | 762 | 509 | 364 | 195 | 257 | 273 | 1,140 | 1,570 | 571 | 208 | 332 | 607 |
| 16 | 724 | 538 | 396 | 208 | 221 | 208 | 1,290 | 1,450 | 538 | 307 | 338 | 606 |
| 17 | 614 | 556 | 371 | 208 | 220 | 249 | 1,340 | 1,210 | 395 | 1,600 | 338 | 671 |
| 18 | 611 | 585 | 394 | 257 | 220 | 208 | 1,340 | 1,080 | 424 | 3,230 | 349 | 1,010 |
| 19 | 611 | 520 | 392 | 208 | 292 | 312 | 1,250 | 1,150 | 483 | 3,130 | 339 | 1,510 |
| 20 | 581 | 498 | 312 | 312 | 208 | 247 | 1,100 | 1,180 | 412 | 3,010 | 343 | 1,610 |
| 21 | 697 | 580 | 312 | 208 | 125 | 249 | 1,060 | 1,020 | 469 | 2,580 | 312 | 1,670 |
| 22 | 757 | 522 | 415 | 266 | 217 | 359 | 904 | 838 | 533 | 2,050 | 381 | 1,490 |
| 23 | 731 | 356 | 454 | 218 | 208 | 312 | 864 | 765 | 337 | 1,680 | 494 | 1,330 |
| 24 | 731 | 398 | 520 | 312 | 208 | 307 | 784 | 718 | 433 | 1,310 | 474 | 1,160 |
| 25 | 656 | 370 | 500 | 208 | 208 | 452 | 731 | 643 | 421 | 1,070 | 505 | 1,050 |
| 26 | 621 | 431 | 504 | 221 | 208 | 437 | 703 | 589 | 382 | 909 | 386 | 940 |
| 27 | 864 | 454 | 410 | 312 | 208 | 565 | 726 | 589 | 364 | 718 | 343 | 861 |
| 28 | 864 | 432 | 385 | 221 | 208 | 617 | 918 | 584 | 359 | 656 | 359 | 843 |
| 29 | 861 | 392 | 409 | 322 | - | 623 | 958 | 568 | 424 | 611 | 371 | 851 |
| 30 | 861 | 342 | 357 | 221 | - | 624 | 958 | 732 | 563 | 611 | 311 | 791 |
| 31 | 786 | - | 315 | 228 | - | 599 | - | 1,240 | - | 611 | 363 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 24,170 | 1,310 | 509 | 780 | 1.44 | 1.66 |
| November | 18,889 | 1,100 | 342 | 630 | 1.16 | 1.29 |
| December | 12,435 | 643 | 289 | 401 | .738 | .85 |
| Calendar year 1941 | 171,862 | 2,160 | 50 | 471 | .867 | 11.77 |
| January | 7,130 | 322 | 117 | 230 | .424 | .49 |
| February | 6,376 | 312 | 125 | 228 | .420 | .44 |
| March | 9,884 | 624 | 135 | 312 | .575 | .66 |
| April | 29,782 | 1,340 | 611 | 993 | 1.83 | 2.04 |
| May | 29,930 | 1,660 | 568 | 965 | 1.78 | 2.05 |
| June | 22,247 | 1,540 | 337 | 742 | 1.37 | 1.53 |
| July | 30,037 | 3,230 | 208 | 969 | 1.78 | 2.05 |
| August | 12,888 | 611 | 311 | 409 | .753 | .87 |
| September | 22,846 | 1,670 | 312 | 762 | 1.40 | 1.56 |
| Water year 1941-42 | 226,214 | 3,230 | 117 | 620 | 1.14 | 15.49 |

Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Pike River at Amberg, Wis.

Location.- Staff gage, lat. 45°29', long. 88°00', in sec. 21, T. 35 N., R. 20 E., 500 feet upstream from Chicago, Milwaukee, St. Paul & Pacific Railroad bridge, a quarter of a mile south of Amberg, and 1¾ miles downstream from North Branch.

Drainage area.- 250 square miles.

Records available.- February 1914 to September 1942.

Average discharge.- 28 years, 233 second-feet.

Extremes.- Maximum discharge observed during year, 837 second-feet Apr. 6 (gage height, 4.08 feet); minimum observed, 132 second-feet Aug. 18-21, Sept. 6.
1914-42: Maximum discharge observed, 2,730 second-feet Apr. 10, 1922 (gage height, 7.68 feet, site and datum then in use), from rating curve extended above 1,100 second-feet; minimum observed, 26 second-feet Dec. 27, 1925 (gage height, 1.30 feet, site and datum then in use).

Remarks.- Records good except those for periods of ice effect, which are fair. Gage read once daily.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | |
|---|---|---|---|
| 1.9 | 132 | 3.0 | 449 |
| 2.0 | 153 | 3.5 | 620 |
| 2.2 | 204 | 4.0 | 800 |
| 2.5 | 289 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 335 | 585 | 260 | 265 | 210 | 190 | 620 | 415 | 727 | 260 | 21e | 177 |
| 2 | 335 | 800 | 260 | 200 | 200 | 190 | 727 | 482 | 655 | 231 | a204 | 165 |
| 3 | 320 | 763 | 260 | 192 | 210 | 190 | 800 | 516 | 550 | 274 | 190 | 153 |
| 4 | 320 | 655 | 260 | 192 | 212 | 190 | 800 | 655 | 449 | 294 | 177 | 142 |
| 5 | 449 | 585 | 265 | 198 | 210 | 190 | a818 | 550 | 382 | 260 | 165 | 142 |
| 6 | 620 | 482 | 270 | 202 | 208 | 190 | 837 | 516 | 415 | 246 | 165 | 132 |
| 7 | 691 | 432 | 274 | 205 | 180 | 190 | 727 | 449 | 432 | 231 | 165 | 142 |
| 8 | 763 | 398 | 274 | 205 | 180 | 192 | 655 | 398 | 382 | 204 | 165 | 153 |
| 9 | 655 | 366 | 270 | 203 | 180 | 195 | 691 | 366 | 335 | 190 | 165 | 153 |
| 10 | 585 | 366 | 250 | 200 | 205 | 192 | 655 | 335 | 294 | 190 | 153 | 153 |
| 11 | 482 | 350 | 210 | 195 | 200 | 190 | 585 | 320 | 335 | 177 | 153 | 142 |
| 12 | 432 | 335 | 210 | 192 | 196 | *189 | 550 | 350 | 366 | 165 | 153 | 153 |
| 13 | 398 | 320 | 215 | 187 | *192 | 190 | 516 | 350 | 320 | 165 | 142 | 165 |
| 14 | 449 | 320 | 220 | 182 | 192 | 190 | 482 | 382 | 274 | 153 | 142 | 177 |
| 15 | 482 | 320 | 230 | 178 | 190 | 190 | 482 | 482 | 260 | 153 | 142 | 177 |
| 16 | 449 | 320 | 246 | *175 | 190 | 204 | 516 | 482 | 231 | 153 | 142 | 190 |
| 17 | 398 | 294 | 246 | 170 | 190 | 218 | 516 | 432 | 218 | 320 | 142 | 320 |
| 18 | 366 | 294 | 246 | 185 | 190 | 231 | 482 | 398 | 231 | 585 | 132 | 415 |
| 19 | 350 | 294 | 231 | 205 | 190 | 218 | 449 | 398 | 231 | 585 | 132 | 516 |
| 20 | 350 | 320 | 236 | 220 | 190 | 246 | 398 | 366 | 246 | 449 | 132 | 516 |
| 21 | 415 | 320 | 242 | 220 | 190 | 289 | 366 | 335 | 260 | 335 | 132 | 516 |
| 22 | 432 | 294 | 246 | 220 | 190 | 294 | 350 | 320 | 246 | 274 | 153 | 449 |
| 23 | 398 | 294 | 289 | 220 | 190 | 289 | 335 | 294 | 231 | 231 | 190 | 382 |
| 24 | 366 | 289 | 300 | 220 | 190 | 350 | 320 | 274 | 218 | 218 | 177 | 382 |
| 25 | 335 | 260 | 310 | 220 | 190 | 382 | 294 | 260 | 218 | 204 | 165 | 350 |
| 26 | a426 | 265 | 310 | 217 | 190 | 432 | 289 | 260 | 204 | 190 | 153 | 320 |
| 27 | 516 | 265 | 302 | 217 | 190 | 620 | 294 | 274 | 204 | 190 | 142 | 320 |
| 28 | 585 | 260 | 295 | 215 | 190 | 800 | 335 | 260 | 190 | 190 | 142 | 294 |
| 29 | 516 | 260 | 288 | 215 | - | 763 | 320 | 260 | 260 | 231 | 142 | 289 |
| 30 | 449 | 260 | 280 | 215 | - | 691 | 366 | 366 | 294 | 218 | 142 | 274 |
| 31 | 415 | - | 275 | 215 | - | 620 | - | 655 | - | 231 | 165 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 14,082 | 763 | 320 | 454 | 1.82 | 2.10 |
| November | 11,366 | 800 | 260 | 379 | 1.52 | 1.70 |
| December | 8,070 | 310 | 210 | 260 | 1.04 | 1.20 |
| Calendar year 1941 | 95,947 | 960 | 86 | 263 | 1.05 | 14.30 |
| January | 6,345 | 265 | 170 | 205 | .820 | .95 |
| February | 5,435 | 212 | 180 | 194 | .776 | .81 |
| March | 9,505 | 800 | 189 | 307 | 1.23 | 1.42 |
| April | 15,575 | 837 | 289 | 519 | 2.08 | 2.32 |
| May | 12,200 | 655 | 260 | 394 | 1.58 | 1.82 |
| June | 9,658 | 727 | 190 | 322 | 1.29 | 1.44 |
| July | 7,797 | 585 | 153 | 252 | 1.01 | 1.16 |
| August | 4,882 | 218 | 132 | 157 | .628 | .72 |
| September | 7,859 | 516 | 132 | 262 | 1.05 | 1.17 |
| Water year 1941-42 | 112,774 | 837 | 132 | 309 | 1.24 | 16.81 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Nov. 25-27, Dec. 5, 6, 8-15, 20, 21, Dec. 24 to Feb. 14, Feb. 16 to Mar. 14.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942: central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Oconto River near Gillett, Wis.

Location.- Water-stage recorder, lat. 44°52', long. 88°18', in sec. 34, T. 28 N., R. 18 E., at highway bridge 2 miles upstream from Christy Brook and 2½ miles south of Gillett.

Drainage area.- 678 square miles.

Records available.- June 1906 to March 1909, January 1914 to September 1942.

Average discharge.- 29 years (1908, 1914-42), 606 second-feet.

Extremes.- Maximum discharge during year, 2,340 second-feet Apr. 6 or 7 (gage height, 4.16 feet); maximum gage height, 5.85 feet Jan. 7 (affected by ice); minimum, 93 second-feet Nov. 26 (gage height, 0.13 foot).
1906-9, 1914-42: Maximum discharge observed, 6,470 second-feet Apr. 11, 1922, caused by failure of dam at Pulcifer, 4 miles upstream (gage height, 9.1 feet); minimum, that of Nov. 26, 1941.

Remarks.- Records excellent except those for periods of ice effect or no gage-height record, which are fair.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.0 | 340 | 1.8 | 710 | 3.0 | 1,440 |
| 1.2 | 423 | 2.2 | 912 | 3.5 | 1,800 |
| 1.5 | 562 | 2.6 | 1,150 | 4.0 | 2,100 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 760 | 1,580 | 735 | 610 | 560 | 500 | 1,730 | 886 | 1,260 | 685 | 500 | 364 |
| 2 | 785 | 1,620 | 710 | 480 | 560 | 500 | 1,660 | 938 | 1,400 | 635 | 505 | 364 |
| 3 | 735 | 1,700 | 685 | 485 | 530 | 500 | a1,680 | 992 | 1,540 | 586 | 500 | 364 |
| 4 | 760 | 1,730 | 710 | 510 | 500 | 500 | a1,800 | 1,080 | 1,510 | 586 | 468 | 356 |
| 5 | 835 | 1,700 | 735 | 525 | 510 | 500 | a2,020 | 1,220 | 1,400 | 610 | 446 | 348 |
| 6 | 912 | 1,580 | 735 | 560 | 535 | 500 | a2,260 | 1,290 | 1,290 | 635 | 450 | 344 |
| 7 | 1,050 | 1,480 | 735 | 575 | 560 | 505 | a2,300 | 1,330 | 1,220 | 660 | 519 | 348 |
| 8 | 1,260 | 1,370 | 710 | 580 | 565 | 515 | a2,290 | 1,290 | 1,220 | 610 | 509 | 360 |
| 9 | 1,510 | 1,260 | 620 | 575 | 535 | 520 | 2,140 | 1,220 | 1,220 | 586 | 482 | 364 |
| 10 | 1,540 | 1,180 | 540 | 570 | 500 | 520 | 1,940 | 1,150 | 1,180 | 562 | 468 | 372 |
| 11 | 1,440 | 1,120 | 500 | 560 | 495 | 520 | 1,760 | 1,080 | 1,150 | 538 | 454 | 372 |
| 12 | 1,330 | 1,050 | 515 | 560 | 490 | *520 | 1,620 | 1,180 | 1,050 | 500 | 446 | 376 |
| 13 | 1,220 | 1,020 | 540 | 565 | *490 | 520 | 1,510 | 1,180 | 1,020 | 454 | 432 | 402 |
| 14 | 1,290 | 992 | 570 | 575 | 490 | 530 | 1,440 | 1,220 | 965 | 450 | 419 | 423 |
| 15 | 1,290 | 938 | 600 | 580 | 490 | 560 | 1,370 | 1,220 | 938 | 446 | 410 | 446 |
| 16 | 1,330 | 912 | 660 | *590 | 490 | 680 | 1,290 | 1,220 | 860 | 450 | 402 | 473 |
| 17 | 1,330 | 912 | 720 | 590 | 485 | 770 | 1,260 | 1,220 | 785 | 468 | 397 | 635 |
| 18 | 1,290 | 886 | 770 | 590 | 480 | 800 | 1,220 | 1,220 | 735 | 562 | 393 | 912 |
| 19 | 1,290 | 886 | 780 | 590 | 480 | 850 | 1,180 | 1,180 | 660 | 610 | 384 | 1,080 |
| 20 | 1,330 | 860 | 720 | 590 | 475 | 960 | 1,120 | 1,120 | 660 | 660 | 380 | 1,150 |
| 21 | 1,330 | 860 | 690 | 590 | 485 | 1,100 | 1,050 | 1,020 | 685 | 635 | 360 | 1,290 |
| 22 | 1,330 | 835 | 770 | 585 | 500 | 1,260 | 992 | 938 | 685 | 610 | 360 | 1,290 |
| 23 | 1,290 | 810 | 912 | 580 | 500 | 1,420 | 965 | 886 | 660 | 543 | 348 | 1,260 |
| 24 | 1,260 | 785 | 1,020 | 580 | 495 | 1,560 | 886 | 810 | 610 | 468 | 348 | 1,150 |
| 25 | 1,220 | 696 | 1,020 | 580 | 490 | 1,660 | 835 | 760 | 586 | 436 | 344 | 1,080 |
| 26 | 1,120 | 713 | 960 | 580 | 490 | 1,730 | 810 | 710 | 562 | 450 | 352 | 1,020 |
| 27 | 1,260 | 710 | 890 | 575 | 490 | 1,760 | 760 | 685 | 562 | 454 | 356 | 965 |
| 28 | 1,260 | 710 | 840 | 570 | 495 | 1,780 | 735 | 685 | 660 | 450 | 356 | 886 |
| 29 | 1,370 | 760 | 815 | 570 | - | 1,800 | 785 | 835 | 860 | 459 | 356 | 835 |
| 30 | 1,480 | 735 | 800 | 565 | - | 1,840 | 860 | 1,080 | 760 | 473 | 360 | 785 |
| 31 | 1,480 | - | 780 | 560 | - | 1,840 | - | 1,180 | - | 496 | 360 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 37,687 | 1,540 | 735 | 1,216 | 1.79 | 2.06 |
| November | 32,390 | 1,730 | 696 | 1,080 | 1.59 | 1.77 |
| December | 22,787 | 1,020 | 500 | 735 | 1.08 | 1.24 |
| Calendar year 1941 | 258,665 | 1,900 | 226 | 709 | 1.05 | 14.16 |
| January | 17,595 | 610 | 480 | 568 | .838 | .97 |
| February | 14,165 | 565 | 475 | 506 | .746 | .78 |
| March | 29,520 | 1,840 | 500 | 952 | 1.40 | 1.61 |
| April | 42,268 | 2,300 | 735 | 1,409 | 2.08 | 2.32 |
| May | 32,825 | 1,330 | 685 | 1,059 | 1.56 | 1.80 |
| June | 28,693 | 1,540 | 562 | 956 | 1.41 | 1.57 |
| July | 16,767 | 685 | 436 | 541 | .798 | .92 |
| August | 12,864 | 519 | 344 | 415 | .612 | .71 |
| September | 20,414 | 1,290 | 344 | 680 | 1.00 | 1.12 |
| Water year 1941-42 | 307,975 | 2,300 | 344 | 844 | 1.24 | 16.87 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for Wolf River above West Branch of Wolf River.
Note.- Stage-discharge relation affected by ice Dec. 9-22, Dec. 26 to Mar. 27.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Wheeler Lake near Lakewood, Wis.

Location.- Staff gage, lat. 45°19', long. 88°29', in sec. 27, T. 33 N., R. 16 E., on southwest shore of lake at Berglund's resort, 3½ miles east of Lakewood.

Drainage area.- 2 square miles.

Records available.- August 1936 to September 1942 (fragmentary).

Extremes.- Maximum elevation observed during year, 96.46 feet Sept. 18, 21; minimum, 95.46 feet Oct. 3.
1936-42: Maximum elevation observed, that of Sept. 18, 21, 1942; minimum observed, 93.64 feet Oct. 9, 12, 1937.

Remarks.- Gage heights have been reduced to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1941 to September 1942

| Date | Elevation | Date | Elevation | Date | Elevation | Date | Elevation | Date | Elevation |
|---|---|---|---|---|---|---|---|---|---|
| Oct. 3 | 5.46 | Dec. 5 | 5.70 | Apr. 6 | 6.14 | June 8 | 6.38 | Aug. 10 | 6.20 |
| 6 | 5.56 | 8 | 5.70 | 10 | 6.04 | 12 | 6.40 | 14 | 5.98 |
| 10 | 5.58 | 12 | 5.70 | 13 | 6.10 | 15 | 6.40 | 17 | 5.92 |
| 13 | 5.58 | 15 | 5.70 | 17 | 6.12 | 19 | 6.34 | 21 | 5.92 |
| 17 | 5.58 | 19 | 5.74 | 21 | 6.10 | 22 | 6.24 | 24 | 5.80 |
| 20 | 5.60 | 22 | 5.74 | 24 | 6.10 | 26 | 6.20 | 28 | 5.84 |
| 24 | 5.60 | 26 | 5.76 | 27 | 6.12 | 29 | 6.20 | 31 | 5.86 |
| 27 | 5.66 | 29 | 5.78 | May 1 | 6.14 | July 3 | 6.20 | Sept. 4 | 5.84 |
| 31 | 5.70 | Jan. 2 | 5.86 | 4 | 6.16 | 6 | 6.18 | 7 | 5.80 |
| Nov. 3 | 5.74 | 5 | 5.86 | 8 | 6.16 | 10 | 6.16 | 11 | 5.80 |
| 7 | 5.72 | 9 | 5.84 | 11 | 6.20 | 13 | 6.12 | 14 | 5.84 |
| 10 | 5.72 | 12 | 5.86 | 15 | 6.26 | 17 | 6.18 | 18 | 6.46 |
| 14 | 5.70 | 16 | 5.88 | 18 | 6.20 | 20 | 6.18 | 21 | 6.46 |
| 17 | 5.70 | 19 | 5.94 | 22 | 6.16 | 24 | 6.12 | 25 | 6.44 |
| 21 | 5.72 | 23 | 5.98 | 25 | 6.16 | 27 | 6.10 | 28 | 6.40 |
| 24 | 5.70 | 26 | 5.99 | 29 | 6.20 | 31 | 6.14 | | |
| 28 | 5.70 | 30 | 6.02 | June 1 | 6.34 | Aug. 3 | 6.08 | | |
| Dec. 1 | 5.68 | Apr. 3 | 6.04 | 5 | 6.36 | 7 | 6.10 | | |

Note.- Add 90 feet to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Boot Lake near Townsend, Wis.

Location.- Staff gage, lat. 45°15', long. 88°39', in sec. 9, T. 32 N., R. 15 E., on narrow neck of land cut by small channel extending across north end of lake, 5½ miles southwest of Townsend.

Drainage area.- 1.5 square miles.

Records available.- August 1936 to September 1942 (fragmentary).

Extremes.- Maximum elevation observed during year, 97.98 feet June 11; minimum, 96.61 feet Oct. 1.
1936-42: Maximum elevation observed, that of June 11, 1942; minimum, 94.69 feet Oct. 31, Nov. 7, 1936.

Remarks.- Gage heights have been reduced to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1941 to September 1942

| Date | Elevation | Date | Elevation | Date | Elevation | Date | Elevation |
|---|---|---|---|---|---|---|---|
| Oct. 1 | 96.61 | Dec. 6 | 97.00 | Apr. 3 | 97.62 | June 30 | 97.74 |
| 4 | 96.73 | 9 | 96.97 | 6 | 97.66 | July 6 | 97.76 |
| 8 | 96.77 | 13 | 96.97 | 9 | 97.72 | 13 | 97.70 |
| 11 | 96.76 | 16 | 97.00 | 15 | 97.72 | 23 | 97.64 |
| 15 | 96.75 | 20 | 97.04 | 21 | 97.66 | 28 | 97.64 |
| 18 | 96.79 | 27 | 97.24 | 25 | 97.61 | Aug. 3 | 97.65 |
| 22 | 96.81 | 31 | 97.22 | 30 | 97.72 | 7 | 97.62 |
| 25 | 96.84 | Jan. 12 | 97.30 | May 5 | 97.82 | 13 | 97.52 |
| 29 | 96.92 | 16 | 97.30 | 12 | 97.78 | 20 | 97.44 |
| Nov. 1 | 96.97 | 19 | 97.30 | 15 | 97.86 | 26 | 97.34 |
| 5 | 97.00 | 22 | 97.29 | 20 | 97.80 | Sept. 2 | 97.32 |
| 8 | 96.98 | 30 | 97.30 | 27 | 97.72 | 9 | 97.28 |
| 12 | 96.97 | Feb. 11 | 97.32 | June 1 | 97.90 | 14 | 97.32 |
| 15 | 96.95 | 20 | 97.38 | 6 | 97.92 | 23 | 97.54 |
| 19 | 96.97 | Mar. 4 | 97.30 | 11 | 97.98 | 30 | 97.50 |
| 22 | 97.00 | 13 | 97.34 | 18 | 97.90 | | |
| Dec. 1 | 96.97 | 24 | 97.50 | 24 | 97.80 | | |

Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Fox River at Berlin, Wis.

Location.- Staff gage, lat. 43°57'05", long. 88°57'30", in sec. 16, T. 17 N., R. 13 E., at Government lock and dam at Berlin, 2½ miles upstream from Barnes Creek.

Drainage area.- 1,430 square miles.

Records available.- January 1898 to September 1942.

Average discharge.- 44 years, 1,123 second-feet.

Extremes.- Maximum daily discharge during year, 2,740 second-feet Mar. 20, 21; minimum daily, 676 second-feet Apr. 26, 27.
1898-1942: Maximum daily discharge, 6,620 second-feet Mar. 21, 23, 1929; minimum daily, 250 second-feet Feb. 1-4, 1900.

Remarks.- Records good except those for period of ice effect, which are fair. Gage read once daily.

Cooperation.- Gage-height record and computations of daily discharge furnished by Corps of Engineers, U. S. Army; six discharge measurements made and records reviewed by Geological Survey.

**Rating table, water year 1941-42, except period of ice effect**
**(gage height, in feet, and discharge, in second-feet)**
**(Shifting-control method used Oct. 1-20, Nov.3-5)**

| | | | | | |
|---|---|---|---|---|---|
| 8.0 | 740 | 9.5 | 1,380 | 12.0 | 2,880 |
| 8.5 | 920 | 10.0 | 1,630 | | |
| 9.0 | 1,130 | 11.0 | 2,230 | | |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 740 | 1,430 | 960 | 1,440 | 1,110 | 780 | 1,870 | 740 | 1,810 | 1,130 | 1,080 | 707 |
| 2 | 774 | 1,530 | 960 | 1,290 | 1,090 | 780 | 1,810 | 740 | 2,050 | 1,040 | 1,080 | 1,000 |
| 3 | 740 | 1,690 | 960 | 1,170 | 1,010 | 780 | 1,750 | 774 | 2,290 | 1,040 | 1,040 | 1,000 |
| 4 | 707 | 1,710 | 1,000 | 1,170 | 1,010 | 810 | 1,690 | 809 | 2,350 | 1,000 | 1,000 | 960 |
| 5 | 740 | 1,730 | 1,000 | 1,170 | 1,010 | 930 | 1,630 | 774 | 2,410 | 1,000 | 960 | 960 |
| 6 | 774 | 1,750 | 920 | 1,210 | 1,050 | 1,030 | 1,690 | 809 | 2,410 | 920 | 920 | 920 |
| 7 | 845 | 1,750 | 920 | 1,170 | 1,050 | 1,130 | 1,690 | 1,000 | 2,410 | 920 | 1,080 | 960 |
| 8 | 920 | 1,750 | 920 | 1,050 | 1,010 | 1,230 | 1,690 | 1,130 | 2,410 | 920 | 1,130 | 960 |
| 9 | 960 | 1,750 | 920 | 930 | *990 | 1,290 | 1,690 | 1,180 | 2,350 | 882 | 1,180 | 960 |
| 10 | 960 | 1,750 | 809 | 839 | 950 | 1,360 | 1,630 | 1,230 | 2,230 | 845 | 1,180 | 960 |
| 11 | 1,040 | 1,690 | 845 | 778 | 950 | 1,430 | 1,580 | 1,230 | 2,410 | 707 | 1,130 | 960 |
| 12 | 1,040 | 1,630 | 920 | *778 | 950 | 1,510 | 1,580 | 1,430 | 2,470 | 707 | 1,080 | 960 |
| 13 | 1,040 | 1,630 | 960 | 778 | 950 | 1,690 | 1,530 | 1,630 | 2,470 | 707 | 1,040 | 960 |
| 14 | 1,080 | 1,580 | 960 | 734 | 950 | 1,820 | 1,530 | 1,810 | 2,470 | 740 | 1,000 | 1,040 |
| 15 | 1,130 | 1,530 | 960 | 734 | 915 | 2,080 | 1,480 | 1,810 | 2,350 | 740 | 1,000 | 1,080 |
| 16 | 1,080 | 1,530 | 960 | 734 | 950 | 2,300 | 1,430 | 1,930 | 2,290 | 845 | 960 | 1,130 |
| 17 | 1,080 | 1,430 | 920 | 734 | 915 | 2,570 | 1,330 | 1,930 | 2,170 | 882 | 920 | 1,130 |
| 18 | 1,130 | 1,380 | 960 | 763 | 870 | 2,710 | 1,230 | 1,990 | 2,110 | 845 | 920 | 1,280 |
| 19 | 1,280 | 1,380 | 1,000 | 793 | 810 | 2,710 | 1,180 | 1,930 | 2,110 | 845 | 845 | 1,480 |
| 20 | 1,330 | 1,330 | 1,040 | 793 | 810 | 2,740 | 1,080 | 1,870 | 1,990 | 809 | 845 | 1,530 |
| 21 | 1,380 | 1,330 | 1,040 | 823 | 780 | 2,740 | 1,080 | 1,750 | 1,990 | 774 | 809 | 1,690 |
| 22 | 1,430 | 1,280 | 1,130 | 853 | 750 | 2,600 | 1,040 | 1,750 | 1,930 | 774 | 774 | 1,690 |
| 23 | 1,480 | 1,230 | 1,130 | 883 | 750 | 2,410 | 1,040 | 1,690 | 1,870 | 774 | 774 | 1,750 |
| 24 | 1,480 | 1,080 | 1,280 | 913 | 721 | 2,350 | 960 | 1,580 | 1,750 | 774 | 774 | 1,810 |
| 25 | 1,480 | 1,080 | 1,330 | 951 | 750 | 2,230 | 740 | 1,530 | 1,630 | 740 | 774 | 1,810 |
| 26 | 1,480 | 1,080 | 1,380 | 990 | 750 | 2,170 | 676 | 1,430 | 1,530 | 740 | 740 | 1,810 |
| 27 | 1,480 | 1,080 | 1,280 | 1,030 | 750 | 2,110 | 676 | 1,280 | 1,380 | 707 | 740 | 1,810 |
| 28 | 1,380 | 1,040 | 1,230 | 1,070 | 750 | 2,110 | 707 | 1,180 | 1,280 | 707 | 707 | 1,810 |
| 29 | 1,380 | 1,040 | 1,330 | 1,070 | - | 2,050 | 707 | 1,130 | 1,230 | 882 | 707 | 1,810 |
| 30 | 1,330 | 1,000 | 1,380 | 1,110 | - | 1,990 | 707 | 1,000 | 1,180 | 960 | 740 | 1,750 |
| 31 | 1,330 | - | 1,480 | 1,110 | - | 1,930 | - | 1,380 | - | 1,080 | 740 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 34,970 | 1,480 | 707 | 1,128 | 0.789 | 0.91 |
| November | 43,190 | 1,750 | 1,000 | 1,440 | 1.01 | 1.13 |
| December | 32,884 | 1,480 | 809 | 1,061 | .742 | .86 |
| Calendar year 1941 | 430,243 | 3,540 | 467 | 1,179 | .824 | 11.20 |
| January | 29,861 | 1,440 | 734 | 963 | .673 | .78 |
| February | 25,351 | 1,110 | 721 | 905 | .633 | .66 |
| March | 56,370 | 2,740 | 780 | 1,818 | 1.27 | 1.46 |
| April | 39,423 | 1,870 | 676 | 1,314 | .919 | 1.03 |
| May | 42,446 | 1,990 | 740 | 1,369 | .957 | 1.10 |
| June | 61,330 | 2,470 | 1,180 | 2,044 | 1.43 | 1.60 |
| July | 26,436 | 1,130 | 707 | 853 | .597 | .69 |
| August | 28,669 | 1,180 | 707 | 925 | .647 | .75 |
| September | 38,617 | 1,810 | 707 | 1,287 | .900 | 1.00 |
| Water year 1941-42 | 459,547 | 2,740 | 676 | 1,259 | .880 | 11.97 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 1 to Mar. 19.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Lake Winnebago at Oshkosh, Wis.

Location.- Staff gage, lat. 44°00'40", long. 88°32'00", in sec. 24, T. 18 N., R. 17 E., in mouth of upper Fox River at Chicago & Northwestern Railroad bridge, 0.2 mile downstream from Main Street Bridge in Oshkosh and 18 miles up the lake from Menasha Dam and outlet. Datum of gage is 745.05 feet above mean sea level (levels by Corps of Engineers, U. S. Army). Prior to 1882 lake levels were referred to Deuchman gage at lake outlet at Menasha Dam. Datum of Deuchman gage, which is still in existence, is 745.00 feet above mean sea level.

Drainage area.- 6,030 square miles at lake outlet at Menasha Dam.

Records available.- October 1938 to September 1942. Records from 1857 to 1938 in files of Corps of Engineers, U. S. Army. A report on Fox River by Corps of Engineers, U. S. Army, is published as House Document No. 146, 67th Congress, 2nd Session.

Extremes.- Maximum gage height observed during year, 3.33 feet June 1; minimum observed, 1.29 feet Mar. 9.

1857-1942: Maximum gage height observed, 5.33 feet (Deuchman gage) Nov. 8, 1881; minimum observed, -2.00 feet (Deuchman gage) Nov. 28, 1891.

Remarks.- Lake elevations controlled by dams at Menasha and Neenah which are operated in the interest of navigation. Crests of both dams are at elevation 746.73 feet. Present limits of regulation are from 21½ inches above crest of Menasha Dam down to crest during navigation season, plus additional 18 to 24 inches below crest during winter. Oshkosh gage gives true level of the lake while Deuchman gage readings are affected by loss of head in the channel between the lake and dam. Gage read once daily.

Cooperation.- Records furnished by Corps of Engineers, U. S. Army.

Gage height, in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.75 | 2.98 | 2.75 | 2.65 | 2.02 | 1.46 | 2.29 | 3.08 | 3.33 | 3.08 | 3.06 | 2.63 |
| 2 | 2.79 | 3.06 | 2.79 | 2.69 | 1.98 | 1.42 | 2.35 | 3.08 | 3.15 | 3.04 | 3.08 | 2.65 |
| 3 | 2.77 | 3.02 | 2.73 | 2.67 | 1.96 | 1.42 | 2.48 | 3.10 | 3.27 | 2.92 | 3.10 | 2.67 |
| 4 | 2.81 | 3.00 | 2.73 | 2.63 | 1.92 | 1.40 | 2.46 | 3.10 | 3.17 | 3.00 | 3.10 | 2.58 |
| 5 | 2.83 | 3.02 | 2.75 | 2.58 | 1.94 | 1.40 | 2.42 | 3.13 | 3.27 | 3.06 | 3.04 | 2.56 |
| 6 | 2.85 | 3.02 | 2.65 | 2.58 | 1.92 | 1.38 | 2.40 | 3.25 | 3.27 | 3.02 | 3.08 | 2.56 |
| 7 | 2.44 | 3.00 | 2.71 | 2.56 | 1.92 | 1.33 | 2.54 | 3.02 | 3.23 | 3.02 | 3.08 | 2.58 |
| 8 | 2.94 | 2.96 | 2.50 | 2.52 | 1.90 | 1.31 | 2.63 | 3.04 | 3.19 | 3.08 | 3.06 | 2.63 |
| 9 | 2.92 | 3.00 | 2.65 | 2.50 | 1.90 | 1.29 | 2.69 | 3.23 | 3.15 | 3.04 | 3.10 | 2.60 |
| 10 | 2.94 | 2.98 | 2.50 | 2.46 | 1.88 | 1.38 | 2.67 | 3.04 | 3.10 | 3.02 | 3.08 | 2.58 |
| 11 | 2.98 | 2.96 | 2.56 | 2.44 | 1.83 | 1.40 | 2.65 | 3.00 | 3.17 | 3.02 | 3.06 | 2.56 |
| 12 | 3.00 | 2.96 | 2.58 | 2.42 | 1.79 | 1.40 | 2.85 | 3.08 | 3.25 | 3.00 | 3.04 | 2.56 |
| 13 | 3.00 | 2.94 | 2.56 | 2.38 | 1.77 | 1.38 | 2.90 | 3.13 | 3.19 | 2.94 | 3.00 | 2.54 |
| 14 | 3.02 | 3.00 | 2.52 | 2.38 | 1.79 | 1.35 | 2.90 | 3.06 | 3.15 | 3.06 | 2.98 | 2.58 |
| 15 | 3.00 | 2.92 | 2.50 | 2.33 | 1.79 | 1.35 | 2.96 | 3.13 | 3.10 | 3.02 | 2.96 | 2.56 |
| 16 | 3.00 | 2.88 | 2.44 | 2.27 | 1.77 | 1.42 | 2.96 | 3.10 | 3.08 | 3.08 | 2.94 | 2.58 |
| 17 | 3.00 | 2.83 | 2.40 | 2.25 | 1.77 | 1.50 | 3.02 | 3.10 | 3.02 | 3.08 | 2.92 | 2.56 |
| 18 | 3.06 | 2.88 | 2.42 | 2.23 | 1.75 | 1.58 | 3.08 | 3.08 | 3.02 | 3.06 | 2.94 | 2.50 |
| 19 | 3.08 | 2.92 | 2.40 | 2.21 | 1.75 | 1.60 | 3.00 | 3.08 | 3.02 | 3.06 | 2.88 | 2.69 |
| 20 | 3.09 | 2.88 | 2.38 | 2.17 | 1.71 | 1.65 | 2.98 | 3.06 | 3.17 | 3.04 | 2.83 | 2.73 |
| 21 | 3.08 | 2.86 | 2.40 | 2.15 | 1.67 | 1.75 | 2.98 | 3.08 | 3.21 | 3.08 | 2.83 | 2.71 |
| 22 | 3.08 | 2.92 | 2.35 | 2.10 | 1.63 | 1.81 | 2.96 | 3.02 | 3.23 | 3.02 | 2.75 | 2.77 |
| 23 | 2.98 | 2.88 | 2.40 | 2.08 | 1.58 | 1.92 | 2.94 | 2.98 | 3.19 | 3.00 | 2.75 | 2.65 |
| 24 | 3.00 | 2.90 | 2.44 | 2.08 | 1.58 | 1.98 | 2.96 | 2.94 | 3.23 | 3.00 | 2.79 | 2.60 |
| 25 | 3.08 | 2.83 | 2.54 | 2.08 | 1.58 | 1.94 | 2.96 | 2.88 | 3.19 | 2.96 | 2.71 | 2.75 |
| 26 | 3.02 | 2.77 | 2.60 | 2.08 | 1.56 | 2.04 | 2.94 | 2.98 | 3.15 | 2.94 | 2.65 | 2.88 |
| 27 | 3.00 | 2.83 | 2.56 | 2.06 | 1.52 | 2.02 | 3.02 | 2.96 | 3.08 | 2.92 | 2.65 | 2.90 |
| 28 | 3.02 | 2.86 | 2.58 | 1.98 | 1.48 | 2.16 | 3.00 | 3.02 | 3.06 | 2.92 | 2.69 | 2.88 |
| 29 | 3.00 | 2.81 | 2.60 | 2.02 | - | 2.21 | 3.02 | 3.02 | 3.02 | 3.06 | 2.65 | 2.83 |
| 30 | 3.00 | 2.83 | 2.60 | 2.04 | - | 2.27 | 3.06 | 3.00 | 3.08 | 3.00 | 2.65 | 2.92 |
| 31 | 3.02 | - | 2.60 | 2.00 | - | 2.31 | - | 2.98 | - | 3.02 | 2.63 | - |

Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## 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.

Drainage area.- 6,150 square miles.

Records available.- March 1896 to September 1942.

Average discharge.- 46 years, 4,314 second-feet.

Extremes (regulated).- Maximum daily discharge during year, 19,800 second-feet June 12; minimum daily, 2,680 second-feet Aug. 31.
1918-42: Maximum daily discharge, 20,600 second-feet Apr. 4, 1929; minimum daily, 138 second-feet Aug. 2, 1936.

Remarks.- Records good. Flow regulated by Lake Winnebago. (See preceding page.) Occasional discharge measurements made by Geological Survey.

Cooperation.- Daily discharge, computed from power-plant records, furnished by Corps of Engineers, U. S. Army.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,110 | 7,030 | 5,740 | 4,280 | 4,080 | 3,740 | 6,830 | 4,110 | 13,900 | 5,520 | 3,990 | 3,180 |
| 2 | 3,080 | 9,050 | 5,800 | 3,720 | 4,660 | 3,900 | 6,740 | 4,250 | 16,200 | 4,870 | 3,830 | 3,210 |
| 3 | 3,150 | 8,980 | 5,840 | 5,090 | 4,390 | 3,930 | 6,220 | 3,840 | 17,100 | 5,320 | 3,380 | 3,000 |
| 4 | 2,930 | 9,160 | 5,850 | 5,240 | 4,430 | 4,000 | 7,070 | 3,630 | 18,000 | 5,480 | 3,390 | 3,060 |
| 5 | 2,940 | 8,840 | 5,760 | 6,140 | 4,410 | 3,900 | 7,170 | 3,910 | 18,800 | 5,080 | 3,650 | 3,000 |
| 6 | 3,090 | 8,750 | 5,080 | 5,580 | 4,300 | 3,920 | 7,290 | 5,250 | 18,100 | 5,370 | 3,590 | 3,040 |
| 7 | 3,640 | 8,620 | 5,670 | 5,330 | 4,310 | 3,980 | 6,610 | 9,260 | 17,800 | 4,620 | 3,610 | 2,710 |
| 8 | 3,370 | 9,290 | 5,520 | 5,370 | 3,940 | 4,080 | 5,010 | 9,360 | 18,500 | 5,080 | 3,800 | 2,880 |
| 9 | 3,700 | 9,690 | 4,730 | 5,210 | 4,230 | 3,960 | 3,800 | 8,920 | 18,300 | 5,050 | 3,260 | 3,100 |
| 10 | 3,540 | 9,660 | 5,020 | 5,110 | 4,340 | 3,880 | 3,900 | 8,850 | 18,400 | 4,630 | 3,810 | 3,020 |
| 11 | 3,780 | 9,630 | 5,110 | 5,060 | 4,430 | 3,990 | 4,020 | 8,910 | 19,300 | 3,720 | 3,820 | 3,370 |
| 12 | 3,750 | 9,840 | 5,170 | 4,970 | 4,240 | 3,670 | 4,230 | 11,000 | 19,800 | 3,910 | 4,850 | 2,950 |
| 13 | 3,930 | 7,140 | 5,180 | 4,970 | 4,160 | 3,920 | 4,480 | 9,240 | 16,900 | 4,090 | 4,670 | 2,720 |
| 14 | 4,180 | 9,520 | 5,130 | 5,140 | 4,240 | 3,940 | 4,650 | 9,750 | 16,800 | 3,460 | 4,420 | 2,900 |
| 15 | 5,530 | 9,920 | 5,010 | 5,070 | 4,170 | 3,960 | 4,780 | 10,600 | 17,200 | 3,640 | 4,330 | 2,960 |
| 16 | 5,630 | 9,650 | 5,170 | 5,060 | 4,100 | 4,230 | 4,710 | 10,800 | 16,300 | 3,960 | 3,640 | 3,150 |
| 17 | 5,590 | 9,570 | 5,080 | 4,940 | 3,810 | 4,690 | 4,560 | 11,200 | 11,600 | 3,870 | 3,600 | 3,310 |
| 18 | 5,580 | 6,280 | 5,010 | 4,600 | 4,190 | 4,280 | 4,790 | 11,300 | 11,600 | 3,980 | 4,220 | 3,540 |
| 19 | 5,270 | 5,800 | 4,720 | 4,460 | 4,310 | 4,020 | 6,350 | 11,200 | 11,100 | 3,920 | 4,270 | 3,960 |
| 20 | 5,230 | 6,490 | 4,300 | 4,850 | 4,230 | 4,160 | 6,440 | 11,200 | 6,470 | 3,670 | 4,240 | 3,730 |
| 21 | 6,040 | 6,660 | 3,620 | 4,870 | 4,240 | 4,160 | 7,100 | 11,100 | 5,540 | 3,640 | 4,110 | 3,860 |
| 22 | 6,200 | 6,630 | 3,500 | 4,590 | 4,060 | 4,040 | 6,460 | 10,900 | 5,540 | 3,780 | 3,720 | 4,150 |
| 23 | 6,490 | 6,090 | 3,630 | 4,760 | 4,240 | 4,870 | 4,410 | 10,800 | 6,280 | 3,920 | 3,150 | 4,440 |
| 24 | 7,090 | 5,960 | 3,160 | 4,550 | 4,070 | 6,020 | 4,010 | 10,400 | 9,270 | 3,750 | 3,650 | 4,050 |
| 25 | 6,870 | 6,640 | 2,960 | 4,350 | 4,050 | 5,970 | 3,420 | 9,140 | 9,270 | 3,590 | 3,440 | 3,990 |
| 26 | 7,790 | 6,230 | 4,560 | 4,370 | 3,900 | 6,290 | 3,040 | 5,190 | 9,170 | 3,770 | 3,180 | 4,160 |
| 27 | 7,060 | 6,170 | 4,230 | 4,520 | 4,050 | 6,140 | 3,700 | 5,050 | 8,640 | 3,350 | 3,160 | 3,670 |
| 28 | 5,760 | 5,760 | 4,900 | 4,510 | 3,970 | 6,430 | 3,750 | 4,990 | 7,810 | 3,530 | 3,070 | 3,820 |
| 29 | 7,580 | 6,150 | 4,620 | 4,520 | - | 6,820 | 4,010 | 5,820 | 5,920 | 3,990 | 3,010 | 4,590 |
| 30 | 6,670 | 5,490 | 4,660 | 4,390 | - | 6,570 | 3,960 | 5,390 | 4,920 | 4,140 | 2,850 | 3,970 |
| 31 | 7,300 | - | 4,760 | 4,380 | - | 6,780 | - | 12,000 | - | 4,060 | 2,680 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 155,870 | 7,790 | 2,930 | 5,028 | 0.818 | 0.94 |
| November | 234,890 | 9,920 | 5,490 | 7,830 | 1.27 | 1.42 |
| December | 149,490 | 5,850 | 2,960 | 4,822 | .784 | .90 |
| Calendar year 1941 | 1,742,250 | 16,600 | 1,160 | 4,775 | .776 | 10.52 |
| January | 149,920 | 6,140 | 3,720 | 4,836 | .786 | .91 |
| February | 117,550 | 4,660 | 3,810 | 4,198 | .683 | .71 |
| March | 144,240 | 6,820 | 3,670 | 4,653 | .757 | .87 |
| April | 154,110 | 7,290 | 3,040 | 5,137 | .835 | .93 |
| May | 257,360 | 12,000 | 3,630 | 8,302 | 1.35 | 1.56 |
| June | 394,530 | 19,800 | 4,920 | 13,150 | 2.14 | 2.39 |
| July | 130,960 | 5,520 | 3,350 | 4,225 | .687 | .79 |
| August | 114,390 | 4,850 | 2,680 | 3,690 | .600 | .69 |
| September | 103,490 | 4,590 | 2,710 | 3,450 | .561 | .63 |
| Water year 1941-42 | 2,106,800 | 19,800 | 2,680 | 5,772 | .939 | 12.74 |

Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Silver Lake at Portage, Wis.

Location.- Staff gage, lat. 43°33', long. 89°29', in sec. 6, T. 12 N., R. 9 E., at ice hoist of C. Smith and Son, at southeast end of lake.
Drainage area.- 1 square mile.
Records available.- August 1936 to September 1942 (fragmentary).
Extremes.- Maximum elevation observed during year, 93.01 feet June 12; minimum, 92.37 feet Oct. 4.
1936-42: Maximum elevation observed, that of June 12, 1942; minimum, 90.85 feet Aug. 22, 24, 1937.
Remarks.- Gage heights have been reduced to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1941 to September 1942

| Date | Elevation | Date | Elevation | Date | Elevation | Date | Elevation | Date | Elevation |
|---|---|---|---|---|---|---|---|---|---|
| Oct. 4 | 7.37 | Dec. 11 | 7.63 | Mar. 6 | 7.73 | May 16 | 7.80 | July 24 | 7.60 |
| 11 | 7.47 | 20 | 7.62 | 14 | 7.74 | 23 | 7.70 | Aug. 1 | 6.63 |
| 18 | 7.67 | 26 | 7.72 | 21 | 7.75 | 30 | 7.70 | 8 | 7.66 |
| 25 | 7.63 | Jan. 18 | 7.70 | 28 | 7.73 | June 6 | 7.75 | 15 | 7.62 |
| Nov. 1 | 7.70 | 24 | 7.70 | Apr. 4 | 7.69 | 12 | 8.01 | 21 | 7.55 |
| 7 | 7.70 | 31 | 7.70 | 10 | 7.74 | 20 | 7.80 | 29 | 7.52 |
| 14 | 7.67 | Feb. 6 | 7.69 | 17 | 7.70 | 26 | 7.71 | Sept. 5 | 7.60 |
| 21 | 7.65 | 14 | 7.72 | 25 | 7.60 | July 4 | 7.65 | 12 | 7.65 |
| 28 | 7.63 | 20 | 7.76 | May 2 | 7.60 | 10 | 7.70 | 18 | 7.85 |
| Dec. 4 | 7.63 | 28 | 7.76 | 9 | 7.70 | 18 | 7.65 | 26 | 7.85 |

Note.- Add 85 feet to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Little Green Lake near Markesan, Wis.

Location.- Staff gage, lat. 43°44', long. 88°58', in sec. 32, T. 15 N., R. 13 E., within 50 feet of lake outlet and 1½ miles north of Markesan.
Drainage area.- 5 square miles.
Records available.- August 1936 to September 1942 (fragmentary).
Extremes.- Maximum elevation observed during year, 95.92 feet June 11; minimum, 94.68 feet Oct. 1-6.
1936-42: Maximum elevation observed, 96.74 feet June 23, 24, 1940; minimum, 94.28 feet Sept. 10, 11, 1936.
Remarks.- Gage heights have been referred to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.68 | 4.98 | 4.94 | | | | - | 5.42 | 5.88 | 5.56 | 5.42 | 5.36 |
| 2 | 4.68 | 4.98 | 4.94 | | | | - | 5.44 | 5.86 | 5.54 | 5.44 | 5.50 |
| 3 | 4.68 | 4.98 | 4.94 | | | | - | 5.42 | 5.84 | 5.54 | 5.44 | 5.48 |
| 4 | 4.68 | 4.98 | 4.94 | | | | - | 5.42 | 5.82 | 5.52 | 5.42 | 5.48 |
| 5 | 4.68 | 4.96 | 4.92 | | | | - | 5.40 | 5.80 | 5 52 | 5.40 | 5.46 |
| 6 | 4.68 | 4.96 | 4.92 | | | | - | 5.42 | 5.78 | 5.50 | 5.46 | 5.46 |
| 7 | - | 4.96 | 4.92 | | | | - | 5.48 | 5.76 | 5.48 | 5.50 | 5.48 |
| 8 | 4.72 | 4.98 | 4.92 | | | | - | 5.48 | 5.74 | 5.46 | 5.50 | 5.48 |
| 9 | 4.72 | 4.98 | 4.92 | | | | - | 5.46 | 5.74 | 5.46 | 5.48 | 5.48 |
| 10 | 4.74 | 4.98 | - | | | | - | 5.46 | 5.72 | 5.46 | 5.48 | 5.48 |
| 11 | 4.74 | 4.96 | - | | | | - | 5.50 | 5.92 | 5.44 | 5.46 | 5.46 |
| 12 | 4.72 | 4.96 | - | | | | - | 5.52 | 5.90 | 5.44 | 5.46 | 5.46 |
| 13 | 4.72 | 4.96 | - | | | | - | 5.54 | 5 84 | 5.44 | 5.44 | 5.46 |
| 14 | 4.80 | 4.96 | - | | | | - | 5.54 | 5.82 | 5.44 | 5.44 | 5.46 |
| 15 | 4.80 | 4.96 | - | | | | - | 5.52 | 5.80 | 5.44 | 5.42 | 5.46 |
| 16 | 4.80 | 4.96 | - | | | | - | 5.52 | 5.78 | 5.46 | 5.42 | 5.44 |
| 17 | 4.78 | 4.96 | - | | | | - | 5.50 | 5.76 | 5.46 | 5.40 | 5.44 |
| 18 | 4.90 | 4.96 | - | | | | - | 5.50 | 5.78 | 5.44 | 5.40 | 5.50 |
| 19 | 4.90 | 4.96 | - | | | | - | 5.50 | 5.80 | 5.44 | 5.38 | 5.58 |
| 20 | 4.90 | - | - | | | | - | 5.50 | 5.78 | 5.44 | 5.38 | 5.56 |
| 21 | 4.90 | - | - | | | | - | 5.48 | 5.78 | 5.42 | 5.36 | 5.54 |
| 22 | 4.90 | - | - | | | | - | 5.48 | 5.80 | 5.40 | 5.42 | 5.52 |
| 23 | 4.90 | - | - | | | | - | 5.48 | 5.78 | 5.40 | 5.40 | 5.50 |
| 24 | 4.90 | - | - | | | | 5.34 | 5.46 | 5.74 | 5.38 | 5.38 | 5.48 |
| 25 | 4.90 | - | - | | | | 5.34 | 5.46 | 5.70 | 5.36 | 5.38 | 5.46 |
| 26 | 4.90 | - | - | | | | 5.34 | 5.46 | 5.66 | 5.34 | 5.36 | 5.48 |
| 27 | 4.98 | - | - | | | | 5.34 | 5.46 | 5.64 | 5.34 | 5.36 | 5.48 |
| 28 | 4.98 | - | - | | | | 5.38 | 5.48 | 5.64 | 5.32 | 5.34 | 5.46 |
| 29 | 4.96 | - | - | | | | 5.40 | 5.48 | 5.60 | 5.38 | 5.34 | 5.46 |
| 30 | 4.96 | - | - | | | | 5.40 | 5.56 | 5.58 | 5.38 | 5.38 | 5.44 |
| 31 | 4.96 | | - | | | | - | 5.76 | - | 5.40 | 5.38 | - |

Note.- Add 90 feet to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Wolf River above West Branch of Wolf River, Wis.

Location.- Chain gage, lat. 44°55', long. 88°39', in E½ sec. 3, T. 28 N., R. 15 E., half a mile upstream from West Branch and 4 miles north of Keshena. Datum of gage is 856.57 feet above mean sea level (levels by Wisconsin Power & Light Co.).

Drainage area.- 633 square miles.

Records available.- March 1928 to September 1942.

Average discharge.- 14 years, 571 second-feet.

Extremes.- Maximum discharge observed during year, 1,660 second-feet Apr. 6 (gage height, 4.57 feet); minimum daily, 420 second-feet Jan. 6.
1928-42: Maximum discharge observed, 2,580 second-feet Apr. 8, 1929 (gage height, 6.10 feet), from rating curve extended above 1,500 second-feet; minimum observed, 199 second-feet Feb. 20, 1936.

Remarks.- Records good except those for periods of ice effect, which are fair. Gage read once daily.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 2.0 | 396 | 2.9 | 748 | 4.0 | 1,310 |
| 2.3 | 500 | 3.2 | 889 | 4.6 | 1,660 |
| 2.6 | 619 | 3.6 | 1,090 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 889 | 1,310 | 661 | 661 | 540 | 540 | 938 | 1,150 | 1,420 | 794 | 661 | 538 |
| 2 | 841 | 1,540 | 661 | 600 | 535 | 550 | 1,090 | 1,200 | 1,420 | 748 | 661 | 538 |
| 3 | 641 | 1,540 | 619 | 510 | 530 | 545 | 1,310 | 1,370 | 1,420 | 794 | 619 | 500 |
| 4 | 794 | 1,420 | 619 | 460 | 525 | 540 | 1,310 | 1,480 | 1,370 | 889 | 578 | 464 |
| 5 | 1,200 | 1,370 | 619 | 440 | 520 | 535 | 1,540 | 1,480 | 1,310 | 841 | 578 | 464 |
| 6 | 1,150 | 1,250 | 661 | 420 | 520 | 530 | 1,660 | 1,420 | 1,600 | 841 | 578 | 430 |
| 7 | 1,250 | 1,200 | 619 | 430 | 515 | 525 | 1,480 | 1,420 | 1,600 | 794 | 576 | 430 |
| 8 | 1,310 | 1,150 | 538 | 450 | 510 | 525 | 1,420 | 1,370 | 1,540 | 748 | 578 | 464 |
| 9 | 1,250 | 1,090 | 704 | 465 | 500 | 525 | 1,420 | 1,310 | 1,370 | 704 | 538 | 464 |
| 10 | 1,200 | 1,090 | 500 | 480 | 490 | 520 | 1,420 | 1,250 | 1,310 | 704 | 538 | 464 |
| 11 | 1,090 | 1,040 | 640 | 490 | 480 | 520 | 1,420 | 1,200 | 1,310 | 704 | 538 | 464 |
| 12 | 1,040 | 988 | 710 | 505 | *475 | 520 | 1,370 | 1,250 | 1,310 | 661 | 538 | 538 |
| 13 | 1,040 | 988 | 742 | 520 | 470 | *520 | 1,310 | 1,250 | 1,200 | 619 | 500 | 538 |
| 14 | 1,200 | 938 | 775 | 535 | 470 | 540 | 1,250 | 1,370 | 1,090 | 619 | 500 | 538 |
| 15 | 1,250 | 938 | 780 | 537 | 470 | 550 | 1,250 | 1,420 | 988 | 578 | 500 | 619 |
| 16 | 1,250 | 889 | 750 | 545 | 470 | 560 | 1,310 | 1,370 | 938 | 619 | 538 | 661 |
| 17 | 1,200 | 889 | 704 | 550 | 470 | 570 | 1,310 | 1,310 | 889 | 704 | 500 | 938 |
| 18 | 1,150 | 841 | 748 | 555 | 470 | 580 | 1,250 | 1,310 | 889 | 704 | 500 | 1,250 |
| 19 | 1,150 | 841 | 748 | 560 | 470 | 590 | 1,200 | 1,250 | 841 | 704 | 500 | 1,480 |
| 20 | 1,150 | 841 | 704 | 560 | 470 | 610 | 1,150 | 1,200 | 794 | 661 | 500 | 1,540 |
| 21 | 1,200 | 794 | 661 | 560 | 470 | 640 | 1,090 | 1,150 | 794 | 661 | 464 | 1,370 |
| 22 | 1,200 | 748 | 748 | 555 | 473 | 680 | 1,040 | 1,090 | 794 | 619 | 464 | 1,310 |
| 23 | 1,150 | 704 | 841 | 555 | 473 | 735 | 988 | 1,040 | 794 | 619 | 500 | 1,310 |
| 24 | 1,090 | 619 | 1,040 | 555 | 475 | 800 | 988 | 988 | 748 | 619 | 500 | 1,200 |
| 25 | 988 | 704 | 938 | 555 | 478 | 870 | 938 | 938 | 704 | 619 | 464 | 1,090 |
| 26 | 988 | 720 | 794 | 550 | 478 | 940 | 938 | 938 | 661 | a619 | 464 | 1,090 |
| 27 | 1,250 | 740 | 748 | 550 | 480 | 1,100 | 938 | 889 | 661 | 619 | 464 | 1,040 |
| 28 | 1,420 | 748 | 748 | 550 | 510 | 1,300 | 1,040 | 889 | 704 | 619 | 464 | 1,040 |
| 29 | 1,310 | 704 | 748 | 545 | - | 1,070 | 1,090 | 938 | 748 | 661 | 464 | 988 |
| 30 | 1,200 | 704 | 704 | 545 | - | 988 | 1,090 | 1,090 | 841 | 661 | a542 | 938 |
| 31 | 1,200 | - | 704 | 540 | - | 988 | - | 1,310 | - | 661 | 619 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 35,241 | 1,420 | 794 | 1,137 | 1.80 | 2.08 |
| November | 29,338 | 1,540 | 619 | 978 | 1.55 | 1.73 |
| December | 22,176 | 1,040 | 500 | 715 | 1.13 | 1.30 |
| Calendar year 1941 | 266,067 | 2,260 | 306 | 729 | 1.15 | 15.63 |
| January | 16,333 | 661 | 420 | 527 | .833 | .96 |
| February | 13,737 | 540 | 470 | 491 | .776 | .81 |
| March | 21,006 | 1,300 | 520 | 678 | 1.07 | 1.23 |
| April | 36,548 | 1,660 | 938 | 1,218 | 1.92 | 2.14 |
| May | 37,640 | 1,480 | 889 | 1,214 | 1.92 | 2.21 |
| June | 32,058 | 1,600 | 661 | 1,069 | 1.69 | 1.89 |
| July | 21,407 | 889 | 578 | 691 | 1.09 | 1.26 |
| August | 16,430 | 661 | 464 | 530 | .837 | .96 |
| September | 24,698 | 1,540 | 430 | 823 | 1.30 | 1.45 |
| Water year 1941-42 | 306,612 | 1,660 | 420 | 840 | 1.33 | 18.02 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Nov. 26, 27, Dec. 11-16, Jan. 2 to Mar. 29.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Wolf River at Keshena Falls, Wis.

Location.- Water-stage recorder, lat. 44°53', long. 88°39', in E½ sec. 22, T. 28 N., R. 15 E., 500 feet downstream from Keshena Falls, 1½ miles upstream from Keshena, and 2½ miles below West Branch.

Drainage area.- 812 square miles.

Records available.- March 1923 to September 1942. May 1907 to March 1909 and February 1911 to March 1928 at site at Keshena, 1½ miles downstream.

Average discharge.- 32 years (1907-8, 1911-42), 794 second-feet.

Extremes.- Maximum discharge during year, 2,250 second-feet Nov. 2, Apr. 6 (gage height, 7.51 feet); minimum daily, 555 second-feet Jan. 6.
1907-9, 1911-42: Maximum discharge observed, 4,390 second-feet Apr. 10, 1922, from rating curve extended above 2,100 second-feet; minimum discharge, 91 second-feet Dec. 22, 1939 (gage height, 4.67 feet), flow retarded temporarily by formation of ice above station.

Remarks.- Records good except those for periods of ice effect, which are fair.

**Rating table, water year 1941-42, except period of ice effect**
**(gage height, in feet, and discharge, in second-feet)**

| | | | | | |
|---|---|---|---|---|---|
| 5.6 | 535 | 6.4 | 1,160 | 7.2 | 1,930 |
| 6.0 | 823 | 6.8 | 1,530 | 7.5 | 2,250 |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,180 | 1,830 | 960 | 871 | 740 | 675 | 1,250 | 1,430 | 1,930 | 1,100 | 831 | 722 |
| 2 | 1,150 | 2,200 | 903 | 820 | 740 | 700 | 1,430 | 1,530 | 1,830 | 985 | 879 | 678 |
| 3 | 1,120 | 2,200 | 903 | 660 | 740 | 720 | 1,680 | 1,680 | 1,830 | 985 | 831 | 642 |
| 4 | 1,080 | 2,030 | 903 | 570 | 740 | 665 | 1,780 | 1,930 | 1,730 | 1,090 | 761 | 614 |
| 5 | 1,340 | 1,830 | 936 | 560 | 740 | 670 | 2,030 | 1,880 | 1,630 | 1,160 | 738 | 600 |
| 6 | 1,630 | 1,680 | 977 | 555 | 740 | 670 | 2,200 | 1,730 | 1,830 | 1,100 | 738 | 587 |
| 7 | 1,780 | 1,580 | 887 | 565 | 740 | 680 | 2,030 | 1,880 | 2,030 | 1,040 | 745 | 587 |
| 8 | 1,980 | 1,530 | 823 | 595 | 745 | 690 | 1,880 | 1,680 | 1,980 | 985 | 722 | 607 |
| 9 | 1,880 | 1,480 | 887 | 615 | 740 | 690 | 1,780 | 1,630 | 1,780 | 928 | 722 | 580 |
| 10 | 1,680 | 1,430 | 745 | 620 | 720 | 695 | 1,780 | 1,480 | 1,630 | 903 | 730 | 607 |
| 11 | 1,480 | 1,380 | 1,000 | 640 | 710 | 690 | 1,780 | 1,430 | 1,580 | 895 | 722 | 594 |
| 12 | 1,380 | 1,340 | 936 | 650 | *684 | 660 | 1,730 | 1,680 | 1,630 | 855 | 708 | 663 |
| 13 | 1,380 | 1,300 | 1,040 | 670 | 685 | 634 | 1,630 | 1,680 | 1,580 | 815 | 685 | 745 |
| 14 | 1,680 | 1,250 | 1,030 | 675 | 680 | 660 | 1,580 | 1,780 | 1,430 | 784 | 663 | 753 |
| 15 | 1,830 | 1,250 | 969 | *696 | 690 | 710 | 1,630 | 1,780 | 1,250 | 753 | 685 | 761 |
| 16 | 1,780 | 1,250 | 1,040 | 730 | 690 | 750 | 1,680 | 1,730 | 1,170 | 768 | 692 | 919 |
| 17 | 1,630 | 1,200 | 1,030 | 740 | 690 | 760 | 1,680 | 1,630 | 1,120 | 847 | 678 | 1,240 |
| 18 | 1,530 | 1,170 | 1,030 | 760 | 660 | 780 | 1,630 | 1,580 | 1,100 | 936 | 678 | 1,530 |
| 19 | 1,580 | 1,170 | 1,010 | 770 | 620 | 790 | 1,480 | 1,480 | 1,060 | 919 | 656 | 1,930 |
| 20 | 1,580 | 1,180 | 969 | 780 | 620 | 810 | 1,430 | 1,430 | 1,030 | 871 | 642 | 2,080 |
| 21 | 1,730 | 1,150 | 919 | 780 | 640 | 860 | 1,340 | 1,380 | 1,040 | 807 | 628 | 1,880 |
| 22 | 1,730 | 1,060 | 1,010 | 780 | 650 | 910 | 1,300 | 1,340 | 1,030 | 815 | 614 | 1,630 |
| 23 | 1,630 | 985 | 1,120 | 780 | 650 | 1,000 | 1,250 | 1,250 | 994 | 792 | 614 | 1,530 |
| 24 | 1,480 | 890 | 1,430 | 780 | 645 | 1,090 | 1,200 | 1,210 | 960 | 792 | 642 | 1,480 |
| 25 | 1,380 | 910 | 1,380 | 760 | 640 | 1,230 | 1,190 | 1,160 | 919 | 807 | 621 | 1,380 |
| 26 | 1,340 | 940 | 1,170 | 760 | 640 | 1,380 | 1,150 | 1,120 | 863 | 807 | 600 | 1,340 |
| 27 | 1,630 | 960 | 1,050 | 760 | 650 | 1,580 | 1,130 | 1,070 | 855 | 800 | 587 | 1,300 |
| 28 | 1,930 | 990 | 1,020 | 750 | 655 | 1,680 | 1,300 | 1,060 | 1,140 | 815 | 587 | 1,300 |
| 29 | 1,930 | 1,020 | 985 | 740 | - | 1,480 | 1,380 | 1,130 | 1,120 | 855 | 607 | 1,220 |
| 30 | 1,730 | 1,000 | 960 | 740 | - | 1,340 | 1,430 | 1,480 | 1,120 | 863 | 628 | 1,170 |
| 31 | 1,580 | - | 969 | 740 | - | 1,250 | - | 1,830 | - | 879 | 665 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 48,760 | 1,980 | 1,080 | 1,573 | 1.94 | 2.24 |
| November | 40,185 | 2,200 | 890 | 1,340 | 1.65 | 1.84 |
| December | 30,991 | 1,430 | 745 | 1,000 | 1.23 | 1.42 |
| Calendar year 1941 | 358,945 | 3,340 | 403 | 983 | 1.21 | 16.44 |
| January | 21,912 | 871 | 555 | 707 | .871 | 1.00 |
| February | 19,284 | 745 | 620 | 689 | .849 | .88 |
| March | 27,909 | 1,680 | 634 | 900 | 1.11 | 1.28 |
| April | 46,760 | 2,200 | 1,130 | 1,559 | 1.92 | 2.14 |
| May | 47,080 | 1,930 | 1,060 | 1,519 | 1.87 | 2.16 |
| June | 41,191 | 2,030 | 855 | 1,373 | 1.69 | 1.89 |
| July | 27,751 | 1,160 | 753 | 895 | 1.10 | 1.27 |
| August | 21,319 | 879 | 587 | 688 | .847 | .98 |
| September | 31,669 | 2,080 | 580 | 1,056 | 1.30 | 1.45 |
| Water year 1941-42 | 404,811 | 2,200 | 555 | 1,109 | 1.37 | 18.55 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 25-28, Jan. 2 to Mar. 25.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Wolf River at New London, Wis.

Location.- Staff gage, lat. 44°23', long. 88°44', in sec. 12, T. 22 N., R. 14 E., at right bank, about 15 feet downstream from Pearl Street Bridge and three-quarters of a mile downstream from Embarrass River. Datum of gage is 749.37 feet above mean sea level (levels by Corps of Engineers, U. S. Army).
Drainage area.- 2,240 square miles.
Records available.- October 1913 to September 1942.
Average discharge.- 29 years, 1,837 second-feet.
Extremes.- Maximum discharge observed during year, 7,940 second-feet June 5, 7 (gage height, 9.0 feet); minimum, 995 second-feet Sept. 1, 7, 10 (gage height, 1.5 feet).
1913-42: Maximum discharge observed, 15,500 second-feet Apr. 13, 1922 (gage height, 11.4 feet), from rating curve extended above 10,000 second-feet; minimum, 261 second-feet Sept. 6, 1933.
Maximum stage known, 11.6 feet Apr. 16, 1888, from information by Corps of Engineers, U. S. Army.
Remarks.- Records good except those for period of ice effect, which are fair. Gage read once daily.
Cooperation.- Gage-height record furnished by Corps of Engineers, U. S. Army.

Rating tables, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 31 | | | | Apr. 1 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 1,190 | 6.0 | 3,730 | 1.5 | 995 | 5.0 | 2,640 | 8.0 | 5,500 |
| 2.5 | 1,420 | 6.5 | 4,160 | 2.0 | 1,190 | 6.0 | 3,330 | 8.5 | 6,510 |
| 3.0 | 1,680 | 7.0 | 4,650 | 2.5 | 1,390 | 6.5 | 3,750 | 9.0 | 7,940 |
| 4.0 | 2,280 | 7.5 | 5,250 | 3.0 | 1,600 | 7.0 | 4,220 | | |
| 5.0 | 2,960 | 8.0 | 5,970 | 4.0 | 2,080 | 7.5 | 4,790 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,760 | 4,650 | 2,350 | 1,680 | 1,400 | 1,200 | 4,790 | 2,640 | 4,220 | 3,330 | 1,830 | 995 |
| 2 | 2,690 | 4,880 | 2,150 | 1,640 | 1,390 | 1,240 | 4,790 | 2,840 | 4,670 | 3,410 | 1,780 | 1,030 |
| 3 | 2,620 | 5,120 | 2,090 | 1,370 | 1,390 | 1,280 | 4,790 | 2,910 | 5,500 | 3,490 | 1,690 | 1,030 |
| 4 | 2,620 | 5,380 | 2,090 | 1,200 | 1,380 | 1,280 | 4,670 | 2,980 | 7,010 | 3,570 | 1,600 | 1,070 |
| 5 | 2,620 | 5,620 | 2,220 | 1,170 | 1,380 | 1,280 | 4,670 | 2,980 | 7,940 | 3,660 | 1,550 | 1,070 |
| 6 | 2,620 | 5,660 | 2,220 | 1,160 | 1,380 | 1,280 | 4,670 | 3,120 | 7,010 | 3,570 | 1,470 | 1,070 |
| 7 | 2,830 | 5,660 | 2,150 | 1,160 | 1,360 | 1,280 | 4,790 | 3,330 | 7,940 | 3,410 | 1,430 | 995 |
| 8 | 2,910 | 5,610 | 2,090 | 1,150 | 1,370 | 1,300 | 4,790 | 3,540 | 7,600 | 3,260 | 1,430 | 1,030 |
| 9 | 3,060 | 5,810 | 2,030 | 1,150 | 1,360 | 1,330 | 4,920 | 4,120 | 7,010 | 3,120 | 1,470 | 1,030 |
| 10 | 3,200 | 5,660 | 1,970 | 1,150 | 1,360 | *1,370 | 5,060 | 4,330 | 6,510 | 2,980 | 1,470 | 995 |
| 11 | 3,270 | 5,380 | 1,790 | 1,150 | *1,380 | 1,370 | 5,190 | 4,440 | 6,080 | 2,840 | 1,510 | 1,070 |
| 12 | 3,420 | 5,120 | 1,420 | 1,160 | 1,360 | 1,350 | 5,190 | 4,790 | 6,080 | 2,640 | 1,510 | 1,070 |
| 13 | 3,500 | 4,880 | 1,520 | 1,170 | 1,340 | 1,360 | 5,060 | 5,060 | 5,680 | 2,390 | 1,430 | 1,110 |
| 14 | 3,650 | 4,650 | 1,570 | *1,200 | 1,330 | 1,400 | 4,790 | 5,340 | 5,500 | 2,230 | 1,310 | 1,070 |
| 15 | 3,810 | 4,440 | 1,620 | 1,220 | 1,310 | 1,500 | 4,660 | 5,500 | 5,190 | 2,030 | 1,310 | 1,030 |
| 16 | 3,980 | 4,260 | 1,680 | 1,230 | 1,300 | 1,700 | 4,330 | 5,680 | 4,920 | 1,780 | 1,310 | 1,230 |
| 17 | 4,160 | 4,070 | 1,730 | 1,270 | 1,290 | 1,870 | 4,120 | 5,680 | 4,660 | 2,130 | 1,270 | 1,510 |
| 18 | 4,250 | 3,980 | 1,850 | 1,340 | 1,270 | 1,980 | 3,930 | 5,500 | 4,330 | 2,230 | 1,190 | 1,640 |
| 19 | 4,340 | 3,810 | 2,030 | 1,370 | 1,210 | 2,090 | 3,750 | 5,340 | 4,120 | 2,180 | 1,230 | 2,510 |
| 20 | 4,540 | 3,730 | 2,220 | 1,400 | 1,190 | 2,200 | 3,570 | 5,060 | 3,930 | 2,080 | 1,230 | 2,910 |
| 21 | 4,650 | 3,650 | 2,220 | 1,400 | 1,190 | 2,390 | 3,410 | 4,920 | 3,660 | 1,930 | 1,150 | 3,060 |
| 22 | 4,760 | 3,500 | 2,280 | 1,400 | 1,190 | 2,500 | 3,260 | 4,670 | 3,410 | 1,830 | 1,110 | 3,190 |
| 23 | 4,760 | 3,420 | 2,420 | 1,390 | 1,200 | 2,680 | 3,120 | 4,330 | 3,260 | 1,690 | 1,070 | 3,330 |
| 24 | 4,760 | 3,270 | 2,620 | 1,380 | 1,200 | 2,800 | 2,980 | 3,930 | 3,120 | 1,550 | 1,070 | 3,670 |
| 25 | 4,760 | 3,130 | 2,980 | 1,390 | 1,200 | 3,000 | 2,840 | 3,660 | 2,980 | 1,470 | 1,030 | 3,750 |
| 26 | 4,650 | 2,910 | 2,760 | 1,400 | 1,200 | 3,320 | 2,700 | 3,410 | 2,640 | 1,470 | 1,070 | 3,930 |
| 27 | 4,650 | 2,830 | 2,400 | 1,430 | 1,200 | 3,700 | 2,570 | 3,260 | 2,450 | 1,430 | 1,070 | 4,020 |
| 28 | 4,650 | 2,690 | 2,150 | 1,430 | 1,200 | 4,050 | 2,610 | 3,050 | 2,230 | 1,430 | 1,030 | 4,020 |
| 29 | 4,540 | 2,550 | 2,000 | 1,430 | - | 4,300 | 2,450 | 2,840 | 2,840 | 1,640 | 1,030 | 4,020 |
| 30 | 4,540 | 2,420 | 1,870 | 1,420 | - | 4,500 | 2,640 | 3,050 | 3,190 | 1,780 | 1,030 | 3,840 |
| 31 | 4,540 | - | 1,760 | 1,400 | - | 4,650 | - | 3,570 | - | 1,830 | 1,030 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 118,100 | 4,760 | 2,620 | 3,810 | 1.70 | 1.96 |
| November | 128,830 | 5,810 | 2,420 | 4,294 | 1.92 | 2.14 |
| December | 64,240 | 2,980 | 1,420 | 2,072 | .925 | 1.07 |
| Calendar year 1941 | 888,585 | 7,140 | 664 | 2,434 | 1.09 | 14.75 |
| January | 40,710 | 1,680 | 1,150 | 1,313 | .586 | .68 |
| February | 36,350 | 1,400 | 1,190 | 1,298 | .579 | .60 |
| March | 67,550 | 4,650 | 1,200 | 2,179 | .973 | 1.12 |
| April | 120,880 | 5,190 | 2,450 | 4,029 | 1.80 | 2.01 |
| May | 126,150 | 5,680 | 2,640 | 4,069 | 1.82 | 2.10 |
| June | 145,570 | 7,940 | 2,230 | 4,852 | 2.17 | 2.42 |
| July | 74,380 | 3,660 | 1,430 | 2,399 | 1.07 | 1.23 |
| August | 40,710 | 1,830 | 1,030 | 1,313 | .586 | .68 |
| September | 62,185 | 4,020 | 995 | 2,073 | .925 | 1.03 |
| Water year 1941-42 | 1,025,655 | 7,940 | 995 | 2,810 | 1.25 | 17.04 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 26 to Mar. 31.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Embarrass River near Embarrass, Wis.

Location.- Water-stage recorder, lat. 44°43', long. 88°44', on line between sec. 13, T. 26 N., R. 14 E., and sec. 18, T. 26 N., R. 15 E., three-quarters of a mile downstream from Mill Creek and 4 miles northwest of Embarrass.
Drainage area.- 395 square miles.
Records available.- June 1919 to September 1942.
Average discharge.- 23 years, 302 second-feet.
Extremes.- Maximum discharge during year, 2,310 second-feet June 1 (gage height, 6.84 feet); minimum, 117 second-feet Sept. 6, 7 (gage height, 2.86 feet).
1919-42: Maximum discharge observed, 6,760 second-feet Apr. 10, 1922 (gage height, 11.5 feet), from rating curve extended above 2,800 second-feet; minimum observed, 23 second-feet Aug. 3, 6, 7, 1931.
Remarks.- Records good except those for periods of ice effect, which are fair. Slight diurnal fluctuation caused by power plants above station.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 2.9 | 127 | 4.0 | 589 | 6.0 | 1,750 |
| 3.1 | 185 | 4.5 | 844 | 6.5 | 2,100 |
| 3.3 | 259 | 5.0 | 1,110 | 7.0 | 2,450 |
| 3.6 | 394 | 5.5 | 1,410 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 356 | 897 | 320 | 312 | 240 | 160 | 818 | 462 | 2,310 | 614 | 224 | 143 |
| 2 | 447 | 1,140 | 320 | 310 | 224 | 137 | 844 | 530 | 2,030 | 476 | 216 | 149 |
| 3 | 432 | 1,200 | 320 | 295 | 222 | 192 | 897 | 555 | 1,470 | 356 | 210 | 146 |
| 4 | 360 | 1,080 | 329 | 255 | 220 | 230 | 950 | 689 | 1,170 | 334 | 192 | 151 |
| 5 | 471 | 897 | 342 | 225 | 183 | 215 | 1,030 | 766 | 957 | 306 | 176 | 149 |
| 6 | 740 | 740 | 366 | 216 | 195 | 202 | 1,230 | 714 | 1,000 | 316 | 179 | 122 |
| 7 | 950 | 614 | 380 | 248 | 208 | 206 | 1,350 | 792 | 1,290 | 329 | 213 | 122 |
| 8 | 1,170 | 550 | 361 | 220 | 209 | 179 | 1,140 | 697 | 1,200 | 311 | 160 | 151 |
| 9 | 1,230 | 530 | 306 | 190 | 202 | 216 | 950 | 818 | 1,030 | 263 | 185 | 160 |
| 10 | 1,140 | 491 | 251 | 150 | 195 | *263 | 818 | 639 | 844 | 247 | 166 | 160 |
| 11 | 897 | 491 | 235 | 138 | *195 | 247 | 714 | 560 | 870 | 216 | 196 | 146 |
| 12 | 689 | 471 | 222 | 130 | 196 | 232 | 614 | 818 | 714 | 182 | 185 | 149 |
| 13 | 525 | 432 | 270 | 217 | 220 | 298 | 564 | 1,000 | 670 | 192 | 160 | 151 |
| 14 | 689 | 423 | 280 | *205 | 264 | 293 | 530 | 1,000 | 766 | 202 | 179 | 236 |
| 15 | 950 | 437 | 278 | 162 | 180 | 240 | 520 | 818 | 579 | 196 | 182 | 280 |
| 16 | 975 | 432 | 286 | 135 | 150 | 380 | 520 | 639 | 352 | 192 | 166 | 293 |
| 17 | 897 | 428 | 300 | 130 | 180 | 525 | 545 | 530 | 356 | 243 | 140 | 676 |
| 18 | 766 | 413 | 324 | 300 | 150 | 579 | 535 | 442 | 368 | 220 | 140 | 1,110 |
| 19 | 740 | 413 | 272 | 160 | 195 | 639 | 506 | 408 | 293 | 243 | 146 | 1,350 |
| 20 | 766 | 408 | 276 | 250 | 180 | 614 | 466 | 375 | 311 | 255 | 151 | 1,350 |
| 21 | 818 | 408 | 263 | 170 | 190 | 689 | 423 | 366 | 352 | 192 | 143 | 1,140 |
| 22 | 870 | 404 | 276 | 178 | 200 | 740 | 385 | 334 | 431 | 176 | 151 | 924 |
| 23 | 870 | 380 | 375 | 200 | 170 | 714 | 361 | 293 | 356 | 173 | 157 | 818 |
| 24 | 818 | 324 | 639 | 201 | 165 | 818 | 311 | 268 | 311 | 166 | 163 | 592 |
| 25 | 664 | 240 | 792 | 207 | 190 | 924 | 329 | 280 | 285 | 173 | 146 | 569 |
| 26 | 589 | 311 | 740 | 227 | 185 | 924 | 311 | 251 | 276 | 166 | 135 | 560 |
| 27 | 714 | 324 | 574 | 260 | 180 | 1,080 | 324 | 220 | 232 | 166 | 132 | 511 |
| 28 | 1,030 | 347 | 501 | 275 | 170 | 1,140 | 320 | 243 | 259 | 146 | 124 | 486 |
| 29 | 1,110 | 289 | 452 | 212 | - | 1,080 | 361 | 392 | 536 | 264 | 140 | 447 |
| 30 | 1,080 | 306 | 366 | 242 | - | 950 | 462 | 1,320 | 714 | 243 | 130 | 389 |
| 31 | 870 | - | 320 | 248 | - | 844 | - | 2,100 | - | 272 | 138 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 24,593 | 1,230 | 356 | 793 | 2.01 | 2.32 |
| November | 15,820 | 1,200 | 240 | 527 | 1.33 | 1.48 |
| December | 11,336 | 792 | 222 | 366 | .927 | 1.07 |
| Calendar year 1941 | 145,888 | 1,890 | 90 | 400 | 1.01 | 13.72 |
| January | 6,688 | 312 | 130 | 216 | .547 | .63 |
| February | 5,458 | 264 | 150 | 195 | .494 | .51 |
| March | 15,950 | 1,140 | 137 | 515 | 1.30 | 1.50 |
| April | 19,128 | 1,350 | 311 | 638 | 1.62 | 1.81 |
| May | 19,519 | 2,100 | 220 | 630 | 1.59 | 1.83 |
| June | 22,532 | 2,310 | 232 | 751 | 1.90 | 2.12 |
| July | 7,830 | 614 | 146 | 253 | .641 | .74 |
| August | 5,125 | 224 | 124 | 165 | .418 | .48 |
| September | 13,630 | 1,350 | 122 | 454 | 1.15 | 1.28 |
| Water year 1941-42 | 167,609 | 2,310 | 122 | 459 | 1.16 | 15.77 |

Peak discharge.- Oct. 8 (4 p.m.) 1,320 sec.-ft.; Mar. 28 (5 a.m.) 1,260 sec.-ft.; Apr. 7 (1 p.m.) 1,410 sec.-ft.; June 1 (5 a.m.) 2,310 sec.-ft.; June 7 (11 a.m.) 1,350 sec.-ft.; Sept. 19 (12 m.) 1,470 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 11-17, Jan. 1 to Mar. 2.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Little Wolf River at Royalton, Wis.

Location.- Water-stage recorder, lat. 44°24', long. 88°51', in sec. 1, T. 22 N., R. 13 E., 4 miles upstream from mouth.

Drainage area.- 485 square miles.

Records available.- January 1914 to September 1942.

Average discharge.- 28 years, 438 second-feet.

Extremes.- Maximum discharge during year, 2,810 second-feet June 1 (gage height, 4.47 feet); minimum, 160 second-feet Dec. 9 (gage height, 1.26 feet).
1914-42: Maximum discharge observed, 5,780 second-feet Apr. 10, 11, 1922 (gage height, 6.92 feet), from rating curve extended above 3,500 second-feet; maximum gage height, 10.33 feet Mar. 25, 1939 (affected by ice); minimum discharge, 57 second-feet Feb. 10, 1934.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Diurnal fluctuation caused by power plant 6 miles above station.

Rating table, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 15 to Sept. 18)

| | | | | | |
|---|---|---|---|---|---|
| 1.4 | 206 | 2.3 | 719 | 4.0 | 2,300 |
| 1.6 | 290 | 2.6 | 920 | 4.5 | 2,870 |
| 1.8 | 402 | 3.0 | 1,250 | | |
| 2.0 | 527 | 3.5 | 1,750 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a300 | 825 | 350 | 344 | 320 | 270 | 852 | 706 | 2,750 | 1,440 | 514 | 276 |
| 2 | a360 | 1,030 | 322 | 250 | 330 | 290 | 805 | 667 | 2,700 | 1,120 | 445 | 237 |
| 3 | a400 | 1,030 | 374 | 260 | 295 | 270 | 765 | 712 | 2,360 | 700 | 427 | 305 |
| 4 | a305 | 990 | 346 | 290 | 295 | 280 | 765 | 825 | 1,920 | 527 | 346 | 286 |
| 5 | a310 | 852 | 344 | 400 | 300 | 295 | 839 | 818 | 1,590 | 477 | 330 | 237 |
| 6 | a450 | 686 | 349 | 370 | 350 | 310 | 1,060 | 921 | 1,540 | 533 | 330 | 229 |
| 7 | 540 | 596 | 281 | 250 | 320 | 320 | 1,030 | 1,300 | 1,590 | 427 | 340 | 286 |
| 8 | 609 | 571 | 382 | 220 | 250 | 290 | 1,030 | 1,250 | 1,700 | 377 | 352 | 290 |
| 9 | 635 | 508 | 325 | 220 | 300 | 340 | 920 | 1,160 | 1,590 | 414 | 365 | 258 |
| 10 | 622 | 502 | 326 | 218 | *292 | *355 | 752 | 869 | 1,120 | 365 | 470 | 320 |
| 11 | 540 | 470 | 448 | 215 | 260 | 460 | 660 | 790 | 1,030 | 335 | 421 | 254 |
| 12 | 489 | 489 | 382 | 215 | 280 | 470 | 546 | 1,380 | 1,160 | 352 | 310 | 290 |
| 13 | 439 | 452 | 352 | *214 | 270 | 520 | 521 | 1,400 | 1,160 | 330 | 305 | 263 |
| 14 | 603 | 439 | 326 | 212 | 270 | 617 | 521 | 1,590 | 990 | 300 | 300 | 263 |
| 15 | 825 | 489 | 373 | 210 | 250 | 651 | 496 | 1,300 | 732 | 310 | 310 | 391 |
| 16 | 886 | 414 | 303 | 230 | 320 | 1,050 | 483 | 990 | 590 | 578 | 286 | 452 |
| 17 | 805 | 390 | 302 | 280 | 270 | 1,080 | 483 | 765 | 546 | 792 | 320 | 648 |
| 18 | 745 | 427 | 320 | 290 | 250 | 1,120 | 477 | 635 | 525 | 920 | 290 | 818 |
| 19 | 641 | 445 | 324 | 270 | 220 | 1,160 | 383 | 603 | 641 | 719 | 272 | 1,300 |
| 20 | 674 | 433 | 314 | 230 | 240 | 1,160 | 371 | 565 | 603 | 540 | 268 | 1,490 |
| 21 | 667 | 371 | 238 | 350 | 245 | 1,070 | 383 | 508 | 533 | 414 | 258 | 1,440 |
| 22 | 706 | 414 | 400 | 350 | 248 | 955 | 365 | 458 | 533 | 402 | 272 | 1,200 |
| 23 | 700 | 390 | 530 | 350 | 255 | 955 | 346 | 390 | 470 | 340 | 250 | 1,070 |
| 24 | 654 | 330 | 752 | 365 | 255 | 886 | 330 | 359 | 427 | 330 | 233 | 845 |
| 25 | 565 | 328 | 778 | 380 | 240 | 798 | 290 | 340 | 383 | 352 | 241 | 778 |
| 26 | 577 | 348 | 706 | 400 | 270 | 886 | 295 | 383 | 414 | 325 | 229 | 745 |
| 27 | 546 | 361 | 644 | 360 | 230 | 920 | 320 | 315 | 421 | 346 | 233 | 680 |
| 28 | 654 | 344 | 527 | 370 | 310 | 1,120 | 315 | 330 | 705 | 425 | 254 | 648 |
| 29 | 693 | 310 | 602 | 375 | - | 1,120 | 570 | 494 | 1,980 | 680 | 281 | 635 |
| 30 | 706 | 317 | 552 | 375 | - | 1,070 | 590 | 1,060 | 1,590 | 732 | 237 | 603 |
| 31 | 641 | - | 348 | 370 | - | 955 | - | 2,000 | - | 706 | 258 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 18,287 | 886 | 300 | 590 | 1.22 | 1.41 |
| November | 15,551 | 1,030 | 310 | 518 | 1.07 | 1.19 |
| December | 12,920 | 778 | 238 | 417 | .860 | .99 |
| Calendar year 1941 | 153,254 | 2,130 | 138 | 420 | .866 | 11.75 |
| January | 9,233 | 400 | 210 | 298 | .614 | .71 |
| February | 7,735 | 350 | 220 | 276 | .569 | .59 |
| March | 22,043 | 1,160 | 270 | 711 | 1.47 | 1.70 |
| April | 17,563 | 1,060 | 290 | 585 | 1.21 | 1.35 |
| May | 25,883 | 2,000 | 315 | 835 | 1.72 | 1.98 |
| June | 34,293 | 2,750 | 383 | 1,143 | 2.36 | 2.63 |
| July | 16,608 | 1,440 | 300 | 536 | 1.11 | 1.28 |
| August | 9,747 | 514 | 229 | 314 | .647 | .75 |
| September | 17,537 | 1,490 | 229 | 585 | 1.21 | 1.35 |
| Water year 1941-42 | 207,400 | 2,750 | 210 | 568 | 1.17 | 15.93 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and Manawa power plant records.
Note.- Stage-discharge relation affected by ice Jan. 2 to Mar. 13.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Waupaca River near Waupaca, Wis.

Location.- Water-stage recorder, lat. 44°21', long. 88°59', near north line of sec. 1, T. 21 N., R. 12 E., at highway bridge 1½ miles downstream from Crystal River and 4 miles downstream from Waupaca.

Drainage area.- 305 square miles.

Records available.- October 1917 to September 1942. June 1916 to October 1917 at site 1 mile downstream.

Average discharge.- 26 years, 253 second-feet.

Extremes.- Maximum discharge during year, 872 second-feet June 7 (gage height, 3.49 feet); minimum, 172 second-feet Mar. 5 (gage height, 1.41 feet).
1916-42: Maximum discharge observed, 2,600 second-feet Mar. 17, 1919 (gage height, 5.6 feet), from rating curve extended above 1,000 second-feet; minimum observed, 35 second-feet Jan. 22, 28, 1926.

Remarks.- Records good except those for periods of ice effect, which are fair. Considerable diurnal fluctuation caused by power plants above station.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 3 | | | | Mar. 4 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.3 | 139 | 1.7 | 245 | 1.6 | 223 | 2.6 | 562 |
| 1.4 | 161 | 1.8 | 277 | 1.8 | 287 | 2.9 | 665 |
| 1.5 | 187 | 2.0 | 344 | 2.0 | 355 | 3.3 | 803 |
| 1.6 | 215 | 2.2 | 415 | 2.3 | 458 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 248 | 386 | 245 | 220 | 200 | 210 | 322 | 307 | 677 | 340 | 336 | 229 |
| 2 | 245 | 426 | 246 | 200 | 170 | 218 | 304 | 291 | 560 | 315 | 323 | 255 |
| 3 | 242 | 372 | 239 | 190 | 190 | 228 | 293 | 302 | 517 | 300 | 298 | 273 |
| 4 | 239 | 324 | 239 | 185 | 225 | 235 | 290 | 309 | 470 | 266 | 284 | 251 |
| 5 | 290 | 317 | 248 | 180 | 270 | 229 | 340 | 290 | 409 | 275 | 274 | 245 |
| 6 | 317 | 297 | 239 | 178 | 230 | 232 | 390 | 373 | 522 | 267 | 282 | 240 |
| 7 | 324 | 290 | 245 | 175 | 230 | 251 | 376 | 511 | 795 | 255 | 294 | 246 |
| 8 | 317 | 297 | 242 | 172 | 240 | 257 | 333 | 448 | 575 | 249 | 337 | 259 |
| 9 | 300 | 284 | 210 | 165 | 250 | *427 | 314 | 347 | 417 | 244 | 370 | 260 |
| 10 | 300 | 287 | 170 | 150 | 235 | 247 | 290 | 315 | 402 | 256 | 318 | 246 |
| 11 | 284 | 274 | 190 | 152 | *227 | 268 | 276 | 357 | 477 | 248 | 307 | 240 |
| 12 | 277 | 271 | 210 | 170 | 215 | 271 | 262 | 514 | 413 | 249 | 285 | 232 |
| 13 | 271 | 280 | 230 | *205 | 205 | 286 | 252 | 465 | 358 | 241 | 269 | 246 |
| 14 | 287 | 271 | 230 | 205 | 190 | 293 | 257 | 441 | 325 | 239 | 280 | 243 |
| 15 | 348 | 264 | 235 | 202 | 180 | 303 | 245 | 392 | 309 | 237 | 271 | 278 |
| 16 | 297 | 261 | 250 | 200 | 175 | 397 | 246 | 346 | 272 | 534 | 262 | 291 |
| 17 | 284 | 267 | 260 | 200 | 150 | 475 | 248 | 321 | 284 | 676 | 258 | 421 |
| 18 | 290 | 264 | 255 | 202 | 150 | 461 | 235 | 308 | 355 | 489 | 264 | 520 |
| 19 | 320 | 267 | 242 | 210 | 150 | 367 | 227 | 295 | 356 | 363 | 258 | 606 |
| 20 | 303 | 271 | 239 | 240 | 150 | 368 | 242 | 285 | 304 | 351 | 253 | 539 |
| 21 | 317 | 274 | 230 | 270 | 155 | 361 | 225 | 264 | 324 | 292 | 247 | 469 |
| 22 | 307 | 258 | 261 | 270 | 158 | 351 | 228 | 260 | 306 | 290 | 242 | 400 |
| 23 | 297 | 251 | 297 | 268 | 161 | 324 | 222 | 250 | 282 | 281 | 238 | 386 |
| 24 | 300 | 230 | 344 | 265 | 166 | 317 | 217 | 248 | 278 | 268 | 245 | 381 |
| 25 | 277 | 235 | 327 | 268 | 170 | 313 | 217 | 251 | 259 | 276 | 237 | 343 |
| 26 | 271 | 242 | 303 | 272 | 174 | 316 | 220 | 232 | 279 | 280 | 233 | 345 |
| 27 | 287 | 239 | 287 | 260 | 180 | 361 | 222 | 241 | 265 | 261 | 228 | 349 |
| 28 | 297 | 239 | 264 | 250 | 195 | 363 | 222 | 241 | 384 | 304 | 242 | 331 |
| 29 | 271 | 248 | 271 | 238 | - | 348 | 278 | 305 | 504 | 479 | 244 | 323 |
| 30 | 280 | 236 | 280 | 232 | - | 336 | 294 | 422 | 452 | 404 | 243 | 293 |
| 31 | 271 | - | 251 | 230 | - | 333 | - | 664 | - | 356 | 238 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 8,958 | 348 | 239 | 289 | 0.948 | 1.09 |
| November | 8,422 | 426 | 230 | 281 | .921 | 1.03 |
| December | 7,781 | 344 | 170 | 251 | .823 | .95 |
| Calendar year 1941 | 94,641 | 648 | 135 | 259 | .849 | 11.54 |
| January | 6,624 | 272 | 150 | 214 | .702 | .81 |
| February | 5,391 | 270 | 150 | 193 | .633 | .66 |
| March | 9,746 | 475 | 210 | 314 | 1.03 | 1.19 |
| April | 8,087 | 390 | 217 | 270 | .885 | .99 |
| May | 10,595 | 664 | 232 | 342 | 1.12 | 1.29 |
| June | 12,130 | 795 | 259 | 404 | 1.32 | 1.47 |
| July | 9,885 | 676 | 237 | 319 | 1.05 | 1.21 |
| August | 8,460 | 370 | 228 | 273 | .895 | 1.03 |
| September | 9,740 | 606 | 229 | 325 | 1.07 | 1.19 |
| Water year 1941-42 | 105,819 | 795 | 150 | 290 | .951 | 12.91 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 24, 25, Dec. 9-18, Jan. 1 to Mar. 3 (no gage-height record Jan. 6-10, 31).
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## West Branch of Fond du Lac River at Fond du Lac, Wis.

Location.- Water-stage recorder, lat. 43°45'45", long. 88°29'00", on line between secs. 17 and 20, T. 15 N., R. 17 E., at concrete bridge on County Trunk Highway T, three-quarters of a mile west of Fond du Lac and 2½ miles upstream from confluence with East Branch. Datum of gage is 766.78 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 88 square miles.

Records available.- March 1939 to September 1942.

Extremes.- Maximum discharge during year, 1,320 second-feet May 31 (gage height, 6.16 feet) from rating curve extended above 460 second-feet; minimum daily, 0.1 second-foot Oct. 2-5.

1939-42: Maximum discharge, that of May 31, 1942; no flow on many days.

Remarks.- Records good except those below 1 second-foot and those for periods of ice effect, which are poor.

**Rating table, water year 1941-42, except periods of ice effect**
**(gage height, in feet, and discharge, in second-feet)**
**(Shifting-control method used May 12-27, Sept. 1-30)**

| | | | | | |
|---|---|---|---|---|---|
| 0.1 | 0.1 | .8 | 34.0 | 3.2 | 405 |
| .2 | .3 | 1.0 | 57 | 3.7 | 517 |
| .3 | .8 | 1.3 | 98 | 4.1 | 628 |
| .4 | 4.5 | 1.7 | 156 | | |
| .5 | 10.0 | 2.2 | 234 | | |
| .6 | 17.0 | 2.7 | 318 | | |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.2 | 46 | a20 | 19 | 38 | 5 | 92 | 12 | 242 | 43 | 11 | 31 |
| 2 | .1 | 32 | h19 | 14 | 35 | 8 | 88 | 11 | 609 | 40 | 11 | 31 |
| 3 | .1 | 26 | 17 | 12 | 30 | 10 | 80 | 13 | 454 | 38 | 11 | 28 |
| 4 | .1 | 25 | 17 | 11 | 29 | 12 | 74 | 14 | 405 | 35 | 11 | 27 |
| 5 | .1 | 25 | *18 | *11 | 30 | 13 | 74 | 12 | 360 | 33 | 12 | 25 |
| 6 | .2 | 26 | 17 | 10 | 30 | 14 | 133 | 14 | 318 | 31 | 17 | 24 |
| 7 | 5.6 | 30 | 13 | 9 | 29 | 15 | 106 | 19 | 276 | 28 | 22 | 29 |
| 8 | 3.4 | 33 | 11 | 9 | 24 | 15 | 94 | 19 | 242 | 26 | 52 | 30 |
| 9 | 4.1 | 32 | h10 | h8 | 17 | *16 | 91 | 19 | 210 | 23 | 42 | 30 |
| 10 | 5.6 | 33 | 9 | 8 | *10 | 16 | 90 | 18 | 188 | 22 | 36 | 30 |
| 11 | 6.2 | 34 | 7.8 | 8 | 9 | 17 | 84 | 26 | 180 | 21 | 36 | 30 |
| 12 | 6.7 | 35 | 7.2 | 8 | 8 | 19 | 77 | 49 | 166 | 19 | 36 | 31 |
| 13 | 7.2 | 37 | 5.6 | 8 | 8 | 40 | 67 | 44 | 148 | 18 | 42 | 31 |
| 14 | 14 | 37 | 6.2 | 9 | 8 | 100 | 62 | 41 | 147 | 17 | 44 | 35 |
| 15 | 3.8 | 36 | 6.2 | 10 | 9 | 226 | 56 | 45 | 148 | 16 | 47 | 35 |
| 16 | 2.3 | 34 | 5.6 | 12 | 12 | 301 | 52 | 71 | 141 | 18 | 47 | 37 |
| 17 | 3.0 | 33 | 5.0 | 13 | 15 | 335 | 49 | 69 | 131 | 16 | 46 | 36 |
| 18 | 19 | 32 | 6.2 | 15 | 7 | 301 | 42 | 64 | 121 | 15 | 46 | 45 |
| 19 | 14 | 34 | 7.8 | 16 | 7 | 340 | 40 | 62 | 112 | 14 | 46 | 76 |
| 20 | 11 | 35 | 7.8 | 18 | e | 251 | 35 | 60 | 109 | 14 | 45 | 61 |
| 21 | 12 | 34 | 7.2 | 18 | 8 | 234 | 31 | 58 | 99 | 12 | 44 | 56 |
| 22 | 12 | 32 | 11 | 19 | 7 | 197 | 28 | 53 | 88 | 11 | 62 | 60 |
| 23 | 14 | 36 | 21 | 20 | 7 | 178 | 24 | 47 | 78 | 11 | 55 | 62 |
| 24 | 13 | 24 | 34 | 22 | 6 | 156 | 22 | 41 | 70 | 9.4 | 49 | 66 |
| 25 | 12 | 23 | 26 | 30 | 6 | 135 | 19 | 36 | 65 | 8.9 | 44 | 66 |
| 26 | 11 | 23 | 22 | 35 | 5 | 120 | 17 | 36 | 61 | 7.8 | 42 | 85 |
| 27 | 12 | 24 | 20 | 38 | 5 | 126 | 17 | 34 | 56 | 7.2 | 40 | 80 |
| 28 | 11 | 23 | 21 | 41 | 4 | 118 | 17 | 34 | 53 | h8.4 | 38 | 76 |
| 29 | 10 | 22 | 22 | 43 | - | 106 | 16 | 32 | 51 | h9.4 | 37 | 70 |
| 30 | 9.4 | 21 | 22 | 44 | - | 101 | 14 | 30 | 47 | 11 | 33 | 67 |
| 31 | 10 | - | 22 | 41 | - | 101 | - | 440 | - | 11 | 33 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 234.1 | 19 | 0.1 | 7.55 | 0.086 | 0.10 |
| November | 917 | 46 | 21 | 30.6 | .348 | .39 |
| December | 444.6 | 34 | 5.0 | 14.3 | .162 | .19 |
| Calendar year 1941 | 10,862.4 | 777 | 0 | 29.8 | .339 | 4.61 |
| January | 579 | 44 | 8 | 18.7 | .212 | .24 |
| February | 411 | 38 | 4 | 14.7 | .167 | .17 |
| March | 3,626 | 340 | 5 | 117 | 1.33 | 1.53 |
| April | 1,691 | 133 | 14 | 56.4 | .641 | .72 |
| May | 1,523 | 440 | 11 | 49.1 | .558 | .64 |
| June | 5,375 | 609 | 47 | 179 | 2.03 | 2.26 |
| July | 594.1 | 43 | 7.2 | 19.2 | .218 | .25 |
| August | 1,137 | 62 | 11 | 36.7 | .417 | .48 |
| September | 1,390 | 85 | 24 | 46.3 | .526 | .59 |
| Water year 1941-42 | 17,921.6 | 609 | .1 | 49.1 | .556 | 7.56 |

Peak discharge.- Mar. 19 (4 p.m.) 600 sec.-ft.; Apr. 6 (11 a.m.) 165 sec.-ft.; May 31 (11 a.m.) 1,320 sec.-ft.; June 2 (6 a.m.) 970 sec.-ft.; Aug. 8 (5 p.m.) 189 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge interpolated.

h Computed from staff-gage readings.

Note.- Stage-discharge relation affected by ice Nov. 25, Dec. 8-10, Dec. 27 to Mar. 14.

Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## East Branch of Fond du Lac River at Fond du Lac, Wis.

Location.- Water-stage recorder, lat. 43°45'15", long. 88°27'10", in sec. 22, T. 15 N., R. 17 E., at steel bridge on town road, an eighth of a mile west of U. S. Highway 41, half a mile south of Fond du Lac, and 2½ miles upstream from confluence with West Branch. Datum of gage is 762.82 feet above mean sea level (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 75 square miles.

Records available.- March 1939 to September 1942. May to July 1903 (gage heights only), at site about 2 miles downstream.

Extremes.- Maximum discharge during year, 920 second-feet May 31 (gage height, 4.12 feet); minimum daily, 1 second-foot Jan. 5-10.
1929-42: Maximum discharge, 2,140 second-feet June 23, 1940 (gage height, 5.87 feet); no flow Jan. 17-29, 1940.

Remarks.- Records good except those for periods of ice effect, which are poor.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.8 | 52 | 11 | 18 | 15 | 8 | 52 | 7.4 | 449 | 17 | 12 | 9.0 |
| 2 | 4.2 | 90 | 12 | 12 | 13 | 9 | 41 | 7.4 | 675 | 15 | 11 | 35 |
| 3 | 3.0 | 52 | 13 | 6 | 12 | 12 | 33 | 7.9 | 606 | 14 | 9.8 | 28 |
| 4 | 2.7 | 38 | 13 | 3 | 11 | 14 | 29 | 8.4 | 368 | 14 | 6.6 | 18 |
| 5 | 2.7 | 29 | *13 | *1 | 11 | 17 | 31 | 7.4 | 362 | 14 | 6.2 | 14 |
| 6 | 2.7 | 29 | 12 | 1 | 11 | 20 | 149 | 8.4 | 221 | 13 | 8.2 | 13 |
| 7 | 3.4 | 30 | 10 | 1 | 11 | 25 | 136 | 48 | 160 | 12 | 27 | 20 |
| 8 | 3.4 | 28 | 10 | 1 | 10 | 40 | 83 | 19 | 122 | 10 | 59 | 41 |
| 9 | 4.2 | 28 | 9 | 1 | 9 | *61 | 61 | 16 | 93 | 8.2 | 84 | 28 |
| 10 | 3.6 | 28 | 9 | 1 | *9 | 67 | 50 | 12 | 155 | 7.5 | 34 | 25 |
| 11 | 2.8 | 26 | 8.4 | 2 | 9 | 72 | 41 | 14 | 192 | 7.5 | 20 | 22 |
| 12 | 2.7 | 26 | 6.8 | 3 | 8 | 80 | 34 | 67 | 149 | 7.1 | 15 | 20 |
| 13 | 3.1 | 31 | 6.8 | 4 | 8 | 90 | 29 | 54 | 97 | 6.6 | 14 | 17 |
| 14 | 19 | 33 | 7.4 | 5 | 8 | 110 | 26 | 50 | 73 | 6.2 | 13 | 22 |
| 15 | 15 | 29 | 8.4 | 6 | 9 | 180 | 21 | 41 | 63 | 6.6 | 11 | 27 |
| 16 | 8.4 | 26 | 7.9 | 7 | 10 | 300 | 17 | 72 | 53 | 12 | 9.8 | 24 |
| 17 | 5.8 | 25 | 8.4 | 8 | 15 | 370 | 17 | 65 | 46 | 15 | 8.2 | 20 |
| 18 | 31 | 22 | 8.9 | 9 | 11 | 340 | 15 | 47 | 50 | 9.0 | 7.1 | 43 |
| 19 | 45 | 21 | 10 | 13 | 9 | 250 | 12 | 41 | 45 | 7.5 | 6.6 | 152 |
| 20 | 22 | 29 | 18 | 16 | 7 | 170 | 10 | 31 | 67 | 7.5 | 6.2 | 100 |
| 21 | 15 | 28 | 10 | 19 | 8 | 133 | 9.4 | 29 | 97 | 7.1 | 5.7 | 63 |
| 22 | 11 | 21 | 11 | 20 | 9 | 81 | 8.4 | 25 | 53 | 6.2 | 10 | 55 |
| 23 | 12 | 16 | 19 | 20 | 10 | 65 | 7.9 | 21 | 38 | 6.2 | 20 | 52 |
| 24 | 11 | 15 | 63 | 22 | 10 | 54 | 6.8 | 17 | 31 | 5.7 | 13 | 52 |
| 25 | 10 | 15 | 52 | 24 | 10 | 47 | 6.3 | 14 | 24 | 5.3 | 9.0 | 43 |
| 26 | 10 | 14 | 33 | 25 | 10 | 41 | 5.8 | 13 | 23 | 5.3 | 7.5 | 52 |
| 27 | 9.4 | 13 | 25 | 24 | 9 | 65 | 6.3 | 15 | 21 | 4.9 | 7.5 | 65 |
| 28 | 10 | 11 | 24 | 23 | 8 | 86 | 9.4 | 15 | 19 | 4.4 | 7.5 | 48 |
| 29 | 8.9 | 11 | 23 | 21 | - | 74 | 7.9 | 15 | 19 | 7.1 | 11 | 38 |
| 30 | 7.9 | 11 | 23 | 19 | - | 65 | 6.8 | 19 | 19 | 9.0 | 11 | 34 |
| 31 | 7.9 | - | 23 | 16 | - | 63 | - | 427 | - | 15 | 9.0 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 303.6 | 45 | 2.7 | 9.79 | 0.131 | 0.15 |
| November | 827 | 90 | 11 | 27.6 | .368 | .41 |
| December | 509.0 | 63 | 6.8 | 16.4 | .219 | .25 |
| Calendar year 1941 | 11,830.0 | 878 | 1.7 | 32.4 | .432 | 5.85 |
| January | 351 | 25 | 1 | 11.3 | .151 | .17 |
| February | 280 | 15 | 7 | 10.0 | .133 | .14 |
| March | 3,009 | 370 | 8 | 97.1 | 1.29 | 1.49 |
| April | 962.0 | 149 | 5.8 | 32.1 | .428 | .48 |
| May | 1,233.9 | 427 | 7.4 | 39.8 | .531 | .61 |
| June | 4,390 | 675 | 19 | 146 | 1.95 | 2.18 |
| July | 285.9 | 17 | 4.4 | 9.22 | .123 | .14 |
| August | 479.9 | 64 | 5.7 | 15.5 | .207 | .24 |
| September | 1,180 | 152 | 9.0 | 39.3 | .524 | .58 |
| Water year 1941-42 | 13,611.3 | 675 | 1 | 37.8 | .504 | 6.84 |

Peak discharge.- May 31 (12 m.) 920 sec.-ft.; June 2 (9 a.m.) 799 sec.-ft.; June 10 (6 p.m.) 388 sec.-ft.; Aug. 8 (8 p.m.) 368 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 24-27, Dec. 5-10, Dec. 28 to Mar. 20.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Lake de Neveu near Fond du Lac, Wis.

Location.- Staff gage, lat. 43°44', long. 88°24', in sec. 30, T. 15 N., R. 18 E., at boat house at north end of lake on farm of Nick Giebel, 4 miles southeast of Fond du Lac.

Drainage area.- 2 square miles.

Records available.- August 1936 to September 1942 (fragmentary).

Extremes.- Maximum elevation observed during year, 98.10 feet May 31, June 2; minimum, 97.30 feet July 28.
1936-42: Maximum elevation observed, 98.20 feet Sept. 18, 1938; minimum, 96.90 feet Aug. 15, 1936.

Remarks.- Gage heights have been reduced to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1941 to September 1942

| Date | Elevation | Date | Elevation | Date | Elevation | Date | Elevation |
|---|---|---|---|---|---|---|---|
| Oct. 4 | 7.46 | Dec. 6 | 7.44 | June 2 | 8.10 | Aug. 4 | 7.46 |
| 7 | 7.46 | 9 | 7.44 | 5 | 7.90 | 7 | 7.50 |
| 11 | 7.48 | 13 | 7.44 | 9 | 7.86 | 11 | 7.50 |
| 14 | 7.56 | 16 | 7.44 | 12 | 7.68 | 14 | 7.48 |
| 18 | 7.62 | 20 | 7.42 | 16 | 7.54 | 18 | 7.44 |
| 21 | 7.60 | 23 | 7.46 | 19 | 7.52 | 21 | 7.40 |
| 25 | 7.58 | 27 | 7.50 | 23 | 7.48 | 25 | 7.48 |
| 28 | 7.54 | 30 | 7.48 | 26 | 7.46 | 28 | 7.44 |
| Nov. 1 | 7.56 | Apr. 24 | 7.45 | 30 | 7.44 | Sept. 1 | 7.48 |
| 4 | 7.54 | May 5 | 7.40 | July 3 | 7.40 | 4 | 7.48 |
| 8 | 7.50 | 8 | 7.44 | 7 | 7.38 | 8 | 7.48 |
| 11 | 7.48 | 12 | 7.52 | 10 | 7.34 | 11 | 7.46 |
| 15 | 7.46 | 15 | 7.54 | 14 | 7.34 | 15 | 7.48 |
| 18 | 7.46 | 19 | 7.56 | 17 | 7.40 | 18 | 7.50 |
| 22 | 7.48 | 22 | 7.50 | 21 | 7.38 | 22 | 7.52 |
| 25 | 7.46 | 26 | 7.48 | 24 | 7.34 | 25 | 7.48 |
| 29 | 7.44 | 29 | 7.46 | 28 | 7.30 | 29 | 7.50 |
| Dec. 2 | 7.44 | 31 | 8.10 | 31 | 7.50 | | |

Note.- Add 90 feet to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Cedar Lake near Kiel, Wis.

Location.- Staff gage, lat. 43°55', long. 87°56', in sec. 24, T. 17 N., R. 21 E., at Cedar Lake Resort on narrows of lake, 5 miles east of Kiel.

Drainage area.- 3 square miles.

Records available.- August 1936 to September 1942 (fragmentary).

Extremes.- Maximum elevation observed during year, 98.34 feet Sept. 27; minimum, 96.50 feet Oct. 4, 11.
1936-42: Maximum elevation observed, that of Sept. 27, 1942; minimum, 94.95 feet Aug. 14, 1936.

Remarks.- Gage heights have been reduced to datum assumed for this lake by Public Service Commission of Wisconsin.

Elevation, in feet, water year October 1941 to September 1942

| Date | Elevation | Date | Elevation | Date | Elevation | Date | Elevation |
|---|---|---|---|---|---|---|---|
| Oct. 4 | 6.50 | June 20 | 7.60 | Aug. 15 | 8.19 | Sept. 9 | 8.12 |
| 11 | 6.50 | 27 | 7.60 | 16 | 8.18 | 10 | 8.12 |
| 18 | 6.70 | July 23 | 7.90 | 17 | 8.16 | 11 | 8.10 |
| 25 | 6.80 | 24 | 7.90 | 18 | 8.15 | 12 | 8.10 |
| Nov. 1 | 6.80 | 25 | 7.82 | 19 | 8.12 | 13 | 8.10 |
| 8 | 6.80 | 26 | 7.80 | 20 | 8.10 | 14 | 8.10 |
| 15 | 6.80 | 27 | 7.80 | 21 | 8.10 | 15 | 8.08 |
| 22 | 6.80 | 28 | 7.90 | 22 | 8.12 | 16 | 8.10 |
| 29 | 6.80 | 29 | 8.10 | 23 | 8.12 | 17 | 8.11 |
| Dec. 6 | 6.80 | 30 | 8.10 | 24 | 8.14 | 18 | 8.12 |
| 13 | 6.80 | 31 | 8.12 | 25 | 8.14 | 19 | 8.14 |
| 20 | 6.80 | Aug. 1 | 8.14 | 26 | 8.13 | 20 | 8.16 |
| 27 | 6.80 | 2 | 8.14 | 27 | 8.12 | 21 | 8.16 |
| Apr. 4 | 7.20 | 3 | 8.12 | 28 | 8.10 | 22 | 8.20 |
| 11 | 7.20 | 4 | 8.12 | 29 | 8.10 | 23 | 8.22 |
| 18 | 7.20 | 5 | 8.12 | 30 | 8.10 | 24 | 8.24 |
| 23 | 7.24 | 6 | 8.14 | 31 | 8.11 | 25 | 8.26 |
| 25 | 7.24 | 7 | 8.18 | Sept. 1 | 8.12 | 26 | 8.32 |
| May 2 | 7.24 | 8 | 8.20 | 2 | 8.13 | 27 | 8.34 |
| 9 | 7.24 | 9 | 8.21 | 3 | 8.14 | 28 | 8.32 |
| 16 | 7.24 | 10 | 8.22 | 4 | 8.14 | 29 | 8.30 |
| 23 | 7.50 | 11 | 8.22 | 5 | 8.14 | 30 | 8.28 |
| 30 | 7.60 | 12 | 8.22 | 6 | 8.12 | | |
| June 6 | 7.60 | 13 | 8.21 | 7 | 8.12 | | |
| 13 | 7.60 | 14 | 8.20 | 8 | 8.13 | | |

Note.- Add 90 feet to obtain elevation above datum assumed for this lake by Public Service Commission of Wisconsin.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Milwaukee River at Milwaukee, Wis.

Location.- Water-stage recorder, lat. 43°06'00", long. 87°54'30", in NE¼ sec. 5, T. 7 N., R. 22 E., on left bank of river near north limits of Milwaukee, 2,000 feet downstream from Port Washington Road bridge, and 6 miles upstream from mouth. Datum of gage is 607.3 feet above mean sea level, adjustment of 1912.

Drainage area.- 661 square miles.

Records available.- April 1914 to September 1942.

Average discharge.- 28 years, 406 second-feet.

Extremes.- Maximum discharge during year, 2,360 second-feet Mar. 17 (gage height, 4.74 feet); minimum, 6 second-feet (regulated) June 30; minimum daily, 36 second-feet June 30. 1914-42: Maximum discharge, 15,100 second-feet Mar. 20, 1918 (gage height, 9.00 feet, datum then in use, from floodmark); minimum, 1.4 second-feet (regulated) Sept. 12, 1939; minimum daily, 4 second-feet July 8, 1941.

Remarks.- Records good except those for periods of ice effect, which are poor. Occasional regulation caused by dams above station.

**Rating table, water year 1941-42, except periods of ice effect, (gage height, in feet, and discharge, in second-feet) (Shifting-control method used Sept. 18- 30)**

| | | | | | |
|---|---|---|---|---|---|
| 1.9 | 34 | 2.8 | 416 | 4.0 | 1,420 |
| 2.1 | 81 | 3.1 | 600 | 4.4 | 1,900 |
| 2.3 | 154 | 3.4 | 833 | | |
| 2.5 | 248 | 3.7 | 1,110 | | |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 369 | 614 | 243 | 318 | 554 | 181 | 587 | 219 | 1,180 | 106 | 158 | 84 |
| 2 | 248 | 741 | 233 | 181 | 516 | 228 | 554 | 238 | 1,380 | 126 | 259 | 110 |
| 3 | 296 | 710 | 233 | 140 | 462 | 224 | 486 | 214 | 1,280 | 126 | 285 | 101 |
| 4 | 253 | 574 | 233 | 110 | 416 | 233 | 439 | 219 | 1,150 | 118 | 301 | 122 |
| 5 | 172 | 516 | 233 | 92 | 433 | 318 | 416 | 209 | 1,110 | 122 | 214 | 130 |
| 6 | 163 | 445 | 224 | 85 | 428 | 492 | 387 | 209 | 992 | 172 | 204 | 110 |
| 7 | 274 | 393 | 200 | 80 | 380 | 554 | 457 | 274 | 920 | 118 | 194 | 107 |
| 8 | 516 | 370 | 160 | 82 | 340 | 703 | 504 | 364 | 757 | 107 | 280 | 114 |
| 9 | 428 | 341 | *136 | 83 | 310 | 710 | 468 | 115 | 658 | 107 | 301 | 154 |
| 10 | 341 | 341 | 132 | *85 | 280 | 665 | 422 | 422 | 554 | 118 | 347 | 163 |
| 11 | 264 | 330 | 134 | 88 | *262 | 665 | 399 | 381 | 746 | 130 | 554 | 172 |
| 12 | 194 | 318 | 138 | 94 | 250 | 665 | 301 | 347 | 894 | 138 | 541 | 186 |
| 13 | 163 | 312 | 146 | 100 | 240 | 665 | 375 | 534 | 1,120 | 114 | 468 | 150 |
| 14 | 194 | 318 | 154 | 110 | 238 | 734 | 259 | 614 | 1,090 | 104 | 381 | 176 |
| 15 | 190 | 290 | 163 | 130 | 230 | 766 | 274 | 516 | 791 | 81 | 312 | 190 |
| 16 | 214 | 312 | 146 | 180 | 210 | 1,030 | 259 | 504 | 574 | 107 | 228 | 176 |
| 17 | 176 | 301 | 146 | 210 | 180 | 1,900 | 253 | 567 | 439 | 101 | 204 | 172 |
| 18 | 233 | 290 | 172 | 230 | 150 | 1,650 | 248 | 650 | 387 | 107 | 176 | 248 |
| 19 | 492 | 324 | 194 | 235 | 150 | 1,840 | 269 | 574 | 324 | 94 | 146 | 312 |
| 20 | 600 | 358 | 204 | 240 | 150 | 1,530 | 233 | 498 | 393 | 78 | 142 | 451 |
| 21 | 547 | 428 | 224 | 240 | 150 | 1,230 | 209 | 292 | 404 | 88 | 146 | 560 |
| 22 | 486 | 387 | 228 | 250 | 150 | 1,090 | 199 | 501 | 410 | 76 | 94 | 480 |
| 23 | 439 | 364 | 285 | 275 | 150 | 911 | 176 | 312 | 404 | 94 | 76 | 381 |
| 24 | 341 | 285 | 375 | 320 | 150 | 766 | 209 | 285 | 364 | 91 | 88 | 194 |
| 25 | 324 | 421 | 480 | 385 | 152 | 643 | 181 | 228 | 296 | 84 | 91 | 324 |
| 26 | 296 | 285 | 516 | 450 | 156 | 600 | 163 | 199 | 259 | 73 | 98 | 370 |
| 27 | 285 | 209 | 480 | 520 | 165 | 587 | 154 | 224 | 158 | 65 | 91 | 439 |
| 28 | 243 | 259 | 404 | 580 | 176 | 636 | 199 | 209 | 190 | 104 | 98 | 468 |
| 29 | 246 | 238 | 393 | 620 | - | 680 | 163 | 158 | 176 | 101 | 101 | 416 |
| 30 | 233 | 236 | 301 | 622 | - | 650 | 158 | 219 | 36 | 107 | 104 | 358 |
| 31 | 190 | - | 274 | 607 | - | 636 | - | 770 | - | 101 | 94 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 9,412 | 600 | 163 | 304 | 0.460 | 0.53 |
| November | 11,312 | 741 | 209 | 377 | .570 | .64 |
| December | 7,584 | 516 | 132 | 245 | .371 | .43 |
| Calendar year 1941 | 101,304 | 1,480 | 4 | 278 | .421 | 5.70 |
| January | 7,742 | 622 | 80 | 250 | .378 | .44 |
| February | 7,428 | 554 | 150 | 265 | .401 | .42 |
| March | 24,182 | 1,900 | 181 | 780 | 1.18 | 1.36 |
| April | 9,401 | 587 | 154 | 313 | .474 | .53 |
| May | 11,065 | 770 | 115 | 357 | .540 | .62 |
| June | 19,436 | 1,380 | 36 | 648 | .980 | 1.09 |
| July | 3,258 | 172 | 65 | 105 | .159 | .18 |
| August | 6,776 | 554 | 76 | 219 | .331 | .38 |
| September | 7,418 | 560 | 84 | 247 | .374 | .42 |
| Water year 1941-42 | 125,014 | 1,900 | 36 | 343 | .519 | 7.04 |

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 7-13, Jan. 3-29, Feb. 7-27.

Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Cedar Creek near Cedarburg, Wis.

Location.- Chain gage, lat. 43°19'25", long. 87°58'50", on line between secs. 14 and 23, T. 10 N., R. 21 E., at bridge on State Trunk Highway, 2 miles north of Cedarburg and 6 miles upstream from mouth.

Drainage area.- 113 square miles.

Records available.- August 1930 to September 1942.

Average discharge.- 12 years, 54.8 second-feet.

Extremes.- Maximum discharge observed during year, 850 second-feet June 13 (gage height, 7.38 feet); minimum observed, 9.6 second-feet July 25-28 (gage height, 5.25 feet).
1930-42: Maximum discharge, 3,180 second-feet by discharge measurement June 23, 1940; maximum gage height, 12.00 feet Feb. 7, 1938 (affected by ice); minimum discharge observed, 0.2 second-foot Aug. 9-12, 1936.

Remarks.- Records good except those for period of ice effect, which are fair. Gage read once daily.

Rating table, water year 1941-42, except period of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 18 to Sept. 30)

| | | | |
|---|---|---|---|
| 5.2 | 8.2 | 6.0 | 152 |
| 5.3 | 13 | 6.5 | 310 |
| 5.4 | 18 | 7.0 | 472 |
| 5.6 | 44 | 7.5 | 662 |
| 5.8 | 94 | 8.0 | 904 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a30 | 105 | 41 | 29 | 90 | 33 | 111 | 29 | 246 | 24 | 24 | 10 |
| 2 | 29 | 134 | 41 | 25 | 77 | 38 | 100 | 29 | 342 | 20 | 40 | 12 |
| 3 | 25 | 146 | 38 | 22 | 71 | 40 | 84 | 35 | 278 | 18 | 51 | 15 |
| 4 | 21 | 116 | 38 | 20 | 70 | 43 | 78 | 32 | 201 | 18 | 40 | 13 |
| 5 | 18 | 73 | 35 | 18 | 70 | 60 | 73 | 32 | 146 | 18 | 36 | 13 |
| 6 | 17 | 63 | 32 | 18 | 70 | 100 | 78 | 41 | 94 | 17 | 28 | 12 |
| 7 | 38 | 54 | 32 | 17 | 64 | 125 | 105 | 73 | 78 | 17 | 34 | 13 |
| 8 | 78 | 58 | 32 | 16 | 56 | 140 | 89 | 68 | 68 | 16 | 34 | 14 |
| 9 | 78 | 54 | 19 | 16 | 50 | 155 | 73 | 68 | 66 | 18 | 36 | 16 |
| 10 | 58 | 54 | 23 | *16 | *47 | *155 | 68 | 41 | 84 | 28 | 40 | 25 |
| 11 | 41 | 49 | 21 | 16 | 44 | 156 | 58 | 44 | 146 | 26 | 34 | 25 |
| 12 | 29 | 49 | 19 | 16 | 42 | 158 | 54 | 152 | 455 | 24 | 26 | 21 |
| 13 | 27 | 49 | 21 | 17 | 38 | 160 | 49 | 164 | 800 | 20 | 22 | 17 |
| 14 | 25 | 44 | 23 | 19 | 34 | 165 | 49 | 116 | 542 | 18 | 20 | 18 |
| 15 | 27 | 49 | 23 | 22 | 30 | 175 | 44 | 111 | 294 | 18 | 17 | 21 |
| 16 | 23 | 44 | 25 | 30 | 32 | 210 | 44 | 146 | 176 | 16 | 17 | 25 |
| 17 | 21 | 41 | 29 | 34 | 36 | 320 | 44 | 176 | 111 | 16 | 16 | 25 |
| 18 | 73 | 41 | 35 | 38 | 40 | 350 | 44 | 176 | 78 | 16 | 16 | 27 |
| 19 | 116 | 44 | 41 | 40 | 30 | 278 | 38 | 122 | 58 | 15 | 15 | 73 |
| 20 | 134 | 116 | 35 | 41 | 25 | 230 | 32 | 78 | 58 | 15 | 12 | 94 |
| 21 | 116 | 105 | 35 | 42 | 25 | 201 | 32 | 68 | 100 | 14 | 13 | 89 |
| 22 | 78 | 84 | 38 | 44 | 25 | 170 | 29 | 63 | 152 | 12 | 12 | 58 |
| 23 | 63 | 63 | 68 | 47 | 25 | 152 | 29 | 58 | 152 | 12 | 12 | 44 |
| 24 | 58 | 54 | 111 | 56 | 26 | 122 | 27 | 44 | 84 | 11 | 11 | 38 |
| 25 | 44 | 54 | 100 | 70 | 29 | 105 | 27 | 35 | 63 | 9.6 | 10 | 35 |
| 26 | 38 | 44 | 58 | 80 | 30 | 94 | 29 | 35 | 44 | 9.6 | 10 | 44 |
| 27 | 35 | 41 | 58 | 92 | 30 | 128 | 35 | 35 | 44 | 9.6 | 11 | 89 |
| 28 | 35 | 41 | 73 | 100 | 31 | 134 | 32 | 35 | 38 | 9.6 | 12 | 89 |
| 29 | 32 | 41 | 68 | 105 | - | 140 | 29 | 35 | 35 | 12 | 12 | 58 |
| 30 | 27 | 41 | 78 | 106 | - | 134 | 29 | 32 | 29 | 20 | 11 | 44 |
| 31 | 32 | - | 73 | 100 | - | 122 | - | 158 | - | 22 | 11 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,466 | 134 | 17 | 47.3 | 0.419 | 0.48 |
| November | 1,951 | 146 | 41 | 65.0 | .575 | .64 |
| December | 1,363 | 111 | 19 | 44.0 | .389 | .45 |
| Calendar year 1941 | 18,173.8 | 350 | 2.1 | 49.8 | .441 | 5.98 |
| January | 1,312 | 106 | 16 | 42.3 | .374 | .43 |
| February | 1,237 | 90 | 25 | 44.2 | .391 | .41 |
| March | 4,593 | 350 | 33 | 148 | 1.31 | 1.51 |
| April | 1,613 | 111 | 27 | 53.8 | .476 | .53 |
| May | 2,331 | 176 | 29 | 75.2 | .665 | .77 |
| June | 5,064 | 800 | 29 | 169 | 1.50 | 1.67 |
| July | 521.4 | 28 | 9.6 | 16.8 | .149 | .17 |
| August | 683 | 51 | 10 | 22.0 | .195 | .22 |
| September | 1,079 | 94 | 10 | 36.0 | .319 | .36 |
| Water year 1941-42 | 23,213.4 | 800 | 9.6 | 63.6 | .563 | 7.64 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of observer's notes and weather records.
Note.- Stage-discharge relation affected by ice Jan. 3 to Mar. 18.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Wolf Lake at Chicago, Ill.

Location.- Water-stage recorder, lat. 41°40'00", long. 87°32'15", in SW¼ sec. 29, T. 37 N., R. 15 E., in Chicago, at outlet on west shore. Datum of gage is 580.45 feet above mean sea level, datum of 1929 (Cook County Highway bench mark).

Records available.- December 1939 to September 1942.

Extremes.- Maximum mean hourly gage height during year, 1.78 feet Oct. 6; minimum mean hourly, 0.96 foot May 1-3.
1939-42: Maximum mean hourly gage height, that of Oct. 6, 1941; minimum gage height observed, 0.76 foot Aug. 3, 1940.

Remarks.- Mean hourly figures used to determine extremes, in order to average out the effects of wind action.

Gage height, in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.27 | 1.60 | 1.35 | 1.17 | 1.21 | 1.26 | 1.28 | 1.07 | 1.34 | 1.13 | 1.17 | 1.28 |
| 2 | 1.30 | 1.62 | 1.35 | 1.17 | 1.20 | 1.26 | 1.27 | 1.04 | 1.33 | 1.13 | 1.18 | 1.28 |
| 3 | 1.53 | 1.61 | 1.34 | f1.15 | 1.20 | 1.26 | 1.30 | 1.02 | 1.32 | 1.14 | 1.21 | 1.31 |
| 4 | 1.55 | 1.59 | 1.33 | f1.14 | 1.22 | 1.27 | 1.25 | 1.02 | 1.32 | 1.17 | 1.21 | 1.30 |
| 5 | 1.56 | 1.61 | 1.25 | f1.13 | 1.25 | 1.28 | 1.24 | 1.06 | 1.33 | 1.13 | 1.21 | 1.28 |
| 6 | 1.63 | 1.64 | 1.29 | f1.14 | 1.36 | 1.29 | 1.24 | 1.08 | 1.32 | 1.21 | 1.21 | 1.27 |
| 7 | 1.74 | 1.62 | 1.2[illegible] | f1.14 | 1.43 | 1.28 | 1.34 | 1.09 | 1.31 | 1.18 | 1.24 | 1.26 |
| 8 | 1.75 | 1.64 | 1.23 | f1.14 | 1.43 | 1.30 | 1.36 | 1.10 | 1.30 | 1.20 | 1.29 | 1.34 |
| 9 | 1.74 | 1.62 | f1.23 | f1.13 | 1.40 | 1.27 | 1.35 | 1.10 | 1.27 | 1.20 | 1.28 | 1.39 |
| 10 | 1.70 | 1.59 | 1.25 | f1.13 | 1.40 | 1.30 | 1.35 | 1.10 | 1.28 | 1.22 | 1.28 | 1.40 |
| 11 | 1.66 | 1.57 | 1.25 | f1.12 | 1.40 | 1.28 | 1.30 | 1.09 | 1.32 | 1.22 | 1.27 | 1.40 |
| 12 | 1.65 | 1.54 | 1.24 | f1.10 | 1.40 | 1.30 | 1.30 | 1.14 | 1.32 | 1.17 | 1.27 | 1.38 |
| 13 | 1.64 | 1.53 | 1.24 | f1.08 | 1.40 | 1.32 | 1.27 | 1.19 | 1.31 | 1.19 | 1.27 | 1.36 |
| 14 | 1.63 | 1.54 | 1.20 | f1.09 | 1.39 | 1.32 | 1.26 | 1.21 | 1.28 | 1.20 | 1.26 | 1.32 |
| 15 | 1.61 | 1.50 | 1.20 | 1.10 | 1.39 | 1.30 | 1.24 | 1.26 | 1.25 | 1.22 | 1.25 | 1.38 |
| 16 | 1.60 | 1.50 | 1.20 | 1.10 | 1.40 | 1.33 | 1.23 | 1.25 | 1.23 | 1.22 | 1.23 | 1.41 |
| 17 | 1.57 | 1.48 | 1.20 | f1.11 | 1.40 | 1.35 | 1.27 | 1.25 | 1.13 | 1.20 | 1.22 | 1.41 |
| 18 | 1.60 | 1.45 | 1.21 | 1.13 | 1.39 | 1.40 | 1.26 | 1.25 | 1.19 | 1.18 | 1.22 | 1.40 |
| 19 | 1.60 | 1.44 | 1.20 | 1.13 | 1.38 | 1.41 | 1.22 | 1.25 | 1.15 | 1.16 | 1.22 | 1.40 |
| 20 | 1.58 | 1.40 | 1.19 | 1.13 | 1.38 | 1.41 | 1.20 | 1.27 | 1.15 | 1.16 | 1.22 | 1.39 |
| 21 | 1.57 | 1.41 | 1.18 | 1.14 | 1.38 | 1.35 | 1.19 | 1.27 | 1.16 | 1.16 | 1.21 | 1.36 |
| 22 | 1.55 | 1.40 | f1.16 | 1.14 | 1.37 | 1.31 | 1.17 | 1.26 | 1.13 | 1.14 | 1.19 | 1.35 |
| 23 | 1.58 | 1.40 | f1.15 | 1.15 | 1.32 | 1.35 | 1.17 | 1.24 | 1.11 | 1.14 | 1.22 | 1.32 |
| 24 | 1.54 | 1.39 | f1.20 | 1.14 | 1.32 | 1.36 | 1.17 | 1.23 | 1.12 | 1.15 | 1.21 | 1.32 |
| 25 | 1.54 | 1.36 | f1.25 | 1.13 | 1.30 | 1.35 | 1.15 | 1.20 | 1.13 | 1.13 | 1.21 | 1.36 |
| 26 | 1.51 | 1.36 | f1.28 | 1.12 | 1.30 | 1.34 | 1.13 | 1.21 | 1.14 | 1.10 | 1.20 | 1.41 |
| 27 | 1.54 | 1.37 | f1.22 | 1.13 | 1.30 | 1.30 | 1.12 | 1.23 | 1.15 | 1.10 | 1.24 | 1.37 |
| 28 | 1.55 | 1.36 | f1.18 | 1.13 | 1.28 | 1.33 | 1.10 | 1.23 | 1.14 | 1.11 | 1.30 | 1.38 |
| 29 | 1.55 | 1.35 | f1.17 | 1.13 | - | 1.29 | 1.10 | 1.22 | 1.12 | 1.12 | 1.31 | 1.36 |
| 30 | 1.54 | 1.35 | 1.18 | 1.15 | - | 1.29 | 1.09 | 1.19 | 1.12 | 1.13 | 1.29 | 1.35 |
| 31 | 1.61 | - | 1.17 | 1.22 | - | 1.29 | - | 1.24 | - | 1.17 | 1.28 | - |

f Computed on basis of partly estimated gage-height record.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## St. Joseph River at Mottville, Mich.

Location.- Float gage, lat. 41°48', long. 85°45', in NE¼ sec. 6, T. 8 S., R. 12 W., at hydroelectric plant of Michigan Gas & Electric Co. at Mottville, 5 miles downstream from Fawn River. Datum of gage is 759.5 feet above mean sea level (levels by Michigan Gas & Electric Co.).

Records available.- December 1923 to September 1942.

Average discharge.- 18 years (1924-42), 1,384 second-feet.

Extremes.- Maximum discharge during year, 5,480 second-feet Mar. 18-20 (gage height, 3.24 feet); minimum daily, 254 second-feet (regulated) Oct. 5.
1924-42 (regulated): Maximum discharge, 8,250 second-feet Apr. 20, 1926 (gage height, 4.4 feet); minimum, 20 second-feet Sept. 7, 1930; minimum daily, 44 second-feet Oct. 17, 1937.

Remarks.- Records good except those for periods of ice effect, which are fair. Flow regulated by power plant. Gage read hourly.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 566 | 1,760 | 1,380 | 1,940 | 1,800 | 1,450 | 3,450 | 1,890 | 1,670 | 1,210 | 1,330 | 1,540 |
| 2 | 367 | 1,620 | 1,730 | 1,880 | 2,020 | 1,700 | 3,310 | 1,750 | 1,620 | 1,190 | 1,770 | 1,200 |
| 3 | 429 | 1,810 | 1,750 | b1,900 | 2,070 | 1,560 | 3,310 | 1,480 | 1,490 | 1,150 | 2,750 | 1,310 |
| 4 | 517 | 1,840 | 1,650 | 1,250 | 2,090 | 1,580 | 3,380 | 2,160 | 1,480 | 770 | 3,360 | 1,430 |
| 5 | 254 | 1,920 | 1,710 | b1,800 | 2,510 | 1,620 | 3,030 | 1,840 | 1,420 | 664 | 3,460 | 1,300 |
| 6 | 1,040 | 1,900 | 1,630 | b1,300 | 2,390 | 1,700 | 2,900 | 1,880 | 1,470 | 1,640 | 3,350 | 1,130 |
| 7 | 799 | 1,940 | 1,700 | b1,450 | 2,450 | 2,040 | 3,380 | 1,760 | 1,460 | 1,100 | 3,060 | 1,280 |
| 8 | 1,270 | 2,260 | 1,520 | b1,250 | 2,420 | 2,480 | 3,660 | 1,760 | 1,560 | 890 | 2,790 | 1,210 |
| 9 | 824 | 2,390 | 1,820 | b1,400 | 2,110 | 3,370 | 4,080 | 1,730 | 1,480 | 878 | 2,630 | 1,420 |
| 10 | 1,010 | 2,600 | 1,530 | b1,500 | 2,170 | 3,630 | 4,640 | 1,410 | 1,420 | 1,220 | 2,560 | 1,330 |
| 11 | 1,040 | 2,640 | 1,550 | b1,050 | *2,020 | 3,940 | 4,640 | 1,810 | 1,450 | 793 | 2,490 | 1,190 |
| 12 | 832 | 2,580 | 1,380 | b1,500 | 2,030 | 4,640 | 4,500 | 1,610 | 1,720 | 870 | 2,480 | 1,250 |
| 13 | 985 | 2,530 | 1,530 | b1,300 | 1,910 | 4,640 | 4,360 | 1,720 | 1,890 | 1,320 | 2,280 | 861 |
| 14 | 925 | 2,480 | 1,200 | *b1,250 | 1,880 | 4,780 | 4,220 | 1,670 | 1,960 | 1,030 | 2,150 | 1,240 |
| 15 | 916 | 2,330 | 1,390 | b1,300 | 1,860 | 4,780 | 3,940 | 1,610 | 2,170 | 895 | 1,980 | 1,160 |
| 16 | 832 | 2,240 | 1,530 | b1,300 | 1,930 | 4,920 | 3,800 | 1,850 | 2,060 | 949 | 1,960 | 1,090 |
| 17 | 945 | 2,020 | 1,370 | b1,250 | 1,870 | 5,200 | 3,450 | 1,990 | 1,840 | 1,020 | 1,890 | 980 |
| 18 | 942 | 1,910 | 1,330 | 1,020 | 1,910 | 5,480 | 3,170 | 2,190 | 1,940 | 905 | 1,790 | 958 |
| 19 | 710 | 1,810 | 1,270 | 1,520 | 1,690 | 5,480 | 3,030 | 2,100 | 1,920 | 918 | 1,570 | 935 |
| 20 | 889 | 1,700 | 1,400 | 1,400 | 1,530 | 5,480 | 2,830 | 1,960 | 1,880 | 1,090 | 1,560 | 906 |
| 21 | 972 | 1,810 | 1,050 | 1,380 | 1,740 | 5,340 | 2,700 | 2,030 | 1,660 | 952 | 1,580 | 1,120 |
| 22 | 1,040 | 1,870 | 1,300 | 1,510 | 1,670 | 4,920 | 2,500 | 1,940 | 1,600 | 915 | 1,410 | 923 |
| 23 | 1,170 | 1,690 | 1,600 | 1,580 | 1,890 | 4,780 | 2,380 | 1,760 | 1,710 | 866 | 1,420 | 884 |
| 24 | 1,210 | 1,390 | 1,770 | 1,580 | 1,780 | 4,500 | 2,200 | 1,710 | 1,630 | 860 | 1,560 | 992 |
| 25 | 1,610 | 1,730 | 1,740 | 1,390 | 1,780 | 4,080 | 2,300 | 1,620 | 1,390 | 780 | 1,450 | 901 |
| 26 | 1,490 | 1,590 | 1,950 | 1,730 | 1,720 | 3,800 | 2,180 | 1,570 | 1,400 | 515 | 1,490 | 905 |
| 27 | 1,730 | 1,570 | 2,100 | 1,620 | 1,650 | 3,660 | 1,830 | 1,540 | 1,150 | 846 | 1,420 | 1,060 |
| 28 | 1,800 | 1,670 | *2,220 | 1,430 | 1,680 | 3,660 | 2,010 | 1,360 | 962 | 834 | 1,550 | 1,140 |
| 29 | 1,790 | 1,630 | 2,110 | 1,490 | - | 3,520 | 2,140 | 1,330 | 1,380 | 918 | 1,550 | 1,330 |
| 30 | 1,750 | 1,450 | 2,100 | 1,390 | - | 3,520 | 1,700 | 1,350 | 1,240 | 930 | 1,570 | 1,150 |
| 31 | 1,730 | - | 2,040 | 1,760 | - | 3,310 | - | 1,010 | - | 1,040 | 1,420 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 32,384 | 1,800 | 254 | 1,045 | | |
| November | 58,680 | 2,640 | 1,390 | 1,956 | | |
| December | 50,350 | 2,220 | 1,050 | 1,624 | | |
| Calendar year 1941 | 445,698 | 2,790 | 122 | 1,221 | | |
| January | 45,420 | 1,940 | 1,020 | 1,465 | | |
| February | 54,570 | 2,510 | 1,530 | 1,949 | | |
| March | 115,560 | 5,480 | 1,450 | 3,728 | | |
| April | 95,020 | 4,640 | 1,700 | 3,167 | | |
| May | 53,390 | 2,190 | 1,010 | 1,722 | | |
| June | 48,022 | 2,170 | 962 | 1,601 | | |
| July | 29,958 | 1,640 | 515 | 966 | | |
| August | 63,630 | 3,460 | 1,330 | 2,053 | | |
| September | 34,125 | 1,540 | 861 | 1,138 | | |
| Water year 1941-42 | 681,109 | 5,480 | 254 | 1,866 | | |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## St. Joseph River at Niles, Mich.

Location.- Water-stage recorder, lat. 41°49'45", long. 86°15'35", in sec. 26, T. 7 S., R. 17 W., at Niles, 1 mile upstream from Dowagiac Creek. Datum of gage is 634.98 feet above mean sea level (levels by city of Niles).

Drainage area.- 3,620 square miles.

Records available.- October 1930 to September 1942.

Average discharge.- 10 years (1930-37, 1938-39, 1940-42), 2,550 second-feet.

Extremes.- Maximum discharge during year, 12,700 second-feet Mar. 18 (gage height, 9.03 feet); minimum daily, 700 second-feet Oct. 5.
1930-42: Maximum discharge, 13,300 second-feet Mar. 13, 1939 (gage height, 9.28 feet); minimum, 244 second-feet (regulated), Aug. 30, 1931.

Remarks.- Records good exc those for periods of ice effect or no gage-height record, which are fair. Flow regulated by power plants upstream.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,000 | 2,740 | 3,040 | 2,650 | 5,380 | 2,750 | 5,410 | 3,800 | 2,460 | 2,270 | 2,700 | 2,800 |
| 2 | 850 | 3,830 | 2,590 | 2,930 | 4,650 | 2,850 | 5,170 | 3,400 | 2,480 | 2,330 | 3,100 | 3,000 |
| 3 | 900 | 3,470 | 2,790 | 2,940 | 3,780 | 2,700 | 5,040 | 3,000 | 2,600 | 2,150 | 3,600 | 2,500 |
| 4 | 1,000 | 3,030 | 2,610 | 2,260 | 4,010 | 2,380 | 4,870 | 3,300 | 2,260 | 2,020 | 4,100 | 2,700 |
| 5 | 700 | 2,970 | 2,700 | 2,800 | 4,630 | 2,870 | 4,810 | 3,700 | 2,300 | 1,890 | 4,100 | 2,400 |
| 6 | 1,100 | 3,210 | 2,680 | b3,100 | 5,520 | 3,580 | 4,920 | 3,400 | 2,440 | 2,100 | 4,300 | 2,200 |
| 7 | 1,700 | 3,740 | 2,180 | b3,300 | 6,260 | 3,940 | 5,330 | 3,200 | 1,990 | 2,440 | 4,700 | 2,400 |
| 8 | 1,600 | 5,290 | 2,770 | b3,500 | 5,960 | 4,990 | 6,390 | 3,000 | 2,440 | 1,780 | 4,700 | 2,600 |
| 9 | 2,000 | 5,240 | 2,350 | b3,600 | *4,820 | 7,330 | 6,860 | 2,900 | 2,390 | 1,860 | 4,900 | 2,500 |
| 10 | 1,700 | 4,990 | 2,670 | b3,400 | 4,320 | 7,870 | 7,170 | 2,700 | 2,410 | 1,840 | 4,700 | 2,700 |
| 11 | 1,900 | 4,900 | 2,400 | b3,500 | 4,190 | 7,010 | 8,070 | 3,200 | 2,280 | 1,680 | 4,400 | 2,300 |
| 12 | 1,600 | 4,600 | 2,250 | b3,400 | 3,730 | 8,500 | 7,500 | 3,000 | 2,620 | 1,670 | 4,200 | 2,400 |
| 13 | 1,900 | 4,050 | 2,210 | b3,000 | 3,660 | 8,500 | 7,170 | 2,850 | 2,700 | 2,720 | 4,000 | 2,000 |
| 14 | 1,800 | 4,100 | 2,320 | *b2,200 | 3,330 | 7,870 | 6,560 | 3,430 | 2,900 | 2,340 | 3,800 | 2,400 |
| 15 | 1,700 | 3,960 | 2,420 | 2,330 | 3,370 | 7,870 | 6,280 | 2,940 | 3,200 | 1,920 | 3,500 | 2,500 |
| 16 | 1,600 | 3,430 | 2,210 | 2,310 | 3,960 | 8,500 | 6,280 | 2,900 | 3,600 | 1,700 | 3,300 | 2,300 |
| 17 | 1,700 | 3,690 | 2,370 | 2,070 | 3,930 | 11,200 | 5,720 | 3,640 | 3,900 | 1,830 | 3,200 | 2,100 |
| 18 | 1,690 | 3,010 | 2,290 | 2,210 | 4,570 | 12,400 | 5,580 | 3,850 | 3,600 | 1,750 | 3,100 | 2,000 |
| 19 | 1,890 | 3,240 | 2,380 | 2,640 | 3,620 | 10,900 | 4,900 | 3,660 | 3,400 | 1,730 | 3,000 | 2,000 |
| 20 | 1,990 | 2,650 | 2,120 | 2,460 | 2,690 | 10,200 | 4,760 | 3,540 | 3,200 | 2,080 | 2,800 | 1,900 |
| 21 | 2,000 | 3,200 | 2,130 | 2,600 | 2,840 | 9,420 | 5,300 | 3,170 | 2,800 | 1,930 | 2,800 | 2,200 |
| 22 | 1,820 | 2,860 | 2,360 | 2,630 | 3,570 | 8,720 | 5,200 | 2,770 | 2,500 | 1,920 | 2,900 | 2,100 |
| 23 | 2,410 | 3,060 | 2,380 | 2,660 | 3,780 | 8,070 | 4,620 | 2,750 | 2,700 | 1,810 | 2,700 | 2,000 |
| 24 | 2,300 | 2,990 | 3,230 | 2,600 | 3,480 | 7,500 | 4,600 | 2,570 | 2,400 | 1,800 | 2,800 | 1,940 |
| 25 | 2,200 | 2,690 | 3,720 | 2,390 | 3,350 | 7,010 | 4,120 | 2,770 | 2,100 | 1,600 | 2,900 | 2,210 |
| 26 | 2,620 | 2,970 | 3,400 | 2,530 | 3,320 | 6,420 | 3,920 | 2,410 | 1,980 | 1,500 | 2,700 | 2,280 |
| 27 | 3,080 | 2,840 | 3,050 | 2,540 | 3,150 | 6,140 | 4,370 | 2,600 | 2,350 | 1,700 | 2,700 | 2,050 |
| 28 | 2,990 | 2,840 | 3,230 | 2,660 | 2,740 | 6,000 | 3,390 | 2,530 | 2,320 | 1,800 | 2,700 | 2,330 |
| 29 | 3,170 | 2,680 | 3,190 | 2,330 | - | 6,000 | 3,490 | 2,010 | 2,400 | 1,900 | 3,000 | 2,270 |
| 30 | 3,020 | 2,460 | 2,880 | 2,590 | - | 6,000 | 3,730 | 2,090 | 2,240 | 2,000 | 2,900 | 2,300 |
| 31 | 2,740 | - | 2,880 | 3,200 | - | 5,860 | - | 2,250 | - | 2,300 | 3,000 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 58,670 | 3,170 | 700 | 1,893 | 0.523 | 0.60 |
| November | 104,730 | 5,290 | 2,460 | 3,491 | .964 | 1.08 |
| December | 81,800 | 3,720 | 2,120 | 2,639 | .729 | .84 |
| Calendar year 1941 | 789,873 | 5,290 | 433 | 2,164 | .598 | 8.10 |
| January | 85,330 | 3,600 | 2,070 | 2,753 | .760 | .88 |
| February | 112,610 | 6,260 | 2,890 | 4,022 | 1.11 | 1.16 |
| March | 211,350 | 12,400 | 2,380 | 6,818 | 1.88 | 2.17 |
| April | 161,530 | 8,070 | 3,390 | 5,384 | 1.49 | 1.66 |
| May | 93,330 | 3,850 | 2,010 | 3,011 | .832 | .96 |
| June | 78,960 | 3,900 | 1,980 | 2,632 | .727 | .81 |
| July | 60,360 | 2,720 | 1,500 | 1,947 | .538 | .62 |
| August | 107,300 | 4,900 | 2,700 | 3,461 | .956 | 1.10 |
| September | 69,380 | 3,000 | 1,900 | 2,313 | .639 | .71 |
| Water year 1941-42 | 1,225,350 | 12,400 | 700 | 3,357 | .927 | 12.59 |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Note.- No gage-height record Oct. 1-17, May 1-12, June 13-25, July 24 to Sept. 23; discharge computed on basis of two discharge measurements, recorded range of stage, records for station at Mottville, and weather records.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

East Branch of Coldwater River at Coldwater, Mich.

Location.- Staff gage, lat. 41°55'50", long. 85°00'50", in sec. 21, T. 6 S., R. 6 W., at sewage-treatment plant in Coldwater, 2 miles upstream from mouth.

Drainage area.- 59 square miles.

Records available.- December 1937 to September 1942.

Extremes.- Maximum discharge observed during year, 264 second-feet Mar. 17 (gage height, 3.16 feet); minimum observed, 0.7 second-foot Oct. 17-21 (gage height, 0.90 foot).

1937-42: Maximum discharge observed, 379 second-feet Feb. 20, Mar. 12, 1939 (gage height, 2.80 feet, site then in use), from rating curve extended above 150 second-feet; minimum observed, that of Oct. 17-21, 1941.

Remarks.- Records good except those below 4.0 second-feet, which are fair. Gage read once daily except Sundays Oct. 1 to Jan. 13, twice daily thereafter.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.2 | 1.0 | 13 | 36 | 54 | 35 | 166 | 60 | 26 | 15 | 30 | 16 |
| 2 | 1.1 | 1.1 | 13 | 35 | 42 | 36 | 158 | 59 | 26 | 14 | 54 | 15 |
| 3 | 1.0 | 1.2 | 13 | 34 | 41 | 36 | 148 | 59 | 25 | 15 | 50 | 14 |
| 4 | 1.0 | 1.6 | 15 | 33 | 43 | 40 | 140 | 57 | 24 | 14 | 33 | 13 |
| 5 | 1.0 | 1.8 | 16 | 33 | 50 | 51 | 134 | 52 | 21 | 15 | 26 | 11 |
| 6 | 1.0 | 3.5 | 16 | 29 | 53 | 77 | 128 | 48 | 19 | 16 | 24 | 10 |
| 7 | 1.6 | 8.1 | 15 | 25 | 56 | 92 | 131 | 44 | 19 | 14 | 25 | 11 |
| 8 | 1.0 | 12 | 15 | 21 | 42 | 128 | 151 | 43 | 19 | 12 | 23 | 11 |
| 9 | .8 | 15 | 13 | 19 | 47 | 170 | 161 | 41 | 19 | 10 | 25 | 11 |
| 10 | .8 | 17 | 14 | 18 | 45 | 183 | 165 | 39 | 20 | 9.4 | 26 | 10 |
| 11 | .8 | 17 | 14 | 18 | 48 | 183 | 177 | 37 | 25 | 9.4 | 26 | 9.4 |
| 12 | .8 | 16 | 14 | 18 | 47 | 183 | 170 | 35 | 23 | 9.4 | 28 | 9.4 |
| 13 | .8 | 16 | 13 | 18 | 44 | 183 | 162 | 36 | 21 | 11 | 29 | 10 |
| 14 | .8 | 15 | 13 | 17 | 45 | 183 | 151 | 38 | 26 | 13 | 31 | 12 |
| 15 | .8 | 15 | 11 | 17 | 54 | 179 | 145 | 41 | 24 | 11 | 31 | 12 |
| 16 | .8 | 14 | 11 | 17 | 45 | 180 | 140 | 43 | 23 | 11 | 29 | 11 |
| 17 | .7 | 13 | 11 | 17 | 44 | 256 | 133 | 38 | 23 | 11 | 27 | 11 |
| 18 | .7 | 11 | 11 | 18 | 52 | 218 | 124 | 37 | 22 | 11 | 25 | 11 |
| 19 | .7 | 11 | 11 | 20 | 31 | 211 | 117 | 36 | 22 | 10 | 23 | 11 |
| 20 | .7 | 13 | 9.4 | 18 | 33 | 197 | 113 | 35 | 21 | 9.4 | 22 | 10 |
| 21 | .7 | 13 | 10 | 17 | 38 | 190 | 109 | 32 | 22 | 7.6 | 21 | 9.4 |
| 22 | .9 | 15 | 11 | 18 | 38 | 190 | 99 | 29 | 21 | 6.8 | 19 | 9.4 |
| 23 | 5.0 | 15 | 17 | 20 | 37 | 179 | 91 | 26 | 19 | 5.9 | 19 | 8.5 |
| 24 | 1.3 | 15 | 34 | 20 | 38 | 172 | 89 | 25 | 19 | 5.0 | 17 | 8.5 |
| 25 | 1.1 | 15 | 36 | 20 | 39 | 165 | 85 | 23 | 18 | 5.0 | 16 | 12 |
| 26 | 1.2 | 15 | 37 | 20 | 38 | 158 | 82 | 23 | 17 | 5.0 | 17 | 14 |
| 27 | 1.2 | 16 | 36 | 20 | 39 | 155 | 78 | 23 | 15 | 5.4 | 19 | 14 |
| 28 | 1.1 | 15 | 35 | 19 | 39 | 163 | 72 | 21 | 15 | 4.4 | 20 | 13 |
| 29 | .9 | 15 | 34 | 19 | - | 173 | 66 | 20 | 15 | 4.4 | 20 | 13 |
| 30 | .8 | 13 | 35 | 19 | - | 179 | 62 | 18 | 15 | 4.1 | 19 | 11 |
| 31 | .9 | - | 35 | 24 | - | 176 | - | 19 | - | 12 | 17 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 33.2 | 5.0 | 0.7 | 1.07 | 0.018 | 0.02 |
| November | 350.3 | 17 | 1.0 | 11.7 | .198 | .22 |
| December | 581.4 | 37 | 9.4 | 18.8 | .319 | .37 |
| Calendar year 1941 | 8,459.2 | 89 | .7 | 23.2 | .393 | 5.32 |
| January | 677 | 36 | 17 | 21.8 | .369 | .43 |
| February | 1,222 | 56 | 31 | 43.6 | .739 | .77 |
| March | 4,721 | 256 | 35 | 152 | 2.58 | 2.98 |
| April | 3,747 | 177 | 62 | 125 | 2.12 | 2.36 |
| May | 1,137 | 60 | 18 | 36.7 | .622 | .72 |
| June | 624 | 26 | 15 | 20.8 | .353 | .39 |
| July | 306.2 | 16 | 4.1 | 9.88 | .167 | .19 |
| August | 791 | 54 | 16 | 25.5 | .432 | .50 |
| September | 341.6 | 16 | 8.5 | 11.4 | .193 | .22 |
| Water year 1941-42 | 14,531.7 | 256 | .7 | 39.8 | .675 | 9.17 |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Elkhart River at Goshen, Ind.

Location.- Water-stage recorder, lat. 41°45', long. 85°50', near line between secs. 8 and 9, T. 36 N., R. 6 E., at River Avenue Bridge in Goshen, half a mile upstream from Rock Run.

Drainage area.- 573 square miles.

Records available.- April 1931 to September 1942 in reports of Geological Survey. September 1924 to September 1927 in reports of Indiana Department of Conservation.

Average discharge.- 14 years (1924-27, 1931-42), 414 second-feet.

Extremes.- Maximum discharge during year, 2,820 second-feet Mar. 17 (gage height, 7.15 feet); minimum, 45 second-feet (regulated) Oct. 17 (gage height, 1.49 feet); minimum daily, 50 second-feet Oct. 1.
1931-42: Maximum discharge, 3,540 second-feet Mar. 13, 1939 (gage height, 8.45 feet), from rating curve extended above 1,800 second-feet; minimum, 28 second-feet (regulated) Sept. 5, 6, 1941; minimum daily, 35 second-feet Sept. 26, 1941; minimum gage height, 1.27 feet May 25, 30, 1932.

Remarks.- Records good except those for periods of ice effect, which are fair. Flow regulated by three power plants above station.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 50 | 254 | 206 | 309 | 1,040 | 413 | 1,020 | 430 | a225 | 237 | 447 | 288 |
| 2 | 70 | 353 | 216 | 363 | 618 | 405 | 965 | 419 | a220 | 220 | 364 | 260 |
| 3 | 85 | 251 | 224 | 285 | *579 | 384 | 890 | 426 | a210 | 212 | 326 | 249 |
| 4 | 116 | 242 | 226 | b260 | 462 | 369 | 816 | 424 | a200 | 225 | 272 | 261 |
| 5 | 160 | 217 | 236 | b280 | 735 | 538 | 768 | 391 | 195 | 212 | 266 | 230 |
| 6 | 143 | 257 | 214 | b225 | 1,020 | 695 | 743 | 378 | 194 | 221 | 249 | 243 |
| 7 | 228 | 429 | 212 | b275 | *1,340 | 695 | 841 | 389 | 191 | 226 | 296 | 228 |
| 8 | 188 | 473 | 206 | a250 | 1,090 | *1,020 | 1,160 | 378 | 192 | 197 | 464 | 242 |
| 9 | 129 | 422 | 190 | a225 | 852 | 1,780 | 1,080 | 282 | 216 | 181 | 611 | 247 |
| 10 | 114 | 409 | 193 | b205 | 776 | 1,560 | 1,260 | 279 | 201 | 193 | 577 | 248 |
| 11 | 126 | 309 | 128 | b200 | 701 | 1,440 | 1,440 | 314 | 198 | 199 | 543 | 238 |
| 12 | 123 | 242 | 158 | b190 | *662 | 1,560 | 1,260 | 299 | 247 | 187 | 405 | 220 |
| 13 | 106 | 273 | 208 | b185 | 611 | 1,390 | 1,120 | 332 | 247 | 201 | 394 | 224 |
| 14 | 121 | 248 | 192 | *b180 | 617 | 1,290 | 1,060 | 302 | 267 | 224 | 368 | 234 |
| 15 | 104 | 171 | 145 | b185 | 618 | 1,260 | 1,040 | 292 | 243 | 181 | 377 | 226 |
| 16 | 74 | 284 | 185 | b175 | 636 | 1,340 | 965 | 415 | 229 | 144 | 392 | 233 |
| 17 | 81 | 239 | 211 | b170 | 990 | 1,780 | 915 | 366 | 236 | 193 | 354 | 225 |
| 18 | 66 | 233 | 190 | b170 | 940 | 2,460 | 841 | 340 | 240 | 166 | 369 | 238 |
| 19 | 139 | 218 | 163 | b185 | 633 | 2,050 | 766 | 355 | 214 | 152 | 358 | 252 |
| 20 | 105 | 206 | 168 | 203 | b590 | 1,830 | 743 | 353 | 229 | 160 | 342 | 287 |
| 21 | 95 | 233 | 167 | 201 | b560 | 1,720 | 695 | 311 | 318 | 150 | 323 | 252 |
| 22 | 139 | 220 | 205 | 202 | b540 | 1,610 | 647 | 250 | 363 | 137 | 340 | 271 |
| 23 | 151 | a225 | 310 | 195 | b510 | 1,560 | 618 | 312 | 309 | 150 | 403 | 271 |
| 24 | 146 | a230 | 552 | 238 | b490 | 1,390 | 590 | 278 | 284 | 142 | 442 | 275 |
| 25 | 155 | 235 | 393 | 125 | b460 | 1,340 | 555 | 282 | 249 | 147 | 370 | 279 |
| 26 | 131 | 218 | 397 | 233 | b435 | 1,260 | 547 | a260 | 296 | 142 | 340 | 350 |
| 27 | 169 | 212 | 442 | 195 | b420 | 1,220 | 455 | a250 | 263 | 139 | 367 | 393 |
| 28 | 231 | 220 | 326 | 196 | 398 | 1,220 | 474 | a250 | 264 | 136 | 356 | 397 |
| 29 | 236 | 220 | 303 | 190 | - | 1,190 | 489 | a240 | 268 | 182 | 358 | 359 |
| 30 | 143 | 216 | 288 | 192 | - | 1,140 | 410 | a240 | 249 | 216 | 337 | 340 |
| 31 | 166 | - | 252 | 634 | - | 1,060 | - | a230 | - | 347 | 286 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 4,090 | 236 | 50 | 132 | 0.230 | 0.27 |
| November | 7,959 | 473 | 171 | 265 | .462 | .52 |
| December | 7,506 | 552 | 128 | 242 | .422 | .49 |
| Calendar year 1941 | 76,928 | 552 | 35 | 211 | .368 | 5.00 |
| January | 7,121 | 634 | 125 | 230 | .401 | .46 |
| February | 19,323 | 1,340 | 398 | 690 | 1.20 | 1.25 |
| March | 38,969 | 2,460 | 369 | 1,257 | 2.19 | 2.53 |
| April | 25,175 | 1,440 | 410 | 839 | 1.46 | 1.63 |
| May | 10,067 | 430 | 230 | 325 | .567 | .65 |
| June | 7,257 | 363 | 191 | 242 | .422 | .47 |
| July | 5,819 | 347 | 136 | 188 | .328 | .38 |
| August | 11,696 | 611 | 249 | 377 | .658 | .76 |
| September | 8,030 | 397 | 220 | 268 | .468 | .52 |
| Water year 1941-42 | 153,012 | 2,460 | 50 | 419 | .731 | 9.93 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of records for Kankakee River at Shelby and St. Joseph River near Fort Wayne.
b Stage-discharge relation affected by ice.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Kalamazoo River near Battle Creek, Mich.

Location.- Water-stage recorder, lat. 42°20'45", long. 85°15'45", in NE¼ sec. 32, T. 1 S., R. 8 W., half a mile upstream from Wabascon Creek and 3 miles downstream from city of Battle Creek. Datum of gage is 797.00 feet above mean sea level, datum of 1929.

Drainage area.- 849 square miles.

Records available.- July 1937 to September 1942.

Extremes.- Maximum discharge during year, 3,500 second-feet Mar. 19 (gage height, 7.64 feet); minimum, 195 second-feet (regulated) Oct. 1; minimum daily, 258 second-feet (regulated) Oct. 1; minimum gage height, 1.82 feet Feb. 28.
1937-42: Maximum discharge, that of Mar. 19, 1942; minimum, 50 second-feet (regulated) Sept. 22, 1939; minimum daily, 143 second-feet (regulated) Aug. 21, 1941; minimum gage height, 1.51 feet Feb. 22, 1940.

Remarks.- Records excellent Jan. 1 to May 15; others good except those for periods of no gage-height record, which are fair. Slight regulation from power plants upstream.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 258 | 952 | 629 | 775 | 1,110 | 481 | 1,320 | 578 | 652 | 538 | 627 | 533 |
| 2 | 270 | 918 | 580 | 753 | 872 | 439 | 1,280 | 504 | 667 | 519 | 784 | 558 |
| 3 | 301 | 901 | 562 | 720 | 880 | 435 | 1,180 | 518 | 784 | 511 | 804 | 505 |
| 4 | 335 | 918 | 573 | 680 | 900 | 464 | 1,090 | 556 | 800 | 510 | 717 | 492 |
| 5 | 494 | 884 | 571 | 630 | 890 | 623 | 1,030 | 569 | 755 | 525 | 636 | 455 |
| 6 | 516 | 972 | 551 | 580 | 840 | 910 | 1,010 | 521 | 789 | 547 | 632 | 437 |
| 7 | 760 | 1,130 | 556 | 550 | 780 | 1,230 | 953 | 579 | 748 | 524 | 704 | 437 |
| 8 | 756 | 1,200 | 503 | 530 | 750 | 1,620 | 1,300 | 555 | 697 | 508 | 797 | 451 |
| 9 | 766 | 1,440 | 440 | 500 | 700 | 2,240 | 1,270 | 594 | 603 | 500 | 791 | 430 |
| 10 | 745 | 1,550 | 507 | 490 | 660 | 2,380 | 1,400 | 544 | 603 | 542 | 811 | 458 |
| 11 | 731 | 1,570 | 480 | 490 | 630 | 2,720 | 1,590 | 568 | 825 | 536 | 804 | 455 |
| 12 | 666 | 1,390 | 480 | 500 | 600 | 2,720 | 1,440 | 574 | 903 | 575 | 739 | 440 |
| 13 | 621 | 1,350 | 474 | 538 | 570 | 2,540 | 1,360 | 846 | 968 | 792 | 759 | 434 |
| 14 | 616 | 1,240 | 481 | 409 | 560 | 2,380 | 1,330 | 922 | 1,180 | 775 | 720 | 438 |
| 15 | 597 | 1,100 | 489 | 446 | 580 | 2,240 | 1,310 | 952 | 1,370 | 708 | 663 | 425 |
| 16 | 595 | 1,060 | 431 | 413 | 610 | 2,180 | 978 | 1,220 | 1,400 | 694 | 630 | 407 |
| 17 | 571 | 850 | 409 | 419 | 670 | 2,540 | 916 | 1,230 | 1,320 | 707 | 599 | 382 |
| 18 | 581 | 709 | 463 | 404 | 696 | 3,260 | 826 | 1,180 | 1,250 | 662 | 517 | 431 |
| 19 | 549 | 722 | 504 | 555 | 610 | 3,500 | 816 | 1,100 | 1,110 | 662 | 517 | 431 |
| 20 | 554 | 942 | 478 | 506 | 632 | 3,140 | 735 | 1,020 | 1,000 | 653 | 483 | 416 |
| 21 | 508 | 744 | 478 | 544 | 670 | 2,720 | 626 | 870 | 1,100 | 639 | 476 | 388 |
| 22 | 443 | 557 | 491 | 535 | 640 | 2,310 | 699 | 758 | 945 | 535 | 466 | 374 |
| 23 | 588 | 563 | 474 | 579 | 600 | 2,010 | 674 | 682 | 891 | 541 | 576 | 374 |
| 24 | 756 | 724 | 804 | 542 | 540 | 1,650 | 610 | 579 | 811 | 536 | 559 | 448 |
| 25 | 764 | 676 | 944 | 488 | 500 | 1,570 | 545 | 576 | 766 | 488 | 497 | 401 |
| 26 | 745 | 553 | 979 | 565 | 470 | 1,410 | 576 | 482 | 754 | 491 | 579 | 443 |
| 27 | 800 | 748 | 999 | 470 | 448 | 1,180 | 580 | 520 | 672 | 501 | 636 | 479 |
| 28 | 717 | 607 | 1,040 | 573 | 453 | 1,230 | 534 | 491 | 614 | 470 | 674 | 525 |
| 29 | 741 | 621 | 1,120 | 536 | - | 1,240 | 564 | 504 | 574 | 582 | 643 | 485 |
| 30 | 759 | 605 | 915 | 459 | - | 1,250 | 558 | 527 | 555 | 547 | 615 | 448 |
| 31 | 830 | - | 832 | 853 | - | 1,190 | - | 456 | - | 627 | 606 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 18,933 | 830 | 258 | 611 | 0.720 | 0.83 |
| November | 28,196 | 1,570 | 553 | 940 | 1.11 | 1.24 |
| December | 19,237 | 1,120 | 409 | 621 | .731 | .84 |
| Calendar year 1941 | 198,925 | 1,570 | 143 | 545 | .642 | 8.71 |
| January | 17,032 | 853 | 404 | 549 | .647 | .75 |
| February | 18,861 | 1,110 | 448 | 674 | .794 | .83 |
| March | 55,802 | 3,500 | 435 | 1,800 | 2.12 | 2.44 |
| April | 29,100 | 1,590 | 534 | 970 | 1.14 | 1.27 |
| May | 21,575 | 1,230 | 456 | 696 | .820 | .95 |
| June | 26,106 | 1,400 | 555 | 870 | 1.02 | 1.14 |
| July | 17,945 | 792 | 470 | 579 | .682 | .79 |
| August | 20,161 | 811 | 466 | 650 | .766 | .88 |
| September | 13,380 | 558 | 374 | 446 | .525 | .59 |
| Water year 1941-42 | 286,328 | 3,500 | 258 | 784 | .923 | 12.55 |

Note.- No gage-height record Dec. 11, 12, Jan. 3-12, Feb. 3-17, 21-26; discharge computed on basis of weather records and records for station at Comstock and Battle Creek at Battle Creek.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

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## Kalamazoo River at Comstock, Mich.

Location.- Wire-weight gage, lat. 42°17'10", long. 85°30'50", in NW¼ sec. 19, T. 2 S., R. 10 W., at highway bridge at Comstock, a quarter of a mile downstream from Comstock Creek. Datum of gage is 759.13 feet above mean sea level, datum of 1929.

Drainage area.- 1,010 square miles.

Records available.- April to August 1931, October 1932 to September 1942.

Extremes.- Maximum discharge during year, 3,960 second-feet Mar. 19 (gage height, 5.60 feet, from graph based on gage readings); minimum, 304 second-feet Oct. 1 (gage height, 0.89 foot, from graph based on gage readings).
1931, 1932-42: Maximum discharge, that of Mar. 19, 1942; minimum observed, 199 second-feet Oct. 14, 1934; minimum gage height, 0.56 foot May 4, 1931.

Remarks.- Records fair. Flow regulated by power plants upstream. Gage read once daily Oct. 1 to Feb. 17, twice daily thereafter.

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-13, May 3 to Sept. 30)

| | | | | | |
|---|---|---|---|---|---|
| 0.8 | 291 | 1.6 | 733 | 4.3 | 2,790 |
| 1.0 | 383 | 2.1 | 1,080 | 5.6 | 3,960 |
| 1.2 | 488 | 3.2 | 1,910 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 313 | 1,160 | 834 | 976 | 848 | 848 | 1,460 | 766 | 919 | 766 | 1,080 | 841 |
| 2 | 317 | 1,050 | 821 | 919 | 976 | 862 | 1,460 | 760 | 1,050 | 740 | 1,310 | 733 |
| 3 | 326 | 1,010 | 800 | 904 | 940 | 780 | 1,420 | 753 | 1,120 | 707 | 1,350 | 700 |
| 4 | 335 | 1,050 | 780 | 855 | 926 | 787 | 1,380 | 740 | 1,120 | 707 | 1,200 | 707 |
| 5 | 912 | 1,080 | 753 | 800 | 912 | 869 | 1,350 | 733 | 1,080 | 700 | 1,120 | 681 |
| 6 | 869 | 1,200 | 733 | 753 | 897 | 1,010 | 1,350 | 707 | 1,120 | 700 | 1,080 | 649 |
| 7 | 855 | 1,270 | 720 | 700 | 883 | 1,200 | 1,310 | 726 | 1,200 | 733 | 1,080 | 630 |
| 8 | 1,240 | 1,420 | 707 | 649 | 869 | 1,540 | 1,380 | 733 | 1,080 | 655 | 1,240 | 636 |
| 9 | 1,310 | 1,570 | 700 | 649 | 834 | 1,990 | 1,540 | 726 | 926 | 611 | 1,270 | 630 |
| 10 | 1,240 | 1,760 | 700 | 662 | 807 | 2,390 | 1,650 | 707 | 890 | 649 | 1,240 | 662 |
| 11 | 1,160 | 1,840 | 688 | 668 | 780 | 2,710 | 1,650 | 694 | 1,010 | 733 | 1,240 | 733 |
| 12 | 1,010 | 1,800 | 681 | 668 | 766 | 2,970 | 1,680 | 674 | 1,200 | 766 | 1,200 | 726 |
| 13 | 933 | 1,720 | 674 | 668 | 787 | 3,060 | 1,540 | 726 | 1,310 | 897 | 1,160 | 694 |
| 14 | 904 | 1,610 | 668 | 681 | 800 | 2,880 | 1,460 | 1,010 | 1,350 | 1,050 | 1,120 | 681 |
| 15 | 869 | 1,500 | 668 | 655 | 773 | 2,790 | 1,460 | 1,120 | 1,460 | 1,010 | 1,120 | 649 |
| 16 | 814 | 1,310 | 662 | 681 | 740 | 2,710 | 1,310 | 1,270 | 1,570 | 976 | 1,120 | 611 |
| 17 | 740 | 1,200 | 662 | 700 | 800 | 3,060 | 1,200 | 1,420 | 1,570 | 940 | 1,050 | 587 |
| 18 | 726 | 1,080 | 668 | 688 | 814 | 3,600 | 1,120 | 1,420 | 1,500 | 933 | 926 | 581 |
| 19 | 700 | 1,120 | 668 | 662 | 773 | 3,960 | 976 | 1,350 | 1,460 | 883 | 876 | 593 |
| 20 | 668 | 1,240 | 668 | 773 | 780 | 3,600 | 1,010 | 1,310 | 1,380 | 876 | 855 | 587 |
| 21 | 662 | 1,270 | 668 | 753 | 834 | 3,060 | 976 | 1,240 | 1,380 | 862 | 834 | 593 |
| 22 | 655 | 1,120 | 668 | 733 | 1,010 | 2,710 | 883 | 1,120 | 1,350 | 855 | 807 | 587 |
| 23 | 662 | 1,050 | 733 | 740 | 883 | 2,310 | 834 | 1,010 | 1,310 | 848 | 787 | 563 |
| 24 | 733 | 976 | 904 | 746 | 733 | 2,070 | 814 | 904 | 1,200 | 814 | 787 | 522 |
| 25 | 834 | 940 | 1,050 | 766 | 700 | 1,840 | 814 | 834 | 1,050 | 800 | 834 | 707 |
| 26 | 897 | 904 | 1,080 | 773 | 720 | 1,720 | 773 | 814 | 933 | 793 | 1,010 | 681 |
| 27 | 926 | 890 | 1,080 | 787 | 746 | 1,610 | 766 | 800 | 912 | 807 | 940 | 766 |
| 28 | 883 | 869 | 1,080 | 807 | 780 | 1,570 | 766 | 793 | 919 | 848 | 940 | 814 |
| 29 | 976 | 869 | 1,080 | 828 | - | 1,570 | 780 | 766 | 876 | 926 | 1,010 | 780 |
| 30 | 1,050 | 848 | 1,080 | 834 | - | 1,570 | 780 | 780 | 760 | 976 | 1,010 | 740 |
| 31 | 1,120 | - | 1,050 | 828 | - | 1,460 | - | 828 | - | 1,010 | 940 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 25,639 | 1,310 | 313 | 827 | 0.819 | 0.94 |
| November | 36,726 | 1,840 | 848 | 1,224 | 1.21 | 1.35 |
| December | 24,728 | 1,080 | 662 | 798 | .790 | .91 |
| Calendar year 1941 | 275,162 | 1,590 | 202 | 754 | .747 | 10.12 |
| January | 23,306 | 976 | 649 | 752 | .745 | .86 |
| February | 23,111 | 1,010 | 700 | 825 | .817 | .85 |
| March | 65,106 | 3,960 | 780 | 2,100 | 2.08 | 2.40 |
| April | 35,892 | 1,680 | 766 | 1,196 | 1.18 | 1.32 |
| May | 26,234 | 1,420 | 674 | 911 | .902 | 1.04 |
| June | 35,005 | 1,570 | 760 | 1,167 | 1.16 | 1.29 |
| July | 25,571 | 1,050 | 611 | 825 | .817 | .94 |
| August | 32,536 | 1,350 | 787 | 1,050 | 1.04 | 1.20 |
| September | 20,064 | 841 | 522 | 669 | .662 | .74 |
| Water year 1941-42 | 375,918 | 3,960 | 313 | 1,030 | 1.02 | 13.84 |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

Kalamazoo River at Calkins Dam, near Allegan, Mich.

Location.- Water-stage recorder, lat. 42°34', long. 85°57', in sec. 15, T. 2 N., R. 14 W., at hydroelectric plant of city of Allegan, 1 mile upstream from Swan Creek and 8 miles northwest of Allegan. Datum of gage is at mean sea level (levels by city of Allegan).

Drainage area.- 1,540 square miles.

Records available.- April 1929 to September 1936, October 1937 to September 1942.

Extremes.- 1940-41: Maximum daily discharge during water year, 2,900 second-feet Mar. 9; maximum gage height, 603.75 feet Mar. 7 (discharge not determined); minimum daily discharge, 73 second-feet Aug. 31; minimum gage height, 594.32 feet Sept. 21, 22, (discharge not determined).

1941-42: Maximum daily discharge during water year, 5,730 second-feet Mar. 17; maximum gage height, 605.30 feet Mar. 17 (discharge not determined); minimum daily discharge, 442 second-feet Oct. 2; minimum gage height, 596.10 feet (discharge not determined).

1929-36, 1937-42: Maximum daily discharge, that of Mar. 17, 1942; maximum gage height, 605.63 feet (revised) Aug. 27, 1940 (discharge not determined); minimum daily discharge, that of Aug. 31, 1941; minimum gage height, that of Sept. 21, 22, 1941.

Remarks.- Records good except those below 300 second-feet and above 2,500 second-feet, which are fair, and those for periods of no gage-height record, which are poor. Discharge regulated by city of Allegan power plant.

Discharge, in second-feet, 1940-42

1940-41

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 824 | 1,140 | 1,520 | 2,070 | 1,140 | 950 | 1,200 | 1,060 | 750 | 774 | 428 | 112 |
| 2 | 785 | 1,120 | 1,060 | 1,750 | 1,380 | 1,190 | 1,260 | 882 | 850 | 740 | 678 | 264 |
| 3 | 802 | 1,110 | 874 | 1,890 | 1,020 | 1,080 | 1,450 | 1,060 | 900 | 794 | 548 | 401 |
| 4 | 772 | 1,070 | 1,040 | 2,040 | 1,070 | 2,610 | 1,400 | 1,140 | 950 | 578 | 424 | 414 |
| 5 | 742 | 1,160 | 1,160 | 2,710 | 1,080 | 1,990 | 1,400 | 1,000 | 1,000 | 641 | 486 | 593 |
| 6 | 661 | 1,030 | 1,050 | 1,780 | 1,080 | 1,660 | 1,670 | 902 | 1,050 | 592 | 466 | 728 |
| 7 | 1,030 | 1,110 | 1,180 | 1,590 | 1,090 | 2,120 | 1,340 | 1,220 | 1,100 | 750 | 451 | 565 |
| 8 | 1,240 | 1,090 | 1,910 | 1,640 | 1,080 | 1,970 | 1,280 | 1,160 | 1,100 | 821 | 462 | 650 |
| 9 | 1,280 | 940 | 1,340 | 1,680 | 1,100 | 2,900 | 1,530 | 1,380 | 1,000 | 809 | 362 | 830 |
| 10 | 1,240 | 1,320 | 1,400 | 1,810 | 1,200 | 1,520 | 1,550 | 1,110 | 900 | 780 | 518 | 858 |
| 11 | 1,060 | 940 | 1,660 | 1,670 | 1,250 | 1,550 | 1,300 | 1,360 | 850 | 796 | 410 | 893 |
| 12 | 1,300 | 906 | 1,500 | 2,100 | 1,200 | 1,420 | 1,320 | 1,120 | 950 | 795 | 425 | 950 |
| 13 | 1,240 | 1,340 | 1,690 | 1,130 | 1,200 | 1,710 | 1,280 | 1,060 | 1,050 | 596 | 408 | 894 |
| 14 | 1,010 | 1,200 | 1,820 | 1,220 | 1,300 | 1,620 | 1,160 | 980 | 1,200 | 728 | 380 | 729 |
| 15 | 1,280 | 1,160 | 1,930 | 1,340 | 1,400 | 1,580 | 1,130 | 1,030 | 1,400 | 803 | 374 | 714 |
| 16 | 1,260 | 1,220 | 1,620 | 1,240 | 1,450 | 1,960 | 1,240 | 960 | 1,350 | 743 | 721 | 580 |
| 17 | 1,400 | 1,400 | 2,320 | 1,280 | 1,500 | 1,300 | 1,280 | 1,050 | 1,250 | 723 | 544 | 566 |
| 18 | 1,300 | 1,120 | 1,940 | 1,360 | 1,400 | 1,380 | 1,360 | 1,180 | 1,150 | 746 | 552 | 466 |
| 19 | 1,160 | 1,000 | 2,310 | 1,640 | 1,340 | 1,110 | 1,670 | 930 | 1,010 | 722 | 560 | 459 |
| 20 | 1,050 | 1,120 | 1,680 | 1,280 | 1,220 | 1,220 | 1,730 | 950 | 970 | 557 | 608 | 211 |
| 21 | 1,140 | 1,180 | 1,690 | 1,380 | 980 | 1,430 | 1,660 | 1,030 | 766 | 698 | 581 | 85 |
| 22 | 1,130 | 1,240 | 2,470 | 1,420 | 1,130 | 1,800 | 2,490 | 1,020 | 794 | 665 | 646 | 264 |
| 23 | 1,040 | 1,110 | 1,650 | 1,670 | 1,360 | 1,380 | 1,710 | 970 | 882 | 609 | 747 | 534 |
| 24 | 950 | 1,430 | 1,690 | 1,720 | 1,130 | 1,460 | 2,200 | 842 | 834 | 595 | 550 | 525 |
| 25 | 970 | 1,030 | 1,920 | 1,490 | 1,220 | 1,500 | 1,620 | 893 | 822 | 602 | 511 | 562 |
| 26 | 990 | 970 | 1,630 | 1,930 | 1,080 | 1,600 | 1,780 | 850 | 846 | 765 | 634 | 543 |
| 27 | 1,050 | 1,200 | 1,400 | 1,050 | 1,130 | 1,500 | 1,700 | 844 | 783 | 606 | 719 | 437 |
| 28 | 990 | 1,030 | 1,810 | 1,140 | 1,180 | 1,600 | 1,580 | 854 | 822 | 524 | 788 | 641 |
| 29 | 1,260 | 1,140 | 1,950 | 1,280 | - | 1,420 | 1,320 | 814 | 629 | 514 | 328 | 483 |
| 30 | 1,030 | 1,100 | 1,640 | 1,160 | - | 1,730 | 1,360 | 592 | 648 | 456 | 301 | 526 |
| 31 | 1,080 | - | 1,650 | 1,130 | - | 1,220 | - | 652 | - | 410 | 73 | - |

Note.- No gage-height record Feb. 9-18, Mar. 25, 26, Apr. 27, June 1-17; discharge computed on basis of records for station at Comstock and weather records.

Discharge, in second-feet, of Kalamazoo River at Calkins Dam, near Allegan, Mich., 1940-42--Continued

1941-42

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 482 | 1,570 | 1,240 | 2,280 | 1,510 | 1,340 | 2,270 | 1,110 | 1,090 | 1,100 | 1,260 | 1,090 |
| 2 | 442 | 2,410 | 1,100 | 1,550 | 1,480 | 940 | 2,700 | 947 | 1,310 | 1,050 | 2,240 | 1,210 |
| 3 | 546 | 1,720 | 1,140 | 1,530 | 1,520 | 990 | 2,180 | 1,250 | 1,260 | 1,070 | 1,840 | 1,220 |
| 4 | 756 | 1,990 | 892 | 1,630 | 1,860 | 1,100 | 1,830 | 1,080 | 1,300 | 1,140 | 2,500 | 1,050 |
| 5 | 716 | 2,020 | 872 | 1,220 | 1,790 | 1,190 | 2,670 | 1,090 | 1,490 | 652 | 1,910 | 1,140 |
| 6 | 1,240 | 2,020 | 1,030 | 1,200 | 1,650 | 1,300 | 1,690 | 988 | 1,470 | 992 | 1,680 | 1,040 |
| 7 | 1,340 | 2,180 | 1,590 | 1,110 | 1,760 | 1,500 | 1,810 | 998 | 1,460 | 1,290 | 2,850 | 1,100 |
| 8 | 1,380 | 2,570 | 1,060 | 1,070 | 2,600 | 2,250 | 2,310 | 1,060 | 1,220 | 1,040 | 3,190 | 1,110 |
| 9 | 1,440 | 2,360 | 1,060 | 1,160 | 1,550 | 2,990 | 2,030 | 1,060 | 1,320 | 982 | 2,890 | 1,150 |
| 10 | 1,360 | 2,110 | 1,200 | 1,280 | 1,480 | 3,390 | 2,400 | 1,090 | 1,290 | 1,040 | 2,320 | 1,330 |
| 11 | 1,430 | 2,110 | 1,160 | 1,440 | 1,420 | 3,340 | 2,080 | 1,110 | 1,290 | 1,060 | 2,210 | 1,380 |
| 12 | 1,940 | 2,490 | 1,190 | 1,480 | 1,440 | 3,570 | 2,530 | 1,260 | 1,480 | 1,120 | 1,810 | 1,130 |
| 13 | 1,200 | 2,730 | 1,100 | 1,300 | 1,320 | 3,590 | 2,300 | 2,100 | 2,500 | 1,070 | 1,860 | 772 |
| 14 | 1,340 | 2,890 | 1,040 | 1,140 | 1,280 | 3,630 | 2,590 | 3,150 | 2,080 | 927 | 1,860 | 898 |
| 15 | 1,220 | 1,820 | 1,040 | 1,240 | 1,540 | 4,500 | 1,860 | 2,450 | 1,690 | 1,270 | 1,790 | 912 |
| 16 | 1,200 | 2,720 | 1,050 | 1,220 | 1,220 | 4,420 | 2,360 | 1,650 | 2,040 | 1,330 | 2,640 | 905 |
| 17 | 1,160 | 2,370 | 1,020 | 1,050 | 1,120 | 5,730 | 2,330 | 3,040 | 1,640 | 1,230 | 1,400 | 926 |
| 18 | 1,120 | 1,540 | 1,090 | 1,320 | 1,240 | 5,220 | a2,150 | 1,920 | 2,370 | 1,290 | 1,330 | 946 |
| 19 | 1,280 | 1,740 | 1,110 | 1,280 | 1,340 | 4,310 | a2,000 | 1,680 | 2,510 | 1,340 | 1,340 | 958 |
| 20 | 1,140 | 2,160 | 1,010 | 1,180 | 1,280 | 4,700 | a1,800 | 2,340 | 1,910 | 1,120 | 1,130 | 788 |
| 21 | 864 | 1,360 | 1,260 | 1,340 | 1,340 | 4,850 | a1,600 | 2,090 | 2,960 | 1,040 | 1,100 | 904 |
| 22 | 990 | 1,670 | 894 | 1,400 | 1,400 | 4,410 | a1,500 | 1,480 | 1,980 | 1,090 | 1,060 | 829 |
| 23 | 1,220 | 2,800 | 1,220 | 1,610 | 1,020 | 4,420 | 1,450 | 1,670 | 2,350 | 1,060 | 1,600 | 962 |
| 24 | 1,340 | 1,260 | 1,260 | 1,590 | 1,240 | 3,580 | 1,340 | 1,560 | 1,640 | 1,080 | 1,400 | 1,070 |
| 25 | 1,460 | 1,240 | 2,270 | 1,590 | 1,480 | 3,130 | 1,360 | 1,260 | 1,560 | 1,050 | 1,410 | 944 |
| 26 | 1,640 | 1,320 | 1,220 | 1,300 | 1,360 | 3,090 | 1,310 | 1,160 | 1,550 | 804 | 1,160 | 956 |
| 27 | 1,140 | 1,410 | 1,200 | 1,490 | 1,200 | 2,270 | 1,070 | 1,330 | 1,570 | 874 | 1,250 | 1,320 |
| 28 | 1,280 | 1,550 | 1,340 | 1,460 | 1,040 | 3,060 | 1,080 | 1,210 | 1,630 | 894 | 1,420 | 1,120 |
| 29 | 1,450 | 1,520 | 1,620 | 1,480 | - | 2,740 | 1,160 | 1,060 | 1,130 | 918 | 2,380 | 1,260 |
| 30 | 1,480 | 1,360 | 2,010 | 1,480 | - | 2,700 | 1,120 | 1,110 | 1,020 | 1,070 | 2,490 | 1,310 |
| 31 | 1,550 | - | 1,630 | 1,440 | - | 2,850 | - | 1,150 | - | 1,170 | 1,210 | - |

a No gage-height record; discharge computed on basis of records for station at Comstock and weather records.

Monthly discharge, in second-feet, 1940-42

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October 1940 | 33,066 | 1,400 | 661 | 1,067 | 0.693 | 0.80 |
| November | 33,926 | 1,430 | 906 | 1,131 | .734 | .82 |
| December | 50,504 | 2,470 | 874 | 1,629 | 1.06 | 1.22 |
| Calendar year 1940 | 428,348 | 3,630 | 467 | 1,170 | .760 | 10.35 |
| January 1941 | 48,590 | 2,710 | 1,050 | 1,567 | 1.02 | 1.17 |
| February | 33,710 | 1,500 | 980 | 1,162 | .755 | .81 |
| March | 49,480 | 2,900 | 950 | 1,596 | 1.04 | 1.19 |
| April | 44,970 | 2,490 | 1,130 | 1,499 | .973 | 1.09 |
| May | 30,895 | 1,380 | 592 | 997 | .647 | .75 |
| June | 28,706 | 1,400 | 629 | 957 | .621 | .69 |
| July | 20,932 | 821 | 410 | 675 | .438 | .51 |
| August | 15,683 | 788 | 73 | 506 | .329 | .38 |
| September | 16,477 | 950 | 85 | 549 | .356 | .40 |
| Water year 1940-41 | 406,939 | 2,900 | 73 | 1,115 | .724 | 9.83 |
| October 1941 | 37,146 | 1,940 | 442 | 1,198 | .778 | .90 |
| November | 59,010 | 2,890 | 1,240 | 1,967 | 1.28 | 1.43 |
| December | 37,918 | 2,270 | 872 | 1,223 | .794 | .92 |
| Calendar year 1941 | 423,517 | 2,900 | 73 | 1,160 | .753 | 10.24 |
| January 1942 | 42,850 | 2,280 | 1,040 | 1,382 | .897 | 1.03 |
| February | 40,480 | 2,600 | 1,020 | 1,446 | .939 | .98 |
| March | 97,100 | 5,730 | 940 | 3,132 | 2.03 | 2.34 |
| April | 56,880 | 2,700 | 1,070 | 1,896 | 1.23 | 1.37 |
| May | 46,453 | 3,150 | 947 | 1,498 | .973 | 1.12 |
| June | 50,110 | 2,960 | 1,020 | 1,670 | 1.08 | 1.21 |
| July | 33,163 | 1,340 | 652 | 1,070 | .695 | .80 |
| August | 56,530 | 3,190 | 1,060 | 1,824 | 1.18 | 1.37 |
| September | 31,750 | 1,380 | 772 | 1,058 | .687 | .77 |
| Water year 1941-42 | 589,370 | 5,730 | 442 | 1,615 | 1.05 | 14.24 |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Battle Creek at Battle Creek, Mich.

Location.- Staff gage, lat. 42°19'55", long. 85°09'15", in sec. 5, T. 2 S., R. 7 W., 350 feet upstream from Verona Street Bridge in city of Battle Creek and 3 miles upstream from mouth.

Drainage area.- 241 square miles.

Records available.- October 1930 to July 1931, October 1932 to September 1942.

Extremes.- Maximum discharge during year, 2,460 second-feet Mar. 18 (gage height, 3.51 feet, from graph based on gage readings); minimum, 63 second-feet Oct. 1, (gage height, 0.65 foot, from graph based on gage readings).

1930-31, 1932-42: Maximum discharge, that of Mar. 18, 1942; minimum, 22 second-feet Aug. 14, 1934; minimum gage height, about -0.5 foot in July 1936, and Aug. 31, 1939, caused by opening of gates at dam forming control.

Remarks.- Records good except those for period of ice effect, which are fair. Gage read twice daily.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Backwater from aquatic vegetation June 6 to Sept. 30)

| | | | | | |
|---|---|---|---|---|---|
| 0.6 | 48 | 1.2 | 294 | 2.8 | 1,670 |
| .7 | 78 | 1.5 | 481 | 3.4 | 2,340 |
| .8 | 112 | 1.8 | 714 | | |
| 1.0 | 193 | 2.3 | 1,170 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 63 | 305 | 198 | 305 | 227 | 139 | 481 | 142 | 163 | 159 | 154 | 180 |
| 2 | 66 | 322 | 193 | 276 | 222 | 142 | 467 | 131 | 184 | 142 | 172 | 167 |
| 3 | 92 | 401 | 193 | 207 | 236 | 142 | 433 | 135 | 212 | 142 | 167 | 154 |
| 4 | 98 | 518 | 169 | b190 | 305 | 146 | 388 | 139 | 252 | 135 | 154 | 146 |
| 5 | 193 | 461 | 184 | b180 | 345 | 163 | 357 | 139 | 269 | 127 | 139 | 139 |
| 6 | 241 | 440 | 176 | b170 | 340 | 262 | 328 | 139 | 294 | 139 | 139 | 131 |
| 7 | 340 | 420 | 172 | b155 | 294 | 413 | 322 | 139 | 262 | 142 | 159 | 123 |
| 8 | 413 | 467 | 167 | b145 | 241 | 845 | 334 | 142 | 207 | 139 | 189 | 116 |
| 9 | 420 | 757 | 163 | b140 | 207 | 890 | 370 | 139 | 176 | 135 | 227 | 127 |
| 10 | 407 | e90 | 159 | b130 | 184 | 1,370 | 413 | 135 | 163 | 142 | 278 | 127 |
| 11 | 363 | 845 | 154 | b125 | 176 | 1,470 | 420 | 135 | 189 | 167 | 351 | 123 |
| 12 | 294 | 714 | 146 | *b123 | 167 | 1,270 | 407 | 159 | 300 | 203 | 388 | 120 |
| 13 | 227 | 593 | 142 | b120 | 159 | 1,120 | 440 | 222 | 401 | 294 | 357 | 116 |
| 14 | 203 | 481 | 135 | 123 | 150 | 1,120 | 440 | 278 | 757 | 328 | 311 | 112 |
| 15 | 189 | 433 | 131 | 123 | 146 | 1,060 | 388 | 407 | 845 | 340 | 257 | 105 |
| 16 | 180 | 382 | 135 | 123 | 150 | 1,030 | 345 | 518 | 845 | 340 | 212 | 109 |
| 17 | 172 | 334 | 139 | 123 | 176 | 1,470 | 305 | 554 | 800 | 334 | 180 | 116 |
| 18 | 172 | 300 | 142 | 127 | *193 | 2,340 | 283 | 593 | 714 | 322 | 163 | 116 |
| 19 | 172 | 278 | 146 | 146 | 184 | 1,890 | 257 | 554 | 554 | 328 | 146 | 112 |
| 20 | 172 | 262 | 146 | 180 | 189 | 1,470 | 227 | 454 | 461 | 305 | 135 | 109 |
| 21 | 167 | 246 | 142 | 193 | 198 | 1,120 | 212 | 351 | 433 | 257 | 127 | 105 |
| 22 | 167 | 236 | 139 | 198 | 189 | 845 | 203 | 278 | 370 | 212 | 123 | 98 |
| 23 | 180 | 231 | 180 | 193 | 167 | 757 | 193 | 227 | 351 | 176 | 135 | 95 |
| 24 | 203 | 227 | 231 | 193 | 150 | 714 | 189 | 193 | 345 | 146 | 142 | 102 |
| 25 | 227 | 222 | 283 | 193 | 142 | 593 | 180 | 172 | 334 | 135 | 172 | 105 |
| 26 | 246 | 222 | 388 | 193 | 139 | 518 | 172 | 150 | 305 | 127 | 212 | 120 |
| 27 | 257 | 217 | 518 | 193 | 135 | 467 | 163 | 146 | 252 | 120 | 241 | 109 |
| 28 | 262 | 212 | 518 | 189 | 135 | 427 | 159 | 142 | 222 | 120 | 252 | 131 |
| 29 | 268 | 207 | 474 | 180 | - | 420 | 150 | 142 | 193 | 127 | 246 | 142 |
| 30 | 283 | 203 | 401 | 176 | - | 433 | 146 | 146 | 176 | 135 | 222 | 139 |
| 31 | 300 | - | 340 | 193 | - | 467 | - | 142 | - | 146 | 203 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 7,037 | 420 | 63 | 227 | 0.942 | 1.09 |
| November | 11,846 | 890 | 203 | 395 | 1.64 | 1.83 |
| December | 6,824 | 518 | 131 | 220 | .913 | 1.05 |
| Calendar year 1941 | 70,358 | 890 | 38 | 193 | .801 | 10.86 |
| January | 5,307 | 305 | 120 | 171 | .710 | .82 |
| February | 5,546 | 345 | 135 | 198 | .822 | .86 |
| March | 25,533 | 2,340 | 139 | 824 | 3.42 | 3.94 |
| April | 9,172 | 481 | 146 | 306 | 1.27 | 1.42 |
| May | 7,343 | 593 | 131 | 237 | .983 | 1.13 |
| June | 11,049 | 845 | 163 | 368 | 1.53 | 1.71 |
| July | 6,064 | 340 | 120 | 196 | .813 | .94 |
| August | 6,353 | 388 | 123 | 205 | .851 | .98 |
| September | 3,694 | 180 | 95 | 123 | .510 | .57 |
| Water year 1941-42 | 105,768 | 2,340 | 63 | 290 | 1.20 | 16.34 |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Grand River at Jackson, Mich.

Location.- Water-stage recorder, lat. 42°17'05", long. 84°24'30", in sec. 22, T. 2 S., R. 1 W., 1 mile north of Jackson and 2¼ miles upstream from Portage River. Datum of gage is 900.00 feet above mean sea level (Fargo Engineering Co. bench mark).

Drainage area.- 174 square miles.

Records available.- April 1935 to September 1942.

Extremes.- Maximum discharge observed during year, 830 second-feet Aug. 27 (gage height, 12.90 feet); minimum, 17 second-feet Dec. 21 (gage height, 8.26 feet).
1935-42: Maximum discharge, 1,220 second-feet June 25, 1937 (gage height, 13.50 feet), from rating curve extended above 750 second-feet; minimum, 9.2 second-feet Aug. 22, 1936; minimum daily, 12 second-feet Aug. 23, 1936.

Remarks.- Records good except those for periods of backwater from aquatic vegetation and shifting control, which are fair.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25 | 85 | 68 | 88 | 111 | 65 | 182 | 71 | 103 | 50 | 36 | 116 |
| 2 | 26 | 61 | 132 | 90 | 108 | 67 | 180 | 67 | 181 | 44 | 48 | 106 |
| 3 | 40 | 66 | 128 | 125 | 140 | 68 | 180 | 73 | 159 | 47 | 44 | 48 |
| 4 | 32 | 67 | 128 | 139 | 239 | 86 | 195 | 70 | 146 | 55 | 43 | 39 |
| 5 | 40 | 72 | 125 | 116 | 239 | 138 | 188 | 66 | 137 | 39 | 44 | 35 |
| 6 | 51 | 133 | 113 | 108 | 224 | 142 | 215 | 66 | 135 | 56 | 44 | 31 |
| 7 | 56 | 224 | 109 | 52 | 209 | 166 | 286 | 66 | 130 | 47 | 65 | 31 |
| 8 | 39 | 258 | 113 | 45 | 182 | 272 | 258 | 63 | 125 | 43 | 66 | 35 |
| 9 | 41 | 268 | 108 | 40 | 182 | 326 | 258 | 62 | 98 | 41 | 55 | 38 |
| 10 | 37 | 258 | 103 | 37 | 144 | 306 | 306 | 66 | 64 | 99 | 68 | 36 |
| 11 | 32 | 239 | 86 | 34 | 108 | 386 | 316 | 97 | 89 | 53 | 62 | 36 |
| 12 | 29 | 207 | 88 | 38 | 96 | 419 | 316 | 100 | 101 | 46 | 57 | 36 |
| 13 | 35 | 139 | 53 | 38 | 90 | 419 | 316 | 135 | 88 | 51 | 59 | 30 |
| 14 | 39 | 125 | 48 | 38 | 88 | 430 | 316 | 132 | 130 | 47 | 56 | 35 |
| 15 | 32 | 72 | 51 | 36 | 86 | 419 | 306 | 169 | 132 | 47 | 50 | 59 |
| 16 | 32 | 63 | 54 | 36 | 138 | 442 | 296 | 162 | 220 | 61 | 43 | 46 |
| 17 | 30 | 62 | 54 | 36 | 137 | 465 | 277 | 155 | 205 | 51 | 46 | 35 |
| 18 | 38 | 57 | 55 | 44 | 116 | 442 | 226 | 160 | 160 | 46 | 44 | 36 |
| 19 | 28 | 56 | 48 | 45 | 92 | 408 | 207 | 159 | 155 | 38 | 43 | 39 |
| 20 | 32 | 64 | 47 | 47 | 116 | 397 | 190 | 133 | 155 | 40 | 43 | 29 |
| 21 | 32 | 57 | 43 | 48 | 116 | 386 | 169 | 89 | 178 | 41 | 43 | 34 |
| 22 | 38 | 56 | 48 | 50 | 105 | 366 | 130 | 82 | 163 | 42 | 119 | 33 |
| 23 | 79 | 63 | 70 | 53 | 98 | 346 | 118 | 75 | 139 | 37 | 54 | 33 |
| 24 | 54 | 62 | 80 | 53 | 92 | 306 | 95 | 67 | 103 | 38 | 38 | 34 |
| 25 | 56 | 61 | 74 | 54 | 86 | 286 | 89 | 63 | 82 | 37 | 38 | 38 |
| 26 | 59 | 62 | 83 | 59 | 92 | 277 | 83 | 57 | 59 | 32 | 39 | 58 |
| 27 | 68 | 61 | 83 | 59 | 84 | 258 | 82 | 56 | 54 | 35 | 191 | 56 |
| 28 | 60 | 60 | 82 | 60 | 68 | 248 | 77 | 56 | 47 | 34 | 155 | 46 |
| 29 | 55 | 57 | 80 | 58 | - | 233 | 74 | 53 | 52 | 46 | 137 | 47 |
| 30 | 52 | 55 | 77 | 62 | - | 222 | 72 | 48 | 53 | 70 | 126 | 47 |
| 31 | 54 | - | 77 | 185 | - | 186 | - | 64 | - | 47 | 126 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,321 | 79 | 25 | 42.6 | 0.245 | 0.28 |
| November | 3,170 | 268 | 55 | 106 | .609 | .68 |
| December | 2,508 | 132 | 43 | 80.9 | .465 | .54 |
| Calendar year 1941 | 28,592 | 306 | 14 | 78.3 | .450 | 6.12 |
| January | 1,973 | 185 | 34 | 63.6 | .366 | .42 |
| February | 3,586 | 239 | 68 | 128 | .736 | .77 |
| March | 8,977 | 465 | 65 | 290 | 1.67 | 1.92 |
| April | 6,003 | 316 | 72 | 200 | 1.15 | 1.28 |
| May | 2,782 | 169 | 48 | 89.7 | .516 | .59 |
| June | 3,613 | 220 | 47 | 120 | .690 | .77 |
| July | 1,460 | 99 | 32 | 47.1 | .271 | .31 |
| August | 2,082 | 191 | 36 | 67.2 | .386 | .44 |
| September | 1,324 | 116 | 29 | 44.1 | .253 | .28 |
| Water year 1941-42 | 38,799 | 465 | 25 | 106 | .609 | 8.28 |

Note.- Backwater from aquatic vegetation Oct. 1 to Dec. 11, May 26 to Sept. 30. Shifting-control method used Apr. 5 to May 24.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Grand River at Lansing, Mich.

Location.- Water-stage recorder, lat. 42°45'20", long. 84°34'55", in SW¼ sec. 5, T. 4 N., R. 2 W., at northwest city limits of Lansing, 3⅔ miles downstream from Cedar River.

Drainage area.- 1,230 square miles.

Records available.- November 1934 to September 1942. March 1901 to August 1906 at site at Seymour Street Bridge, 1¾ miles upstream.

Extremes.- Maximum discharge during year, 7,530 second-feet Mar. 18 (gage height, 10.81 feet); minimum, 26 second-feet (regulated) Dec. 21; minimum daily, 92 second-feet Sept. 17.

1934-42: Maximum discharge, that of Mar. 18, 1942; minimum, 6 second-feet (regulated) Aug. 26, 1941; minimum daily, 20 second-feet Aug. 25, 1941.

Remarks.- Records good except those for periods of backwater from aquatic growth and periods of no gage-height record, which are fair. Flow regulated by power plant above station.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 133 | 634 | 398 | 684 | 1,380 | 480 | 1,650 | 504 | 655 | 352 | 316 | 420 |
| 2 | 134 | 342 | 396 | 700 | 1,480 | 520 | 1,630 | 351 | 951 | 319 | 320 | 371 |
| 3 | 244 | 504 | 403 | 900 | 1,170 | 427 | 1,500 | 224 | 1,030 | 341 | 344 | 388 |
| 4 | 196 | 504 | 413 | 1,100 | 1,060 | 439 | 1,390 | 149 | 830 | 228 | 312 | 346 |
| 5 | 807 | 477 | 537 | 960 | 1,010 | 726 | 1,340 | 268 | 769 | 347 | 286 | 270 |
| 6 | 376 | 478 | 406 | 840 | 967 | 1,950 | 1,160 | 388 | 583 | 451 | 264 | 186 |
| 7 | 423 | 1,180 | 389 | 680 | 876 | 2,880 | 1,310 | 371 | 762 | 322 | 304 | 167 |
| 8 | 365 | 792 | 393 | 500 | 741 | 3,780 | 1,670 | 264 | 514 | 345 | 476 | 268 |
| 9 | 385 | 1,330 | 379 | 357 | 745 | 4,900 | 1,880 | 312 | 514 | 305 | 438 | 300 |
| 10 | 380 | 1,180 | 388 | 282 | 598 | 4,380 | 1,970 | 326 | 482 | 490 | 596 | 211 |
| 11 | 247 | 1,030 | 348 | 251 | 535 | 4,580 | 2,110 | 392 | 592 | 754 | 562 | 208 |
| 12 | 222 | 989 | 368 | 240 | 505 | 4,790 | 2,200 | 458 | 818 | 525 | 510 | 196 |
| 13 | 246 | 920 | 331 | 257 | 496 | 4,680 | 2,160 | 684 | 884 | 537 | 428 | 106 |
| 14 | 296 | 810 | 231 | 265 | 550 | 4,080 | 1,920 | 524 | 1,010 | 401 | 398 | 242 |
| 15 | 233 | 660 | 324 | 457 | 412 | 3,590 | 1,750 | 656 | 1,320 | 386 | 326 | 158 |
| 16 | 264 | 519 | 338 | 259 | 623 | 3,880 | 1,610 | 774 | 1,230 | 405 | 349 | 115 |
| 17 | 322 | 563 | 310 | 173 | 538 | 6,570 | 1,460 | 893 | 993 | 344 | 339 | 92 |
| 18 | 293 | 519 | 273 | 195 | 998 | 7,290 | 1,270 | 856 | 860 | 374 | 245 | 155 |
| 19 | 202 | 479 | 329 | 370 | 960 | 5,890 | 1,150 | 680 | 737 | 361 | 292 | 212 |
| 20 | 335 | 457 | 315 | 406 | 880 | 3,200 | 1,000 | 676 | 1,030 | 346 | 302 | 136 |
| 21 | 284 | 446 | 279 | 404 | 800 | 4,400 | 998 | 609 | 1,490 | 214 | 253 | 233 |
| 22 | 247 | 406 | 308 | 414 | 720 | 3,800 | 876 | 556 | 1,220 | 304 | 288 | 135 |
| 23 | 224 | 420 | 412 | 384 | 660 | 3,300 | 820 | 342 | 1,140 | 374 | 322 | 139 |
| 24 | 292 | 518 | 808 | 397 | 600 | 2,900 | 718 | 450 | 938 | 230 | 660 | 167 |
| 25 | 372 | 478 | 1,030 | 426 | 550 | 2,500 | 722 | 337 | 676 | 211 | 606 | 153 |
| 26 | 252 | 435 | 1,070 | 453 | 510 | 2,300 | 576 | 376 | 634 | 272 | 333 | 356 |
| 27 | 404 | 456 | 868 | 433 | 460 | 2,000 | 471 | 387 | 436 | 198 | 394 | 218 |
| 28 | 338 | 417 | 721 | 440 | 440 | 1,800 | 532 | 313 | 544 | 215 | 344 | 264 |
| 29 | 336 | 433 | 742 | 421 | - | 1,600 | 516 | 332 | 358 | 352 | 412 | 234 |
| 30 | 317 | 411 | 708 | 420 | - | 1,500 | 550 | 320 | 373 | 336 | 472 | 219 |
| 31 | 357 | - | 668 | 604 | - | 1,600 | - | 214 | - | 362 | 434 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 9,526 | 807 | 133 | 307 | 0.250 | 0.29 |
| November | 18,787 | 1,330 | 342 | 626 | .509 | .57 |
| December | 14,883 | 1,070 | 231 | 480 | .390 | .45 |
| Calendar year 1941 | 200,064 | 2,740 | 20 | 548 | .446 | 6.05 |
| January | 14,672 | 1,100 | 173 | 473 | .385 | .44 |
| February | 21,264 | 1,480 | 412 | 759 | .617 | .64 |
| March | 96,732 | 7,290 | 427 | 3,120 | 2.54 | 2.93 |
| April | 38,809 | 2,200 | 471 | 1,294 | 1.05 | 1.17 |
| May | 13,986 | 893 | 149 | 451 | .367 | .42 |
| June | 24,373 | 1,490 | 358 | 812 | .660 | .74 |
| July | 11,001 | 754 | 198 | 355 | .289 | .33 |
| August | 11,925 | 660 | 245 | 385 | .313 | .36 |
| September | 6,665 | 420 | 92 | 222 | .180 | .20 |
| Water year 1941-42 | 282,623 | 7,290 | 92 | 774 | .629 | 8.54 |

Note.- No gage-height record Nov. 13-15, Jan. 3-8, Feb. 19 to Mar. 1, Mar. 20-31; discharge computed on the basis of weather records and records for stations at Jackson and Grand Rapids. Backwater from aquatic vegetation Oct. 1 to Jan. 2 and Apr. 15 to Sept. 30.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Grand River at Grand Rapids, Mich.

Location.- Water-stage recorder, lat. 42°57'10", long. 85°41'15", at municipal sewage-pumping plant near west limits of Grand Rapids, Kent County, three-quarters of a mile upstream from Plaster Creek. Datum of gage is 589.01 feet above mean sea level (levels by city of Grand Rapids).
Drainage area.- 4,900 square miles.
Records available.- October 1930 to September 1942. March 1901 to December 1905 and January 1906 to September 1918 (gage heights only) at site at Fulton Street Bridge in Grand Rapids.
Average discharge.- 12 years (1930-42), 2,808 second-feet.
Extremes.- Maximum discharge during year, 34,000 second-feet Mar. 20 (gage height, 15.13 feet); minimum, 1,200 second-feet Aug. 25 (gage height, -3.62 feet).
1930-42: Maximum discharge, that of Mar. 20, 1942; minimum observed, 341 second-feet Aug. 17, 1936; minimum daily, 381 second-feet Aug. 17, 1936.
A stage of 19.3 feet occurred at the Fulton Street gage Mar. 27, 1904 (discharge 53,000 second-feet).
Remarks.- Records good except those for periods of ice effect, which are fair. Flow slightly regulated by power plants above station. City of Grand Rapids diverts about 30 second-feet above station, most of which is returned to river 1 mile below.
Cooperation.- Gage-height record furnished by city of Grand Rapids.

**Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)**

| | | | | | |
|---|---|---|---|---|---|
| -3.4 | 1,230 | 2.0 | 5,720 | 12.0 | 21,800 |
| -3.0 | 1,480 | 4.0 | 7,820 | 13.5 | 26,800 |
| -2.0 | 2,160 | 6.0 | 10,300 | 15.1 | 34,000 |
| -1.0 | 2,940 | 8.0 | 13,300 | | |
| 0 | 3,790 | 10.0 | 17,100 | | |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,330 | 3,520 | 2,940 | 3,700 | 2,460 | 2,300 | 7,820 | 2,160 | 3,020 | 2,620 | 2,160 | 1,600 |
| 2 | 1,430 | 4,520 | 2,860 | 3,970 | 2,700 | 2,160 | 7,490 | 2,160 | 4,150 | 2,300 | 2,460 | 1,540 |
| 3 | 1,670 | 5,020 | 2,860 | 3,610 | 2,780 | 2,230 | 6,830 | 2,160 | 5,020 | 2,160 | 2,230 | 1,540 |
| 4 | 2,020 | 4,720 | 2,780 | 2,700 | 3,520 | 2,160 | 6,420 | 1,950 | 5,720 | 2,090 | 2,160 | 1,540 |
| 5 | 2,860 | 4,330 | 2,780 | 3,340 | 3,880 | 2,460 | 6,120 | 1,950 | 5,120 | 1,880 | 2,090 | 1,480 |
| 6 | 2,700 | 4,060 | 2,780 | 4,200 | 3,880 | 3,260 | 5,620 | 1,880 | 4,620 | 1,950 | 1,810 | 1,380 |
| 7 | 3,260 | 4,920 | 2,620 | 3,600 | 3,700 | 5,620 | 5,520 | 1,880 | 4,150 | 1,880 | 1,950 | 1,540 |
| 8 | 2,940 | 5,920 | 2,780 | 3,000 | 3,340 | 8,420 | 5,420 | 1,950 | 3,520 | 1,740 | 2,090 | 1,950 |
| 9 | 2,780 | 6,720 | 2,620 | 2,600 | 3,180 | 10,600 | 5,320 | 1,880 | 3,260 | 1,810 | 2,300 | 3,700 |
| 10 | 2,780 | 6,940 | 2,620 | 2,300 | 2,860 | 11,400 | 5,020 | 1,880 | 3,100 | 2,020 | 2,780 | 5,920 |
| 11 | 2,540 | 6,940 | 2,460 | 2,200 | 2,700 | *12,500 | 5,320 | 1,950 | 3,340 | 2,780 | 2,860 | 5,720 |
| 12 | 2,380 | 6,620 | 2,300 | 2,100 | 2,600 | 14,000 | 5,420 | 2,540 | 4,330 | 2,460 | 2,700 | 6,220 |
| 13 | 2,300 | 6,120 | 2,300 | 2,100 | 2,500 | 14,600 | 5,420 | 4,150 | 5,420 | 2,700 | 2,860 | 5,020 |
| 14 | 2,160 | 5,820 | 2,160 | 2,100 | 2,400 | 15,100 | 5,420 | 5,120 | 6,020 | 2,380 | 2,540 | 3,430 |
| 15 | 2,230 | 5,320 | 2,230 | 2,100 | 2,500 | 15,900 | 5,120 | 5,820 | 5,520 | 2,090 | 2,300 | 2,940 |
| 16 | 1,950 | 4,920 | *2,230 | 2,000 | 2,500 | 17,100 | 4,920 | 6,120 | 5,220 | 2,230 | 2,230 | 2,620 |
| 17 | 1,810 | 4,420 | 2,090 | 2,000 | 2,600 | 19,600 | 4,720 | 6,940 | 5,020 | 2,300 | 2,020 | 2,380 |
| 18 | 2,020 | 4,240 | 2,160 | 2,000 | 2,700 | 22,700 | 4,330 | 6,940 | 5,120 | 2,230 | 1,880 | 2,160 |
| 19 | 2,090 | 3,790 | 2,160 | 2,000 | 2,780 | 31,000 | 3,970 | 6,320 | 4,820 | 2,090 | 1,810 | 2,160 |
| 20 | 2,160 | 4,060 | 2,160 | 2,100 | 3,430 | 34,000 | 3,790 | 5,820 | 4,520 | 1,880 | 1,670 | 2,090 |
| 21 | 2,090 | 3,970 | 2,020 | 2,100 | 3,610 | 30,500 | 3,340 | 4,920 | 4,520 | 1,740 | 1,480 | 1,950 |
| 22 | 2,020 | 3,700 | 2,020 | 2,200 | 3,610 | 25,600 | 3,340 | 4,420 | 4,920 | 1,600 | 1,480 | 1,880 |
| 23 | 2,460 | 3,430 | 2,300 | 2,400 | 3,340 | 21,600 | 2,940 | 3,970 | 5,120 | 1,540 | 1,330 | 2,020 |
| 24 | 2,540 | 3,610 | 2,780 | 2,600 | 3,020 | 18,100 | 2,940 | 3,430 | 4,820 | 1,540 | 1,330 | 2,230 |
| 25 | 2,540 | 3,430 | 3,340 | 2,700 | 2,780 | 15,500 | 3,020 | 3,260 | 4,420 | 1,430 | 1,280 | 2,090 |
| 26 | 2,160 | 3,340 | 3,970 | 2,800 | 2,460 | 13,300 | 2,620 | 3,020 | 4,150 | 1,430 | 1,430 | 2,090 |
| 27 | 2,460 | 3,260 | 4,520 | 2,900 | 2,300 | 11,600 | 2,460 | 2,780 | 3,700 | 1,430 | 1,600 | 2,160 |
| 28 | 2,700 | 3,100 | 4,620 | 2,900 | 2,300 | 10,300 | 2,380 | 2,620 | 3,340 | 1,330 | 1,880 | 2,380 |
| 29 | 2,620 | 2,940 | 4,520 | 2,900 | - | 9,540 | 2,230 | 2,460 | 3,100 | 1,950 | 1,740 | 2,460 |
| 30 | 2,700 | 2,860 | 4,060 | 2,940 | - | 8,660 | 2,230 | 2,300 | 2,780 | 2,620 | 1,740 | 2,300 |
| 31 | 2,700 | - | 3,970 | 2,940 | - | 8,180 | - | 2,300 | - | 2,460 | 1,540 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 72,400 | 3,260 | 1,330 | 2,335 | 0.477 | 0.55 |
| November | 136,560 | 6,940 | 2,860 | 4,552 | .929 | 1.04 |
| December | 88,010 | 4,620 | 2,020 | 2,839 | .579 | .67 |
| Calendar year 1941 | 1,094,920 | 9,780 | 752 | 3,000 | .612 | 8.32 |
| January | 83,100 | 4,200 | 2,000 | 2,681 | .547 | .63 |
| February | 82,430 | 3,880 | 2,300 | 2,944 | .601 | .63 |
| March | 419,990 | 34,000 | 2,160 | 13,550 | 2.77 | 3.19 |
| April | 137,510 | 7,820 | 2,230 | 4,584 | .936 | 1.04 |
| May | 107,050 | 6,940 | 1,880 | 3,453 | .705 | .81 |
| June | 131,880 | 6,020 | 2,780 | 4,396 | .897 | 1.00 |
| July | 62,660 | 2,780 | 1,330 | 2,021 | .412 | .48 |
| August | 61,730 | 2,860 | 1,280 | 1,991 | .406 | .47 |
| September | 77,490 | 5,920 | 1,380 | 2,583 | .527 | .59 |
| Water year 1941-42 | 1,460,810 | 34,000 | 1,280 | 4,002 | .817 | 11.10 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 6-29, Feb. 11-18.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Cedar River at East Lansing, Mich.

Location.- Water-stage recorder and concrete dam, lat. 42°43'40", long. 84°28'40", in SW¼ sec. 18, T. 4 N., R. 1 W., at East Lansing, 3 miles upstream from Sycamore Creek and 4 miles upstream from mouth. Datum of gage is 824.96 feet above mean sea level.
Drainage area.- 355 square miles.
Records available.- March 1931 to September 1942. August 1902 to December 1903 at site three-quarters of a mile downstream.
Average discharge.- 11 years (1931-42), 151 second-feet.
Extremes.- Maximum discharge during year, 2,660 second-feet Mar. 18 (gage height, 7.83 feet); minimum, 14 second-feet Oct. 1 (gage height, 3.03 feet).
1902-3, 1931-42: Maximum discharge, 4,020 second-feet Feb. 14, 1938 (gage height, 9.20 feet); minimum, 3 second-feet July 31, 1931.
Maximum stage known, about 14.5 feet during flood of 1921.
Remarks.- Records good except those for periods of doubtful or no gage-height record, which are fair.

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 3.0 | 11 | 3.6 | 141 | 6.0 | 1,290 |
| 3.1 | 23 | 3.9 | 237 | 7.0 | 2,000 |
| 3.2 | 41 | 4.2 | 350 | 7.6 | 2,490 |
| 3.3 | 63 | 4.5 | 478 | | |
| 3.4 | 87 | 5.0 | 720 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 68 | 65 | 138 | 456 | 68 | 391 | 80 | 136 | 77 | 61 | 54 |
| 2 | 18 | 68 | 73 | d190 | 478 | 82 | 362 | 73 | 375 | 73 | 54 | 37 |
| 3 | 28 | 56 | 77 | d130 | 375 | 90 | 307 | 77 | 325 | 65 | 54 | 30 |
| 4 | 54 | 59 | 80 | d100 | 281 | 87 | 266 | 82 | 203 | 63 | 59 | 28 |
| 5 | 63 | 63 | 62 | d81 | 213 | 232 | 234 | 90 | 159 | 63 | 54 | 37 |
| 6 | 35 | 59 | 85 | a72 | 171 | 745 | 223 | 61 | 113 | 63 | 39 | 35 |
| 7 | 59 | 138 | 75 | a66 | 150 | 1,110 | 284 | 82 | 87 | 75 | 50 | 33 |
| 8 | 70 | 234 | 68 | a61 | 121 | 1,480 | 465 | 92 | 87 | 70 | 56 | 33 |
| 9 | 65 | 266 | 66 | 56 | 119 | 1,760 | 478 | 75 | 90 | 59 | 65 | 43 |
| 10 | 37 | 241 | 68 | a53 | 119 | 1,550 | 417 | 56 | 54 | 63 | 82 | 58 |
| 11 | 23 | 203 | 65 | a51 | 97 | 1,520 | 474 | 77 | 90 | 85 | 92 | 64 |
| 12 | 39 | 177 | 68 | a48 | 97 | 1,590 | 506 | 92 | 147 | 70 | 105 | 43 |
| 13 | 19 | d155 | 68 | a47 | 82 | 1,420 | 438 | 99 | 162 | 61 | 67 | 26 |
| 14 | 46 | d145 | 56 | a50 | 97 | 1,140 | 354 | 130 | 309 | 54 | 73 | 24 |
| 15 | 42 | d130 | 52 | a55 | 68 | 964 | 288 | 121 | 438 | 45 | 54 | 41 |
| 16 | 47 | d120 | 50 | a65 | 67 | 1,020 | 251 | 206 | 362 | 48 | 61 | 23 |
| 17 | 41 | d110 | 52 | a80 | 200 | 2,160 | 181 | 227 | 259 | 65 | 59 | 19 |
| 18 | 48 | d100 | 56 | a100 | 330 | 2,460 | 187 | 197 | a230 | 56 | 52 | 35 |
| 19 | 26 | d95 | 59 | 95 | 284 | 1,760 | 159 | 162 | a220 | 50 | 50 | 33 |
| 20 | 23 | d85 | 54 | 82 | 206 | 1,290 | 159 | 133 | a265 | 45 | 66 | 31 |
| 21 | 33 | 77 | 43 | a74 | 171 | a1,020 | 150 | 121 | a570 | 43 | 39 | a31 |
| 22 | 37 | 65 | 54 | a65 | 147 | 799 | 135 | 103 | 599 | 41 | 39 | 31 |
| 23 | 43 | 87 | 70 | a70 | 150 | 653 | 133 | 85 | 434 | 41 | 33 | 26 |
| 24 | 48 | 105 | 154 | 95 | a135 | 542 | 116 | 77 | 300 | 43 | 33 | 26 |
| 25 | 41 | 90 | 220 | 95 | a119 | 438 | 110 | 73 | 210 | 37 | 54 | 26 |
| 26 | 28 | 87 | 230 | 90 | 105 | 379 | 108 | 85 | 162 | 33 | 39 | a39 |
| 27 | 31 | 92 | 213 | 97 | 87 | 334 | 103 | 65 | 138 | 33 | 41 | a35 |
| 28 | 46 | 77 | 190 | 87 | 82 | 346 | 103 | 56 | 121 | 33 | 58 | a31 |
| 29 | 28 | 80 | 177 | 62 | - | 391 | 97 | 82 | 108 | 41 | 39 | a28 |
| 30 | 28 | 80 | 159 | 85 | - | 425 | 97 | 66 | a90 | a70 | 22 | 26 |
| 31 | 43 | - | 144 | 153 | - | 425 | - | 52 | - | a90 | 22 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,211 | 70 | 18 | 39.1 | 0.110 | 0.13 |
| November | 3,432 | 266 | 56 | 114 | .321 | .36 |
| December | 2,975 | 230 | 43 | 96.0 | .270 | .31 |
| Calendar year 1941 | 46,358.7 | 992 | 9.9 | 127 | .358 | 4.87 |
| January | 2,613 | 190 | 47 | 84.3 | .237 | .27 |
| February | 5,027 | 478 | 66 | 180 | .507 | .53 |
| March | 26,280 | 2,460 | 66 | 912 | 2.57 | 2.96 |
| April | 7,576 | 506 | 97 | 253 | .713 | .80 |
| May | 3,079 | 227 | 52 | 99.3 | .280 | .32 |
| June | 6,843 | 599 | 54 | 228 | .642 | .72 |
| July | 1,755 | 90 | 33 | 56.6 | .159 | .18 |
| August | 1,694 | 105 | 22 | 54.6 | .154 | .18 |
| September | 1,026 | 64 | 19 | 34.2 | .096 | .11 |
| Water year 1941-42 | 65,511 | 2,460 | 18 | 179 | .504 | 6.87 |

a No gage-height record; discharge computed on basis of two discharge measurements, weather records, and records for Grand River at Jackson and Raisin River at Monroe.
d Doubtful gage-height record; discharge computed on basis of one discharge measurement, records for Grand River at Jackson and Raisin River at Monroe, and weather records.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Higgins Lake Outlet near Roscommon, Mich.

Location.- Staff gage, lat. 44°25'50", long. 84°40'10", in sec. 34, T. 24 N., R. 3 W., at outlet of Higgins Lake, 3 miles southwest of Roscommon and 8 miles upstream from Backus Creek.

Drainage area.- 58 square miles.

Records available.- June to September 1942.

Extremes.- Maximum discharge observed during period, 61 second-feet July 31, Aug. 1, 2 (gage height, 1.98 feet); minimum observed, 29 second-feet Aug. 17 (gage height, 1.42 feet).

Remarks.- Records good.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | - | 51 | 61 | 38 |
| 2 | | | | | | | | | - | 49 | 60 | 42 |
| 3 | | | | | | | | | - | 47 | 53 | 44 |
| 4 | | | | | | | | | - | 44 | 51 | 43 |
| 5 | | | | | | | | | - | 47 | 48 | 42 |
| 6 | | | | | | | | | - | 49 | 46 | 42 |
| 7 | | | | | | | | | - | 48 | 46 | 42 |
| 8 | | | | | | | | | - | 43 | 45 | 42 |
| 9 | | | | | | | | | - | 42 | 43 | 43 |
| 10 | | | | | | | | | - | 42 | 39 | 43 |
| 11 | | | | | | | | | - | 46 | 36 | 42 |
| 12 | | | | | | | | | - | 51 | 32 | 41 |
| 13 | | | | | | | | | - | 52 | 32 | 40 |
| 14 | | | | | | | | | - | 48 | 32 | 41 |
| 15 | | | | | | | | | - | 48 | 31 | 41 |
| 16 | | | | | | | | | - | 47 | 30 | 40 |
| 17 | | | | | | | | | - | 48 | 28 | 41 |
| 18 | | | | | | | | | - | 50 | 36 | 42 |
| 19 | | | | | | | | | - | 48 | 39 | 43 |
| 20 | | | | | | | | | - | 45 | 38 | 42 |
| 21 | | | | | | | | | - | 44 | 38 | 41 |
| 22 | | | | | | | | | - | 43 | 40 | 39 |
| 23 | | | | | | | | | - | 43 | 42 | 37 |
| 24 | | | | | | | | | - | 44 | 39 | 38 |
| 25 | | | | | | | | | 53 | 44 | 34 | 39 |
| 26 | | | | | | | | | 53 | 44 | 34 | 39 |
| 27 | | | | | | | | | 52 | 45 | 36 | 39 |
| 28 | | | | | | | | | 52 | 49 | 36 | 39 |
| 29 | | | | | | | | | 51 | 58 | 36 | 38 |
| 30 | | | | | | | | | 51 | 57 | 36 | 38 |
| 31 | | | | | | | | | - | 60 | 38 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | | | | | | |
| November | | | | | | |
| December | | | | | | |
| Calendar year | | | | | | |
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March | - | - | - | - | - | - |
| April | - | - | - | - | - | - |
| May | - | - | - | - | - | - |
| June 25-30 | 312 | 53 | 51 | 52.0 | 0.897 | 0.20 |
| July | 1,476 | 60 | 42 | 47.6 | .821 | .95 |
| August | 1,235 | 61 | 28 | 39.8 | .686 | .79 |
| September | 1,221 | 44 | 37 | 40.7 | .702 | .78 |
| Water year | - | - | - | - | - | - |

Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Muskegon River at Evart, Mich.

Location.- Wire-weight gage, lat. 43°54', long. 85°15', in sec. 34, T. 18 N., R. 8 W., on highway bridge at east edge of Evart, half a mile upstream from Twin Creek.

Drainage area.- 1,450 square miles.

Records available.- November 1930 to June 1931, January 1934 to September 1942.

Extremes (observed).- Maximum discharge during year, 4,310 second-feet Mar. 30 (gage height, 11.37 feet); minimum, 278 second-feet Sept. 7 (gage height, 6.69 feet).
1930-31, 1934-42: Maximum discharge, 5,110 second-feet Mar. 26, 1938 (gage height, 12.12 feet); minimum, 237 second-feet Aug. 28, 1941 (gage height, 6.58 feet).

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Gage read once daily Oct. 1 to Nov. 29 and twice daily thereafter.

Rating table, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 6.7 | 282 | 7.4 | 625 | 10.0 | 2,800 |
| 6.8 | 322 | 8.0 | 1,030 | 11.0 | 3,860 |
| 7.0 | 410 | 9.0 | 1,850 | 11.5 | 4,430 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 661 | 1,620 | 1,220 | 1,140 | 995 | 744 | 3,970 | 1,140 | 1,060 | a675 | 543 | 356 |
| 2 | 631 | 2,120 | 1,140 | 1,100 | 890 | 757 | 3,750 | 1,100 | 1,100 | 655 | 516 | 356 |
| 3 | 661 | 2,210 | 1,140 | 1,030 | 883 | 757 | 3,530 | 1,060 | 1,100 | 607 | 490 | 352 |
| 4 | 655 | 2,080 | 1,140 | 960 | 820 | 841 | 3,310 | 960 | 1,060 | 607 | 465 | 331 |
| 5 | 862 | 1,900 | 1,140 | 950 | 827 | 806 | 3,310 | 890 | 1,060 | 613 | 543 | 450 |
| 6 | 834 | 1,670 | 1,380 | 980 | 890 | 827 | 3,530 | 862 | 1,030 | 601 | 510 | 370 |
| 7 | 820 | a1,650 | 1,340 | 1,000 | 925 | 890 | 3,640 | 925 | 995 | 565 | 410 | 302 |
| 8 | 862 | 1,670 | 1,100 | 1,020 | 925 | 1,060 | 3,750 | 995 | 995 | 571 | 406 | 361 |
| 9 | 778 | 1,720 | 1,060 | 1,030 | 890 | a1,300 | 3,530 | 960 | 960 | 565 | 396 | 396 |
| 10 | 764 | 1,720 | 995 | 1,050 | 925 | a1,200 | 3,310 | 995 | 869 | 543 | 406 | 410 |
| 11 | 771 | 1,720 | 960 | 1,050 | 855 | a1,400 | 3,000 | 995 | 925 | 538 | 415 | 396 |
| 12 | 750 | 1,670 | 925 | 1,050 | 995 | a1,300 | 2,900 | 1,140 | 1,100 | 521 | 406 | 374 |
| 13 | 827 | 1,580 | 890 | 1,040 | 925 | a1,170 | 2,600 | 1,220 | 1,260 | 516 | 396 | 331 |
| 14 | 1,760 | 1,580 | 960 | 1,030 | 960 | 1,140 | 2,450 | 1,220 | 1,140 | 480 | 392 | 374 |
| 15 | 1,760 | 1,620 | 925 | 1,030 | 883 | 1,340 | 2,300 | 1,180 | 1,030 | 465 | 370 | 383 |
| 16 | 1,720 | 1,580 | 960 | 1,040 | 778 | 1,500 | 2,120 | 1,220 | 960 | 480 | 370 | 383 |
| 17 | 1,500 | 1,540 | *925 | 1,050 | 876 | 2,500 | 1,980 | 1,220 | 806 | 480 | 352 | 392 |
| 18 | 1,420 | 1,500 | 960 | 1,060 | 925 | 3,100 | 1,900 | 1,220 | 806 | 475 | 352 | 470 |
| 19 | 1,420 | 1,420 | 995 | 1,070 | 764 | 3,200 | 1,760 | 1,220 | 1,030 | 465 | 352 | 516 |
| 20 | 1,460 | 1,580 | 960 | 1,080 | 750 | 3,100 | 1,720 | 1,180 | 1,220 | 490 | 348 | 495 |
| 21 | 1,420 | 1,720 | 925 | 1,090 | 883 | 3,100 | 1,620 | 1,100 | 1,300 | 521 | 326 | 445 |
| 22 | 1,380 | 1,760 | 960 | 1,100 | 848 | 3,200 | 1,540 | 1,100 | 1,300 | 565 | 356 | 445 |
| 23 | 1,420 | a1,720 | 995 | 1,100 | 834 | 3,100 | 1,500 | 1,060 | 1,220 | 571 | 420 | 425 |
| 24 | 1,460 | a1,610 | 1,260 | 1,030 | 925 | 3,000 | 1,420 | 995 | 1,100 | 577 | 378 | 460 |
| 25 | 1,420 | a1,480 | 1,340 | 1,030 | 813 | 3,000 | 1,380 | 960 | 995 | 571 | 365 | 475 |
| 26 | 1,340 | 1,380 | 1,300 | 1,100 | 757 | 3,100 | 1,300 | 925 | 925 | 543 | 374 | 510 |
| 27 | 1,260 | 1,340 | 1,220 | *1,140 | 750 | 3,200 | 1,260 | 883 | 876 | 510 | 378 | 571 |
| 28 | 1,260 | 1,220 | 1,260 | 1,140 | 785 | 3,640 | 1,180 | 855 | 792 | 490 | 392 | 583 |
| 29 | 1,220 | 1,260 | 1,180 | 1,100 | - | 3,970 | 1,140 | 848 | a740 | 505 | 388 | 583 |
| 30 | 1,180 | 1,220 | 1,140 | 1,100 | - | 4,190 | 1,180 | 925 | a700 | 516 | 383 | 577 |
| 31 | 1,180 | - | 1,100 | 960 | - | 4,080 | - | 995 | - | 571 | 365 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 35,486 | 1,760 | 631 | 1,145 | 0.790 | 0.91 |
| November | 48,860 | 2,210 | 1,220 | 1,629 | 1.12 | 1.25 |
| December | 33,795 | 1,380 | 890 | 1,090 | .752 | .87 |
| Calendar year 1941 | 375,534 | 3,640 | 252 | 1,029 | .710 | 9.64 |
| January | 32,650 | 1,140 | 950 | 1,053 | .726 | .84 |
| February | 24,276 | 995 | 750 | 867 | .598 | .62 |
| March | 66,512 | 4,190 | 744 | 2,146 | 1.48 | 1.71 |
| April | 71,780 | 3,970 | 1,140 | 2,393 | 1.65 | 1.84 |
| May | 32,348 | 1,220 | 848 | 1,043 | .719 | .83 |
| June | 30,454 | 1,300 | 700 | 1,015 | .700 | .78 |
| July | 16,852 | 675 | 465 | 544 | .375 | .43 |
| August | 12,563 | 543 | 326 | 405 | .279 | .32 |
| September | 12,872 | 583 | 302 | 429 | .296 | .33 |
| Water year 1941-42 | 418,448 | 4,190 | 302 | 1,146 | .790 | 10.73 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Pere Marquette River at Custer and weather records.
Note.- Stage-discharge relation affected by ice Jan. 4-21.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Muskegon River at Newaygo, Mich.

Location.- Water-stage recorder, lat. 43°25', long. 85°48', in sec. 24, T. 12 N., R. 13 W., in tailrace of power plant operated by Consumers Power Co. at Newaygo, 600 feet downstream from Penoyer Creek.
Drainage area.- 2,350 square miles.
Records available.- October 1930 to September 1942. June 1901 to December 1906 at site above Newaygo.
Average discharge.- 12 years (1930-42), 1,659 second-feet.
Extremes.- Maximum discharge during year, 5,780 second-feet Mar. 31 (gage height, 50.22 feet); minimum, 285 second-feet June 25 (gage height, 45.93 feet); minimum daily, 798 second-feet Aug. 19.
1901-06, 1930-42: Maximum daily discharge, 11,600 second-feet Feb. 14, 1938 (gage height, 51.9 feet); minimum, about 150 second-feet June 4, 1941 (gage height, 45.66 feet); minimum daily, 390 second-feet July 13, 1934.
Remarks.- Records good except those based on hourly staff-gage readings, which are fair, and those for period of no gage-height record, which are poor. Flow regulated by Hardy Dam (since 1931), Croton Dam, and several smaller dams, and by power plant at Newaygo.

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)

| | |
|---|---|
| 46.6 | 770 |
| 47.2 | 1,380 |
| 48.0 | 2,370 |
| 49.0 | 3,840 |
| 50.2 | 5,780 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,850 | 2,300 | 2,180 | 2,180 | 1,980 | 1,730 | 5,600 | 2,040 | 1,670 | 1,270 | h960 | 990 |
| 2 | 1,790 | 2,510 | 2,180 | 2,180 | 1,730 | 1,920 | 5,600 | 1,400 | 1,850 | 1,270 | h960 | 1,000 |
| 3 | 1,790 | 3,090 | 2,240 | 1,790 | 1,730 | 2,180 | 4,760 | 1,790 | 2,110 | 1,270 | h960 | 930 |
| 4 | 1,850 | 3,320 | 2,240 | 1,790 | 1,790 | 2,180 | 4,920 | 1,980 | 2,110 | 960 | h960 | 1,010 |
| 5 | 2,180 | 3,620 | 1,920 | 1,250 | 1,790 | 2,110 | 4,760 | 2,110 | 2,110 | 960 | h960 | 910 |
| 6 | 2,240 | 3,620 | 1,850 | 1,350 | 1,790 | 2,110 | 4,600 | 2,110 | 2,040 | 960 | h960 | 842 |
| 7 | 2,180 | 3,620 | 1,790 | 1,320 | 1,730 | 2,110 | 5,250 | 2,110 | 2,040 | 960 | h960 | 824 |
| 8 | 2,110 | 3,160 | 1,920 | 1,470 | 1,730 | 2,180 | 5,080 | 2,040 | 1,980 | 960 | 960 | 860 |
| 9 | 2,300 | 2,860 | 1,920 | 1,470 | 1,730 | 1,920 | 5,080 | 1,730 | 1,670 | 960 | 960 | 880 |
| 10 | 2,180 | 2,790 | 1,920 | 1,550 | 1,790 | 3,320 | 4,600 | 1,320 | 1,570 | 960 | 970 | 833 |
| 11 | 1,850 | 3,160 | 1,850 | 1,850 | 1,790 | 2,790 | 4,140 | 1,460 | 1,320 | 960 | 960 | 833 |
| 12 | 1,110 | 3,160 | 1,850 | 1,850 | 1,730 | 2,790 | 3,690 | 1,980 | 1,610 | 960 | 950 | 833 |
| 13 | 1,500 | 3,160 | 1,790 | 1,790 | 1,730 | 2,790 | 3,620 | 2,110 | 2,650 | 960 | 950 | 815 |
| 14 | 2,040 | 3,160 | 1,790 | 1,920 | 1,730 | 2,790 | 3,460 | 2,180 | 3,160 | 860 | 960 | 890 |
| 15 | 2,300 | 2,180 | 1,790 | 2,110 | 1,670 | 2,860 | 3,020 | 2,180 | 3,160 | 860 | 950 | 940 |
| 16 | 2,790 | 2,180 | 1,920 | 2,110 | 2,240 | 3,240 | 2,720 | 2,180 | 3,090 | 860 | 950 | 870 |
| 17 | 2,790 | 2,720 | 1,370 | 1,790 | 2,720 | 3,620 | 2,720 | 2,110 | 2,650 | 860 | 950 | 960 |
| 18 | 2,510 | 3,240 | 1,360 | 1,790 | 2,720 | 3,990 | 2,180 | 2,110 | 2,040 | 860 | 940 | 940 |
| 19 | 2,790 | 2,860 | 1,120 | 1,980 | a2,700 | 4,140 | 2,110 | 2,110 | 1,670 | 860 | 798 | 960 |
| 20 | 2,790 | 2,180 | 1,790 | 2,110 | a2,300 | 4,290 | 2,300 | 2,110 | 1,570 | 960 | 1,100 | 940 |
| 21 | 2,790 | 2,650 | 1,790 | 2,110 | a1,700 | 4,290 | 2,720 | 2,110 | 2,040 | 1,060 | 980 | 930 |
| 22 | 2,650 | 3,160 | 1,920 | 1,790 | a1,700 | 4,290 | 2,720 | 2,180 | 2,650 | 1,490 | 980 | 940 |
| 23 | 2,370 | 2,180 | 2,240 | 1,790 | a1,700 | 4,140 | 2,510 | 2,110 | 2,370 | 1,490 | 970 | 1,010 |
| 24 | 2,300 | 2,180 | 2,040 | 1,790 | 1,730 | 4,440 | 2,110 | 1,980 | 2,370 | 1,380 | 980 | 1,170 |
| 25 | 2,300 | 2,790 | 2,240 | 1,790 | 1,730 | 4,920 | 1,790 | 1,790 | 2,180 | 960 | 1,110 | 1,230 |
| 26 | 2,300 | 2,790 | 2,510 | 1,980 | 1,730 | 5,250 | 1,790 | 1,790 | 2,040 | 960 | 990 | 970 |
| 27 | 2,300 | 2,860 | 2,440 | 2,300 | 1,730 | 5,250 | 1,980 | 1,790 | 1,730 | 960 | 1,000 | 950 |
| 28 | 2,300 | 2,790 | 2,370 | 2,440 | 1,730 | 5,250 | 2,110 | 1,360 | 1,730 | h1,490 | 1,000 | 1,240 |
| 29 | 2,300 | 2,180 | 2,300 | 2,510 | - | 5,080 | 2,110 | 1,720 | 1,610 | h1,490 | 1,000 | 1,510 |
| 30 | 2,300 | 2,180 | 2,300 | 2,110 | - | 5,250 | 1,920 | 1,670 | 1,270 | h1,490 | 1,000 | 1,550 |
| 31 | 2,300 | - | 2,300 | 2,110 | - | 5,780 | - | 1,670 | - | h1,490 | 1,000 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 69,150 | 2,790 | 1,110 | 2,231 | 0.949 | 1.09 |
| November | 84,650 | 3,620 | 2,180 | 2,822 | 1.20 | 1.34 |
| December | 61,240 | 2,510 | 1,120 | 1,975 | .840 | .97 |
| Calendar year 1941 | 683,696 | 3,620 | 558 | 1,873 | .797 | 10.83 |
| January | 58,370 | 2,510 | 1,250 | 1,883 | .801 | .92 |
| February | 52,870 | 2,720 | 1,670 | 1,888 | .803 | .84 |
| March | 109,000 | 5,780 | 1,730 | 3,516 | 1.50 | 1.73 |
| April | 101,970 | 5,600 | 1,790 | 3,399 | 1.45 | 1.62 |
| May | 59,330 | 2,180 | 1,320 | 1,914 | .814 | .94 |
| June | 62,060 | 3,160 | 1,270 | 2,069 | .880 | .98 |
| July | 33,790 | 1,490 | 860 | 1,090 | .464 | .53 |
| August | 30,128 | 1,110 | 798 | 972 | .414 | .48 |
| September | 29,560 | 1,550 | 815 | 985 | .419 | .47 |
| Water year 1941-42 | 752,118 | 5,780 | 798 | 2,061 | .877 | 11.91 |

a No gage-height record; discharge computed on basis of weather records and records for station at Evart.
h Computed from hourly staff-gage readings.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Pere Marquette River at Custer, Mich.

Location.- Wire-weight gage, lat. 43°58', long. 86°14', on line between secs. 21 and 22, T. 18 N., R. 16 W., three-quarters of a mile south of Custer and 1 mile downstream from South Branch.

Drainage area.- 702 square miles.

Records available.- August 1939 to September 1942.

Extremes.- Maximum discharge observed during year, 1,900 second-feet Mar. 19 (gage height, 5.96 feet); minimum observed, 359 second-feet Sept. 7, 8 (gage height, 2.32 feet).
1939-42: Maximum discharge observed, that of Mar. 19, 1942; minimum, 310 second-feet Aug. 9, 10, 1941 (gage height, 2.12 feet).

Remarks.- Records good. Gage read once daily Oct. 1 to Feb. 24, twice daily thereafter.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 15-18)

| Oct. 1-14 | | Oct. 15 to Mar. 17 | | | | Mar. 18 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3.2 | 639 | 3.1 | 559 | 5.3 | 1,310 | 2.3 | 359 | 5.0 | 1,240 |
| 3.6 | 762 | 4.0 | 805 | 5.7 | 1,610 | 3.0 | 554 | 5.6 | 1,560 |
| | | 4.8 | 1,070 | | | 4.0 | 650 | 6.0 | 1,960 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 639 | 978 | 747 | 790 | 719 | 585 | 1,220 | 641 | 745 | 470 | 512 | 386 |
| 2 | 654 | 995 | 747 | 805 | 719 | 572 | 1,150 | 656 | 730 | 470 | 498 | 366 |
| 3 | 669 | 1,010 | 733 | 820 | 719 | 572 | 1,090 | 656 | 715 | 484 | 484 | 372 |
| 4 | 700 | 1,010 | 733 | 820 | 719 | 585 | 1,050 | 656 | 685 | 484 | 470 | 372 |
| 5 | 731 | 1,010 | 719 | 820 | 719 | 585 | 1,010 | 656 | 656 | 498 | 456 | 372 |
| 6 | 731 | 1,030 | 706 | 820 | 719 | 611 | 1,050 | 656 | 641 | 498 | 456 | 372 |
| 7 | 746 | 1,010 | 706 | 820 | 706 | *652 | 1,110 | 656 | 626 | 470 | 456 | 359 |
| 8 | 731 | 1,010 | 719 | 820 | 706 | 733 | 1,090 | 656 | 626 | 456 | 470 | 372 |
| 9 | 731 | 1,010 | 706 | 820 | 692 | 761 | 1,090 | 641 | 598 | 442 | 456 | 456 |
| 10 | 700 | 1,010 | 706 | 820 | 692 | 835 | 1,010 | 626 | 583 | 442 | 456 | 456 |
| 11 | 684 | 995 | 692 | 800 | 678 | 790 | 970 | 626 | 598 | 442 | 428 | 456 |
| 12 | 664 | 995 | 678 | 800 | 678 | 790 | 910 | 626 | 626 | 428 | 414 | 442 |
| 13 | 684 | 942 | 665 | 800 | 665 | 805 | 865 | 626 | 626 | 428 | 414 | 414 |
| 14 | 700 | 926 | 665 | 800 | 665 | 865 | 835 | 730 | 641 | 428 | 400 | 428 |
| 15 | 805 | 942 | 665 | 800 | 652 | 942 | 805 | 820 | 670 | 428 | 386 | 456 |
| 16 | 865 | 942 | 652 | 800 | 652 | 1,150 | 790 | 850 | 685 | 428 | 386 | 456 |
| 17 | 805 | 942 | *665 | 820 | 652 | 1,610 | 745 | 880 | 641 | 456 | 386 | 442 |
| 18 | 775 | 942 | 665 | 840 | 652 | 1,850 | 730 | 970 | 612 | 470 | 372 | 428 |
| 19 | 775 | 942 | 665 | 850 | 650 | 1,900 | 730 | 950 | 626 | 470 | 372 | 442 |
| 20 | 790 | 942 | 665 | 850 | 650 | 1,800 | 730 | 865 | 641 | 484 | 372 | 470 |
| 21 | 805 | 960 | 665 | 850 | 650 | 1,620 | 715 | 835 | 670 | 470 | 372 | 484 |
| 22 | 790 | 960 | 678 | 850 | 650 | 1,540 | 685 | 760 | 685 | 456 | 386 | 470 |
| 23 | 761 | 942 | 678 | 835 | 650 | 1,480 | 670 | 715 | 656 | 442 | 386 | 470 |
| 24 | 733 | 926 | 706 | 835 | *640 | 1,390 | 656 | 685 | 612 | 428 | 386 | 470 |
| 25 | 719 | 910 | 719 | 835 | 620 | 1,290 | 641 | 670 | 568 | 400 | 386 | 540 |
| 26 | 719 | 880 | 733 | 835 | 611 | 1,240 | 641 | 656 | 554 | 400 | 386 | 568 |
| 27 | 719 | 850 | 761 | 835 | 598 | 1,190 | 641 | 656 | 540 | 442 | 386 | 583 |
| 28 | 775 | 790 | 775 | *850 | 585 | 1,220 | 626 | 626 | 540 | 442 | 400 | 568 |
| 29 | 850 | 761 | 775 | 835 | - | 1,260 | 641 | 641 | 512 | 456 | 414 | 540 |
| 30 | 895 | 761 | 790 | 805 | - | 1,290 | 641 | 670 | 484 | 470 | 414 | 526 |
| 31 | 960 | - | 790 | 747 | - | 1,260 | - | 700 | - | 484 | 400 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 23,325 | 960 | 639 | 752 | 1.07 | 1.23 |
| November | 28,321 | 1,030 | 761 | 944 | 1.34 | 1.50 |
| December | 21,969 | 790 | 652 | 709 | 1.01 | 1.16 |
| Calendar year 1941 | 249,558 | 1,230 | 310 | 684 | .974 | 13.19 |
| January | 25,427 | 850 | 747 | 820 | 1.17 | 1.35 |
| February | 18,708 | 719 | 585 | 668 | .952 | .99 |
| March | 33,773 | 1,900 | 572 | 1,089 | 1.55 | 1.79 |
| April | 25,537 | 1,220 | 626 | 851 | 1.21 | 1.35 |
| May | 22,057 | 970 | 626 | 712 | 1.01 | 1.16 |
| June | 18,792 | 745 | 484 | 626 | .892 | 1.00 |
| July | 14,066 | 498 | 400 | 454 | .647 | .75 |
| August | 12,960 | 512 | 372 | 418 | .595 | .69 |
| September | 13,556 | 583 | 359 | 452 | .644 | .72 |
| Water year 1941-42 | 258,491 | 1,900 | 359 | 708 | 1.01 | 13.69 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 5-21, Feb. 19-25.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter.
To convert war time to standard time, subtract 1 hour.

## Big Sable River near Free Soil, Mich.

Location.- Staff gage, lat. 44°07'15", long. 86°16'50", in sec. 24, T. 20 N., R. 17 W., 30 feet downstream from bridge on U. S. Highway 31, 2¼ miles northwest of Free Soil and 6 miles upstream from Hamlin Lake. Datum of gage is 615.32 feet above mean sea level, datum of 1929 (levels by Michigan State Department of Conservation).

Drainage area.- 127 square miles.

Records available.- May to September 1942.

Extremes.- Maximum discharge observed during period, 202 second-feet June 14 (gage height, 2.02 feet); minimum observed, 94 second-feet Aug. 21, 22, 26 (gage height, 1.09 feet).

Remarks.- Records good. Gage read twice daily.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | - | 176 | 129 | 128 | 95 |
| 2 | | | | | | | | - | 170 | 125 | 119 | 103 |
| 3 | | | | | | | | - | 164 | 122 | 114 | 100 |
| 4 | | | | | | | | - | 152 | 124 | 108 | 98 |
| 5 | | | | | | | | - | 147 | 125 | 104 | 95 |
| 6 | | | | | | | | - | 145 | 125 | 104 | 95 |
| 7 | | | | | | | | - | 142 | 120 | 103 | 95 |
| 8 | | | | | | | | - | 138 | 118 | 102 | 117 |
| 9 | | | | | | | | - | 133 | 115 | 102 | 121 |
| 10 | | | | | | | | - | 128 | 114 | 104 | 117 |
| 11 | | | | | | | | - | 135 | 112 | 106 | 113 |
| 12 | | | | | | | | - | 170 | 110 | 105 | 108 |
| 13 | | | | | | | | - | 196 | 108 | 103 | 103 |
| 14 | | | | | | | | - | 202 | 106 | 100 | 108 |
| 15 | | | | | | | | - | 189 | 104 | 99 | 113 |
| 16 | | | | | | | | - | 164 | 119 | 97 | 116 |
| 17 | | | | | | | | - | 148 | 140 | 96 | 114 |
| 18 | | | | | | | | - | 146 | 133 | 95 | 110 |
| 19 | | | | | | | | - | 158 | 122 | 96 | 119 |
| 20 | | | | | | | | - | 164 | 115 | 96 | 117 |
| 21 | | | | | | | | - | 189 | 112 | 95 | 115 |
| 22 | | | | | | | | - | 189 | 108 | 97 | 120 |
| 23 | | | | | | | | 170 | 182 | 106 | 98 | 126 |
| 24 | | | | | | | | 158 | 164 | 104 | 98 | 130 |
| 25 | | | | | | | | 152 | 152 | 103 | 96 | 133 |
| 26 | | | | | | | | 148 | 147 | 102 | 95 | 141 |
| 27 | | | | | | | | 148 | 141 | 109 | 97 | 150 |
| 28 | | | | | | | | 147 | 136 | 107 | 99 | 150 |
| 29 | | | | | | | | 146 | 135 | 117 | 98 | 146 |
| 30 | | | | | | | | 170 | 133 | 119 | 97 | 139 |
| 31 | | | | | | | | 176 | - | 125 | 96 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | - | | | | | |
| November | | | | | | |
| December | | | | | | |
| Calendar year | | | | | | |
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March | - | - | - | - | - | - |
| April | - | - | - | - | - | - |
| May 23-31 | 1,415 | 176 | 146 | 157 | 1.24 | 0.42 |
| June | 4,735 | 202 | 128 | 158 | 1.24 | 1.38 |
| July | 3,598 | 140 | 102 | 116 | .913 | 1.05 |
| August | 3,145 | 128 | 95 | 101 | .795 | .92 |
| September | 3,507 | 150 | 95 | 117 | .921 | 1.03 |
| Water year | - | - | - | - | - | - |

Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Manistee River near Sherman, Mich.

Location.- Wire-weight gage, lat. 44°26', long. 85°42', on line between sec. 36, T. 24 N., R. 12 W., and sec. 31, T. 24 N., R. 11 W., 150 feet upstream from Wheeler Creek and three-quarters of a mile north of Sherman.
Drainage area.- 900 square miles.
Records available.- July 1903 to May 1916, November 1930 to June 1931, January 1934 to September 1942.
Average discharge.- 20 years (1903-15, 1934-42), 1,086 second-feet.
Extremes.- Maximum discharge observed during year, 2,190 second-feet Apr. 7 (gage height, 12.93 feet); minimum observed, 840 second-feet Aug. 20, Sept. 5, 6; minimum gage height, 9.57 feet Sept. 5.
1903-16, 1930-31, 1934-42: Maximum discharge observed, 3,500 second-feet Mar. 25, 1913 (gage height, 7.0 feet, datum then in use); minimum observed, 540 second-feet Aug. 9, 1936 (gage height, 8.55 feet).
Remarks.- Records good. Gage read once daily.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1-13, June 13 to Sept. 30 | | Oct. 14 to June 12 | |
|---|---|---|---|
| 9.6 | 840 | 10.0 | 950 |
| 10.0 | 980 | 11.0 | 1,300 |
| 10.9 | 1,360 | 12.0 | 1,740 |
| | | 12.9 | 2,190 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 945 | 1,340 | 1,120 | 1,080 | a1,020 | 950 | 1,740 | 1,080 | 1,460 | 980 | 1,180 | 875 |
| 2 | 945 | 1,540 | 1,120 | 1,080 | 1,020 | 950 | 1,740 | 1,080 | 1,460 | 945 | 1,100 | 875 |
| 3 | 945 | 1,540 | 1,120 | 1,050 | 1,000 | 950 | 1,840 | 1,080 | 1,420 | 945 | 1,020 | 875 |
| 4 | 945 | 1,540 | 1,080 | 1,050 | 1,000 | 950 | 1,940 | 1,080 | 1,340 | 980 | 980 | 875 |
| 5 | 945 | 1,460 | 1,120 | 1,050 | 980 | 950 | 1,990 | 1,080 | 1,260 | 980 | 945 | 840 |
| 6 | 945 | 1,340 | 1,120 | 1,050 | 960 | 950 | 2,140 | 1,080 | 1,220 | 1,020 | 910 | 840 |
| 7 | 1,100 | 1,300 | 1,120 | 1,050 | 950 | 950 | 2,190 | 1,080 | 1,220 | 980 | 910 | a860 |
| 8 | 1,140 | 1,260 | 1,080 | 1,050 | 950 | *980 | 2,140 | 1,080 | 1,160 | 980 | 910 | 875 |
| 9 | 1,060 | 1,260 | 1,080 | 1,050 | 950 | 980 | 2,040 | 1,050 | 1,120 | 945 | 910 | 875 |
| 10 | 1,060 | 1,300 | 1,080 | 1,050 | 960 | 980 | 1,840 | 1,050 | 1,080 | 980 | 910 | 875 |
| 11 | 1,020 | 1,300 | 1,080 | 1,000 | 960 | 980 | 1,640 | 1,020 | 1,080 | 980 | 910 | 910 |
| 12 | 1,020 | 1,260 | 1,080 | 1,000 | 960 | 980 | 1,540 | 1,020 | 1,220 | 945 | 910 | 875 |
| 13 | 980 | 1,300 | 1,080 | 1,000 | 970 | 1,020 | 1,420 | 980 | 1,360 | 945 | 910 | 875 |
| 14 | 1,260 | 1,300 | 1,050 | 1,000 | 970 | 1,020 | 1,380 | 980 | 1,180 | 910 | 910 | 875 |
| 15 | 1,460 | 1,300 | 1,050 | 1,000 | 980 | 1,050 | 1,380 | 980 | 1,100 | 910 | 910 | 910 |
| 16 | 1,300 | 1,300 | 1,050 | 1,000 | 980 | 1,190 | 1,380 | 1,260 | 1,100 | 910 | 910 | 910 |
| 17 | 1,260 | 1,300 | *1,050 | 1,000 | 980 | 1,460 | 1,420 | 1,380 | 1,060 | 910 | 875 | 980 |
| 18 | 1,300 | 1,260 | 1,080 | 1,050 | 980 | 1,690 | 1,420 | 1,260 | 1,060 | 945 | 875 | 1,020 |
| 19 | 1,380 | 1,340 | 1,120 | 1,050 | 980 | 1,540 | 1,420 | 1,220 | 1,060 | 910 | a875 | 1,060 |
| 20 | 1,380 | 1,540 | 1,080 | 1,050 | 970 | 1,460 | 1,340 | a1,200 | 1,140 | 910 | 875 | 1,020 |
| 21 | 1,340 | 1,540 | 1,080 | 1,050 | 970 | 1,540 | 1,260 | 1,190 | 1,280 | 910 | 875 | 1,020 |
| 22 | 1,300 | 1,500 | 1,050 | 1,050 | 960 | 1,540 | 1,220 | 1,160 | 1,180 | 910 | 945 | 980 |
| 23 | 1,500 | 1,420 | 1,080 | 1,050 | 960 | 1,500 | 1,220 | 1,120 | 1,140 | 945 | 980 | a1,000 |
| 24 | 1,540 | 1,340 | 1,120 | 1,080 | 950 | 1,460 | 1,190 | 1,080 | 1,140 | 945 | 945 | 1,020 |
| 25 | 1,590 | 1,300 | 1,220 | 1,080 | 950 | 1,500 | 1,160 | 1,050 | 1,100 | 910 | 910 | 1,060 |
| 26 | 1,640 | 1,260 | 1,260 | 1,080 | 950 | 1,640 | 1,120 | 1,050 | 1,100 | 910 | 910 | 1,140 |
| 27 | 1,380 | 1,220 | 1,220 | 1,050 | 950 | 1,740 | 1,120 | 1,050 | 1,060 | a880 | 875 | 1,230 |
| 28 | 1,260 | 1,220 | 1,190 | *1,050 | 950 | 1,840 | 1,080 | 1,050 | 1,020 | a900 | 910 | 1,360 |
| 29 | 1,190 | 1,220 | 1,160 | 1,020 | - | 1,940 | 1,080 | 1,260 | 1,020 | 1,060 | 910 | 1,320 |
| 30 | 1,120 | 1,190 | 1,120 | 1,020 | - | 1,840 | 1,080 | 1,420 | 980 | 1,230 | 910 | a1,250 |
| 31 | 1,160 | - | 1,120 | 1,020 | - | 1,790 | - | 1,420 | - | 1,230 | 910 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 37,410 | 1,640 | 945 | 1,207 | 1.34 | 1.54 |
| November | 40,290 | 1,540 | 1,190 | 1,343 | 1.49 | 1.66 |
| December | 34,360 | 1,260 | 1,050 | 1,109 | 1.23 | 1.42 |
| Calendar year 1941 | 388,520 | 2,340 | 710 | 1,064 | 1.18 | 16.04 |
| January | 32,260 | 1,080 | 1,000 | 1,041 | 1.16 | 1.34 |
| February | 27,160 | 1,020 | 950 | 970 | 1.08 | 1.12 |
| March | 40,310 | 1,940 | 950 | 1,300 | 1.44 | 1.66 |
| April | 45,470 | 2,190 | 1,080 | 1,516 | 1.68 | 1.87 |
| May | 34,890 | 1,420 | 980 | 1,125 | 1.25 | 1.44 |
| June | 35,120 | 1,460 | 980 | 1,171 | 1.30 | 1.45 |
| July | 29,840 | 1,230 | 880 | 963 | 1.07 | 1.23 |
| August | 28,815 | 1,180 | 875 | 930 | 1.03 | 1.19 |
| September | 29,480 | 1,360 | 840 | 983 | 1.09 | 1.22 |
| Water year 1941-42 | 415,425 | 2,190 | 840 | 1,138 | 1.26 | 17.14 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records.
Note.- Stage-discharge relation affected by ice Jan. 3-23, Feb. 3-7, 9-14, 18-26.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Rainy River near Onaway, Mich.

Location.- Staff gage, lat. 45°21'25", long. 84°10'00", in sec. 2, T. 34 N., R. 2 E., 1¼ miles downstream from Little Rainy River, and 3 miles east of Onaway.

Drainage area.- 79 square miles.

Records available.- January to September 1942.

Extremes.- Maximum discharge observed during period, 562 second-feet Apr. 5 (gage height, 5.24 feet); minimum observed, 0.4 second-feet Aug. 18, 29, Sept. 3 (gage height, 1.84 feet).

Remarks.- Records good except those for period of ice effect, which are poor. Gage read once daily.

Rating table, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.8 | 0.2 | 2.3 | 8.6 | 3.3 | 87 |
| 1.9 | .6 | 2.4 | 12 | 3.6 | 132 |
| 2.0 | 1.5 | 2.6 | 23 | 4.0 | 210 |
| 2.1 | 3.0 | 2.8 | 37 | 4.4 | 309 |
| 2.2 | 5.2 | 3.0 | 54 | 5.2 | 545 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | - | 23 | 13 | 334 | 60 | 79 | 14 | 2.5 | 0.5 |
| 2 | | | | - | 23 | 12 | 425 | 56 | 70 | 13 | 1.8 | .4 |
| 3 | | | | - | 23 | 12 | 425 | 50 | 66 | 11 | 1.4 | .4 |
| 4 | | | | - | 23 | 12 | 410 | 48 | 61 | 11 | 1.2 | .4 |
| 5 | | | | - | 22 | 11 | 530 | 42 | 55 | 13 | .9 | .5 |
| 6 | | | | - | 20 | 11 | 530 | 36 | 51 | 13 | .8 | .5 |
| 7 | | | | - | 19 | 11 | 425 | 35 | 50 | 12 | .7 | .6 |
| 8 | | | | - | 19 | 11 | *395 | 34 | 48 | 11 | .6 | .6 |
| 9 | | | | - | 19 | 15 | 354 | 31 | 40 | 11 | .6 | .8 |
| 10 | | | | - | 19 | 25 | 298 | 30 | 34 | 7.9 | .7 | 1.0 |
| 11 | | | | - | 19 | 23 | 246 | 29 | 31 | 6.9 | .8 | 1.0 |
| 12 | | | | - | 19 | 21 | 210 | 58 | 31 | 5.2 | .9 | .9 |
| 13 | | | | - | 18 | 20 | 165 | 87 | 27 | 4.3 | .8 | .8 |
| 14 | | | | - | 18 | 19 | 158 | 75 | 24 | 3.4 | .8 | .7 |
| 15 | | | | - | 17 | 18 | 158 | 64 | 21 | 2.7 | .8 | .8 |
| 16 | | | | - | 16 | 23 | 158 | 60 | 18 | 2.2 | a.6 | 1.1 |
| 17 | | | | - | 16 | 30 | 156 | 63 | 16 | 3.7 | .5 | 1.5 |
| 18 | | | | - | *16 | 35 | 145 | 62 | 16 | 5.2 | .4 | 1.7 |
| 19 | | | | 28 | 16 | 31 | 130 | 64 | 19 | 4.3 | .4 | 2.7 |
| 20 | | | | 29 | 16 | 33 | 116 | 62 | 21 | 3.0 | .4 | 3.0 |
| 21 | | | | 30 | 16 | 38 | 102 | 55 | 22 | 2.7 | .4 | 2.5 |
| 22 | | | | 30 | 16 | 45 | 88 | 50 | 21 | 2.3 | .6 | 2.0 |
| 23 | | | | 30 | 16 | 55 | 81 | 48 | 20 | 2.2 | .6 | 2.0 |
| 24 | | | | 30 | 15 | 65 | 76 | 46 | 19 | 1.7 | .9 | 3.0 |
| 25 | | | | 30 | 14 | 79 | 67 | 43 | 18 | 1.5 | .8 | 3.2 |
| 26 | | | | 29 | 14 | 100 | 61 | 40 | 16 | 1.4 | .6 | 4.5 |
| 27 | | | | 29 | 14 | 148 | 56 | 40 | 14 | 2.5 | .6 | 6.6 |
| 28 | | | | 28 | 14 | 228 | 50 | 38 | 12 | 3.0 | .5 | 6.6 |
| 29 | | | | 24 | - | 287 | 45 | 44 | 11 | 2.3 | .4 | 5.2 |
| 30 | | | | 23 | - | 323 | 47 | 70 | 14 | 2.0 | .6 | 4.3 |
| 31 | | | | 23 | - | 306 | - | 74 | - | 1.7 | .6 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | | | | | | |
| November | | | | | | |
| December | | | | | | |
| Calendar year | | | | | | |
| January 19-31 | 363 | 30 | 23 | 27.9 | 0.353 | 0.17 |
| February | 500 | 23 | 14 | 17.9 | .227 | .24 |
| March | 2,060 | 323 | 11 | 66.5 | .842 | .97 |
| April | 6,461 | 530 | 45 | 215 | 2.72 | 3.04 |
| May | 1,594 | 87 | 29 | 51.4 | .651 | .75 |
| June | 945 | 79 | 11 | 31.5 | .399 | .45 |
| July | 181.1 | 14 | 1.4 | 5.84 | .074 | .09 |
| August | 24.4 | 2.5 | .4 | .79 | .010 | .01 |
| September | 59.8 | 6.6 | .4 | 1.99 | .025 | .03 |
| Water year | - | - | - | - | - | - |

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Jan. 19 to Mar. 24.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Indian River at Indian River, Mich.

Location.- Staff gage, lat. 45°24'35", long. 84°37'10", in sec. 24, T. 35 N., R. 3 W., at town of Indian River an eighth of a mile downstream from Burt Lake and 3½ miles upstream from Mullett Lake.
Drainage area.- 583 square miles.
Records available.- April to September 1942.
Extremes.- Maximum discharge observed during period, 920 second-feet Apr. 18 (gage height, 5.40 feet); minimum observed, 360 second-feet Sept. 5-8, 13 (gage-height, 3.80 feet).
Remarks.- Records good. Gage read once daily.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Apr. | May | June | July | Aug. | Sept. | Day | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | 840 | 740 | 588 | 474 | 387 | 16 | 900 | 780 | 700 | 537 | 430 | 374 |
| 2 | - | 820 | 760 | 570 | 490 | 374 | 17 | 920 | 780 | 700 | 521 | 415 | 374 |
| 3 | - | 800 | 760 | 537 | a474 | 374 | 18 | 920 | 780 | 700 | 537 | 415 | 387 |
| 4 | - | 800 | 760 | a554 | 459 | 374 | 19 | 920 | 780 | 680 | 537 | 401 | 387 |
| 5 | - | 780 | 760 | a554 | 444 | 360 | 20 | 900 | 760 | 680 | 537 | 401 | 387 |
| 6 | - | 780 | 760 | 570 | 444 | 360 | 21 | 900 | 760 | 661 | a537 | 401 | 387 |
| 7 | - | 780 | 780 | 570 | a444 | 360 | 22 | 900 | 760 | 661 | 537 | 415 | 430 |
| 8 | - | 760 | 760 | 570 | a430 | 360 | 23 | 900 | 760 | 661 | a521 | 415 | 430 |
| 9 | - | 760 | 760 | a554 | 430 | 360 | 24 | 880 | 740 | 642 | 521 | 401 | 444 |
| 10 | - | 760 | 760 | 505 | a430 | 360 | 25 | 880 | 740 | 642 | 505 | 387 | 430 |
| 11 | 860 | 760 | 760 | 554 | 430 | 360 | 26 | 860 | 720 | 661 | 505 | 374 | 444 |
| 12 | 880 | 780 | a740 | a554 | a430 | 360 | 27 | 840 | 720 | 661 | 490 | 374 | a474 |
| 13 | 880 | 780 | a740 | 537 | 430 | 360 | 28 | 840 | 720 | 605 | 474 | 374 | 474 |
| 14 | 880 | 800 | 720 | 537 | a430 | 374 | 29 | 840 | 720 | 605 | 490 | 374 | a459 |
| 15 | 880 | 780 | 720 | 537 | a430 | 374 | 30 | 840 | 720 | 605 | a490 | a374 | 459 |
| | | | | | | | 31 | - | 720 | - | a490 | 387 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| April 11-30 | 17,620 | 920 | 840 | 881 | 1.51 | 1.12 |
| May | 23,740 | 840 | 720 | 766 | 1.31 | 1.51 |
| June | 21,144 | 780 | 605 | 705 | 1.21 | 1.35 |
| July | 16,520 | 588 | 474 | 533 | .914 | 1.05 |
| August | 13,007 | 490 | 374 | 420 | .720 | .83 |
| September | 11,837 | 474 | 360 | 395 | .678 | .76 |

a No gage-height record; discharge computed on basis of weather records.

## Sturgeon River near Wolverine, Mich.

Location.- Staff gage, lat. 45°17'25", long. 84°36'15", in sec. 31, T. 34 N., R. 2 W., 1½ miles north of Wolverine and 2 miles downstream from West Branch. Prior to June 15, staff gage at site about a quarter of a mile upstream at different datum.
Drainage area.- 164 square miles.
Records available.- April to September 1942.
Extremes.- Maximum discharge observed during period, 425 second-feet May 12 (gage height, 2.82 feet, site and datum then in use); minimum discharge observed, 145 second-feet, Aug. 25-27 (gage height, 2.30 feet).
Remarks.- Records fair. Gage read once daily.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Apr. | May | June | July | Aug. | Sept. | Day | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | 244 | 275 | 180 | 175 | 160 | 16 | 393 | 275 | 226 | 170 | 165 | 188 |
| 2 | - | 242 | 252 | 180 | 182 | 158 | 17 | 393 | 294 | 190 | 218 | 162 | 192 |
| 3 | - | 224 | 240 | 195 | 165 | 155 | 18 | 359 | 254 | 188 | 291 | 160 | 229 |
| 4 | - | 220 | 229 | 195 | 160 | 155 | 19 | 294 | 240 | 213 | 216 | 160 | 307 |
| 5 | - | 218 | 222 | 200 | 160 | 155 | 20 | 265 | 231 | 190 | 190 | 158 | 296 |
| 6 | - | 240 | 233 | 182 | 160 | 152 | 21 | 254 | 222 | 190 | 180 | 152 | 188 |
| 7 | - | 250 | 257 | 178 | 160 | 150 | 22 | 248 | 222 | 188 | 180 | 152 | 192 |
| 8 | - | 244 | 235 | 185 | 160 | 155 | 23 | 237 | 226 | 188 | 172 | 150 | 200 |
| 9 | - | 222 | 215 | 185 | 160 | 175 | 24 | 233 | 224 | 211 | 168 | 148 | 265 |
| 10 | - | 218 | 218 | 182 | 165 | 190 | 25 | 224 | 231 | 185 | 165 | 145 | 283 |
| 11 | 332 | 222 | 240 | 178 | 185 | 185 | 26 | 222 | 224 | 180 | 165 | 145 | 255 |
| 12 | 332 | 359 | 261 | 170 | 170 | 182 | 27 | 237 | 231 | 175 | 166 | 148 | 304 |
| 13 | 323 | 401 | 237 | 162 | 165 | 175 | 28 | 244 | 215 | 175 | 172 | 188 | 286 |
| 14 | 332 | 304 | 218 | 165 | 165 | 168 | 29 | 242 | 294 | 175 | 178 | 165 | 276 |
| 15 | 276 | 250 | 200 | 162 | 165 | 175 | 30 | 242 | 393 | 182 | 170 | 165 | 288 |
| | | | | | | | 31 | - | 323 | - | 170 | 162 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| April 11-30 | 5,782 | 393 | 222 | 289 | 1.76 | 1.31 |
| May | 7,957 | 401 | 215 | 257 | 1.57 | 1.81 |
| June | 6,386 | 275 | 175 | 213 | 1.30 | 1.45 |
| July | 5,672 | 291 | 162 | 183 | 1.12 | 1.29 |
| August | 5,002 | 185 | 145 | 161 | .982 | 1.13 |
| September | 6,199 | 307 | 150 | 207 | 1.26 | 1.41 |

Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Pigeon River at Afton, Mich.

Location.- Staff gage, lat. 45°22'25", long. 84°30'50", in sec. 2, T. 34 N., R. 2 W., three-quarters of a mile west of Afton, 2 miles downstream from Wilkes Creek, and 5½ miles upstream from Mullett Lake.

Drainage area.- 159 square miles.

Records available.- April to September 1942.

Extremes.- Maximum discharge observed during period, 400 second-feet May 13 (gage height, 5.52 feet); minimum observed, 84 second-feet Aug. 16, 21 (gage height, 4.30 feet).

Remarks.- Records good. Gage read once daily.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | - | 159 | 281 | 102 | 100 | 92 |
| 2 | | | | | | | - | 159 | 224 | 97 | 100 | 87 |
| 3 | | | | | | | - | 159 | 196 | 105 | 98 | 87 |
| 4 | | | | | | | - | 157 | 189 | 107 | 92 | 87 |
| 5 | | | | | | | - | 146 | 184 | 120 | 90 | 87 |
| 6 | | | | | | | - | 138 | 189 | 122 | 94 | 87 |
| 7 | | | | | | | - | 142 | 187 | 118 | 92 | 87 |
| 8 | | | | | | | - | 148 | 177 | 120 | 92 | 87 |
| 9 | | | | | | | - | 151 | 155 | 122 | 95 | 95 |
| 10 | | | | | | | - | 153 | 142 | 111 | 97 | 104 |
| 11 | | | | | | | 303 | 148 | 142 | 105 | 98 | 107 |
| 12 | | | | | | | 290 | 232 | 151 | 104 | 97 | 109 |
| 13 | | | | | | | 272 | 385 | 153 | 100 | 92 | 102 |
| 14 | | | | | | | 260 | 370 | 142 | 95 | 92 | 95 |
| 15 | | | | | | | 278 | 260 | 124 | 92 | 92 | 97 |
| 16 | | | | | | | 312 | 216 | 118 | 92 | 86 | 100 |
| 17 | | | | | | | 329 | 209 | 116 | 113 | 86 | 109 |
| 18 | | | | | | | 306 | 196 | 113 | 153 | 86 | 138 |
| 19 | | | | | | | 257 | 192 | 111 | 155 | 86 | 164 |
| 20 | | | | | | | 216 | 182 | 111 | 140 | 86 | 182 |
| 21 | | | | | | | 192 | 175 | 111 | 111 | 84 | 148 |
| 22 | | | | | | | 168 | 164 | 109 | 104 | 84 | 134 |
| 23 | | | | | | | 146 | 155 | 114 | 102 | 100 | 164 |
| 24 | | | | | | | 144 | 148 | 118 | 98 | 111 | 151 |
| 25 | | | | | | | 151 | 148 | 116 | 95 | 104 | 142 |
| 26 | | | | | | | 151 | 144 | 113 | 95 | 89 | 146 |
| 27 | | | | | | | 148 | 153 | 104 | 109 | 94 | 168 |
| 28 | | | | | | | 142 | 155 | 102 | 114 | 95 | 211 |
| 29 | | | | | | | 138 | 184 | 100 | 114 | 92 | 216 |
| 30 | | | | | | | 151 | 243 | 102 | 105 | 92 | 196 |
| 31 | | | | | | | - | 306 | - | 102 | 94 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | | | | | | |
| November | | | | | | |
| December | | | | | | |
| Calendar year | | | | | | |
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March | - | - | - | - | - | - |
| April 11-30 | 4,354 | 329 | 138 | 218 | 1.37 | 1.02 |
| May | 5,877 | 385 | 138 | 190 | 1.19 | 1.37 |
| June | 4,294 | 281 | 100 | 143 | .899 | 1.00 |
| July | 3,422 | 155 | 92 | 110 | .692 | .80 |
| August | 2,890 | 111 | 84 | 93.2 | .586 | .68 |
| September | 3,779 | 216 | 87 | 126 | .792 | .88 |
| Water year | - | - | - | - | - | - |

Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Rifle River at Michigan Highway 70, near Sterling, Mich.

Location.- Water-stage recorder, lat. 44°04', long. 84°02', in sec. 5, T. 19 N., R. 4 E., at bridge on State Highway 70, 3 miles north of Sterling.

Drainage area.- 320 square miles.

Records available.- January 1937 to September 1942.

Extremes.- Maximum discharge during year, 2,660 second-feet Mar. 18 (gage height, 8.76 feet); minimum, 120 second-feet Sept. 5 (gage height, 1.35 feet).
1937-42: Maximum discharge observed, 2,760 second-feet Mar. 17, 1938; maximum gage height, 12.07 feet Mar. 25, 1939 (backwater from ice); minimum discharge, 108 second-feet Aug. 6, 1941 (gage height, 1.28 feet).

Remarks.- Records good except those for period of ice effect or no gage-height record, which are fair.

Rating tables, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 18 | | | | | | Mar. 19 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.9 | 180 | 3.2 | 494 | 6.5 | 1,640 | 1.4 | 126 | 2.5 | 319 |
| 2.0 | 196 | 4.5 | 892 | 7.5 | 2,040 | 1.7 | 171 | 3.2 | 494 |
| 2.3 | 258 | 5.5 | 1,240 | 8.5 | 2,510 | 2.0 | 223 | | |

Note.- Same as preceding table above 3.2 feet.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 384 | 666 | 268 | 302 | 250 | 230 | 715 | 270 | 858 | 165 | 178 | 144 |
| 2 | 300 | 1,060 | 265 | 332 | 220 | 230 | 700 | 260 | 655 | 157 | 160 | 136 |
| 3 | 330 | 858 | 263 | 345 | 200 | 230 | 685 | 250 | 466 | 158 | 155 | 146 |
| 4 | 384 | 625 | 258 | 322 | 230 | 220 | 625 | 250 | 400 | 165 | 142 | 143 |
| 5 | 452 | 494 | 269 | 310 | 270 | 250 | 670 | 234 | 352 | 158 | 146 | 134 |
| 6 | 508 | 410 | 284 | 300 | 260 | 300 | 730 | 234 | 289 | 163 | 137 | 140 |
| 7 | 397 | 595 | 268 | 290 | 250 | 360 | 746 | 270 | 279 | 160 | 144 | 144 |
| 8 | 397 | 685 | 249 | 280 | 210 | 540 | 625 | 270 | 279 | 155 | 154 | 183 |
| 9 | 358 | 670 | 256 | 270 | 200 | 370 | 508 | 241 | 241 | 158 | 152 | 227 |
| 10 | 292 | 595 | 246 | 260 | 220 | 300 | 480 | 239 | 223 | 158 | 157 | 270 |
| 11 | 310 | 522 | 240 | 260 | 240 | 360 | 425 | 230 | 227 | 160 | 150 | 270 |
| 12 | 287 | 452 | 235 | 250 | 230 | 390 | 412 | 445 | 400 | 155 | 158 | 202 |
| 13 | 246 | 424 | 231 | 250 | 220 | 380 | 375 | 494 | 550 | 154 | 155 | 180 |
| 14 | 857 | 371 | 233 | 270 | 250 | 450 | 352 | 412 | 412 | 140 | 143 | 178 |
| 15 | 1,170 | 371 | 235 | 260 | 250 | 500 | 352 | 309 | 319 | 136 | 152 | 188 |
| 16 | 858 | 358 | 222 | 260 | 240 | 1,300 | 352 | 299 | 260 | 144 | 146 | 200 |
| 17 | 550 | 345 | 242 | 250 | 260 | 2,200 | 352 | 279 | 230 | 155 | 139 | 212 |
| 18 | 466 | 302 | 249 | 260 | 220 | 2,310 | 330 | 260 | 216 | 161 | 149 | 223 |
| 19 | 670 | 314 | *263 | 270 | 190 | *1,680 | 309 | 250 | 219 | 149 | 148 | 221 |
| 20 | 640 | 345 | 242 | 290 | *180 | 1,520 | 299 | 239 | 203 | 149 | 146 | 210 |
| 21 | 508 | 345 | 227 | 290 | 210 | 1,480 | 289 | 228 | 223 | 146 | 143 | 188 |
| 22 | 424 | 345 | 227 | 280 | 210 | 1,280 | 270 | 219 | 241 | 139 | 137 | 186 |
| 23 | 466 | 324 | 384 | 300 | 210 | 1,060 | 260 | 200 | 210 | 148 | 160 | 188 |
| 24 | 610 | 312 | 1,030 | 330 | 200 | 995 | 260 | 202 | 203 | 137 | 157 | 191 |
| 25 | 508 | 292 | 926 | 350 | 220 | 1,140 | 250 | 193 | 205 | 137 | 144 | 195 |
| 26 | 384 | 277 | 625 | 340 | 220 | 1,060 | 250 | 188 | 188 | 137 | 149 | 216 |
| 27 | 384 | 280 | 508 | 330 | 220 | 1,030 | 237 | 193 | 183 | 171 | 154 | 250 |
| 28 | 371 | 275 | 410 | 290 | 220 | 1,060 | 228 | 200 | 174 | 160 | 165 | a250 |
| 29 | 332 | 265 | 358 | 250 | - | 995 | 234 | 227 | 171 | 180 | 154 | a240 |
| 30 | 317 | 270 | 332 | *260 | - | 892 | 241 | 425 | 166 | 225 | 149 | a220 |
| 31 | 312 | - | 312 | 260 | - | 778 | - | 858 | - | 214 | 140 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 14,472 | 1,170 | 246 | 467 | 1.46 | 1.68 |
| November | 13,447 | 1,060 | 265 | 448 | 1.40 | 1.56 |
| December | 10,356 | 1,030 | 222 | 334 | 1.04 | 1.20 |
| Calendar year 1941 | 130,249 | 1,640 | 120 | 357 | 1.12 | 15.13 |
| January | 8,911 | 350 | 250 | 287 | .897 | 1.03 |
| February | 6,300 | 270 | 180 | 225 | .703 | .73 |
| March | 25,890 | 2,310 | 220 | 835 | 2.61 | 3.01 |
| April | 12,561 | 746 | 228 | 419 | 1.31 | 1.46 |
| May | 8,868 | 858 | 188 | 286 | .894 | 1.03 |
| June | 9,042 | 858 | 166 | 301 | .941 | 1.05 |
| July | 4,894 | 225 | 136 | 158 | .494 | .57 |
| August | 4,663 | 178 | 137 | 150 | .469 | .54 |
| September | 5,875 | 270 | 134 | 196 | .612 | .68 |
| Water year 1941-42 | 125,279 | 2,310 | 134 | 343 | 1.07 | 14.54 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range of stage, weather records, and records for Muskegon River at Evart.
Note.- Stage-discharge relation affected by ice Jan. 5 to Mar. 17.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Shiawassee River at Owosso, Mich.

Location.- Water-stage recorder, lat. 43°00'54", long. 84°10'52", in SW¼ sec. 12, T. 7 N., R. 2 E., a quarter of a mile north of Owosso. Datum of gage is 707.25 feet (revised) above mean sea level, datum of 1929.

Drainage area.- 538 square miles.

Records available.- March 1931 to September 1942.

Extremes.- Maximum discharge during year, 4,230 second-feet Mar. 17 (gage height, 8.74 feet); minimum, 22 second-feet (regulated) Oct. 15 (gage height, 1.63 feet); minimum daily, 33 second-feet (regulated) Oct. 1.

1931-42: Maximum discharge, that of Mar. 17, 1942; minimum, 0.2 second-foot (regulated) July 27, 1934 (gage height, 1.12 feet); minimum daily, 2.0 second-feet (regulated) July 28, 1934.

Maximum stage known, 726 feet above mean sea level, at site of former gage, during an ice jam in 1918.

Remarks.- Records good except those for periods of ice effect and no gage-height record, which are fair. Flow regulated by power plant at Shiawasseetown.

Cooperation.- Water-stage recorder inspected by employee of city of Owosso.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 33 | 183 | 127 | 168 | 320 | 150 | 640 | 161 | 175 | 147 | 148 | 89 |
| 2 | 44 | 186 | 123 | 190 | 450 | 160 | 580 | 175 | 160 | 90 | 141 | 94 |
| 3 | 62 | 164 | 117 | 180 | 600 | 130 | 520 | 174 | 180 | 123 | 145 | 160 |
| 4 | 80 | 131 | 123 | 160 | 470 | 180 | 480 | 156 | 170 | 115 | 129 | 128 |
| 5 | 173 | 124 | 139 | 140 | 400 | 400 | 440 | 136 | 160 | 117 | 117 | 119 |
| 6 | 92 | 151 | 132 | 130 | 350 | 900 | 400 | 142 | 153 | 109 | 108 | 108 |
| 7 | 94 | 493 | 136 | 120 | 300 | *1,270 | 420 | 144 | 135 | 101 | 109 | 101 |
| 8 | 83 | 419 | 117 | 110 | 260 | 1,990 | 440 | 125 | 120 | 103 | 167 | 200 |
| 9 | 81 | 330 | 115 | 105 | 240 | 2,510 | 500 | 135 | 110 | 122 | 545 | 142 |
| 10 | 79 | 269 | 96 | 99 | 230 | 2,190 | 470 | 130 | 120 | 121 | 454 | 132 |
| 11 | 72 | 210 | 88 | 94 | 220 | 2,350 | 480 | 123 | 130 | 129 | 438 | 120 |
| 12 | 76 | 209 | 86 | 91 | 180 | 2,670 | 520 | 122 | 163 | 120 | 394 | 112 |
| 13 | 73 | 201 | 100 | 88 | 165 | 2,190 | 480 | 174 | 350 | 116 | 330 | 96 |
| 14 | 68 | 179 | 90 | 86 | 155 | 1,720 | 450 | 177 | 350 | 104 | 282 | 97 |
| 15 | 57 | 189 | *80 | 90 | 150 | 1,480 | 420 | 180 | 320 | 88 | 222 | 93 |
| 16 | 64 | 158 | 95 | 95 | 150 | 2,210 | 400 | 257 | 290 | 99 | 200 | 81 |
| 17 | 70 | 174 | 104 | 100 | 350 | 3,940 | 360 | 245 | 240 | 107 | 185 | 84 |
| 18 | 85 | 129 | 115 | 110 | 450 | 2,990 | 360 | 247 | 214 | 92 | 161 | 82 |
| 19 | 77 | 146 | 112 | 115 | 400 | 2,270 | 340 | 201 | 171 | 97 | 143 | 83 |
| 20 | 83 | 162 | 95 | 110 | 340 | 2,030 | 320 | 187 | 156 | 94 | 136 | 84 |
| 21 | 57 | 137 | 90 | 110 | 300 | 1,760 | 300 | 184 | 220 | 87 | 128 | 94 |
| 22 | 58 | 138 | 110 | 105 | 290 | 1,460 | 280 | 163 | 394 | 72 | 120 | 81 |
| 23 | 96 | 137 | 136 | 115 | 230 | 1,220 | 270 | 144 | 485 | 85 | 134 | 82 |
| 24 | 80 | 145 | 179 | 110 | 190 | 1,020 | 257 | 150 | 493 | 79 | 144 | 97 |
| 25 | 86 | 126 | 223 | 120 | 200 | 900 | 232 | 147 | 416 | 78 | 128 | 87 |
| 26 | 86 | 149 | 231 | *150 | *180 | 800 | 230 | .38 | 348 | 72 | 98 | 92 |
| 27 | 103 | 135 | 250 | 130 | 170 | 750 | 197 | .29 | 286 | 87 | 119 | 100 |
| 28 | 78 | 126 | 220 | 140 | 160 | 710 | 165 | .39 | 245 | 70 | 118 | 119 |
| 29 | 75 | 136 | 190 | 110 | - | 750 | 172 | 127 | 189 | 130 | 124 | 94 |
| 30 | 87 | 116 | 170 | 120 | - | 710 | 166 | 167 | 163 | 160 | 114 | 108 |
| 31 | 92 | - | 160 | 170 | - | 680 | - | 182 | - | 160 | 118 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,444 | 173 | 33 | 78.8 | 0.146 | 0.17 |
| November | 5,554 | 493 | 116 | 185 | .344 | .38 |
| December | 4,149 | 250 | 80 | 134 | .249 | .29 |
| Calendar year 1941 | 75,352 | 1,500 | 18 | 206 | .383 | 5.21 |
| January | 3,761 | 190 | 86 | 121 | .225 | .26 |
| February | 7,900 | 600 | 150 | 282 | .524 | .55 |
| March | 44,480 | 3,940 | 130 | 1,435 | 2.67 | 3.08 |
| April | 11,309 | 640 | 165 | 377 | .701 | .78 |
| May | 5,051 | 257 | 122 | 163 | .303 | .35 |
| June | 7,126 | 493 | 110 | 238 | .442 | .49 |
| July | 3,274 | 160 | 70 | 106 | .197 | .23 |
| August | 5,899 | 545 | 98 | 190 | .353 | .41 |
| September | 3,159 | 200 | 81 | 105 | .195 | .22 |
| Water year 1941-42 | 104,106 | 3,940 | 33 | 285 | .530 | 7.21 |

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 11-16, 21, 22, 28-31, Jan. 2 to Mar. 6. No gage-height record Mar. 25 to Apr. 23, June 2-5, 7-11, 13-17, July 29-31; discharge computed on basis of recorded limits, available fragmentary gage-height record, weather records, and records for station at Fergus.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Shiawassee River near Fergus, Mich.

Location.- Wire-weight gage, lat. 43°15'17", long. 84°06'20", in sec. 22, T. 10 N., R. 3 E., at highway bridge, 1 1/5 miles east of Fergus and 1¾ miles upstream from Bear Creek. Datum of gage is 587.80 feet above mean sea level, datum of 1929.

Drainage area.- 637 square miles.

Records available.- January 1940 to September 1942.

Extremes.- Maximum discharge observed during year, 3,880 second-feet Mar. 17; maximum gage height observed, 12.06 feet Mar. 9 (affected by ice); minimum discharge observed, 56 second-feet Oct. 16; minimum gage height, 3.29 feet Oct. 2.
1940-42: Maximum discharge observed, that of Mar. 17, 1942; maximum gage height observed, that of Mar. 9, 1942; minimum discharge observed, 35 second-feet Aug. 11, 13, 1941 (gage height, 2.68 feet).

Remarks.- Records fair. Gage read twice daily.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 64 | 174 | 132 | 208 | 160 | 190 | 750 | 165 | 282 | 175 | 170 | 124 |
| 2 | 58 | 290 | 142 | 214 | 350 | 170 | 698 | 160 | 253 | 155 | 160 | 108 |
| 3 | 58 | 232 | 142 | 230 | 500 | 180 | 635 | 175 | 220 | 104 | 150 | 104 |
| 4 | 69 | 180 | 137 | 190 | 500 | 170 | 576 | 155 | 259 | 120 | 150 | 132 |
| 5 | 131 | 132 | 142 | 170 | 480 | 300 | 576 | 170 | 220 | 120 | 142 | 137 |
| 6 | 170 | 146 | 142 | 150 | 440 | 900 | 521 | 132 | 226 | 124 | 124 | 128 |
| 7 | 116 | 538 | 137 | 140 | 380 | 1,400 | 492 | 155 | 186 | 112 | 112 | 124 |
| 8 | 100 | 665 | 137 | 130 | 330 | 2,100 | 508 | 146 | 175 | 104 | 329 | 197 |
| 9 | 90 | 456 | 128 | 120 | 290 | 2,900 | 534 | 128 | 146 | 100 | 482 | 324 |
| 10 | 90 | 364 | 120 | 115 | 260 | 2,600 | 590 | 120 | 142 | 124 | 590 | 260 |
| 11 | 87 | 282 | 112 | 110 | 220 | *2,600 | 562 | 142 | 150 | 137 | 508 | 197 |
| 12 | 81 | 253 | 104 | 110 | 190 | 3,200 | 576 | 170 | 306 | 132 | 482 | 160 |
| 13 | 81 | 232 | 100 | 105 | 190 | *3,350 | 590 | 150 | 521 | 128 | 397 | 128 |
| 14 | 81 | 220 | 110 | 100 | 190 | 2,430 | 548 | 192 | 548 | 120 | 354 | 112 |
| 15 | 76 | 208 | *96 | 100 | 180 | 2,030 | 482 | 208 | 495 | 104 | 298 | 104 |
| 16 | 62 | 186 | 110 | 130 | 190 | 2,270 | 456 | 285 | 344 | 97 | 239 | 100 |
| 17 | 65 | 180 | 120 | 120 | 230 | 3,550 | 456 | 364 | 274 | 90 | 220 | 94 |
| 18 | 73 | 192 | 120 | 130 | 370 | 3,050 | 432 | 334 | 260 | 100 | 197 | 90 |
| 19 | 84 | 155 | 124 | 140 | 520 | 2,350 | 397 | 315 | 246 | 97 | 180 | 90 |
| 20 | 78 | 155 | 116 | 150 | 430 | 1,960 | 364 | 267 | 202 | 97 | 146 | 87 |
| 21 | 81 | 175 | 110 | 140 | 360 | 1,820 | 344 | 246 | 232 | 94 | 150 | 90 |
| 22 | 69 | 150 | 120 | 130 | 310 | 1,580 | 324 | 208 | 252 | 90 | 142 | 94 |
| 23 | 73 | 146 | 137 | 140 | 300 | 1,400 | 306 | 192 | 432 | 73 | 132 | 94 |
| 24 | 97 | 160 | 180 | 160 | 230 | 1,200 | 282 | 180 | 495 | 77 | 137 | 81 |
| 25 | 94 | 155 | 208 | 150 | 210 | 1,080 | 274 | 192 | 495 | 81 | 160 | 90 |
| 26 | 94 | 146 | 232 | *150 | 210 | 938 | 253 | 180 | 420 | 77 | 128 | 97 |
| 27 | 100 | 155 | 260 | 150 | *210 | 850 | 239 | 170 | 354 | 90 | 116 | 100 |
| 28 | 132 | 146 | 267 | 140 | 190 | 810 | 214 | 165 | 298 | 100 | 137 | 108 |
| 29 | 112 | 132 | 240 | 150 | - | 830 | 160 | 170 | 226 | 112 | 128 | 120 |
| 30 | 84 | 142 | 220 | 120 | - | 850 | 160 | 150 | 186 | 132 | 132 | 104 |
| 31 | 100 | - | 192 | 150 | - | 790 | - | 192 | - | 170 | 132 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,750 | 170 | 58 | 88.7 | 0.139 | 0.16 |
| November | 6,747 | 665 | 132 | 225 | .353 | .39 |
| December | 4,637 | 267 | 96 | 150 | .235 | .27 |
| Calendar year 1941 | 88,076 | 2,190 | 35 | 241 | .378 | 5.12 |
| January | 4,442 | 230 | 100 | 143 | .224 | .26 |
| February | 8,420 | 520 | 160 | 301 | .473 | .49 |
| March | 49,848 | 3,550 | 170 | 1,608 | 2.52 | 2.90 |
| April | 13,289 | 750 | 160 | 443 | .695 | .78 |
| May | 5,978 | 364 | 120 | 193 | .303 | .35 |
| June | 8,855 | 548 | 142 | 295 | .463 | .52 |
| July | 3,436 | 175 | 73 | 111 | .174 | .20 |
| August | 6,924 | 590 | 112 | 223 | .350 | .40 |
| September | 3,778 | 324 | 81 | 126 | .198 | .22 |
| Water year 1941-42 | 119,104 | 3,550 | 58 | 326 | .512 | 6.94 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 13-16, 21, 22, 29, 30, Jan. 3 to Mar. 12.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter.
To convert war time to standard time, subtract 1 hour.

## Flint River at Genesee, Mich.

Location.- Wire-weight gage, lat. 43°06'25", long. 83°37'00", in sec. 10, T. 8 N., R. 7 E., at highway bridge at Genesee, three-quarters of a mile downstream from Butternut Creek. Datum of gage is 695.27 feet (revised) above mean sea level, datum of 1929.

Drainage area.- 593 square miles.

Records available.- March 1931 to September 1942.

Average discharge.- 11 years, 285 second-feet.

Extremes.- Maximum discharge observed during year, 4,800 second-feet Mar. 19 (gage height, 24.49 feet); minimum discharge observed, 38 second-feet Oct. 1 (gage height, 12.89 feet).

1931-42: Maximum discharge observed, that of Mar. 19, 1942; minimum observed, about 10 second-feet Aug. 15, 1936.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Gage read twice daily.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12.8 | 30 | 13.6 | 122 | 15.5 | 490 | 19.0 | 1,600 |
| 13.0 | 48 | 14.0 | 188 | 16.0 | 615 | 20.0 | 2,070 |
| 13.2 | 69 | 14.5 | 285 | 17.0 | 900 | 22.0 | 3,110 |
| 13.4 | 94 | 15.0 | 385 | 18.0 | 1,200 | 24.4 | 4,730 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 38 | 215 | 142 | 385 | 350 | 150 | 690 | 153 | 275 | 91 | 85 | 60 |
| 2 | 40 | 215 | 140 | 365 | 400 | 145 | 640 | 122 | 305 | 86 | 82 | 61 |
| 3 | 50 | 228 | 139 | 330 | 450 | 145 | 578 | 70 | 285 | 88 | 85 | 70 |
| 4 | 68 | 239 | 137 | 260 | 500 | 145 | 515 | 119 | 255 | 86 | 71 | 74 |
| 5 | 97 | a240 | 137 | 200 | 430 | 400 | 455 | 131 | 220 | 75 | 67 | 69 |
| 6 | 104 | a290 | 139 | 160 | 390 | 930 | 425 | 125 | 205 | 75 | 65 | 68 |
| 7 | 105 | 345 | 136 | 140 | 340 | 1,440 | 435 | 128 | a200 | 73 | 71 | 68 |
| 8 | 107 | 375 | 131 | 130 | 300 | 2,470 | 435 | 128 | 190 | a72 | 114 | 79 |
| 9 | 98 | 385 | 124 | 120 | 260 | 3,410 | 425 | 130 | 163 | 68 | 80 | 101 |
| 10 | 89 | 385 | 110 | 112 | 220 | 3,820 | 405 | 124 | 145 | 79 | 75 | 105 |
| 11 | 94 | 375 | 110 | 107 | 190 | *4,240 | 415 | 121 | 137 | 79 | 80 | 105 |
| 12 | 77 | 335 | 120 | 100 | 175 | 3,960 | 435 | 130 | 155 | 84 | 76 | 97 |
| 13 | 79 | 305 | 110 | 97 | 160 | 3,230 | 425 | 155 | 179 | 82 | 71 | 90 |
| 14 | 82 | 285 | 100 | 95 | 150 | 2,820 | 405 | 183 | 259 | 77 | 71 | 85 |
| 15 | 84 | 249 | a110 | 95 | 150 | 2,570 | 395 | 295 | 275 | 69 | 73 | 80 |
| 16 | 84 | 215 | a112 | 100 | 260 | 3,170 | 345 | 375 | 285 | 66 | 65 | 79 |
| 17 | 84 | 183 | *115 | 110 | 450 | 3,680 | 305 | 478 | 241 | 71 | 60 | 77 |
| 18 | 94 | 165 | 116 | 105 | 480 | 4,240 | 275 | 490 | 211 | 73 | 60 | 80 |
| 19 | 90 | 160 | 128 | 110 | 500 | 4,730 | 275 | 478 | 188 | 73 | 59 | 71 |
| 20 | 90 | 163 | 115 | 115 | 430 | 4,240 | 265 | 435 | 175 | 68 | 58 | 69 |
| 21 | 90 | 163 | 118 | 120 | 360 | 3,230 | 239 | 375 | 175 | 62 | 56 | 71 |
| 22 | 93 | 163 | 125 | 125 | 300 | 2,570 | 216 | 220 | 170 | 65 | 53 | 66 |
| 23 | 98 | 163 | 156 | 130 | 240 | 2,020 | 215 | 224 | 160 | 73 | 60 | 64 |
| 24 | 107 | 160 | 285 | 135 | *205 | 1,520 | 183 | 237 | 137 | 80 | 65 | 66 |
| 25 | 108 | 156 | 395 | 150 | 190 | 1,200 | 170 | 205 | 126 | 79 | 69 | 70 |
| 26 | 112 | 155 | 435 | 160 | 175 | 1,050 | 163 | 184 | 122 | 73 | 75 | 68 |
| 27 | 104 | 147 | 455 | 170 | 165 | 870 | 158 | 165 | 115 | 71 | 67 | 74 |
| 28 | 109 | 143 | 465 | *180 | 155 | 810 | 163 | 151 | 102 | 65 | 68 | 79 |
| 29 | 116 | 143 | 400 | 175 | - | 780 | 165 | 145 | 98 | 68 | 66 | 69 |
| 30 | 125 | 139 | 260 | 175 | - | 720 | 163 | 162 | 97 | 76 | 62 | 79 |
| 31 | 155 | - | 370 | 230 | - | 705 | - | 201 | - | 94 | 62 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,871 | 155 | 38 | 92.6 | 0.156 | 0.18 |
| November | 6,884 | 385 | 139 | 229 | .386 | .43 |
| December | 6,035 | 465 | 100 | 195 | .329 | .38 |
| Calendar year 1941 | 73,597 | 1,440 | 22 | 202 | .341 | 4.62 |
| January | 4,986 | 385 | 95 | 161 | .272 | .31 |
| February | 8,375 | 500 | 150 | 299 | .504 | .52 |
| March | 65,410 | 4,730 | 145 | 2,110 | 3.56 | 4.10 |
| April | 10,378 | 690 | 158 | 346 | .583 | .65 |
| May | 6,639 | 490 | 70 | 214 | .361 | .42 |
| June | 5,650 | 305 | 97 | 188 | .317 | .35 |
| July | 2,341 | 94 | 62 | 75.5 | .127 | .15 |
| August | 2,171 | 114 | 53 | 70.0 | .118 | .14 |
| September | 2,294 | 105 | 60 | 76.5 | .129 | .14 |
| Water year 1941-42 | 124,034 | 4,730 | 38 | 340 | .573 | 7.77 |

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for station at Flint.

Note.- Stage-discharge relation affected by ice Dec. 10-14, 29-31, Jan. 3 to Mar. 5.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Flint River near Flint, Mich.

Location.- Water-stage recorder, lat. 43°02'20", long. 83°46'10", in SW¼ sec. 4, T. 7 N., R. 6 E., at sewage-treatment plant 2 miles downstream from Flint and 5 miles downstream from Swartz Creek. Datum of gage is 678.80 feet above mean sea level (levels by U. S. Weather Bureau and city of Flint).

Drainage area.- 927 square miles.

Records available.- August 1932 to September 1942.

Average discharge.- 10 years, 412 second-feet.

Extremes.- 1940-41: Maximum discharge during water year, 2,950 second-feet Jan. 3 (gage height, 11.20 feet); minimum, 28 second-feet (revised) Aug. 10.
1941-42: Maximum discharge during water year, 8,700 second-feet Mar. 17 (gage height, 12.93 feet); minimum, 30 second-feet Oct. 2 (gage height, 2.10 feet).
1932-42: Maximum discharge, that of Mar. 17, 1942; minimum, 9.0 second-feet Aug. 7, 1934.

Remarks.- Records fair except those above 1,000 second-feet, which are good. Some regulation by reservoirs above station. City of Flint diverts water above station for municipal and industrial use, but sewage from city is included in flow at station.

Revisions.- Figures of discharge for the water year 1941, given herein, supersede those published in Water-Supply Paper 924; figures for low-water period in 1941 have been revised.

Discharge, in second-feet, 1940-42

1940-41

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 86 | 208 | 117 | 1,990 | b340 | 229 | 512 | 382 | 101 | 105 | 37 | 50 |
| 2 | 90 | 198 | 185 | 2,270 | 364 | 237 | 512 | 283 | 101 | 107 | 35 | 50 |
| 3 | 86 | 201 | 194 | 2,770 | 356 | 1,060 | 530 | 233 | 90 | 88 | 34 | 45 |
| 4 | 86 | 201 | 201 | 2,190 | 337 | 1,480 | 566 | 222 | 101 | 95 | 39 | 47 |
| 5 | 74 | 369 | 222 | 1,340 | 310 | *1,190 | 705 | 350 | 97 | 74 | 39 | 46 |
| 6 | 135 | 233 | 198 | 1,130 | 306 | 1,190 | 730 | 76 | 90 | 70 | 61 | 42 |
| 7 | 434 | 190 | 249 | 980 | 301 | 1,130 | 705 | 163 | 86 | 66 | 41 | 39 |
| 8 | 152 | 62 | 346 | 922 | 260 | 950 | 655 | 205 | 84 | 58 | 38 | 48 |
| 9 | 208 | 98 | 418 | 950 | 158 | 895 | 655 | 241 | 81 | 58 | 38 | 54 |
| 10 | 229 | 160 | 558 | 895 | 237 | 895 | 620 | 218 | 71 | 84 | 34 | 61 |
| 11 | 225 | 249 | 730 | 758 | 257 | 950 | 544 | 205 | 65 | 74 | 71 | 45 |
| 12 | 211 | 350 | 730 | 610 | 265 | 868 | 476 | 191 | 90 | 65 | 64 | 42 |
| 13 | 182 | 382 | 705 | 615 | 454 | 840 | 400 | 179 | 117 | 52 | 45 | 40 |
| 14 | 231 | 324 | 600 | 481 | 1,040 | 868 | 499 | 171 | 116 | 56 | 45 | 39 |
| 15 | 283 | 283 | 576 | 384 | 868 | 980 | 458 | 174 | 132 | 58 | 96 | 41 |
| 16 | 283 | 218 | 868 | 468 | 730 | 1,010 | 386 | 176 | 137 | 64 | 57 | 40 |
| 17 | 301 | 274 | 980 | 526 | 705 | 868 | 404 | 198 | 122 | 57 | 51 | 40 |
| 18 | 288 | 237 | 950 | 540 | 630 | 643 | 418 | 194 | a115 | 60 | 50 | 77 |
| 19 | 274 | 237 | 895 | 490 | 580 | 544 | 820 | 218 | a108 | 55 | 51 | 50 |
| 20 | 253 | 237 | *868 | 445 | 481 | 655 | 1,830 | 191 | 99 | 49 | 47 | 43 |
| 21 | 249 | 229 | 950 | 454 | 368 | 562 | 1,480 | 201 | 91 | 56 | 47 | 41 |
| 22 | 229 | 245 | 922 | 540 | 310 | 522 | 1,340 | 351 | 81 | 87 | 45 | 43 |
| 23 | 233 | 249 | 868 | 553 | 274 | 544 | 1,250 | 68 | 91 | 50 | 47 | 44 |
| 24 | 201 | 237 | 840 | b490 | 265 | 655 | 1,190 | 132 | 74 | 51 | 39 | 45 |
| 25 | 194 | 402 | 785 | b450 | 225 | 680 | 1,040 | 140 | 70 | 48 | 43 | 44 |
| 26 | 174 | 104 | 730 | b410 | 146 | 655 | 785 | 128 | 66 | 51 | 44 | 43 |
| 27 | 168 | 196 | 625 | *b380 | 115 | 630 | 680 | 117 | 65 | 54 | 41 | 39 |
| 28 | 160 | 185 | 812 | b360 | 176 | 618 | 535 | 117 | 68 | 69 | 41 | 38 |
| 29 | 195 | 168 | 1,600 | b340 | - | 595 | 576 | 101 | 78 | 63 | 39 | 40 |
| 30 | 176 | 171 | 2,350 | b320 | - | 553 | 490 | 97 | 82 | 47 | 38 | 61 |
| 31 | 171 | - | 2,190 | b310 | - | 486 | - | 99 | - | 46 | 48 | - |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for Raisin River at Monroe.
b Stage-discharge relation affected by ice.

Discharge, in second-feet, of Flint River near Flint, Mich., 1940-42--Continued

1941-42

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 40 | 375 | 201 | 558 | 730 | b220 | 1,100 | 225 | 422 | 142 | 113 | 91 |
| 2 | 36 | 319 | 205 | 630 | 758 | b210 | 1,100 | 188 | 418 | 126 | 107 | 147 |
| 3 | 75 | 328 | 211 | 450 | 730 | b230 | 1,070 | 185 | 418 | 109 | 103 | 443 |
| 4 | 77 | 314 | 201 | 334 | 655 | 288 | 1,070 | 182 | 373 | 109 | 91 | 119 |
| 5 | 293 | 314 | 198 | b250 | 625 | 718 | 950 | 168 | 328 | 107 | 86 | 79 |
| 6 | 140 | 447 | 201 | b225 | 566 | 1,620 | 840 | 160 | 239 | 115 | 84 | 77 |
| 7 | 165 | 680 | 194 | b205 | 517 | 1,990 | 730 | 165 | 229 | 103 | 82 | 97 |
| 8 | 126 | 615 | 191 | b190 | 458 | *3,700 | 730 | 168 | 222 | 103 | 747 | 247 |
| 9 | 117 | 595 | 182 | b185 | 400 | 5,600 | 705 | 165 | 194 | 99 | 450 | 198 |
| 10 | 113 | 566 | 171 | b160 | 350 | 4,200 | 705 | 162 | 179 | 94 | 241 | 176 |
| 11 | 103 | 553 | 128 | b155 | 324 | 5,200 | 705 | 160 | 171 | 82 | 229 | 157 |
| 12 | 97 | 544 | 137 | b145 | 314 | 5,800 | 730 | 198 | 205 | 79 | 211 | 152 |
| 13 | 99 | 494 | 176 | b140 | 223 | 5,100 | 705 | 273 | 205 | 82 | 198 | 140 |
| 14 | 128 | 445 | 162 | b135 | 216 | 4,200 | 680 | 257 | 414 | 81 | 182 | 135 |
| 15 | 95 | 400 | 142 | b140 | 233 | 3,500 | 655 | 319 | 310 | 90 | 191 | 124 |
| 16 | 103 | 364 | 239 | b150 | 386 | 4,660 | 620 | 625 | 332 | 106 | 174 | 122 |
| 17 | 97 | 355 | *84 | 160 | 840 | 8,480 | 571 | 758 | 310 | 84 | 150 | 111 |
| 18 | 135 | 213 | 144 | 179 | 922 | 7,380 | 436 | 758 | 278 | 82 | 99 | 109 |
| 19 | 124 | 229 | 154 | 191 | 705 | 7,820 | 396 | 758 | 245 | 77 | 97 | 117 |
| 20 | 119 | 245 | 152 | 168 | b560 | 7,050 | 418 | 680 | 241 | 77 | 97 | 107 |
| 21 | 117 | 237 | 128 | 176 | b470 | 5,100 | 404 | 630 | 245 | 77 | 95 | 95 |
| 22 | 115 | 218 | 133 | 185 | b400 | 3,700 | 373 | 576 | 237 | 101 | 136 | 91 |
| 23 | 190 | 257 | 208 | 188 | b350 | 2,770 | 360 | 306 | 218 | 79 | 169 | 90 |
| 24 | 133 | 237 | 350 | 198 | *b300 | 2,190 | 346 | 368 | 218 | 79 | 122 | 97 |
| 25 | 128 | 225 | 595 | 215 | b275 | 1,760 | 350 | 319 | 198 | 81 | 115 | 91 |
| 26 | 140 | 225 | 680 | 233 | b260 | 1,540 | 319 | 283 | 194 | 90 | 117 | 111 |
| 27 | 191 | 225 | 705 | 257 | b245 | 1,510 | 264 | 265 | 188 | 113 | 126 | 136 |
| 28 | 256 | 208 | 705 | *b245 | b230 | 1,510 | 179 | 241 | 150 | 82 | 142 | 117 |
| 29 | 81 | 198 | 705 | b245 | - | 1,370 | 257 | 191 | 113 | 148 | 115 | 111 |
| 30 | 168 | 205 | 553 | b220 | - | 1,190 | 253 | 222 | 137 | 109 | 97 | 107 |
| 31 | 182 | - | 535 | 534 | - | 1,070 | - | 296 | - | 119 | 95 | - |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Monthly discharge, in second-feet, 1940-42

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October 1940 | 6,261 | 434 | 74 | 202 | 0.218 | 0.25 |
| November | 6,904 | 402 | 62 | 230 | .248 | .28 |
| December | 25,262 | 2,350 | 117 | 750 | .809 | .93 |
| Calendar year 1940 | 127,811 | 3,750 | 55 | 349 | .376 | 5.13 |
| January 1941 | 25,361 | 2,770 | 310 | 818 | .882 | 1.02 |
| February | 10,857 | 1,040 | 115 | 388 | .419 | .44 |
| March | 25,979 | 1,480 | 229 | 774 | .835 | .96 |
| April | 21,791 | 1,830 | 386 | 726 | .783 | .87 |
| May | 5,821 | 382 | 68 | 188 | .203 | .23 |
| June | 2,769 | 137 | 65 | 92.3 | .100 | .11 |
| July | 2,017 | 107 | 46 | 65.1 | .070 | .08 |
| August | 1,445 | 96 | 34 | 46.6 | .050 | .06 |
| September | 1,377 | 77 | 38 | 45.9 | .050 | .06 |
| Water year 1940-41 | 131,844 | 2,770 | 34 | 361 | .389 | 5.29 |
| October 1941 | 3,983 | 293 | 36 | 128 | .138 | .16 |
| November | 10,630 | 680 | 198 | 354 | .382 | .43 |
| December | 8,770 | 705 | 84 | 283 | .305 | .35 |
| Calendar year 1941 | 118,800 | 2,770 | 34 | 325 | .351 | 4.77 |
| January 1942 | 7,446 | 630 | 135 | 240 | .259 | .30 |
| February | 15,042 | 922 | 216 | 466 | .503 | .52 |
| March | 101,676 | 8,480 | 210 | 3,280 | 3.54 | 4.08 |
| April | 18,021 | 1,100 | 179 | 601 | .648 | .72 |
| May | 10,251 | 758 | 160 | 331 | .357 | .41 |
| June | 7,631 | 422 | 113 | 254 | .274 | .31 |
| July | 3,025 | 148 | 77 | 97.6 | .105 | .12 |
| August | 5,061 | 747 | 82 | 163 | .176 | .20 |
| September | 3,994 | 443 | 77 | 133 | .143 | .16 |
| Water year 1941-42 | 193,530 | 8,480 | 36 | 530 | .572 | 7.76 |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Flint River near Fosters, Mich.

Location.- Chain gage, lat. 43°17'56", long. 83°55'58", in sec. 6, T. 10 N., R. 5 E., at bridge on Sheridan Road, 1 mile west of Fosters and 4 miles downstream from Silver Creek. Datum of gage is 582.22 feet above mean sea level (levels by U. S. Weather Bureau).

Drainage area.- 1,120 square miles.

Records available.- January 1940 to September 1942.

Extremes.- 1940-41: Maximum discharge during water year, 4,260 second-feet Jan. 3 (gage height, 15.56 feet); minimum observed, 27 second-feet Aug. 6 (gage height, 3.67 feet).
1941-42: Maximum daily discharge during water year, 11,000 second-feet Mar. 17 (computed; unmeasured overflow included); maximum gage height observed, 17.76 feet Mar. 9; minimum discharge observed, 47 second-feet Oct. 3 (gage height, 3.89 feet).
1940-42: Maximum daily discharge, that of Mar. 17, 1942; maximum gage height observed, that of Mar. 9, 1942; minimum discharge observed, 27 second-feet Aug. 6, 1941 (gage height, 3.67 feet).
Maximum stage known, about 18.4 feet (from U. S. Weather Bureau data) in March 1904.

Remarks.- Records good except those for periods of backwater from leaves, those for periods of ice effect, and those for period of unmeasured overflow, which are fair. Gage read twice daily.

Revisions.- Records for water year 1941 given herein supersede those published in Water-Supply Paper 924, because of revision of figures for June to September.

Discharge, in second-feet, 1940-42

1940-41

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 102 | 187 | 150 | 2,780 | 420 | 240 | 590 | 470 | 116 | 90 | 42 | 54 |
| 2 | 102 | 204 | 220 | 2,660 | 440 | 280 | 665 | 390 | 109 | 102 | 37 | 48 |
| 3 | 96 | 222 | 230 | 4,100 | 430 | 550 | 615 | 313 | 109 | 109 | 40 | 65 |
| 4 | 96 | 231 | 240 | 3,500 | 420 | 1,800 | 665 | 277 | 109 | 90 | 35 | 65 |
| 5 | 102 | 277 | 250 | 2,700 | 390 | 1,650 | 890 | 260 | 109 | 90 | 34 | 48 |
| 6 | 102 | 416 | 260 | 1,700 | 400 | 1,450 | 1,100 | 410 | 96 | 83 | 28 | 44 |
| 7 | 137 | 277 | 320 | 1,400 | 380 | 1,250 | 1,020 | 165 | 96 | 90 | 28 | 47 |
| 8 | 418 | 231 | 390 | 1,200 | 360 | 1,150 | 865 | 172 | 96 | 77 | 54 | 47 |
| 9 | 187 | 146 | 500 | 1,150 | 320 | 1,020 | 815 | 243 | 96 | 83 | 71 | 48 |
| 10 | 196 | 176 | 640 | 1,150 | 290 | 1,000 | 765 | 260 | 96 | 96 | 48 | 71 |
| 11 | 222 | 204 | 800 | 1,100 | 320 | 1,050 | 715 | 243 | 90 | 96 | 48 | 65 |
| 12 | 213 | 356 | 960 | 980 | 350 | 1,000 | 615 | 226 | 96 | 83 | 48 | 71 |
| 13 | 196 | 484 | 940 | 860 | 580 | 940 | 540 | 226 | 123 | 77 | 96 | 54 |
| 14 | 196 | 418 | 800 | 720 | 1,500 | 1,000 | 492 | 226 | 151 | 65 | 77 | 42 |
| 15 | 336 | 508 | 750 | 600 | 1,300 | 1,030 | 590 | 210 | 151 | 65 | 65 | 46 |
| 16 | 316 | 316 | 980 | 550 | 1,100 | 1,050 | 515 | 226 | 151 | 65 | 90 | 54 |
| 17 | 296 | 296 | 1,250 | 610 | 940 | 790 | 470 | 226 | 151 | 59 | 90 | 48 |
| 18 | 277 | 316 | 1,200 | 700 | 820 | *640 | 492 | 226 | 144 | 65 | 71 | 39 |
| 19 | 296 | 277 | 1,150 | 630 | 760 | 600 | 540 | 226 | 137 | 65 | 59 | 45 |
| 20 | 277 | 296 | 1,250 | 560 | 700 | 660 | 1,940 | 243 | 123 | 71 | 65 | 65 |
| 21 | 258 | 296 | 1,320 | 550 | 570 | 700 | 2,260 | 210 | 123 | 54 | 59 | 43 |
| 22 | 240 | 296 | 1,320 | 650 | 470 | 640 | 1,610 | 226 | 109 | 39 | 59 | 40 |
| 23 | 222 | 296 | 1,190 | 700 | 400 | 600 | 1,460 | 370 | 90 | 48 | 65 | 43 |
| 24 | 204 | 296 | 1,120 | 620 | 350 | *640 | 1,370 | 116 | 83 | 59 | 59 | 48 |
| 25 | 187 | 296 | 1,030 | 560 | 310 | 640 | 1,220 | 165 | 83 | 59 | 59 | 46 |
| 26 | 187 | 222 | 1,030 | 520 | 280 | 790 | 990 | 151 | 77 | 54 | 54 | 48 |
| 27 | 170 | 130 | 1,060 | 490 | 250 | 765 | 765 | 151 | 71 | 48 | 48 | 44 |
| 28 | 162 | 187 | 1,160 | 450 | 190 | 740 | 690 | 144 | 71 | 47 | 54 | 42 |
| 29 | 170 | 204 | 1,560 | 420 | - | 715 | 615 | 137 | 71 | 59 | 46 | 45 |
| 30 | 187 | 154 | 2,960 | 400 | - | 665 | 690 | 123 | 65 | 77 | 54 | 44 |
| 31 | 196 | - | 3,140 | 390 | - | 640 | - | 116 | - | 54 | 54 | - |

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 1-20, Jan. 4 to Mar. 24. Backwater from leaves Oct. 20 to Nov. 5; discharge computed on the basis of gage heights, one discharge measurement, and weather records.

Discharge, in second-feet, of Flint River near Fosters, Mich., 1940-42--Continued

1941-42

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 63 | 304 | 234 | 765 | 600 | 300 | 1,420 | 268 | 544 | 173 | 122 | 122 |
| 2 | 66 | 360 | 243 | 715 | 800 | 290 | 1,360 | 277 | 296 | 180 | 123 | 129 |
| 3 | 54 | 430 | 243 | 615 | 820 | 280 | 1,290 | 258 | 277 | 170 | 130 | 194 |
| 4 | 75 | 430 | 234 | 450 | 820 | 300 | 1,220 | 240 | 258 | 151 | 126 | 473 |
| 5 | 151 | 380 | 234 | 350 | 820 | 700 | 1,120 | 222 | 268 | 144 | 122 | 268 |
| 6 | 350 | 410 | 243 | 300 | 700 | 2,370 | 1,030 | 209 | 316 | 135 | 112 | 144 |
| 7 | 195 | 1,010 | 234 | 270 | 600 | 3,700 | 998 | 217 | 316 | 128 | 117 | 122 |
| 8 | 190 | 1,160 | 234 | 250 | 530 | 5,420 | 968 | 222 | 286 | 122 | 233 | 234 |
| 9 | 186 | 840 | 218 | 230 | 460 | 6,610 | 938 | 201 | 268 | 115 | 1,050 | 508 |
| 10 | 141 | 765 | 210 | 215 | 400 | *5,500 | 848 | 184 | 258 | 120 | 580 | 418 |
| 11 | 164 | 690 | 202 | 200 | 370 | 6,060 | 848 | 172 | 258 | 149 | 451 | 316 |
| 12 | 176 | 628 | 190 | 195 | 380 | *5,800 | 848 | 258 | 286 | 122 | 306 | 268 |
| 13 | 131 | 615 | 200 | 185 | 350 | 5,300 | 878 | 336 | 366 | 105 | 258 | 258 |
| 14 | 95 | 602 | 210 | 180 | 300 | 4,730 | 848 | 407 | 473 | 116 | 213 | 224 |
| 15 | 100 | 590 | *170 | 175 | 260 | 4,260 | 848 | 451 | 520 | 108 | 192 | 159 |
| 16 | 108 | 578 | 230 | 175 | 260 | e5,800 | 792 | 473 | 376 | 135 | 175 | 152 |
| 17 | 109 | 540 | 362 | 170 | 700 | e11,000 | 604 | 764 | 366 | 165 | 162 | 144 |
| 18 | 112 | 450 | 136 | 180 | 1,200 | e9,800 | 592 | 792 | 326 | 149 | 149 | 141 |
| 19 | 137 | 430 | 180 | 200 | 900 | e9,000 | 544 | 792 | 306 | 132 | 130 | 128 |
| 20 | 145 | 410 | 195 | 235 | 750 | e8,500 | 508 | 736 | 277 | 112 | 110 | 117 |
| 21 | 150 | 400 | 184 | 230 | 600 | e6,000 | 462 | 656 | 296 | 91 | 108 | 116 |
| 22 | 134 | 360 | 176 | 230 | 520 | 4,350 | 418 | 604 | 296 | 102 | 164 | 112 |
| 23 | 137 | 322 | 226 | 235 | 450 | 3,540 | 376 | 508 | 277 | 112 | 182 | 109 |
| 24 | 176 | 295 | 322 | 250 | 400 | 2,910 | 407 | 356 | 268 | 146 | 202 | 109 |
| 25 | 164 | 268 | 540 | 270 | 370 | 2,540 | 418 | 326 | 249 | 132 | 187 | 106 |
| 26 | 164 | 243 | 665 | *275 | 350 | 2,070 | 407 | 296 | 249 | 120 | 165 | 115 |
| 27 | 174 | 252 | 715 | 280 | *330 | 1,960 | 396 | 268 | 233 | 122 | 140 | 144 |
| 28 | 268 | 252 | 740 | 295 | 310 | 2,030 | 336 | 229 | 277 | 151 | 146 | 173 |
| 29 | 400 | 243 | 715 | 290 | - | 2,000 | 227 | 236 | 235 | 180 | 149 | 164 |
| 30 | 100 | 226 | 640 | 290 | - | 1,740 | 286 | 268 | 154 | 240 | 138 | 152 |
| 31 | 145 | - | 528 | 400 | - | 1,490 | - | 472 | - | 141 | 128 | - |

* Winter discharge measurement made on this day.

e Unmeasured overflow passing gage; discharge computed on basis of observer's notes and records for station near Flint.

Note.- Stage-discharge relation affected by ice Dec. 12-16, Jan. 4 to Mar. 5, Mar. 10. Backwater from leaves Oct. 6-29; discharge computed on basis of gage heights, one discharge measurement, and weather records.

Monthly discharge, in second-feet, 1940-42

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October 1940 | 6,396 | 418 | 96 | 206 | 0.184 | 0.21 |
| November | 8,219 | 508 | 130 | 274 | .245 | .27 |
| December | 30,170 | 3,140 | 150 | 973 | .869 | 1.00 |
| Calendar year 1940 | 148,459 | 4,500 | 60 | 406 | .362 | 4.92 |
| January 1941 | 35,400 | 4,100 | 390 | 1,142 | 1.02 | 1.18 |
| February | 15,040 | 1,500 | 190 | 537 | .479 | .50 |
| March | 26,885 | 1,800 | 240 | 867 | .774 | .89 |
| April | 26,469 | 2,260 | 470 | 882 | .788 | .88 |
| May | 7,147 | 470 | 116 | 231 | .206 | .24 |
| June | 3,192 | 151 | 65 | 106 | .095 | .11 |
| July | 2,219 | 109 | 39 | 71.6 | .064 | .07 |
| August | 1,737 | 96 | 28 | 56.0 | .050 | .06 |
| September | 1,509 | 71 | 39 | 50.3 | .045 | .05 |
| Water year 1940-41 | 164,383 | 4,100 | 28 | 450 | .402 | 5.46 |
| October 1941 | 4,760 | 400 | 54 | 154 | .138 | .16 |
| November | 14,483 | 1,160 | 226 | 483 | .431 | .48 |
| December | 9,853 | 740 | 136 | 318 | .284 | .33 |
| Calendar year 1941 | 148,694 | 4,100 | 28 | 407 | .363 | 4.95 |
| January 1942 | 9,100 | 765 | 170 | 294 | .262 | .30 |
| February | 15,350 | 1,200 | 260 | 548 | .489 | .51 |
| March | 126,350 | 11,000 | 280 | 4,076 | 3.64 | 4.20 |
| April | 22,235 | 1,420 | 227 | 741 | .662 | .74 |
| May | 11,698 | 792 | 172 | 377 | .337 | .39 |
| June | 9,175 | 544 | 154 | 306 | .273 | .30 |
| July | 4,268 | 240 | 91 | 138 | .123 | .14 |
| August | 6,570 | 1,050 | 108 | 212 | .189 | .22 |
| September | 5,819 | 508 | 106 | 194 | .173 | .19 |
| Water year 1941-42 | 239,661 | 11,000 | 54 | 657 | .587 | 7.96 |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Farmers Creek near Lapeer, Mich.

Location.- Staff gage and concrete control, lat. 43°02', long. 83°20', at footbridge at Michigan Home and Training School, 2 miles west of Lapeer, Lapeer County. Datum of gage is 806.48 feet above mean sea level.

Drainage area.- 57 square miles.

Records available.- March 1933 to September 1942.

Extremes.- Maximum discharge observed during year, 517 second-feet Mar. 18 (gage height, 13.50 feet); minimum observed, 1.4 second-feet Oct. 1, 2 (gage height, 14.98 feet).
1933-42: Maximum discharge observed, that of Mar. 18, 1942; minimum not determined.

Remarks.- Records good except those below 2.0 second-feet and those for periods of ice effect, which are fair. Occasional regulation by dam above station. Gage read twice daily.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 14.9 | 0.4 | 15.4 | 15 | 16.4 | 134 |
| 15.0 | 1.6 | 15.5 | 21 | 16.8 | 197 |
| 15.1 | 3.5 | 15.6 | 29 | 17.3 | 285 |
| 15.2 | 6.4 | 15.8 | 50 | 17.8 | 377 |
| 15.3 | 10 | 16.0 | 76 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.4 | 11 | 10 | 20 | 25 | 10 | 62 | 11 | 16 | 5.4 | 2.0 | 3.7 |
| 2 | 1.4 | 11 | 10 | 20 | 30 | 9.0 | 61 | 9.5 | 17 | 4.8 | 2.0 | 3.5 |
| 3 | 2.4 | 12 | 10 | 18 | 40 | 9.0 | 56 | 9.1 | 16 | 4.2 | 2.2 | 4.2 |
| 4 | 3.4 | 13 | 10 | 15 | 40 | 11 | 51 | 8.7 | 15 | 3.9 | 2.2 | 3.9 |
| 5 | 5.7 | 13 | 10 | 13 | 40 | 16 | 48 | 7.9 | 13 | 3.9 | 2.2 | 3.9 |
| 6 | 6.0 | 14 | 10 | 11 | 35 | 23 | 42 | 7.5 | 12 | 3.7 | 2.0 | 3.5 |
| 7 | 6.4 | 16 | 10 | 10 | 30 | 70 | 41 | 7.9 | 13 | 3.5 | 2.0 | 3.5 |
| 8 | 7.1 | 18 | 10 | 9 | 25 | *165 | 40 | 7.5 | 10 | 3.5 | 2.6 | 4.2 |
| 9 | 7.1 | 20 | 9.9 | 8 | 20 | 200 | 42 | 6.7 | 7.5 | 3.4 | 2.9 | 4.5 |
| 10 | 7.1 | 22 | 8.3 | 7 | 18 | 254 | 43 | 6.4 | 6.7 | 3.1 | 2.9 | 4.5 |
| 11 | 7.1 | 22 | 7.9 | 6.5 | 16 | 285 | 43 | 6.4 | 7.9 | 3.1 | 3.7 | 3.9 |
| 12 | 6.4 | 20 | 7.1 | 6 | 15 | 215 | 43 | 6.4 | 10 | 3.1 | 3.9 | 3.9 |
| 13 | 6.4 | 19 | 7.1 | 6 | 13 | 171 | 46 | 7.5 | 14 | 3.1 | 3.9 | 3.9 |
| 14 | 6.7 | 16 | 7.1 | 5.7 | 11 | 154 | 47 | 7.9 | 19 | 2.6 | 4.2 | 3.9 |
| 15 | 6.7 | 15 | 6.4 | 5.4 | 10 | 126 | 46 | 10 | 22 | 2.0 | 4.2 | 3.7 |
| 16 | 6.4 | 14 | 7.1 | 4.8 | 11 | 144 | 41 | 18 | 25 | 2.4 | 4.2 | 3.5 |
| 17 | 6.4 | 14 | *8.7 | 4.5 | 13 | 285 | 37 | 22 | 24 | 2.4 | 4.2 | 3.5 |
| 18 | 7.1 | 12 | 10 | 5.7 | 16 | 369 | 32 | 26 | 22 | 2.6 | 3.9 | 3.5 |
| 19 | 7.9 | 12 | 11 | 6.4 | 22 | 275 | 29 | 27 | 19 | 2.4 | 3.4 | 3.6 |
| 20 | 7.9 | 12 | 9.9 | 6.7 | 42 | 211 | 27 | 26 | 16 | 2.7 | 3.1 | 3.4 |
| 21 | 7.5 | 11 | 7.9 | 7.9 | 31 | 154 | 23 | 23 | 15 | 2.2 | 2.7 | 3.1 |
| 22 | 7.1 | 11 | 9.1 | 9.9 | 25 | 130 | 21 | 19 | 13 | 2.2 | 2.7 | 3.1 |
| 23 | 7.5 | 11 | 11 | 11 | 20 | 108 | 20 | 16 | 13 | 2.0 | 3.1 | 2.9 |
| 24 | 7.9 | 11 | 16 | 12 | 17 | 96 | 17 | 14 | 13 | 2.2 | 3.4 | 2.9 |
| 25 | 7.9 | 11 | 20 | 12 | *15 | 86 | 16 | 12 | 13 | 2.2 | 3.5 | 2.7 |
| 26 | 8.7 | 11 | 27 | 13 | 15 | 75 | 16 | 10 | 11 | 1.8 | 3.4 | 3.1 |
| 27 | 9.1 | 11 | 34 | 13 | 11 | 66 | 15 | 9.1 | 9.9 | 1.8 | 3.4 | 3.7 |
| 28 | 9.1 | 11 | 35 | *13 | 10 | 65 | 14 | 9.1 | 9.1 | 1.6 | 3.5 | 3.9 |
| 29 | 8.7 | 11 | 28 | 12 | - | 62 | 13 | 8.7 | 7.5 | 2.4 | 3.5 | 3.9 |
| 30 | 8.7 | 10 | 27 | 12 | - | 65 | 12 | 8.7 | 6.4 | 2.2 | 3.5 | 4.6 |
| 31 | 8.7 | - | 23 | 19 | - | 65 | - | 12 | - | 2.2 | 3.7 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 207.9 | 9.1 | 1.4 | 6.71 | 0.118 | 0.14 |
| November | 415 | 22 | 10 | 13.8 | .242 | .27 |
| December | 418.5 | 35 | 6.4 | 13.5 | .237 | .27 |
| Calendar year 1941 | 5,863.0 | 126 | .6 | 16.1 | .282 | 3.83 |
| January | 323.5 | 20 | 4.5 | 10.4 | .182 | .21 |
| February | 616 | 42 | 10 | 22.0 | .386 | .40 |
| March | 3,974 | 369 | 9.0 | 128 | 2.25 | 2.59 |
| April | 1,044 | 62 | 12 | 34.8 | .611 | .68 |
| May | 381.0 | 27 | 6.4 | 12.3 | .216 | .25 |
| June | 416.0 | 25 | 6.4 | 13.9 | .244 | .27 |
| July | 88.6 | 5.4 | 1.6 | 2.86 | .050 | .06 |
| August | 98.1 | 4.2 | 2.0 | 3.16 | .055 | .06 |
| September | 109.9 | 4.5 | 2.7 | 3.66 | .064 | .07 |
| Water year 1941-42 | 8,092.5 | 369 | 1.4 | 22.2 | .389 | 5.27 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 3-13, Feb. 1-19, Feb. 22 to Mar. 5.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Tittabawassee River at Midland, Mich.

Location.- Water-stage recorder, lat. 40°36', long. 84°15', in NE¼ sec. 28, T. 14 N., R. 2 E., 0.5 mile south of Midland and 1 mile downstream from Chippewa River. Datum of gage is 590.28 feet above mean sea level, datum of 1929.
Drainage area.- 2,400 square miles.
Records available.- March 1936 to September 1942.
Extremes.- Maximum discharge during year, 26,000 second-feet Mar. 18 (gage height, 17.07 feet); minimum, 72 second-feet (regulated) July 1 (gage height, -0.11 foot).
1936-42: Maximum discharge, that of Mar. 18, 1942; minimum, 69 second-feet (regulated) Sept. 27, 1940, and Sept. 18, 1941.
Remarks.- Records good except those for periods of no gage-height record, which are poor. Water is diverted from river a short distance above station for industrial use; small part returned to river a quarter of a mile below station; remainder returned 1 mile below and below control. Records of daily discharge not adjusted for diversion. Low flow regulated by power plants above station.
Cooperation.- Gage-height record and records of diversion furnished by Dow Chemical Co.

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 0.2 | 174 | 2.0 | 1,140 | 11.0 | 9,750 |
| .4 | 252 | 3.0 | 1,630 | 13.0 | 12,800 |
| .6 | 343 | 5.0 | 3,480 | 15.0 | 17,600 |
| .9 | 496 | 7.0 | 5,380 | 16.0 | 21,000 |
| 1.2 | 669 | 9.0 | 7,390 | 16.8 | 24,500 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 741 | 2,620 | 1,360 | 2,030 | 630 | 518 | 4,980 | 686 | 5,080 | 372 | 332 | 542 |
| 2 | 926 | 5,180 | 1,720 | 2,290 | 710 | 827 | 4,290 | 710 | 5,180 | 330 | 464 | 474 |
| 3 | 1,300 | 4,580 | 1,670 | 2,390 | 890 | 928 | 3,930 | 608 | 4,020 | 601 | 340 | 413 |
| 4 | 792 | 3,840 | 1,180 | 1,150 | 1,090 | 960 | 3,570 | 660 | 2,820 | 502 | 390 | 341 |
| 5 | 2,240 | 3,070 | 1,220 | 808 | 772 | 1,260 | 3,570 | 835 | 2,210 | 445 | 283 | 222 |
| 6 | 2,710 | 2,870 | 1,110 | 878 | 828 | 1,550 | 3,840 | 1,190 | 1,890 | 391 | 564 | 209 |
| 7 | 2,240 | 4,290 | 726 | a1,000 | 752 | 2,730 | 4,360 | 1,370 | 926 | 521 | 534 | 206 |
| 8 | 2,100 | 5,480 | 1,100 | a900 | 909 | 5,180 | 4,380 | 1,280 | 998 | 452 | 471 | 356 |
| 9 | a1,600 | 4,880 | 1,460 | a800 | 708 | 4,880 | 3,930 | 908 | 970 | 388 | 260 | 807 |
| 10 | a1,900 | 4,020 | 1,350 | 664 | 912 | f3,390 | 3,660 | 664 | 636 | 652 | 396 | 946 |
| 11 | a1,800 | 3,300 | 1,200 | 700 | 952 | f3,210 | 3,070 | 1,090 | 1,330 | 348 | 324 | 1,090 |
| 12 | a1,700 | 2,820 | 992 | 772 | 876 | 3,480 | 2,480 | 2,190 | 1,810 | 256 | 246 | 638 |
| 13 | a1,900 | 2,690 | 936 | 1,110 | 968 | 3,300 | 1,650 | 2,490 | 3,300 | 405 | 221 | 452 |
| 14 | a2,100 | 2,060 | 628 | 927 | 638 | 3,660 | 1,760 | 2,480 | 3,210 | 391 | 415 | 585 |
| 15 | a2,300 | 1,610 | 608 | 974 | 573 | 5,580 | 1,720 | 2,210 | 2,310 | 271 | 699 | 440 |
| 16 | a2,600 | 1,520 | 1,050 | 765 | 1,070 | 7,500 | 1,340 | 1,630 | 2,070 | 582 | 268 | 490 |
| 17 | 2,230 | 1,870 | 1,560 | 525 | 1,430 | 14,600 | 1,650 | 1,340 | 1,680 | 604 | 231 | 449 |
| 18 | 2,080 | 1,840 | 1,150 | 790 | 1,030 | 24,500 | 1,310 | 1,750 | 1,330 | 308 | 301 | 595 |
| 19 | 3,110 | 2,190 | 1,160 | 1,250 | 876 | 18,500 | 1,260 | 1,830 | 1,920 | 433 | 262 | 616 |
| 20 | 2,030 | 1,570 | 748 | 936 | 786 | 14,100 | 1,180 | 1,680 | 2,870 | 472 | 345 | 362 |
| 21 | 1,710 | 2,160 | 684 | 1,100 | 446 | 12,400 | 1,290 | 1,400 | 2,950 | 617 | 319 | 512 |
| 22 | 1,690 | 2,040 | 788 | 1,490 | 460 | 10,400 | 1,210 | 1,260 | 3,000 | 444 | 262 | 598 |
| 23 | 1,900 | 1,510 | 1,790 | 1,040 | 564 | 8,050 | 1,200 | 606 | 2,360 | 428 | 246 | 517 |
| 24 | 2,120 | 1,750 | 3,840 | 852 | 685 | 6,480 | 1,360 | 558 | 1,390 | 384 | 244 | 583 |
| 25 | 1,360 | 1,500 | 4,880 | 1,010 | 822 | 6,280 | 857 | 952 | 1,200 | 354 | 427 | 532 |
| 26 | 964 | 1,330 | 4,110 | 1,460 | 926 | 5,580 | 813 | 1,100 | 1,350 | 674 | 300 | 443 |
| 27 | 1,710 | 1,240 | 3,840 | 1,790 | 658 | 4,980 | 1,000 | 724 | 652 | 516 | 613 | 506 |
| 28 | 1,980 | 1,330 | 3,660 | 1,880 | 474 | 5,580 | 1,170 | 726 | 410 | 313 | 531 | 646 |
| 29 | 1,500 | 1,340 | 2,830 | 1,420 | - | 6,380 | 1,210 | 854 | 512 | 630 | 191 | 660 |
| 30 | 1,480 | 1,120 | 2,170 | 1,360 | - | 5,580 | 1,260 | 879 | 722 | 490 | 228 | 724 |
| 31 | 1,620 | - | 2,040 | 750 | - | 5,380 | - | 2,600 | - | 310 | 342 | - |

| Month | Observed | | | | Mean diversion (second-feet)† | Adjusted for diversion | | |
|---|---|---|---|---|---|---|---|---|
| | Second-foot-days | Maximum | Minimum | Mean | | Mean | Per square mile | Run-off in inches |
| October | 56,533 | 3,110 | 741 | 1,824 | 86 | 1,910 | 0.796 | 0.92 |
| November | 77,620 | 5,480 | 1,120 | 2,587 | 72 | 2,659 | 1.11 | 1.24 |
| December | 53,460 | 4,880 | 608 | 1,725 | 65 | 1,790 | .746 | .88 |
| Calendar year 1941 | 509,859 | 5,480 | 117 | 1,397 | 70 | 1,467 | .611 | 8.31 |
| January | 35,811 | 2,390 | 525 | 1,155 | 65 | 1,220 | .508 | .59 |
| February | 22,435 | 1,430 | 446 | 801 | 68 | 869 | .362 | .38 |
| March | 197,743 | 24,500 | 518 | 6,379 | 72 | 6,451 | 2.69 | 3.10 |
| April | 69,320 | 4,980 | 813 | 2,311 | 73 | 2,384 | .993 | 1.11 |
| May | 39,260 | 2,600 | 558 | 1,266 | 81 | 1,347 | .561 | .65 |
| June | 61,106 | 5,180 | 410 | 2,037 | 99 | 2,136 | .890 | .99 |
| July | 13,884 | 674 | 256 | 448 | 104 | 562 | .230 | .27 |
| August | 11,049 | 699 | 191 | 356 | 103 | 459 | .191 | .22 |
| September | 15,954 | 1,090 | 206 | 532 | 101 | 633 | .264 | .29 |
| Water year 1941-42 | 654,175 | 24,500 | 191 | 1,792 | 82 | 1,874 | .781 | 10.62 |

† Diversion by Dow Chemical Co. for industrial use.
a No gage-height record; discharge estimated.
f Computed on basis of partly estimated gage-height record.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Salt River near North Bradley, Mich.

Location.- Wire-weight gage, lat. 43°42', long. 84°28', on bridge on U. S. Highway 10, 1½ miles southeast of North Bradley. Prior to Mar. 27, 1942, staff gage 100 feet upstream at same datum.

Drainage area.- 138 square miles.

Records available.- June 1934 to September 1942.

Extremes.- Maximum discharge observed during year, 4,330 second-feet Mar. 17 (gage height, 12.75 feet); minimum observed, 4.9 second-feet July 15, 16; minimum gage height, 0.35 feet Sept. 7.

1934-42: Maximum discharge observed, 4,460 second-feet Feb. 7, 14, 1938; maximum gage height, 13.77 feet Feb. 6, 1938 (backwater from ice); minimum discharge observed, 1.9 second-feet July 24, 1934.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Gage read twice daily.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9e | 204 | 40 | 62 | 39 | 20 | 201 | 39 | 213 | 10 | 10 | 6.1 |
| 2 | 63 | a496 | 41 | 65 | 33 | 21 | 154 | 42 | 150 | 9.3 | 8.2 | 6.1 |
| 3 | 49 | a355 | 44 | 52 | 29 | 21 | 137 | 37 | 90 | e.9 | 7.1 | 6.4 |
| 4 | 67 | 188 | 37 | 38 | 26 | 25 | 96 | 36 | 58 | 9.3 | 6.8 | 6.1 |
| 5 | a341 | 136 | 37 | 37 | 26 | 40 | 162 | 33 | 41 | e.9 | 6.1 | 6.1 |
| 6 | a341 | 114 | 42 | 36 | 27 | 120 | 213 | 30 | 32 | 8.9 | 5.8 | 5.8 |
| 7 | 176 | 515 | 42 | 35 | 28 | 250 | 462 | 30 | 27 | 8.6 | 6.1 | 5.8 |
| 8 | 117 | 700 | 38 | 33 | 28 | 500 | 249 | 44 | 24 | 7.e | 6.4 | 10 |
| 9 | 79 | 447 | 40 | 31 | 28 | 350 | 146 | 40 | 21 | 6.8 | 6.e | 20 |
| 10 | 62 | 242 | 37 | 29 | 27 | 150 | 112 | 34 | 18 | 7.1 | 9.3 | 26 |
| 11 | 53 | 170 | 32 | 27 | 25 | 160 | 92 | 30 | 24 | 6.e | 7.8 | 17 |
| 12 | 46 | 126 | 31 | 26 | 26 | 180 | 76 | 152 | 53 | 6.4 | 6.8 | 12 |
| 13 | 41 | 98 | 28 | 27 | 27 | 240 | 62 | 314 | e2 | 6.e | 6.8 | 11 |
| 14 | a248 | 92 | 27 | 28 | 26 | 350 | 55 | 83 | 48 | 6.1 | 6.4 | 10 |
| 15 | a341 | 88 | 26 | 29 | 26 | 700 | 48 | 67 | 34 | 5.5 | 7.1 | 10 |
| 16 | 156 | 79 | 28 | 30 | 27 | *1,400 | 46 | 70 | 24 | 6.8 | 6.8 | 9.3 |
| 17 | 99 | 70 | 29 | 28 | 28 | *3,730 | 43 | 84 | 21 | 11 | 6.4 | 8.6 |
| 18 | 94 | 62 | *34 | 30 | 28 | 2,710 | 40 | 65 | 21 | 7.5 | 6.1 | 8.2 |
| 19 | a274 | 58 | 36 | 34 | 28 | 1,000 | 34 | 54 | 175 | e.6 | 5.e | 9.6 |
| 20 | 194 | 78 | 32 | 38 | 27 | 720 | 40 | 42 | 106 | 68 | 5.8 | 11 |
| 21 | 129 | 99 | 32 | 48 | 26 | 644 | 36 | 34 | 94 | 57 | 5.8 | 8.9 |
| 22 | 99 | 71 | 30 | 60 | 24 | 482 | 30 | 29 | 74 | 36 | 6.1 | 8.2 |
| 23 | 113 | 63 | 72 | 70 | 22 | 276 | 27 | 27 | 42 | 20 | 8.6 | 8.6 |
| 24 | 115 | 67 | 461 | 95 | 19 | 288 | 27 | 24 | 32 | 14 | 8.6 | 9.3 |
| 25 | 90 | 56 | 500 | 150 | *18 | 243 | 27 | 23 | 22 | 10 | 7.8 | 8.2 |
| 26 | 74 | 50 | 188 | 130 | 19 | 213 | 27 | 22 | 18 | 10 | 9.3 | 9.6 |
| 27 | 64 | 47 | 158 | 100 | 19 | 183 | 26 | 22 | 15 | 10 | 7.8 | 14 |
| 28 | 68 | 45 | 140 | 80 | 20 | 295 | 26 | 22 | 14 | 9.3 | 7.8 | 13 |
| 29 | 56 | 42 | 106 | *68 | - | 354 | 25 | 22 | 14 | 15 | 7.5 | 11 |
| 30 | 48 | 40 | e9 | 54 | - | 276 | 26 | 37 | 14 | 17 | 6.8 | 10 |
| 31 | 47 | - | 72 | 45 | - | 269 | - | 92 | - | 12 | 6.4 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 3,844 | 341 | 41 | 124 | 0.899 | 1.04 |
| November | 4,e9e | 700 | 40 | 163 | 1.18 | 1.32 |
| December | 2,549 | 500 | 26 | e2.2 | .596 | .69 |
| Calendar year 1941 | 27,435.9 | 1,100 | 2.0 | 75.2 | .545 | 7.41 |
| January | 1,615 | 150 | 26 | 52.1 | .378 | .44 |
| February | 726 | 39 | 18 | 25.9 | .188 | .20 |
| March | 16,210 | 3,730 | 20 | 523 | 3.79 | 4.37 |
| April | 2,745 | 462 | 25 | 91.5 | .663 | .74 |
| May | 1,680 | 314 | 22 | 54.2 | .393 | .45 |
| June | 1,601 | 213 | 14 | 53.4 | .387 | .43 |
| July | 429.4 | 68 | 5.5 | 13.9 | .100 | .12 |
| August | 220.9 | 10 | 5.e | 7.13 | .052 | .06 |
| September | 305.9 | 26 | 5.e | 10.2 | .074 | .08 |
| Water year 1941-42 | 36,824.2 | 3,730 | 5.5 | 101 | .732 | 9.94 |

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for Chippewa River near Mount Pleasant.

Note.- Stage-discharge relation affected by ice Jan. 3 to Mar. 16.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Chippewa River near Mount Pleasant, Mich.

Location.- Water-stage recorder, lat. 43°37'35", long. 84°42'30", on line between secs. 7 and 8, T. 14 N., R. 3 W., 4 miles northeast of Mount Pleasant.

Drainage area.- 416 square miles.

Records available.- October 1930 to July 1931, October 1932 to September 1942.

Average discharge.- 10 years (1932-42) 268 second-feet.

Extremes.- Maximum discharge during year, 1,950 second-feet Mar. 17 (gage height, 8.35 feet); minimum recorded, 69 second-feet Aug. 29; minimum gage height, 3.01 feet Dec. 21. 1930-31, 1932-42: Maximum discharge observed, 3,120 second-feet Feb. 6, 1938 (gage height, 12.02 feet); minimum observed, 19 second-feet Aug. 16, 1936.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Regulation at low flow by power plant above station.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 317 | 455 | 302 | 284 | 240 | 160 | 700 | 251 | 317 | 161 | 188 | 110 |
| 2 | 395 | 685 | 299 | 305 | 230 | 160 | 638 | 246 | 314 | 158 | 190 | 120 |
| 3 | 371 | 700 | 278 | 278 | 240 | 170 | 576 | 234 | 287 | 156 | 165 | 110 |
| 4 | 377 | 670 | 287 | 260 | 240 | 190 | 561 | 260 | 246 | 147 | 158 | 110 |
| 5 | 700 | 546 | 305 | 240 | 250 | 222 | 623 | 254 | 222 | 156 | 150 | 110 |
| 6 | 872 | 455 | 281 | 230 | 230 | 311 | 685 | 257 | 211 | 150 | 147 | 100 |
| 7 | 778 | 561 | 281 | 230 | 210 | 410 | 747 | 260 | 182 | 144 | 135 | 120 |
| 8 | 561 | 654 | 278 | 220 | 200 | 608 | 716 | 278 | 196 | 144 | 141 | 150 |
| 9 | 470 | 608 | 293 | 220 | 190 | *410 | 638 | 263 | 167 | 115 | 158 | 190 |
| 10 | 440 | 576 | 278 | 220 | 190 | 317 | 546 | 257 | 167 | 124 | 164 | 250 |
| 11 | 425 | 515 | 222 | 210 | 200 | 410 | 500 | 251 | 182 | 132 | 150 | 320 |
| 12 | 377 | 455 | 257 | 200 | 210 | 410 | 455 | 311 | 275 | 112 | 147 | 270 |
| 13 | 353 | 425 | 269 | 190 | 210 | 455 | 425 | 362 | 329 | 130 | 140 | 200 |
| 14 | 425 | 395 | 243 | 190 | 200 | 608 | 410 | 338 | 350 | 101 | 150 | 160 |
| 15 | 638 | 395 | 231 | 190 | 210 | 747 | 368 | 302 | 344 | 112 | 160 | 170 |
| 16 | 592 | 374 | 243 | 200 | 200 | 872 | 362 | 329 | 293 | 127 | 150 | 170 |
| 17 | 485 | 377 | 254 | 200 | 190 | 1,550 | 362 | 338 | 222 | 138 | 140 | 170 |
| 18 | 470 | 332 | *248 | 200 | 250 | 1,790 | 341 | 323 | 225 | 150 | 130 | 180 |
| 19 | 530 | 329 | 257 | 210 | 250 | 1,790 | 311 | 281 | 205 | 161 | 130 | 150 |
| 20 | 530 | 347 | 257 | 230 | 240 | 1,510 | 317 | 272 | 257 | 263 | 124 | 180 |
| 21 | 425 | 395 | 211 | 260 | 240 | 1,400 | 299 | 246 | 299 | 284 | 144 | 190 |
| 22 | 395 | 374 | 237 | 260 | 230 | 1,260 | 275 | 254 | 305 | 240 | 141 | 180 |
| 23 | 380 | 347 | 275 | 290 | 200 | 1,180 | 281 | 243 | 290 | 205 | 112 | 190 |
| 24 | 380 | 362 | 425 | 350 | 180 | 1,010 | 269 | 234 | 254 | 222 | 193 | 180 |
| 25 | 356 | 332 | 455 | 350 | 150 | 905 | 248 | 237 | 222 | 211 | 160 | 173 |
| 26 | 332 | 305 | 410 | 330 | 140 | 840 | 234 | 216 | 214 | 158 | 140 | 179 |
| 27 | 329 | 308 | 356 | *314 | 150 | 778 | 234 | 234 | 190 | 161 | 120 | 202 |
| 28 | 320 | 305 | 347 | 296 | 150 | 640 | 240 | 240 | 190 | 170 | 110 | 214 |
| 29 | 308 | 299 | 347 | 278 | - | 872 | 225 | 237 | 176 | 228 | 101 | 205 |
| 30 | 293 | 278 | 326 | 266 | - | 840 | 228 | 243 | 173 | 188 | 127 | 196 |
| 31 | 269 | - | 305 | 251 | - | 762 | - | 263 | - | 205 | 121 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 13,893 | 872 | 269 | 448 | 1.08 | 1.24 |
| November | 13,159 | 700 | 278 | 439 | 1.06 | 1.18 |
| December | 9,057 | 455 | 211 | 292 | .702 | .81 |
| Calendar year 1941 | 98,124 | 872 | 54 | 269 | .647 | 8.77 |
| January | 7,752 | 350 | 190 | 250 | .601 | .69 |
| February | 5,820 | 250 | 140 | 208 | .500 | .52 |
| March | 23,787 | 1,790 | 160 | 767 | 1.84 | 2.12 |
| April | 12,814 | 747 | 225 | 427 | 1.03 | 1.15 |
| May | 8,314 | 362 | 216 | 268 | .644 | .74 |
| June | 7,304 | 350 | 167 | 243 | .584 | .65 |
| July | 5,153 | 284 | 101 | 166 | .399 | .46 |
| August | 4,506 | 193 | 101 | 145 | .349 | .40 |
| September | 5,279 | 320 | 100 | 176 | .423 | .47 |
| Water year 1941-42 | 116,838 | 1,790 | 100 | 320 | .769 | 10.43 |

* Winter discharge measurement made on this day.

Note.- No gage-height record Aug. 13-19, 25-28, Sept. 1-24; discharge computed on basis of weather records and records for Pine River at Alma and Rifle River near Sterling. Stage-discharge relation affected by ice Jan. 4-26, Feb. 1 to Mar. 4.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Pine River at Alma, Mich.

Location.- Water-stage recorder, lat. 43°23', long. 84°39', in sec. 34, T. 12 N., R. 3 W., in Alma, 270 feet downstream from highway bridge. Datum of gage is 718.37 feet (revised) above mean sea level, datum of 1929.

Drainage area.- 288 square miles.

Records available.- October 1930 to September 1942.

Average discharge.- 12 years, 163 second-feet.

Extremes.- Maximum discharge during year, 2,210 second-feet Mar. 17 (gage height, 7.64 feet); minimum not determined.
1930-42: Maximum discharge observed, 4,070 second-feet Feb. 6, 1938 (gage height, 10.43 feet), from rating curve extended above 2,000 second-feet; minimum not determined.

Remarks.- Records fair. Occasional regulation by dam above station.

Rating table, water year 1941-42, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-19, June 4 to Sept. 30)

| | | | | | |
|---|---|---|---|---|---|
| 0.4 | 45 | 3.0 | 382 | 7.0 | 1,760 |
| .6 | 63 | 4.0 | 565 | 7.4 | 2,050 |
| 1.0 | 109 | 5.0 | 840 | | |
| 2.0 | 238 | 6.0 | 1,220 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 96 | 330 | 173 | b192 | b108 | 110 | 422 | 114 | 449 | 81 | 68 | 55 |
| 2 | 142 | 374 | 173 | b247 | b102 | 105 | 382 | 114 | 414 | 73 | 62 | 57 |
| 3 | 156 | 374 | 173 | 173 | b150 | 105 | 337 | 117 | 406 | 69 | 58 | 55 |
| 4 | 173 | 382 | 166 | 166 | 147 | 173 | 307 | 107 | 344 | 73 | 57 | 55 |
| 5 | 244 | 360 | 180 | 154 | 154 | 212 | 293 | 114 | 258 | 77 | 53 | 54 |
| 6 | 258 | 330 | 160 | a150 | 151 | 279 | 300 | 121 | 192 | 71 | 53 | 53 |
| 7 | 293 | 458 | 166 | a140 | 154 | 330 | 337 | 122 | 159 | 69 | 52 | 56 |
| 8 | 279 | 476 | 160 | a130 | b146 | 394 | 352 | 135 | 140 | 65 | 57 | 104 |
| 9 | 272 | 440 | 212 | a130 | b124 | 338 | 360 | 126 | 129 | 65 | 70 | 129 |
| 10 | 206 | 406 | 199 | a120 | b115 | 286 | 344 | 117 | 111 | 64 | 79 | 156 |
| 11 | 173 | 382 | 101 | a120 | b115 | 300 | 314 | 122 | 139 | 66 | 77 | 186 |
| 12 | 166 | 458 | 105 | a110 | b114 | 390 | 272 | 173 | 218 | 69 | 78 | 180 |
| 13 | 156 | 360 | 131 | 113 | b115 | 515 | 265 | 238 | 300 | 64 | 81 | 146 |
| 14 | 180 | 265 | 137 | 115 | b137 | 578 | 143 | 272 | 300 | 61 | 78 | 124 |
| 15 | 199 | 189 | 117 | 111 | b130 | 678 | 101 | 244 | 265 | 57 | 83 | 104 |
| 16 | 218 | 98 | 131 | 122 | b120 | 859 | 199 | 265 | 258 | 61 | 74 | 85 |
| 17 | 218 | 212 | 135 | 126 | b130 | 2,050 | 173 | 279 | 192 | 66 | 71 | 84 |
| 18 | 218 | 212 | 142 | 121 | b144 | 1,640 | 160 | 272 | 151 | 69 | 66 | 79 |
| 19 | 225 | 199 | *143 | 124 | b151 | 1,520 | 159 | 238 | 71 | 70 | 60 | 83 |
| 20 | 244 | 225 | 140 | 142 | b160 | 1,320 | 160 | 192 | 96 | 66 | 58 | 85 |
| 21 | 238 | 261 | 128 | 157 | 287 | 1,060 | 140 | 160 | 173 | 70 | 56 | 93 |
| 22 | 218 | 206 | 129 | 173 | 47 | 855 | 130 | 150 | 206 | 69 | 56 | 92 |
| 23 | 206 | 244 | 192 | 180 | a120 | 735 | 130 | 137 | 212 | 67 | 52 | 93 |
| 24 | 199 | 238 | 286 | *192 | a110 | 690 | 130 | 129 | 166 | 66 | 52 | 89 |
| 25 | 186 | 218 | 314 | 199 | a110 | 578 | 124 | 113 | 134 | 59 | 53 | 87 |
| 26 | 173 | 192 | 330 | 206 | *104 | 495 | 114 | 109 | 113 | 57 | 50 | 98 |
| 27 | 180 | 180 | 330 | 212 | 105 | 449 | 111 | 103 | 109 | 58 | 58 | 122 |
| 28 | 199 | 173 | 307 | 212 | 98 | 458 | 113 | 107 | 103 | 58 | 70 | 120 |
| 29 | 212 | 166 | 329 | 199 | - | 398 | 102 | 103 | 91 | 71 | 77 | 115 |
| 30 | 206 | 180 | 186 | b170 | - | 440 | 111 | 103 | 91 | 74 | 75 | 104 |
| 31 | 192 | - | 206 | 152 | - | 449 | - | 186 | - | 73 | 97 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 6,325 | 293 | 96 | 204 | 0.708 | 0.82 |
| November | 8,588 | 476 | 38 | 286 | .993 | 1.11 |
| December | 5,781 | 330 | 101 | 186 | .646 | .74 |
| Calendar year 1941 | 58,212 | 509 | 16 | 159 | .552 | 7.51 |
| January | 4,858 | 247 | 110 | 157 | .545 | .63 |
| February | 3,648 | 287 | 47 | 130 | .451 | .47 |
| March | 18,789 | 2,050 | 105 | 606 | 2.10 | 2.42 |
| April | 6,585 | 422 | 101 | 220 | .764 | .85 |
| May | 4,882 | 279 | 103 | 157 | .545 | .63 |
| June | 5,990 | 449 | 71 | 200 | .694 | .77 |
| July | 2,078 | 81 | 57 | 67.0 | .233 | .27 |
| August | 2,031 | 97 | 50 | 65.5 | .227 | .26 |
| September | 2,943 | 186 | 53 | 98.1 | .341 | .38 |
| Water year 1941-42 | 72,498 | 2,050 | 47 | 199 | .691 | 9.35 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Cedar River at East Lansing.
b Stage-discharge relation affected by ice.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Cass River at Frankenmuth, Mich.

Location.- Water-stage recorder, lat. 43°19'42", long. 83°45'28", on line between secs. 27 and 28, T. 11 N., R. 6 E., at highway bridge, 1 mile west of Frankenmuth and 2.6 miles upstream from Dead Creek.

Drainage area.- 848 square miles.

Records available.- February 1908 to March 1909, July 1935 to September 1936, June 1939 to September 1942.

Extremes.- Maximum discharge during year, 17,700 second-feet Mar. 18; maximum gage height, 20.91 feet Mar. 10 (backwater from ice); minimum daily discharge, 7.7 second-feet Aug. 23.
1908-9, 1935-36, 1939-42: Maximum discharge, that of Mar. 18, 1942; maximum gage height, that of Mar. 10, 1942; minimum daily discharge, 2 second-feet Sept. 28, 1908, July 27, 1941.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, and those below 50 second-feet, which are poor. Flow regulated by mill above station.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 35 | 330 | 198 | 527 | 160 | 210 | 800 | 144 | 1,260 | 192 | 136 | 22 |
| 2 | 32 | 310 | 154 | 607 | 140 | 100 | 800 | 72 | 1,330 | 81 | 52 | 17 |
| 3 | 65 | 680 | 202 | 500 | 250 | 70 | 700 | 149 | 950 | 69 | 44 | 92 |
| 4 | 60 | 561 | 264 | 350 | 320 | 210 | 700 | 102 | 1,220 | 80 | 40 | 130 |
| 5 | 90 | 516 | 160 | 260 | 310 | 380 | 600 | 161 | 1,300 | 90 | 109 | 60 |
| 6 | 70 | 354 | 200 | 220 | 270 | 750 | 530 | 179 | 890 | 80 | 86 | 23 |
| 7 | 80 | 819 | 166 | 190 | 260 | 1,400 | 570 | 95 | 655 | 70 | 70 | 26 |
| 8 | 49 | 1,300 | 159 | 170 | 250 | 2,600 | 500 | 155 | 516 | 80 | 57 | 66 |
| 9 | 46 | 1,360 | 167 | 160 | 240 | 8,000 | 540 | 94 | 461 | 60 | 88 | 143 |
| 10 | 42 | 950 | 127 | 150 | 230 | *9,000 | 500 | 62 | 362 | 45 | 88 | 461 |
| 11 | 116 | 705 | 177 | 160 | 200 | 5,500 | 500 | 72 | 308 | 42 | 148 | 306 |
| 12 | 87 | 550 | 165 | 120 | 230 | *5,200 | 470 | 181 | 308 | 36 | 169 | 202 |
| 13 | 52 | 328 | 141 | 140 | 170 | 4,940 | 500 | 360 | 330 | 38 | 86 | 149 |
| 14 | 77 | 398 | 98 | 120 | 180 | *4,730 | 420 | 439 | 439 | 39 | 61 | 102 |
| 15 | 195 | 340 | 92 | 140 | 170 | 3,400 | 500 | 252 | 550 | 38 | 50 | 226 |
| 16 | 219 | 292 | *169 | 130 | 210 | 3,920 | 330 | 639 | 730 | 76 | 39 | 169 |
| 17 | 94 | 285 | 109 | 150 | 350 | 13,200 | 400 | 584 | 417 | 102 | 41 | 78 |
| 18 | 50 | 341 | 147 | 170 | 500 | 15,700 | 280 | 680 | 278 | 73 | 40 | 70 |
| 19 | 122 | 240 | 191 | 150 | 450 | 8,310 | 300 | 600 | 347 | 41 | 38 | 90 |
| 20 | 97 | 234 | 127 | 200 | 380 | 5,340 | 250 | 620 | 890 | 45 | 28 | 70 |
| 21 | 118 | 234 | 160 | 170 | 300 | 4,040 | 270 | 500 | 607 | 198 | 17 | 63 |
| 22 | 139 | 218 | 111 | 300 | 210 | 2,870 | 200 | 520 | 655 | 113 | 25 | 49 |
| 23 | 98 | 122 | 143 | 200 | 160 | 1,870 | 250 | 300 | 550 | 89 | 7.7 | 98 |
| 24 | 114 | 505 | 425 | 150 | *140 | 1,130 | 130 | 330 | 472 | 67 | 21 | 75 |
| 25 | 207 | 243 | 1,560 | 270 | 140 | 1,070 | 193 | 270 | 439 | 55 | 109 | 149 |
| 26 | 191 | 106 | 1,990 | 200 | 150 | 1,000 | 176 | 230 | 156 | 123 | 150 | 111 |
| 27 | 101 | 87 | 1,400 | *270 | 70 | 1,000 | 82 | 250 | 72 | 81 | 65 | 46 |
| 28 | 144 | 214 | 1,070 | 270 | 140 | 900 | 124 | 208 | 253 | 45 | 60 | 78 |
| 29 | 296 | 268 | 760 | 260 | - | 900 | 69 | 92 | 118 | 46 | 52 | 60 |
| 30 | 113 | 202 | 550 | 240 | - | 800 | 149 | 327 | 281 | 53 | 7.8 | 48 |
| 31 | 261 | - | 538 | 350 | - | 700 | - | 607 | - | 112 | 42 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 3,460 | 296 | 32 | 112 | 0.132 | 0.15 |
| November | 13,092 | 1,360 | 87 | 436 | .514 | .57 |
| December | 11,940 | 1,990 | 92 | 385 | .454 | .52 |
| Calendar year 1941 | 101,317 | 2,110 | 2 | 278 | .328 | 4.44 |
| January | 7,294 | 607 | 120 | 235 | .277 | .32 |
| February | 6,580 | 500 | 70 | 235 | .277 | .29 |
| March | 109,440 | 15,700 | 70 | 3,530 | 4.16 | 4.80 |
| April | 11,853 | 600 | 82 | 395 | .466 | .52 |
| May | 9,274 | 680 | 62 | 299 | .353 | .41 |
| June | 17,144 | 1,330 | 72 | 571 | .673 | .75 |
| July | 2,359 | 198 | 36 | 76.1 | .090 | .10 |
| August | 2,046.5 | 169 | 7.7 | 66.0 | .078 | .09 |
| September | 3,279 | 461 | 17 | 109 | .129 | .14 |
| Water year 1941-42 | 197,761.5 | 15,700 | 7.7 | 542 | .639 | 8.66 |

* Winter discharge measurement made on this day.

Note.- No gage-height record Oct. 1-7, Jan. 5-18, Feb. 8-15, 18-24, Mar. 26 to Apr. 24, May 19-27, July 4-8, Sept. 18-20; discharge computed on basis of four discharge measurements, available limits of stage, weather records, and records for Flint River near Flint and Shiawassee River at Owosso. Stage-discharge relation affected by ice Jan. 3 to Mar. 12.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Sebewaing River (State drain) near Sebewaing, Mich.

Location.- Water-stage recorder, lat. 43°43', long. 83°26', on line between secs. 16 and 21, T. 15 N., R. 9 E., at highway bridge on Rescue Road, 1½ miles upstream from East Fork, and 1½ miles southeast of Sebewaing. Datum of gage is 590.0 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 62 square miles.

Records available.- January 1940 to September 1942.

Extremes.- Maximum discharge during year, 2,660 second-feet Mar. 16; maximum gage height, 12.81 feet Mar. 9, backwater from ice; no flow for some periods.
1940-42: Maximum discharge, that of Mar. 16, 1942; maximum gage height, that of Mar. 9, 1942, backwater from ice; no flow for long periods.

Remarks.- Records good Dec. 24-28, Mar. 17 to Apr. 13; fair Nov. 26 to Dec. 8, Apr. 14-27; and poor the remainder of the year except for days of no flow.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.3 | 62 | 7.0 | 25 | 1.5 | 1.6 | 38 | 0.8 | 446 | 1.8 | 6.0 | 0 |
| 2 | 0 | 69 | 7.5 | 174 | 2.0 | 1.5 | 29 | .6 | 120 | 1.4 | 3.0 | .1 |
| 3 | .5 | 40 | 8.5 | 110 | 2.5 | 1.5 | 22 | 1.0 | 65 | 1.0 | 1.5 | .1 |
| 4 | .7 | 26 | 8.0 | 50 | 3.5 | 2.0 | 18 | 1.2 | 49 | .9 | .8 | 0 |
| 5 | 3.9 | 19 | 9.5 | 20 | 2.5 | 50 | 19 | 2.6 | 37 | .8 | .3 | .1 |
| 6 | 5.3 | 24 | 9.8 | 10 | 2.0 | 150 | 19 | 1.6 | 23 | .7 | .2 | .3 |
| 7 | 3.8 | 225 | 6.2 | 4 | 2.0 | *380 | 32 | 2.4 | 16 | .4 | .1 | .1 |
| 8 | 2.0 | 185 | 5.5 | 2.0 | 2.0 | 470 | 28 | 4.7 | 12 | .3 | .5 | 2.2 |
| 9 | 1.4 | 78 | 6 | 1.0 | 1.8 | *500 | 20 | 3.9 | 7.5 | .2 | 1.5 | 21 |
| 10 | 1.2 | 51 | 5 | .7 | 1.6 | 160 | 17 | 2.1 | 18 | .1 | 2.1 | 26 |
| 11 | .9 | 38 | 3 | .6 | 1.5 | *190 | 19 | 1.4 | 103 | .1 | 1.3 | 15 |
| 12 | .7 | 28 | 2.5 | .5 | 1.3 | 280 | 16 | 14 | 75 | .1 | .8 | 7.8 |
| 13 | 1.0 | 25 | 2.5 | .5 | 1.1 | 260 | 12 | 26 | 57 | .1 | .5 | 4.6 |
| 14 | 4.7 | 22 | 2.5 | .5 | 1.0 | 210 | 9.6 | 18 | 70 | 0 | .3 | 3.4 |
| 15 | 15 | 22 | 2.5 | .6 | 1.0 | 150 | 9.2 | 12 | 53 | 0 | .2 | 2.1 |
| 16 | 6.9 | 19 | *2.5 | .6 | 1.5 | 1,100 | 7.5 | 57 | 27 | .1 | .1 | 1.4 |
| 17 | 4.0 | 15 | 2.5 | .5 | 10 | *1,570 | 8.4 | a50 | 16 | .1 | 0 | 1.0 |
| 18 | 4.9 | 14 | 3 | 1.0 | 100 | 302 | 7.2 | a36 | 11 | 0 | 0 | .8 |
| 19 | 6.0 | 13 | 3.5 | 5 | 80 | 144 | 5.2 | a27 | 1,290 | .2 | 0 | .8 |
| 20 | 7.3 | 14 | 3.5 | 7 | 70 | 106 | 4.5 | a19 | 271 | .3 | 0 | .4 |
| 21 | 5.8 | 13 | 2.5 | 5 | 40 | 105 | 3.7 | 13 | 112 | 1.4 | 0 | .4 |
| 22 | 4.6 | 11 | 2.5 | 6 | 20 | 84 | 2.9 | 9.2 | 57 | 1.0 | 0 | .2 |
| 23 | 8.2 | 10 | 9 | 6 | 10 | 59 | 2.7 | 6.9 | 34 | .6 | 0 | .2 |
| 24 | 9.8 | 13 | 188 | 10 | 6 | 49 | 2.3 | 5.2 | 23 | .2 | 0 | .6 |
| 25 | 8.0 | 13 | 126 | 17 | *4 | 46 | 1.8 | 3.9 | 16 | .1 | 0 | 1.0 |
| 26 | 5.7 | 10 | 64 | 12 | 2.5 | 38 | 1.6 | 2.9 | 11 | .1 | 0 | 1.2 |
| 27 | 6.9 | 8.7 | 82 | *8 | 1.9 | 34 | 1.5 | 2.6 | 7.5 | .4 | 0 | 2.1 |
| 28 | 28 | 7.8 | 47 | 5 | 1.7 | 42 | 1.3 | 2.3 | 5.3 | 0 | 0 | 3.4 |
| 29 | 18 | 7.0 | 35 | 3 | - | 40 | 1.0 | 3.0 | 3.9 | 40 | 0 | 3.0 |
| 30 | 11 | 7.0 | 28 | 2.0 | - | 53 | .8 | 148 | 2.7 | 24 | 0 | 1.7 |
| 31 | 9.2 | - | 25 | 1.7 | - | 53 | - | 340 | - | 8.6 | 0 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 185.7 | 28 | 0 | 5.99 | 0.097 | 0.11 |
| November | 1,089.5 | 225 | 7.0 | 36.3 | .585 | .65 |
| December | 710.0 | 188 | 2.5 | 22.9 | .369 | .43 |
| Calendar year 1941 | 5,484.0 | 225 | 0 | 15.0 | .242 | 3.29 |
| January | 489.2 | 174 | .5 | 15.8 | .255 | .29 |
| February | 374.9 | 100 | 1.0 | 13.4 | .216 | .22 |
| March | 6,631.6 | 1,570 | 1.5 | 214 | 3.45 | 3.98 |
| April | 360.2 | 38 | .8 | 12.0 | .194 | .22 |
| May | 818.3 | 340 | .6 | 26.4 | .426 | .49 |
| June | 3,038.9 | 1,290 | 2.7 | 101 | 1.63 | 1.82 |
| July | 85.0 | 40 | 0 | 2.74 | .044 | .05 |
| August | 19.2 | 6.0 | 0 | .62 | .010 | .01 |
| September | 101.0 | 26 | 0 | 3.37 | .054 | .06 |
| Water year 1941-42 | 13,903.5 | 1,570 | 0 | 38.1 | .615 | 8.33 |

Peak discharge.- Nov. 7 (4:30 a.m.) 299 sec.-ft.; Mar. 16 (6 p.m.) 2,660 sec.-ft.; June 1 (8 a.m.) 792 sec.-ft.; June 19 (1 p.m.) 2,220 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for East Fork of Sebewaing River near Sebewaing.

Note.- Stage-discharge relation affected by ice Nov. 24, 25, Dec. 9-23, Dec. 29 to Jan. 1, Jan. 3 to Mar. 16.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

East Fork of Sebewaing River (Columbia drain) near Sebewaing, Mich.

Location.- Water-stage recorder, lat. 43°44', long. 83°24', on line between secs. 10 and 11, T. 15 N., R. 9 E., at highway bridge on Gettel Road, 2¼ miles upstream from mouth and 2½ miles southeast of Sebewaing. Datum of gage is 607.0 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 38 square miles.

Records available.- January 1940 to September 1942.

Extremes.- Maximum discharge during year, 1,050 second-feet Mar. 17; maximum gage height, 8.47 feet Mar. 9 (ice jam); no flow for some periods.
1940-42: Maximum discharge, that of Mar. 17, 1942; maximum gage height, that of Mar. 9, 1942; no flow for long periods.

Remarks.- Records good above 5 second-feet and fair below, except those for periods of ice effect and days of flow below 1 second-foot, which are poor.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 21 | 2.6 | 5 | 0.8 | 0.8 | 14 | 0.3 | 118 | 0.6 | 2.7 | 0 |
| 2 | 0 | 40 | 2.6 | 48 | .7 | .7 | 10 | .2 | 47 | .4 | 1.8 | 0 |
| 3 | 0 | 18 | 3.3 | 59 | .8 | .7 | 7.9 | .3 | 26 | .3 | 1.0 | 0 |
| 4 | 0 | 8.2 | 3.5 | 19 | .9 | 1.5 | 5.8 | .3 | 18 | .2 | .6 | 0 |
| 5 | .6 | 5.1 | 3.3 | 8 | 1.2 | 30 | 5.8 | .3 | 15 | .2 | .3 | 0 |
| 6 | .5 | 5.9 | 3.3 | 3.1 | 2.0 | 100 | 7.5 | .4 | 7.2 | .1 | .2 | 0 |
| 7 | .3 | 76 | 2.6 | 1.5 | 1.7 | 200 | 16 | 1.1 | 4.3 | .1 | .1 | 0 |
| 8 | .2 | 78 | 1.8 | .5 | 1.2 | 260 | 14 | 2.0 | 3.1 | 0 | .3 | .1 |
| 9 | .1 | 34 | 1.4 | .1 | 1.0 | *290 | 8.7 | 3.1 | 2.3 | 0 | .9 | .3 |
| 10 | .1 | 20 | 1.8 | 0 | .8 | 70 | 6.4 | 2.3 | 1.6 | 0 | 2.0 | 1.0 |
| 11 | .1 | 13 | 1.3 | 0 | .7 | *60 | 7.5 | 1.5 | 7.2 | 0 | 1.0 | 1.4 |
| 12 | 0 | 9.8 | .8 | 0 | .6 | 150 | 7.5 | 8.3 | 13 | 0 | .6 | 1.6 |
| 13 | 0 | 7.8 | .6 | 0 | .6 | 130 | 4.7 | 15 | 14 | 0 | .4 | .9 |
| 14 | 2.0 | 7.0 | .5 | 0 | .5 | 100 | 3.5 | 11 | 13 | 0 | .4 | .7 |
| 15 | 1.8 | 6.6 | .4 | 0 | .5 | 80 | 3.3 | 8.7 | 20 | 0 | .3 | .6 |
| 16 | 2.4 | 6.3 | *.5 | 0 | 1.0 | 400 | 2.8 | 39 | 8.1 | 0 | .2 | .4 |
| 17 | 1.2 | 4.8 | .6 | 0 | 3 | *955 | 2.8 | 22 | 5.0 | 0 | .1 | .3 |
| 18 | 1.3 | 4.0 | .8 | .4 | 40 | 293 | 3.7 | 11 | 3.7 | 0 | .1 | .3 |
| 19 | 1.6 | 3.5 | 1.1 | 3 | 32 | 76 | 2.3 | 7.2 | 430 | 0 | .1 | .3 |
| 20 | 2.2 | 3.5 | .8 | 4 | 27 | 49 | 1.6 | 5.0 | 302 | 0 | 0 | .2 |
| 21 | 2.4 | 3.3 | .6 | 2.5 | 18 | 39 | 1.4 | 3.7 | 86 | 0 | 0 | .2 |
| 22 | 1.6 | 3.3 | .5 | 3 | 10 | 29 | 1.1 | 2.6 | 35 | 0 | 0 | .2 |
| 23 | 3.3 | 2.8 | 1.0 | 2.5 | 5 | 20 | .8 | 2.0 | 18 | 0 | 0 | .2 |
| 24 | 4.3 | 3.3 | 68 | 3.5 | 3 | 19 | .8 | 1.6 | 9.6 | .1 | 0 | .3 |
| 25 | 3.8 | 3.5 | 77 | 8 | *2.0 | 16 | 1.1 | 1.4 | 6.2 | .1 | 0 | .4 |
| 26 | 2.2 | 2.9 | 26 | 7 | 1.5 | 14 | .8 | 1.1 | 3.9 | .1 | 0 | .6 |
| 27 | 2.6 | 2.6 | 33 | *4 | 1.0 | 13 | .7 | .9 | 2.7 | .2 | 0 | 1.4 |
| 28 | 6.8 | 2.6 | 18 | 2.0 | .8 | 16 | .6 | .7 | 2.0 | .2 | 0 | 1.4 |
| 29 | 8.2 | 2.6 | 9 | 1.4 | - | 17 | .4 | 1.2 | 1.4 | 6.7 | 0 | 1.6 |
| 30 | 4.8 | 2.4 | 6 | 1.1 | - | 24 | .4 | 27 | 1.1 | 23 | 0 | 1.2 |
| 31 | 3.3 | - | 5 | .9 | - | 20 | - | 50 | - | 5.7 | 0 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 57.7 | 8.2 | 0 | 1.86 | 0.049 | 0.06 |
| November | 401.8 | 78 | 2.4 | 13.4 | .353 | .39 |
| December | 277.7 | 77 | .4 | 8.96 | .236 | .27 |
| Calendar year 1941 | 2,555.3 | 93 | 0 | 7.00 | .184 | 2.50 |
| January | 187.5 | 59 | 0 | 6.05 | .159 | .18 |
| February | 158.3 | 40 | .5 | 5.65 | .149 | .16 |
| March | 3,473.7 | 955 | .7 | 112 | 2.95 | 3.40 |
| April | 143.9 | 16 | .4 | 4.80 | .126 | .14 |
| May | 231.2 | 50 | .2 | 7.46 | .196 | .23 |
| June | 1,224.4 | 430 | 1.1 | 40.8 | 1.07 | 1.19 |
| July | 38.0 | 23 | 0 | 1.22 | .032 | .04 |
| August | 13.1 | 2.7 | 0 | .42 | .011 | .01 |
| September | 15.6 | 1.6 | 0 | .52 | .014 | .02 |
| Water year 1941-42 | 6,222.9 | 955 | 0 | 17.0 | .447 | 6.09 |

Peak discharge.- Mar. 17 (7 a.m.) 1,050 sec.-ft.; June 1 (4 p.m.) 172 sec.-ft.; June 19 (11:30 a.m.) 708 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 25, Dec. 18-23, Dec. 28 to Jan. 1, Jan. 5, 7, Jan. 19 to Mar. 16 (no gage-height record Feb. 18-24).
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Black River near Port Huron, Mich.

Location.- Chain gage, lat. 42°59', long. 82°32', in sec. 2, T. 6 N., R. 16 E., at highway bridge 6 miles west of Port Huron and 10 miles upstream from mouth.

Drainage area.- 634 square miles.

Records available.- April to June 1931, October 1932 to September 1942.

Average discharge.- 10 years (1932-42), 248 second-feet.

Extremes.- Maximum discharge during year, 12,300 second-feet Mar. 18 (gage height, 23.3 feet, from floodmarks); minimum observed, 11 second-feet Sept. 25; minimum gage height, 4.74 feet Aug. 20, 21.
1931, 1932-42: Maximum discharge observed, that of Mar. 18, 1942; minimum observed, 4.0 second-feet June 22, 1931 (gage height, 4.48 feet).

Remarks.- Records fair, except those for periods of ice effect or no gage-height record, which are poor. Gage read once daily prior to Feb. 25, twice daily thereafter.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13 | 67 | 41 | 137 | 400 | b85 | 440 | 60 | 528 | 26 | 33 | 20 |
| 2 | 14 | 60 | 39 | 175 | 700 | b81 | 405 | 50 | 615 | 24 | 35 | 21 |
| 3 | 22 | 64 | 40 | 165 | 500 | b76 | 358 | 48 | 475 | 21 | 35 | 22 |
| 4 | 31 | 94 | 42 | 120 | 350 | b65 | 317 | 58 | 790 | 37 | 30 | 21 |
| 5 | 36 | 89 | 40 | 95 | 250 | b95 | 264 | 55 | 685 | 43 | 28 | 20 |
| 6 | 31 | 102 | 39 | b80 | 180 | b350 | 238 | 56 | 416 | 37 | 25 | 20 |
| 7 | 28 | 110 | 42 | b72 | 150 | b1,500 | 261 | 55 | 258 | 35 | 24 | 20 |
| 8 | 26 | 100 | 42 | 65 | 130 | b3,000 | 232 | 45 | 197 | 32 | 27 | 34 |
| 9 | 25 | 192 | 41 | 60 | 110 | b4,500 | 227 | 36 | 164 | 28 | 32 | 64 |
| 10 | 23 | 262 | 40 | 56 | 100 | b3,500 | 244 | 31 | 134 | 27 | 32 | 41 |
| 11 | 22 | 170 | 38 | 53 | 93 | 3,700 | 305 | 31 | 129 | 28 | 28 | 36 |
| 12 | 19 | 112 | 40 | 51 | 85 | 3,300 | 545 | 36 | 151 | 26 | 18 | 38 |
| 13 | 16 | 93 | 42 | 49 | 80 | *3,300 | 562 | 47 | 174 | 21 | 20 | 37 |
| 14 | 20 | 78 | 40 | 47 | 75 | 2,900 | 419 | 50 | 166 | 18 | 20 | 36 |
| 15 | 20 | 67 | 42 | 48 | 70 | 2,150 | 330 | 54 | 148 | 18 | 19 | 34 |
| 16 | 22 | 61 | 40 | 52 | 130 | 1,800 | 278 | 210 | 148 | 22 | 18 | 34 |
| 17 | 20 | 52 | 42 | 58 | 250 | 7,800 | 221 | 278 | 189 | 30 | 16 | 27 |
| 18 | 21 | 50 | *40 | 63 | 800 | 10,600 | 166 | 246 | 158 | 30 | 17 | 24 |
| 19 | 26 | 52 | 37 | 69 | 600 | 8,600 | 132 | 238 | 122 | 34 | 16 | 54 |
| 20 | 24 | 47 | 38 | 60 | 350 | 5,360 | 127 | 213 | 132 | 39 | 14 | 36 |
| 21 | 25 | 49 | b36 | 55 | 250 | 2,950 | 122 | 219 | 208 | 34 | 13 | 24 |
| 22 | 22 | 48 | b35 | 56 | 180 | 2,050 | 111 | 219 | 189 | 71 | 14 | 21 |
| 23 | 28 | 49 | b34 | 60 | 140 | 1,460 | 100 | 181 | 154 | 62 | 16 | 17 |
| 24 | 24 | 48 | 67 | 66 | 110 | 1,040 | 87 | 141 | 111 | 48 | 17 | 18 |
| 25 | 28 | 43 | 221 | 74 | b100 | 772 | 81 | 107 | 98 | 42 | 19 | 12 |
| 26 | 26 | 43 | 720 | 81 | *b90 | 615 | 81 | 96 | 79 | 42 | 18 | 14 |
| 27 | 24 | 42 | 545 | 80 | b95 | 492 | 79 | 90 | 76 | 27 | 22 | 17 |
| 28 | 28 | 42 | 366 | 73 | b87 | 458 | 66 | 85 | 44 | 23 | 24 | 16 |
| 29 | 28 | 42 | 300 | *71 | - | 433 | 58 | 81 | 35 | 36 | 24 | 14 |
| 30 | 27 | 42 | 203 | 75 | - | 440 | 66 | 132 | 28 | 44 | 21 | 12 |
| 31 | 30 | - | 125 | 150 | - | 458 | - | 281 | - | 45 | 19 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 749 | 36 | 13 | 24.2 | 0.038 | 0.04 |
| November | 2,370 | 262 | 42 | 79.0 | .125 | .14 |
| December | 3,457 | 720 | 34 | 112 | .177 | .20 |
| Calendar year 1941 | 60,373.5 | 2,250 | 4.6 | 165 | .260 | 3.52 |
| January | 2,416 | 175 | 47 | 77.9 | .123 | .14 |
| February | 6,455 | 800 | 70 | 231 | .364 | .38 |
| March | 73,930 | 10,600 | 65 | 2,385 | 3.76 | 4.34 |
| April | 6,922 | 562 | 58 | 231 | .364 | .41 |
| May | 3,529 | 281 | 31 | 114 | .180 | .21 |
| June | 6,801 | 790 | 28 | 227 | .358 | .40 |
| July | 1,050 | 71 | 18 | 33.9 | .053 | .06 |
| August | 694 | 35 | 13 | 22.4 | .035 | .04 |
| September | 804 | 64 | 12 | 26.8 | .042 | .05 |
| Water year 1941-42 | 109,177 | 10,600 | 12 | 299 | .472 | 6.41 |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Nov. 20, Jan. 4, 5, Jan. 8 to Feb. 24; discharge computed on basis of one discharge measurement, weather records, and records for Flint River near Flint and Raisin River at Monroe.
*Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Clinton River at Mount Clemens, Mich.

Location.- Water-stage recorder, lat. 42°35'45", long. 82°54'35", 20 feet downstream from Moravian Drive highway bridge, a quarter of a mile downstream from confluence of North and South Branches, and half a mile west of Mount Clemens. Auxiliary wire-weight gage 8,500 feet downstream on Gratiot Avenue Bridge. Datum of gages is 570.43 feet above mean sea level, datum of 1929.

Drainage area.- 733 square miles.

Records available.- May 1934 to September 1942.

Extremes.- Maximum discharge during year, 4,150 second-feet Mar. 17 or 18 (estimated); minimum daily, 60 second-feet Oct. 1.
1934-42: Maximum discharge observed, 11,100 second-feet Feb. 14, 1938 (gage height, 19.64 feet); minimum gage height, 2.90 feet Oct. 15, 1934.

Remarks.- Records good Mar. 8 to Apr. 6 and fair the remainder of year except those below 150 second-feet during period June to September, which are poor. Discharge computed by using fall in the reach as a factor.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 60 | 154 | 109 | a200 | 900 | 190 | 640 | 199 | 945 | 160 | a150 | 218 |
| 2 | 65 | 184 | 133 | 229 | 700 | 170 | 580 | 208 | 910 | 129 | 209 | 155 |
| 3 | 73 | 154 | 127 | 180 | 550 | 150 | 477 | 213 | 647 | 145 | 230 | 167 |
| 4 | 125 | 132 | 123 | 160 | 450 | 170 | 450 | 218 | 454 | 156 | 188 | 181 |
| 5 | 137 | 121 | 113 | 140 | 400 | 450 | 426 | 210 | 315 | 130 | 160 | 179 |
| 6 | 104 | 122 | 147 | 130 | 350 | 650 | 395 | 181 | 270 | 138 | 151 | 141 |
| 7 | 80 | 186 | 127 | 120 | 350 | 950 | a1,090 | 180 | 363 | 182 | 134 | 138 |
| 8 | 125 | 200 | 113 | 110 | 260 | 1,290 | a1,330 | 182 | 316 | 132 | 212 | 139 |
| 9 | 121 | 183 | 126 | 100 | 230 | 2,320 | a1,020 | 166 | 251 | 132 | a350 | 231 |
| 10 | 80 | 153 | 152 | 110 | 230 | 2,020 | 858 | 166 | 197 | 123 | 598 | 146 |
| 11 | 96 | 156 | 195 | 115 | 230 | 1,210 | a1,870 | 172 | 205 | 156 | 600 | 154 |
| 12 | 101 | 151 | a150 | 120 | 230 | 910 | a2,170 | 176 | 339 | 175 | 345 | 114 |
| 13 | 88 | 141 | a130 | 125 | 190 | *788 | 1,290 | 181 | 530 | 121 | 286 | 144 |
| 14 | 97 | 143 | a120 | 130 | 190 | 685 | 910 | 174 | 454 | 144 | 239 | 106 |
| 15 | 110 | 134 | a110 | 140 | 190 | 655 | 752 | 187 | 415 | 101 | 215 | 124 |
| 16 | 102 | 136 | a120 | 150 | 190 | 685 | a610 | a700 | 314 | 123 | 210 | 188 |
| 17 | 104 | 124 | a130 | 180 | 450 | 2,660 | a540 | a580 | 269 | 159 | 164 | 208 |
| 18 | 99 | 126 | *126 | 170 | 700 | 3,520 | a480 | a460 | 220 | 121 | 164 | 164 |
| 19 | 88 | 119 | 122 | 180 | 550 | 1,720 | a430 | a380 | 184 | 132 | 156 | 154 |
| 20 | 88 | 138 | 133 | 190 | 400 | 1,050 | a400 | a330 | 150 | 123 | 138 | 178 |
| 21 | 99 | 139 | 120 | 150 | 340 | 980 | a360 | a270 | 190 | 163 | 131 | 195 |
| 22 | 92 | 118 | 110 | 150 | 290 | 1,020 | a330 | a240 | 209 | 255 | 156 | 156 |
| 23 | 124 | 129 | 113 | 160 | 240 | 840 | a310 | a200 | 168 | 151 | 244 | 141 |
| 24 | 90 | 138 | 203 | 150 | 210 | 700 | a290 | a180 | 146 | 134 | 197 | 154 |
| 25 | 100 | a150 | 416 | 180 | 190 | 655 | 267 | a170 | 170 | 93 | 171 | 142 |
| 26 | 85 | 145 | a370 | 190 | *190 | 610 | 235 | 186 | 149 | 116 | 164 | 196 |
| 27 | 72 | 129 | a320 | 190 | 200 | 580 | 222 | 187 | 132 | 113 | 153 | 175 |
| 28 | 82 | 122 | a290 | 190 | 190 | 640 | 211 | 212 | 133 | 91 | 184 | 180 |
| 29 | 85 | 138 | a260 | *150 | - | 718 | 195 | 176 | 132 | 345 | 224 | 162 |
| 30 | 99 | 119 | a230 | 150 | - | 655 | a190 | 200 | 120 | 118 | 173 | 153 |
| 31 | 93 | - | a210 | 400 | - | 670 | - | 385 | - | a130 | 186 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,964 | 137 | 60 | 95.6 | 0.130 | 0.15 |
| November | 4,284 | 200 | 118 | 143 | .195 | .22 |
| December | 5,248 | 416 | 109 | 169 | .231 | .27 |
| Calendar year 1941 | 101,860 | 4,000 | 25 | 279 | .381 | 5.18 |
| January | 5,039 | 400 | 100 | 163 | .222 | .26 |
| February | 9,590 | 900 | 190 | 342 | .467 | .49 |
| March | 30,311 | 3,520 | 150 | 978 | 1.33 | 1.53 |
| April | 19,328 | 2,170 | 190 | 644 | .879 | .98 |
| May | 7,669 | 700 | 166 | 247 | .337 | .39 |
| June | 9,297 | 945 | 120 | 310 | .423 | .47 |
| July | 4,491 | 345 | 91 | 145 | .198 | .23 |
| August | 6,882 | 600 | 131 | 222 | .303 | .35 |
| September | 4,903 | 231 | 106 | 163 | .222 | .25 |
| Water year 1941-42 | 110,006 | 3,520 | 60 | 301 | .411 | 5.59 |

* Winter discharge measurement made on this day.
a No gage-height record at one of the two gages; discharge computed on basis of gage heights at other of two gages, typical recession curves, weather records, and records for Cedar River at East Lansing.
Note.- Stage-discharge relation affected by ice Dec. 21, 22, Jan. 3 to Mar. 7.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## River Rouge at Detroit, Mich.

Location.- Chain gage, lat. 42°21'40", long. 83°15'15", on line between secs. 33 and 34, T. 1 S., R. 10 E., in Detroit and 3 miles above Middle Rouge River. Datum of gage is 579.90 feet above mean sea level.

Drainage area.- 194 square miles.

Records available.- November 1930 to September 1942.

Average discharge.- 12 years, 82.8 second-feet.

Extremes.- Maximum discharge observed during year, 1,300 second-feet Mar. 17 (gage height, 12.75 feet); minimum observed, 14 second-feet Oct. 2, 3; minimum gage height, 3.96 feet Oct. 2.

1930-42: Maximum discharge observed, 3,630 second-feet Feb. 20, 1939 (gage height, 18.87 feet), from rating curve extended above 1,300 second-feet; minimum observed, 2.7 second-feet Aug. 11, 1934 (gage height, 3.50 feet).

Remarks.- Records poor except those for August and September, which are fair. Gage read once daily prior to July 29, twice daily thereafter.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14 | a30 | 26 | a65 | a150 | a30 | 145 | 42 | 624 | a29 | 22 | 24 |
| 2 | 14 | a50 | 28 | 120 | 350 | 40 | a130 | a38 | a280 | a27 | 20 | 22 |
| 3 | 20 | 45 | 37 | a65 | a180 | a47 | 116 | a42 | a180 | a26 | 45 | 34 |
| 4 | 39 | a25 | a34 | a50 | 110 | 43 | a110 | 45 | a95 | a25 | 36 | 38 |
| 5 | a60 | 18 | 32 | 42 | 80 | a75 | a100 | a36 | a73 | a25 | 20 | 37 |
| 6 | 54 | 20 | a35 | 36 | 90 | 250 | a130 | a30 | a55 | 25 | 18 | 38 |
| 7 | 48 | 112 | a34 | a32 | a72 | a420 | 165 | a39 | a42 | a30 | 23 | 20 |
| 8 | 48 | a180 | 33 | 27 | a64 | a560 | 450 | 32 | a33 | a24 | 466 | 30 |
| 9 | 45 | a120 | 26 | 29 | 50 | 780 | a300 | a29 | a25 | a20 | 251 | 45 |
| 10 | 38 | 62 | 24 | 31 | 54 | a500 | 218 | a26 | a35 | 15 | 229 | 35 |
| 11 | 29 | a54 | 28 | a28 | 50 | a350 | 516 | a29 | a60 | a20 | 185 | 29 |
| 12 | a25 | 48 | 24 | 27 | a45 | a220 | a400 | 31 | 125 | a29 | 107 | 26 |
| 13 | 24 | a35 | 24 | a28 | a41 | 155 | 286 | a42 | a190 | a40 | 62 | 21 |
| 14 | 24 | 26 | a23 | a31 | a37 | *145 | a230 | a60 | a300 | a35 | 48 | 21 |
| 15 | 25 | a23 | 24 | 34 | a32 | a140 | a180 | a70 | a180 | a30 | 35 | 22 |
| 16 | 25 | a20 | 26 | a37 | 55 | a900 | 145 | a100 | a130 | a28 | 31 | 26 |
| 17 | a23 | *22 | 33 | 43 | 200 | 1,300 | a110 | a85 | a100 | a26 | 26 | 26 |
| 18 | a24 | 29 | *31 | a40 | a160 | 422 | a96 | a75 | a70 | a24 | 24 | 26 |
| 19 | a20 | a40 | 21 | 44 | 110 | a290 | a90 | a63 | a50 | a22 | 22 | 20 |
| 20 | 16 | a36 | 23 | a39 | 85 | 240 | 85 | a53 | 39 | a21 | 20 | a25 |
| 21 | a18 | 33 | a25 | a34 | a68 | a220 | a76 | a45 | a100 | a28 | 17 | 38 |
| 22 | 24 | a35 | 27 | a28 | a53 | a210 | 69 | 39 | a96 | a40 | 18 | 24 |
| 23 | 39 | a38 | 29 | 33 | a45 | 207 | a64 | a35 | a75 | a30 | a60 | 24 |
| 24 | 26 | 36 | 65 | a49 | 40 | a200 | a59 | a33 | a62 | a23 | 51 | 24 |
| 25 | a21 | a34 | a150 | a45 | a36 | 135 | 54 | 31 | a55 | a20 | 32 | 23 |
| 26 | a18 | 33 | a120 | 41 | *38 | a130 | a54 | a29 | a47 | a25 | 26 | 30 |
| 27 | a15 | a30 | a96 | a38 | a37 | a110 | 54 | a29 | a41 | a19 | 38 | 51 |
| 28 | a17 | 27 | a80 | a35 | a34 | a120 | a55 | a28 | a36 | a20 | 45 | 58 |
| 29 | a20 | 26 | 65 | *33 | - | a130 | a51 | a26 | a33 | 102 | 35 | 39 |
| 30 | a15 | a25 | 31 | 35 | - | 145 | a48 | a25 | a30 | 65 | 31 | 32 |
| 31 | a20 | - | 48 | a48 | - | a160 | - | a100 | - | 30 | 27 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 848 | 60 | 14 | 27.4 | 0.141 | 0.16 |
| November | 1,312 | 180 | 18 | 43.7 | .225 | .25 |
| December | 1,302 | 150 | 21 | 42.0 | .216 | .25 |
| Calendar year 1941 | 24,443 | 800 | 12 | 67.0 | .345 | 4.69 |
| January | 1,267 | 120 | 27 | 40.9 | .211 | .24 |
| February | 2,366 | 350 | 32 | 84.5 | .436 | .45 |
| March | 8,674 | 1,300 | 30 | 280 | 1.44 | 1.66 |
| April | 4,586 | 516 | 48 | 153 | .789 | .88 |
| May | 1,387 | 100 | 25 | 44.7 | .230 | .27 |
| June | 3,261 | 624 | 25 | 109 | .562 | .63 |
| July | 923 | 102 | 15 | 29.8 | .154 | .18 |
| August | 2,070 | 466 | 17 | 66.8 | .344 | .40 |
| September | 908 | 58 | 20 | 30.3 | .156 | .17 |
| Water year 1941-42 | 28,904 | 1,300 | 14 | 79.2 | .408 | 5.54 |

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for Cedar River at East Lansing and Clinton River at Mount Clemens.

Note.- Stage-discharge relation affected by ice Dec. 11-22, Jan. 2 to Mar. 6.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Raisin River at Monroe, Mich.

Location.- Water-stage recorder and concrete dam, lat. 41°54'50", long. 83°23'15", at municipal water-supply plant at Monroe, 4 miles upstream from mouth. Datum of gage is 570.00 feet above mean sea level (city of Monroe bench mark).
Drainage area.- 1,020 square miles.
Records available.- September 1937 to September 1942.
Extremes.- Maximum discharge during year, 5,700 second-feet Mar. 9, 17; maximum gage height, 8.64 feet Mar. 17; minimum discharge, 9 second-feet Oct. 1; minimum gage height, 5.53 feet July 3 (gates in dam open).
1937-42: Maximum discharge, that of Mar. 9, 17, 1942; maximum gage height, 8.87 feet Feb. 20, 1939; minimum discharge, about 2 second-feet Sept. 19, 20, 1941; minimum gage height observed, 3.22 feet Aug. 26, 1941 (gates in dam open).
Revisions.- Figures of minimum discharge for some water years have been revised, as shown in following table, superseding those published in water-supply papers indicated.

| Water-Supply Paper | Water year | Date | Gage height (feet) | Discharge (second-feet) |
|---|---|---|---|---|
| 854..... | 1937-38 | Sept. 4 | 5.51 | about 2 |
| 874..... | 1938-39 | July 27 | 5.56 | 15 |
| 894..... | 1939-40 | Aug. 3 | 5.53 | 6 |
| 924..... | 1940-41 | Sept.19, 20 | 5.51 | about 2 |

Remarks.- Records good except those below 50 second-feet, which are fair, and those for periods of ice effect, which are poor.
Cooperation.- Water-stage recorder inspected by employees of city of Monroe.
Revisions.- Revised figures of discharge, in second-feet, for the low-water periods in the water year 1941, superseding those published in Water-Supply Paper 924 are given herein:

| | | | | |
|---|---|---|---|---|
| Aug. 1.....22 | Aug. 18.....28 | Sept. 16.....28 | Sept. 20.....16 | Sept. 27.....23 |
| 7.....23 | 19.....23 | 17.....23 | 22.....26 | 28.....15 |
| 8.....19 | 20.....28 | 18.....19 | 23.....26 | 29.....15 |
| 9.....19 | Sept.15.....29 | 19.....11 | 26.....28 | 30..... 9 |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| August..... | 1,250 | 73 | 19 | 40.3 | 0.040 | 0.05 |
| September..... | 1,536 | 177 | 9 | 51.2 | .050 | .06 |
| Water year 1940-41..... | 125,971 | 2,570 | 9 | 345 | .338 | 4.59 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | 213 | 234 | 584 | b1,450 | 373 | 1,260 | 282 | 149 | 221 | 188 | 570 |
| 2 | 23 | 246 | 246 | 1,000 | 1,730 | 350 | 1,260 | 301 | 221 | 205 | 264 | 384 |
| 3 | 28 | 292 | 229 | b900 | 1,820 | 350 | 1,140 | 228 | 221 | e188 | 339 | 339 |
| 4 | 32 | 319 | 264 | b600 | 1,710 | 319 | 970 | 313 | 229 | 205 | 373 | 328 |
| 5 | 86 | 310 | 292 | b400 | 1,380 | b500 | 850 | 292 | 301 | 237 | 395 | 264 |
| 6 | 98 | 264 | 282 | b330 | 1,240 | b1,300 | 778 | 339 | 406 | 212 | 339 | 246 |
| 7 | 172 | 613 | 237 | b300 | 2,110 | b2,000 | 778 | 328 | 590 | 282 | 292 | 172 |
| 8 | 188 | 1,220 | 273 | b280 | 2,120 | b2,700 | 1,620 | 282 | 1,100 | 156 | 229 | 165 |
| 9 | 164 | 1,300 | 264 | b260 | 1,970 | 4,570 | 1,970 | 255 | 910 | 164 | 210 | 156 |
| 10 | 188 | 1,210 | 221 | b250 | 1,770 | 4,760 | 2,740 | 255 | 880 | 180 | 186 | 128 |
| 11 | 164 | 970 | 173 | b230 | 1,320 | 4,630 | 4,000 | 237 | 692 | 205 | 227 | 133 |
| 12 | 122 | 763 | 213 | b220 | 836 | 4,500 | 3,520 | 237 | 638 | 149 | 339 | 170 |
| 13 | 80 | 638 | 196 | b200 | 692 | 4,120 | 3,280 | 229 | 748 | 164 | 479 | 164 |
| 14 | 108 | 531 | 180 | b210 | 557 | *3,400 | 2,740 | 237 | 1,020 | 164 | 453 | 137 |
| 15 | 108 | 440 | 155 | b200 | 453 | 2,950 | 2,090 | 237 | 1,370 | 120 | 339 | 164 |
| 16 | 75 | 350 | 213 | b200 | 518 | 2,460 | 1,500 | 380 | 1,400 | 101 | 264 | 142 |
| 17 | 84 | 362 | 188 | b190 | 1,640 | 4,500 | 1,190 | 678 | 1,240 | 115 | 196 | 134 |
| 18 | 63 | 328 | 188 | b200 | 2,400 | 5,020 | 955 | 720 | 955 | 142 | 174 | 142 |
| 19 | 75 | 273 | *213 | 205 | 2,260 | 4,760 | 792 | 624 | 748 | 135 | 164 | 151 |
| 20 | 62 | 255 | 227 | 237 | 2,030 | 4,380 | 778 | 492 | 624 | 104 | 116 | 171 |
| 21 | 94 | 292 | 202 | 213 | 1,520 | 3,880 | 748 | 429 | 570 | 108 | 142 | 133 |
| 22 | 58 | 273 | 198 | 198 | 970 | 3,170 | 624 | 339 | 570 | 122 | 164 | 163 |
| 23 | 93 | 237 | 213 | 237 | 734 | 2,400 | 544 | 310 | 678 | 76 | 151 | 208 |
| 24 | 226 | 264 | 505 | 255 | 624 | 1,950 | 531 | 273 | 678 | 97 | 111 | 246 |
| 25 | 273 | 282 | 1,370 | 264 | 518 | 1,820 | 466 | 237 | 518 | 114 | 138 | 196 |
| 26 | 282 | 282 | 1,380 | 273 | 479 | 1,350 | 406 | 264 | 384 | 100 | 180 | 197 |
| 27 | 246 | 282 | 1,420 | 282 | *373 | 1,180 | 395 | 255 | 339 | 83 | 142 | 213 |
| 28 | 246 | 255 | 1,210 | 273 | 373 | 1,030 | 362 | 188 | 282 | 124 | 175 | 166 |
| 29 | 196 | 255 | 955 | 292 | - | 1,060 | 373 | 188 | 237 | 136 | 273 | 196 |
| 30 | 172 | 221 | 778 | *255 | - | 1,130 | 350 | 156 | 255 | 202 | 375 | 196 |
| 31 | 205 | - | 638 | b500 | - | 1,220 | - | 149 | - | 246 | 570 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October..... | 4,026 | 282 | 15 | 130 | 0.127 | 0.15 |
| November..... | 13,540 | 1,300 | 213 | 451 | .442 | .49 |
| December..... | 13,357 | 1,420 | 155 | 431 | .423 | .49 |
| Calendar year 1941 ..... | 128,856 | 2,570 | 9 | 353 | .346 | 4.70 |
| January..... | 10,036 | 1,000 | 190 | 324 | .318 | .37 |
| February..... | 35,597 | 2,400 | 373 | 1,271 | 1.25 | 1.30 |
| March..... | 78,232 | 5,020 | 319 | 2,524 | 2.47 | 2.85 |
| April..... | 39,010 | 4,000 | 350 | 1,300 | 1.27 | 1.42 |
| May..... | 9,734 | 720 | 149 | 314 | .308 | .36 |
| June..... | 18,953 | 1,400 | 149 | 632 | .620 | .69 |
| July..... | 4,857 | 282 | 76 | 157 | .154 | .18 |
| August..... | 7,987 | 570 | 111 | 258 | .253 | .29 |
| September..... | 6,174 | 570 | 128 | 206 | .202 | .23 |
| Water year 1941-42 ..... | 241,503 | 5,020 | 15 | 662 | .649 | 8.82 |

Peak discharge.- Feb. 3 (6 p.m.) 1,920 sec.-ft.; Feb. 7 (8 p.m.) 2,340 sec.-ft.; Feb. 18 (7 p.m.) 2,550 sec.-ft.; Mar. 9 (7 p.m.) 5,700 sec.-ft.; Mar. 17 (11:30 p.m.) 5,700 sec.-ft.; Apr. 11 (11:30 a.m.) 4,250 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
e Gate in control open part of day; discharge interpolated for part of day affected.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Maumee River at Antwerp, Ohio

Location.- Water-stage recorder, lat. 41°11'56", long. 84°44'40", in sec. 22, T. 3 N., R. 1 E., just downstream from highway bridge, 1 mile north of Antwerp, 7 miles downstream from State line, and 10 miles upstream from Marie DeLarme Creek. Datum of gage is 695.49 feet above mean sea level, adjustment of 1912.

Drainage area.- 2,049 square miles.

Records available.- September 1921 to December 1935, April 1939 to September 1942.

Average discharge.- 17 years, 1,464 second-feet.

Extremes.- Maximum discharge during year, 11,300 second-feet Feb. 7 (gage height, 14.2 feet); minimum, 54 second-feet Oct. 1 (gage height, 0.52 foot).
1921-35, 1939-42: Maximum discharge, 22,000 second-feet Jan. 16, 1930 (gage height, 19.4 feet); minimum, 24 second-feet Oct. 17, 1930, June 21, 22, 1933 (gage height, 0.32 foot).

Remarks.- Records good except those for period of ice effect, which are poor.

Rating table, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-7, Nov. 9 to Dec. 24)

| | | | | | |
|---|---|---|---|---|---|
| 0.9 | 117 | 3.0 | 850 | 8.0 | 4,400 |
| 1.2 | 184 | 3.5 | 1,100 | 10.0 | 6,400 |
| 1.5 | 268 | 4.0 | 1,380 | 13.0 | 9,800 |
| 2.0 | 436 | 5.0 | 2,000 | | |
| 2.5 | 625 | 6.0 | 2,700 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 57 | 153 | 189 | 670 | 3,500 | 648 | 2,490 | 489 | 259 | 290 | 1,810 | 585 |
| 2 | 60 | 253 | 189 | 1,060 | 3,260 | 605 | 2,420 | 446 | 253 | 278 | 1,620 | 565 |
| 3 | 72 | 207 | 230 | 1,500 | 2,420 | 545 | 2,140 | 446 | 287 | 210 | 1,210 | 471 |
| 4 | 93 | 230 | 259 | 1,160 | *1,940 | 526 | 1,940 | 526 | 259 | 265 | 1,260 | 416 |
| 5 | 205 | 207 | 265 | 850 | 3,590 | 545 | 1,680 | 471 | 238 | 320 | 1,210 | 416 |
| 6 | 418 | 202 | 241 | 700 | 6,400 | 1,280 | 1,470 | 385 | 247 | 351 | 1,000 | 471 |
| 7 | 1,070 | 500 | 230 | 550 | 10,700 | 2,350 | 1,440 | 648 | 307 | 605 | 850 | 409 |
| 8 | 1,130 | 692 | 205 | 600 | 10,400 | 2,700 | 3,670 | 715 | 489 | 507 | 2,220 | 615 |
| 9 | 648 | 625 | 197 | 500 | 7,940 | 7,020 | 5,820 | 605 | 545 | 375 | 3,860 | 2,000 |
| 10 | 409 | 507 | 189 | 400 | 5,180 | 9,080 | 8,700 | 526 | 625 | 324 | 3,180 | 1,800 |
| 11 | 274 | 388 | 189 | 350 | 3,680 | 9,800 | 10,400 | 507 | 489 | 268 | 3,260 | 1,160 |
| 12 | 207 | 354 | 172 | 330 | 2,940 | 9,440 | 10,300 | 464 | 412 | 278 | 2,860 | 850 |
| 13 | 184 | 297 | 167 | 320 | 2,280 | 8,600 | 9,560 | 468 | 446 | 224 | 2,070 | 648 |
| 14 | 170 | 278 | 160 | 300 | 1,740 | 7,830 | 8,960 | 412 | 941 | 271 | 1,500 | 507 |
| 15 | 147 | 241 | 182 | 280 | 1,320 | 6,840 | 8,000 | 382 | 2,210 | 278 | 1,080 | 422 |
| 16 | 138 | 218 | 147 | 260 | 1,870 | 5,880 | 5,920 | 489 | 1,800 | 192 | 850 | 439 |
| 17 | 125 | 192 | 151 | 240 | 6,840 | 7,280 | 3,500 | 489 | 1,350 | 205 | 715 | 1,020 |
| 18 | a119 | 167 | 153 | 250 | 7,610 | 9,560 | 2,350 | 471 | 1,080 | 160 | 692 | 828 |
| 19 | a113 | 182 | 153 | 250 | 5,880 | 9,680 | 1,740 | 625 | 875 | 184 | 805 | 625 |
| 20 | a107 | 170 | 156 | 250 | 3,770 | 8,490 | 1,380 | 828 | 692 | 194 | 648 | 973 |
| 21 | 101 | 210 | 165 | 250 | 3,020 | 7,720 | 1,210 | 875 | 3,010 | 556 | 526 | 726 |
| 22 | 103 | 194 | 167 | 240 | 2,700 | 7,830 | 1,000 | 1,080 | 2,560 | 216 | 460 | 526 |
| 23 | 101 | 184 | 184 | 260 | 2,280 | 5,480 | 715 | 925 | 1,620 | 156 | 772 | 446 |
| 24 | 109 | 207 | 705 | 270 | 1,800 | 3,860 | 782 | 570 | 1,100 | 136 | 1,680 | 429 |
| 25 | 115 | 230 | 1,560 | 280 | 1,320 | 2,780 | 738 | 565 | 828 | 138 | 1,240 | 395 |
| 26 | 97 | 253 | 1,560 | 280 | 950 | 2,140 | 692 | 507 | 625 | 128 | 782 | 354 |
| 27 | 97 | 238 | 1,560 | 280 | 805 | 1,800 | 625 | 429 | 507 | 117 | 648 | 314 |
| 28 | 101 | 213 | 1,350 | 280 | 738 | 1,870 | 605 | 388 | 426 | 115 | 950 | 382 |
| 29 | 128 | 205 | 1,130 | 300 | - | 2,140 | 565 | 341 | 375 | 140 | 1,180 | 416 |
| 30 | 125 | 197 | 925 | 327 | - | 2,280 | 526 | 310 | 324 | 254 | 850 | 460 |
| 31 | 121 | - | 738 | 1,120 | - | 2,420 | - | 287 | - | 622 | 670 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 6,944 | 1,130 | 57 | 224 | 0.109 | 0.13 |
| November | 8,194 | 692 | 153 | 273 | .133 | .15 |
| December | 13,868 | 1,560 | 147 | 447 | .218 | .25 |
| Calendar year 1941 | 201,781 | 3,640 | 57 | 553 | .270 | 3.66 |
| January | 14,707 | 1,500 | 240 | 474 | .231 | .27 |
| February | 106,873 | 10,700 | 738 | 3,817 | 1.86 | 1.94 |
| March | 149,019 | 9,800 | 526 | 4,807 | 2.35 | 2.71 |
| April | 101,338 | 10,400 | 526 | 3,378 | 1.65 | 1.84 |
| May | 16,669 | 1,080 | 287 | 538 | .263 | .30 |
| June | 25,179 | 3,010 | 238 | 839 | .409 | .46 |
| July | 8,357 | 622 | 115 | 270 | .132 | .15 |
| August | 42,458 | 3,860 | 460 | 1,370 | .669 | .77 |
| September | 19,668 | 2,000 | 314 | 656 | .320 | .36 |
| Water year 1941-42 | 513,274 | 10,700 | 57 | 1,406 | .686 | 9.33 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Jan. 5-29.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Maumee River near Defiance, Ohio

Location.- Water-stage recorder above spillway of dam, lat. 41°17'30", long. 84°16'50", in NW¼ sec. 22, T. 4 N., R. 5 E., 40 feet (revised) upstream from Independence Dam, 275 feet (revised) downstream from point of diversion to Miami & Erie Canal, 4 miles downstream from Auglaize River, and 4½ miles east of Defiance. Datum of gage is 659.12 feet above mean sea level.
Drainage area.- 5,530 square miles.
Records available.- November 1924 to December 1935, March 1939 to September 1942.
Average discharge.- 13 years (1925-35, 1939-42), 3,421 second-feet (not including flow in Miami & Erie Canal).
Extremes.- Maximum discharge during year, 43,200 second-feet Apr. 11 (gage height, 7.93 feet); minimum, 35 second-feet Oct. 1 (gage height, 1.39 feet).
1924-35, 1939-42: Maximum discharge, 87,000 second-feet Jan. 16, 1930 (gage height, 12.9 feet), from rating curve extended above 58,000 second-feet; minimum, 18 second-feet Aug. 2, 1934 (gage height, 1.24 feet).
Remarks.- Records good except those below 400 second-feet, which are fair. Flow affected by regulation of Auglaize River at hydroelectric plant of Toledo Edison Co., 3 miles south of Defiance. Diversion into Miami & Erie Canal above station not included in records; for miscellaneous measurements of this canal, see p. 107.

Rating tables, water year 1941-42 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 28 to June 20)

Oct. 1 to Feb. 6

| | | | | | |
|---|---|---|---|---|---|
| 1.4 | 40 | 2.0 | 1,000 | 4.0 | 9,720 |
| 1.5 | 117 | 2.3 | 1,770 | 4.5 | 12,800 |
| 1.6 | 226 | 2.6 | 2,710 | 5.0 | 16,200 |
| 1.7 | 380 | 3.0 | 4,240 | | |
| 1.8 | 570 | 3.5 | 6,830 | | |

Feb. 7 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 1.5 | 140 | 2.3 | 1,840 | 4.5 | 12,800 |
| 1.6 | 270 | 2.6 | 2,800 | 5.0 | 16,200 |
| 1.7 | 430 | 3.0 | 4,360 | 6.0 | 24,600 |
| 1.8 | 625 | 3.5 | 6,850 | 7.0 | 34,100 |
| 2.0 | 1,060 | 4.0 | 9,720 | 8.0 | 44,100 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 51 | 452 | 416 | 1,850 | 4,120 | 1,300 | 7,130 | 906 | 1,230 | 566 | 1,560 | 1,380 |
| 2 | 108 | 346 | 416 | 3,160 | 5,760 | 1,280 | 8,260 | 818 | 1,950 | 508 | 2,870 | 1,020 |
| 3 | 178 | 632 | 380 | 3,900 | 4,730 | 1,080 | 8,260 | 884 | 2,270 | 566 | 2,400 | 862 |
| 4 | 126 | 570 | 416 | 3,430 | 3,990 | 950 | 7,410 | 928 | 1,380 | 398 | 1,960 | 690 |
| 5 | 164 | 530 | 632 | 4,190 | 7,290 | 1,480 | 5,950 | 1,420 | 1,200 | 547 | 1,840 | 566 |
| 6 | 269 | 578 | 470 | 1,230 | 13,600 | 3,160 | 5,100 | 1,600 | 972 | 732 | 1,480 | 488 |
| 7 | 2,380 | 955 | 363 | 933 | 29,200 | 5,150 | 5,050 | 972 | 606 | 906 | 1,350 | 646 |
| 8 | 3,900 | 1,290 | 470 | 1,070 | 30,100 | 7,590 | 10,600 | 1,250 | 840 | 884 | 3,550 | 690 |
| 9 | 3,170 | 1,440 | 346 | 955 | 22,800 | 21,800 | 21,500 | 1,460 | 906 | 972 | 5,390 | 2,460 |
| 10 | 1,550 | 1,420 | 298 | 736 | 15,200 | 31,100 | 34,100 | 1,080 | 862 | 662 | 5,950 | 4,450 |
| 11 | 911 | 1,070 | 254 | 653 | 10,300 | 31,100 | 42,300 | 1,180 | 928 | 690 | 4,950 | 3,020 |
| 12 | 398 | 844 | 268 | 570 | 6,530 | 24,600 | 41,300 | 1,080 | 862 | 972 | 4,720 | 2,020 |
| 13 | 434 | 632 | 330 | 510 | 4,190 | 19,800 | 32,100 | 906 | 797 | 906 | 3,430 | 1,250 |
| 14 | 346 | 653 | 226 | 434 | 3,270 | 16,600 | 21,100 | 972 | 1,840 | 646 | 2,430 | 1,110 |
| 15 | 226 | 510 | 254 | 434 | 2,770 | 14,800 | 16,200 | 1,340 | 2,940 | 508 | 1,640 | 840 |
| 16 | 167 | 363 | 314 | 416 | 5,330 | 14,100 | 12,100 | 1,740 | 3,660 | 508 | 1,620 | 950 |
| 17 | 202 | 516 | 314 | 346 | 15,600 | 20,200 | 8,550 | 3,780 | 2,910 | 414 | 1,250 | 732 |
| 18 | 226 | 346 | 298 | 346 | 22,800 | 26,400 | 5,190 | 2,980 | 2,200 | 318 | 1,460 | 1,160 |
| 19 | 156 | 298 | 298 | 363 | 18,600 | 24,600 | 2,910 | 2,110 | 1,620 | 270 | 1,230 | 1,060 |
| 20 | 178 | 380 | 298 | 363 | 12,800 | 19,600 | 2,840 | 2,040 | 1,720 | 257 | 1,160 | 1,020 |
| 21 | 268 | 330 | 254 | 363 | 8,840 | 16,200 | 2,530 | 2,270 | 4,950 | 257 | 1,020 | 1,200 |
| 22 | 167 | 346 | 363 | 346 | 6,210 | 13,400 | 2,110 | 2,490 | 8,550 | 528 | 884 | 1,020 |
| 23 | 167 | 380 | 398 | 363 | 4,950 | 11,500 | 1,780 | 2,200 | 8,640 | 382 | 2,240 | 818 |
| 24 | 156 | 470 | 2,480 | 416 | 3,660 | 8,550 | 1,400 | 1,840 | 6,000 | 302 | 1,480 | 754 |
| 25 | 167 | 570 | 4,370 | 398 | 2,200 | 6,420 | 1,460 | 1,230 | 3,350 | 192 | 1,900 | 668 |
| 26 | 167 | 490 | 5,060 | 452 | 1,810 | 4,580 | 1,160 | 1,200 | 1,780 | 179 | 1,380 | 606 |
| 27 | 212 | 550 | 3,900 | 452 | 1,590 | 4,070 | 1,350 | 994 | 1,160 | 166 | 1,180 | 547 |
| 28 | 202 | 490 | 2,820 | 416 | 1,350 | 5,050 | 1,160 | 840 | 994 | 166 | 3,090 | 508 |
| 29 | 136 | 530 | 2,610 | 434 | - | 6,420 | 994 | 776 | 884 | 398 | 3,160 | 606 |
| 30 | 226 | 380 | 2,010 | 398 | - | 6,800 | 972 | 586 | 666 | 205 | 2,980 | 668 |
| 31 | 202 | - | 1,460 | 2,620 | - | 6,650 | - | 508 | - | 928 | 1,930 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 17,210 | 3,900 | 51 | 555 | | |
| November | 18,361 | 1,440 | 298 | 612 | | |
| December | 32,786 | 5,060 | 226 | 1,058 | | |
| Calendar year 1941 | 440,364 | 6,260 | 45 | 1,206 | | |
| January | 32,547 | 4,190 | 346 | 1,050 | | |
| February | 269,590 | 30,100 | 1,350 | 9,628 | | |
| March | 376,730 | 31,100 | 950 | 12,150 | | |
| April | 312,866 | 42,300 | 972 | 10,430 | | |
| May | 44,380 | 3,780 | 508 | 1,432 | | |
| June | 69,069 | 8,640 | 606 | 2,302 | | |
| July | 16,153 | 972 | 166 | 521 | | |
| August | 73,504 | 5,950 | 884 | 2,371 | | |
| September | 33,829 | 4,450 | 486 | 1,128 | | |
| Water year 1941-42 | 1,297,025 | 42,300 | 51 | 3,553 | | |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Maumee River at Waterville, Ohio

Location.- Water-stage recorder, lat. 41°30'00", long. 83°42'46", at highway bridge at Waterville, Lucas County, 3 miles downstream from Tontogany Creek. Datum of gage is 596.33 feet above mean sea level, adjustment of 1912.

Drainage area.- 6,314 square miles.

Records available.- November 1898 to December 1901, August 1921 to December 1935, March 1939 to September 1942.

Average discharge.- 17 years (1921-35, 1939-42), 4,066 second-feet (does not include flow in Miami & Erie Canal; canal was abandoned in 1929 and was filled in prior to March 1939).

Extremes.- Maximum discharge during year, 49,800 second-feet Feb. 7 (gage height, 10.88 feet); minimum, 40 second-feet Oct. 2, 3.
1921-35, 1939-42: Maximum discharge recorded, 75,000 second-feet Jan. 16, 1930 (gage height, 13.60 feet); minimum, 32 second-feet Sept. 29, 1941.

Remarks.- Records good except those below 150 second-feet, and those for periods of ice effect, which are fair. Low flow slightly regulated by power plants above station.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 24, May 19 to June 2, and Sept. 23-30)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.4 | 40 | 1.8 | 264 | 3.0 | 2,320 | 4.5 | 7,250 | 7.0 | 20,200 |
| 1.5 | 70 | 2.0 | 500 | 3.4 | 3,380 | 5.0 | 9,350 | 8.0 | 26,900 |
| 1.6 | 115 | 2.4 | 1,110 | 3.8 | 4,640 | 5.5 | 11,700 | 9.0 | 34,300 |
| 1.7 | 180 | 2.7 | 1,650 | 4.1 | 5,720 | 6.0 | 14,300 | 10.0 | 42,200 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 74 | 726 | 487 | 1,460 | 5,000 | 1,360 | 8,700 | 1,030 | 930 | 680 | 1,710 | 1,970 |
| 2 | 45 | 620 | 500 | 3,440 | 7,650 | 1,320 | 9,350 | 1,030 | 1,880 | 575 | 2,220 | 1,320 |
| 3 | 60 | 465 | 515 | 5,540 | 8,270 | 1,200 | 9,130 | 950 | 4,300 | 560 | 3,300 | 1,080 |
| 4 | 60 | 740 | 487 | 4,500 | 5,720 | 1,000 | 8,700 | 1,010 | 2,880 | 680 | 2,370 | 950 |
| 5 | 205 | 680 | 695 | 5,000 | 6,670 | 2,000 | 7,250 | 950 | 1,760 | 515 | 1,820 | 815 |
| 6 | 154 | 725 | 735 | 2,500 | 12,900 | 3,500 | 6,100 | 1,480 | 1,540 | 695 | 1,650 | 575 |
| 7 | 1,100 | 1,370 | 385 | 1,300 | *32,000 | 4,990 | 5,540 | 1,700 | 1,210 | 998 | 1,350 | 575 |
| 8 | 3,670 | 1,250 | 590 | 1,150 | 36,600 | 7,330 | 13,200 | 1,050 | 770 | 905 | 1,990 | 710 |
| 9 | 4,200 | 1,610 | 515 | 1,000 | 30,600 | 25,200 | 20,800 | 1,440 | 1,050 | 935 | 5,540 | 1,800 |
| 10 | 2,890 | 1,690 | 318 | 825 | 20,200 | 34,300 | 35,800 | 1,280 | 1,090 | 966 | 6,100 | 4,990 |
| 11 | 1,300 | 1,520 | 329 | 725 | 13,200 | 35,800 | 46,400 | 1,060 | 1,090 | 966 | 5,910 | 4,470 |
| 12 | 935 | 1,080 | 264 | 630 | 8,500 | 29,000 | 45,600 | 1,200 | 1,130 | 905 | 5,350 | 2,800 |
| 13 | 530 | 905 | 329 | 560 | 6,000 | 22,800 | 39,000 | 1,010 | 998 | 1,010 | 4,300 | 1,730 |
| 14 | 620 | 650 | 350 | 500 | 4,000 | 20,200 | 26,900 | 890 | 1,780 | 785 | 2,940 | 1,200 |
| 15 | 474 | 830 | 266 | 500 | 3,580 | 17,200 | 19,000 | 845 | 2,780 | 575 | 2,220 | 982 |
| 16 | 329 | 515 | 296 | 475 | 4,270 | 16,600 | 14,600 | 1,950 | 4,470 | 500 | 1,650 | 905 |
| 17 | 256 | 449 | 329 | 400 | 18,400 | 25,500 | 10,300 | 3,390 | 3,860 | 560 | 1,250 | 920 |
| 18 | 361 | 680 | 350 | 400 | 26,900 | 29,000 | 6,670 | 4,040 | 2,910 | 474 | 1,370 | 860 |
| 19 | 361 | 487 | 307 | 425 | 25,500 | *28,300 | 3,970 | 2,750 | 2,100 | 350 | 1,330 | 1,200 |
| 20 | 247 | 605 | 318 | 425 | 20,000 | 23,400 | 2,860 | 1,930 | 1,670 | 264 | 1,180 | 1,060 |
| 21 | 329 | 474 | 256 | 425 | 13,500 | 19,600 | 2,650 | 2,620 | 4,640 | 168 | 1,060 | 982 |
| 22 | 340 | 307 | 318 | 400 | 9,000 | 16,600 | 2,420 | 2,880 | 6,270 | 230 | 1,030 | 1,140 |
| 23 | 340 | 487 | 410 | 425 | 6,500 | 13,500 | 1,970 | 2,630 | 10,500 | 449 | 1,820 | 755 |
| 24 | 247 | 500 | 1,190 | 450 | 5,000 | 10,300 | 1,730 | 2,200 | 7,860 | 423 | 1,690 | 800 |
| 25 | 230 | 545 | 4,640 | 430 | 3,500 | 7,250 | 1,500 | 1,710 | 4,820 | 318 | 1,610 | 474 |
| 26 | 174 | 710 | 6,290 | 500 | 2,250 | 5,540 | 1,570 | 1,330 | 2,600 | 239 | 1,650 | 530 |
| 27 | 275 | 515 | 5,350 | 500 | 1,700 | 4,470 | 1,320 | 1,130 | 1,570 | 239 | 1,260 | 515 |
| 28 | 307 | 560 | 3,820 | 480 | 1,500 | 5,350 | 1,440 | 1,060 | 1,140 | 230 | 4,160 | 372 |
| 29 | 286 | 650 | 2,940 | 470 | - | 7,060 | 1,140 | 998 | 1,010 | 247 | 6,480 | 247 |
| 30 | 247 | 560 | 2,440 | 600 | - | 7,860 | 1,080 | 890 | 950 | 410 | 5,350 | 500 |
| 31 | 318 | - | 1,990 | 3,000 | - | 8,060 | - | 665 | - | 1,730 | 2,960 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 20,964 | 4,200 | 45 | 676 | 0.107 | 0.12 |
| November | 22,905 | 1,690 | 307 | 764 | .121 | .14 |
| December | 38,029 | 6,290 | 256 | 1,227 | .194 | .22 |
| Calendar year 1941 | 515,286 | 11,900 | 36 | 1,412 | .224 | 3.04 |
| January | 39,455 | 5,540 | 400 | 1,273 | .202 | .23 |
| February | 338,910 | 36,600 | 1,500 | 12,100 | 1.92 | 2.00 |
| March | 435,590 | 35,800 | 1,000 | 14,050 | 2.23 | 2.57 |
| April | 356,690 | 46,400 | 1,080 | 11,890 | 1.68 | 2.10 |
| May | 49,298 | 4,040 | 665 | 1,590 | .252 | .29 |
| June | 63,558 | 10,500 | 770 | 2,785 | .441 | .49 |
| July | 18,601 | 1,730 | 168 | 600 | .095 | .11 |
| August | 84,620 | 6,480 | 1,030 | 2,730 | .432 | .50 |
| September | 37,227 | 4,990 | 247 | 1,241 | .197 | .22 |
| Water year 1941-42 | 1,525,647 | 46,400 | 45 | 4,180 | .662 | 8.99 |

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Jan. 4 to Feb. 1, Feb. 12-14, Feb. 20 to Mar. 6 (no gage-height record Jan. 11 to Feb. 1, Feb. 26 to Mar. 5; discharge computed on basis of records for station near Defiance).

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## St. Marys River near Fort Wayne, Ind.

Location.- Water-stage recorder, lat. 41°00', long. 85°08', in sec. 35, T. 30 N., R. 12 E., 130 feet downstream from highway bridge, 4 miles south of Fort Wayne, and 12 miles upstream from mouth.
Drainage area.- 753 square miles.
Records available.- November 1930 to September 1942 in reports of Geological Survey. October 1924 to October 1925 and July to September 1927 in reports of Indiana Department of Conservation.
Average discharge.- 10 years (1931-33, 1934-42), 459 second-feet.
Extremes.- Maximum discharge during year, 5,630 second-feet Apr. 13 (gage height, 12.74 feet); minimum, 12 second-feet Oct. 1, 2; minimum gage height, 0.52 foot Oct. 1.
1930-42: Maximum discharge observed, 9,430 second-feet Jan. 17, 1937 (gage height, 16.83 feet), from rating curve extended above 4,000 second-feet; minimum observed, 3.4 second-feet Oct. 19, 1934 (gage height, 0.28 foot).
Remarks.- Records good except those for periods of ice effect and those for periods of backwater from aquatic vegetation or leaves, which are fair.

Rating tables, water year 1941-42, except periods of ice effect and of backwater from weeds and leaves (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Feb. 6 | | | | Feb. 7 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.5 | 11 | 1.2 | 63 | 0.6 | 16 | 2.5 | 244 | 8.0 | 2,220 |
| .6 | 15 | 1.6 | 113 | .7 | 22 | 3.0 | 354 | 10.0 | 3,460 |
| .7 | 20 | 2.0 | 171 | 1.0 | 44 | 4.0 | 630 | 12.0 | 5,000 |
| .8 | 26 | 2.5 | 258 | 1.3 | 73 | 5.0 | 940 | 12.7 | 5,630 |
| .9 | 33 | 3.0 | 361 | 1.6 | 107 | 6.0 | 1,310 | | |
| 1.0 | 42 | 4.0 | 603 | 2.0 | 159 | 7.0 | 1,740 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 30 | 42 | 144 | 450 | 160 | 601 | 78 | 76 | 33 | 645 | 58 |
| 2 | 12 | 91 | 42 | 527 | 230 | 140 | 515 | 72 | 80 | 28 | 296 | 56 |
| 3 | 16 | 75 | 39 | 300 | *165 | 130 | 459 | 70 | 61 | 28 | 168 | 53 |
| 4 | 22 | 52 | 37 | 200 | 240 | 125 | 459 | 75 | 53 | 28 | 148 | 52 |
| 5 | 79 | 40 | 37 | 170 | 1,400 | 140 | 405 | 95 | 49 | 32 | 112 | 46 |
| 6 | 149 | 47 | 37 | *200 | 3,000 | *180 | 318 | 284 | 53 | 129 | 77 | 35 |
| 7 | 661 | 110 | 33 | 160 | 4,440 | 210 | 530 | 330 | 68 | 54 | 170 | 30 |
| 8 | 277 | 127 | 32 | 115 | 3,390 | 549 | 2,220 | 244 | 54 | 35 | 543 | 151 |
| 9 | 117 | 105 | 31 | 100 | *2,220 | 3,180 | 2,680 | 193 | 46 | 31 | 432 | 330 |
| 10 | 83 | 85 | 29 | 95 | 1,510 | 3,740 | 4,280 | 172 | 58 | 32 | 675 | 296 |
| 11 | 77 | 65 | *30 | 75 | 1,310 | 3,740 | 4,920 | 146 | 82 | 32 | 529 | 216 |
| 12 | 63 | 53 | 24 | 65 | *1,190 | 3,530 | 5,360 | 122 | 84 | 29 | 242 | 155 |
| 13 | 54 | 45 | 27 | 58 | 1,010 | 3,040 | 5,630 | 106 | 253 | 32 | 136 | 105 |
| 14 | 44 | 39 | 27 | 55 | 630 | 2,620 | 5,000 | 97 | 1,120 | 41 | 86 | 70 |
| 15 | 38 | 35 | 25 | 55 | 330 | 2,170 | 3,600 | 100 | 572 | 29 | 67 | 48 |
| 16 | 32 | 34 | 24 | 54 | 1,210 | 1,620 | 1,780 | 137 | 379 | 26 | 101 | 41 |
| 17 | 28 | 31 | 27 | 54 | 2,800 | *2,920 | 940 | 162 | 354 | 24 | 282 | 47 |
| 18 | 25 | 27 | 33 | 56 | 2,560 | 2,860 | 601 | 318 | 285 | 23 | 379 | 51 |
| 19 | 24 | 25 | 43 | 60 | 1,640 | 2,320 | 379 | 473 | 185 | 21 | 252 | 45 |
| 20 | 25 | 32 | 45 | 58 | 1,500 | 2,320 | 274 | 572 | 218 | 21 | 192 | 41 |
| 21 | 24 | 40 | 43 | 52 | 1,300 | 2,170 | 218 | 630 | 542 | 19 | 128 | 41 |
| 22 | 24 | 32 | 38 | 47 | 1,100 | 1,780 | 180 | 601 | 184 | 18 | 106 | 48 |
| 23 | 24 | 33 | 55 | 45 | 850 | 1,190 | 159 | 446 | 101 | 18 | 157 | 40 |
| 24 | 22 | 75 | 405 | 43 | 450 | 750 | 141 | 330 | 72 | 17 | 81 | 32 |
| 25 | 20 | 77 | 429 | 40 | 330 | 515 | 128 | 233 | 60 | 17 | 48 | 30 |
| 26 | 17 | 61 | 318 | 36 | 250 | 366 | 117 | 177 | 54 | 17 | 38 | 30 |
| 27 | 16 | 51 | 248 | 32 | 210 | 307 | 108 | 141 | 46 | 20 | 168 | 29 |
| 28 | 16 | 46 | 239 | 32 | 180 | 529 | 100 | 120 | 42 | 19 | 473 | 26 |
| 29 | 15 | 42 | 197 | 35 | - | 660 | 91 | 105 | 39 | 18 | 153 | 23 |
| 30 | 15 | 41 | 141 | 40 | - | 616 | 84 | 88 | 37 | 22 | 105 | 20 |
| 31 | 16 | - | 112 | 500 | - | 616 | - | 77 | - | 231 | 84 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,047 | 661 | 12 | 66.0 | 0.088 | 0.10 |
| November | 1,646 | 127 | 25 | 54.9 | .073 | .08 |
| December | 2,889 | 429 | 24 | 93.2 | .124 | .14 |
| Calendar year 1941 | 63,218 | 2,970 | 12 | 173 | .230 | 3.11 |
| January | 3,503 | 527 | 32 | 113 | .150 | .17 |
| February | 35,895 | 4,440 | 165 | 1,282 | 1.70 | 1.77 |
| March | 45,393 | 3,740 | 125 | 1,464 | 1.94 | 2.24 |
| April | 42,277 | 5,630 | 84 | 1,409 | 1.87 | 2.09 |
| May | 6,794 | 630 | 70 | 219 | .291 | .34 |
| June | 5,307 | 1,120 | 37 | 177 | .235 | .26 |
| July | 1,124 | 231 | 17 | 36.3 | .048 | .06 |
| August | 7,123 | 675 | 38 | 230 | .305 | .35 |
| September | 2,245 | 330 | 20 | 74.8 | .099 | .11 |
| Water year 1941-42 | 156,243 | 5,630 | 12 | 428 | .568 | 7.71 |

Peak discharge.- Feb. 7 (4 a.m.) 4,760 sec.-ft.; Mar. 11 (1 a.m.) 3,810 sec.-ft.; Mar. 17 (7 p.m.) 3,250 sec.-ft.; Apr. 13 (10 a.m.) 5,630 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 15, Jan. 3 to Feb. 6, Feb. 20 to Mar. 7. Backwater from aquatic vegetation or leaves Oct. 1-4, Oct. 9 to Nov. 8, July 30 to Sept. 30.
Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## STREAMS TRIBUTARY TO LAKE ERIE

### St. Joseph River near Fort Wayne, Ind.

Location.- Water-stage recorder, lat. 41°10', long. 85°04', in SW¼NW¼SE¼ sec. 4, T. 31 N., R. 13 E., at Ely Bridge on Mayhew Road, 3½ miles downstream from Cedar Creek and 8 miles northeast of Fort Wayne.
Drainage area.- 1,060 square miles.
Records available.- August 1941 to September 1942.
Extremes.- 1941: Maximum daily discharge during August and September, 124 second-feet Sept. 4; minimum daily, 27 second-feet Aug. 21; minimum gage height, 1.40 feet Sept. 20, 29.
1941-42: Maximum discharge during water year, 6,650 second-feet Mar. 18 (gage height, 12.81 feet); minimum daily, 38 second-feet Oct. 1; minimum gage height, 1.47 feet Oct. 1.
Remarks.- Records good except those below 100 second-feet and those for periods of ice effect, which are fair.

Discharge, in second-feet, 1941-42

1941

| Day | Aug. | Sept. | Day | Aug. | Sept. | Day | Aug. | Sept. | Day | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | 46 | 9 | k46 | 55 | 17 | k37 | k43 | 25 | 64 | k49 |
| 2 | - | 46 | 10 | 47 | 46 | 18 | k34 | 43 | 26 | 68 | k40 |
| 3 | - | 44 | 11 | k46 | k44 | 19 | k31 | 41 | 27 | 52 | k44 |
| 4 | - | 124 | 12 | k43 | k47 | 20 | k28 | k43 | 28 | 47 | k52 |
| 5 | - | 103 | 13 | k38 | k48 | 21 | k27 | k40 | 29 | 46 | k44 |
| 6 | - | 73 | 14 | k38 | k51 | 22 | k34 | 41 | 30 | k52 | k37 |
| 7 | - | 70 | 15 | k46 | k48 | 23 | k46 | k44 | 31 | k51 | - |
| 8 | k47 | k54 | 16 | k49 | k38 | 24 | k37 | k48 | | | |

k Stage-discharge relation affected by operation of turbine at dam 6 miles downstream.

1941-42

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | k38 | 122 | 126 | 407 | 2,000 | 450 | 1,730 | 322 | 152 | 187 | 633 | 446 |
| 2 | k47 | 135 | 135 | 810 | 1,400 | 350 | 1,620 | 306 | 159 | 170 | 529 | 309 |
| 3 | 59 | 129 | 175 | 750 | *1,550 | 280 | 1,370 | 286 | 152 | 170 | 995 | 259 |
| 4 | 70 | 120 | 177 | 650 | *1,450 | 200 | 1,120 | 284 | 175 | 194 | 950 | 368 |
| 5 | 81 | 118 | 173 | 550 | 2,300 | 975 | 930 | 324 | 184 | 292 | 830 | 407 |
| 6 | 103 | 177 | 155 | 420 | 3,000 | *2,030 | 830 | 324 | 227 | 329 | 649 | 309 |
| 7 | 189 | 407 | 150 | *280 | 4,600 | 2,150 | 970 | 276 | 294 | 286 | 633 | 342 |
| 8 | 215 | 433 | 146 | 250 | *3,890 | 2,760 | 2,550 | 259 | 558 | 259 | 1,320 | 543 |
| 9 | 159 | 307 | 141 | 220 | *2,690 | 5,090 | 2,900 | 249 | 529 | 222 | 1,470 | 665 |
| 10 | 108 | 254 | 131 | 200 | 2,210 | 5,410 | 4,450 | 239 | 381 | 242 | 1,850 | 501 |
| 11 | 101 | 236 | 144 | 190 | 1,650 | 5,010 | 4,850 | 239 | 299 | 212 | 1,790 | 407 |
| 12 | 95 | 224 | 112 | 180 | *1,150 | 4,770 | 3,970 | 224 | 282 | 189 | 1,570 | 316 |
| 13 | 79 | 196 | 120 | 165 | 950 | 4,290 | 3,410 | 219 | 324 | 215 | 1,170 | 252 |
| 14 | 81 | 177 | 122 | 160 | 800 | 3,890 | 2,900 | 210 | 764 | 173 | 830 | 212 |
| 15 | 70 | 159 | *120 | 155 | 650 | 3,490 | 2,340 | 205 | 1,100 | 194 | 633 | 498 |
| 16 | 68 | 150 | 114 | 150 | 1,100 | 3,110 | 1,730 | 249 | 830 | k166 | 501 | 970 |
| 17 | 70 | 161 | 110 | 145 | 2,000 | 5,970 | 1,220 | 254 | 649 | k158 | 407 | 649 |
| 18 | 75 | 133 | *110 | 155 | 1,800 | 6,380 | 930 | 256 | 515 | 108 | 342 | 487 |
| 19 | 79 | 129 | 110 | 155 | *1,900 | 5,650 | 770 | 272 | 420 | 116 | 292 | 501 |
| 20 | 66 | 133 | 110 | 170 | 2,000 | 5,010 | 700 | 249 | 558 | 171 | 269 | 460 |
| 21 | 62 | 131 | 103 | 155 | 1,800 | 4,530 | 618 | 246 | 1,100 | 101 | 254 | 381 |
| 22 | 68 | 133 | 106 | 140 | 1,500 | 3,890 | 558 | 264 | 1,070 | 97 | 296 | 342 |
| 23 | 71 | 133 | 180 | 150 | 1,200 | 2,970 | 515 | 210 | 790 | 101 | 1,320 | 355 |
| 24 | 70 | 137 | 649 | 145 | 1,000 | 2,150 | 487 | 210 | 618 | 93 | 950 | 299 |
| 25 | 75 | 141 | 770 | 135 | 850 | 1,570 | 446 | 182 | 474 | 93 | 587 | 242 |
| 26 | 71 | 141 | 890 | 135 | 750 | 1,320 | 420 | 182 | 368 | 77 | 460 | 259 |
| 27 | 83 | 139 | 970 | 130 | 650 | 1,120 | 394 | 177 | 296 | 93 | 407 | 312 |
| 28 | 95 | 133 | 770 | 130 | 550 | 1,270 | 368 | 170 | 242 | 137 | 501 | 433 |
| 29 | 93 | 133 | 633 | 125 | - | 1,470 | 355 | 166 | 224 | 224 | 501 | 460 |
| 30 | 95 | 133 | 529 | 120 | - | 1,570 | 329 | 150 | 236 | 322 | 446 | 460 |
| 31 | 89 | - | 433 | 1,300 | - | 1,670 | - | 152 | - | 682 | 487 | - |

Peak discharge.- Mar. 10 (2 a.m.) 5,570 sec.-ft.; Mar. 18 (2 a.m.) 6,650 sec.-ft.; Apr. 11 (4:30 a.m.) 5,010 sec.-ft.)
* Winter discharge measurement made on this day.
k Stage-discharge relation affected by operation of turbine at dam 6 miles downstream.
Note.- Stage discharge relation affected by ice Dec. 15, Jan. 3 to Feb. 7, Feb. 11 to Mar. 4.

Monthly discharge, in second-feet, 1941-42

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| August 8-31, 1941 | 1,054 | 68 | 27 | 43.9 | 0.414 | 0.37 |
| September | 1,546 | 124 | 37 | 51.5 | .486 | .54 |
| October 1941 | 2,725 | 215 | 38 | 87.9 | .083 | .10 |
| November | 5,254 | 433 | 118 | 175 | .165 | .18 |
| December | 8,714 | 970 | 103 | 281 | .265 | .31 |
| January 1942 | 8,827 | 1,300 | 120 | 285 | .269 | .31 |
| February | 47,390 | 4,600 | 550 | 1,692 | 1.60 | 1.66 |
| March | 90,795 | 6,380 | 200 | 2,929 | 2.76 | 3.19 |
| April | 45,780 | 4,850 | 329 | 1,526 | 1.44 | 1.61 |
| May | 7,355 | 324 | 150 | 237 | .224 | .26 |
| June | 13,970 | 1,100 | 152 | 466 | .440 | .49 |
| July | 6,073 | 682 | 77 | 196 | .185 | .21 |
| August | 23,872 | 1,850 | 254 | 770 | .726 | .84 |
| September | 12,444 | 970 | 212 | 414 | .392 | .44 |
| Water year 1941-42 | 273,199 | 6,380 | 38 | 748 | .706 | 9.60 |

Time basis: Central standard time prior to 2 a.m., Feb. 9, 1942; central war time thereafter. To convert war time to standard time, subtract 1 hour.

## Tiffin River at Stryker, Ohio

Location.- Water-stage recorder, lat. 41°30'05", long. 84°25'50", in SW¼ sec. 5, T. 6 N., R. 4 E., at electric railroad bridge at west edge of Stryker. Datum of gage is 685.5 feet above mean sea level, adjustment of 1912.

Drainage area.- 444 square miles.

Records available.- October 1940 to September 1942. September 1921 to September 1928 at site about 3 miles downstream, published as Tiffin River near Stryker.

Extremes.- Maximum discharge during year, 3,280 second-feet Mar. 10, 18; maximum gage height, 12.78 feet Feb. 21 or 22 (result of ice jam); minimum discharge, 13 second-feet Oct. 1; minimum gage height, 1.19 feet July 25.
1921-28, 1940-42: Maximum discharge, that of Mar. 10, 18, 1942; minimum, 5.0 second-feet Sept. 20, 1941.

Remarks.- Records fair except those for periods of ice effect, which are poor.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 8, Sept. 1-30)

| | | | | | |
|---|---|---|---|---|---|
| 1.1 | 11 | 2.0 | 105 | 9.0 | 1,110 |
| 1.2 | 17 | 4.0 | 355 | 10.0 | 1,380 |
| 1.3 | 24 | 6.0 | 605 | 11.0 | 1,820 |
| 1.4 | 32 | 7.0 | 745 | 12.5 | 3,280 |
| 1.5 | 42 | 8.0 | 920 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | 49 | 51 | 105 | 450 | 120 | 618 | 90 | 50 | 31 | 150 | 68 |
| 2 | 20 | 66 | 51 | 255 | 550 | 120 | 530 | 82 | 124 | 29 | 124 | 55 |
| 3 | 26 | 68 | 55 | 200 | *610 | 120 | 455 | 81 | 211 | 27 | 205 | 48 |
| 4 | 31 | 58 | 61 | 140 | 550 | 135 | 392 | 94 | 186 | 44 | 144 | 44 |
| 5 | 38 | 46 | 64 | 105 | 475 | 500 | 330 | 98 | 98 | 75 | 82 | 42 |
| 6 | 45 | 40 | 60 | *90 | 580 | 850 | 280 | 88 | 66 | 54 | 58 | 45 |
| 7 | 51 | 66 | 58 | 70 | 800 | *1,000 | 330 | 86 | 65 | 50 | 48 | 38 |
| 8 | 51 | 136 | 54 | 60 | 850 | 1,600 | 813 | 86 | 80 | 45 | 45 | 36 |
| 9 | 48 | 168 | 51 | 52 | 800 | 2,750 | 920 | 82 | 86 | 36 | 55 | 34 |
| 10 | 38 | 149 | 45 | 48 | 550 | 3,170 | 1,210 | 74 | 80 | 42 | 130 | 32 |
| 11 | 28 | 120 | 36 | 46 | 375 | 2,960 | 1,380 | 66 | 74 | 40 | 122 | 31 |
| 12 | 24 | 95 | 36 | 45 | 275 | 2,330 | 1,490 | 65 | 80 | 42 | 100 | 28 |
| 13 | 20 | 81 | 44 | 45 | 200 | 1,760 | 1,450 | 65 | 82 | 34 | 69 | 27 |
| 14 | 20 | 72 | 42 | 45 | 170 | 1,410 | 1,180 | 62 | 121 | 34 | 51 | 26 |
| 15 | 19 | 66 | 36 | 45 | 150 | 1,160 | 868 | 69 | 135 | 30 | 42 | 32 |
| 16 | 19 | 62 | 36 | 46 | 180 | 1,030 | 580 | 106 | 121 | 27 | 38 | 34 |
| 17 | 19 | 59 | 51 | 46 | 800 | *1,820 | 468 | 149 | 91 | 25 | 32 | 40 |
| 18 | 18 | 55 | 50 | 47 | *1,000 | 2,960 | 405 | 140 | 72 | 24 | 30 | 34 |
| 19 | 19 | 52 | 48 | 48 | 1,100 | 2,960 | 355 | 109 | 62 | 22 | 27 | 32 |
| 20 | 20 | 54 | 50 | 50 | 1,200 | 2,130 | 305 | 92 | 58 | 21 | 26 | 31 |
| 21 | 20 | 56 | 44 | 54 | 1,150 | 1,610 | 268 | 88 | 86 | 18 | 24 | 45 |
| 22 | 22 | 58 | 46 | 58 | 1,000 | 1,230 | 218 | 81 | 144 | 18 | 23 | 59 |
| 23 | 25 | 61 | 51 | 60 | 400 | 947 | 174 | 79 | 116 | 18 | 25 | 46 |
| 24 | 36 | 66 | 109 | 62 | 200 | 685 | 152 | 76 | 80 | 17 | 27 | 40 |
| 25 | 54 | 68 | 255 | 64 | 160 | 568 | 138 | 70 | 66 | 16 | 27 | 36 |
| 26 | 44 | *66 | 280 | 66 | 140 | 492 | 128 | 66 | 52 | 16 | 25 | 36 |
| 27 | 42 | 65 | 255 | 68 | 130 | 430 | 120 | 59 | 45 | 17 | 27 | 38 |
| 28 | 38 | 62 | 224 | 68 | 120 | 480 | 115 | 56 | 40 | 19 | 34 | 51 |
| 29 | 38 | 58 | 174 | 70 | - | 605 | 106 | 54 | 38 | 23 | 59 | 55 |
| 30 | 34 | 52 | 131 | 70 | - | 631 | 99 | 51 | 34 | 30 | 115 | 51 |
| 31 | 34 | - | 108 | 300 | - | 644 | - | 46 | - | 90 | 88 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 956 | 54 | 15 | 30.8 | 0.069 | 0.08 |
| November | 2,174 | 168 | 40 | 72.5 | .163 | .18 |
| December | 2,656 | 280 | 36 | 85.7 | .193 | .22 |
| Calendar year 1941 | 43,351.6 | 1,140 | 5.2 | 119 | .268 | 3.63 |
| January | 2,528 | 300 | 45 | 81.5 | .184 | .21 |
| February | 14,965 | 1,200 | 120 | 534 | 1.20 | 1.25 |
| March | 39,207 | 3,170 | 120 | 1,265 | 2.85 | 3.29 |
| April | 15,877 | 1,490 | 99 | 529 | 1.19 | 1.33 |
| May | 2,510 | 149 | 46 | 81.0 | .182 | .21 |
| June | 2,643 | 211 | 34 | 88.1 | .198 | .22 |
| July | 1,020 | 75 | 16 | 32.9 | .074 | .09 |
| August | 2,052 | 205 | 23 | 66.2 | .149 | .17 |
| September | 1,214 | 68 | 26 | 40.5 | .091 | .10 |
| Water year 1941-42 | 87,802 | 3,170 | 15 | 241 | .543 | 7.35 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Jan. 3 to Mar. 8 (no gage-height record Feb. 21-24).
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter.
To convert war time to standard time, subtract 1 hour.

## Bean Creek at Powers, Ohio

Location.- Water-stage recorder, lat. 41°40'40", long. 84°13'50", in NE¼ sec. 24, T. 9 S., R. 1 E., at bridge on U. S. highway 20, 1 mile east of Powers and 2¼ miles upstream from Iron Creek. Datum of gage is 722.6 feet above mean sea level, adjustment of 1912.

Drainage area.- 238 square miles.

Records available.- October 1940 to September 1942.

Extremes.- Maximum discharge during year, 1,760 second-feet Mar. 9 (gage height, 10.5 feet); minimum, 8.5 second-feet Oct. 1 (gage height, 0.70 foot).
1940-42: Maximum discharge, that of Mar. 9, 1942; minimum, 6.4 second-feet Sept. 17, 1941; minimum gage height, 0.62 foot Aug. 7-10, 1941.

Remarks.- Records fair except those for periods of ice effect, which are poor.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.1 | 28 | 36 | 77 | 450 | 85 | 308 | 65 | 32 | 23 | 70 | 52 |
| 2 | 9.7 | 40 | 37 | 175 | 350 | 85 | 267 | 62 | 65 | 22 | 53 | 43 |
| 3 | 14 | 42 | 42 | 100 | 300 | 86 | 235 | 61 | 78 | 24 | 92 | 39 |
| 4 | 16 | 36 | 44 | 50 | *240 | 95 | 213 | 69 | 49 | 28 | 56 | 39 |
| 5 | 20 | 30 | 45 | 32 | 220 | 400 | 199 | 60 | 38 | 24 | 39 | 44 |
| 6 | 20 | 32 | 43 | *25 | 250 | *750 | 178 | 60 | 33 | 24 | 31 | 36 |
| 7 | 21 | 77 | 41 | 25 | 350 | 722 | 218 | 61 | 36 | 23 | 28 | -32 |
| 8 | 26 | 105 | 40 | 25 | 500 | 740 | 592 | 60 | 60 | 22 | 31 | 30 |
| 9 | 22 | 104 | 38 | 25 | 400 | 1,640 | 470 | 55 | 59 | 20 | 42 | 29 |
| 10 | 18 | 90 | 36 | 25 | 300 | 1,250 | 815 | 51 | 52 | 22 | 53 | 28 |
| 11 | 16 | 72 | 28 | 25 | 250 | 962 | 920 | 47 | 45 | 21 | 68 | 26 |
| 12 | 16 | 61 | 38 | 25 | 200 | 740 | 722 | 47 | 46 | 20 | 41 | 25 |
| 13 | 15 | 54 | 34 | 25 | 140 | 582 | 557 | 48 | 49 | 20 | 33 | 24 |
| 14 | 15 | 48 | 33 | 25 | 120 | 524 | 436 | 47 | 68 | 19 | 28 | 24 |
| 15 | 15 | 45 | 29 | 25 | 110 | 488 | 351 | 48 | 81 | 18 | 26 | 29 |
| 16 | 15 | 42 | 35 | 26 | 130 | 578 | 300 | 83 | 62 | 18 | 24 | 37 |
| 17 | 15 | 39 | 32 | 26 | 800 | *1,450 | 251 | 105 | 48 | 17 | 22 | 31 |
| 18 | 15 | 37 | 33 | 27 | 700 | 1,320 | 213 | 82 | 41 | 17 | 21 | 28 |
| 19 | 15 | 36 | 34 | 28 | 500 | 880 | 178 | 69 | 37 | 16 | 20 | 28 |
| 20 | 16 | 39 | 34 | 29 | 350 | 614 | 156 | 68 | 37 | 14 | 18 | 49 |
| 21 | 16 | 40 | 32 | 31 | 250 | 524 | 141 | 59 | 78 | 13 | 18 | 64 |
| 22 | 15 | 42 | 33 | 31 | 200 | 470 | 126 | 54 | 72 | 13 | 18 | 48 |
| 23 | 27 | 45 | 36 | 32 | 150 | 419 | 109 | 50 | 46 | 13 | 21 | 40 |
| 24 | 44 | 47 | 106 | 33 | 130 | 376 | 99 | 46 | 42 | 13 | 21 | 36 |
| 25 | 34 | 47 | 192 | 35 | 110 | 317 | 92 | 44 | 36 | 12 | 20 | 32 |
| 26 | 27 | *45 | 161 | 36 | 100 | 267 | 88 | 39 | 31 | 12 | 16 | 35 |
| 27 | 25 | 44 | 155 | 37 | 90 | 251 | 88 | 37 | 28 | 13 | 21 | 50 |
| 28 | 23 | 42 | 128 | 38 | 85 | 283 | 80 | 36 | 27 | 15 | 51 | 55 |
| 29 | 21 | 38 | 103 | 40 | - | 342 | 76 | 35 | 26 | 18 | 152 | 50 |
| 30 | 20 | 37 | 85 | 41 | - | 334 | 71 | 33 | 24 | 16 | 94 | 43 |
| 31 | 21 | - | 75 | 150 | - | 360 | - | 31 | - | 80 | 68 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 601.8 | 44 | 9.1 | 19.4 | 0.082 | 0.09 |
| November | 1,484 | 105 | 28 | 49.5 | .208 | .23 |
| December | 1,838 | 192 | 28 | 59.3 | .249 | .29 |
| Calendar year 1941 | 24,283.4 | 524 | 6.6 | 66.5 | .279 | 3.79 |
| January | 1,324 | 175 | 25 | 42.7 | .179 | .21 |
| February | 7,775 | 800 | 85 | 278 | 1.17 | 1.22 |
| March | 17,934 | 1,640 | 85 | 579 | 2.43 | 2.80 |
| April | 8,549 | 920 | 71 | 285 | 1.20 | 1.34 |
| May | 1,712 | 105 | 31 | 55.2 | .232 | .27 |
| June | 1,426 | 81 | 24 | 47.5 | .200 | .22 |
| July | 630 | 80 | 12 | 20.3 | .085 | .10 |
| August | 1,296 | 152 | 16 | 41.8 | .176 | .20 |
| September | 1,126 | 64 | 24 | 37.5 | .158 | .18 |
| Water year 1941-42 | 45,695.8 | 1,640 | 9.1 | 125 | .525 | 7.15 |

Peak discharge.- Mar. 9 (3 p.m.) 1,760 sec.-ft.; Mar. 17 (6 p.m.) 1,630 sec.-ft.; Apr. 10 (8 p.m.) 1,070 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 12, Jan. 3 to Mar. 6.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Auglaize River near Fort Jennings, Ohio

Location.- Water-stage recorder, lat. 40°56'55", long. 84°15'58", in SE¼ sec. 15, T. 1 S., R. 5 E., at highway bridge 3⅝ miles northeast of Fort Jennings and 6 miles upstream from Ottawa River. Datum of gage is 713.9 feet above mean sea level, adjustment of 1912.
Drainage area.- 333 square miles.
Records available.- August 1921 to December 1935, October 1940 to September 1942.
Average discharge.- 16 years, 276 second-feet.
Extremes.- Maximum discharge during year, 5,020 second-feet Apr. 11 (gage height, 14.15 feet); minimum, 5.4 second-feet Oct. 21 (gage height, 1.18 feet).
1921-35, 1940-42: Maximum discharge, 7,860 second-feet Jan. 15, 1930 (gage height, 16.6 feet); minimum, 5.0 second-feet Aug. 28, 1932 (gage height, 0.75 foot).
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Some diversion from Lake St. Marys by Miami & Erie Canal into Jennings Creek, tributary to Auglaize River above station.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 23 to Sept.30)

Oct. 1 to May 16

| | | | | | |
|---|---|---|---|---|---|
| 1.2 | 5.8 | 2.1 | 59 | 6.0 | 870 |
| 1.3 | 8.0 | 2.3 | 87 | 7.0 | 1,140 |
| 1.4 | 11 | 2.6 | 141 | 9.0 | 1,770 |
| 1.5 | 14 | 3.0 | 202 | 11.0 | 2,550 |
| 1.6 | 19 | 3.5 | 285 | 11.5 | 2,800 |
| 1.7 | 24 | 4.0 | 385 | 12.5 | 3,500 |
| 1.8 | 31 | 4.5 | 501 | 14.0 | 4,800 |
| 1.9 | 39 | 5.0 | 632 | | |

May 17 to Sept. 30

| | | | |
|---|---|---|---|
| 1.6 | 26 | 2.2 | 89 |
| 1.7 | 32 | 2.4 | 125 |
| 1.9 | 50 | 2.8 | 174 |
| 2.0 | 61 | 3.0 | 202 |

Note.- Same as preceding table above 3.0 feet.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13 | 35 | 24 | 48 | 101 | 67 | 598 | 50 | 61 | 48 | 74 | 58 |
| 2 | 14 | 32 | 18 | 127 | 68 | 63 | 795 | 48 | 74 | 45 | 119 | 45 |
| 3 | 18 | 36 | 18 | 242 | 56 | 58 | 528 | 51 | 62 | 42 | 101 | 34 |
| 4 | 21 | 25 | 28 | 180 | 62 | 58 | 322 | 218 | 70 | 43 | 70 | 30 |
| 5 | 19 | 26 | 25 | *85 | 623 | 74 | 242 | 312 | 104 | 42 | 52 | 26 |
| 6 | 16 | 30 | 23 | 60 | *1,470 | 92 | 194 | 210 | 103 | 46 | 41 | 28 |
| 7 | 84 | 37 | 21 | 45 | 2,230 | 123 | 234 | 167 | 76 | 41 | 41 | 25 |
| 8 | 29 | 36 | 21 | 35 | 2,190 | 233 | 1,900 | 174 | 66 | 38 | 73 | 26 |
| 9 | 15 | 31 | 20 | 30 | a950 | 1,980 | 2,870 | 146 | 61 | 37 | 70 | 33 |
| 10 | 11 | 22 | 18 | 27 | a350 | 2,340 | 3,900 | 114 | 65 | 34 | 62 | 83 |
| 11 | 14 | 23 | 17 | 25 | a280 | 1,210 | 4,800 | 96 | 65 | 40 | 56 | 119 |
| 12 | 14 | 21 | 19 | 24 | h210 | 870 | 3,250 | 97 | 61 | 38 | 56 | 74 |
| 13 | 12 | 23 | 23 | 24 | a150 | 582 | 1,010 | 87 | 59 | 38 | 49 | 52 |
| 14 | 11 | 23 | 23 | 24 | a135 | 595 | 632 | 74 | 65 | 34 | 45 | 43 |
| 15 | 11 | 24 | 22 | 24 | a140 | 870 | 429 | 72 | 70 | 32 | 40 | 36 |
| 16 | 9.5 | 23 | 23 | 24 | h234 | 654 | 312 | 886 | 140 | 32 | 43 | 32 |
| 17 | 8.6 | 23 | 22 | 25 | a1,500 | 1,920 | 242 | 1,040 | 130 | 32 | 188 | 32 |
| 18 | 7.8 | 21 | 22 | 26 | *2,000 | 2,510 | 202 | 442 | 96 | 30 | 218 | 31 |
| 19 | 6.7 | 19 | 22 | 26 | 922 | 1,090 | 174 | 276 | 77 | 29 | 142 | 30 |
| 20 | 5.8 | 22 | 23 | 28 | a600 | 528 | 143 | 250 | 84 | 30 | 108 | 30 |
| 21 | 12 | 23 | 21 | 31 | a400 | 374 | 123 | 396 | 612 | 26 | 77 | 27 |
| 22 | 19 | 20 | 21 | 31 | a300 | 374 | 106 | 294 | 312 | 26 | 60 | 26 |
| 23 | 20 | 21 | 22 | 31 | h218 | 322 | 94 | 210 | 218 | 26 | 48 | 25 |
| 24 | 22 | 24 | 95 | 33 | a180 | 234 | 84 | 161 | 195 | 26 | 40 | 27 |
| 25 | 23 | 25 | 117 | 35 | a150 | 187 | 76 | 130 | 137 | 26 | 33 | 26 |
| 26 | 23 | 26 | 218 | 38 | 119 | 160 | 71 | 119 | 99 | 26 | 32 | 26 |
| 27 | 24 | 24 | 123 | 37 | 82 | 148 | 67 | 103 | 76 | 26 | 32 | 26 |
| 28 | a24 | 22 | 74 | 37 | 72 | 277 | 60 | 88 | 62 | 26 | 34 | 26 |
| 29 | a24 | 23 | 57 | 33 | - | 501 | 57 | 80 | 58 | 29 | 30 | 25 |
| 30 | h24 | 25 | 46 | 35 | - | 363 | 55 | 71 | 49 | 32 | 53 | 24 |
| 31 | a27 | - | 42 | 75 | - | 312 | - | 68 | - | 49 | 80 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 582.4 | 84 | 5.8 | 18.8 | | |
| November | 765 | 37 | 19 | 25.5 | | |
| December | 1,268 | 218 | 17 | 40.9 | | |
| Calendar year 1941 | 33,489.4 | 1,440 | 5.8 | 91.8 | | |
| January | 1,545 | 242 | 24 | 49.8 | | |
| February | 15,792 | 2,230 | 56 | 564 | | |
| March | 19,169 | 2,510 | 58 | 618 | | |
| April | 23,570 | 4,800 | 55 | 786 | | |
| May | 6,530 | 1,040 | 48 | 211 | | |
| June | 3,409 | 612 | 49 | 114 | | |
| July | 1,069 | 49 | 26 | 34.5 | | |
| August | 2,167 | 218 | 30 | 69.9 | | |
| September | 1,125 | 119 | 24 | 37.5 | | |
| Water year 1941-42 | 76,991.4 | 4,800 | 5.8 | 211 | | |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for nearby stations.
h Computed from staff-gage reading.
Note.- Stage-discharge relation affected by ice Jan. 5-20.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Auglaize River near Defiance, Ohio

Location.- Water-stage recorder, lat. 41°14'15", long. 84°24'02", in NE¼ sec. 9, T. 3 N., R. 4 E., 125 feet downstream from dam and power plant of Toledo Edison Co., a quarter of a mile upstream from Jackson ditch, and 3 miles south of Defiance. Datum of gage is 660.00 feet above mean sea level, adjustment of 1912.

Drainage area.- 2,329 square miles.

Records available.- April 1915 to December 1935, October 1940 to September 1942. May to August 1903 at site at highway bridge 1¾ miles downstream.

Average discharge.- 22 years (1915-35, 1940-42), 1,558 second-feet.

Extremes.- 1940-41: Maximum discharge during water year, 5,250 second-feet June 6 (gage height, 9.87 feet); minimum daily, 20 second-feet Nov. 20, 24.
1941-42: Maximum discharge during water year, 26,700 second-feet Apr. 12 (gage height, 18.9 feet); minimum daily, 28 second-feet Oct. 28.
1915-35, 1940-42: Maximum daily discharge, 38,700 second-feet Jan. 15, 1930; minimum daily, 6 second-feet Oct. 17, 1923.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Flow regulated by power plant above station. Some diversion by Miami & Erie Canal from Lake St. Marys into Jennings Creek, tributary to Auglaize River above station.

Revisions.- Revised figures of discharge for the water year 1941, superseding those published in Water-Supply Paper 924, are given herein.

Rating table, Oct. 1 1940 to Sept. 30, 1942, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 1 to Oct. 6, 1941)

| | | | | | |
|---|---|---|---|---|---|
| 4.35 | 22 | 5.4 | 440 | 10.0 | 5,400 |
| 4.4 | 33 | 5.8 | 675 | 12.0 | 9,000 |
| 4.45 | 48 | 6.2 | 960 | 14.0 | 13,200 |
| 4.5 | 65 | 7.0 | 1,650 | 16.0 | 16,200 |
| 4.8 | 170 | 8.0 | 2,890 | 18.0 | 24,000 |
| 5.0 | 249 | 9.0 | 3,950 | | |

Discharge, in second-feet, 1940-42

1940-41

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 40 | 55 | 22 | 2,180 | 154 | 76 | 1,160 | 311 | 346 | 346 | 42 | 33 |
| 2 | 35 | 51 | 145 | 3,200 | 272 | 130 | 1,320 | 112 | 1,200 | 662 | 39 | 33 |
| 3 | 35 | 51 | 26 | 3,300 | 430 | 432 | 1,300 | 198 | 1,320 | 420 | 39 | 33 |
| 4 | 35 | 51 | 36 | 2,950 | 490 | 242 | 2,550 | 33 | 2,320 | 194 | 39 | 90 |
| 5 | 35 | 51 | 33 | 852 | 598 | 256 | 3,300 | 165 | 4,080 | 264 | 45 | 90 |
| 6 | 30 | 55 | 33 | 786 | 552 | 262 | 3,170 | 148 | 4,220 | 148 | 51 | 36 |
| 7 | 30 | 48 | 33 | 799 | 466 | 309 | 3,100 | 39 | 3,240 | 290 | 46 | 227 |
| 8 | 30 | 36 | 36 | 541 | 302 | 323 | 2,010 | 282 | 1,860 | 110 | 42 | 42 |
| 9 | 80 | 42 | 162 | 536 | 184 | 172 | 888 | 39 | 995 | 64 | 36 | 92 |
| 10 | 31 | 48 | 84 | 460 | 273 | 304 | 896 | 74 | 676 | 288 | 39 | 45 |
| 11 | 94 | 55 | 122 | 466 | 254 | 1,380 | 614 | 42 | 554 | 153 | 94 | 39 |
| 12 | 33 | 42 | 1,040 | 65 | 350 | 120 | 564 | 156 | 1,260 | 131 | 78 | 74 |
| 13 | 31 | 45 | 759 | 270 | 895 | 149 | 360 | 98 | 3,300 | 51 | 31 | 39 |
| 14 | 33 | 116 | 45 | 223 | 1,670 | 280 | 450 | 104 | 3,820 | 51 | 31 | 124 |
| 15 | 64 | 48 | 86 | 220 | 2,730 | 954 | 398 | 190 | 3,690 | 110 | 69 | 42 |
| 16 | 42 | 45 | 1,430 | 196 | 2,780 | 442 | 776 | 264 | 3,560 | 166 | 28 | 39 |
| 17 | 39 | 132 | 283 | 916 | 1,640 | 658 | 824 | 33 | 2,470 | 62 | 28 | 28 |
| 18 | 39 | 31 | 166 | 254 | 492 | 841 | 831 | 33 | 1,470 | 366 | 31 | 31 |
| 19 | 39 | 22 | 434 | 55 | 486 | 594 | 616 | 508 | 1,040 | 126 | 56 | 28 |
| 20 | 39 | 20 | 402 | 534 | 638 | 568 | 696 | 279 | 740 | 36 | 154 | 28 |
| 21 | 42 | 24 | 157 | 731 | 508 | 554 | 337 | 315 | 653 | 39 | 96 | 31 |
| 22 | 132 | 133 | 280 | 638 | 436 | 258 | 225 | 183 | 514 | 196 | 33 | 28 |
| 23 | 166 | 22 | 195 | 615 | 182 | 352 | 320 | 319 | 310 | 197 | 33 | 36 |
| 24 | 90 | 20 | 132 | 439 | 328 | 242 | 229 | 33 | 123 | 36 | 36 | 36 |
| 25 | 109 | 80 | 51 | 147 | 286 | 283 | 256 | 96 | 116 | 39 | 154 | 79 |
| 26 | 51 | 22 | 313 | 298 | 302 | 290 | 144 | 196 | 166 | 129 | 39 | 45 |
| 27 | 51 | 26 | 134 | 560 | 278 | 277 | 104 | 65 | 170 | 42 | 120 | 24 |
| 28 | 55 | 64 | 55 | 192 | 375 | 262 | 270 | 65 | 414 | 194 | 39 | 28 |
| 29 | 55 | 24 | 1,790 | 265 | - | 258 | 152 | 161 | 36 | 270 | 45 | 28 |
| 30 | 55 | 82 | 2,270 | 281 | - | 243 | 138 | 36 | 261 | 39 | 212 | 51 |
| 31 | 55 | - | 2,390 | 250 | - | 335 | - | 282 | - | 39 | 55 | - |

Note.- No gage-height record Oct. 1-9; discharge computed on basis of record of power plant operation and leakage through dam.

Discharge, in second-feet, of Auglaize River near Defiance, Ohio, 1940-42--Continued

1941-42

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 42 | 274 | 125 | 862 | 957 | 350 | 2,640 | 288 | 788 | 212 | 694 | 308 |
| 2 | 115 | 251 | 148 | 1,590 | 1,150 | 430 | 3,950 | 285 | 1,730 | 185 | 760 | 296 |
| 3 | 133 | 246 | 110 | 1,900 | 934 | 300 | 4,220 | 302 | 1,360 | 263 | 460 | 174 |
| 4 | 33 | 255 | 71 | 1,180 | 1,160 | 200 | 3,820 | 269 | 400 | 51 | 352 | 174 |
| 5 | 31 | 178 | 284 | 430 | *2,740 | 673 | 2,980 | 938 | 608 | 312 | 282 | 36 |
| 6 | 320 | 468 | 33 | 358 | 6,170 | 826 | 2,640 | 957 | 547 | 266 | 138 | 134 |
| 7 | 2,960 | 336 | 36 | *410 | 13,000 | 1,370 | 2,200 | 482 | 244 | 363 | 256 | 58 |
| 8 | 2,660 | 591 | 170 | 495 | 13,900 | 2,240 | 4,780 | 539 | 277 | 251 | 2,510 | 511 |
| 9 | 1,860 | 474 | 42 | 350 | 10,200 | 9,620 | 12,800 | 679 | 258 | 382 | 1,950 | 1,790 |
| 10 | 638 | 459 | 39 | 160 | 6,000 | 15,900 | 19,600 | 332 | 227 | 277 | 1,630 | 1,380 |
| 11 | 338 | 308 | 39 | 90 | 3,700 | 13,400 | 25,200 | 422 | 252 | 360 | 1,390 | 766 |
| 12 | 101 | 231 | 92 | 90 | 1,800 | 9,000 | 25,200 | 440 | 210 | 519 | 1,090 | 584 |
| 13 | 221 | 135 | 42 | 90 | 900 | 6,590 | 16,100 | 310 | 400 | 402 | 492 | 193 |
| 14 | 174 | 310 | 42 | 90 | 900 | 4,950 | 8,600 | 329 | 912 | 227 | 468 | 215 |
| 15 | 36 | 58 | 131 | 90 | 670 | 4,650 | 5,250 | 708 | 1,360 | 202 | 148 | 202 |
| 16 | 36 | 51 | 75 | 90 | 2,500 | 4,950 | 3,430 | 1,490 | 1,310 | 146 | 394 | 373 |
| 17 | 153 | 251 | 93 | 90 | 6,320 | 6,930 | 2,300 | 2,990 | 1,000 | 142 | 614 | 50 |
| 18 | 45 | 86 | 87 | 90 | 10,800 | 11,400 | 1,130 | 1,950 | 652 | 48 | 678 | 68 |
| 19 | 39 | 95 | 88 | 90 | 7,800 | 9,600 | 220 | 1,220 | 480 | 82 | 422 | 155 |
| 20 | 194 | 143 | 182 | 90 | 4,300 | 6,590 | 728 | 1,060 | 634 | 36 | 356 | 31 |
| 21 | 92 | 96 | 36 | 90 | 3,200 | 4,360 | 698 | 1,280 | 2,340 | 86 | 360 | 119 |
| 22 | 31 | 92 | 161 | 90 | 1,900 | 3,430 | 590 | 1,320 | 4,500 | 42 | 386 | 106 |
| 23 | 33 | 101 | 112 | 90 | 1,850 | 2,730 | 560 | 944 | 5,740 | 170 | 620 | 106 |
| 24 | 33 | 240 | 1,580 | 90 | 1,300 | 1,600 | 406 | 682 | 3,950 | 55 | 225 | 136 |
| 25 | 80 | 258 | 2,400 | 90 | 2,000 | 1,470 | 509 | 534 | 1,760 | 55 | 196 | 88 |
| 26 | 36 | 168 | 2,400 | 149 | 300 | 1,110 | 224 | 470 | 726 | 51 | 182 | 33 |
| 27 | 170 | 240 | 1,260 | 148 | 400 | 1,560 | 472 | 379 | 338 | 48 | 540 | 33 |
| 28 | 28 | 166 | 614 | 128 | 440 | 1,880 | 364 | 346 | 330 | 48 | 1,500 | 31 |
| 29 | 31 | 229 | 844 | 122 | - | 2,380 | 226 | 338 | 378 | 322 | 1,390 | 153 |
| 30 | 129 | 101 | 565 | 178 | - | 2,520 | 302 | 239 | 240 | 150 | 1,080 | 36 |
| 31 | 36 | - | 239 | 1,430 | - | 2,420 | - | 265 | - | 756 | 652 | - |

* Winter discharge measurement made on this day.

Note.- No gage-height record Feb. 10-16, Feb. 19 to Mar. 4; discharge computed on basis of record of power plant operation and leakage through dam. Stage-discharge relation affected by ice Jan. 7, 9-25.

Monthly discharge, in second-feet, 1940-42

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October 1940 | 1,695 | 166 | 30 | 54.7 | | |
| November | 1,541 | 133 | 20 | 51.4 | | |
| December | 13,144 | 2,390 | 22 | 424 | | |
| Calendar year | - | - | - | - | | |
| January 1941 | 23,222 | 3,300 | 55 | 749 | | |
| February | 18,351 | 2,780 | 154 | 655 | | |
| March | 11,846 | 1,380 | 76 | 382 | | |
| April | 28,198 | 3,300 | 104 | 940 | | |
| May | 4,889 | 508 | 33 | 168 | | |
| June | 44,944 | 4,220 | 36 | 1,498 | | |
| July | 5,258 | 662 | 36 | 170 | | |
| August | 1,882 | 212 | 28 | 60.7 | | |
| September | 1,579 | 227 | 24 | 52.6 | | |
| Water year 1940-41 | 156,549 | 4,220 | 20 | 429 | | |
| October 1941 | 10,828 | 2,960 | 28 | 349 | | |
| November | 6,891 | 591 | 51 | 230 | | |
| December | 12,140 | 2,400 | 33 | 392 | | |
| Calendar year 1941 | 170,027 | 4,220 | 24 | 466 | | |
| January 1942 | 11,240 | 1,900 | 90 | 363 | | |
| February | 107,291 | 13,900 | 300 | 3,832 | | |
| March | 135,429 | 15,900 | 200 | 4,369 | | |
| April | 152,139 | 25,200 | 220 | 5,071 | | |
| May | 22,787 | 2,990 | 239 | 735 | | |
| June | 33,951 | 5,740 | 210 | 1,132 | | |
| July | 6,509 | 756 | 36 | 210 | | |
| August | 22,215 | 2,510 | 138 | 717 | | |
| September | 8,339 | 1,790 | 31 | 278 | | |
| Water year 1941-42 | 529,759 | 25,200 | 28 | 1,451 | | |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Blanchard River near Findlay, Ohio

Location.- Water-stage recorder, lat. 41°03'21", long. 83°41'17", on east line sec. 10, T. 1 N., R. 10 E., at highway bridge 2 miles northwest of Findlay. Datum of gage is 754.55 feet above mean sea level.

Drainage area.- 343 square miles.

Records available.- November 1923 to December 1935, October 1940 to September 1942.

Average discharge.- 13 years (1924-35, 1940-42), 209 second-feet.

Extremes.- Maximum discharge during year, 4,780 second-feet Apr. 10 (gage height, 11.8 feet); minimum, 2.3 second-feet Oct. 1; minimum gage height, 0.78 foot Oct. 6.
1923-35, 1940-42: Maximum discharge, 6,320 second-feet Dec. 1, 1927 (gage height, 14.5 feet); minimum, 0.4 second-foot Aug. 26, 27, Sept. 3, 1934.
Flood of March 1913 reached a stage of 18.5 feet.

Remarks.- Records fair except those for period of ice effect, which are poor.

Rating tables, water year 1941-42, except period of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-6, Apr. 15 to June 2, June 25 to Sept 30)

Oct. 1 to Feb. 17

| | | | | | |
|---|---|---|---|---|---|
| 0.8 | 4.2 | 1.3 | 45 | 3.0 | 527 |
| .9 | 7.5 | 1.5 | 77 | 4.3 | 1,040 |
| 1.0 | 13 | 1.9 | 154 | 5.0 | 1,300 |
| 1.1 | 22 | 2.3 | 259 | 6.0 | 1,720 |
| 1.2 | 33 | 2.6 | 361 | | |

Feb. 18 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 0.8 | 5.0 | 1.2 | 37 | 2.1 | 220 |
| .9 | 9.0 | 1.3 | 51 | 2.4 | 320 |
| 1.0 | 15 | 1.5 | 86 | 3.0 | 580 |
| 1.1 | 25 | 1.8 | 145 | 4.3 | 1,040 |

Note.- Same as preceding table above 4.3 feet.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.6 | 36 | 19 | 85 | 77 | 75 | 989 | 45 | 136 | 29 | 36 | 24 |
| 2 | 3.4 | 45 | 19 | 304 | 63 | 67 | 1,340 | 43 | 92 | 112 | 36 | 21 |
| 3 | 5.5 | 51 | 21 | 125 | 63 | 67 | 930 | 71 | 437 | 69 | 30 | 21 |
| 4 | 4.0 | 39 | 20 | 108 | 70 | 61 | 536 | 96 | 133 | 44 | 18 | 17 |
| 5 | 10 | 29 | 22 | *b58 | 786 | 125 | 352 | 65 | 80 | 33 | 16 | 14 |
| 6 | 47 | 33 | 20 | b40 | *1,230 | 180 | 247 | 76 | 56 | 78 | 14 | 12 |
| 7 | 650 | 86 | 17 | b35 | 1,680 | 178 | 447 | 107 | 47 | 45 | 22 | 13 |
| 8 | 198 | 90 | 16 | b25 | 1,300 | 322 | 2,500 | 82 | 43 | 27 | 25 | 14 |
| 9 | 106 | 74 | 16 | b21 | 630 | 1,040 | 2,450 | 64 | 37 | 21 | 71 | 13 |
| 10 | 54 | 60 | 15 | b20 | 332 | 720 | 3,960 | 62 | 32 | 122 | 86 | 14 |
| 11 | 35 | 45 | 9.7 | b19 | 206 | 560 | 3,960 | 56 | 27 | 146 | 41 | 12 |
| 12 | 23 | 36 | 13 | b18 | 144 | 504 | 1,940 | 57 | 32 | 61 | 57 | 10 |
| 13 | 23 | 32 | 16 | 18 | 118 | 414 | 808 | 56 | 36 | 38 | 47 | 8.2 |
| 14 | 19 | 26 | 16 | 19 | 104 | 598 | 560 | 50 | 121 | 30 | 33 | 11 |
| 15 | 13 | 22 | 14 | 21 | 110 | 720 | 374 | 61 | 212 | 23 | 23 | 12 |
| 16 | 12 | 22 | 11 | 21 | 285 | 860 | 264 | 247 | 117 | 18 | 41 | 9.6 |
| 17 | 11 | 19 | 11 | 18 | 1,640 | 3,200 | 202 | 232 | 92 | 24 | 113 | 9.0 |
| 18 | 8.6 | 15 | 14 | 20 | 1,420 | 1,720 | 158 | 188 | 67 | 22 | 150 | 8.2 |
| 19 | 9.7 | 16 | 16 | 26 | 675 | 772 | 131 | 139 | 53 | 17 | 113 | 14 |
| 20 | 11 | 17 | 16 | 26 | 340 | 518 | 109 | 121 | 92 | 23 | 65 | 12 |
| 21 | 9.7 | 16 | 14 | 25 | 250 | 396 | 97 | 131 | 738 | 25 | 37 | 4.2 |
| 22 | 8.0 | 12 | 13 | 23 | 180 | 352 | 90 | 101 | 454 | 31 | 32 | 3.8 |
| 23 | 11 | 20 | 19 | 23 | 150 | 268 | 80 | 90 | 285 | 21 | 32 | 3.8 |
| 24 | 9.2 | 24 | 283 | 23 | 125 | 202 | 71 | 73 | 145 | 17 | 25 | 4.8 |
| 25 | 7.5 | 24 | 417 | 23 | 119 | 165 | 65 | 62 | 94 | 14 | 29 | 4.0 |
| 26 | 6.5 | 25 | 259 | 23 | 103 | 141 | 61 | 53 | 65 | 13 | 23 | 5.4 |
| 27 | 10 | 24 | 156 | 22 | 84 | 131 | 57 | 48 | 53 | 11 | 25 | 7.8 |
| 28 | 9.7 | 24 | 112 | 21 | 84 | 162 | 54 | 44 | 43 | 29 | 263 | 5.8 |
| 29 | 9.7 | 21 | 82 | 17 | - | 232 | 53 | 40 | 35 | 38 | 65 | 4.8 |
| 30 | 12 | 20 | 65 | 18 | - | 218 | 48 | 33 | 33 | 24 | 32 | 4.5 |
| 31 | 16 | - | 56 | 77 | - | 244 | - | 31 | - | 64 | 31 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,356.1 | 650 | 3.4 | 43.7 | 0.127 | 0.15 |
| November | 1,003 | 90 | 12 | 33.4 | .097 | .11 |
| December | 1,797.7 | 417 | 9.7 | 58.0 | .169 | .19 |
| Calendar year 1941 | 25,429.0 | 850 | 2.0 | 69.7 | .203 | 2.76 |
| January | 1,322 | 304 | 17 | 42.6 | .124 | .14 |
| February | 12,368 | 1,680 | 63 | 442 | 1.29 | 1.34 |
| March | 15,212 | 3,200 | 61 | 491 | 1.43 | 1.65 |
| April | 22,933 | 3,960 | 48 | 764 | 2.23 | 2.49 |
| May | 2,624 | 247 | 31 | 84.6 | .247 | .28 |
| June | 3,887 | 738 | 27 | 130 | .379 | .42 |
| July | 1,269 | 146 | 11 | 40.9 | .119 | .14 |
| August | 1,631 | 263 | 14 | 52.6 | .153 | .18 |
| September | 317.9 | 24 | 3.8 | 10.6 | .031 | .03 |
| Water year 1941-42 | 65,720.7 | 3,960 | 3.4 | 180 | .525 | 7.12 |

Peak discharge.- Mar. 17 (12:30 p.m.) 3,580 sec.-ft.; Apr. 8 (1 p.m.) 2,760 sec.-ft.; Apr. 10 (11 p.m.) 4,780 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Portage River at Woodville, Ohio

Location.- Water-stage recorder, lat. 41°26'55", long. 83°21'41", in sec. 28, T. 6 N., R. 13 E., at highway bridge in Woodville. Datum of gage is 615.14 feet above mean sea level, adjustment of 1912.

Drainage area.- 433 square miles.

Records available.- July 1928 to December 1935, October 1939 to September 1942.

Extremes.- Maximum discharge during year, 6,010 second-feet Apr. 11 (gage height, 10.68 feet); minimum, 2.1 second-feet Oct. 1 (gage height, 1.93 feet).
1928-35, 1939-42: Maximum discharge, 9,150 second-feet Jan. 15, 1930 (gage height, 12.96 feet); minimum, 0.3 second-foot Aug. 26, 1931; minimum gage height, 1.60 feet July 25, 26, 1934.
Flood of March 1913 reached a stage of 17 feet, from information by local residents.

Remarks.- Records good except those above 700 second-feet and those for periods of ice effect, which are fair.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.4 | 13 | 12 | 34 | 167 | 57 | 1,190 | 54 | 38 | 17 | 169 | 78 |
| 2 | 2.9 | 16 | 12 | 185 | 291 | 46 | 1,330 | 52 | 120 | 21 | 88 | 47 |
| 3 | 4.2 | 21 | 11 | 376 | 212 | 39 | 795 | 54 | 474 | 36 | 52 | 34 |
| 4 | 6.6 | 24 | 11 | b150 | 148 | 43 | 1,120 | 67 | 795 | 27 | 36 | 30 |
| 5 | 13 | 19 | 12 | b90 | 203 | 64 | 795 | 217 | 331 | 65 | 24 | 23 |
| 6 | 18 | 20 | 9.6 | b50 | b1,000 | 247 | 464 | 147 | 161 | 67 | 18 | 19 |
| 7 | 21 | 26 | 9.6 | b35 | 1,750 | 355 | 497 | 107 | 92 | 181 | 13 | 15 |
| 8 | 280 | 47 | 9.6 | *b18 | 1,350 | 471 | 2,800 | 152 | 71 | 210 | 12 | 13 |
| 9 | 162 | 67 | 8.5 | b11 | 603 | 2,680 | 2,870 | 154 | 57 | 88 | 14 | 20 |
| 10 | 65 | 49 | 7.3 | b7.5 | b325 | 2,360 | 4,160 | 111 | 38 | 51 | 14 | 165 |
| 11 | 31 | 32 | 6.6 | b6.0 | b200 | 1,300 | 5,530 | 66 | 32 | 238 | 85 | 189 |
| 12 | 20 | 23 | 7.3 | b5.5 | b150 | 1,010 | 2,860 | 70 | 28 | 387 | 101 | 103 |
| 13 | 13 | 19 | 7.3 | b5.5 | b120 | 652 | 1,330 | 71 | 29 | 156 | 54 | 59 |
| 14 | 10 | 16 | 7.6 | b7.0 | b100 | 630 | 820 | 73 | 107 | 75 | 30 | 39 |
| 15 | 7.6 | 15 | 6.2 | 8.5 | 88 | 652 | 540 | 68 | 532 | 45 | 20 | 28 |
| 16 | 6.6 | 13 | 7.6 | 10 | 210 | 558 | 369 | 278 | 398 | 33 | 18 | 20 |
| 17 | 6.6 | 12 | 8.0 | 11 | 2,580 | 1,720 | 275 | 568 | 128 | 24 | 14 | 18 |
| 18 | 5.8 | 11 | 8.5 | 15 | 2,860 | 1,440 | 214 | 266 | 76 | 18 | 16 | 16 |
| 19 | 5.5 | 10 | 9.1 | 17 | 949 | 720 | 159 | 171 | 50 | 13 | 15 | 15 |
| 20 | 5.1 | 10 | 9.1 | 18 | b425 | 460 | 121 | 159 | 40 | 10 | 12 | 13 |
| 21 | 5.1 | 9.6 | 8.0 | 18 | b275 | 358 | 95 | 334 | 52 | 7.3 | 10 | 12 |
| 22 | 4.8 | 9.6 | 8.0 | 17 | b175 | 394 | 81 | 440 | 540 | 5.8 | 10 | 10 |
| 23 | 4.8 | 12 | 9.6 | 17 | b140 | 348 | 70 | 262 | 291 | 4.8 | 13 | 8.5 |
| 24 | 3.8 | 11 | 25 | 17 | b125 | 244 | 64 | 166 | 161 | 5.5 | 28 | 8.0 |
| 25 | 3.8 | 11 | 235 | 18 | b110 | 187 | 59 | 107 | 88 | 5.1 | 33 | 8.0 |
| 28 | 4.4 | 12 | 190 | 18 | *90 | 147 | 57 | 78 | 55 | 5.1 | 21 | 10 |
| 27 | 5.8 | 12 | 101 | 17 | 62 | 130 | 55 | 62 | 37 | 6.6 | 18 | 15 |
| 28 | 6.6 | 13 | 73 | 15 | 61 | 133 | 54 | 52 | 28 | 10 | 20 | 18 |
| 29 | 6.6 | 14 | 49 | 13 | - | 187 | 54 | 47 | 25 | 8.0 | 242 | 16 |
| 30 | 7.3 | 12 | 35 | 14 | - | 241 | 54 | 40 | 19 | 8.7 | 304 | 17 |
| 31 | 8.0 | - | 31 | 40 | - | 235 | - | 34 | - | 61 | 161 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 747.3 | 280 | 2.4 | 24.1 | 0.056 | 0.06 |
| November | 581.2 | 67 | 9.6 | 19.4 | .045 | .05 |
| December | 944.5 | 235 | 6.2 | 30.5 | .070 | .08 |
| Calendar year 1941 | 31,468.7 | 2,040 | 1.9 | 86.2 | .199 | 2.69 |
| January | 1,264.0 | 376 | 5.5 | 40.8 | .094 | .11 |
| February | 14,769 | 2,860 | 61 | 527 | 1.22 | 1.27 |
| March | 18,108 | 2,680 | 39 | 584 | 1.35 | 1.56 |
| April | 28,882 | 5,530 | 54 | 963 | 2.22 | 2.48 |
| May | 4,547 | 568 | 34 | 147 | .339 | .39 |
| June | 4,893 | 795 | 19 | 163 | .376 | .42 |
| July | 1,889.9 | 387 | 4.8 | 61.0 | .141 | .16 |
| August | 1,665 | 304 | 10 | 53.7 | .124 | .14 |
| September | 1,068.5 | 189 | 8.0 | 35.6 | .082 | .09 |
| Water year 1941-42 | 79,359.4 | 5,530 | 2.4 | 217 | .501 | 6.81 |

Peak discharge.--Feb. 18 (12:30 a.m.) 3,550 sec.-ft.; Mar. 9 (10 p.m.) 3,350 sec.-ft.; Mar. 17 (8 p.m.) 2,120 sec.-ft.; Apr. 8 (11:30 p.m.) 3,650 sec.-ft.; Apr. 11 (12:30 p.m.) 6,010 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Sandusky River near Bucyrus, Ohio

Location.- Water-stage recorder, lat. 40°48'13", long. 83°00'21", in NE¼ sec. 10, T. 3 S., R. 16 E., at highway bridge 1⅛ miles west of Bucyrus and 12 miles downstream from Loss Creek. Datum of gage is 955.9 feet above mean sea level, adjustment of 1912.

Drainage area.- 89.8 square miles.

Records available.- August 1925 to November 1935, July 1938 to September 1942.

Average discharge.- 14 years, 74.8 second-feet.

Extremes.- Maximum discharge during year, 2,010 second-feet Apr. 10 (gage height, 7.04 feet); minimum, 0.4 second-foot July 16; minimum gage height, 0.70 foot Oct. 1.
1925-35, 1938-42: Maximum discharge observed, 6,900 second-feet Dec. 14, 1927 (gage height, 9.15 feet); minimum, 0.4 second-foot Sept. 29, 1941, July 16, 1942.
Flood of March 23, 1913, reached a stage of 14.5 feet, from floodmarks.

Remarks.- Records good except those for period of ice effect, which are fair.

Rating table, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-6, Apr. 17 to Sept.30)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.7 | 0.S | 1.2 | 14 | 2.4 | 123 | 4.8 | 722 |
| .S | 2.0 | 1.3 | 20 | 2.7 | 170 | 5.6 | 1,040 |
| .9 | 4.0 | 1.4 | 27 | 3.0 | 224 | 6.0 | 1,240 |
| 1.0 | 6.6 | 1.8 | 59 | 3.5 | 332 | 6.7 | 1,700 |
| 1.1 | 9.9 | 2.0 | 78 | 4.0 | 462 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.7 | 103 | S.1 | 3S | 156 | 19 | 167 | 13 | 5.2 | 3.1 | 3.S | 10 |
| 2 | 2.1 | 120 | 13 | 244 | b65 | 18 | 928 | 13 | 13 | 3.6 | 6.3 | 8.1 |
| 3 | 9.9 | 57 | 14 | 92 | b45 | 18 | 359 | 16 | 17 | 4.0 | 4.7 | 6.6 |
| 4 | 3.6 | 37 | 14 | 46 | 63 | 20 | 290 | 13 | 25 | 3.1 | 3.6 | 6.0 |
| 5 | 2.9 | 27 | 13 | 26 | 823 | 34 | 150 | 11 | 13 | 2.0 | 3.1 | 5.8 |
| 6 | 20 | 3S | 13 | 28 | 672 | 41 | 94 | 12 | 11 | 3.8 | 2.5 | 5.8 |
| 7 | 408 | 120 | 12 | 17 | 521 | 44 | 124 | 12 | 6.0 | 2.7 | 3.8 | 6.0 |
| 8 | 394 | 7S | 11 | 13 | 223 | 71 | 1,230 | 13 | 5.0 | 3.6 | 3.3 | 7.8 |
| 9 | S8 | 57 | 11 | *9.9 | 98 | 288 | 1,000 | 13 | 4.2 | 2.9 | 4.7 | 6.3 |
| 10 | 41 | 52 | 9.2 | 9.2 | 74 | 14S | 1,700 | 11 | 2.7 | 2.4 | 9.9 | S.1 |
| 11 | 21 | 45 | 8.1 | 9.5 | 53 | 142 | 760 | 9.5 | 1.7 | 1.S | 7.2 | 7.8 |
| 12 | 12 | 37 | 8.1 | 9.5 | 39 | 315 | 616 | 5.5 | 2.5 | 1.8 | 5.8 | 6.6 |
| 13 | 7.S | 29 | 12 | 11 | 36 | 162 | 221 | 4.5 | 5.2 | 2.0 | 4.7 | 5.5 |
| 14 | 7.5 | 24 | 11 | 12 | 29 | 585 | 127 | 9.5 | 11 | 1.6 | 3.8 | 5.0 |
| 15 | 5.2 | 21 | 14 | 12 | 32 | 274 | 92 | 1S | 2.5 | 1.1 | 4.7 | 4.7 |
| 16 | 9.2 | 19 | 17 | 13 | 216 | 554 | 73 | 51 | 5.5 | 1.3 | 12 | 4.7 |
| 17 | 8.8 | 18 | 13 | 12 | 1,310 | 804 | 60 | 38 | 3.6 | 1.8 | 14 | 4.2 |
| 18 | 7.8 | 17 | 12 | 15 | 403 | 209 | 50 | 22 | 2.2 | 2.4 | 8.1 | 4.2 |
| 19 | 9.2 | 13 | 13 | 54 | 123 | 129 | 41 | 16 | 1.7 | 2.2 | 5.8 | 6.0 |
| 20 | 8.8 | 10 | 14 | 84 | 81 | 97 | 37 | 13 | 12 | 4.0 | 4.7 | 3.3 |
| 21 | 8.8 | 9.9 | 12 | 47 | 59 | 85 | 33 | 11 | 47 | 1.7 | 3.8 | 6.6 |
| 22 | 6.6 | 13 | 14 | 33 | 44 | 92 | 29 | 13 | 45 | 1.4 | 3.6 | 6.3 |
| 23 | 5.2 | 15 | 14 | 28 | 37 | 74 | 25 | 13 | 12 | 2.2 | 2.9 | 5.0 |
| 24 | 2.5 | 23 | 19S | 26 | 33 | 57 | 23 | 13 | 5.8 | 1.7 | 3.1 | 5.2 |
| 25 | 2.7 | 22 | 213 | 28 | 29 | 48 | 20 | 12 | 3.3 | 2.0 | 2.9 | 4.0 |
| 26 | 2.0 | 17 | 90 | 31 | *26 | 43 | 19 | 9.5 | 2.2 | 2.2 | 2.9 | 10 |
| 27 | 4.8 | 17 | 65 | 29 | 20 | 40 | 1S | 8.5 | 2.4 | 2.4 | 11 | 17 |
| 28 | 7.0 | 11 | 50 | 29 | 21 | 38 | 17 | 7.5 | 3.3 | 37 | 235 | 52 |
| 29 | 20 | 8.8 | 41 | 28 | - | 36 | 15 | 7.2 | 3.1 | 6.6 | 232 | 19 |
| 30 | 10 | S.1 | 33 | 27 | - | 33 | 13 | 6.6 | 2.4 | 2.9 | 45 | 9.9 |
| 31 | 17 | - | 29 | 69 | - | 44 | - | 6.0 | - | 6.9 | 18 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,154.1 | 408 | 0.7 | 37.2 | 0.414 | 0.4S |
| November | 1,066.8 | 120 | 8.1 | 35.6 | .396 | .44 |
| December | 999.5 | 213 | 8.1 | 32.2 | .359 | .41 |
| Calendar year 1941 | 12,349.6 | 811 | .6 | 33.8 | .376 | 5.11 |
| January | 1,130.1 | 244 | 9.2 | 36.5 | .406 | .47 |
| February | 5,331 | 1,310 | 20 | 190 | 2.12 | 2.21 |
| March | 4,562 | 804 | 18 | 147 | 1.64 | 1.89 |
| April | 8,331 | 1,700 | 13 | 278 | 3.10 | 3.46 |
| May | 421.3 | 51 | 4.5 | 13.6 | .151 | .17 |
| June | 276.5 | 47 | 1.7 | 9.22 | .103 | .11 |
| July | 118.2 | 37 | 1.1 | 3.81 | .042 | .05 |
| August | 676.7 | 235 | 2.5 | 21.8 | .243 | .28 |
| September | 257.5 | 52 | 3.3 | 8.58 | .096 | .11 |
| Water year 1941-42 | 24,324.7 | 1,700 | .7 | 66.6 | .742 | 10.08 |

Peak discharge.- Feb. 5 (10 p.m.) 1,330 sec.-ft.; Feb. 17 (3 p.m.) 1,520 sec.-ft.; Mar. 16 (11:30 p.m.) 1,300 sec.-ft.; Apr. 2 (9:30 a.m.) 1,140 sec.-ft.; Apr. 8 (3 p.m.) 1,580 sec.-ft.; Apr. 10 (8 p.m.) 2,010 sec.-ft.

* Winter discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Sandusky River near Upper Sandusky, Ohio

Location.- Water-stage recorder, 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. Datum of gage is 792.8 feet above mean sea level, adjustment of 1912.

Drainage area.- 299 square miles.

Records available.- October 1921 to December 1935, January 1938 to September 1942.

Average discharge.- 18 years, 239 second-feet.

Extremes.- Maximum discharge during year, 4,670 second-feet Apr. 11; maximum gage height, 9.0 feet Feb. 6 (result of ice jam); minimum discharge, 2.6 second-feet July 27 (gage height, 0.96 foot).

1921-35, 1938-42: Maximum discharge, 8,900 second-feet Dec. 15, 1927 (gage height, 10.5 feet); minimum, 0.9 second-foot Sept. 24, 1939; minimum gage height, 0.67 foot Sept. 6, 7, 1934.

Flood in June 1937 reached a stage of 14.3 feet, from marks in gage well.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.8 | 58 | 29 | 76 | 169 | 82 | 352 | a52 | 26 | 17 | 44 | 52 |
| 2 | 5.3 | 203 | 27 | 270 | 293 | 71 | 2,100 | 50 | 27 | 13 | 24 | 32 |
| 3 | 7.4 | 189 | 28 | 512 | 158 | 71 | 1,650 | 57 | 158 | 12 | 12 | 25 |
| 4 | 8.5 | 101 | 32 | 175 | b145 | 55 | 1,030 | 60 | 90 | 15 | 9.5 | 21 |
| 5 | 22 | 70 | 35 | b100 | 1,060 | 84 | 734 | 54 | 68 | 17 | 9.5 | 17 |
| 6 | 20 | 76 | 34 | b70 | b2,310 | 103 | 420 | 49 | 46 | 19 | 7.4 | 15 |
| 7 | 290 | 217 | 35 | b60 | 1,950 | 116 | 365 | 52 | 34 | 22 | 7.9 | 11 |
| 8 | 767 | 259 | 32 | b50 | 1,310 | 140 | 1,990 | 54 | 26 | 21 | 7.4 | 18 |
| 9 | 422 | 158 | 30 | *b41 | 520 | 541 | 3,100 | 50 | 23 | 17 | 12 | 44 |
| 10 | 136 | 114 | 28 | b35 | 354 | 666 | 4,060 | 52 | 21 | 14 | 47 | 55 |
| 11 | 73 | 99 | b27 | b33 | 221 | 398 | 4,130 | 52 | 18 | 14 | 96 | 30 |
| 12 | 46 | 87 | 29 | b33 | b138 | 620 | 1,540 | 47 | 16 | 12 | 52 | 22 |
| 13 | 30 | 74 | 29 | b34 | b110 | 604 | 976 | 44 | 15 | 13 | 23 | 19 |
| 14 | 23 | 63 | 30 | b37 | b110 | 976 | 569 | 42 | 25 | 16 | 15 | 14 |
| 15 | 22 | 54 | 36 | b45 | 120 | 1,140 | 389 | 62 | 42 | 12 | 10 | 12 |
| 16 | 19 | 49 | 36 | b55 | 193 | 936 | 278 | 126 | 34 | 9.0 | 79 | 9.5 |
| 17 | 18 | 42 | 40 | b62 | 2,260 | 2,850 | 214 | 195 | 23 | 8.5 | 121 | 7.9 |
| 18 | 14 | 40 | 40 | 68 | 2,510 | 1,600 | 172 | 126 | 23 | 6.9 | 54 | 7.9 |
| 19 | 20 | 36 | 35 | 73 | b760 | 661 | 140 | 92 | 21 | 5.9 | 32 | 7.4 |
| 20 | 17 | 35 | 34 | 79 | b480 | 452 | 118 | 76 | 20 | 7.9 | 23 | 12 |
| 21 | 16 | 34 | 28 | 205 | b410 | 338 | 105 | 68 | 210 | 7.4 | 18 | 25 |
| 22 | 17 | 30 | 38 | 130 | b290 | 363 | 94 | 60 | 248 | 7.9 | 13 | 14 |
| 23 | 17 | 35 | 40 | 92 | b185 | 313 | 87 | 58 | 136 | 7.4 | 13 | 9.0 |
| 24 | 17 | 47 | 96 | b75 | b130 | 221 | 79 | 58 | 73 | 6.4 | 9.5 | 11 |
| 25 | 13 | 50 | 506 | 66 | b115 | 172 | 71 | 54 | 47 | 3.7 | 7.9 | 9.5 |
| 26 | 12 | 58 | 325 | 65 | *106 | 142 | a66 | 54 | 32 | 3.7 | 7.4 | e.5 |
| 27 | 10 | 49 | 189 | 63 | 86 | 126 | a62 | 50 | 24 | 3.2 | 11 | 46 |
| 28 | 9.5 | 42 | 135 | 63 | 90 | 124 | a58 | 46 | 20 | 3.5 | 50 | 99 |
| 29 | 9.0 | 40 | 106 | 58 | - | 116 | a56 | 41 | 17 | 24 | 501 | 78 |
| 30 | 16 | 32 | 90 | b60 | - | 108 | a54 | 35 | 14 | 52 | 262 | 58 |
| 31 | 38 | - | 79 | 79 | - | 120 | - | 30 | - | 35 | 90 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,159.5 | 787 | 4.8 | 69.7 | 0.233 | 0.27 |
| November | 2,441 | 259 | 30 | 81.4 | .272 | .30 |
| December | 2,278 | 506 | 27 | 73.5 | .246 | .28 |
| Calendar year 1941 | 34,725.9 | 1,420 | 1.4 | 95.1 | .318 | 4.32 |
| January | 2,864 | 512 | 33 | 92.4 | .309 | .36 |
| February | 16,583 | 2,510 | 86 | 592 | 1.98 | 2.06 |
| March | 14,309 | 2,850 | 55 | 462 | 1.55 | 1.79 |
| April | 25,079 | 4,130 | 54 | 836 | 2.80 | 3.12 |
| May | 1,946 | 195 | 30 | 62.8 | .210 | .24 |
| June | 1,577 | 248 | 14 | 52.6 | .176 | .20 |
| July | 426.4 | 52 | 3.2 | 13.8 | .046 | .05 |
| August | 1,668.5 | 501 | 7.4 | 53.8 | .180 | .21 |
| September | 789.7 | 99 | 7.4 | 26.3 | .088 | .10 |
| Water year 1941-42 | 72,121.1 | 4,130 | 3.2 | 198 | .662 | 8.98 |

Peak discharge.- Feb. 18 (6 a.m.) 3,100 sec.-ft.; Mar. 17 (4:30 p.m.) 3,100 sec.-ft.; Apr. 2 (9 p.m.) 2,540 sec.-ft.; Apr. 11 (1 a.m.) 4,670 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for station near Mexico.

b Stage-discharge relation affected by ice.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Sandusky River near Mexico, Ohio

Location.- Water-stage recorder, 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 4½ miles north of Mexico. Datum of gage is 733.1 feet above mean sea level, adjustment of 1912.
Drainage area.- 776 square miles.
Records available.- March 1923 to December 1935, July 1938 to September 1942.
Average discharge.- 16 years, 537 second-feet.
Extremes.- Maximum discharge during year, 9,600 second-feet Apr. 11 (gage height, 16.0 feet); minimum, 4.3 second-feet Oct. 1, 2 (gage height, 1.52 feet).
1923-35, 1938-42: Maximum discharge observed, 15,200 second-feet Mar. 22, 1927 (gage height, 19.9 feet); minimum, 4.0 second-feet Aug. 25, 1928, Sept. 25, 26, 29, 30, 1941.
Flood in June 1937 reached a stage of 22.5 feet, from information by local residents.
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair.

**Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)**
**(Shifting-control method used Oct. 1 to Dec. 19, Sept. 27-30)**

| | | | | | |
|---|---|---|---|---|---|
| 1.4 | 2.5 | 2.3 | 99 | 6.0 | 1,340 |
| 1.5 | 5.8 | 2.6 | 150 | 7.5 | 2,100 |
| 1.6 | 11 | 3.0 | 236 | 9.0 | 3,020 |
| 1.7 | 19 | 3.5 | 364 | 11.0 | 4,520 |
| 1.8 | 29 | 4.0 | 520 | 13.0 | 6,220 |
| 2.0 | 54 | 5.0 | 895 | 15.0 | 8,360 |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.3 | 36 | 64 | 143 | 172 | 174 | 594 | 115 | 65 | 54 | 65 | 145 |
| 2 | 4.6 | 79 | 62 | 184 | 280 | 166 | 3,140 | 112 | 83 | 49 | 85 | 93 |
| 3 | a10 | 241 | 60 | 499 | 360 | 150 | 3,680 | 104 | 346 | 50 | 67 | 68 |
| 4 | a20 | 222 | 58 | 450 | 260 | 137 | 2,760 | 110 | 295 | 50 | 53 | 55 |
| 5 | a25 | 148 | 58 | 180 | 864 | 150 | 1,730 | 113 | 253 | 44 | 41 | 49 |
| 6 | 26 | 124 | 62 | 100 | 2,640 | 213 | 1,060 | 105 | 156 | 45 | 33 | 41 |
| 7 | 252 | 202 | 61 | 70 | 4,200 | 248 | 676 | 110 | 110 | 51 | 28 | 35 |
| 8 | 572 | 342 | 58 | 60 | 4,100 | 310 | 3,900 | 105 | 94 | 56 | 25 | 37 |
| 9 | 737 | 350 | 57 | *50 | 2,460 | 823 | 5,100 | 104 | 80 | 8.2 | 27 | 37 |
| 10 | 403 | 248 | 55 | 47 | 1,160 | 1,290 | 7,890 | 97 | 68 | 27 | 40 | 51 |
| 11 | 187 | 180 | 50 | 45 | 643 | 1,020 | 9,470 | 94 | 60 | 128 | 212 | 94 |
| 12 | 113 | 152 | 48 | 45 | a400 | 695 | 6,700 | 89 | 54 | 71 | 272 | 85 |
| 13 | 77 | 132 | 51 | 46 | a300 | 1,110 | 4,940 | 88 | 57 | 51 | 125 | 67 |
| 14 | 58 | 115 | 54 | 50 | a280 | 1,240 | 1,880 | 65 | 109 | 41 | 74 | 55 |
| 15 | 48 | 97 | 51 | 56 | 292 | 2,100 | 1,110 | 99 | 170 | 37 | 54 | 48 |
| 16 | 44 | 85 | 51 | 58 | 342 | 2,050 | 795 | 384 | 132 | 33 | 60 | 44 |
| 17 | 36 | 77 | 54 | 58 | 2,940 | 4,590 | 607 | 503 | 132 | 29 | 328 | 41 |
| 18 | 34 | 67 | 58 | 70 | 4,280 | 4,600 | 470 | 422 | 109 | 29 | 275 | 45 |
| 19 | 31 | 62 | 61 | 80 | a2,500 | 2,720 | 378 | 285 | 88 | 27 | 143 | 46 |
| 20 | 29 | 61 | 62 | 90 | a1,500 | 1,290 | 313 | 195 | 76 | 25 | 96 | 40 |
| 21 | 28 | 58 | 60 | 141 | a1,000 | 875 | 270 | 164 | 389 | 46 | 70 | 34 |
| 22 | 28 | 55 | 57 | 209 | a700 | 737 | 238 | 137 | 643 | 45 | 54 | 36 |
| 23 | 28 | 55 | 58 | 172 | a500 | 699 | 209 | 124 | 470 | 34 | 55 | 68 |
| 24 | 26 | 60 | 98 | 125 | 378 | 537 | 187 | 113 | 280 | 28 | 58 | 172 |
| 25 | 24 | 67 | 361 | 109 | 305 | 422 | 170 | 109 | 180 | 24 | 53 | 66 |
| 26 | 22 | 71 | 737 | 99 | *260 | 336 | 152 | 97 | 141 | 22 | 40 | 45 |
| 27 | 22 | 80 | 486 | 97 | 220 | 292 | 143 | 93 | 113 | 164 | 36 | 45 |
| 28 | 22 | 77 | 318 | 96 | 185 | 275 | 132 | 83 | 89 | 125 | 59 | 94 |
| 29 | 22 | 74 | 243 | 90 | - | 278 | 127 | 78 | 72 | 61 | 281 | 141 |
| 30 | 22 | 70 | 193 | 82 | - | 272 | 120 | 74 | 56 | 41 | 503 | 124 |
| 31 | 23 | - | 162 | 110 | - | 290 | - | 70 | - | 65 | 271 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,977.9 | 737 | 4.3 | 96.1 | 0.124 | 0.14 |
| November | 3,687 | 350 | 36 | 123 | .159 | .18 |
| December | 3,908 | 737 | 48 | 126 | .162 | .19 |
| Calendar year 1941 | 77,293.8 | 3,650 | 4.3 | 212 | .273 | 3.70 |
| January | 3,711 | 499 | 45 | 120 | .155 | .18 |
| February | 33,521 | 4,280 | 172 | 1,197 | 1.54 | 1.60 |
| March | 30,289 | 4,600 | 137 | 977 | 1.26 | 1.45 |
| April | 61,143 | 9,470 | 120 | 2,038 | 2.63 | 2.93 |
| May | 4,461 | 503 | 70 | 144 | .186 | .21 |
| June | 4,972 | 643 | 54 | 166 | .214 | .24 |
| July | 1,560.2 | 164 | 8.2 | 50.3 | .065 | .07 |
| August | 3,603 | 503 | 25 | 116 | .149 | .17 |
| September | 2,021 | 172 | 34 | 67.4 | .087 | .10 |
| Water year 1941-42 | 155,854.1 | 9,470 | 4.3 | 427 | .550 | 7.46 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records, recorded range in stage, and records for stations near Upper Sandusky and Fremont.
Note.- Stage-discharge relation affected by ice Jan. 4-20, 29, Feb. 2-4, 7 (no gage-height record Jan. 9-12).
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Sandusky River near Fremont, Ohio

Location.- Water-stage recorder, lat. 41°18'28", long. 83°09'32", in sec. 17, T. 4 N., R. 15 E., at highway bridge 2½ miles downstream from Wolf Creek and 3½ miles southwest of Fremont. Datum of gage is 626.3 feet above mean sea level, adjustment of 1912.

Drainage area.- 1,248 square miles.

Records available.- November 1923 to December 1935, July 1938 to September 1942. November 1898 to March 1901 at site 4 miles downstream.

Average discharge.- 16 years (1923-35, 1938-42), 833 second-feet.

Extremes.- Maximum discharge during year, 18,400 second-feet Apr. 11 (gage height, 8.3 feet); minimum, 7.0 second-feet Oct. 1, 2 (gage height, 0.83 foot).
1923-35, 1938-42: Maximum discharge (not determined) occurred Jan. 15, 1930 (gage height, 11.1 feet); maximum gage height, 11.4 feet (ice jam) Mar. 3, 1940; minimum discharge, 5.0 second-feet Sept. 27, 28, 1941 (gage height, 0.80 foot).

Remarks.- Records good except those for periods of ice effect, which are poor.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.7 | 49 | 85 | 185 | 150 | 286 | 796 | 218 | 118 | 79 | 152 | 260 |
| 2 | 7.7 | 60 | 82 | 240 | 2,000 | 253 | 4,130 | 207 | 394 | 72 | 118 | 152 |
| 3 | 11 | 114 | 79 | 408 | 2,750 | 234 | 5,300 | 207 | 956 | 63 | 102 | 110 |
| 4 | 13 | 280 | 79 | 713 | 400 | 212 | 4,850 | 229 | 783 | 63 | 82 | 88 |
| 5 | 17 | 229 | 72 | 600 | 801 | 229 | 2,760 | 224 | 489 | 60 | 66 | 72 |
| 6 | 19 | 185 | 72 | a240 | 3,500 | 352 | 1,710 | 229 | 352 | 69 | 54 | 60 |
| 7 | 193 | 240 | 69 | a144 | 7,500 | *461 | 1,370 | 234 | 240 | 118 | 49 | 54 |
| 8 | 785 | 408 | 72 | a110 | 8,260 | 555 | 8,600 | 240 | 176 | 95 | 49 | 60 |
| 9 | 906 | 470 | 72 | 85 | 4,000 | 1,550 | 9,460 | 229 | 143 | 82 | 52 | 63 |
| 10 | 689 | 400 | 69 | 75 | 2,110 | 1,990 | 15,300 | 218 | 118 | 69 | 72 | 54 |
| 11 | 352 | 286 | 69 | 65 | 1,230 | 1,750 | 15,600 | 207 | 98 | 494 | 106 | 52 |
| 12 | 196 | 224 | 92 | 66 | 677 | 1,380 | 12,300 | 207 | 98 | 398 | 328 | 82 |
| 13 | 130 | 196 | 63 | 66 | 479 | 1,540 | 8,160 | 207 | 98 | 229 | 266 | 92 |
| 14 | 98 | 166 | 63 | 65 | 435 | 1,620 | 3,470 | 207 | 138 | 134 | 147 | 76 |
| 15 | 76 | 147 | 66 | 65 | 408 | 2,650 | 1,890 | 240 | 234 | 92 | 92 | 66 |
| 16 | 63 | 122 | 72 | 75 | 479 | 3,320 | 1,350 | 805 | 253 | 72 | 88 | 57 |
| 17 | 54 | 106 | 63 | 85 | 5,910 | 9,020 | 980 | 1,070 | 202 | 63 | 152 | 52 |
| 18 | 49 | 98 | 60 | 90 | 7,880 | 8,200 | 773 | 852 | 185 | 54 | 408 | 49 |
| 19 | 44 | 88 | 60 | 100 | 5,650 | 5,360 | 625 | 645 | 143 | 46 | 280 | 52 |
| 20 | 39 | 85 | 66 | 110 | 2,500 | 2,320 | 526 | 470 | 118 | 39 | 171 | 52 |
| 21 | 42 | 82 | 66 | 120 | a1,700 | 1,300 | 452 | 426 | 167 | 39 | 122 | 54 |
| 22 | 39 | 79 | 63 | 140 | a1,200 | 1,150 | 400 | 336 | 720 | 44 | 92 | 49 |
| 23 | 36 | 79 | 66 | 150 | a900 | 1,020 | 352 | 286 | 665 | 49 | 92 | 44 |
| 24 | 39 | 79 | 82 | 140 | a700 | 852 | 314 | 240 | 461 | 42 | 95 | 46 |
| 25 | 34 | 79 | 288 | 120 | a525 | 665 | 286 | 212 | 299 | 39 | 82 | 147 |
| 26 | 34 | 82 | 689 | 100 | 450 | 536 | 266 | 190 | 212 | 39 | 72 | 95 |
| 27 | 36 | 88 | 725 | 100 | 350 | 461 | 240 | 171 | 171 | 36 | 63 | 82 |
| 28 | 42 | 95 | 470 | 100 | 310 | 426 | 234 | 162 | 138 | 153 | 82 | 63 |
| 29 | 44 | 95 | 329 | 110 | - | 400 | 229 | 147 | 106 | 138 | 166 | 79 |
| 30 | 34 | 88 | 253 | 120 | - | 391 | 218 | 134 | 92 | 82 | 461 | 138 |
| 31 | 36 | - | 207 | 140 | - | 417 | - | 122 | - | 122 | 489 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 4,165.4 | 906 | 7.7 | 134 | 0.107 | 0.12 |
| November | 4,799 | 470 | 49 | 160 | .128 | .14 |
| December | 4,663 | 725 | 60 | 150 | .120 | .14 |
| Calendar year 1941 | 115,721.5 | 5,460 | 5.6 | 317 | .254 | 3.44 |
| January | 4,955 | 713 | 65 | 160 | .128 | .15 |
| February | 63,254 | 8,260 | 150 | 2,259 | 1.81 | 1.89 |
| March | 50,900 | 9,020 | 212 | 1,642 | 1.32 | 1.52 |
| April | 102,941 | 15,600 | 218 | 3,431 | 2.75 | 3.07 |
| May | 9,571 | 1,070 | 122 | 309 | .248 | .29 |
| June | 8,367 | 956 | 92 | 279 | .224 | .25 |
| July | 3,174 | 494 | 36 | 102 | .082 | .09 |
| August | 4,650 | 489 | 49 | 150 | .120 | .14 |
| September | 2,400 | 260 | 44 | 80.0 | .064 | .07 |
| Water year 1941-42 | 263,839.4 | 15,600 | 7.7 | 723 | .579 | 7.87 |

Peak discharge.- Feb. 7 (11 p.m.) 13,000 sec.-ft.; Feb. 18 (12:30 a.m.) 8,880 sec.-ft.; Mar. 17 (2 p.m.) 9,750 sec.-ft.; Apr. 8 (6 p.m.) 10,700 sec.-ft.; Apr. 11 (2 a.m.) 18,400 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for nearby stations.

Note.- Stage-discharge relation affected by ice Jan. 5, 9-31, Feb. 1-4, 6, 7, 20, 26-28.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Cuyahoga River at Old Portage, Ohio

Location.- Water-stage recorder, lat. 41°08'04", long. 81°32'49", at Old Portage, Summit County, at highway bridge 1½ miles downstream from Little Cuyahoga River and 4 miles northwest of Akron.

Drainage area.- 405 square miles.

Records available.- September 1921 to December 1935, March 1939 to September 1942.

Average discharge.- 17 years, 423 second-feet.

Extremes.- Maximum discharge during year, 2,490 second-feet Mar. 14 (gage height, 7.54 feet); minimum, 29 second-feet Sept. 25; minimum gage height, 0.44 foot Nov. 29.
1921-35, 1939-42: Maximum discharge, 3,820 second-feet Apr. 5, 1929 (gage height, 10.1 feet); minimum, 25 second-feet Dec. 7, 11, 1934.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Diurnal fluctuation caused by power plants above station. Flow regulated by Lake Rockwell, about 16 miles above gage, where a mean of 39 second-feet was diverted for municipal supply of city of Akron. Sewage returned to river below station.

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 21 to Sept. 30)

| | | | | | |
|---|---|---|---|---|---|
| 0.6 | 45 | 1.3 | 162 | 4.0 | 1,010 |
| .7 | 56 | 1.6 | 227 | 5.0 | 1,390 |
| .8 | 70 | 1.9 | 304 | 6.0 | 1,810 |
| .9 | 87 | 2.2 | 394 | 7.0 | 2,250 |
| 1.0 | 104 | 3.0 | 666 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 73 | 249 | 128 | 307 | 446 | 308 | 381 | 152 | 479 | 333 | 60 | 94 |
| 2 | 64 | 205 | 150 | 372 | 371 | 345 | 331 | 115 | 425 | 195 | 77 | 102 |
| 3 | 150 | 192 | 153 | 321 | 348 | 323 | 386 | 156 | 428 | 180 | 140 | 91 |
| 4 | 123 | 187 | 130 | 308 | 411 | 338 | 445 | 186 | 394 | 169 | 70 | 113 |
| 5 | 112 | 187 | 132 | 279 | 844 | 348 | 479 | 150 | 362 | 149 | 72 | 55 |
| 6 | 241 | 235 | 123 | 182 | 940 | 379 | 530 | 134 | 214 | 302 | 70 | 91 |
| 7 | 576 | 270 | 128 | 145 | 1,310 | 435 | 666 | 181 | 167 | 220 | 110 | 86 |
| 8 | 281 | 300 | 128 | 140 | 1,520 | 496 | 1,010 | 137 | 209 | 174 | 150 | 149 |
| 9 | 186 | 338 | 135 | 124 | 1,270 | 900 | 1,360 | 111 | 176 | 151 | 278 | 106 |
| 10 | 161 | 310 | 120 | 103 | 1,310 | 1,150 | 2,160 | 186 | 185 | 184 | 246 | 89 |
| 11 | 104 | 201 | 115 | 86 | 1,310 | 1,640 | 2,160 | 203 | 236 | 158 | 202 | 66 |
| 12 | 106 | 165 | 122 | 163 | 1,010 | 2,250 | 2,160 | 196 | 204 | 130 | 190 | 69 |
| 13 | 151 | 171 | 133 | 117 | 768 | 2,120 | 1,940 | 167 | 155 | 181 | 260 | 46 |
| 14 | 136 | 140 | 144 | 133 | 596 | 2,440 | 1,520 | 195 | 284 | 168 | 366 | 97 |
| 15 | 150 | 131 | 140 | 124 | 547 | 2,160 | 1,120 | 346 | 408 | 133 | 378 | 75 |
| 16 | 150 | 122 | 142 | 137 | 819 | 1,990 | 870 | 766 | 488 | 117 | 359 | 67 |
| 17 | 134 | 166 | 133 | 100 | 1,850 | 2,350 | 700 | 802 | 475 | 124 | 315 | 109 |
| 18 | 123 | 146 | 131 | 107 | 1,560 | 2,160 | 564 | 717 | 424 | 89 | 267 | 67 |
| 19 | 144 | 125 | 125 | 243 | 1,390 | 2,160 | 479 | 819 | 371 | 129 | 223 | 101 |
| 20 | 152 | 133 | 105 | 223 | 1,430 | 1,940 | 448 | 888 | 336 | 165 | 206 | 74 |
| 21 | 139 | 158 | 112 | 193 | 1,270 | 1,560 | 388 | 853 | 382 | 103 | 209 | 87 |
| 22 | 129 | 140 | 121 | 211 | 975 | 1,230 | 340 | 802 | 409 | 193 | 190 | 85 |
| 23 | 145 | 150 | 137 | 174 | 768 | 1,040 | 337 | a850 | 476 | 155 | 102 | 106 |
| 24 | 136 | 159 | 315 | 324 | 615 | 905 | 235 | 768 | 337 | 89 | 122 | 110 |
| 25 | 111 | 147 | 275 | 318 | 513 | 802 | 182 | 734 | 291 | 55 | 103 | 62 |
| 26 | 123 | 144 | 217 | 330 | 438 | 734 | 209 | 683 | 211 | 73 | 102 | 79 |
| 27 | 154 | 140 | 241 | 301 | 359 | 632 | 213 | 615 | 131 | 139 | 100 | 213 |
| 28 | 146 | 134 | 330 | 296 | 322 | 564 | 182 | 530 | 161 | 76 | 100 | 181 |
| 29 | a130 | 125 | 320 | 294 | - | 479 | 155 | 455 | 193 | 81 | 99 | 106 |
| 30 | a130 | 125 | 308 | 283 | - | 462 | 140 | 394 | 213 | 84 | 79 | 115 |
| 31 | a169 | - | 288 | 386 | - | 462 | - | 368 | - | 146 | 138 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 4,826 | 576 | 64 | 156 | | |
| November | 5,395 | 338 | 122 | 180 | | |
| December | 5,281 | 330 | 105 | 170 | | |
| Calendar year 1941 | 95,538 | 1,560 | 32 | 262 | | |
| January | 6,825 | 383 | 85 | 220 | | |
| February | 25,312 | 1,850 | 322 | 904 | | |
| March | 35,102 | 2,440 | 308 | 1,132 | | |
| April | 22,140 | 2,160 | 140 | 738 | | |
| May | 13,659 | 888 | 111 | 441 | | |
| June | 9,224 | 488 | 131 | 307 | | |
| July | 4,645 | 333 | 55 | 150 | | |
| August | 5,383 | 378 | 60 | 174 | | |
| September | 2,890 | 213 | 46 | 96.3 | | |
| Water year 1941-42 | 140,682 | 2,440 | 46 | 385 | | |

a No gage-height record; discharge computed on basis of records for station at Independence.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Cuyahoga River at Independence, Ohio

Location.- Water-stage recorder, lat. 41°23'44", long. 81°37'54", in T. 6 N., R. 12 W., at highway bridge 1 mile northeast of Independence. Datum of gage is 584.14 feet above mean sea level (levels by city of Cleveland).
Drainage area.- 709 square miles.
Records available.- September 1903 to July 1906, September 1921 to May 1923, September 1927 to December 1935, March 1940 to September 1942.
Average discharge.- 11 years (1921-22, 1927-35, 1940-42), 643 second-feet.
Extremes.- Maximum discharge during year, 8,910 second-feet Mar. 16 or 17 (gage height, 16.9 feet, from floodmark); minimum, 68 second-feet Sept. 14, 15 (gage height, 2.52 feet).
1921-23, 1927-35, 1940-42: Maximum discharge, 10,800 second-feet Jan. 19, 1929 (gage height, 18.9 feet); minimum, 14 second-feet Nov. 30, 1930; minimum combined discharge of river and canal, 48 second-feet Aug. 29, 1933.
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. A small amount of water from Tuscarawas River is diverted into this basin at Portage Lakes. Water diverted 6 miles above station at Brecksville, by the Ohio Canal, bypasses station; measurements of canal during water year 1941-42 made as follows:

| Date | Second-feet | Date | Second-feet | Date | Second-feet | Date | Second-feet |
|---|---|---|---|---|---|---|---|
| Oct. 30 | 54.3 | Jan. 22 | 63.0 | May 2 | 68.9 | Apr. 7 | 44.3 |
| Nov. 25 | 58.9 | Feb. 25 | 66.1 | June 15 | 60.2 | Sept.17 | 59.8 |
| Dec. 16 | 60.1 | Apr. 2 | 61.9 | July 22 | 46.1 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 118 | 560 | 179 | 435 | 1,040 | 460 | 817 | 230 | 635 | 472 | 240 | 164 |
| 2 | 104 | 437 | 242 | 824 | 702 | 529 | 794 | 231 | 593 | 373 | 154 | 132 |
| 3 | 100 | 325 | 272 | 561 | 564 | 577 | 817 | 224 | 572 | 278 | 158 | 142 |
| 4 | 288 | 274 | 252 | 458 | 564 | 529 | 1,210 | 208 | 522 | 288 | 192 | 138 |
| 5 | 148 | 273 | 231 | 399 | 3,430 | 770 | 841 | 242 | 510 | 246 | 128 | 154 |
| 6 | 144 | 377 | 214 | 344 | 2,840 | 961 | 770 | 220 | 355 | 393 | 127 | 101 |
| 7 | 1,100 | 556 | 194 | 234 | 4,160 | 1,500 | 817 | 325 | 242 | 435 | 122 | 121 |
| 8 | 694 | 488 | 192 | 269 | 2,840 | 2,010 | 2,960 | 304 | 230 | 272 | 174 | 122 |
| 9 | 334 | 436 | 220 | 275 | 2,060 | 3,040 | 3,480 | 239 | 252 | 242 | 386 | 198 |
| 10 | 249 | 410 | 209 | b225 | 1,740 | 2,120 | 5,840 | 217 | 264 | 252 | 1,060 | 158 |
| 11 | 220 | 360 | 190 | b190 | 1,620 | 2,180 | 4,220 | 277 | 244 | 491 | 409 | 130 |
| 12 | 184 | 245 | 188 | b190 | 1,360 | 3,000 | 3,180 | 292 | 358 | 286 | 280 | 115 |
| 13 | 125 | 248 | 220 | b245 | 1,010 | 2,890 | 2,670 | 307 | 340 | 268 | 288 | 142 |
| 14 | 200 | 242 | 272 | b205 | 794 | 4,600 | 2,230 | 266 | 398 | 280 | 421 | 83 |
| 15 | 204 | 204 | 225 | b220 | 702 | 3,300 | 1,790 | 430 | 494 | 246 | 456 | 137 |
| 16 | 189 | 197 | 244 | b210 | 2,260 | 5,300 | 1,420 | 3,410 | 572 | 211 | 523 | 119 |
| 17 | 180 | 183 | 226 | *b218 | *6,240 | 6,400 | 1,180 | 1,680 | 593 | 195 | 505 | 114 |
| 18 | 190 | 214 | *241 | b155 | 3,230 | 4,500 | 972 | 1,320 | 522 | 181 | 375 | 154 |
| 19 | 190 | 202 | 234 | b660 | 2,060 | 3,500 | 792 | 1,220 | 481 | 166 | 322 | 116 |
| 20 | 175 | 198 | 224 | 568 | 2,000 | 2,800 | 725 | 1,270 | 392 | 190 | 280 | 190 |
| 21 | 189 | 280 | 186 | 418 | 1,800 | 2,230 | 600 | 1,320 | 1,100 | 186 | 242 | 108 |
| 22 | 182 | 242 | 174 | 340 | 1,400 | 2,060 | 530 | 1,370 | 860 | 166 | 263 | 135 |
| 23 | 192 | 270 | 214 | 333 | 1,100 | 1,740 | 500 | 2,120 | 950 | 288 | 389 | 130 |
| 24 | 188 | 275 | 862 | 414 | 900 | 1,460 | 400 | 1,520 | 593 | 188 | 224 | 154 |
| 25 | 179 | 275 | 862 | 460 | 724 | 1,240 | 350 | 1,220 | 424 | 139 | 190 | 154 |
| 26 | 153 | 235 | 586 | 482 | 634 | 1,080 | 330 | 1,020 | 340 | 104 | 168 | 108 |
| 27 | 163 | 236 | 486 | 473 | 577 | 937 | 350 | 905 | 249 | 118 | 157 | 470 |
| 28 | 272 | 222 | 486 | 439 | 482 | 841 | 280 | 770 | 194 | 227 | 155 | 351 |
| 29 | 220 | 208 | 466 | 406 | - | 724 | 250 | 635 | 234 | 138 | 167 | 224 |
| 30 | 198 | 197 | 436 | 378 | - | 656 | 220 | 572 | 234 | 147 | 141 | 160 |
| 31 | 202 | - | 410 | 831 | - | 679 | - | 485 | - | 336 | 137 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 7,274 | 1,100 | 100 | 235 | | |
| November | 8,869 | 560 | 183 | 296 | | |
| December | 9,637 | 862 | 174 | 311 | | |
| Calendar year 1941 | 159,176 | 2,890 | 62 | 436 | | |
| January | 11,859 | 831 | 155 | 383 | | |
| February | 48,833 | 6,240 | 482 | 1,744 | | |
| March | 64,613 | 6,400 | 460 | 2,084 | | |
| April | 41,335 | 5,840 | 220 | 1,378 | | |
| May | 24,849 | 3,410 | 206 | 802 | | |
| June | 13,747 | 1,100 | 194 | 458 | | |
| July | 7,802 | 491 | 104 | 252 | | |
| August | 8,833 | 1,060 | 122 | 285 | | |
| September | 4,744 | 470 | 83 | 158 | | |
| Water year 1941-42 | 252,395 | 6,400 | 83 | 691 | | |

Peak discharge.- Feb. 7 (1 p.m.) 4,610 sec.-ft.; Feb. 17 (7:30 a.m.) 7,420 sec.-ft.; Apr. 9 (4 p.m.) 4,870 sec.-ft.; Apr. 10 (12 m.) 6,740 sec.-ft.; May 16 (8 a.m.) 5,310 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Feb. 20-24, Mar. 14-20, Apr. 21 to May 1; discharge computed on basis of weather records, observer's notes, floodmark, and records for station at Old Portage.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Little Cuyahoga River at Akron, Ohio

Location.- Water-stage recorder and sharp-crested weir, lat. 41°03'34", long. 81°28'32", at foot of Seiberling Street, Akron, Summit County, half a mile downstream from mouth of Springfield Lake Outlet. Datum of gage is 997.41 feet above mean sea level.

Drainage area.- 42.0 square miles.

Records available.- July 1920 to December 1935, March 1939 to September 1942.

Average discharge.- 18 years, 34.1 second-feet.

Extremes.- Maximum discharge during year, 481 second-feet Feb. 17 (gage height, 2.18 feet); minimum, 9.3 second-feet June 28, Aug. 7; minimum gage height, 0.18 foot Aug. 7. 1920-35, 1939-42: Maximum discharge not determined; no flow June 24, July 14, 1923, because of regulation above station.

Remarks.- Records good except those above 50 second-feet, which are poor. Some water is pumped from below station and returned to stream above. Amount of diversion not determined.

Cooperation.- Gage-height record furnished by Goodyear Tire & Rubber Co.

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 4 to July 5, Sept. 4-30)

| | | | | | |
|---|---|---|---|---|---|
| 0.2 | 11 | 0.5 | 44 | 1.0 | 145 |
| .3 | 19 | .6 | 61 | 1.3 | 215 |
| .4 | 30 | .8 | 101 | 1.6 | 295 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 49 | 20 | 26 | 37 | 40 | 53 | 20 | 103 | 20 | 14 | 17 |
| 2 | 19 | 27 | 20 | 34 | 27 | 40 | 51 | 21 | 59 | 17 | 13 | 17 |
| 3 | 30 | 22 | 19 | 25 | 25 | 40 | 49 | 20 | 43 | 15 | 18 | 17 |
| 4 | 25 | 19 | 18 | 21 | 33 | 43 | 56 | 22 | 36 | 14 | 19 | 18 |
| 5 | 19 | 18 | 17 | 20 | 138 | 49 | 49 | 21 | 33 | 11 | 17 | 17 |
| 6 | 36 | 34 | 13 | a25 | 95 | 53 | 43 | 24 | 29 | 59 | 17 | 15 |
| 7 | 133 | 34 | 12 | a22 | 108 | 58 | 56 | 28 | 28 | 27 | 11 | 15 |
| 8 | 43 | 25 | 16 | a20 | 67 | 65 | 82 | 25 | 27 | 19 | 16 | 18 |
| 9 | 24 | 20 | 17 | 16 | 48 | 114 | 159 | 24 | 26 | 17 | 18 | 21 |
| 10 | 18 | 20 | 16 | 15 | 44 | 70 | 246 | 21 | 26 | 22 | 18 | 20 |
| 11 | 17 | 19 | 25 | 13 | 43 | 79 | 125 | 21 | 29 | 26 | 13 | 16 |
| 12 | 14 | 21 | 15 | 17 | 40 | 105 | 97 | 21 | 25 | 17 | 12 | 21 |
| 13 | 18 | 18 | 18 | 17 | 36 | 107 | 84 | 22 | 22 | 19 | 16 | 16 |
| 14 | 19 | 17 | 17 | 18 | 33 | 203 | 86 | 24 | 33 | 22 | 20 | 16 |
| 15 | 20 | 17 | 18 | 18 | 34 | 112 | 80 | 54 | 26 | 20 | 15 | 18 |
| 16 | 18 | 17 | 19 | 18 | 149 | 147 | 74 | 140 | 26 | 18 | 14 | 17 |
| 17 | 18 | 20 | 17 | 14 | 294 | 173 | 69 | 51 | 26 | 18 | 18 | 18 |
| 18 | 19 | 20 | 18 | 17 | 86 | 103 | 65 | 46 | 22 | 15 | 18 | 20 |
| 19 | 15 | 18 | 18 | 46 | 69 | 86 | 61 | 46 | 22 | 15 | 18 | 27 |
| 20 | 16 | 20 | 16 | 27 | 58 | 76 | 58 | 68 | 19 | 17 | 18 | 30 |
| 21 | 18 | 24 | 13 | 22 | 51 | 86 | 51 | 69 | 22 | 16 | 18 | 21 |
| 22 | 18 | 19 | 15 | 22 | 46 | 86 | 49 | 84 | 17 | 23 | 17 | 19 |
| 23 | 21 | 22 | 19 | 24 | 44 | 76 | 51 | 95 | 18 | 17 | 15 | 18 |
| 24 | 19 | 22 | 63 | 22 | 42 | 69 | 43 | 56 | 15 | 15 | 17 | 19 |
| 25 | 17 | 18 | 37 | 21 | 44 | 65 | 36 | 48 | 14 | 14 | 17 | 19 |
| 26 | 14 | 17 | 26 | 26 | 43 | 59 | 34 | 43 | 13 | 12 | 17 | 19 |
| 27 | 22 | 17 | 22 | 26 | 43 | 56 | 31 | 37 | 17 | 17 | 17 | 39 |
| 28 | 19 | 19 | 21 | 26 | 42 | 56 | 27 | 33 | 10 | 17 | 18 | 22 |
| 29 | 18 | 16 | 24 | 25 | - | 51 | 37 | 27 | 13 | 16 | 16 | 21 |
| 30 | 18 | 16 | 22 | 22 | - | 48 | 25 | 26 | 17 | 16 | 14 | 20 |
| 31 | 27 | - | 21 | 44 | - | 51 | - | 31 | - | 20 | 17 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 750 | 133 | 14 | 24.2 | | |
| November | 645 | 49 | 16 | 21.5 | | |
| December | 632 | 63 | 12 | 20.4 | | |
| Calendar year 1941 | 8,631 | 160 | 10 | 23.6 | | |
| January | 711 | 46 | 13 | 22.9 | | |
| February | 1,819 | 294 | 25 | 65.0 | | |
| March | 2,466 | 203 | 40 | 79.5 | | |
| April | 2,027 | 246 | 25 | 67.6 | | |
| May | 1,268 | 140 | 20 | 40.9 | | |
| June | 816 | 103 | 10 | 27.2 | | |
| July | 591 | 59 | 11 | 19.1 | | |
| August | 506 | 20 | 11 | 16.3 | | |
| September | 595 | 39 | 15 | 19.8 | | |
| Water year 1941-42 | 12,826 | 294 | 10 | 35.1 | | |

Peak discharge.- Oct. 6 (11 p.m.) 281 sec.-ft.; Oct. 7 (3:30 a.m.) 257 sec.-ft.; Feb. 17 (3 a.m.) 481 sec.-ft.; Mar. 14 (2 a.m.) 236 sec.-ft.; Mar. 16 (10 p.m.) 257 sec.-ft.; Apr. 10 (5 a.m.) 315 sec.-ft.

a No gage-height record; discharge computed on basis of range in stage and weather records.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Chagrin River at Willoughby, Ohio

Location.- Water-stage recorder, lat. 41°37'51", long. 81°24'13", at city water works, 800 feet downstream from East Branch, 1 mile southeast of Willoughby, Lake County, and 5 miles upstream from mouth.

Drainage area.- 251 square miles.

Records available.- July 1925 to November 1935, October 1939 to September 1942.

Average discharge.- 13 years, 282 second-feet (not including diversion).

Extremes.- Maximum discharge during year, 11,600 second-feet May 16 (gage height, 11.9 feet, from floodmark); minimum daily, 18 second-feet Oct. 1.
1925-35, 1940-42: Maximum discharge, 20,500 second-feet June 26, 1931 (gage height, 9.90 feet, site and datum then in use); minimum daily, 3.0 second-feet July 25, 26, 1934.
Flood of Mar. 23, 1913, reached a stage of 17.3 feet, present datum, from floodmarks.

Remarks.- Records good except those computed on basis of partly estimated gage heights or from graph based on gage readings, which are fair, and those for periods of ice effect, which are poor. Water diverted at dam just above station for municipal supply of city of Willoughby.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 83 | 49 | 103 | 475 | 138 | 378 | 77 | 161 | 653 | 132 | 40 |
| 2 | 20 | 128 | 58 | 419 | 219 | 158 | 598 | 77 | 118 | 186 | 1,530 | 37 |
| 3 | 25 | 83 | 103 | 200 | 170 | 150 | 488 | 93 | 98 | 106 | 344 | 38 |
| 4 | 58 | 60 | 96 | 110 | 220 | 190 | 1,280 | 88 | 83 | 140 | 187 | 44 |
| 5 | 56 | 49 | 77 | 90 | 2,030 | 252 | 532 | 73 | 77 | 92 | 113 | 37 |
| 6 | 47 | 56 | 68 | 80 | 1,630 | 340 | 336 | 66 | 66 | 172 | 75 | 36 |
| 7 | 66 | 122 | 58 | 70 | 3,980 | 903 | 485 | 141 | 70 | 171 | 57 | 32 |
| 8 | 122 | 118 | 53 | 66 | 1,350 | 2,660 | 2,110 | 141 | 108 | 97 | 52 | 46 |
| 9 | 62 | 81 | 58 | 66 | 527 | 3,700 | 2,040 | 112 | 98 | 66 | 264 | 68 |
| 10 | 49 | 66 | 55 | 65 | 417 | 1,220 | 4,050 | 88 | f70 | 63 | 860 | 77 |
| 11 | 37 | 58 | 51 | 65 | 288 | 870 | 1,460 | 75 | f81 | 113 | 315 | 71 |
| 12 | 34 | 53 | 47 | 65 | 170 | 1,140 | 788 | 66 | f86 | 90 | 181 | 54 |
| 13 | 34 | 47 | 56 | 65 | 150 | 626 | 506 | 75 | 144 | 64 | 120 | 57 |
| 14 | 32 | 46 | 79 | 65 | 140 | 1,770 | 365 | 75 | 158 | 101 | 81 | 52 |
| 15 | 39 | 44 | 77 | 64 | 155 | 904 | 288 | 108 | 147 | 72 | f75 | 44 |
| 16 | 36 | 46 | 93 | 64 | 2,250 | 1,480 | 245 | f5,370 | 103 | 54 | 178 | 41 |
| 17 | 34 | 44 | *75 | *63 | 5,260 | 4,300 | 209 | f762 | 88 | 54 | 199 | 38 |
| 18 | 32 | 40 | 88 | 70 | 1,330 | 1,070 | 181 | f369 | 81 | 54 | 115 | 38 |
| 19 | 37 | 39 | 91 | 600 | 516 | 609 | 161 | f320 | 66 | 45 | 81 | 38 |
| 20 | 37 | 44 | 77 | 620 | 365 | 417 | 152 | 328 | 60 | 48 | 66 | 46 |
| 21 | 36 | 70 | 62 | 357 | 285 | 453 | 138 | 270 | 149 | 40 | 57 | 49 |
| 22 | 34 | f83 | 62 | 226 | 230 | 920 | 128 | 632 | 256 | 36 | 54 | 41 |
| 23 | 39 | f70 | 60 | 206 | 200 | 638 | 120 | 1,960 | 423 | 50 | 77 | 37 |
| 24 | 40 | 88 | 337 | 182 | 175 | 417 | 110 | 644 | 161 | 45 | 90 | 38 |
| 25 | 39 | f75 | 588 | 178 | *150 | 304 | 103 | 365 | 103 | 37 | 66 | 38 |
| 26 | 37 | f62 | 300 | 170 | 145 | 249 | 98 | 256 | 79 | 31 | 52 | 37 |
| 27 | 39 | f58 | 213 | 155 | 138 | 213 | 86 | 190 | 64 | 30 | 43 | 240 |
| 28 | 77 | 53 | 164 | 138 | 141 | 193 | 86 | 150 | 58 | 28 | 44 | 216 |
| 29 | 79 | 49 | 141 | 112 | - | 178 | 91 | 125 | 51 | 37 | 43 | 113 |
| 30 | 56 | 49 | 118 | 103 | - | 184 | 86 | 105 | 2,300 | 82 | 41 | 71 |
| 31 | 49 | - | 100 | 228 | - | 216 | - | 100 | - | 215 | 41 | - |

| Month | Observed | | | | Diversion (mean sec.-ft.)† | Adjusted for diversion | | |
|---|---|---|---|---|---|---|---|---|
| | Second-foot-days | Maximum | Minimum | Mean | | Mean | Per square mile | Run-off in inches |
| October | 1,400 | 122 | 18 | 45.2 | 1.71 | 46.9 | 0.187 | 0.22 |
| November | 1,964 | 128 | 39 | 65.5 | 1.66 | 67.2 | .268 | .30 |
| December | 3,553 | 588 | 47 | 115 | 1.56 | 117 | .466 | .54 |
| Calendar year 1941 | 53,272 | 2,200 | 13 | 146 | 1.70 | 148 | .590 | 7.99 |
| January | 5,070 | 620 | 63 | 164 | 1.49 | 165 | .657 | .76 |
| February | 23,106 | 5,260 | 138 | 825 | 1.46 | 826 | 3.29 | 3.43 |
| March | 26,862 | 4,300 | 138 | 867 | 1.45 | 868 | 3.46 | 3.99 |
| April | 17,698 | 4,050 | 86 | 590 | 1.55 | 592 | 2.36 | 2.63 |
| May | 13,301 | 5,370 | 66 | 429 | 1.55 | 431 | 1.72 | 1.98 |
| June | 5,607 | 2,300 | 51 | 187 | 1.61 | 189 | .753 | .84 |
| July | 3,074 | 653 | 28 | 99.2 | 1.62 | 101 | .402 | .46 |
| August | 5,633 | 1,530 | 41 | 182 | 1.56 | 184 | .733 | .85 |
| September | 1,814 | 240 | 32 | 60.5 | 1.58 | 62.1 | .247 | .28 |
| Water year 1941-42 | 109,082 | 5,370 | 18 | 299 | 1.57 | 301 | 1.20 | 16.28 |

Peak discharge.- Feb. 7 (6:30 a.m.) 5,260 sec.-ft.; Feb. 17 (12:30 a.m.) 8,200 sec.-ft.; Mar. 17 (4:30 a.m.) 7,600 sec.-ft.; Apr. 10 (9 a.m.) 5,260 sec.-ft.; May 16 (4 a.m.) 11,600 sec.-ft.; June 30 (6:30 p.m.) 9,730 sec.-ft.

* Winter discharge measurement made on this day.

† Diversion for municipal supply of city of Willoughby.

f Computed on basis of partly estimated gage height.

Note.- Discharge July 23 to Aug. 14 computed from graph based on gage readings. Stage-discharge relation affected by ice Jan. 3-19, Feb. 3, 4, 12-14, 21-26.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Grand River near North Bristol, Ohio

Location.- Water-stage recorder, lat. 41°24'45", long. 80°54'45", at highway bridge an eighth of a mile downstream from Center Creek, and 2½ miles west of North Bristol, Trumbull County. Prior to Aug. 28, wire-weight gage at same site and datum.

Drainage area.- 89.7 square miles.

Records available.- March to September 1942.

Extremes.- Maximum discharge observed during period, 2,150 second-feet Apr. 10 (gage height, 12.36 feet); minimum, 4.9 second-feet Sept. 8 (gage height, 2.77 feet).

Remarks.- Records fair except those above 750 second-feet and those for periods of no gage-height record, which are poor. Wire-weight gage read twice daily Mar. 25 to Aug. 28.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | - | 55 | 9.9 | 186 | 9.2 | 15 | 7.4 |
| 2 | | | | | | - | 62 | 11 | 300 | 8.7 | 12 | 6.6 |
| 3 | | | | | | - | 60 | 13 | 137 | 9.0 | 14 | 6.4 |
| 4 | | | | | | - | 235 | 13 | 58 | 8.3 | 10 | 5.9 |
| 5 | | | | | | - | 193 | 10 | 27 | 8.7 | 7.2 | 6.8 |
| 6 | | | | | | - | 84 | 8.5 | 19 | 8.7 | 7.2 | 6.2 |
| 7 | | | | | | - | 96 | 21 | 14 | 14 | 6.6 | 5.7 |
| 8 | | | | | | - | 574 | 20 | 12 | 12 | 9.0 | 5.5 |
| 9 | | | | | | - | 626 | 13 | 11 | 9.6 | 30 | 7.6 |
| 10 | | | | | | - | 2,150 | 11 | 9.6 | 9.2 | 41 | 7.4 |
| 11 | | | | | | - | 790 | 9.0 | 9.6 | 32 | 27 | 6.8 |
| 12 | | | | | | - | 300 | 9.4 | 90 | 14 | 14 | 6.4 |
| 13 | | | | | | - | 137 | 9.4 | 88 | 9.4 | 13 | 6.8 |
| 14 | | | | | | - | 84 | 11 | 62 | 9.2 | 12 | a7.3 |
| 15 | | | | | | - | 60 | 11 | 36 | 7.4 | 10 | a7.9 |
| 16 | | | | | | - | 35 | 970 | 20 | 7.4 | 8.3 | a7.4 |
| 17 | | | | | | - | 14 | 664 | 17 | 7.9 | 7.4 | a7.0 |
| 18 | | | | | | - | 21 | 246 | 16 | 7.4 | 7.0 | a6.2 |
| 19 | | | | | | - | 24 | 79 | 14 | 6.6 | 7.6 | a6.4 |
| 20 | | | | | | - | 21 | 68 | 10 | 6.6 | 7.6 | a6.7 |
| 21 | | | | | | - | 20 | 68 | 25 | 7.4 | 7.6 | a7.2 |
| 22 | | | | | | - | 18 | 186 | 28 | 11 | 6.8 | a7.6 |
| 23 | | | | | | - | 17 | 644 | 18 | 11 | 24 | 7.0 |
| 24 | | | | | | - | 14 | 322 | 20 | 7.9 | 29 | 6.1 |
| 25 | | | | | | 77 | 13 | 116 | 16 | 7.0 | 11 | 5.9 |
| 26 | | | | | | 56 | 13 | 52 | 13 | 8.1 | 9.9 | a6.2 |
| 27 | | | | | | 42 | 10 | 29 | 10 | 6.4 | 7.6 | 7.0 |
| 28 | | | | | | 36 | 12 | 23 | 9.9 | 7.6 | 7.4 | 18 |
| 29 | | | | | | 33 | 11 | 18 | 8.1 | 7.9 | 7.9 | 11 |
| 30 | | | | | | 32 | 9.4 | 14 | 9.0 | 9.6 | 8.1 | 7.9 |
| 31 | | | | | | 36 | - | 13 | - | 14 | 6.2 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | | | | | | |
| November | | | | | | |
| December | | | | | | |
| Calendar year | | | | | | |
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March 25-31 | 312 | 77 | 32 | 44.6 | 0.497 | 0.13 |
| April | 5,758.4 | 2,150 | 9.4 | 192 | 2.14 | 2.39 |
| May | 3,692.2 | 970 | 8.5 | 119 | 1.33 | 1.53 |
| June | 1,293.2 | 300 | 8.1 | 43.1 | .480 | .54 |
| July | 303.2 | 32 | 6.4 | 9.78 | .109 | .13 |
| August | 391.4 | 41 | 6.2 | 12.6 | .140 | .16 |
| September | 218.3 | 18 | 5.5 | 7.28 | .081 | .09 |
| Water year | - | - | - | - | - | - |

a No gage-height record; discharge computed on basis of weather records, tape-gage readings, and records for station near Rome.

Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Grand River near Rome, Ohio

Location.- Water-stage recorder, lat. 41°36'20", long. 80°53'40", at bridge on U. S. Highway 6, 2¼ miles upstream from Mud Creek, and 2½ miles west of Rome, Ashtabula County. Prior to Aug. 10, wire-weight gage at same site and datum.

Drainage area.- 276 square miles.

Records available.- March to September 1942.

Extremes.- Maximum discharge observed during period, 3,150 second-feet Apr. 11 (gage height, 17.02 feet); minimum, 16 second-feet Sept. 26 (gage height, 1.25 feet).

Remarks.- Records poor. Wire-weight gage read twice daily Mar. 21 to Aug. 10.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | - | 148 | 34 | 258 | 33 | 151 | 18 |
| 2 | | | | | | - | 199 | 33 | 260 | 42 | 915 | 17 |
| 3 | | | | | | - | 195 | 40 | 269 | 30 | 1,420 | 22 |
| 4 | | | | | | - | 377 | 44 | 269 | 22 | 506 | 21 |
| 5 | | | | | | - | 520 | 38 | 165 | 20 | 151 | 20 |
| 6 | | | | | | - | 464 | 34 | 104 | 27 | 60 | 19 |
| 7 | | | | | | - | 308 | 45 | 67 | 41 | 35 | 18 |
| 8 | | | | | | - | 736 | 64 | 66 | 36 | 33 | 18 |
| 9 | | | | | | - | 972 | 72 | 86 | 29 | 646 | 22 |
| 10 | | | | | | - | 2,100 | 57 | 51 | 35 | 852 | 32 |
| 11 | | | | | | - | 3,110 | 44 | 49 | 76 | 832 | 27 |
| 12 | | | | | | - | 2,830 | 35 | 272 | 101 | 450 | 25 |
| 13 | | | | | | - | 1,860 | 32 | 666 | 66 | 187 | 24 |
| 14 | | | | | | - | 832 | 31 | 536 | 35 | 89 | 22 |
| 15 | | | | | | - | 353 | 38 | 353 | 22 | 62 | 21 |
| 16 | | | | | | - | 211 | 1,220 | 269 | 17 | 53 | 20 |
| 17 | | | | | | - | 148 | 1,320 | 110 | 19 | 48 | 17 |
| 18 | | | | | | - | 113 | 1,250 | 79 | 23 | 41 | 17 |
| 19 | | | | | | - | 95 | 1,250 | 62 | 22 | 34 | 17 |
| 20 | | | | | | - | 76 | 972 | 48 | 37 | 28 | 16 |
| 21 | | | | | | 649 | 64 | 536 | 40 | 32 | 23 | 17 |
| 22 | | | | | | 792 | 60 | 437 | 37 | 116 | a21 | 21 |
| 23 | | | | | | 772 | 56 | 932 | 68 | 666 | a20 | 20 |
| 24 | | | | | | 700 | 51 | 832 | 53 | 478 | a40 | 18 |
| 25 | | | | | | 520 | 46 | 754 | 41 | 187 | 79 | 17 |
| 26 | | | | | | 319 | 42 | 568 | 37 | 66 | 60 | 16 |
| 27 | | | | | | 203 | 39 | 288 | 30 | 35 | 34 | 18 |
| 28 | | | | | | 158 | 34 | 144 | 26 | 26 | 26 | 24 |
| 29 | | | | | | 134 | 35 | 92 | 22 | 27 | 22 | 33 |
| 30 | | | | | | 125 | 37 | 66 | 24 | 30 | 20 | 35 |
| 31 | | | | | | 125 | - | 51 | - | 137 | 18 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | | | | | | |
| November | | | | | | |
| December | | | | | | |
| Calendar year | | | | | | |
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March 21-31 | 4,497 | 792 | 125 | 409 | 1.48 | 0.61 |
| April | 16,111 | 3,110 | 34 | 537 | 1.95 | 2.18 |
| May | 11,353 | 1,320 | 31 | 366 | 1.33 | 1.53 |
| June | 4,417 | 666 | 22 | 147 | .533 | .59 |
| July | 2,533 | 666 | 17 | 81.7 | .296 | .34 |
| August | 6,956 | 1,420 | 18 | 224 | .812 | .94 |
| September | 632 | 35 | 16 | 21.1 | .076 | .08 |
| Water year | - | - | - | - | - | - |

a No gage-height record; discharge computed on basis of weather records, recorded range in stage, and records for station near Madison.

Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Grand River near Madison, Ohio

Location.- Water-stage recorder, lat. 41°44'26", long. 81°02'48", at highway bridge half a mile upstream from Griswold Creek and 2 miles south of Madison, Lake County. Datum of gage is 674.47 feet above mean sea level, adjustment of 1912.
Drainage area.- 587 square miles.
Records available.- July 1922 to December 1935, February 1938 to September 1942.
Average discharge.- 17 years, 615 second-feet.
Extremes.- Maximum discharge during year, 11,200 second-feet Mar. 9 (gage height, 10.5 feet); minimum, 0.8 second-foot Oct. 6 (gage height, 0.57 foot).
1922-35, 1938-42: Maximum discharge, 16,400 second-feet Jan. 19, 1929 (gage height, 12.0 feet); practically no flow July 31, Aug. 1-2, 1934.
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 22)

Oct. 1 to Feb. 7

| | | | | | |
|---|---|---|---|---|---|
| 1.2 | 30 | 2.7 | 376 | 5.0 | 1,650 |
| 1.4 | 49 | 3.0 | 496 | 5.5 | 2,090 |
| 1.7 | 94 | 3.5 | 728 | 6.0 | 2,660 |
| 2.0 | 158 | 4.0 | 1,010 | 7.0 | 4,070 |
| 2.4 | 271 | 4.5 | 1,320 | 8.0 | 5,900 |

Feb. 8 to Sept. 30

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1.2 | 24 | 2.1 | 148 | 4.5 | 1,250 | 8.7 | 6,680 |
| 1.4 | 40 | 2.3 | 200 | 5.0 | 1,610 | 9.7 | 6,900 |
| 1.5 | 50 | 2.6 | 300 | 5.5 | 2,060 | | |
| 1.8 | 88 | 3.4 | 620 | 6.5 | 3,170 | | |
| 1.9 | 105 | 4.0 | 940 | 7.5 | 4,600 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.5 | 44 | 41 | 214 | 1,350 | 158 | 340 | 68 | 183 | 67 | 720 | 29 |
| 2 | 2.1 | 48 | 44 | 654 | 920 | 146 | 448 | 66 | 795 | 70 | 1,090 | 25 |
| 3 | 2.7 | 52 | 48 | 678 | 654 | b150 | 480 | 68 | 480 | 77 | 3,630 | 25 |
| 4 | 2.5 | 79 | 65 | 438 | 607 | b150 | 910 | 69 | 428 | 74 | 2,110 | 22 |
| 5 | 1.6 | 119 | 86 | 291 | 678 | 184 | 1,060 | 72 | 372 | 58 | 770 | 22 |
| 6 | 1.4 | 117 | 86 | b160 | 1,790 | 218 | 820 | 67 | 230 | 84 | 293 | 22 |
| 7 | 10 | 134 | 74 | b120 | 6,830 | 416 | 745 | 139 | 156 | 150 | 136 | 20 |
| 8 | 10 | 115 | 68 | b100 | 5,140 | 2,070 | 2,330 | 127 | 111 | 143 | 824 | 20 |
| 9 | 16 | 109 | 74 | b90 | 2,810 | 9,040 | 2,550 | 150 | 109 | 95 | 3,460 | 23 |
| 10 | 37 | 148 | 48 | b80 | 2,320 | 6,680 | 5,940 | 141 | 121 | 57 | 4,000 | 32 |
| 11 | 109 | 146 | 50 | b78 | *2,010 | 4,300 | 5,940 | 113 | 381 | 115 | 2,370 | 39 |
| 12 | 105 | 111 | 47 | b76 | 1,250 | 4,760 | 4,450 | 88 | 1,250 | 227 | 1,320 | 39 |
| 13 | 72 | 79 | 42 | b75 | 695 | 3,630 | 3,170 | 63 | 1,530 | 176 | 820 | 37 |
| 14 | 46 | 48 | 58 | b74 | 444 | *4,150 | 1,730 | 62 | 1,570 | 127 | 300 | 34 |
| 15 | 30 | 50 | 77 | b73 | 320 | 4,300 | 850 | 55 | 1,030 | 87 | 166 | 30 |
| 16 | 17 | 42 | 80 | *b73 | 854 | 3,420 | 480 | 3,840 | 645 | 47 | 143 | 29 |
| 17 | 18 | 36 | *115 | b70 | *6,760 | 5,940 | 340 | 5,420 | 376 | 2,000 | 132 | 23 |
| 18 | 19 | 34 | 179 | b70 | 5,280 | 4,920 | 248 | 2,260 | 227 | 3,420 | 111 | 22 |
| 19 | 18 | 31 | 184 | b290 | 3,050 | 3,560 | 195 | 1,820 | 153 | 771 | 90 | 20 |
| 20 | 16 | 31 | 161 | b1,200 | 2,320 | 2,480 | 160 | 2,210 | 117 | 400 | 66 | 32 |
| 21 | 16 | 34 | 117 | 1,010 | 1,860 | 1,530 | 134 | 1,420 | 102 | 279 | 54 | 22 |
| 22 | 15 | 35 | 105 | 678 | a1,100 | 2,320 | 119 | 1,120 | 157 | 212 | 50 | 19 |
| 23 | 20 | 46 | 84 | 557 | a750 | 2,010 | 109 | 3,580 | 612 | 2,960 | 47 | 19 |
| 24 | 17 | 61 | 595 | 548 | 540 | 1,500 | 100 | 2,560 | 320 | 1,820 | 42 | 24 |
| 25 | 18 | 74 | 2,040 | 509 | 368 | 1,090 | 91 | 1,420 | 160 | 820 | 46 | 22 |
| 26 | 24 | 70 | 1,350 | 467 | a275 | 745 | 73 | 1,060 | 103 | 352 | 84 | 21 |
| 27 | a30 | 66 | 890 | 430 | a200 | 500 | 67 | 695 | 84 | 156 | 77 | 55 |
| 28 | a30 | 61 | 678 | 397 | a175 | 364 | 69 | 412 | 60 | 96 | 56 | 50 |
| 29 | 27 | 53 | 479 | 322 | - | 300 | 62 | 237 | 47 | 75 | 42 | 47 |
| 30 | 29 | 47 | 318 | 274 | - | 265 | 63 | 156 | 62 | 66 | 35 | 42 |
| 31 | 31 | - | 223 | 387 | - | 254 | - | 130 | - | 259 | 31 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 792.8 | 109 | 1.4 | 25.6 | 0.044 | 0.05 |
| November | 2,120 | 148 | 31 | 70.7 | .120 | .13 |
| December | 8,506 | 2,040 | 41 | 274 | .467 | .54 |
| Calendar year 1941 | 118,427.6 | 3,750 | 1.0 | 324 | .552 | 7.51 |
| January | 10,473 | 1,200 | 70 | 338 | .576 | .66 |
| February | 51,350 | 6,830 | 175 | 1,834 | 3.12 | 3.25 |
| March | 71,550 | 9,040 | 146 | 2,308 | 3.93 | 4.53 |
| April | 34,073 | 5,940 | 62 | 1,136 | 1.94 | 2.16 |
| May | 29,688 | 5,420 | 55 | 958 | 1.63 | 1.88 |
| June | 11,971 | 1,570 | 47 | 399 | .680 | .76 |
| July | 15,340 | 3,420 | 47 | 495 | .843 | .97 |
| August | 22,915 | 4,000 | 31 | 739 | 1.26 | 1.45 |
| September | 866 | 55 | 19 | 28.9 | .049 | .05 |
| Water year 1941-42 | 259,644.8 | 9,040 | 1.4 | 711 | 1.21 | 16.43 |

Peak discharge.- Feb. 7 (7 p.m.) 8,050 sec.-ft.; Feb. 17 (7:30 p.m.) 8,160 sec.-ft.; Mar. 9 (7:30 p.m.) 11,200 sec.-ft.; Mar. 17 (3 p.m.) 6,490 sec.-ft.; Apr. 10 (10 p.m.) 6,880 sec.-ft.; May 16 (11 p.m.) 7,920 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for nearby stations.
b Stage-discharge relation affected by ice.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Phelps Creek near Windsor, Ohio

Location.- Water-stage recorder, lat. 41°30'55", long. 80°56'05", at bridge on State highway 534, 1.4 miles south of Windsor, Ashtabula County, and 1½ miles upstream from mouth. Prior to June 11, wire-weight gage at same site and datum.

Drainage area.- 26.4 square miles.

Records available.- March to September 1942.

Extremes.- Maximum discharge during period, 1,500 second-feet Aug. 2 (gage height, 7.6 feet), from rating curve extended above 840 second-feet; minimum, 0.6 second-foot Sept. 25-27 (gage height, 0.47 foot).

Remarks.- Records fair. Wire-weight gage read twice daily Mar. 20 to June 11.

Rating table, March to September 1942 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 16 to June 11, July 6-11, Sept. 13-30)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.3 | 0.2 | 0.8 | 6.0 | 1.7 | 61 | 4.0 | 516 |
| .4 | .8 | .9 | 9.4 | 1.9 | 84 | 5.0 | 749 |
| .5 | 1.5 | 1.0 | 14 | 2.1 | 113 | | |
| .6 | 2.5 | 1.3 | 30 | 2.5 | 185 | | |
| .7 | 3.9 | 1.5 | 43 | 3.0 | 294 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | - | 37 | 1.8 | 12 | 9.9 | 15 | 1.8 |
| 2 | | | | | | - | 35 | 1.5 | 4.7 | 6.7 | 530 | 1.7 |
| 3 | | | | | | - | 26 | 6.7 | 3.3 | 5.0 | 72 | 1.8 |
| 4 | | | | | | - | 110 | 4.7 | 3.2 | 3.9 | 16 | 1.9 |
| 5 | | | | | | - | 35 | 3.2 | 2.5 | 3.8 | 9.4 | 1.8 |
| 6 | | | | | | - | 24 | 3.2 | 2.1 | 3.9 | 5.4 | 1.7 |
| 7 | | | | | | - | 20 | 7.7 | 4.1 | 5.0 | 3.9 | 1.9 |
| 8 | | | | | | - | 196 | 8.4 | 5.2 | 4.1 | 7.7 | 2.1 |
| 9 | | | | | | - | 326 | 5.4 | 4.1 | 3.5 | 47 | 2.3 |
| 10 | | | | | | - | 585 | 4.5 | 2.9 | 3.1 | 498 | 2.6 |
| 11 | | | | | | - | 92 | 3.2 | 58 | 19 | 46 | 4.5 |
| 12 | | | | | | - | 43 | 2.9 | 305 | 8.0 | 14 | 3.2 |
| 13 | | | | | | - | 23 | 2.6 | 228 | 5.2 | 9.9 | 2.9 |
| 14 | | | | | | - | 16 | 2.5 | 30 | 3.6 | 7.0 | 2.6 |
| 15 | | | | | | - | 11 | 23 | 25 | 3.8 | 6.0 | 2.0 |
| 16 | | | | | | - | 8.0 | 516 | 13 | 5.6 | a5.8 | 1.4 |
| 17 | | | | | | - | 7.4 | 59 | 9.9 | 11 | a5.6 | 1.2 |
| 18 | | | | | | - | 7.0 | 26 | e.4 | 8.0 | a5.0 | 1.2 |
| 19 | | | | | | - | 6.7 | 40 | 5.8 | 5.4 | a4.0 | 1.1 |
| 20 | | | | | | 27 | 4.7 | 41 | 4.5 | 3.1 | a2.8 | .9 |
| 21 | | | | | | 87 | 4.7 | 29 | 4.3 | 4.3 | a2.6 | .9 |
| 22 | | | | | | 215 | 3.5 | 30 | 4.3 | 158 | a2.5 | .9 |
| 23 | | | | | | 54 | 3.1 | 153 | 4.5 | 59 | a3.0 | .8 |
| 24 | | | | | | 42 | 2.5 | 33 | 5.0 | 14 | 5.6 | .7 |
| 25 | | | | | | 27 | 2.1 | 18 | 3.6 | 5.8 | e.4 | .7 |
| 26 | | | | | | 20 | 2.3 | 9.9 | 3.1 | 3.9 | 2.9 | .6 |
| 27 | | | | | | 16 | 2.2 | 6.3 | 2.8 | 3.2 | 2.3 | 1.2 |
| 28 | | | | | | 15 | 2.1 | 4.1 | 2.5 | 2.5 | 2.1 | 2.9 |
| 29 | | | | | | 14 | 3.1 | 3.2 | 2.5 | 3.1 | 2.1 | 2.5 |
| 30 | | | | | | 14 | 3.2 | 3.1 | 3.2 | 3.8 | 2.0 | 1.5 |
| 31 | | | | | | 16 | - | 25 | - | 12 | 1.9 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | | | | | | |
| November | | | | | | |
| December | | | | | | |
| Calendar year | | | | | | |
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March 20-31 | 547 | 215 | 14 | 45.6 | 1.73 | 0.77 |
| April | 1,641.6 | 585 | 2.1 | 54.7 | 2.07 | 2.31 |
| May | 1,077.9 | 516 | 1.5 | 34.8 | 1.32 | 1.52 |
| June | 767.5 | 305 | 2.1 | 25.6 | .970 | 1.08 |
| July | 391.2 | 158 | 2.5 | 12.6 | .477 | .55 |
| August | 1,345.9 | 530 | 1.9 | 43.4 | 1.64 | 1.89 |
| September | 53.3 | 4.5 | .6 | 1.78 | .067 | .07 |
| Water year | - | - | - | - | - | - |

a No gage-height record; discharge computed on basis of tape-gage readings, weather records, recorded range in stage, and records for Grand River near North Bristol.
Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Rock Creek near Rock Creek, Ohio

Location.- Water-stage recorder, lat. 41°39'05", long. 80°50'10", 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. Prior to June 10, chain gage at same site and datum.

Drainage area.- 56.6 square miles.

Records available.- March to September 1942.

Extremes.- Maximum discharge during period, 2,930 second-feet May 16 (gage height, 6.60 feet); minimum, 0.7 second-foot July 5 (gage height, 0.31 foot).

Remarks.- Records fair. Chain gage read twice daily Mar. 20 to June 10.

Rating table, March to September 1942 (gage height, in feet, and discharge, in second-feet)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.3 | 0.5 | 0.7 | 12 | 1.4 | 65 | 2.3 | 197 | 4.0 | 945 |
| .4 | 2.3 | .9 | 24 | 1.6 | 86 | 2.6 | 281 | 4.5 | 1,230 |
| .5 | 4.5 | 1.0 | 30 | 1.8 | 112 | 3.0 | 430 | 5.0 | 1,560 |
| .6 | 6.9 | 1.2 | 46 | 2.0 | 142 | 3.5 | 675 | 5.5 | 1,930 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | - | 36 | 3.4 | 475 | 8.7 | 69 | 2.7 |
| 2 | | | | | | - | 31 | 3.6 | 139 | 8.3 | 929 | 2.7 |
| 3 | | | | | | - | 25 | 5.5 | 41 | 3.6 | 670 | 3.0 |
| 4 | | | | | | - | 177 | 4.5 | 20 | 1.9 | 212 | 3.0 |
| 5 | | | | | | - | 101 | 3.2 | 18 | 1.0 | 64 | 2.5 |
| 6 | | | | | | - | 53 | 2.7 | 9.7 | 19 | 31 | 2.0 |
| 7 | | | | | | - | 36 | 24 | 6.4 | 42 | 19 | 1.6 |
| 8 | | | | | | - | 187 | 14 | 7.8 | 11 | 148 | 1.6 |
| 9 | | | | | | - | 530 | 8.7 | 11 | 4.1 | 650 | 2.0 |
| 10 | | | | | | - | 1,420 | 5.7 | 6.9 | 5.2 | 585 | 4.0 |
| 11 | | | | | | - | 700 | 4.1 | 11 | 97 | 287 | 4.0 |
| 12 | | | | | | - | 316 | 3.4 | 220 | 35 | 111 | 3.5 |
| 13 | | | | | | - | 133 | 3.4 | 530 | 14 | 54 | 3.5 |
| 14 | | | | | | - | 66 | 2.7 | 140 | 6.4 | 37 | 3.4 |
| 15 | | | | | | - | 45 | 6.9 | 126 | 4.1 | 27 | 2.7 |
| 16 | | | | | | - | 32 | 1,660 | 54 | 2.7 | 22 | 2.5 |
| 17 | | | | | | - | 24 | 575 | 31 | 13 | 18 | 1.9 |
| 18 | | | | | | - | 16 | 222 | 20 | 13 | 16 | 1.8 |
| 19 | | | | | | - | 11 | 313 | 13 | 5.9 | 12 | 1.4 |
| 20 | | | | | | 79 | 8.3 | 281 | 8.7 | 17 | 8.3 | 1.0 |
| 21 | | | | | | 156 | 6.9 | 133 | 6.9 | 8.3 | 6.7 | 1.0 |
| 22 | | | | | | 388 | 6.7 | 556 | 5.9 | 415 | 5.9 | 1.0 |
| 23 | | | | | | 181 | 5.7 | 725 | 5.7 | 220 | 6.2 | 1.0 |
| 24 | | | | | | 118 | 5.2 | 259 | 4.7 | 116 | 6.2 | 1.4 |
| 25 | | | | | | 67 | 4.5 | 94 | 3.8 | 47 | 5.0 | 1.2 |
| 26 | | | | | | 42 | 4.3 | 54 | 3.2 | 25 | 4.5 | 1.0 |
| 27 | | | | | | 34 | 3.0 | 34 | 2.5 | 15 | 4.0 | 2.5 |
| 28 | | | | | | 28 | 2.7 | 23 | 2.1 | 8.7 | 3.5 | 2.3 |
| 29 | | | | | | 23 | 5.7 | 17 | 1.8 | 7.4 | 3.0 | 1.9 |
| 30 | | | | | | 12 | 4.3 | 11 | 2.3 | 12 | 2.9 | 2.5 |
| 31 | | | | | | 23 | - | 9.2 | - | 116 | 2.8 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | | | | | | |
| November | | | | | | |
| December | | | | | | |
| Calendar year | | | | | | |
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March 20-31 | 1,151 | 388 | 12 | 95.9 | 1.69 | 0.76 |
| April | 3,996.3 | 1,420 | 2.7 | 133 | 2.35 | 2.62 |
| May | 5,062.0 | 1,660 | 2.7 | 163 | 2.88 | 3.32 |
| June | 1,927.4 | 530 | 1.8 | 64.2 | 1.13 | 1.26 |
| July | 1,303.3 | 415 | 1.0 | 42.0 | .742 | .86 |
| August | 4,020.0 | 929 | 2.8 | 130 | 2.30 | 2.65 |
| September | 66.6 | 4.0 | 1.0 | 2.22 | .039 | .04 |
| Water year | - | - | - | - | - | - |

Peak discharge.- July 22 (6 p.m.) 1,770 sec.-ft.; Aug. 2 (5 p.m.) 1,630 sec.-ft.

Note.- No gage-height record Aug. 25 to Sept. 6, Sept. 9-13, 21, 22; discharge computed on basis of tape-gage reading, weather records, recorded range in stage, and records for Grand River near Rome.

Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Mill Creek near Jefferson, Ohio

Location.- Water-stage recorder, lat. 41°45'10", long. 80°48'00", at bridge on State Highway 307, 1¾ miles northwest of Jefferson, Ashtabula County, and 3¾ miles downstream from Griggs Creek. Prior to June 10, wire-weight gage at same site and datum.

Drainage area.- 78.3 square miles.

Records available.- March to September 1942.

Extremes.- Maximum discharge during period, 5,900 second-feet May 16 (gage height, 9.5 feet); no flow Sept. 15-19, 21-26.

Remarks.- Records fair. Wire-weight gage read twice daily prior to June 11.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | - | 44 | 1.6 | 6.5 | 2.6 | 100 | 0.4 |
| 2 | | | | | | - | 46 | 1.6 | 8.5 | 1.6 | 158 | .3 |
| 3 | | | | | | - | 34 | 1.7 | 37 | 1.2 | 269 | .2 |
| 4 | | | | | | - | 183 | 3.0 | 49 | 1.0 | 141 | .2 |
| 5 | | | | | | - | 119 | 3.7 | 20 | .8 | 84 | .1 |
| 6 | | | | | | - | 63 | 4.3 | 8.1 | 1.4 | 56 | .1 |
| 7 | | | | | | - | 45 | 7.8 | 5.5 | 2.6 | 28 | .1 |
| 8 | | | | | | - | 637 | 61 | 5.0 | 4.3 | 37 | .1 |
| 9 | | | | | | - | 395 | 49 | 3.8 | 3.5 | 582 | .1 |
| 10 | | | | | | - | 1,760 | 30 | 3.5 | 8.1 | 582 | .1 |
| 11 | | | | | | - | 698 | 13 | 25 | 27 | 222 | .1 |
| 12 | | | | | | - | 228 | 7.8 | 228 | 44 | 105 | .1 |
| 13 | | | | | | - | 100 | 5.7 | 308 | 74 | 72 | .1 |
| 14 | | | | | | - | 59 | 4.0 | 254 | 55 | 49 | .1 |
| 15 | | | | | | - | 34 | 5.5 | 147 | 31 | 24 | 0 |
| 16 | | | | | | - | 15 | 3,140 | 114 | 13 | 13 | 0 |
| 17 | | | | | | - | 8.9 | 692 | 77 | 2,790 | 9.9 | 0 |
| 18 | | | | | | - | 6.0 | 173 | 60 | 935 | 8.1 | 0 |
| 19 | | | | | | - | 4.3 | 158 | 42 | 195 | 6.0 | 0 |
| 20 | | | | | | 75 | 3.3 | 369 | 16 | 144 | 4.1 | .1 |
| 21 | | | | | | 135 | 3.0 | 158 | 9.6 | 153 | 2.6 | 0 |
| 22 | | | | | | 481 | 2.5 | 368 | 22 | 196 | 2.0 | 0 |
| 23 | | | | | | 293 | 2.3 | 1,090 | 106 | 1,120 | 1.8 | 0 |
| 24 | | | | | | 198 | 1.8 | 297 | 75 | 262 | 1.7 | 0 |
| 25 | | | | | | 109 | 1.6 | 109 | 51 | 113 | 1.5 | 0 |
| 26 | | | | | | 65 | 1.7 | 69 | 19 | 76 | 1.2 | 0 |
| 27 | | | | | | 42 | 1.6 | 50 | 6.5 | 51 | 1.0 | .2 |
| 28 | | | | | | 24 | 1.6 | 34 | 4.0 | 24 | .9 | .2 |
| 29 | | | | | | 15 | 1.5 | 18 | 3.7 | 14 | .8 | .1 |
| 30 | | | | | | 10 | 1.6 | 9.9 | 3.0 | 9.2 | .6 | .1 |
| 31 | | | | | | 10 | - | 7.1 | - | 71 | .5 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | | | | | | |
| November | | | | | | |
| December | | | | | | |
| Calendar year | | | | | | |
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March 20-31 | 1,457 | 481 | 10 | 121 | 1.55 | 0.69 |
| April | 4,501.7 | 1,760 | 1.5 | 150 | 1.92 | 2.14 |
| May | 6,941.7 | 3,140 | 1.6 | 224 | 2.86 | 3.30 |
| June | 1,717.7 | 308 | 3.0 | 57.3 | .732 | .82 |
| July | 6,424.3 | 2,790 | .8 | 207 | 2.64 | 3.04 |
| August | 2,564.7 | 582 | .5 | 82.7 | 1.06 | 1.22 |
| September | 2.8 | .4 | 0 | .09 | .0011 | .001 |
| Water year | - | - | - | - | - | - |

Peak discharge.- July 17 (12 m.) 4,140 sec.-ft.; July 23 (8 a.m.) 1,640 sec.-ft.
Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Ashtabula River near Ashtabula, Ohio

Location.- Water-stage recorder, 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 square miles.

Records available.- July 1924 to December 1935, March 1939 to September 1942.

Average discharge.- 14 years, 136 second-feet.

Extremes.- Maximum discharge during year, 10,800 second-feet May 16 (gage height, 9.67 feet); no flow Oct. 1-6.
1924-35, 1939-42: Maximum discharge, that of May 16, 1942; no flow at times during 1925-35, 1939-41.
Revisions: The maximum discharge for the water year 1929 has been revised to 7,500 second-feet Jan. 19, 1929, superseding figure published in Water-Supply Papers 784, 804, 874, 894, and 924.

Remarks.- Records good except those below 10 second-feet, which are fair, and those for periods of ice effect, which are poor.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 13 | 10 | 62 | 312 | 45 | 86 | 17 | 40 | 174 | 84 | 7.0 |
| 2 | 0 | 21 | 12 | 481 | 115 | 40 | 134 | 14 | 123 | 86 | 196 | 6.2 |
| 3 | 0 | 45 | 45 | 196 | 110 | 40 | 106 | 21 | 139 | 48 | 149 | 6.6 |
| 4 | 0 | 24 | 81 | 89 | 110 | 50 | 435 | 31 | 77 | 34 | 71 | 7.8 |
| 5 | 0 | 14 | 58 | 51 | 130 | 70 | 260 | 24 | 46 | 25 | 36 | 6.6 |
| 6 | .1 | 13 | 38 | 35 | 400 | 100 | 127 | 17 | 32 | 22 | 24 | 5.8 |
| 7 | .3 | 21 | 26 | 25 | 2,540 | 150 | 94 | 43 | 25 | 52 | 18 | 5.8 |
| 8 | .6 | 94 | 21 | 20 | 651 | 500 | 1,180 | 150 | 20 | 52 | 22 | 10 |
| 9 | .6 | 66 | 17 | 19 | 280 | 5,000 | 565 | 84 | 18 | 32 | 224 | 9.0 |
| 10 | .8 | 36 | 16 | 18 | 182 | 860 | 2,380 | 51 | 15 | 25 | 471 | 12 |
| 11 | .8 | 24 | 15 | 17 | *100 | 638 | 1,130 | 31 | 347 | 190 | 186 | 9.5 |
| 12 | .5 | 16 | 15 | 16 | 80 | 1,430 | 435 | 24 | 1,090 | 129 | 82 | 7.0 |
| 13 | .4 | 13 | 17 | 15 | 70 | 513 | 193 | 17 | 471 | 64 | 45 | 6.2 |
| 14 | .8 | 12 | 20 | 14 | 60 | 1,210 | 109 | 13 | 244 | 45 | 32 | 4.7 |
| 15 | 1.3 | 12 | 73 | *14 | 50 | 856 | 71 | 15 | 189 | 32 | 40 | 4.1 |
| 16 | 1.1 | 10 | 81 | 14 | 300 | 521 | 58 | 4,980 | 109 | 20 | 37 | 3.2 |
| 17 | .9 | 9.1 | *40 | 14 | 3,620 | 1,840 | 49 | 1,100 | 57 | 4,740 | 29 | 2.6 |
| 18 | .9 | 7.5 | 81 | 14 | 839 | 526 | 36 | 320 | 37 | 1,690 | 21 | 2.3 |
| 19 | 2.8 | 6.8 | 109 | 250 | 288 | 212 | 31 | 244 | 28 | 300 | 17 | 2.3 |
| 20 | 2.1 | 7.5 | 62 | 722 | 200 | 147 | 26 | 534 | 22 | 206 | 15 | 2.6 |
| 21 | 1.5 | 17 | 45 | 284 | 150 | 171 | 24 | 252 | 19 | 206 | 13 | 2.6 |
| 22 | 1.5 | 55 | 30 | 154 | 130 | 684 | 21 | 436 | 26 | 133 | 12 | 3.5 |
| 23 | 4.9 | 47 | 22 | 131 | 100 | 523 | 17 | 1,640 | 408 | 478 | 12 | 3.8 |
| 24 | 6.1 | 58 | 306 | 168 | 80 | 391 | 14 | 499 | 167 | 240 | 11 | 4.1 |
| 25 | 8.3 | 60 | 1,270 | 164 | 70 | 244 | 12 | 206 | 71 | 89 | 12 | 3.5 |
| 26 | 6.8 | 33 | 376 | 134 | 60 | 140 | 11 | 112 | 38 | 46 | 14 | 2.3 |
| 27 | 6.8 | 21 | 171 | 115 | 55 | *89 | 9.1 | 70 | 26 | 32 | 12 | 7.4 |
| 28 | 12 | 16 | 103 | 89 | 50 | 68 | 8.3 | 48 | 20 | 24 | 12 | 12 |
| 29 | 18 | 12 | 73 | 53 | - | 62 | 6.8 | 37 | 15 | 23 | 10 | 9.0 |
| 30 | 18 | 12 | 64 | 62 | - | 60 | 5.5 | 30 | 18 | 21 | 9.0 | 8.6 |
| 31 | 15 | - | 58 | 103 | - | 62 | - | 30 | - | 37 | 7.8 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 112.9 | 18 | 0 | 3.64 | 0.031 | 0.04 |
| November | 795.9 | 94 | 6.8 | 26.5 | .225 | .25 |
| December | 3,355 | 1,270 | 10 | 108 | .915 | 1.05 |
| Calendar year 1941 | 24,349.0 | 1,510 | 0 | 66.7 | .565 | 7.67 |
| January | 3,543 | 722 | 14 | 114 | .966 | 1.11 |
| February | 11,132 | 3,620 | 50 | 398 | 3.37 | 3.51 |
| March | 17,242 | 5,000 | 40 | 556 | 4.71 | 5.43 |
| April | 7,633.7 | 2,380 | 5.5 | 254 | 2.15 | 2.40 |
| May | 11,096 | 4,980 | 13 | 358 | 3.03 | 3.49 |
| June | 3,937 | 1,090 | 15 | 131 | 1.11 | 1.24 |
| July | 9,295 | 4,740 | 20 | 300 | 2.54 | 2.93 |
| August | 1,923.8 | 471 | 7.8 | 62.1 | .526 | .61 |
| September | 178.1 | 12 | 2.3 | 5.94 | .050 | .06 |
| Water year 1941-42 | 70,244.4 | 5,000 | 0 | 192 | 1.63 | 22.12 |

Peak discharge.- Feb. 7 (12 m.) 3,110 sec.-ft.; Feb. 17 (8 a.m.) 5,320 sec.-ft.; Mar. 9 (12:30 p.m.) 7,250 sec.-ft.; May 16 (12 m.) 10,800 sec.-ft.; July 17 (11 a.m.) 7,250 sec.-ft.; July 17 (6 p.m.) 9,000 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 10-13, 21, 22, Jan. 6-19, Feb. 3-6, 11-16, Feb. 20 to Mar. 8.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Cattaraugus Creek at Gowanda, N. Y.

Location.- Water-stage recorder, lat. 42°27'50", long. 78°56'10", at Gowanda, Erie County, 380 feet downstream from highway bridge, 600 feet downstream from powerhouse of Niagara, Lockport, & Ontario Power Co., and 4.2 miles downstream from South Branch of Cattaraugus Creek.

Drainage area.- 428 square miles.

Records available.- November 1939 to September 1942.

Extremes.- Maximum discharge during year, 35,900 second-feet Mar. 17 (gage height, 13.73 feet), from rating curve extended above 6,500 second-feet by logarithmic plotting; minimum, 9.1 second-feet (regulated) Oct. 20 (gage height, 1.04 feet); minimum daily, 66 second-feet (regulated) Oct. 2.
1939-42: Maximum discharge, that of Mar. 17, 1942; minimum, 6 second-feet (regulated) Aug. 21, 1941 (gage height, 1.01 feet); minimum daily, 53 second-feet Sept. 19, 1941.

Remarks.- Records good except those above 8,000 second-feet or those for periods of ice effect or doubtful or no gage-height record, which are fair. Flow regulated by municipal power plant and several industrial plants upstream. Diurnal fluctuation at low and medium stages.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 68 | 144 | 166 | 365 | 400 | 326 | 1,490 | 357 | 423 | 195 | 235 | 86 |
| 2 | 66 | 157 | 232 | 1,180 | 340 | 333 | 2,240 | 358 | 340 | 155 | 180 | 86 |
| 3 | 81 | 144 | 290 | 600 | 310 | 341 | 2,660 | 414 | 316 | 135 | 225 | 106 |
| 4 | 112 | 139 | 220 | 540 | 280 | 254 | 3,060 | 416 | 300 | 130 | 165 | 140 |
| 5 | 112 | 118 | 199 | 450 | 300 | 352 | 2,200 | 365 | 325 | 135 | 130 | 112 |
| 6 | 109 | 119 | 182 | 390 | 400 | 398 | 1,770 | 332 | 278 | 210 | 120 | 98 |
| 7 | 112 | 135 | 160 | 370 | 760 | 407 | 2,440 | 490 | 238 | 185 | 106 | 86 |
| 8 | 128 | 143 | 150 | 320 | 640 | 960 | 4,980 | 576 | 239 | 145 | 104 | 104 |
| 9 | 113 | 122 | *166 | 290 | 520 | 12,500 | 1,940 | 434 | 201 | 130 | 120 | 165 |
| 10 | 114 | 117 | 142 | 270 | *500 | 3,590 | 1,810 | 358 | 192 | 124 | 124 | 300 |
| 11 | 116 | 137 | 131 | 250 | 460 | 2,530 | 2,040 | 322 | 197 | 180 | 130 | 260 |
| 12 | 102 | 138 | 140 | 260 | 410 | *4,660 | 2,020 | 318 | 194 | 155 | 114 | 180 |
| 13 | 82 | 142 | 150 | 250 | 370 | 2,580 | 2,330 | 365 | 170 | 130 | 114 | 160 |
| 14 | 113 | 281 | 170 | 240 | 360 | 5,020 | 2,090 | 325 | 187 | 116 | 116 | 130 |
| 15 | 135 | 255 | 165 | *230 | 350 | 4,370 | 1,540 | 738 | 183 | 104 | 114 | 124 |
| 16 | 118 | 185 | 188 | 220 | 400 | 4,490 | 1,230 | 533 | 165 | 100 | 114 | 145 |
| 17 | 102 | 159 | 196 | 220 | 1,800 | 22,900 | 985 | 502 | 180 | 104 | 100 | 145 |
| 18 | 97 | 143 | 288 | 240 | 1,810 | 8,870 | 864 | 431 | 190 | 1,150 | 104 | 140 |
| 19 | 135 | 123 | 456 | 1,080 | 948 | 2,940 | 792 | 398 | 175 | 643 | 92 | 110 |
| 20 | 132 | 131 | 419 | 1,400 | 540 | 1,820 | 743 | 397 | 160 | 640 | 104 | 320 |
| 21 | 121 | 187 | 197 | 892 | 480 | 1,970 | 671 | 379 | 260 | 420 | 94 | 232 |
| 22 | 98 | a160 | 251 | 655 | 420 | 2,330 | 612 | 801 | 280 | 280 | 210 | 164 |
| 23 | 166 | a230 | 307 | 567 | 400 | 1,530 | 556 | 1,290 | 245 | 310 | 240 | 136 |
| 24 | 284 | a350 | 1,640 | 682 | 370 | 1,290 | 510 | 655 | 220 | 230 | 180 | 163 |
| 25 | 218 | a240 | 3,510 | 769 | 410 | 1,360 | 472 | 516 | 180 | 190 | 140 | 219 |
| 26 | 161 | a200 | 1,150 | 652 | 360 | 1,660 | 445 | 422 | 170 | 160 | 114 | 157 |
| 27 | 145 | a175 | 829 | 534 | 340 | 2,000 | 430 | 372 | 160 | 180 | 104 | 280 |
| 28 | 245 | a155 | 627 | 462 | 334 | 2,080 | 408 | 339 | 145 | 165 | 104 | 440 |
| 29 | 208 | 147 | 493 | 310 | - | 1,920 | 386 | 302 | 145 | 290 | 114 | 290 |
| 30 | 149 | 155 | 347 | 280 | - | 1,560 | 374 | 386 | 150 | 300 | 106 | 205 |
| 31 | 132 | - | 446 | 300 | - | 1,490 | - | 558 | - | 220 | 110 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 4,074 | 284 | 66 | 131 | 0.306 | 0.35 |
| November | 5,031 | 350 | 117 | 168 | .393 | .44 |
| December | 14,007 | 3,510 | 131 | 452 | 1.06 | 1.22 |
| Calendar year 1941 | 167,624 | 9,860 | 53 | 459 | 1.07 | 14.57 |
| January | 15,268 | 1,400 | 220 | 493 | 1.15 | 1.33 |
| February | 15,012 | 1,810 | 280 | 536 | 1.25 | 1.30 |
| March | 98,831 | 22,900 | 254 | 3,188 | 7.45 | 8.59 |
| April | 44,091 | 4,980 | 374 | 1,470 | 3.43 | 3.83 |
| May | 14,449 | 1,290 | 302 | 466 | 1.09 | 1.26 |
| June | 6,608 | 423 | 145 | 220 | .514 | .57 |
| July | 7,611 | 1,150 | 100 | 246 | .575 | .66 |
| August | 4,127 | 240 | 92 | 133 | .311 | .36 |
| September | 5,283 | 440 | 86 | 176 | .411 | .46 |
| Water year 1941-42 | 234,392 | 22,900 | 66 | 642 | 1.50 | 20.37 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage and records for nearby stations.
Note.- Stage-discharge relation affected by ice Dec. 12-14, Jan. 2-20, Jan. 30 to Feb. 17, Feb. 20-27, Mar. 8, 9.
Doubtful gage-height record June 16 to July 17, July 20 to Sept. 19, Sept. 27-30; discharge computed on basis of gage heights, engineers' and observers' notes, five discharge measurements, and records for nearby streams. Shifting-control method used Mar. 15, 16.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Buffalo Creek at Gardenville, N. Y.

Location.- Water-stage recorder, lat. 42°51'15", long. 78°45'30", in Gardenville, Erie County, 700 feet downstream from bridge on Union Road, and 2 miles upstream from Cayuga Creek. Datum of gage is 604.04 feet above mean sea level, unadjusted.
Drainage area.- 145 square miles.
Records available.- October 1938 to September 1942.
Extremes.- Maximum discharge during year, 14,000 second-feet Mar. 17, from rating curve extended above 4,000 second-feet by logarithmic plotting; maximum gage height, 11.90 feet, Mar. 9 (ice jam); minimum discharge, 5.6 second-feet Oct. 1 (gage height, 0.89 foot).

1938-42: Maximum discharge, that of Mar. 17, 1942; maximum gage height, that of Mar. 9, 1942; minimum discharge, 0.7 second-foot (regulated) Aug. 22, 24, 25, 1941 (gage height, 0.70 foot); minimum gage height observed, 0.70 foot Aug. 28, 31, and Sept. 3, 1939 (affected by backwater from leaves and debris) and Aug. 22, 24, 25, 1941.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Diurnal fluctuation at low stages caused by mill 3.2 miles upstream.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 17

| | | | | | |
|---|---|---|---|---|---|
| 0.9 | 6.0 | 1.6 | 127 | 4.0 | 2,040 |
| 1.0 | 12 | 1.8 | 198 | 4.5 | 2,800 |
| 1.1 | 20 | 2.0 | 287 | 5.0 | 3,700 |
| 1.2 | 34 | 2.2 | 394 | 5.5 | 4,740 |
| 1.3 | 50 | 2.6 | 650 | 6.0 | 5,930 |
| 1.4 | 71 | 3.0 | 950 | 6.5 | 7,260 |
| 1.5 | 97 | 3.5 | 1,420 | | |

Mar. 18 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 1.1 | 7.0 | 1.6 | 80 | 2.2 | 365 |
| 1.2 | 10 | 1.7 | 112 | 2.6 | 635 |
| 1.3 | 18 | 1.8 | 150 | 3.0 | 950 |
| 1.4 | 35 | 1.9 | 194 | | |
| 1.5 | 57 | 2.0 | 245 | | |

Note.- Same as preceding table above 3.0 feet.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.6 | a42 | 39 | 86 | 145 | 92 | 632 | 55 | 143 | 221 | 21 | 8.7 |
| 2 | 7.5 | a80 | 42 | 560 | 108 | 90 | 908 | 53 | 78 | 70 | 19 | 8.4 |
| 3 | 19 | a60 | 52 | 145 | 90 | 100 | 558 | 57 | 62 | 35 | 17 | 8.5 |
| 4 | 20 | a48 | 49 | 114 | 66 | 58 | 600 | 73 | 54 | 24 | 14 | 10 |
| 5 | 35 | 38 | 43 | 94 | 76 | 76 | 469 | 62 | 57 | 21 | 13 | 9.5 |
| 6 | 25 | 34 | 42 | 84 | 135 | 102 | 365 | 54 | 55 | 20 | 11 | 10 |
| 7 | 18 | 46 | 32 | 82 | 430 | 110 | 2,150 | 64 | 42 | 36 | 10 | 9.5 |
| 8 | 15 | 56 | 27 | 76 | 280 | 600 | 2,220 | 80 | 35 | 29 | 12 | 13 |
| 9 | a14 | 40 | 44 | 72 | 225 | 4,000 | 516 | 66 | 28 | 19 | 14 | 229 |
| 10 | a14 | 44 | *37 | 70 | 195 | 1,700 | 482 | 59 | 23 | 17 | 14 | 112 |
| 11 | a14 | 35 | 31 | 70 | 180 | *1,120 | 825 | 50 | 23 | 18 | 13 | 83 |
| 12 | a14 | 46 | 29 | 72 | *170 | 2,500 | 1,090 | 46 | 24 | 29 | 13 | 56 |
| 13 | a13 | 58 | 34 | 70 | 150 | 1,080 | 921 | 53 | 27 | 21 | 14 | 37 |
| 14 | 18 | 128 | 54 | *68 | 155 | *1,700 | 575 | 55 | 24 | 16 | 12 | 25 |
| 15 | 24 | 100 | 48 | 66 | 175 | 1,850 | 347 | 146 | 23 | 13 | 8.7 | 20 |
| 16 | 32 | 64 | 92 | 64 | 240 | 1,500 | 251 | 109 | 21 | 12 | 12 | 24 |
| 17 | 22 | 48 | 94 | 66 | 880 | 7,200 | 204 | 80 | 20 | 16 | 12 | 21 |
| 18 | 18 | 38 | 150 | 90 | 600 | 2,130 | 176 | 64 | 20 | 519 | 10 | 20 |
| 19 | 19 | 34 | 250 | 520 | 270 | *752 | 150 | 57 | 19 | 198 | 9.5 | 17 |
| 20 | 19 | 48 | 160 | 860 | 170 | 470 | 146 | 50 | 18 | 94 | 8.5 | 50 |
| 21 | 22 | 71 | 64 | 417 | 140 | 607 | 135 | 50 | 24 | 71 | 8.4 | 76 |
| 22 | 19 | 62 | 78 | 303 | 125 | 758 | 116 | 293 | 36 | 42 | 7.8 | 42 |
| 23 | 23 | 67 | 118 | 249 | 116 | 409 | 102 | 409 | 35 | 28 | 8.4 | 31 |
| 24 | 37 | 164 | 690 | 406 | 108 | 321 | 90 | 146 | 33 | 23 | 9.1 | 24 |
| 25 | 40 | 84 | 1,090 | 394 | 104 | 405 | 83 | 102 | 24 | 18 | 10 | 56 |
| 26 | a35 | 56 | 253 | 245 | 106 | 579 | 78 | 80 | 19 | 16 | 9.3 | 55 |
| 27 | a32 | 46 | 298 | 171 | *102 | 527 | 73 | 64 | 17 | 15 | 8.5 | 67 |
| 28 | a220 | 40 | 207 | 135 | *98 | 497 | 68 | 53 | 16 | 14 | 8.9 | 203 |
| 29 | a70 | 36 | 106 | 74 | - | 436 | 64 | 45 | 16 | 18 | 9.9 | 73 |
| 30 | a45 | 34 | 60 | 66 | - | 410 | 59 | 54 | 15 | 44 | 9.5 | 46 |
| 31 | a40 | - | 70 | 82 | - | 365 | - | 354 | - | 31 | 9.3 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 951.1 | 220 | 7.5 | 30.7 | 0.212 | 0.24 |
| November | 1,747 | 164 | 34 | 58.2 | .401 | .45 |
| December | 4,373 | 1,090 | 27 | 141 | .972 | 1.12 |
| Calendar year 1941 | 47,837.3 | 4,940 | 2.1 | 131 | .903 | 12.25 |
| January | 5,871 | 860 | 64 | 189 | 1.30 | 1.50 |
| February | 5,639 | 880 | 66 | 201 | 1.39 | 1.45 |
| March | 32,544 | 7,200 | 58 | 1,050 | 7.24 | 8.35 |
| April | 14,453 | 2,220 | 59 | 482 | 3.32 | 3.70 |
| May | 2,983 | 409 | 45 | 96.2 | .663 | .76 |
| June | 1,031 | 143 | 15 | 34.4 | .237 | .26 |
| July | 1,748 | 519 | 12 | 56.4 | .389 | .45 |
| August | 356.8 | 21 | 7.8 | 11.5 | .079 | .09 |
| September | 1,444.6 | 229 | 8.4 | 48.2 | .332 | .37 |
| Water year 1941-42 | 73,141.5 | 7,200 | 7.5 | 200 | 1.38 | 18.74 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for nearby stations.
Note.- Stage-discharge relation affected by ice Dec. 7, 10-15, 18-24, Dec. 29 to Jan. 20, Jan. 28 to Mar. 17.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Cayuga Creek near Lancaster, N. Y.

Location.- Water-stage recorder, lat. 42°53'20", long. 78°38'40", 100 feet upstream from low flat-crested dam in Como Lake Park, 700 feet downstream from bridge on Bowen Road, 800 feet downstream from Little Buffalo Creek, and 2 miles southeast of Lancaster, Erie County. Datum of gage is 672.80 feet above mean sea level, unadjusted.

Drainage area.- 93.3 square miles.

Records available.- September 1938 to September 1942.

Extremes.- Maximum discharge during year, 7,480 second-feet Mar. 17; maximum gage height, 12.36 feet Mar. 9 (ice jam); minimum discharge, 1.1 second-feet Sept. 3; minimum gage height, 2.85 feet Oct. 1.
1938-42: Maximum discharge, that of Mar. 17, 1942; maximum gage height, that of Mar. 9, 1942; practically no flow Aug. 8, 9, 1939, when permanent stop logs were installed in dam.

Remarks.- Records good except those for periods of ice effect or doubtful gage-height record, which are fair.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.8 | 29 | 17 | 60 | 94 | 62 | 559 | 30 | 108 | 49 | 9.5 | 1.7 |
| 2 | 2.0 | 110 | 19 | 390 | 60 | 62 | 702 | 26 | 56 | 19 | 10 | 1.6 |
| 3 | 6.0 | 115 | 24 | 120 | 50 | 6e | 342 | 30 | 39 | 11 | 9.3 | 1.9 |
| 4 | 11 | 51 | 24 | 74 | 42 | 54 | 333 | 37 | 35 | 8.2 | 7.3 | 3.8 |
| 5 | 15 | 30 | 21 | 50 | 44 | 60 | 254 | 33 | 33 | 7.5 | 6.2 | 3.0 |
| 6 | 11 | 26 | 20 | 44 | 48 | 80 | 193 | 28 | 28 | 7.1 | 5.2 | 2.4 |
| 7 | 7.4 | 72 | 14 | 42 | 350 | 86 | d2,100 | 36 | 23 | 6.4 | 4.4 | 1.9 |
| 8 | 5.5 | 62 | 13 | 39 | 200 | 450 | d1,700 | 40 | 21 | 5.4 | 4.0 | 11 |
| 9 | 4.8 | 29 | 20 | 36 | 160 | 3,000 | 310 | 34 | 18 | 5.0 | 4.8 | 782 |
| 10 | 5.0 | 25 | *19 | 35 | 140 | 940 | 279 | 32 | 15 | 5.2 | 30 | 292 |
| 11 | 5.0 | 26 | 14 | 37 | 135 | *660 | 590 | 28 | 27 | 3.2 | 16 | 209 |
| 12 | 4.4 | 33 | 13 | 39 | *130 | 1,400 | 857 | 25 | 20 | 5.8 | 10 | 67 |
| 13 | 4.3 | 51 | 12 | 37 | 114 | 640 | 705 | 25 | 23 | 4.6 | 7.3 | 42 |
| 14 | 6.5 | 46 | 15 | *36 | 118 | *1,100 | 428 | 23 | 21 | 3.4 | 6.2 | 32 |
| 15 | 9.9 | 35 | 13 | 35 | 125 | 1,200 | 237 | 113 | 19 | 2.5 | 5.4 | 23 |
| 16 | 8.4 | 26 | 20 | 34 | 160 | 900 | 157 | 69 | 15 | 2.0 | 7.7 | 51 |
| 17 | 7.2 | 21 | 37 | 33 | 800 | *d5,000 | 134 | 62 | 14 | 9.8 | 6.2 | 39 |
| 18 | 6.3 | 17 | 120 | 53 | 400 | 1,250 | 117 | 38 | 14 | 590 | 6.0 | 22 |
| 19 | 8.2 | 16 | 205 | 470 | 150 | 464 | 97 | 35 | 12 | 93 | 4.6 | 16 |
| 20 | 8.7 | 25 | 98 | 520 | 104 | 304 | 94 | 32 | 11 | 76 | 3.6 | 23 |
| 21 | 8.0 | 63 | 27 | 235 | 86 | 439 | e3 | 32 | 15 | 35 | 2.8 | 37 |
| 22 | 7.2 | 35 | 34 | 160 | 80 | 576 | 69 | 345 | 16 | 20 | 3.8 | 22 |
| 23 | 9.6 | 41 | 74 | 150 | 74 | 237 | 62 | 240 | 14 | 14 | 4.8 | 20 |
| 24 | 17 | e8 | 547 | 310 | 72 | 193 | 54 | 90 | 14 | 12 | 4.2 | 22 |
| 25 | 16 | 47 | 772 | 280 | 68 | 265 | 46 | 72 | 12 | 9.8 | 4.0 | 113 |
| 26 | 12 | 29 | 188 | 170 | 72 | 341 | 42 | 56 | 10 | 8.4 | 2.8 | 59 |
| 27 | 16 | 23 | 238 | 112 | 68 | 316 | 38 | 37 | 9.1 | 8.2 | 2.6 | 238 |
| 28 | 23e | 20 | 151 | 60 | *66 | 279 | 37 | 32 | e.2 | 8.2 | 2.8 | 194 |
| 29 | 85 | 16 | 76 | 42 | - | 226 | 34 | 27 | 6.9 | 11 | 4.2 | 62 |
| 30 | 38 | 18 | 35 | 37 | - | 237 | 32 | 28 | 6.0 | 15 | 3.7 | 36 |
| 31 | 26 | - | 42 | 44 | - | 203 | - | 333 | - | 12 | 2.6 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 613.2 | 23e | 1.8 | 19.8 | 0.212 | 0.24 |
| November | 1,227 | 115 | 16 | 40.9 | .438 | .49 |
| December | 2,922 | 772 | 12 | 94.3 | 1.01 | 1.16 |
| Calendar year 1941 | 28,566.2 | 3,060 | 1.5 | 78.5 | .841 | 11.43 |
| January | 3,784 | 520 | 33 | 122 | 1.31 | 1.51 |
| February | 4,010 | 800 | 42 | 143 | 1.53 | 1.59 |
| March | 21,092 | 5,000 | 54 | 680 | 7.29 | 8.40 |
| April | 10,685 | 2,100 | 32 | 356 | 3.82 | 4.26 |
| May | 2,068 | 345 | 23 | 66.7 | .715 | .82 |
| June | 663.2 | 108 | 6.0 | 22.1 | .237 | .26 |
| July | 1,070.7 | 590 | 2.0 | 34.5 | .370 | .43 |
| August | 204.0 | 30 | 2.6 | 6.58 | 071 | .08 |
| September | 2,428.3 | 782 | 1.6 | e0.9 | .867 | .97 |
| Water year 1941-42 | 50,767.4 | 5,000 | 1.5 | 139 | 1.49 | 20.21 |

* Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge computed on basis of records for nearby stations and discharge measurements.
Note.- Stage-discharge relation affected by ice Dec. 8, 13, 15-22, Dec. 29 to Jan. 16, Jan. 19 to Mar. 16.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Cazenovia Creek at Ebenezer, N. Y.

Location.- Water-stage recorder, lat. 42°49'45", long. 78°46'40", 40 feet upstream from highway bridge on Ridge Road in village of Ebenezer, Erie County, 4.4 miles upstream from mouth, and 5 miles southeast of Buffalo. Datum of gage is 606.86 feet above mean sea level, unadjusted.

Drainage area.- 136 square miles.

Records available.- June 1940 to September 1942.

Extremes.- Maximum discharge during year, 11,200 second-feet Mar. 17 (gage height, 13.11 feet); minimum, 5.9 second-feet Aug. 21 (gage height, 0.435 foot).
1940-42: Maximum discharge, that of Mar. 17, 1942; minimum, 3.7 second-feet Aug. 25, 1941 (gage height, 0.42 foot).

Remarks.- Records good except those for periods of ice effect, which are fair.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 9 | | | | | | Mar. 9 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.6 | 9 | 1.5 | 138 | 3.5 | 955 | 0.4 | 4.5 | 1.2 | 88 | 4.0 | 1,170 |
| .7 | 15 | 1.7 | 188 | 4.0 | 1,260 | .5 | 8.5 | 1.4 | 134 | 5.0 | 1,770 |
| .8 | 24 | 1.9 | 246 | 4.5 | 1,610 | .6 | 14 | 1.8 | 240 | 6.0 | 2,500 |
| .9 | 36 | 2.1 | 311 | 5.0 | 1,970 | .7 | 20 | 2.2 | 371 | 7.0 | 3,450 |
| 1.0 | 48 | 2.3 | 383 | 6.0 | 2,780 | .8 | 29 | 2.6 | 525 | 8.0 | 4,500 |
| 1.1 | 62 | 2.5 | 463 | 7.0 | 3,690 | .9 | 40 | 3.0 | 685 | 9.0 | 5,600 |
| 1.3 | 96 | 3.0 | 689 | 7.8 | 4,490 | 1.0 | 53 | 3.5 | 920 | 9.9 | 6,680 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13 | 67 | 89 | 108 | 180 | 100 | 568 | 55 | 103 | 25 | 17 | 10 |
| 2 | 9.8 | 156 | 96 | 640 | 130 | 100 | 727 | 50 | 64 | 24 | 16 | 9.5 |
| 3 | 22 | 118 | 134 | 160 | 106 | 112 | 660 | 56 | 55 | 17 | 15 | 10 |
| 4 | 24 | 76 | 96 | 140 | 80 | 64 | 754 | 80 | 49 | 15 | 14 | 11 |
| 5 | 34 | 59 | 82 | 130 | 88 | 88 | 573 | 61 | 53 | 13 | 11 | 10 |
| 6 | 24 | 51 | 75 | 116 | 150 | 116 | 422 | 52 | 43 | 15 | 9.2 | 10 |
| 7 | 16 | 97 | 58 | 110 | 450 | 125 | 2,140 | 66 | 37 | 20 | 8.4 | 8.3 |
| 8 | 15 | 82 | 48 | 98 | 310 | 700 | 1,960 | 84 | 33 | 19 | 8.1 | 18 |
| 9 | 14 | 58 | 68 | 92 | 245 | 4,410 | 498 | 67 | 29 | 15 | 11 | 197 |
| 10 | 14 | 52 | *58 | 88 | 215 | 1,310 | 522 | 59 | 26 | 15 | 14 | 100 |
| 11 | 14 | 52 | 50 | 86 | *200 | *913 | 808 | 52 | 25 | 14 | 13 | 85 |
| 12 | 16 | 76 | 46 | 90 | 185 | 2,010 | 898 | 48 | 24 | 22 | 12 | 46 |
| 13 | 14 | 97 | 54 | 88 | 165 | 935 | 792 | 56 | 29 | 18 | 11 | 31 |
| 14 | 17 | 417 | 66 | *86 | 175 | 1,590 | 520 | 53 | 27 | 14 | 10 | 24 |
| 15 | 34 | 251 | 64 | 82 | 195 | 1,550 | 333 | 156 | 24 | 12 | 9.5 | 20 |
| 16 | 34 | 135 | 100 | 80 | 270 | 1,370 | 246 | 115 | 24 | 9.8 | 12 | 22 |
| 17 | 22 | 89 | 116 | 78 | 1,020 | 6,650 | 207 | 82 | 23 | 13 | 11 | 19 |
| 18 | 18 | 70 | 165 | 90 | 760 | 1,680 | 177 | 66 | 22 | 242 | 10 | 18 |
| 19 | 20 | 62 | 310 | 500 | 390 | 664 | 152 | 61 | 19 | 116 | 8.6 | 15 |
| 20 | 28 | 74 | 222 | 860 | 280 | 412 | 144 | 56 | 18 | 59 | 8.0 | 209 |
| 21 | 27 | 194 | 78 | 440 | 170 | 533 | 129 | 58 | 23 | 46 | 6.7 | 88 |
| 22 | 21 | 120 | 90 | 360 | 145 | 690 | 117 | 201 | 28 | 29 | 7.9 | 41 |
| 23 | 26 | 222 | 130 | 290 | 135 | 378 | 103 | 270 | 28 | 23 | 11 | 31 |
| 24 | 118 | 320 | 820 | 450 | 122 | 318 | 90 | 127 | 27 | 19 | 16 | 29 |
| 25 | 64 | 136 | 1,550 | 430 | 116 | 341 | 82 | 97 | 23 | 17 | 14 | 89 |
| 26 | 56 | 94 | 332 | 290 | 120 | 443 | 75 | 78 | 19 | 15 | 10 | 54 |
| 27 | 47 | 80 | 353 | 210 | 116 | 506 | 71 | 63 | 16 | 13 | 8.1 | 129 |
| 28 | 674 | 70 | 231 | 160 | 106 | 533 | 66 | 56 | 15 | 14 | 10 | 279 |
| 29 | 142 | 65 | 140 | 86 | - | 389 | 63 | 49 | 14 | 17 | 12 | 77 |
| 30 | 80 | 65 | 76 | 80 | - | 385 | 64 | 104 | 14 | 33 | 11 | 46 |
| 31 | 62 | - | 92 | 90 | - | 371 | - | 228 | - | 21 | 9.2 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,719.8 | 674 | 9.8 | 55.5 | 0.408 | 0.47 |
| November | 3,505 | 417 | 51 | 117 | .860 | .96 |
| December | 5,891 | 1,550 | 46 | 190 | 1.40 | 1.61 |
| Calendar year 1941 | 54,006.5 | 3,930 | 4.5 | 148 | 1.09 | 14.77 |
| January | 6,606 | 860 | 78 | 213 | 1.57 | 1.81 |
| February | 6,626 | 1,020 | 80 | 237 | 1.74 | 1.81 |
| March | 29,786 | 6,650 | 64 | 961 | 7.07 | 8.15 |
| April | 13,961 | 2,140 | 63 | 465 | 3.42 | 3.82 |
| May | 2,706 | 270 | 48 | 87.3 | .642 | .74 |
| June | 934 | 103 | 14 | 31.1 | .229 | .26 |
| July | 944.8 | 242 | 9.8 | 30.5 | .224 | .26 |
| August | 344.7 | 17 | 6.7 | 11.1 | .082 | .09 |
| September | 1,736.8 | 279 | 8.3 | 57.9 | .426 | .48 |
| Water year 1941-42 | 74,763.1 | 6,650 | 6.7 | 205 | 1.51 | 20.46 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 7-19, 21-24, Dec. 29 to Feb. 27, Mar. 6-8.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Little Tonawanda Creek at Linden, N. Y.

Location.- Staff gage and concrete control, lat. 42°52'35", long. 78°09'45", at highway bridge in Linden, Genesee County.

Drainage area.- 22 square miles.

Records available.- July 1912 to September 1942.

Average discharge.- 29 years (1912-19, 1920-42), 26.6 second-feet.

Extremes.- Maximum discharge during year, 2,130 second-feet Mar. 17 (gage height, 13.2 feet, from graph based on gage readings); minimum discharge observed, 0.3 second-foot Oct. 2 (gage height, 0.20 foot).

1912-42: Maximum discharge, about 2,400 second-feet Apr. 22, 1916 (gage height, 14.6 feet, from floodmarks), from rating curve extended above 1,500 second-feet by logarithmic plotting; minimum, about 0.1 second-foot Sept. 5-7, 1934, and several times during period Aug. 4-28, 1936.

Remarks.- Records good except those for periods of ice effect or days of considerable range in stage, which are fair. Gage read twice daily.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 17

| | | | | | |
|---|---|---|---|---|---|
| 0.2 | 0.3 | 0.9 | 12 | 2.5 | 113 |
| .3 | .8 | 1.0 | 15 | 3.0 | 164 |
| .4 | 1.6 | 1.1 | 19 | 4.0 | 284 |
| .5 | 2.9 | 1.3 | 27 | 6.0 | 585 |
| .6 | 4.6 | 1.5 | 37 | 8.0 | 970 |
| .7 | 6.6 | 1.8 | 56 | 10.8 | 1,650 |
| .8 | 9.1 | 2.1 | 78 | | |

Mar. 18 to Sept. 30

| | | | |
|---|---|---|---|
| 0.3 | 0.8 | 1.0 | 16 |
| .4 | 1.7 | 1.2 | 24 |
| .5 | 2.9 | 1.6 | 44 |
| .7 | 6.9 | 1.8 | 56 |
| .9 | 13 | | |

Note.- Same as preceding table above 1.8 feet.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.3 | 1.1 | 0.9 | 7.1 | 9.6 | 16 | 82 | 10 | 20 | 2.7 | 2.0 | 0.8 |
| 2 | .3 | .9 | 1.1 | 14 | b8.4 | 16 | 166 | 9.9 | 14 | 2.7 | 2.2 | .7 |
| 3 | .5 | .9 | 1.1 | 13 | 8.0 | 16 | 153 | 10 | 12 | 2.3 | 1.9 | .8 |
| 4 | .8 | .8 | 1.1 | 11 | 7.6 | 16 | 128 | 10 | 11 | 2.2 | 1.6 | 1.0 |
| 5 | .7 | .8 | 1.0 | 9.1 | 7.6 | 18 | 118 | 8.7 | 13 | 2.0 | 1.6 | 1.0 |
| 6 | .5 | .9 | .9 | 8.8 | 7.8 | 20 | 100 | 8.2 | 9.3 | 1.9 | 1.5 | .8 |
| 7 | .5 | 2.0 | .9 | b8.2 | 17 | 20 | 391 | 12 | 7.9 | 1.9 | 1.5 | .8 |
| 8 | .4 | 1.4 | .9 | 7.1 | 16 | 44 | 319 | 11 | 7.2 | 1.9 | 1.5 | 1.6 |
| 9 | .4 | 1.1 | 1.1 | 6.2 | b14 | 192 | 95 | 8.7 | 6.2 | 1.8 | 1.9 | 83 |
| 10 | .5 | 1.1 | *1.0 | 6.0 | b13 | *175 | 78 | 8.2 | 5.3 | 1.7 | 2.4 | 95 |
| 11 | .5 | 1.1 | b.9 | 5.3 | b13 | 164 | 90 | 7.4 | 5.3 | 1.9 | 1.7 | 36 |
| 12 | .5 | 1.1 | b.9 | 5.3 | *b12 | 255 | 132 | 7.2 | 4.9 | 1.6 | 1.5 | 18 |
| 13 | .4 | 1.0 | 1.2 | 5.3 | b12 | 175 | 250 | 7.7 | 6.2 | 1.5 | 1.5 | 13 |
| 14 | .6 | .9 | 1.3 | 5.3 | b11 | 186 | 201 | 6.2 | 5.3 | 1.3 | 1.5 | 9.3 |
| 15 | .8 | .9 | 1.1 | 5.1 | b12 | 186 | 128 | 12 | 4.9 | 1.2 | 1.5 | 7.2 |
| 16 | .6 | .9 | 1.2 | *4.9 | 16 | 222 | 74 | 12 | 4.5 | 1.1 | 1.4 | 8.5 |
| 17 | .5 | .9 | 1.6 | 4.6 | 132 | 1,640 | 56 | 14 | 4.3 | 2.3 | 1.3 | 7.2 |
| 18 | .5 | .9 | 2.3 | 6.2 | 104 | 456 | 44 | 10 | 4.1 | 50 | 1.3 | 5.7 |
| 19 | .6 | .9 | 3.2 | b32 | 60 | 148 | 36 | 9.0 | 3.6 | 16 | 1.2 | 5.3 |
| 20 | .6 | .9 | b3.3 | b49 | 46 | 106 | 38 | 8.2 | 3.4 | 8.5 | 1.1 | 16 |
| 21 | .6 | 1.1 | b2.5 | 25 | 34 | 128 | 33 | 9.3 | 4.1 | 5.5 | 1.0 | 12 |
| 22 | .6 | .9 | 2.5 | 20 | 26 | 133 | 28 | 58 | 4.1 | 4.1 | 1.0 | 8.2 |
| 23 | .8 | 1.2 | 2.9 | 18 | b22 | 78 | 24 | 44 | 4.5 | 3.1 | 1.1 | 7.7 |
| 24 | .9 | 1.2 | 22 | 25 | b20 | 66 | 21 | 21 | 3.8 | 2.3 | 1.0 | 8.7 |
| 25 | .7 | 1.1 | 38 | 22 | b18 | 66 | 19 | 17 | 3.4 | 2.2 | .9 | 17 |
| 26 | .7 | 1.1 | 16 | 16 | b17 | 95 | 17 | 13 | 2.7 | 2.0 | .9 | 13 |
| 27 | .8 | 1.0 | 15 | 14 | b17 | 128 | 15 | 11 | 2.4 | 2.2 | .9 | 23 |
| 28 | 1.4 | .9 | 12 | 12 | 16 | 124 | 14 | 9.3 | 2.3 | 2.0 | 1.0 | 25 |
| 29 | .9 | .9 | 8.5 | b7.8 | - | 74 | 13 | 8.2 | 2.2 | 2.6 | 1.0 | 14 |
| 30 | .9 | 1.0 | b6.4 | b7.6 | - | 70 | 12 | 9.0 | 2.3 | 2.9 | 1.0 | 10 |
| 31 | .9 | - | b6.8 | b8.2 | - | 60 | - | 40 | - | 2.3 | .9 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 19.7 | 1.4 | 0.3 | 0.64 | 0.029 | 0.03 |
| November | 30.9 | 2.0 | .8 | 1.03 | .047 | .05 |
| December | 159.6 | 38 | .9 | 5.15 | .234 | .27 |
| Calendar year 1941 | 6,174.1 | 802 | .3 | 16.9 | .766 | 10.43 |
| January | 389.1 | 49 | 4.6 | 12.6 | .573 | .66 |
| February | 697.0 | 132 | 7.6 | 24.9 | 1.13 | 1.18 |
| March | 5,093 | 1,640 | 16 | 164 | 7.45 | 8.59 |
| April | 2,877 | 391 | 12 | 95.9 | 4.36 | 4.86 |
| May | 430.2 | 58 | 6.2 | 13.9 | .632 | .73 |
| June | 184.2 | 20 | 2.2 | 6.14 | .279 | .31 |
| July | 137.7 | 50 | 1.1 | 4.44 | .202 | .23 |
| August | 42.8 | 2.4 | .9 | 1.38 | .063 | .07 |
| September | 450.3 | 95 | .7 | 15.0 | .682 | .76 |
| Water year 1941-42 | 10,511.5 | 1,640 | .3 | 28.8 | 1.31 | 17.74 |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Genesee River at Scio, N. Y.

Location.- Water-stage recorder, lat. 42°09'50", long. 77°58'50", at highway bridge three-quarters of a mile upstream from Scio, Allegany County.

Drainage area.- 309 square miles.

Records available.- June 1916 to September 1942.

Average discharge.- 26 years, 368 second-feet.

Extremes.- Maximum discharge during year, 9,740 second-feet July 18 (gage height, 9.74 feet); minimum, 15 second-feet Oct. 1 (gage height, 0.99 foot).
1916-42: Maximum discharge observed, 10,600 second-feet May 22, 1919 (gage height, 10.1 feet, present datum), from rating curve extended above 3,600 second-feet by logarithmic plotting; minimum discharge, 5.8 second-feet Sept. 4, 1939 (gage height, 0.71 foot).

Remarks.- Records good except those for periods of no gage-height record, which are fair.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 82 | 47 | 246 | 166 | 111 | 782 | 178 | 424 | 104 | 539 | 85 |
| 2 | 18 | 102 | 47 | 463 | 114 | 109 | 1,110 | 239 | 514 | 82 | 363 | 79 |
| 3 | 20 | 84 | 56 | 292 | b96 | 109 | 1,530 | 226 | 334 | 67 | 311 | 82 |
| 4 | 52 | 74 | 56 | 246 | 101 | 107 | 1,740 | 525 | 308 | 60 | 249 | 99 |
| 5 | 42 | 70 | 54 | 209 | 103 | 122 | 1,400 | 327 | 330 | 60 | 212 | 97 |
| 6 | 28 | 68 | 56 | b155 | 109 | 160 | 1,160 | 255 | 239 | 73 | 180 | 79 |
| 7 | 27 | 110 | 52 | b155 | 129 | 215 | 993 | 339 | 210 | 107 | 159 | 71 |
| 8 | 40 | 106 | *47 | b145 | 129 | 1,040 | 1,510 | 304 | 195 | 74 | 159 | 69 |
| 9 | 42 | 86 | 54 | b135 | *b114 | 6,940 | 1,040 | 258 | 167 | 60 | 194 | 231 |
| 10 | 33 | 78 | 50 | b130 | b112 | 3,100 | 1,160 | 226 | 150 | 58 | 378 | 1,250 |
| 11 | 32 | 74 | 46 | b125 | 111 | 1,690 | 1,040 | 201 | 140 | 166 | 221 | 428 |
| 12 | 35 | 74 | 47 | b120 | b100 | 3,990 | 965 | 192 | 135 | 112 | 180 | 307 |
| 13 | 32 | 70 | 47 | b116 | b92 | *1,790 | 1,030 | 184 | 178 | 76 | 185 | 237 |
| 14 | 34 | 66 | 47 | b112 | 94 | 3,170 | 972 | 167 | 140 | 64 | 364 | 189 |
| 15 | 60 | 64 | 47 | b116 | 92 | 2,470 | 842 | 145 | 120 | 52 | a209 | 203 |
| 16 | 46 | 60 | 47 | b108 | 94 | 1,990 | 741 | 170 | 105 | 44 | a183 | 186 |
| 17 | 36 | 58 | 52 | b100 | 285 | 5,360 | 670 | 186 | 176 | 44 | a161 | 212 |
| 18 | 34 | 54 | 58 | b104 | 385 | 3,700 | 588 | 145 | 172 | 5,830 | a206 | 159 |
| 19 | 36 | 50 | 74 | 238 | 294 | 1,910 | 525 | 135 | 132 | 3,100 | a209 | a138 |
| 20 | 39 | 50 | 74 | 353 | 220 | 1,280 | 481 | 269 | 135 | 1,190 | a180 | a336 |
| 21 | 37 | 56 | 47 | 248 | 194 | 1,100 | 430 | 508 | 135 | 686 | a161 | a348 |
| 22 | 35 | a54 | 56 | 218 | 173 | 1,130 | 378 | 2,610 | 120 | 500 | 235 | a273 |
| 23 | 39 | a50 | 60 | 212 | 158 | 923 | 334 | 4,700 | 102 | 420 | 276 | a233 |
| 24 | 54 | a64 | 1,300 | 237 | 146 | 797 | 296 | 1,820 | 90 | 318 | 212 | a206 |
| 25 | 50 | a64 | 1,110 | 237 | 134 | 741 | 265 | 1,140 | 84 | 266 | 161 | a186 |
| 26 | 49 | a58 | 627 | 223 | 125 | 729 | 239 | 856 | 80 | 233 | 136 | a172 |
| 27 | 46 | a54 | 509 | 212 | 120 | 670 | 216 | 654 | 74 | 331 | 119 | a1,300 |
| 28 | 80 | a50 | 407 | 207 | 116 | 676 | 204 | 520 | 73 | 955 | 112 | a692 |
| 29 | 74 | a49 | 339 | 155 | - | 694 | 223 | 412 | 67 | 1,050 | 115 | 391 |
| 30 | 58 | 47 | 254 | 146 | - | 694 | 189 | 370 | 62 | 634 | 106 | 329 |
| 31 | 56 | - | 266 | 160 | - | 804 | - | 400 | - | 616 | 95 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,280 | 80 | 16 | 41.3 | 0.134 | 0.15 |
| November | 2,026 | 110 | 47 | 67.5 | .218 | .24 |
| December | 6,033 | 1,300 | 46 | 195 | .631 | .73 |
| Calendar year 1941 | 76,591 | 5,200 | 15 | 210 | .680 | 9.20 |
| January | 5,923 | 463 | 100 | 191 | .618 | .71 |
| February | 4,106 | 385 | 92 | 147 | .476 | .50 |
| March | 48,321 | 6,940 | 107 | 1,559 | 5.05 | 5.82 |
| April | 23,053 | 1,740 | 189 | 768 | 2.49 | 2.78 |
| May | 18,661 | 4,700 | 135 | 602 | 1.95 | 2.25 |
| June | 5,191 | 514 | 62 | 173 | .560 | .62 |
| July | 17,432 | 5,830 | 44 | 562 | 1.82 | 2.10 |
| August | 6,570 | 539 | 95 | 212 | .686 | .79 |
| September | 8,667 | 1,300 | 69 | 289 | .935 | 1.04 |
| Water year 1941-42 | 147,263 | 6,940 | 16 | 403 | 1.30 | 17.73 |

Peak discharge.- Mar. 9 (1:30 p.m.) 8,380 sec.-ft.; Mar. 12 (7 a.m.) 5,590 sec.-ft.; Mar. 14 (6 p.m.) 4,240 sec.-ft.; Mar. 17 (6:30 a.m.) 6,300 sec.-ft.; May 22 (10:30 p.m.) 7,310 sec.-ft.; July 18 (12:30 p.m.) 9,740 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for Allegheny River at Red House.

b Stage-discharge relation affected by ice.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Genesee River at St. Helena, N. Y.

Location.- Water-stage recorder, lat. 42°37'20", long. 77°59'20", at highway bridge in St. Helena, Wyoming County, 1½ miles downstream from Wolf Creek, and 3 miles east of Castile.
Drainage area.- 1,017 square miles.
Records available.- August 1908 to September 1942.
Average discharge.- 34 years, 1,195 second-feet.
Extremes.- Maximum discharge during year, 32,300 second-feet Mar. 17 (gage height, 12.02 feet); minimum, 68 second-feet Oct. 4 (gage height, 2.30 feet).
1908-42: Maximum discharge, 44,400 second-feet May 17, 1916 (gage height, 12.8 feet), from rating curve extended above 29,000 second-feet; minimum, 18 second-feet Oct. 5, 17, 1913 (gage height, 1.70 feet).
Remarks.- Records good except those for periods of ice effect or backwater from debris on control, which are fair. Some diurnal fluctuation during low stages caused by power plants. Flow slightly regulated by Caneadea Reservoir (capacity, 1,106,000,000 cubic feet).

Rating tables, water year 1941-42, except periods of ice effect or backwater from debris on control (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 8 | | | | Mar. 9 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2.3 | 68 | 3.5 | 736 | 2.5 | 144 | 3.7 | 1,010 | 6.5 | 5,440 |
| 2.4 | 94 | 4.0 | 1,270 | 2.6 | 182 | 4.0 | 1,320 | 7.0 | 6,700 |
| 2.5 | 124 | 4.5 | 1,870 | 2.8 | 274 | 4.5 | 1,890 | 8.0 | 9,720 |
| 2.6 | 159 | 5.0 | 2,580 | 3.0 | 391 | 5.0 | 2,580 | 9.0 | 13,800 |
| 2.8 | 244 | 5.5 | 3,390 | 3.2 | 537 | 5.5 | 3,390 | 10.0 | 18,600 |
| 3.0 | 351 | 6.0 | 4,330 | 3.4 | 714 | 6.0 | 4,330 | 11.2 | 26,100 |
| 3.2 | 482 | | | | | | | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 152 | 150 | 135 | 600 | 600 | 560 | 2,860 | 504 | 905 | 221 | 1,330 | 422 |
| 2 | 140 | 140 | 155 | 782 | 480 | 540 | 4,270 | 720 | 1,320 | 242 | 1,020 | 390 |
| 3 | 86 | 175 | 155 | 1,250 | 410 | 540 | 5,420 | 768 | 1,100 | 220 | 775 | 276 |
| 4 | 117 | 180 | 160 | 670 | 540 | 640 | 5,610 | 868 | 852 | 184 | 720 | 198 |
| 5 | 234 | 165 | 165 | 550 | 480 | 700 | 4,520 | 1,140 | 904 | 158 | 602 | 324 |
| 6 | 268 | 160 | 160 | 300 | 330 | 560 | 3,820 | 830 | 802 | 156 | 487 | 448 |
| 7 | 268 | 185 | 150 | 270 | 450 | 560 | 3,420 | 1,150 | 612 | 184 | 411 | 434 |
| 8 | 262 | 225 | 140 | 320 | 600 | 940 | 5,640 | 1,480 | 568 | 184 | 368 | 426 |
| 9 | 200 | 240 | 165 | 400 | 540 | 12,400 | 3,560 | 1,040 | 528 | 185 | 400 | 462 |
| 10 | 107 | 185 | 145 | 380 | 540 | 12,100 | 3,230 | 836 | 422 | 160 | 586 | 1,060 |
| 11 | 158 | 180 | *130 | 360 | 520 | 4,990 | 3,320 | 700 | 372 | 310 | 783 | 1,230 |
| 12 | 232 | 185 | 130 | 350 | 420 | 10,300 | 3,460 | 646 | 350 | 533 | 604 | 900 |
| 13 | 226 | 180 | 155 | 340 | *310 | 5,980 | 3,980 | 660 | 322 | 348 | 448 | 746 |
| 14 | 260 | 165 | 145 | 330 | 390 | 7,650 | 3,660 | 642 | 309 | 268 | 529 | 674 |
| 15 | 259 | 175 | 130 | *320 | 480 | 9,750 | 3,130 | 602 | 299 | 195 | 694 | 628 |
| 16 | 208 | 190 | 180 | 320 | 500 | *6,060 | 2,490 | 595 | 285 | 173 | 472 | 634 |
| 17 | 129 | 150 | 124 | 370 | 940 | 26,300 | 2,060 | 651 | 273 | 167 | 438 | 432 |
| 18 | 162 | 165 | 130 | 500 | 2,150 | 17,700 | 1,810 | 606 | 291 | 8,820 | 586 | 359 |
| 19 | 260 | 150 | 140 | 600 | 1,750 | 6,620 | 1,630 | 510 | 330 | 11,200 | 446 | 445 |
| 20 | 252 | 145 | 300 | 1,400 | 880 | 3,920 | 1,510 | 478 | 307 | 4,070 | 376 | 917 |
| 21 | 269 | 124 | 245 | 1,400 | 680 | 3,550 | 1,240 | 584 | 320 | 2,030 | 336 | 1,470 |
| 22 | 264 | 140 | 320 | 900 | 620 | 3,780 | 1,120 | 1,690 | 333 | 1,260 | 308 | 931 |
| 23 | 222 | 150 | 270 | 740 | 520 | 2,980 | 1,000 | 2,010 | 306 | 1,010 | 334 | 752 |
| 24 | 145 | 150 | 782 | 780 | 450 | 2,380 | 903 | 4,290 | 272 | 874 | 459 | 525 |
| 25 | 165 | 180 | 4,190 | 880 | 460 | 2,250 | 813 | 2,470 | 232 | 695 | 600 | 417 |
| 26 | 160 | 165 | 2,040 | 840 | 580 | 2,490 | 746 | 1,780 | 217 | 605 | 552 | 550 |
| 27 | 150 | 155 | 1,400 | 660 | 580 | 2,710 | 690 | 1,430 | 208 | 636 | 359 | 634 |
| 28 | 180 | 150 | 1,120 | 620 | 560 | 2,880 | 604 | 1,180 | 184 | 700 | 242 | 2,140 |
| 29 | 155 | 140 | 860 | 450 | - | 2,630 | 458 | 978 | 172 | 1,700 | 354 | 1,350 |
| 30 | 170 | 145 | 620 | 460 | - | 2,550 | 572 | 828 | 186 | 1,740 | 446 | 1,030 |
| 31 | 155 | - | 610 | 620 | - | 3,180 | - | 822 | - | 1,310 | 440 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 6,015 | 269 | 86 | 194 | 0.191 | 0.22 |
| November | 4,989 | 240 | 124 | 166 | .163 | .18 |
| December | 15,551 | 4,190 | 124 | 502 | .494 | .57 |
| Calendar year 1941 | 288,518 | 20,000 | 72 | 790 | .777 | 10.57 |
| January | 18,762 | 1,400 | 270 | 605 | .595 | .69 |
| February | 17,760 | 2,150 | 310 | 634 | .623 | .65 |
| March | 159,870 | 26,000 | 540 | 5,157 | 5.07 | 5.84 |
| April | 77,546 | 5,640 | 458 | 2,585 | 2.54 | 2.83 |
| May | 39,468 | 8,010 | 478 | 1,273 | 1.25 | 1.44 |
| June | 13,581 | 1,320 | 172 | 453 | .445 | .50 |
| July | 40,538 | 11,200 | 156 | 1,308 | 1.29 | 1.49 |
| August | 16,485 | 1,330 | 242 | 532 | .523 | .60 |
| September | 21,204 | 2,140 | 198 | 707 | .695 | .78 |
| Water year 1941-42 | 431,769 | 26,000 | 86 | 1,183 | 1.16 | 15.79 |

Peak discharge.- Mar. 9 (11:30 p.m.) 19,000 sec.-ft.; Mar. 12 (1 p.m.) 13,300 sec.-ft.; Mar. 15 (12:30 a.m.) 13,400 sec.-ft.; Mar. 17 (5:30 p.m.) 32,300 sec.-ft.; July 19 (12:15 a.m.) 18,900 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Backwater from debris Oct. 24 to Dec. 23. Stage-discharge relation affected by ice Dec. 11, 12, 20-23, 29, 30, Jan. 6 to Mar. 9.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Genesee River at Jones Bridge, near Mount Morris, N. Y.

Location.- Water-stage recorder, lat. 42°45'55", long. 77°50'25", at Jones Bridge, 3½ miles northeast of Mount Morris, Livingston County. Datum of gage is 540.00 feet above mean sea level (levels by New York State Conservation Commission).

Drainage area.- 1,419 square miles.

Records available.- May 1903 to April 1906, August 1908 to April 1914, July 1915 to September 1942.

Average discharge.- 32 years (1908-13, 1915-42), 1,551 second-feet.

Extremes.- Maximum discharge during year, 32,400 second-feet Mar. 18 (gage height, 24.51 feet); minimum, 37 second-feet (regulated) Oct. 2 (gage height, 0.26 foot); minimum daily, 93 second-feet Oct. 4.
1903-6, 1908-14, 1915-42: Maximum discharge, 55,100 second-feet May 17, 1916 (gage height, 25.44 feet); minimum, 18 second-feet Aug. 29, 1909; minimum daily, 30 second-feet Aug. 8, 1909.

Remarks.- Records good except those for periods of ice effect, which are fair. Diurnal fluctuation at low stages caused by power plants. Slight seasonal regulation by Caneadea Reservoir (capacity, 1,106,000,000 cubic feet).

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 179 | 218 | 204 | 744 | 760 | 680 | 3,630 | 701 | 1,130 | 611 | 1,480 | 481 |
| 2 | 157 | 191 | 195 | 703 | 580 | 660 | 5,140 | 790 | 2,060 | 368 | 1,270 | 463 |
| 3 | 150 | 170 | 205 | 1,410 | 480 | 700 | 6,300 | 972 | 1,800 | 351 | 978 | 441 |
| 4 | 93 | 247 | 210 | 945 | 460 | 620 | 6,630 | 978 | 1,400 | 295 | 824 | 316 |
| 5 | 222 | 234 | 219 | 741 | 540 | 860 | 5,510 | 1,290 | 1,300 | 267 | 675 | 312 |
| 6 | 262 | 188 | 232 | 480 | 460 | 800 | 4,830 | 1,050 | 1,180 | 279 | 550 | 433 |
| 7 | 295 | 238 | 180 | 420 | 480 | 760 | 4,290 | 1,060 | 917 | 236 | 450 | 472 |
| 8 | 304 | 260 | 200 | 430 | 720 | 1,220 | 7,000 | 1,860 | 774 | 277 | 476 | 472 |
| 9 | 260 | 281 | 204 | 480 | 720 | 10,600 | 5,000 | 1,330 | 665 | 272 | 485 | 531 |
| 10 | 180 | 250 | 207 | 460 | 680 | *16,000 | 4,350 | 1,080 | 574 | 249 | 545 | 746 |
| 11 | 159 | 245 | *155 | 430 | 660 | 9,400 | 4,840 | 895 | 508 | 524 | 873 | 1,500 |
| 12 | 222 | 220 | 130 | 410 | 640 | 14,500 | 5,060 | 785 | 420 | 670 | 790 | 972 |
| 13 | 246 | 246 | 150 | 390 | 420 | *10,800 | 5,340 | 769 | 454 | 569 | 614 | 840 |
| 14 | 292 | 224 | 195 | 380 | *380 | 11,200 | 4,860 | 769 | 437 | 441 | 565 | 732 |
| 15 | 326 | 230 | 165 | 370 | 580 | 13,400 | 4,130 | 716 | 424 | 350 | 824 | 670 |
| 16 | 280 | 250 | 203 | *360 | 620 | 9,240 | 3,370 | 690 | 420 | 266 | 654 | 665 |
| 17 | 182 | 219 | 193 | 350 | 960 | *22,900 | 2,780 | 706 | 407 | 272 | 531 | 579 |
| 18 | 178 | 193 | 160 | 360 | 2,200 | 27,700 | 2,370 | 743 | 420 | 5,310 | 629 | 476 |
| 19 | 236 | 209 | 192 | 560 | 2,200 | 15,100 | 2,120 | 660 | 463 | 13,300 | 584 | 459 |
| 20 | 283 | 201 | 270 | 980 | 1,450 | 9,450 | 1,970 | 619 | 450 | 6,000 | 503 | 619 |
| 21 | 300 | 170 | 330 | 1,600 | 1,040 | 6,320 | 1,660 | 634 | 424 | 2,880 | 459 | 1,610 |
| 22 | 309 | 179 | 350 | 1,120 | 660 | 5,740 | 1,480 | 1,390 | 467 | 1,690 | 445 | 1,040 |
| 23 | 303 | 195 | 468 | 980 | 760 | 4,680 | 1,340 | 7,920 | 437 | 1,250 | 437 | 824 |
| 24 | 222 | 199 | 425 | 920 | 600 | 3,690 | 1,190 | 5,540 | 416 | 1,070 | 433 | 675 |
| 25 | 181 | 230 | 3,690 | 1,060 | 580 | 3,290 | 1,090 | 3,070 | 437 | 840 | 526 | 531 |
| 26 | 189 | 237 | 2,450 | 1,080 | 740 | 3,310 | 1,020 | 2,150 | 243 | 711 | 604 | 531 |
| 27 | 160 | 194 | 1,570 | 900 | 720 | 3,470 | 944 | 1,700 | 311 | 732 | 541 | 701 |
| 28 | 231 | 204 | 1,310 | 740 | 700 | 3,620 | 873 | 1,380 | 272 | 753 | 433 | 1,820 |
| 29 | 215 | 185 | 1,040 | 660 | - | 3,290 | 743 | 1,170 | 290 | 1,680 | 378 | 1,560 |
| 30 | 195 | 181 | 760 | 460 | - | 3,090 | 665 | 1,010 | 342 | 2,180 | 416 | 1,100 |
| 31 | 221 | - | 738 | 480 | - | 3,720 | - | 1,060 | - | 1,600 | 467 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 7,032 | 326 | 93 | 227 | 0.160 | 0.18 |
| November | 6,488 | 281 | 170 | 216 | .152 | .17 |
| December | 17,000 | 3,690 | 130 | 548 | .386 | .44 |
| Calendar year 1941 | 357,300 | 22,600 | 73 | 979 | .690 | 9.36 |
| January | 21,403 | 1,600 | 350 | 690 | .486 | .56 |
| February | 21,790 | 2,200 | 380 | 778 | .548 | .57 |
| March | 220,810 | 27,700 | 620 | 7,123 | 5.02 | 5.79 |
| April | 100,525 | 7,000 | 665 | 3,351 | 2.36 | 2.63 |
| May | 45,487 | 7,920 | 619 | 1,467 | 1.03 | 1.19 |
| June | 19,842 | 2,060 | 243 | 661 | .466 | .52 |
| July | 46,293 | 13,300 | 236 | 1,493 | 1.05 | 1.21 |
| August | 19,439 | 1,480 | 378 | 627 | .442 | .51 |
| September | 22,571 | 1,820 | 312 | 752 | .530 | .59 |
| Water year 1941-42 | 548,680 | 27,700 | 93 | 1,503 | 1.06 | 14.36 |

Peak discharge.- Mar. 15 (8 a.m.) 15,200 sec.-ft.; Mar. 18 (4 a.m.) 32,400 sec.-ft.; July 19 (8:30 a.m.) 15,700 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 11-15, 21, 22, 29, 30, Jan. 6 to Mar. 13.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Genesee River at Driving Park Avenue, Rochester, N. Y.

Location.- Water-stage recorder, lat. 43°11'05", long. 77°37'40", in Rochester, Monroe County, 40 feet downstream from plant 5 of Rochester Gas & Electric Corporation and 100 feet upstream from Driving Park Avenue Bridge.
Drainage area.- 2,467 square miles.
Records available.- December 1919 to September 1942.
Average discharge.- 22 years (1920-42), 2,642 second-feet.
Extremes.- Maximum discharge during year, 34,400 second-feet Mar. 19 (gage height, 13.96 feet); minimum, 23 second-feet (regulated), July 6 (gage height, -1.94 feet); minimum daily, 597 second-feet (regulated), Dec. 14.
1919-42: Maximum discharge, 35,500 second-feet Apr. 2, 1940 (gage height, 14.08 feet); minimum, less than 10 second-feet, occurred during low-water periods in some years when power plant was shut down; minimum daily, 219 second-feet (regulated) Aug. 14, 1927.
Maximum discharge known, about 54,000 second-feet sometime in March 1865.
Remarks.- Records good. New York State Barge Canal crosses river near southern boundary of Rochester. It discharges into river, from the west, the water it has diverted from Lake Erie, and diverts from river, to the east, a smaller amount of water. Additional regulation is provided by Caneadea Reservoir.

Rating tables, water year 1941-42 (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 11 | | | | Mar. 12 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.7 | 572 | 3.8 | 3,780 | 1.4 | 875 | 3.8 | 3,800 | 7.0 | 11,700 |
| 1.3 | 833 | 4.3 | 5,280 | 2.0 | 1,250 | 4.1 | 4,850 | 8.5 | 15,950 |
| 2.0 | 1,250 | 4.6 | 6,000 | 2.5 | 1,710 | 4.5 | 6,100 | 10.0 | 20,770 |
| 2.6 | 1,730 | 6.0 | 9,120 | 3.0 | 2,260 | 4.9 | 6,920 | 12.0 | 27,570 |
| 3.2 | 2,360 | 7.9 | 14,200 | 3.5 | 3,100 | 6.0 | 9,180 | 13.5 | 32,800 |
| 3.4 | 2,730 | | | | | | | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 758 | 867 | 812 | 1,110 | 920 | 671 | 4,910 | 2,000 | 2,280 | 992 | 2,540 | 1,070 |
| 2 | 749 | 900 | 831 | 1,630 | 1,210 | 952 | 6,590 | 1,890 | 2,500 | 1,490 | 2,400 | 1,090 |
| 3 | 834 | 938 | 884 | 1,340 | 1,160 | 916 | 7,830 | 2,160 | 3,390 | 1,130 | 2,080 | 1,090 |
| 4 | 768 | 862 | 904 | 1,760 | 1,060 | 902 | 8,640 | 2,280 | 3,160 | 1,000 | 1,720 | 1,070 |
| 5 | 871 | 838 | 937 | 1,450 | 1,010 | 935 | 9,330 | 2,450 | 2,740 | 944 | 1,520 | 1,020 |
| 6 | 727 | 814 | 1,140 | 1,030 | 1,100 | 898 | 8,450 | 2,490 | 2,570 | 952 | 1,350 | 892 |
| 7 | 901 | 894 | 865 | 900 | 1,280 | 940 | 8,450 | 2,420 | 2,140 | 877 | 1,200 | 1,070 |
| 8 | 955 | 905 | 1,420 | 793 | 870 | 918 | 11,600 | 2,560 | 1,780 | 910 | 1,060 | 1,060 |
| 9 | 871 | 851 | 1,480 | 702 | 1,050 | 3,780 | 12,300 | 3,310 | 1,660 | 931 | 1,130 | 1,230 |
| 10 | 901 | 951 | 1,090 | 632 | 1,160 | 11,800 | 8,500 | 2,520 | 1,520 | 960 | 1,260 | 1,440 |
| 11 | 838 | 933 | 850 | f613 | 1,240 | 14,100 | 8,120 | 2,290 | 1,400 | 951 | 1,300 | 2,060 |
| 12 | 775 | 943 | 866 | f810 | 1,210 | 17,700 | 10,300 | 2,000 | 1,350 | 1,200 | 1,610 | 2,240 |
| 13 | 809 | 887 | 746 | 849 | 1,230 | 18,100 | 12,000 | 1,920 | 1,270 | 1,470 | 1,520 | 1,700 |
| 14 | 899 | 888 | 597 | 882 | 1,090 | 19,900 | 10,800 | 1,930 | 1,190 | 1,200 | 1,330 | 1,650 |
| 15 | 899 | 895 | 738 | 850 | 837 | 20,500 | 8,990 | 1,870 | 1,270 | 1,060 | 1,390 | 1,500 |
| 16 | 941 | 898 | 684 | 864 | 1,150 | 20,400 | 7,440 | 1,770 | 1,150 | 932 | 1,380 | 1,460 |
| 17 | 870 | 861 | 672 | 884 | 1,600 | 21,700 | 5,950 | 1,740 | 1,230 | 1,080 | 1,340 | 1,410 |
| 18 | 881 | 842 | 734 | 819 | 1,960 | 26,600 | 5,370 | 1,930 | 1,180 | 1,290 | 1,160 | 1,220 |
| 19 | 740 | 860 | 828 | 917 | 3,540 | 32,500 | 4,710 | 1,820 | 1,200 | 9,010 | 1,350 | 1,200 |
| 20 | 846 | 860 | 888 | 1,020 | 3,450 | 29,600 | 4,570 | 1,680 | 1,210 | 11,200 | 1,230 | 1,140 |
| 21 | 900 | 880 | 777 | 1,300 | 2,540 | 22,100 | 4,320 | 1,590 | 1,160 | 6,120 | 1,200 | 1,540 |
| 22 | 933 | 844 | 946 | 2,160 | 1,690 | 14,400 | 3,870 | 1,790 | 1,190 | 4,100 | 1,170 | 2,250 |
| 23 | 1,030 | 812 | 960 | 1,830 | 1,700 | 9,920 | 3,780 | 4,360 | 1,180 | 2,740 | 1,090 | 1,740 |
| 24 | 1,000 | 906 | 1,450 | 1,540 | 1,470 | 7,410 | 3,460 | 9,810 | 1,170 | 2,100 | 1,010 | 1,520 |
| 25 | 903 | 863 | 1,710 | 1,410 | 1,460 | 5,810 | 3,010 | 6,270 | 1,130 | 1,790 | 1,000 | 1,400 |
| 26 | 759 | 917 | 3,760 | 1,610 | 1,200 | 5,490 | 2,700 | 4,360 | 1,150 | 1,470 | 1,160 | 1,120 |
| 27 | 884 | 946 | 3,680 | 1,570 | 964 | 5,300 | 2,650 | 3,680 | 990 | 1,450 | 1,140 | 1,350 |
| 28 | 812 | 850 | 1,970 | 1,440 | 902 | 5,390 | 2,410 | 2,900 | 945 | 1,380 | 1,160 | 1,580 |
| 29 | 809 | 901 | 2,090 | 1,230 | - | 5,680 | 2,290 | 2,490 | 945 | 1,590 | 1,020 | 3,170 |
| 30 | 860 | 814 | 1,460 | 1,210 | - | 5,090 | 2,040 | 2,180 | 912 | 3,060 | 957 | 2,400 |
| 31 | 847 | - | 1,140 | 1,230 | - | 4,870 | - | 2,050 | - | 3,210 | 1,120 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 26,570 | 1,030 | 727 | 857 | - | - |
| November | 26,420 | 951 | 812 | 881 | - | - |
| December | 37,889 | 3,760 | 597 | 1,222 | - | - |
| Calendar year 1941 | 716,310 | 22,000 | 597 | 1,962 | 0.795 | 10.79 |
| January | 36,385 | 2,160 | 613 | 1,174 | - | - |
| February | 39,953 | 3,540 | 802 | 1,427 | - | - |
| March | 335,272 | 32,500 | 671 | 10,820 | - | - |
| April | 195,380 | 12,300 | 2,040 | 6,513 | - | - |
| May | 84,510 | 9,810 | 1,590 | 2,726 | - | - |
| June | 46,962 | 3,390 | 912 | 1,565 | - | - |
| July | 68,589 | 11,200 | 877 | 2,213 | - | - |
| August | 41,897 | 2,540 | 957 | 1,352 | - | - |
| September | 44,682 | 3,170 | 892 | 1,489 | - | - |
| Water year 1941-42 | 984,509 | 32,500 | 597 | 2,697 | 1.09 | 14.83 |

f Fragmentary gage-height record; discharge computed from reconstructed gage-height graph.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter.
To convert war time to standard time, subtract 1 hour.

## Canaseraga Creek near Dansville, N. Y.

Location.- Water-stage recorder, lat. 42°33'40", long. 77°42'55", just downstream from Ossian Street Bridge, half a mile downstream from Mill Creek, and 1 mile west of Dansville, Livingston County. Datum of gage is 640.00 feet above mean sea level (levels by New York State Conservation Commission).

Drainage area.- 153 square miles.

Records available.- July 1910 to December 1912, July 1915 to June 1917, March 1919 to September 1942. October 1917 to September 1919 published as Canaseraga Creek at Cumminsville.

Average discharge.- 22 years (1920-42), 143 second-feet.

Extremes.- Maximum discharge during year, 8,400 second-feet Mar. 17 (gage height, 12.71 feet), from rating curve extended above 4,900 second-feet by logarithmic plotting; minimum, 13 second-feet Oct. 2.

1910-12, 1915-42: Maximum discharge at present site, 8,830 second-feet July 23, 1940 (gage height, 13.1 feet, from floodmark), by contracted-opening method; maximum at former site, 9,100 second-feet July 23, 1940 (gage height, 9.93 feet), by slope-area method; minimum, 10 second-feet Aug. 9, 1934, Sept. 27, 28, 1941.

Remarks.- Records good except those for periods of ice effect or backwater from debris on control, which are fair.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14 | 25 | 25 | 45 | 50 | 52 | 347 | 88 | 396 | 127 | 112 | 26 |
| 2 | 14 | 22 | 25 | 65 | 37 | 52 | 616 | 91 | 822 | 68 | 107 | 27 |
| 3 | 16 | 22 | 25 | 60 | 43 | 55 | 721 | 93 | 334 | 55 | 96 | 33 |
| 4 | 18 | 22 | 23 | 50 | 45 | 54 | 702 | 131 | 278 | 49 | 76 | 34 |
| 5 | 17 | 20 | 23 | 34 | 39 | 64 | 569 | 104 | 233 | 45 | 68 | 31 |
| 6 | 16 | 22 | 22 | 48 | 41 | 86 | 451 | 89 | 168 | 43 | 60 | 29 |
| 7 | 16 | 26 | 22 | 45 | 77 | 108 | 396 | 173 | 138 | 45 | 55 | 28 |
| 8 | 17 | 22 | 22 | 41 | 60 | 399 | 600 | 157 | 120 | 39 | 58 | 31 |
| 9 | 17 | 22 | 22 | 39 | 56 | 2,760 | 376 | 128 | 100 | 35 | 71 | 41 |
| 10 | 17 | 22 | 22 | 37 | 52 | *1,050 | 388 | 107 | 90 | 47 | 63 | 53 |
| 11 | 18 | 23 | *19 | 36 | 48 | 576 | 388 | 93 | 82 | 301 | 85 | 44 |
| 12 | 18 | 25 | 18 | 34 | 45 | *1,180 | 445 | 84 | 75 | 96 | 107 | 38 |
| 13 | 18 | 25 | 22 | 33 | 41 | 667 | 498 | 81 | 74 | 67 | 75 | 34 |
| 14 | 20 | 23 | 23 | 31 | *37 | 1,230 | 446 | 73 | 70 | 54 | 114 | 31 |
| 15 | 19 | 22 | 22 | 31 | 36 | 1,220 | 370 | 67 | 68 | 46 | 70 | 30 |
| 16 | 18 | 22 | 22 | *29 | 55 | 1,010 | 304 | 66 | 61 | 41 | 59 | 29 |
| 17 | 18 | 22 | 25 | 28 | 191 | 5,430 | 253 | 66 | 68 | 47 | 58 | 28 |
| 18 | 18 | 20 | 25 | 29 | 221 | 2,070 | 220 | 63 | 70 | 695 | 53 | 28 |
| 19 | 19 | 20 | 25 | 58 | 122 | 818 | 200 | 61 | 59 | 217 | 48 | 27 |
| 20 | 18 | 22 | 22 | 120 | 102 | 502 | 200 | 61 | 59 | 218 | 45 | 38 |
| 21 | 19 | 22 | 18 | 77 | 88 | 481 | 185 | 72 | 65 | 129 | 41 | 35 |
| 22 | 19 | 22 | 23 | 64 | 78 | 529 | 167 | 563 | 59 | 103 | 44 | 30 |
| 23 | 22 | 22 | 26 | 62 | 70 | 397 | 150 | 587 | 55 | 101 | 47 | 29 |
| 24 | 22 | 23 | 114 | 68 | 64 | 319 | 136 | 310 | 52 | 81 | 42 | 33 |
| 25 | 20 | 22 | 122 | 75 | 60 | 281 | 123 | 227 | 50 | 69 | 39 | 32 |
| 26 | 20 | 22 | 81 | 68 | 56 | 278 | 115 | 180 | 49 | 89 | 36 | 30 |
| 27 | 20 | 20 | 66 | 64 | 54 | 291 | 107 | 154 | 46 | 112 | 33 | 68 |
| 28 | 26 | 23 | 58 | 57 | 52 | 332 | 102 | 136 | 44 | 138 | 35 | 74 |
| 29 | 23 | 22 | 47 | 43 | - | 278 | 104 | 121 | 41 | 266 | 36 | 49 |
| 30 | 22 | 22 | 39 | 48 | - | 282 | 89 | 123 | 110 | 190 | 34 | 42 |
| 31 | 22 | - | 48 | 50 | - | 319 | - | 190 | - | 131 | 30 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 581 | 26 | 14 | 18.7 | 0.122 | 0.14 |
| November | 669 | 26 | 20 | 22.3 | .146 | .16 |
| December | 1,096 | 122 | 18 | 35.4 | .231 | .27 |
| Calendar year 1941 | 38,368 | 3,620 | 11 | 105 | .686 | 9.32 |
| January | 1,569 | 120 | 28 | 50.6 | .331 | .38 |
| February | 1,920 | 221 | 36 | 68.6 | .448 | .47 |
| March | 23,170 | 5,430 | 52 | 747 | 4.88 | 5.63 |
| April | 9,768 | 721 | 89 | 326 | 2.13 | 2.38 |
| May | 4,539 | 587 | 61 | 146 | .954 | 1.10 |
| June | 3,936 | 822 | 41 | 131 | .856 | .98 |
| July | 3,744 | 695 | 35 | 121 | .791 | .91 |
| August | 1,899 | 114 | 30 | 61.3 | .401 | .46 |
| September | 1,082 | 74 | 26 | 36.1 | .236 | .26 |
| Water year 1941-42 | 53,973 | 5,430 | 14 | 148 | .967 | 13.12 |

Peak discharge.- Mar. 9 (11 a.m.) 4,000 sec.-ft.; Mar. 12 (6 a.m.) 1,630 sec.-ft.; Mar. 17 (2 a.m.) 8,400 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Backwater from debris on control Oct. 1 to Dec. 24, Mar. 12. Stage-discharge relation affected by ice Dec. 11, 12, 20-22, 29, 30, Jan. 4-12, 16, 17, 29, 30, Feb. 2-4, 8-15, 19-24.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter.

To convert war time to standard time, subtract 1 hour.

## Canadice Lake Outlet near Hemlock, N. Y.

Location.- Hook gage, lat. 42°44'25", long. 77°34'15", upstream from weir at foot of Canadice Lake, Ontario County, 4 miles southeast of Hemlock, Livingston County.

Drainage area.- 12.6 square miles.

Records available.- April 1903 to September 1942.

Average discharge.- 39 years, 11.4 second-feet.

Cooperation.- Records furnished by Department of Public Works, Division of Water, city of Rochester, N. Y.

Revisions.- The first paragraph of the footnote published in Water-Supply Paper 924 (p. 120) has been revised as follows:

Terminal water surface elevation for the year ending Dec. 31, 1940 was 1.53 feet higher than that of preceding year, corresponding to an increase in storage of 43,482,410 cubic feet, or a discharge of 1.375 second-feet for the year. This correction applied to the above gives a mean for the year of 14.680 second-feet, 1.165 second-feet per square mile, and 15.857 inches run-off from drainage area.

Monthly discharge, water year October 1941 to September 1942

| Month | Mean elevation of lake above low-water mark (feet) | Discharge in second-feet | | Run-off in inches |
|---|---|---|---|---|
| | | Mean | Per square mile | |
| October | +0.582 | 5.629 | 0.447 | 0.515 |
| November | -.227 | 7.953 | .631 | .704 |
| December | -.840 | 3.206 | .254 | .293 |
| Calendar year 1941 | +1.263 | 8.698 | .690 | 9.369 |
| January | -.848 | 3.057 | .243 | .280 |
| February | -.565 | 10.693 | .849 | .884 |
| March | +2.335 | 33.472 | 2.657 | 3.063 |
| April | +3.728 | 35.607 | 2.826 | 3.153 |
| May | +3.303 | 9.372 | .744 | .858 |
| June | +2.983 | 9.450 | .750 | .837 |
| July | +2.009 | 13.484 | 1.070 | 1.234 |
| August | +.880 | 11.859 | .941 | 1.085 |
| September | -.077 | 8.565 | .680 | .759 |
| Water year 1941-42 | +1.114 | 12.682 | 1.007 | 13.665 |

Note.- Terminal water-surface elevation for the year ending Dec. 31, 1941 was 1.77 feet lower than that of preceding year, corresponding to a decrease in storage of 50,106,317 cubic feet, or a discharge of 1.589 second-feet for the year. This correction applied to the above, gives a mean for the year of 7.109 second-feet, 0.564 second-foot per square mile and 7.656 inches run-off from drainage area.

Terminal water-surface elevation for the year ending Sept. 30, 1942 was 1.15 feet lower than that of preceding year, corresponding to a decrease in storage of 32,707,929 cubic feet, or a discharge of 1.037 second-feet for the year. This correction applied to the above, gives a mean for the year of 11.645 second-feet, 0.924 second-foot per square mile and 12.543 inches run-off from drainage area.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

Oswego River at lock 7, Oswego, N. Y.

Location.- Water-stage recorders, lat. 43°27'00", long. 76°30'25", at lock 7, in Oswego, Oswego County, three-quarters of a mile upstream from mouth. Datum of gage is 246.00 feet above mean sea level (New York State Barge Canal datum).
Drainage area.- 5,121 square miles.
Records available.- November 1933 to September 1942. April 1897 to December 1901 and, of doubtful accuracy, October 1927 to September 1928 at High Dam, about three-quarters of a mile upstream.
Extremes.- Maximum discharge during year, 25,900 second-feet Mar. 18 (gage height, 11.09 feet), includes daily mean discharge of canals; minimum (river only), 38 second-feet (regulated) Sept. 13 (gage height, 1.12 feet); minimum daily, 755 second-feet Oct. 2. 1933-42: Maximum discharge, 37,500 second-feet Mar. 28, 1936 (gage height, 13.10 feet), includes daily mean discharge of canals; minimum (river only), that of Sept. 13, 1942; minimum daily, 465 second-feet Aug. 12, 1934.
Remarks.- Records excellent except those for periods of no gage-height record, which are good. Records represent total discharge at Oswego and includes flow in Hydraulic and Barge Canals. A large amount of natural storage and some artificial regulation is afforded by many large lakes and Barge Canal system in the river basin. Large diurnal fluctuations at low and medium stages caused by power plants above station. Oswego River Basin receives water from Erie division of Barge Canal through lock 32 near Pittsford. Small diversion from basin is occasionally made from tributary streams through summit level of Barge Canal at New London into Mohawk River Basin. During part of year entire flow from 45 square miles of drainage area of Mud Creek may be diverted from Chemung River Basin into Lake Keuka in Oswego River Basin. During year nearly all of the flow from 15.7 square miles of Tioughnioga River Basin was diverted into DeRuyter Reservoir, in Oswego River Basin.

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 988 | 1,610 | 3,060 | 4,780 | 3,560 | 4,210 | 16,500 | 9,040 | 4,910 | 2,760 | 1,950 | 3,700 |
| 2 | 755 | 2,300 | 3,160 | 5,370 | 3,380 | 4,550 | 16,700 | 8,620 | 5,940 | 2,770 | 1,330 | 2,950 |
| 3 | 811 | 2,510 | 3,050 | 4,500 | 3,580 | 4,650 | 15,600 | 8,600 | 5,610 | 2,120 | 1,880 | 3,710 |
| 4 | 1,330 | 2,530 | 2,990 | 5,380 | 3,410 | 4,920 | 15,100 | 8,590 | 5,700 | a1,100 | 1,770 | 3,530 |
| 5 | 1,520 | 2,160 | 2,820 | 5,310 | 3,550 | 4,870 | 14,700 | 8,050 | 5,870 | a880 | 1,840 | 2,880 |
| 6 | 1,500 | 2,480 | 2,800 | a4,950 | 3,480 | 5,050 | 14,200 | 6,260 | 5,930 | a2,000 | 1,700 | 2,440 |
| 7 | 1,300 | 3,160 | 2,300 | a5,100 | 3,090 | 5,660 | 14,400 | 5,870 | 5,920 | a2,450 | 2,200 | 2,000 |
| 8 | 1,520 | 3,390 | 2,840 | 4,970 | 3,330 | 5,910 | 14,600 | 6,040 | 6,040 | 2,410 | a2,100 | 2,760 |
| 9 | 1,550 | 3,050 | 3,140 | 5,000 | 3,480 | 9,610 | 14,500 | 5,960 | 5,710 | 2,520 | a1,200 | 3,560 |
| 10 | 1,440 | 3,120 | 3,100 | 4,640 | 3,770 | 15,600 | 14,500 | 5,560 | 5,040 | 2,360 | a1,500 | 3,320 |
| 11 | 1,640 | 3,080 | 3,130 | 4,640 | 3,460 | 16,600 | 14,600 | 5,440 | 4,530 | 1,950 | a2,300 | 2,570 |
| 12 | 1,310 | 3,130 | 3,320 | 4,500 | 3,600 | 17,800 | 14,500 | 5,300 | 4,470 | 1,080 | a2,400 | 2,240 |
| 13 | 1,300 | 3,000 | 3,190 | 4,350 | 3,350 | 18,200 | 15,300 | 4,940 | 3,940 | 2,150 | a2,700 | 1,260 |
| 14 | 1,660 | 3,180 | 2,870 | 3,720 | 3,130 | 16,200 | 15,400 | 4,330 | 2.580 | 2,280 | a2,500 | a2,400 |
| 15 | 1,790 | 2,870 | 2,920 | 3,280 | 2,860 | 15,500 | 15,900 | a4,150 | 3,720 | 1,810 | a2,400 | a3,200 |
| 16 | 1,960 | 2,930 | 3,140 | 3,070 | 3,240 | 16,800 | 16,800 | 4,200 | 3,610 | 1,590 | 1,200 | a3,250 |
| 17 | 1,590 | 3,130 | 2,350 | 2,860 | 4,510 | 23,200 | 16,300 | 3,450 | 3,200 | 1,800 | 2,340 | a3,100 |
| 18 | 1,620 | 3,470 | 2,670 | 2,770 | 5,140 | 25,500 | 14,800 | 4,020 | 3.190 | 1,560 | 2,900 | a3,100 |
| 19 | 1,440 | 3,660 | 3,070 | 3,340 | 5,870 | 24,700 | 13,900 | 3,990 | 3,040 | 1,200 | 2,670 | a2,950 |
| 20 | 1,560 | 3,550 | 2,530 | 4,080 | 5,800 | 23,800 | 12,400 | 3,750 | 2,280 | 1,760 | 2,770 | a3,000 |
| 21 | 1,640 | 3,190 | 2,540 | 4,200 | 6,070 | 23,400 | 12,100 | 3,810 | 2,360 | 1,780 | 2,310 | a3,300 |
| 22 | 1,760 | 3,720 | 2,640 | 4,040 | 5,710 | 23,100 | 12,300 | 3,850 | 2,700 | 1,920 | 2,400 | a4,200 |
| 23 | 1,870 | 3,210 | 2,800 | 3,690 | 5,320 | 22,700 | 12,100 | 4,580 | 3,000 | 1,860 | 2,400 | a3,750 |
| 24 | 1,780 | 3,590 | 3,430 | 3,760 | 5,160 | 21,900 | 12,300 | 4,490 | 2,980 | 2,060 | 2,670 | 2,820 |
| 25 | 1,690 | 3,650 | 4,340 | 4,110 | 4,720 | 21,300 | 11,300 | 4,580 | 2,670 | 1,940 | 2,820 | 2,610 |
| 26 | 1,620 | 3,830 | 6,620 | 4,070 | 4,520 | 20,300 | 11,100 | 4,640 | 2,500 | 1,390 | 3,160 | 2,810 |
| 27 | 2,130 | 3,260 | 7,530 | 3,840 | 4,530 | 19,100 | 10,400 | 4,540 | 2,030 | 1,760 | 3,240 | 2,050 |
| 28 | 2,480 | 3,250 | 6,620 | 3,960 | 4,250 | 17,800 | 9,930 | 4,380 | 1,730 | 2,140 | 3,300 | 2,720 |
| 29 | 2,240 | 3,120 | 6,750 | 3,700 | - | 17,100 | 9,960 | 4,280 | 2,660 | 2,240 | 3,480 | 2,710 |
| 30 | 2,370 | 2,800 | 5,710 | 3,600 | - | 16,900 | 9,660 | 3,870 | 2,790 | 1,860 | 3,200 | 3,040 |
| 31 | 1,950 | - | 5,450 | 3,410 | - | 16,500 | - | 4,110 | - | 2,010 | 3,690 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 50,114 | 2,480 | 755 | 1,617 | 0.316 | 0.36 |
| November | 91,930 | 3,830 | 1,610 | 3,064 | .598 | .67 |
| December | 112,880 | 7,530 | 2,300 | 3,641 | .711 | .82 |
| Calendar year 1941 | 1,665,622 | 18,800 | 748 | 4,563 | .891 | 12.10 |
| January | 128,990 | 5,380 | 2,770 | 4,161 | .813 | .94 |
| February | 115,870 | 6,070 | 2,860 | 4,138 | .808 | .84 |
| March | 490,630 | 25,500 | 4,210 | 15,830 | 3.09 | 3.56 |
| April | 412,050 | 16,800 | 9,660 | 13,740 | 2.68 | 2.99 |
| May | 163,540 | 9,040 | 3,450 | 5,275 | 1.03 | 1.19 |
| June | 116,550 | 6,040 | 1,730 | 3,885 | .759 | .85 |
| July | 59,510 | 2,770 | 880 | 1,920 | .375 | .43 |
| August | 74,320 | 3,690 | 1,200 | 2,397 | .468 | .54 |
| September | 88,430 | 4,200 | 1,260 | 2,948 | .576 | .64 |
| Water year 1941-42 | 1,904,814 | 25,500 | 755 | 5,219 | 1.02 | 13.83 |

a No gage-height record; discharge computed on basis of records of output at High Dam and Varick power station.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Fall Creek near Ithaca, N. Y.

Location.- Water-stage recorder and concrete control, lat. 42°27'20", long. 76°28'30", in Forest Home, Tompkins County, half a mile upstream from Cornell University Dam and 1½ miles northeast of Ithaca. Datum of gage is 794.81 feet above mean sea level (general adjustment of 1912, levels by Corps of Engineers, U. S. Army).
Drainage area.- 124 square miles.
Records available.- February 1925 to September 1942. July 1908 to June 1909 at site 1½ miles downstream.
Average discharge.- 17 years, 180 second-feet.
Extremes.- Maximum discharge during year, 4,630 second-feet Mar. 17 (gage height, 5.37 feet); minimum, 9.6 second-feet (probable result of regulation) Dec. 11 (gage height, 0.265 foot).
1925-42: Maximum discharge, 15,500 second-feet July 8, 1935 (gage height, 9.52 feet), from average of computed flow over each of four dams; minimum, about 3 second-feet Aug. 25, 1927 (gage height, 0.18 foot).
Remarks.- Records good except those for periods of ice effect, which are fair. Cornell University diverted 259,834,000 gallons during year from a point about a mile above station for water supply, equivalent to a mean discharge at the station of 1.10 second-feet, or 0.7 per cent of the average flow for the year.

Rating table, water year 1941-42 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.3 | 12 | 0.8 | 49 | 1.6 | 225 | 3.0 | 1,200 |
| .4 | 18 | 1.0 | 71 | 1.8 | 320 | 3.5 | 1,710 |
| .5 | 24 | 1.2 | 104 | 2.0 | 434 | 4.0 | 2,340 |
| .6 | 32 | 1.4 | 153 | 2.5 | 775 | 4.5 | 3,080 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13 | 30 | 32 | 137 | 140 | 88 | 419 | 90 | 78 | 36 | 76 | 51 |
| 2 | 13 | 54 | 35 | 274 | 96 | 94 | 467 | 88 | 100 | 51 | 43 | 44 |
| 3 | 15 | 42 | 50 | 190 | 80 | 98 | 459 | 86 | 83 | 32 | 33 | 40 |
| 4 | 35 | 36 | 40 | 142 | 74 | 104 | 477 | 100 | 74 | 26 | 27 | 45 |
| 5 | 38 | 32 | 37 | 104 | 70 | 117 | 494 | 99 | 74 | 29 | 23 | 47 |
| 6 | 28 | 32 | 37 | *49 | 80 | 150 | 446 | 83 | 60 | 28 | 20 | 41 |
| 7 | 23 | 136 | 31 | 52 | 108 | 200 | 348 | 158 | 52 | 28 | 19 | 35 |
| 8 | 21 | 114 | 26 | 56 | 225 | 470 | 453 | 142 | 53 | 26 | 19 | 35 |
| 9 | 19 | 65 | 37 | 58 | 185 | 2,900 | 315 | 104 | 46 | 23 | 21 | 109 |
| 10 | 18 | 51 | 32 | 82 | 140 | 1,210 | 305 | 86 | 42 | 22 | 63 | 311 |
| 11 | 18 | 45 | *21 | 94 | 116 | 657 | 353 | 76 | 38 | 38 | 71 | 177 |
| 12 | 19 | 45 | 30 | 86 | 100 | 686 | 471 | 70 | 38 | 42 | 37 | 124 |
| 13 | 18 | *45 | 32 | 96 | 92 | 477 | 490 | 76 | 38 | 28 | 33 | 97 |
| 14 | 18 | 45 | 44 | 100 | 86 | 738 | 480 | 67 | 45 | 23 | 451 | 80 |
| 15 | 20 | 44 | 66 | 94 | 84 | 682 | 353 | 56 | 42 | 19 | 181 | 67 |
| 16 | 23 | 40 | 64 | 86 | 84 | 575 | 290 | 55 | 37 | 18 | 92 | 59 |
| 17 | 19 | 37 | 61 | 78 | 210 | 3,040 | 248 | 82 | 37 | 20 | 449 | 54 |
| 18 | 19 | 36 | 61 | 94 | 270 | 1,540 | 217 | 71 | 44 | 55 | 192 | 49 |
| 19 | 21 | 34 | 70 | 215 | 185 | 774 | 217 | 69 | 38 | 42 | 103 | 46 |
| 20 | 25 | 34 | 64 | 430 | 145 | 484 | 261 | 90 | 33 | 36 | 80 | 56 |
| 21 | 24 | 38 | 28 | 260 | 120 | 477 | 270 | 106 | 37 | 33 | 65 | 71 |
| 22 | 20 | 43 | 38 | 176 | 104 | 818 | 221 | 233 | 40 | 26 | 81 | 52 |
| 23 | 22 | 39 | 49 | 148 | *96 | 561 | 176 | 779 | 34 | 30 | 159 | 44 |
| 24 | 66 | 45 | 760 | 179 | 90 | 404 | 150 | 270 | 29 | 26 | 101 | 40 |
| 25 | 46 | 44 | 1,020 | 198 | 86 | 381 | 137 | 164 | 29 | 22 | 74 | 39 |
| 26 | 33 | 37 | 400 | 170 | *84 | 399 | 126 | 131 | 28 | 21 | 59 | 37 |
| 27 | 28 | 34 | 305 | 148 | 82 | 471 | 115 | 108 | 27 | 29 | 50 | 136 |
| 28 | 28 | 33 | 217 | 124 | 84 | 440 | 106 | 95 | 26 | 28 | 51 | 369 |
| 29 | 33 | 32 | 163 | *70 | - | 331 | 100 | 80 | 24 | 26 | 161 | 130 |
| 30 | 28 | 32 | 135 | 68 | - | 331 | 95 | 72 | 24 | 28 | 92 | 91 |
| 31 | 26 | - | *120 | 72 | - | 381 | - | 70 | - | 33 | 63 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 777 | 66 | 13 | 25.1 | 0.202 | 0.23 |
| November | 1,374 | 136 | 30 | 45.8 | .369 | .41 |
| December | 4,105 | 1,020 | 21 | 132 | 1.06 | 1.22 |
| Calendar year 1941 | 45,190 | 2,980 | 12 | 124 | 1.00 | 13.53 |
| January | 4,130 | 430 | 49 | 133 | 1.07 | 1.23 |
| February | 3,316 | 270 | 70 | 118 | .952 | .99 |
| March | 20,078 | 3,040 | 88 | 648 | 5.23 | 6.03 |
| April | 9,059 | 494 | 95 | 302 | 2.44 | 2.72 |
| May | 3,856 | 779 | 55 | 124 | 1.00 | 1.15 |
| June | 1,350 | 100 | 24 | 45.0 | .363 | .40 |
| July | 924 | 55 | 18 | 29.8 | .240 | .28 |
| August | 2,939 | 451 | 19 | 96.4 | .777 | .90 |
| September | 2,576 | 369 | 35 | 85.9 | .693 | .77 |
| Water year 1941-42 | 54,534 | 3,040 | 13 | 149 | 1.20 | 16.33 |

Peak discharge.- Mar. 9 (12:05 p.m.) 4,380 sec.-ft.; Mar. 17 (8:30 a.m.) 4,630 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 7, 8, 12, 13, 21-24, 30, 31, Jan. 5-20, Jan. 28 to Mar. 4, Mar. 6-9.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Cayuga Inlet near Ithaca, N. Y.

Location.- Water-stage recorder and concrete control, lat. 42°23'35", long. 76°32'40", half a mile upstream from Butternut Creek and 5 miles south of Ithaca, Tompkins County. Datum of gage is 437.16 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 36.7 square miles.

Records available.- March 1937 to September 1942.

Extremes.- Maximum discharge during year, 4,110 second-feet Aug. 13 (gage height, 7.58 feet), from rating curve extended above 650 second-feet on basis of slope-area determinations at gage heights 5.5 feet and 7.58 feet; minimum, 2.8 second-feet Oct. 2 (gage height, 0.48 foot).
1937-42: Maximum discharge, that of Aug. 13, 1942; minimum, 1.8 second-feet Aug. 30 to Sept. 2, 1939 (gage height, 0.42 foot).

Remarks.- Records good except those for periods of ice effect or no gage-height record, those above 700 second-feet or those based on staff-gage readings, which are fair.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.0 | 6.5 | 4.8 | 16 | 18 | 20 | 84 | 21 | 23 | 20 | 29 | 20 |
| 2 | 3.0 | 6.0 | 5.3 | 25 | 12 | 23 | 85 | 20 | 23 | 12 | 21 | 17 |
| 3 | 3.6 | 5.3 | 5.6 | 16 | 11 | 26 | 109 | 19 | 20 | S.6 | 16 | 18 |
| 4 | 5.3 | 5.0 | 5.5 | 14 | 11 | 25 | 112 | 22 | 22 | 7.2 | 12 | 27 |
| 5 | 4.2 | 4.8 | 5.3 | 11 | 12 | 27 | 97 | 19 | 27 | 7.2 | 10 | 20 |
| 6 | 3.8 | 7.4 | 5.1 | 9.0 | 13 | 43 | 81 | 17 | 17 | S.2 | 9.5 | 16 |
| 7 | 4.3 | 28 | 4.8 | S.6 | 33 | 57 | 74 | 26 | 15 | 9.5 | S.4 | 14 |
| 8 | 4.8 | 12 | 4.4 | 7.S | 33 | 137 | S9 | 20 | 14 | 7.4 | S.8 | 26 |
| 9 | 3.9 | S.6 | 5.0 | 8.2 | 24 | 735 | 66 | 18 | 13 | 6.4 | 12 | 120 |
| 10 | 3.S | 6.8 | 4.8 | 7.8 | 25 | 200 | 80 | 16 | 12 | 6.0 | 10 | 114 |
| 11 | 3.S | 6.9 | *4.1 | 7.8 | 23 | 130 | 9S | 15 | 11 | 18 | 9.5 | 68 |
| 12 | 3.S | a5.8 | 4.0 | 7.8 | 20 | 136 | 122 | 16 | 12 | 11 | S.6 | 51 |
| 13 | 3.8 | a5.6 | 4.4 | S.2 | 19 | 101 | 102 | 16 | 11 | 7.4 | 298 | 42 |
| 14 | 4.0 | 5.5 | 7.6 | 8.6 | 19 | 166 | S3 | 14 | 10 | 6.2 | 485 | 36 |
| 15 | 4.2 | 5.3 | 6.8 | *8.6 | 19 | 130 | 75 | 12 | 10 | 5.6 | 104 | 31 |
| 16 | 3.S | 5.5 | 6.S | 7.S | 20 | 155 | 66 | 16 | 8.6 | 5.4 | g204 | 30 |
| 17 | 3.7 | 5.3 | 8.6 | 7.4 | 100 | 780 | 59 | 16 | 12 | 39 | g241 | 29 |
| 18 | 3.8 | 5.1 | 8.1 | 8.6 | 74 | 249 | 54 | 13 | 12 | 118 | g95 | 25 |
| 19 | 4.2 | 5.1 | 8.1 | 26 | 44 | 156 | 51 | 16 | 13 | 29 | g64 | 22 |
| 20 | 4.2 | 5.1 | 6.S | 39 | 34 | 110 | 49 | 17 | 14 | 16 | g49 | 28 |
| 21 | 4.0 | 5.5 | 5.6 | 25 | 30 | 100 | 49 | 26 | 19 | 12 | g40 | 24 |
| 22 | 3.9 | 5.6 | 5.8 | 20 | 28 | 146 | 43 | 122 | 13 | 10 | g45 | 20 |
| 23 | 5.6 | 6.2 | S.0 | 17 | *24 | 102 | 38 | 120 | 10 | 13 | g37 | 19 |
| 24 | 5.3 | 5.8 | 143 | 19 | 23 | S6 | 35 | 62 | 9.0 | 9.5 | g34 | 18 |
| 25 | 5.3 | 5.5 | 71 | 19 | 21 | 75 | 32 | 48 | 9.0 | 8.6 | g27 | 16 |
| 26 | 4.8 | 5.1 | 41 | 19 | *20 | 67 | 30 | 39 | 8.0 | 9.6 | 23 | 15 |
| 27 | 4.6 | 5.0 | 33 | 17 | 19 | 63 | 27 | 33 | 7.8 | 13 | 20 | 67 |
| 28 | 5.3 | 5.0 | 26 | 16 | 19 | 59 | 25 | 29 | 7.2 | 10 | 35 | 53 |
| 29 | 4.S | 4.6 | 19 | *11 | - | 54 | 23 | 24 | 6.6 | 21 | 45 | 32 |
| 30 | 4.6 | 4.S | 15 | 12 | - | 63 | 22 | 22 | 7.5 | 19 | 29 | 27 |
| 31 | 4.6 | - | *15 | 16 | - | 66 | - | 29 | - | 35 | 23 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 131.8 | 5.6 | 3.0 | 4.25 | 0.116 | 0.13 |
| November | 197.8 | 2S | 4.6 | 6.59 | .180 | .20 |
| December | 498.3 | 143 | 4.0 | 16.1 | .439 | .51 |
| Calendar year 1941 | S,756.5 | 501 | 2.6 | 24.0 | .654 | S.S6 |
| January | 444.2 | 39 | 7.4 | 14.3 | .390 | .45 |
| February | 748 | 100 | 11 | 26.7 | .728 | .76 |
| March | 4,337 | 7S0 | 20 | 140 | 3.81 | 4.39 |
| April | 1,960 | 122 | 22 | 65.3 | 1.78 | 1.99 |
| May | 903 | 122 | 12 | 29.1 | .793 | .91 |
| June | 396.7 | 27 | 6.6 | 13.2 | .360 | .40 |
| July | 508.8 | 118 | 5.4 | 16.4 | .447 | .52 |
| August | 2,052.S | 4S5 | 8.4 | 66.2 | 1.80 | 2.08 |
| September | 1,045 | 120 | 14 | 34.8 | .94S | 1.06 |
| Water year 1941-42 | 13,223.4 | 7S0 | 3.0 | 36.2 | .986 | 13.40 |

Peak discharge.- Mar. 9 (9 a.m.) 1,350 sec.-ft.; Mar. 17 (2:30 a.m.) 2,720 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage and recession pattern.
g Computed from graph based on staff-gage readings.
Note.- Stage-discharge relation affected by ice Dec. 12, 20-22, 31, Jan. 6-20, 29, Feb. 2-5, 9-17, 20, 21.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Canandaigua Lake at Canandaigua, N. Y.

Location.- Staff gage, lat. 42°52'30", long. 77°16'20", at west outlet at northern end of Canandaigua Lake on west side of E. T. Waldorf's boat house, 1 mile southeast of Canandaigua, Ontario County. Datum of gage is 680.76 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 189 square miles.

Records available.- November 1939 to September 1942. Records previously collected at same site by the Oswego River Watershed Corporation of Fulton, N. Y.

Extremes.- Maximum gage height observed during year, 8.45 feet Mar. 19; minimum observed, 4.45 feet Jan. 30.
1939-42: Maximum gage height observed, 9.09 feet Apr. 12, 13, 1940; minimum observed, that of Jan. 30, 1942.

Remarks.- Lake is formed by dams at two outlets. West Outlet, which usually carries most of lake outflow, is an artificial canal 1¼ miles long emptying into Canandaigua Lake Outlet; spillway consists of permanent stop log 9.8 feet long with top at elevation 683.96 feet extending across masonry arch opening under roadway. East Outlet is natural outlet channel from lake; spillway consists of 40 feet of detachable stop logs mounted in several layers on concrete footing. The City engineer, Canandaigua, N. Y., regulates storage in lake for Oswego River Watershed Corporation, Fulton, N. Y., by operation of stop logs at east outlet. Capacity of lake not determined. Area of water surface, about 16.57 square miles at elevation 686 feet. Staff gage read twice daily.

Gage height, in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.5 | 5.2 | 4.75 | 4.7 | 4.5 | 4.85 | 7.8 | 7.0 | 6.85 | 6.75 | 6.85 | 6.45 |
| 2 | 5.55 | 5.2 | 4.75 | 4.65 | 4.55 | 4.85 | 7.75 | 7.0 | 6.8 | 6.75 | 6.9 | 6.45 |
| 3 | 5.6 | 5.2 | 4.75 | 4.7 | 4.5 | 4.9 | 7.75 | 6.95 | 6.8 | 6.75 | 6.8 | 6.55 |
| 4 | 5.6 | 5.1 | 4.7 | 4.65 | 4.55 | 4.9 | 7.7 | 6.9 | 6.85 | 6.7 | 6.75 | 6.5 |
| 5 | 5.55 | 5.15 | 4.7 | 4.65 | 4.55 | 4.95 | 7.7 | 6.9 | 6.9 | 6.75 | 6.7 | 6.45 |
| 6 | 5.45 | 5.2 | 4.7 | 4.65 | 4.6 | 5.0 | 7.7 | 6.85 | 6.95 | 6.75 | 6.7 | 6.5 |
| 7 | 5.45 | 5.15 | 4.7 | 4.65 | 4.65 | 5.0 | 7.65 | 6.9 | 6.85 | 6.65 | 6.65 | 6.45 |
| 8 | 5.35 | 5.1 | 4.7 | 4.6 | 4.7 | 5.25 | 7.65 | 6.85 | 6.8 | 6.6 | 6.75 | 6.45 |
| 9 | 5.35 | 5.05 | 4.75 | 4.6 | 4.7 | 5.6 | 7.7 | 6.8 | 6.75 | 6.6 | 6.8 | 6.5 |
| 10 | 5.3 | 5.0 | 4.75 | 4.6 | 4.7 | 6.05 | 7.7 | 6.8 | 6.75 | 6.6 | 6.75 | 6.55 |
| 11 | 5.3 | 4.95 | 4.75 | 4.6 | 4.7 | 6.15 | 7.7 | 6.7 | 6.85 | 6.65 | 6.75 | 6.5 |
| 12 | 5.3 | 4.95 | 4.7 | 4.65 | 4.7 | 6.55 | 7.7 | 6.6 | 6.8 | 6.6 | 6.75 | 6.5 |
| 13 | 5.3 | 4.95 | 4.7 | 4.6 | 4.7 | 6.7 | 7.75 | 6.65 | 6.75 | 6.6 | 6.7 | d6.6 |
| 14 | 5.25 | 4.95 | 4.65 | 4.6 | 4.7 | 6.85 | 7.7 | 6.7 | 6.8 | 6.6 | 6.7 | d6.55 |
| 15 | 5.25 | 4.9 | 4.7 | 4.6 | 4.7 | 7.1 | 7.6 | 6.7 | 6.8 | 6.65 | 6.65 | d6.65 |
| 16 | 5.25 | 4.9 | 4.7 | 4.55 | 4.75 | 7.3 | 7.5 | 6.75 | 6.8 | 6.7 | 6.7 | d6.55 |
| 17 | 5.25 | 4.85 | 4.65 | 4.5 | 4.75 | 8.25 | 7.45 | 6.7 | 6.75 | 6.8 | 6.7 | d6.5 |
| 18 | 5.2 | 4.85 | 4.6 | 4.55 | 4.8 | 8.25 | 7.45 | 6.7 | 6.75 | 6.85 | 6.7 | d6.5 |
| 19 | 5.2 | 4.85 | 4.6 | 4.6 | 4.8 | 8.45 | 7.55 | 6.75 | 6.7 | 6.85 | 6.75 | 6.45 |
| 20 | 5.2 | 4.9 | 4.6 | 4.55 | 4.8 | 8.4 | 7.65 | 6.7 | 6.65 | 6.85 | 6.7 | 6.45 |
| 21 | 5.2 | 4.85 | 4.55 | 4.6 | 4.85 | 8.35 | 7.75 | 6.75 | 6.7 | 6.8 | 6.7 | 6.4 |
| 22 | 5.2 | 4.85 | 4.5 | 4.6 | 4.9 | 8.4 | 7.75 | 6.8 | 6.6 | 6.8 | 6.7 | 6.35 |
| 23 | 5.2 | 4.8 | 4.55 | 4.6 | 4.85 | 8.4 | 7.5 | 6.75 | 6.7 | 6.75 | 6.65 | 6.35 |
| 24 | 5.2 | 4.8 | 4.6 | 4.6 | 4.8 | 8.25 | 7.35 | 6.75 | 6.75 | 6.75 | 6.65 | 6.25 |
| 25 | 5.2 | 4.75 | 4.6 | 4.6 | 4.85 | 8.25 | 7.35 | 6.75 | 6.75 | 6.75 | 6.65 | 6.2 |
| 26 | 5.15 | 4.8 | 4.65 | 4.55 | 4.85 | 8.1 | 7.35 | 6.8 | 6.8 | 6.7 | 6.65 | 6.15 |
| 27 | 5.2 | 4.8 | 4.7 | 4.5 | 4.85 | 8.05 | 7.25 | 6.8 | 6.7 | 6.75 | 6.55 | 6.2 |
| 28 | 5.15 | 4.75 | 4.7 | 4.5 | 4.85 | 8.0 | 7.2 | 6.7 | 6.7 | 6.75 | 6.5 | 6.15 |
| 29 | 5.15 | 4.7 | 4.75 | 4.5 | - | 7.85 | 7.15 | 6.7 | 6.7 | 6.8 | 6.45 | 6.2 |
| 30 | 5.15 | 4.75 | 4.7 | 4.45 | - | 7.8 | 7.05 | 6.7 | 6.7 | 6.8 | 6.5 | 6.2 |
| 31 | 5.2 | - | 4.7 | 4.5 | - | 7.8 | - | 6.7 | - | 6.85 | 6.5 | - |

d Doubtful gage-height record; mean daily gage heights estimated on basis of precipitation record and record for station on Canandaigua Lake Outlet at Chapin.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Canandaigua Lake Outlet at Chapin, N. Y.

Location.- Water-stage recorder, lat. 42°55'00", long. 77°14'00", in Chapin, Ontario County, about 500 feet upstream from highway bridge, and 3 miles downstream from Canandaigua Lake. Datum of gage is 676.37 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 199 square miles.

Records available.- November 1939 to September 1942.

Extremes.- Maximum discharge during year, 1,100 second-feet Mar. 17 (gage height, 4.64 feet); minimum, 16 second-feet Feb. 1 (gage height, 1.22 feet).
1939-42: Maximum discharge, that of Mar. 17, 1942; minimum, that of Feb. 1, 1942.

Remarks.- Records fair Oct. 1 to Jan. 26, Jan. 29 to Mar. 13, June 9 to Sept. 30, good Mar. 14 to June 8. Seasonal regulation caused by operation of stop logs on dam at east outlet of Canandaigua Lake.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 40 | 38 | 24 | 26 | 25 | 35 | 652 | 374 | 81 | 39 | 40 | 25 |
| 2 | 39 | 34 | 25 | 27 | 24 | 38 | 648 | 363 | 79 | 36 | 40 | 23 |
| 3 | 40 | 33 | 25 | 29 | 23 | 40 | 630 | 356 | 73 | 36 | 39 | 26 |
| 4 | 40 | 34 | 23 | 26 | 22 | 41 | 622 | 356 | 50 | 38 | 38 | 46 |
| 5 | 38 | 33 | 23 | 26 | 24 | 42 | 618 | 358 | 50 | 36 | 36 | 49 |
| 6 | 36 | 35 | 23 | 25 | 30 | 46 | 611 | 331 | 50 | 36 | 36 | 46 |
| 7 | 36 | 36 | 21 | 24 | 34 | 50 | 630 | 334 | 49 | 35 | 36 | 46 |
| 8 | 35 | 34 | 22 | 23 | 32 | 62 | 644 | 331 | 48 | 34 | 35 | 46 |
| 9 | 34 | 32 | 21 | 22 | 28 | 90 | 611 | 320 | 49 | 33 | 38 | 54 |
| 10 | 35 | 30 | 21 | 21 | 26 | 135 | 611 | 307 | 48 | 33 | 36 | 62 |
| 11 | 33 | 30 | 21 | 21 | 24 | 190 | 630 | 268 | 48 | 36 | 34 | 96 |
| 12 | 33 | 29 | *20 | 20 | 22 | 270 | 711 | 124 | 46 | 34 | 33 | 94 |
| 13 | 33 | 29 | 21 | 20 | 21 | 340 | 674 | 83 | 46 | 35 | 33 | 98 |
| 14 | 34 | 29 | 22 | 20 | 21 | 457 | 648 | 84 | 45 | 34 | 33 | 98 |
| 15 | 32 | 29 | 24 | 20 | *22 | *504 | 641 | 84 | 43 | 33 | 33 | 96 |
| 16 | 30 | 28 | 20 | 19 | 23 | 541 | 622 | 86 | 43 | 33 | 33 | 94 |
| 17 | 30 | 28 | 20 | *18 | 40 | 928 | 604 | 84 | 43 | 36 | 32 | 92 |
| 18 | 31 | 28 | 21 | 24 | 36 | 848 | 581 | 84 | 42 | 43 | 31 | 92 |
| 19 | 28 | 27 | 20 | 26 | 33 | 876 | 559 | 86 | 42 | 39 | 30 | 90 |
| 20 | 28 | 28 | 19 | 25 | 31 | 860 | 548 | 88 | 42 | 39 | 29 | 88 |
| 21 | 27 | 27 | 19 | 24 | 30 | 844 | 530 | 90 | 43 | 39 | 29 | 90 |
| 22 | 27 | 27 | 19 | 23 | 29 | 772 | 515 | 98 | 41 | 38 | 29 | 88 |
| 23 | 28 | 27 | 22 | 24 | 29 | 796 | 504 | 100 | 40 | 38 | 30 | 88 |
| 24 | 30 | 26 | 29 | 24 | 30 | 792 | 485 | 96 | 39 | 38 | 28 | 90 |
| 25 | 39 | 26 | 27 | 25 | 30 | 768 | 467 | 92 | 38 | 36 | 27 | 88 |
| 26 | 39 | 26 | 26 | 26 | 31 | 745 | 448 | 90 | 38 | 36 | 26 | 86 |
| 27 | 41 | 25 | 26 | 26 | 31 | 722 | 426 | 86 | 38 | 36 | 26 | 86 |
| 28 | 39 | 25 | 25 | 26 | 33 | 707 | 411 | 84 | 38 | 36 | 26 | 82 |
| 29 | 38 | 25 | 25 | 25 | - | 681 | 404 | 82 | 35 | 38 | 26 | 80 |
| 30 | 38 | 25 | 25 | 24 | - | 659 | 389 | 81 | 38 | 39 | 25 | 80 |
| 31 | 36 | - | 25 | 26 | - | 644 | - | 84 | - | 40 | 25 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,067 | 41 | 27 | - | - | - |
| November | 883 | 38 | 25 | - | - | - |
| December | 704 | 29 | 19 | - | - | - |
| Calendar year 1941 | 33,443 | 524 | 19 | 91.6 | 0.460 | 6.25 |
| January | 735 | 29 | 18 | - | - | - |
| February | 784 | 40 | 21 | - | - | - |
| March | 14,523 | 928 | 35 | - | - | - |
| April | 17,074 | 711 | 389 | - | - | - |
| May | 5,469 | 374 | 81 | - | - | - |
| June | 1,405 | 81 | 35 | - | - | - |
| July | 1,132 | 43 | 33 | - | - | - |
| August | 992 | 40 | 25 | - | - | - |
| September | 2,219 | 98 | 23 | - | - | - |
| Water year 1941-42 | 43,987 | 928 | 18 | 129 | .648 | 8.79 |

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice or weeds Dec. 11 to Jan. 26, Jan. 29 to Mar. 13. Backwater from weeds Oct. 1 to Dec. 10, June 10 to Sept. 30.

Decrease in contents in Canandaigua Lake during calendar year 1941, about 425,000,000 cubic feet (equivalent mean discharge, 13.5 sec.-ft.; run-off, 0.92 inch), decrease in elevation, 0.92 foot; increase during water year 1941-42, about 295,500,000 cubic feet (equivalent mean discharge, 9.37 sec.-ft.; run-off, 0.64 inch), increase in elevation, 0.64 foot.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

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## Owasco Lake Outlet near Auburn, N. Y.

Location.- Water-stage recorder and concrete control, lat. 42°56'45", long. 76°36'05", 2¼ miles downstream from center of Auburn, Cayuga County, and 4 miles downstream from State dam at outlet of Owasco Lake.

Drainage area.- 208 square miles.

Records available.- November 1912 to September 1942.

Average discharge.- 29 years (1913-42), 278 second-feet.

Extremes (regulated).- Maximum discharge during year, 1,510 second-feet Mar. 17 (gage height, 3.98 feet); minimum, 7.8 second-feet Nov. 3 (gage height, 1.42 feet); minimum daily, 18 second-feet Nov. 16.
1912-42: Maximum discharge, 2,090 second-feet Mar. 19, 1936, and Apr. 9, 1940 (gage height, 4.88 feet); minimum, about 2 second-feet Dec. 5, 1936 (gage height, 1.36 feet); minimum daily, 5 second-feet Nov. 11, 1934.

Remarks.- Records excellent except those below 50 second-feet, which are good. Diurnal fluctuation caused by mills in Auburn; seasonal regulation at State dam. Water supply for Auburn taken from Owasco Lake, part of which returns as sewage to outlet above station.

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.5 | 17 | 1.9 | 91 | 2.7 | 445 |
| 1.55 | 23 | 2.1 | 142 | 3.0 | 670 |
| 1.6 | 31 | 2.2 | 175 | 3.4 | 990 |
| 1.7 | 49 | 2.4 | 266 | 3.9 | 1,440 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 41 | 30 | 34 | 114 | 139 | 222 | 830 | 345 | 181 | 139 | 128 | 156 |
| 2 | 40 | 26 | 36 | 118 | 130 | 227 | 767 | 342 | 175 | 141 | 131 | 154 |
| 3 | 50 | 23 | 35 | 117 | 134 | 225 | 627 | 335 | 171 | 136 | 136 | 155 |
| 4 | 42 | 25 | 38 | 126 | 140 | 236 | 495 | 341 | 194 | 133 | 129 | 152 |
| 5 | 52 | 25 | 48 | 124 | 149 | 229 | 541 | 327 | 177 | 129 | 126 | 149 |
| 6 | 41 | 30 | 40 | 127 | 155 | 239 | 545 | 332 | 103 | 134 | 125 | 145 |
| 7 | 41 | 38 | 40 | 122 | 171 | 242 | 552 | 343 | 183 | 128 | 123 | 145 |
| 8 | 40 | 25 | 45 | 134 | 164 | 281 | 555 | 333 | 182 | 128 | 121 | 150 |
| 9 | 39 | 21 | 45 | 130 | 178 | 470 | 545 | 334 | 171 | 126 | 130 | 171 |
| 10 | 38 | 24 | 43 | 122 | 180 | 632 | 550 | 333 | 170 | 125 | 119 | 156 |
| 11 | 38 | 22 | 48 | 112 | 179 | 690 | 532 | 336 | 172 | 129 | 119 | 155 |
| 12 | 35 | 22 | 54 | 66 | 180 | 752 | 528 | 330 | 173 | 123 | 126 | 158 |
| 13 | 36 | 24 | 55 | 125 | 181 | 751 | 546 | 268 | 168 | 122 | 130 | 157 |
| 14 | 38 | 22 | 58 | 120 | 177 | 798 | 635 | 203 | 158 | 121 | 134 | 157 |
| 15 | 37 | 24 | 58 | 116 | 180 | 870 | 684 | 192 | 156 | 120 | 124 | 155 |
| 16 | 36 | 18 | 58 | 113 | 192 | 902 | 683 | 184 | 155 | 125 | 123 | 156 |
| 17 | 36 | 24 | 60 | 106 | 220 | 1,220 | 613 | 158 | 157 | 148 | 127 | 156 |
| 18 | 31 | 23 | 59 | 110 | 210 | 1,390 | 562 | 167 | 150 | 148 | 125 | 155 |
| 19 | 34 | 22 | 58 | 121 | 210 | 1,400 | 563 | 181 | 149 | 137 | 124 | 154 |
| 20 | 34 | 22 | 53 | 113 | 210 | 1,330 | 540 | 185 | 146 | 136 | 129 | 167 |
| 21 | 30 | 22 | 53 | 114 | 207 | 1,290 | 504 | 191 | 154 | 134 | 132 | 153 |
| 22 | 29 | 30 | 58 | 119 | 207 | 1,270 | 491 | 201 | 151 | 134 | 132 | 150 |
| 23 | 36 | 38 | 59 | 124 | 216 | 1,250 | 470 | 180 | 148 | 143 | 132 | 146 |
| 24 | 30 | 38 | 81 | 121 | 220 | 1,210 | 464 | 168 | 150 | 135 | 126 | 146 |
| 25 | 25 | 35 | 71 | 121 | 220 | 1,130 | 464 | 178 | 149 | 137 | 138 | 145 |
| 26 | 26 | 30 | 87 | 123 | 217 | 1,080 | 459 | 183 | 149 | 133 | 150 | 142 |
| 27 | 32 | 31 | 114 | 128 | 218 | 1,040 | 422 | 178 | 146 | 132 | 151 | 147 |
| 28 | 35 | 32 | 92 | 130 | 217 | 1,010 | 352 | 177 | 139 | 132 | 156 | 148 |
| 29 | 30 | 31 | 94 | 134 | - | 958 | 349 | 182 | 137 | 132 | 156 | 141 |
| 30 | 28 | 30 | 88 | 128 | - | 910 | 340 | 180 | 135 | 130 | 154 | 143 |
| 31 | 26 | - | 111 | 144 | - | 878 | - | 176 | - | 132 | 156 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,106 | 52 | 25 | 35.7 | - | - |
| November | 807 | 38 | 18 | 26.9 | - | - |
| December | 1,873 | 114 | 34 | 60.4 | - | - |
| Calendar year 1941 | 73,551 | 1,290 | 18 | 202 | 0.971 | 13.13 |
| January | 3,722 | 144 | 66 | 120 | - | - |
| February | 5,201 | 220 | 130 | 186 | - | - |
| March | 25,132 | 1,400 | 222 | 811 | - | - |
| April | 16,208 | 830 | 340 | 540 | - | - |
| May | 7,563 | 345 | 158 | 244 | - | - |
| June | 4,829 | 194 | 135 | 161 | - | - |
| July | 4,102 | 148 | 120 | 132 | - | - |
| August | 4,112 | 156 | 119 | 133 | - | - |
| September | 4,564 | 171 | 141 | 152 | - | - |
| Water year 1941-42 | 79,219 | 1,400 | 18 | 217 | 1.04 | 14.17 |

Note.- Decrease in contents in Owasco Lake during calendar year 1941, about 605,900,000 cubic feet (equivalent mean discharge, 19.2 second-feet; run-off, 1.25 inches), decrease in elevation, 2.11 feet; increase during water year 1941-42, about 344,600,000 cubic feet (equivalent mean discharge, 10.9 second-feet; run-off, 0.71 inch), increase in elevation, 1.20 feet.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Onondaga Creek at Syracuse, N. Y.

Location.- Water-stage recorder and steel plate weir, lat. 43°00'35", long. 76°09'00", 75 feet upstream from end of channel improvement, 300 feet upstream from Ballantyne Road Bridge, and 2 miles south of the center of Syracuse, Onondaga County. Datum of gage is 401.25 feet above mean sea level, datum of 1929.

Drainage area.- 92.2 square miles.

Records available.- November 1939 to September 1942.

Extremes.- Maximum discharge during year, 2,860 second-feet Mar. 9; maximum gage height, 8.58 Mar. 9 (backwater from debris); minimum discharge, 2.2 second-feet (regulated) July 21 (gage height, 1.91 feet); minimum daily, 8.5 second-feet (regulated) Sept. 6. 1939-42: Maximum discharge, that of Mar. 9, 1942; minimum, 1.2 second-feet (regulated) Sept. 12, 1941 (gage height, 1.85 feet); minimum daily, that of Sept. 6, 1942.

Remarks.- Records good except those for periods of ice effect, which are fair. Diurnal fluctuation at low and medium stages caused by mills.

**Rating tables, water year 1941-42, except periods of ice effect, and backwater from debris (gage height, in feet, and discharge, in second-feet)**

| Oct. 1 to Oct. 3 | | Oct. 4 to Sept. 30 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.1 | 11 | 2.0 | 5.3 | 2.4 | 36 | 3.2 | 171 | 4.3 | 484 | 6.0 | 1,225 |
| 2.2 | 18 | 2.1 | 10 | 2.5 | 48 | 3.4 | 216 | 4.6 | 592 | 6.5 | 1,520 |
| | | 2.2 | 16 | 2.6 | 62 | 3.6 | 267 | 4.9 | 711 | 7.0 | 1,870 |
| | | 2.25 | 20 | 2.8 | 93 | 3.8 | 324 | 5.2 | 840 | | |
| | | 2.3 | 25 | 3.0 | 130 | 4.0 | 385 | 5.5 | 978 | | |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 19 | 19 | 49 | 60 | 53 | 246 | 112 | 78 | 27 | 18 | 14 |
| 2 | 12 | 29 | 17 | 84 | 42 | 56 | 268 | 136 | 93 | 25 | 16 | 12 |
| 3 | 15 | 24 | *18 | 93 | 35 | 64 | 253 | 104 | 72 | 20 | 19 | 15 |
| 4 | 22 | 20 | 17 | 66 | *40 | 62 | 222 | 104 | 68 | 21 | 13 | 10 |
| 5 | 20 | 18 | 18 | 55 | 41 | 64 | 214 | 100 | 67 | 19 | 12 | 15 |
| 6 | 23 | 20 | 18 | *35 | 44 | 107 | 206 | 85 | 55 | 15 | 12 | 8.5 |
| 7 | 20 | 39 | 17 | 38 | 49 | 139 | 183 | 120 | 49 | 23 | 12 | 10 |
| 8 | 13 | 39 | 17 | 27 | 46 | *296 | 239 | 136 | 47 | 14 | 10 | 14 |
| 9 | 17 | 27 | 18 | 32 | 39 | 1,850 | 198 | 102 | 42 | 16 | 12 | 48 |
| 10 | 14 | 22 | 20 | 29 | 35 | 1,120 | 182 | 87 | 37 | 17 | 15 | 65 |
| 11 | 13 | 20 | 19 | 28 | 33 | 400 | 205 | 75 | 36 | 16 | 16 | 36 |
| 12 | 15 | 20 | 17 | 30 | 32 | 429 | 254 | 69 | 33 | 18 | 13 | 25 |
| 13 | 14 | 19 | 20 | 29 | 31 | 315 | 266 | 72 | 34 | 16 | 13 | 21 |
| 14 | 14 | 19 | 24 | 30 | 31 | 362 | 306 | 66 | 40 | 15 | 26 | 18 |
| 15 | 15 | 18 | 25 | 29 | 32 | 540 | 264 | 56 | 36 | 12 | 20 | 16 |
| 16 | 16 | 17 | 24 | 27 | 40 | 337 | 226 | 55 | 33 | 13 | 15 | 17 |
| 17 | 15 | 18 | 28 | 26 | 235 | 1,200 | 197 | 77 | 34 | 14 | 18 | 17 |
| 18 | 15 | 17 | 34 | 31 | 290 | 992 | 178 | 64 | 53 | 17 | 17 | 15 |
| 19 | 18 | 18 | 40 | 80 | 150 | 456 | 182 | 57 | 41 | 17 | 14 | 15 |
| 20 | 20 | 17 | 38 | 170 | 92 | 293 | 208 | 61 | 37 | 27 | 13 | 23 |
| 21 | 18 | 21 | 20 | 110 | 84 | 264 | 214 | 70 | 33 | 12 | 12 | 30 |
| 22 | 17 | 15 | 21 | 88 | 80 | 361 | 179 | 98 | 32 | 14 | 16 | 19 |
| 23 | 19 | 18 | 23 | 80 | 68 | 320 | 155 | 212 | 29 | 15 | 22 | 20 |
| 24 | 30 | 20 | 100 | 88 | 58 | 260 | 141 | 128 | 23 | 18 | 15 | 15 |
| 25 | 23 | 21 | 233 | 81 | 54 | 236 | 131 | 80 | 24 | 15 | 15 | 15 |
| 26 | 18 | 18 | 134 | 58 | 52 | 230 | 122 | 78 | 24 | 14 | 11 | 15 |
| 27 | 18 | 16 | 100 | 55 | 50 | 237 | 110 | 68 | 23 | 15 | 10 | 19 |
| 28 | 16 | 18 | 93 | 51 | 48 | 222 | 102 | 62 | 22 | 15 | 12 | 53 |
| 29 | 18 | 17 | 70 | 34 | - | 191 | 95 | 55 | 21 | 15 | 23 | 30 |
| 30 | 17 | 18 | 43 | 37 | - | 194 | 88 | 52 | 19 | 16 | 23 | 23 |
| 31 | 20 | - | 47 | 41 | - | 212 | - | 62 | - | 11 | 15 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 536 | 30 | 11 | 17.3 | 0.188 | 0.22 |
| November | 622 | 39 | 15 | 20.7 | .225 | .25 |
| December | 1,332 | 233 | 17 | 43.0 | .466 | .54 |
| Calendar year 1941 | 29,758.4 | 1,700 | 9.2 | 81.5 | .884 | 12.00 |
| January | 1,711 | 170 | 26 | 55.2 | .599 | .69 |
| February | 1,891 | 290 | 31 | 67.5 | .732 | .76 |
| March | 11,862 | 1,850 | 53 | 383 | 4.15 | 4.78 |
| April | 5,834 | 306 | 88 | 194 | 2.10 | 2.34 |
| May | 2,711 | 212 | 52 | 87.5 | .949 | 1.09 |
| June | 1,235 | 93 | 19 | 41.2 | .447 | .50 |
| July | 522 | 27 | 11 | 16.8 | .182 | .21 |
| August | 478 | 26 | 10 | 15.4 | .167 | .19 |
| September | 653.5 | 65 | 8.5 | 21.8 | .236 | .26 |
| Water year 1941-42 | 29,387.5 | 1,850 | 8.5 | 80.5 | .873 | 11.83 |

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 12, 21, 22, 30, 31, Jan. 6-21, 29, 30, Feb. 2-27, Mar. 3-5.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Limestone Creek at Fayetteville, N. Y.

Location.- Water-stage recorder, lat. 43°01'45", long. 76°00'50", 100 feet downstream from Genesee Street Bridge in Fayetteville, Onondaga County, and about 8 miles upstream from mouth. Datum of gage is 427.62 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 85.7 square miles, not including 15.7 square miles of the Middle Branch of Tioughnioga Creek Basin, flow from which may be completely diverted into Limestone Creek Basin through Deruyter Reservoir.

Records available.- November 1939 to September 1942.

Extremes.- Maximum discharge during year, 4,150 second-feet Mar. 9 (gage height, 6.34 feet); minimum, 20 second-feet Oct. 1 (gage height, 1.425 feet).
1939-42: Maximum discharge, that of Mar. 9, 1942; minimum, 14 second-feet (regulated) Aug. 10, 1940, Aug. 17, 1941; minimum gage height, 1.365 feet Aug. 17, 1941.

Remarks.- Records good except those for periods of ice effect, which are fair. Flow affected by a canal diverting from Limestone Creek about 3 miles above station, and returning water to the creek about 400 feet above station and by regulation of Deruyter Reservoir.

Revisions.- Revised figures of discharge, in second-feet for the period Apr. 7-28, May 6, 8, and 9, 1941, supersede those published in Water-Supply Paper 924, are given herein.

| Day | Discharge | Day | Discharge | Day | Discharge | Day | Discharge | Day | Discharge |
|---|---|---|---|---|---|---|---|---|---|
| Apr. 7 | 1,090 | Apr. 12 | 463 | Apr. 17 | 252 | Apr. 22 | 209 | Apr. 27 | 126 |
| 8 | 759 | 13 | 414 | 18 | 212 | 23 | 173 | 28 | 118 |
| 9 | 644 | 14 | 395 | 19 | 246 | 24 | 155 | May 6 | 109 |
| 10 | 578 | 15 | 395 | 20 | 317 | 25 | 144 | 8 | 135 |
| 11 | 526 | 16 | 286 | 21 | 225 | 26 | 132 | 9 | 96 |

| Month | Second-foot days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| April | 13,186 | 1,850 | 94 | 440 | - | - |
| May | 2,118 | 135 | 42 | 68.3 | - | - |
| Water year 1940-41 | 41,598 | 1,850 | 21 | 114 | 1.33 | 18.05 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21 | 43 | 32 | 100 | 100 | 77 | 260 | 115 | 100 | 40 | 33 | 34 |
| 2 | 22 | 55 | 31 | 244 | 64 | 77 | 271 | 125 | 132 | 42 | 35 | 32 |
| 3 | 25 | 47 | #32 | 153 | 50 | 84 | 247 | 101 | 101 | 39 | 36 | 32 |
| 4 | 31 | 41 | 34 | 119 | 56 | 82 | 221 | 113 | 100 | 38 | 34 | 32 |
| 5 | 34 | 39 | 33 | 98 | #58 | 84 | 218 | 103 | 110 | 37 | 31 | 32 |
| 6 | 38 | 39 | 32 | #44 | 64 | 122 | 201 | 91 | 79 | 37 | 28 | 32 |
| 7 | 30 | 37 | 32 | 50 | 72 | 142 | 193 | 158 | 70 | 37 | 26 | 31 |
| 8 | 30 | 32 | 28 | 38 | 70 | #451 | 283 | 137 | 67 | 36 | 28 | 31 |
| 9 | 32 | 52 | 35 | 42 | 60 | 2,590 | 190 | 108 | 58 | 36 | 31 | 59 |
| 10 | 28 | 43 | 34 | 38 | 54 | 669 | 185 | 96 | 54 | 35 | 33 | 91 |
| 11 | 30 | 41 | 28 | 36 | 50 | 365 | 215 | 87 | 50 | 37 | 33 | 62 |
| 12 | 32 | 40 | 25 | 38 | 47 | 439 | 247 | 82 | 48 | 36 | 32 | 50 |
| 13 | 28 | 39 | 27 | 37 | 45 | 280 | 275 | 86 | 49 | 34 | 34 | 44 |
| 14 | 27 | 39 | 39 | 38 | 44 | 454 | 279 | 80 | 55 | 33 | 141 | 40 |
| 15 | 28 | 36 | 39 | 37 | 46 | 464 | 241 | 70 | 52 | 31 | 70 | 37 |
| 16 | 28 | 35 | 40 | 34 | 60 | 361 | 212 | 72 | 46 | 30 | 46 | 37 |
| 17 | 27 | 34 | 45 | 33 | 290 | 1,770 | 185 | 89 | 48 | 30 | 36 | 35 |
| 18 | 28 | 32 | 47 | 38 | 340 | 828 | 165 | 77 | 64 | 35 | 69 | 34 |
| 19 | 34 | 32 | 58 | 120 | 170 | 401 | 195 | 72 | 59 | 33 | 48 | 34 |
| 20 | 36 | 31 | 60 | 226 | 114 | 275 | 228 | 75 | 64 | 34 | 40 | 43 |
| 21 | 32 | 32 | 34 | 128 | 106 | 281 | 254 | 87 | 49 | 37 | 37 | 43 |
| 22 | 31 | 34 | 39 | 100 | 100 | 420 | 190 | 116 | 46 | 35 | 39 | 37 |
| 23 | 37 | 34 | 44 | 90 | 92 | 296 | 155 | 248 | 43 | 33 | 61 | 35 |
| 24 | 59 | 38 | 356 | 108 | 80 | 250 | 141 | 128 | 40 | 33 | 44 | 35 |
| 25 | 47 | 36 | 479 | 97 | 77 | 241 | 130 | 94 | 39 | 32 | 40 | 34 |
| 26 | 39 | 32 | 213 | 103 | 72 | 250 | 120 | 86 | 39 | 31 | 38 | 34 |
| 27 | 36 | 33 | 205 | 92 | 70 | 254 | 113 | 75 | 37 | 30 | 35 | 49 |
| 28 | 42 | 34 | 161 | 84 | 72 | 228 | 104 | 69 | 36 | 30 | 37 | 147 |
| 29 | 41 | 32 | 111 | 66 | - | 190 | 98 | 62 | 34 | 30 | 38 | 70 |
| 30 | 39 | 33 | 86 | 56 | - | 198 | 94 | 58 | 34 | 30 | 36 | 55 |
| 31 | 39 | - | 92 | 62 | - | 212 | - | 117 | - | 31 | 35 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,031 | 59 | 21 | 33.3 | - | - |
| November | 1,225 | 87 | 31 | 40.8 | - | - |
| December | 2,551 | 479 | 25 | 82.3 | - | - |
| Calendar year 1941 | 35,838 | 1,850 | 21 | 98.2 | 1.15 | 15.56 |
| January | 2,549 | 244 | 33 | 82.2 | - | - |
| February | 2,523 | 340 | 44 | 90.1 | - | - |
| March | 12,535 | 2,590 | 77 | 414 | - | - |
| April | 5,900 | 283 | 94 | 197 | - | - |
| May | 3,077 | 248 | 58 | 99.3 | - | - |
| June | 1,803 | 132 | 34 | 60.1 | - | - |
| July | 1,062 | 42 | 30 | 34.3 | - | - |
| August | 1,354 | 141 | 26 | 43.7 | - | - |
| September | 1,361 | 147 | 31 | 45.4 | - | - |
| Water year 1941-42 | 37,271 | 2,590 | 21 | 102 | 1.19 | 16.19 |

# Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 11-13, 21, 22, 30, 31, Jan. 5-19, Jan. 29 to Feb. 6, Feb. 9-23, Mar. 3.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## East Branch of Fish Creek at Taberg, N. Y.

Location.- Water-stage recorder, lat. 43°18'05", long. 75°37'10", at highway bridge in Taberg, Oneida County, just downstream from Furnace Creek.
Drainage area.- 189 square miles.
Records available.- April 1923 to September 1942.
Average discharge.- 19 years, 534 second-feet.
Extremes.- Maximum discharge during year, 8,650 second-feet Dec. 25 (gage height, 7.58 feet); minimum, 8.5 second-feet (regulated) Sept. 1 (gage height, -0.05 foot).
1923-42: Maximum discharge, about 16,500 second-feet Oct. 6, 1932 (gage height, 9.18 feet), from rating curve extended above 2,700 second-feet by logarithmic plotting; minimum, 5.4 second-feet (regulated) June 28, 1941 (gage height, -0.10 foot).
Remarks.- Records good except those for periods of ice effect, which are fair.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Dec. 23 | | | | Dec. 24 to Sept. 30 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.8 | 78 | 2.4 | 698 | 0.1 | 14 | 0.7 | 74 | 1.8 | 388 | 4.1 | 2,140 |
| 1.0 | 115 | 2.9 | 1,050 | .2 | 20 | .9 | 106 | 2.2 | 577 | 5.0 | 3,310 |
| 1.2 | 164 | 3.4 | 1,500 | .3 | 27 | 1.1 | 149 | 2.7 | 882 | 5.9 | 4,820 |
| 1.5 | 263 | 3.6 | 1,710 | .5 | 49 | 1.4 | 236 | 3.4 | 1,430 | 6.3 | 5,600 |
| 1.9 | 431 | | | | | | | | | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 78 | 745 | 548 | 520 | 300 | 240 | 1,130 | 490 | 251 | 84 | 327 | 16 |
| 2 | 78 | 1,120 | 482 | 782 | 205 | 250 | 1,140 | 464 | 694 | 69 | 211 | 19 |
| 3 | 271 | 866 | *518 | 952 | *175 | 262 | 1,710 | 413 | 486 | 56 | 130 | 22 |
| 4 | 1,110 | 770 | 524 | 871 | 160 | 257 | 2,130 | 522 | 346 | 54 | 85 | 61 |
| 5 | 830 | 557 | 496 | 643 | 150 | 237 | 2,170 | 614 | 284 | 52 | 62 | 32 |
| 6 | 600 | 499 | 459 | 459 | 145 | 247 | 2,510 | 447 | 208 | 48 | 48 | 35 |
| 7 | 384 | 1,180 | 375 | 384 | 145 | 245 | 5,120 | 538 | 176 | 49 | 38 | 31 |
| 8 | 284 | 968 | 282 | 360 | 140 | 261 | 3,760 | 582 | 199 | 42 | 32 | 51 |
| 9 | 217 | 625 | 317 | 330 | 140 | 1,460 | 2,340 | 448 | 160 | 42 | 84 | 157 |
| 10 | 206 | 471 | 276 | 310 | 135 | *1,480 | 1,560 | 347 | 123 | 37 | 135 | 658 |
| 11 | 384 | 409 | 195 | 280 | 135 | 1,290 | 1,120 | 280 | 105 | 61 | 123 | 514 |
| 12 | 337 | 430 | 195 | 270 | 130 | 1,380 | 996 | 257 | 101 | 57 | 95 | 283 |
| 13 | 268 | 441 | 205 | 260 | 130 | 1,200 | 992 | 364 | 157 | 46 | 72 | 189 |
| 14 | 291 | 462 | 220 | *250 | 125 | 1,080 | 1,070 | 330 | 255 | 37 | 991 | 132 |
| 15 | 663 | 701 | 240 | 245 | 124 | 862 | 1,410 | 255 | 199 | 28 | 609 | 96 |
| 16 | 446 | 837 | 255 | 240 | 160 | 784 | 2,810 | 221 | 146 | 24 | 287 | 208 |
| 17 | 295 | 798 | 290 | 235 | 600 | 2,350 | 2,590 | 548 | 119 | 24 | 177 | 280 |
| 18 | 252 | 564 | 300 | 250 | 978 | 2,490 | 2,310 | 441 | 142 | 47 | 113 | 163 |
| 19 | 384 | 467 | 320 | 420 | 925 | 1,360 | 1,620 | 315 | 135 | 68 | 84 | 109 |
| 20 | 325 | 489 | 317 | 673 | 699 | 1,300 | 1,220 | 259 | 108 | 71 | 66 | 133 |
| 21 | 253 | 1,140 | 245 | 607 | 589 | 1,190 | 1,080 | 251 | 100 | 65 | 58 | 160 |
| 22 | 236 | 881 | 250 | 498 | 571 | 1,850 | 1,020 | 297 | 99 | 47 | 56 | 121 |
| 23 | 646 | 700 | 300 | 426 | 508 | 1,350 | 1,200 | 750 | 84 | 70 | 48 | 93 |
| 24 | 1,070 | 748 | 3,550 | 375 | 420 | 1,080 | 1,360 | 609 | 73 | 70 | 41 | 94 |
| 25 | 795 | 588 | 5,540 | 328 | 352 | 875 | 1,360 | 402 | 66 | 49 | 36 | 90 |
| 26 | 539 | 462 | 2,410 | 301 | 295 | 783 | 1,250 | 319 | 60 | 36 | 32 | 77 |
| 27 | 565 | 435 | 1,560 | 282 | 266 | 918 | 1,040 | 255 | 55 | 40 | 28 | 2,210 |
| 28 | 1,630 | 430 | 1,050 | 260 | 250 | 1,060 | 771 | 212 | 52 | 42 | 33 | 2,510 |
| 29 | 1,060 | 396 | 782 | 181 | - | 1,010 | 643 | 176 | 46 | 100 | 40 | 1,070 |
| 30 | 648 | 726 | 500 | 205 | - | 1,000 | 543 | 153 | 48 | 242 | 36 | 586 |
| 31 | 535 | - | 500 | 231 | - | 949 | - | 161 | - | 179 | 56 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 15,680 | 1,630 | 78 | 506 | 2.68 | 3.09 |
| November | 19,905 | 1,180 | 396 | 664 | 3.51 | 3.92 |
| December | 23,481 | 5,540 | 195 | 757 | 4.01 | 4.62 |
| Calendar year 1941 | 155,750.8 | 5,540 | S.S | 427 | 2.26 | 30.62 |
| January | 12,428 | 952 | 181 | 401 | 2.12 | 2.44 |
| February | 8,952 | 978 | 124 | 320 | 1.69 | 1.76 |
| March | 31,600 | 2,490 | 237 | 1,019 | 5.39 | 6.21 |
| April | 49,975 | 5,120 | 543 | 1,666 | 8.81 | 9.83 |
| May | 11,720 | 750 | 153 | 378 | 2.00 | 2.31 |
| June | 5,077 | 694 | 46 | 169 | .894 | 1.00 |
| July | 1,936 | 242 | 24 | 62.5 | .331 | .38 |
| August | 4,238 | 991 | 28 | 137 | .725 | .84 |
| September | 10,200 | 2,510 | 16 | 340 | 1.80 | 2.01 |
| Water year 1941-42 | 195,192 | 5,540 | 16 | 535 | 2.83 | 38.41 |

Peak discharge.- Dec. 25 (1:30 a.m.) 8,650 sec.-ft.; Apr. 7 (8:30 a.m.) 6,180 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 11-15, 21-23, 30, 31, Jan. 8-19, Feb. 2-17, Feb. 28, Mar. 1.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Black River near Boonville, N. Y.

Location.- Water-stage recorder, lat. 43°30'35", long. 75°18'25", at highway bridge three-quarters of a mile upstream from Sugar River and 2 miles northeast of Boonville, Oneida County.
Drainage area.- 295 square miles.
Records available.- February 1911 to September 1942.
Average discharge.- 31 years, 653 second-feet (unadjusted).
Extremes.- Maximum discharge during year, 6,840 second-feet Sept. 28 (gage height, 9.93 feet); minimum, 79 second-feet (regulated) Aug. 27 (gage height, 3.50 feet).
1911-42: Maximum discharge, about 10,000 second-feet Mar. 28, 1913 (gage height, about 12.5 feet); minimum, about 5 second-feet (regulated) Aug. 26, 1918 (gage height, 2.40 feet).
Remarks.- Records good except those for periods of ice effect or doubtful or fragmentary gage-height record, all of which are fair. Flow partly regulated by several headwater reservoirs. Forestport feeder diverts water from State Pond at Forestport. That portion of diverted water which does not pass down Black River Canal (flowing south) returns to Black River below station through Mill Creek sluiceway.

Rating table, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3.6 | 94 | 4.3 | 255 | 5.5 | 778 | 7.6 | 2,730 |
| 3.8 | 130 | 4.6 | 354 | 6.1 | 1,180 | 8.5 | 4,030 |
| 4.0 | 174 | 5.0 | 516 | 6.8 | 1,810 | 9.5 | 5,880 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 186 | 815 | 621 | d540 | 390 | 330 | 1,170 | f472 | 479 | 215 | 397 | 119 |
| 2 | 199 | 1,170 | 571 | 620 | 390 | 330 | 1,160 | 504 | 642 | 198 | 363 | 106 |
| 3 | 294 | 1,170 | 536 | 920 | 340 | 330 | 1,230 | 458 | 606 | 180 | 261 | 111 |
| 4 | 631 | 1,030 | 541 | 820 | 330 | 320 | 1,570 | 468 | 514 | 158 | 199 | 144 |
| 5 | 639 | 893 | 544 | d640 | 330 | *310 | 1,780 | 462 | 465 | 150 | 156 | 137 |
| 6 | 586 | 849 | *539 | d520 | 330 | 310 | 2,030 | 417 | 429 | 151 | 133 | 123 |
| 7 | 528 | 1,020 | 514 | d430 | 330 | 310 | 3,210 | 527 | 382 | 154 | 116 | 113 |
| 8 | 472 | 1,220 | 434 | d370 | 330 | 330 | 5,100 | 693 | 387 | 146 | 110 | 112 |
| 9 | 440 | 980 | 476 | d330 | 320 | 1,180 | 3,950 | 582 | 356 | 143 | 180 | 375 |
| 10 | 431 | 835 | 464 | d330 | *320 | 1,890 | 2,730 | 471 | 286 | 133 | 346 | 867 |
| 11 | 432 | 756 | 389 | *380 | 320 | 1,650 | 2,090 | 410 | 238 | 168 | 288 | 810 |
| 12 | 418 | 681 | d330 | 430 | 310 | 1,650 | 1,690 | 378 | 215 | 196 | 223 | 528 |
| 13 | 388 | 626 | d330 | 450 | 300 | 1,390 | 1,440 | 418 | 228 | 178 | 178 | 388 |
| 14 | 382 | 605 | d430 | 460 | 310 | 1,070 | 1,400 | 436 | 275 | 146 | 476 | 315 |
| 15 | 442 | 529 | d470 | 450 | 310 | 853 | 1,310 | 369 | 837 | 120 | 484 | 254 |
| 16 | 435 | 345 | d480 | 430 | 330 | 733 | 2,070 | 345 | 784 | 107 | 342 | 221 |
| 17 | 389 | 464 | d470 | 430 | 540 | 1,580 | 2,340 | 694 | 538 | 105 | 353 | 231 |
| 18 | 372 | 455 | d450 | 420 | 620 | 2,310 | 2,080 | 762 | 663 | 194 | 391 | 214 |
| 19 | 428 | 437 | d440 | 420 | 640 | 1,940 | 2,000 | 550 | 597 | 256 | 334 | 194 |
| 20 | 437 | 434 | d430 | 480 | d540 | 1,300 | 1,760 | 516 | 428 | 247 | 312 | 258 |
| 21 | 398 | 503 | d390 | 500 | d440 | 1,140 | 1,520 | 552 | 354 | 268 | 270 | 430 |
| 22 | 372 | 555 | d330 | 450 | d400 | 1,870 | 1,350 | 628 | 338 | 216 | 196 | 399 |
| 23 | 418 | 541 | d330 | 430 | d390 | 1,870 | 1,200 | 1,630 | 302 | 216 | 151 | 336 |
| 24 | 575 | 583 | d1,400 | 410 | d380 | *1,340 | 995 | 1,780 | 259 | 220 | 128 | 277 |
| 25 | 602 | 568 | 4,060 | 400 | 370 | 1,060 | 862 | 1,070 | 240 | 188 | 113 | 204 |
| 26 | 562 | 485 | 2,750 | 390 | 360 | 940 | 745 | 852 | 216 | 155 | 102 | 189 |
| 27 | 554 | 454 | 1,830 | 380 | 350 | 1,000 | 660 | 731 | 190 | 188 | 100 | 1,440 |
| 28 | 963 | 434 | 1,360 | 380 | 340 | 1,120 | f583 | 624 | 174 | 197 | 108 | 5,790 |
| 29 | 1,000 | 413 | d915 | 330 | - | 1,070 | 519 | 497 | 164 | 218 | 167 | 3,740 |
| 30 | 851 | 513 | d620 | 330 | - | 1,070 | 490 | 398 | 155 | 488 | 165 | 2,020 |
| 31 | 784 | - | d540 | 310 | - | 1,030 | - | 396 | - | 404 | 140 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 15,608 | 1,000 | 186 | 503 | 1.71 | 1.97 |
| November | 20,363 | 1,220 | 345 | 679 | 2.30 | 2.57 |
| December | 23,987 | 4,060 | 330 | 774 | 2.62 | 3.02 |
| Calendar year 1941 | 208,277 | 4,090 | 80 | 571 | 1.94 | 26.25 |
| January | 14,180 | 920 | 310 | 457 | 1.55 | 1.79 |
| February | 10,660 | 640 | 300 | 381 | 1.29 | 1.34 |
| March | 33,626 | 2,310 | 310 | 1,085 | 3.68 | 4.24 |
| April | 51,034 | 5,100 | 490 | 1,701 | 5.77 | 6.44 |
| May | 19,090 | 1,780 | 345 | 616 | 2.09 | 2.41 |
| June | 11,741 | 837 | 155 | 391 | 1.33 | 1.48 |
| July | 6,103 | 488 | 105 | 197 | .668 | .77 |
| August | 7,282 | 484 | 100 | 235 | .797 | .92 |
| September | 20,445 | 5,790 | 106 | 682 | 2.31 | 2.58 |
| Water year 1941-42 | 234,119 | 5,790 | 100 | 641 | 2.17 | 29.53 |

Peak discharge.- Dec. 25 (9:30 a.m.) 4,480 sec.-ft.; Sept. 28 (1:30 p.m.) 6,840 sec.-ft.
* Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge computed on basis of engineers' and observer's notes, weather records, and gage-height record at Forestport feeder dam.
f Fragmentary gage-height record; discharge computed on basis of partly estimated gage-height record, and by interpolation.
Note.- Stage-discharge relation affected by ice Dec. 30 to Mar. 9.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Black River at Watertown, N. Y.

Location.- Water-stage recorder, lat. 43°59'05", long. 75°55'30", at Vanduzee Street Bridge in Watertown, Jefferson County.
Drainage area.- 1,876 square miles.
Records available.- July 1920 to September 1942.
Average discharge.- 22 years, 3,793 second-feet.
Extremes.- Maximum discharge during year, 20,400 second-feet Apr. 9 (gage height, 7.79 feet); minimum, 39 second-feet (regulated) Aug. 9 (gage height, -0.07 foot); minimum daily, 673 second-feet (regulated) July 13.
1920-42: Maximum discharge, 33,900 second-feet Apr. 9, 1928 (gage height, 10.6 feet); minimum, 10 second-feet (estimated, regulated) Sept. 2, 1934 (gage height, -0.19 foot); minimum daily, 137 second-feet (regulated) Sept. 4, 1939.
Maximum discharge known, about 39,700 second-feet sometime in April 1869.
Remarks.- Records excellent except those for periods of ice effect, which are good. Flow partly regulated by Stillwater Reservoir, Fulton Chain of Lakes, and other reservoirs. During canal season water is diverted out of basin through Forestport feeder and Black River Canal (flowing south). Large diurnal fluctuation at low and medium stages caused by mills and power plants in Watertown and above.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.0 | 600 | 2.3 | 2,260 | 6.0 | 12,400 |
| 1.3 | 888 | 3.0 | 3,610 | 7.0 | 16,550 |
| 1.6 | 1,220 | 4.0 | 6,040 | 7.6 | 19,400 |
| 1.9 | 1,610 | 5.0 | 8,990 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,530 | 4,160 | 2,660 | 4,460 | 2,220 | 2,020 | 6,520 | 4,590 | 1,700 | 1,440 | 2,350 | 988 |
| 2 | 1,530 | 4,250 | 2,650 | 4,450 | 2,240 | 1,820 | 7,180 | 4,120 | 2,230 | 1,440 | 1,390 | 1,270 |
| 3 | 1,540 | 4,910 | 2,920 | 5,290 | 2,600 | 2,050 | 7,360 | 3,630 | 2,780 | 1,560 | 1,370 | 1,280 |
| 4 | 1,730 | 5,240 | *3,040 | 5,640 | 2,400 | 1,910 | 7,580 | 3,250 | 2,640 | 1,300 | 1,660 | 1,490 |
| 5 | 2,270 | 4,930 | 2,970 | 5,590 | 2,180 | 1,860 | 8,050 | 3,850 | 2,780 | 1,210 | 1,550 | 1,470 |
| 6 | 2,800 | 4,320 | 2,850 | 4,940 | *2,260 | 1,920 | 9,090 | 3,760 | 2,660 | 902 | 1,340 | 1,130 |
| 7 | 2,840 | 4,350 | 2,680 | 3,700 | 2,290 | *2,070 | 11,400 | 3,380 | 1,830 | 1,080 | 1,480 | 936 |
| 8 | 2,540 | 5,250 | 2,380 | *3,100 | 2,000 | 2,050 | 14,600 | 3,320 | 1,660 | 1,190 | 1,490 | 886 |
| 9 | 2,200 | 5,100 | 2,370 | 3,100 | 1,700 | 3,940 | 19,200 | 3,660 | 1,730 | 1,160 | 878 | 1,380 |
| 10 | 2,030 | 4,670 | 2,540 | 2,900 | 2,100 | 7,920 | 18,400 | 3,480 | 1,710 | 1,200 | 977 | 1,510 |
| 11 | 1,670 | 4,160 | 2,000 | 2,800 | 2,100 | 7,810 | 15,200 | 3,100 | 1,450 | 1,100 | 930 | 3,070 |
| 12 | 2,000 | 3,680 | 1,900 | 2,500 | 2,000 | 8,680 | 12,100 | 3,130 | 1,470 | 948 | 1,260 | 3,390 |
| 13 | 1,660 | 3,650 | 1,920 | 2,450 | 1,900 | 9,010 | 10,300 | 2,600 | 1,490 | 673 | 1,490 | 2,220 |
| 14 | 1,920 | 3,320 | 1,880 | 2,600 | 2,000 | 9,470 | 8,850 | 3,070 | 1,450 | 978 | 1,670 | 1,790 |
| 15 | 2,090 | 3,870 | 1,770 | 2,680 | 1,880 | 8,780 | 8,080 | 2,940 | 1,460 | 1,000 | 2,740 | 1,860 |
| 16 | 2,400 | 3,800 | 2,270 | 2,600 | 1,600 | 8,010 | 9,070 | 2,730 | 3,090 | 1,090 | 2,440 | 1,560 |
| 17 | 2,300 | 3,350 | 2,580 | 2,450 | 1,970 | 9,530 | 9,730 | 2,050 | 4,390 | 1,310 | 1,940 | 1,850 |
| 18 | 2,240 | 2,830 | 2,750 | 2,590 | 2,730 | 12,300 | 10,500 | 3,150 | 3,770 | 1,680 | 1,980 | 2,100 |
| 19 | 2,140 | 2,620 | 2,850 | 2,450 | 3,300 | 12,400 | 11,600 | 3,750 | 3,210 | 876 | 1,840 | 2,450 |
| 20 | 2,220 | 2,600 | 2,800 | 3,250 | 3,300 | 11,700 | 11,700 | 3,330 | 3,360 | 808 | 1,600 | 2,020 |
| 21 | 2,590 | 3,090 | 2,000 | 3,620 | 2,900 | 11,200 | 10,900 | 2,990 | 3,040 | 1,420 | 1,890 | 1,710 |
| 22 | 2,740 | 3,320 | 1,940 | 3,820 | 2,800 | 9,620 | 10,300 | 2,820 | 2,630 | 1,370 | 1,900 | 2,090 |
| 23 | 2,680 | 3,050 | 2,140 | 3,470 | 2,380 | 8,730 | 9,090 | 3,060 | 2,510 | 1,700 | 684 | 2,360 |
| 24 | 3,500 | 3,220 | 5,650 | 3,260 | 2,470 | 8,430 | 8,300 | 4,490 | 2,270 | 1,450 | 585 | 2,380 |
| 25 | 3,910 | 3,350 | 12,800 | 3,130 | 2,240 | *7,630 | 7,910 | 5,190 | 2,050 | 1,190 | 1,090 | 2,150 |
| 26 | 3,710 | 2,980 | 13,700 | 2,930 | 2,220 | 6,700 | 7,660 | 5,190 | 1,920 | 991 | 1,040 | 1,860 |
| 27 | 3,140 | 2,750 | 15,200 | 2,780 | 2,190 | 5,930 | 7,290 | 4,440 | 1,640 | 1,050 | 1,160 | 1,710 |
| 28 | 4,550 | 2,620 | 12,400 | 2,660 | 2,210 | 6,000 | 6,550 | 3,580 | 1,590 | 1,230 | 1,340 | 5,610 |
| 29 | 5,540 | 2,360 | 9,360 | 2,400 | - | 5,900 | 5,790 | 2,980 | 1,440 | 1,880 | 1,170 | 8,450 |
| 30 | 5,230 | 2,530 | 6,390 | 2,300 | - | 5,950 | 5,190 | 2,650 | 1,330 | 2,090 | 1,020 | 12,200 |
| 31 | 4,570 | - | 5,210 | 2,130 | - | 6,100 | - | 1,790 | - | 2,230 | 902 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 84,410 | 5,540 | 1,530 | 2,723 | - | - |
| November | 110,330 | 5,250 | 2,360 | 3,678 | - | - |
| December | 136,570 | 15,200 | 1,770 | 4,405 | - | - |
| Calendar year 1941 | 1,118,579 | 18,000 | 600 | 3,065 | 1.63 | 22.17 |
| January | 101,940 | 5,640 | 2,130 | 3,288 | - | - |
| February | 64,180 | 3,300 | 1,600 | 2,292 | - | - |
| March | 207,440 | 12,400 | 1,820 | 6,692 | - | - |
| April | 295,490 | 19,200 | 5,190 | 9,850 | - | - |
| May | 106,070 | 5,190 | 1,790 | 3,422 | - | - |
| June | 67,280 | 4,390 | 1,330 | 2,243 | - | - |
| July | 39,536 | 2,230 | 673 | 1,275 | - | - |
| August | 45,556 | 2,740 | 684 | 1,470 | - | - |
| September | 75,170 | 12,200 | 886 | 2,506 | - | - |
| Water year 1941-42 | 1,333,972 | 19,200 | 673 | 3,655 | 1.95 | 26.46 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 11, 12, 20, 21, Jan. 7-14, 16, 17, 29, 30, Feb. 3, 4, 8-14, 19-22.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Black River Canal (flowing south) near Boonville, N. Y.

Location.- Two water-stage recorders and concrete controls, lat. 43°27'20", long. 75°19'25", No. 1 on main canal at lock 69, and No. 2 on Lansingkill spillway, 100 feet downstream from head gates in summit level at canal, 600 feet upstream from lock 70, and 2 miles south of Boonville, Oneida County.

Records available.- September 1915 to September 1942 (canal seasons).

Remarks.- Records good except those below 15 second-feet and those for periods of fragmentary gage-height record, which are fair. Records show combined flow at gages 1 and 2 and represent total diversion from Black River at Forestport, through Forestport feeder, into Mohawk River Basin. During periods Oct. 29 to Apr. 24 and Sept. 27-30 when no water was diverted, canal carried a flow made up of leakage through head gates and run-off from area draining into canal above station.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 62 | 13 | | | | | f11 | f13 | 49 | 45 | 65 | 55 |
| 2 | 58 | 26 | | | | | 11 | f26 | 36 | 46 | 60 | 54 |
| 3 | 62 | 15 | | | | | 9.3 | 20 | 17 | 55 | 58 | 55 |
| 4 | 50 | 10 | | | | | 8.3 | 37 | 32 | 56 | 55 | 57 |
| 5 | 35 | 6.0 | | | | | 9.0 | 43 | 48 | 56 | 53 | 57 |
| 6 | 64 | 5.8 | | | | | 8.0 | 44 | 55 | 55 | 53 | 57 |
| 7 | 70 | 18 | | | | | 22 | 53 | 46 | 56 | 52 | 56 |
| 8 | 70 | 9.5 | | | | | 20 | 57 | 45 | 56 | 52 | 56 |
| 9 | 70 | f6.2 | | | | | 8.1 | 50 | 43 | 57 | 56 | 62 |
| 10 | 63 | - | | | | | 7.0 | f44 | 50 | 56 | 30 | 57 |
| 11 | 68 | - | | | | | 7.2 | f41 | 50 | 59 | 46 | 48 |
| 12 | 70 | - | | | | | 7.2 | f40 | 48 | 58 | 55 | 58 |
| 13 | 68 | - | | | | | 9.1 | f48 | 49 | 56 | 54 | 64 |
| 14 | 69 | - | | | | | f9.0 | f45 | 51 | 54 | 102 | 63 |
| 15 | 78 | - | | | | | f10 | f46 | 54 | 53 | 51 | 60 |
| 16 | 73 | - | | | | | f13 | f47 | 54 | 53 | 56 | 60 |
| 17 | 70 | - | | | | | f9.0 | 57 | 54 | 54 | 64 | 60 |
| 18 | 62 | - | | | | | f7.2 | 31 | 48 | 60 | 65 | 59 |
| 19 | 47 | - | | | | | f6.4 | 47 | 41 | 58 | 60 | 58 |
| 20 | 71 | - | | | | | f6.1 | 52 | 52 | 58 | 57 | 62 |
| 21 | 69 | - | | | | | f5.9 | 54 | 53 | 57 | 56 | 69 |
| 22 | 67 | - | | | | | 5.6 | 59 | 53 | 55 | 55 | 65 |
| 23 | 73 | - | | | | | 4.9 | 85 | 52 | 58 | 55 | 63 |
| 24 | 81 | - | | | | | 2.7 | 47 | 51 | 59 | 54 | 62 |
| 25 | 80 | - | | | | | 2.3 | 33 | 50 | 56 | 53 | 62 |
| 26 | 75 | - | | | | | f10 | 53 | 50 | 55 | 53 | 61 |
| 27 | 80 | - | | | | | f12 | 53 | 51 | 57 | 53 | 151 |
| 28 | 87 | - | | | | | f12 | f25 | 55 | 57 | 55 | 79 |
| 29 | 32 | - | | | | | f12 | 27 | 55 | 60 | 59 | 44 |
| 30 | 11 | - | | | | | f11 | 47 | 55 | 47 | 60 | 29 |
| 31 | 7.8 | - | | | | | - | 48 | - | 52 | 57 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,942.8 | 87 | 7.8 | 62.7 | | |
| November 1-9 | 109.5 | 26 | 5.8 | 12.2 | | |
| December | - | - | - | - | | |
| Calendar year | - | - | - | - | | |
| January | - | - | - | - | | |
| February | - | - | - | - | | |
| March | - | - | - | - | | |
| April | 276.3 | 22 | 2.3 | 9.2 | | |
| May | 1,372 | 85 | 13 | 44.3 | | |
| June | 1,447 | 55 | 17 | 48.2 | | |
| July | 1,714 | 60 | 45 | 55.3 | | |
| August | 1,754 | 102 | 30 | 56.6 | | |
| September | 1,843 | 151 | 29 | 61.4 | | |
| Water year | - | - | - | - | | |

f Fragmentary gage-height record; discharge computed on basis of recorded range in stage, records of gate operations at head of Forestport feeder, and weather records.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Moose River at McKeever, N. Y.

Location.- Water-stage recorder, lat. 43°36'40", long. 75°06'35", half a mile west of McKeever, Herkimer County, and 2 miles downstream from South Branch.
Drainage area.- 365 square miles.
Records available.- May 1922 to September 1942. June 1900 to December 1922 at site at Moose River, 2¼ miles downstream.
Average discharge.- 34 years (1907-13, 1914-42), 827 second-feet (unadjusted).
Extremes.- Maximum discharge during year, 10,300 second-feet Sept. 28 (gage height, 12.59 feet); minimum, 124 second-feet (regulated) Aug. 27 (gage height, 1.71 feet).
1900-42: Maximum discharge recorded, about 16,500 second-feet Mar. 27, 1913 (gage height, 16.2 feet from floodmarks, site and datum then in use); minimum, about 42 second-feet (regulated) July 21, 23, 25-27, 1913.
Remarks.- Records good except those for periods of ice effect, backwater from logs, or no gage-height record, which are fair. Flow regulated to some extent by Fulton Chain of Lakes. Occasional slight diurnal fluctuation during low and medium stages caused by paper mill in McKeever.

Rating tables, water year 1941-42, except periods of ice effect or backwater from logs (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Apr. 7 | | | | Apr. 8 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2.3 | 298 | 6.0 | 2,470 | 1.7 | 122 | 3.5 | 775 | 7.0 | 3,320 |
| 2.8 | 476 | 7.0 | 3,320 | 2.0 | 196 | 4.0 | 1,040 | 8.0 | 4,300 |
| 3.5 | 795 | 8.0 | 4,300 | 2.5 | 343 | 5.0 | 1,700 | 9.5 | 6,070 |
| 4.5 | 1,370 | 9.1 | 5,570 | 3.0 | 535 | 6.0 | 2,470 | 10.9 | 7,940 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 380 | 894 | 540 | 824 | 580 | 410 | 980 | 970 | 470 | 270 | 274 | 231 |
| 2 | 372 | 1,340 | 552 | 857 | 580 | 410 | 579 | 1,120 | 561 | 264 | 265 | 234 |
| 3 | 418 | 1,370 | 556 | 1,170 | 580 | 410 | 870 | 800 | 654 | 254 | 223 | 240 |
| 4 | 502 | 1,130 | 541 | 1,200 | 580 | *420 | 1,630 | 780 | 579 | 240 | 191 | 243 |
| 5 | 538 | 922 | 544 | 1,050 | 580 | 430 | 1,840 | 760 | 524 | 229 | 170 | 243 |
| 6 | 551 | 798 | *572 | 946 | 560 | 440 | 2,320 | 720 | 464 | a220 | 155 | 248 |
| 7 | 570 | 922 | 568 | 720 | 560 | 470 | 5,530 | 680 | 366 | a215 | 143 | 243 |
| 8 | 406 | 1,390 | 507 | 580 | 560 | 500 | 6,550 | 860 | 340 | a207 | 134 | 234 |
| 9 | 376 | 1,060 | 446 | 520 | 560 | 580 | 4,320 | 880 | 349 | a199 | 131 | 354 |
| 10 | 373 | 832 | 397 | 480 | 560 | 740 | 2,970 | 800 | 306 | 198 | 170 | 675 |
| 11 | 400 | 710 | 336 | *450 | *540 | 800 | 2,190 | 640 | 276 | 202 | 156 | 700 |
| 12 | 518 | 649 | 366 | 440 | 540 | 760 | 1,860 | 620 | 271 | 203 | 201 | 480 |
| 13 | 583 | 610 | 494 | 430 | 540 | 720 | 1,530 | 600 | 258 | 204 | 188 | 348 |
| 14 | 580 | 590 | 621 | 430 | 540 | 700 | 1,350 | 620 | 265 | 198 | 232 | 280 |
| 15 | 600 | 567 | 570 | 520 | 520 | 680 | 1,460 | 560 | 1,900 | 173 | 292 | 268 |
| 16 | 594 | 469 | 596 | 620 | 540 | 683 | 3,460 | 410 | 1,560 | 165 | 289 | 310 |
| 17 | 593 | 536 | 596 | 600 | 540 | 776 | 3,470 | 580 | 1,140 | 160 | 266 | 706 |
| 18 | 518 | 518 | 580 | 600 | 470 | 1,410 | 3,220 | 800 | 1,030 | 166 | 263 | 810 |
| 19 | 507 | 456 | 556 | 600 | 390 | 1,490 | 2,690 | 660 | 1,010 | 186 | 234 | 600 |
| 20 | 676 | 387 | 558 | 580 | 370 | 1,230 | 2,220 | 620 | 1,200 | 191 | 195 | 533 |
| 21 | 684 | 492 | 540 | 560 | 340 | 1,050 | 2,000 | 540 | 1,150 | 196 | 183 | 749 |
| 22 | 629 | 564 | 540 | 580 | 320 | 1,160 | 1,870 | 500 | 967 | 196 | 144 | 654 |
| 23 | 644 | 579 | 560 | 560 | 310 | 1,300 | 1,940 | 1,220 | 807 | 191 | 141 | 509 |
| 24 | 776 | 526 | 1,460 | 560 | 350 | *1,140 | 2,200 | 1,700 | 674 | 196 | 148 | 445 |
| 25 | 847 | 512 | 4,260 | 560 | 500 | 938 | 2,360 | 1,100 | 580 | 186 | 146 | 414 |
| 26 | 751 | 461 | 2,600 | 560 | 480 | 816 | 2,330 | 916 | 496 | 175 | 130 | 396 |
| 27 | 656 | 392 | 1,570 | 560 | 480 | 762 | 2,120 | 682 | 430 | 175 | 124 | 2,440 |
| 28 | 1,330 | 450 | 1,220 | 540 | 410 | 842 | 1,770 | 570 | 392 | 212 | 138 | 7,880 |
| 29 | 1,560 | 466 | 1,040 | 540 | - | 910 | 1,540 | 459 | 312 | 231 | 188 | 2,830 |
| 30 | 1,030 | 459 | 922 | 540 | - | 949 | 1,390 | 359 | 285 | 330 | 199 | 1,540 |
| 31 | 854 | - | 831 | 560 | - | 884 | - | 255 | - | 311 | 207 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 19,816 | 1,560 | 372 | 639 | - | - |
| November | 21,051 | 1,390 | 387 | 702 | - | - |
| December | 26,041 | 4,260 | 538 | 840 | - | - |
| Calendar year 1941 | 221,858 | 6,230 | 116 | 608 | 1.67 | 22.60 |
| January | 19,757 | 1,200 | 430 | 637 | - | - |
| February | 13,880 | 580 | 310 | 496 | - | - |
| March | 24,810 | 1,490 | 410 | 800 | - | - |
| April | 70,739 | 6,550 | 759 | 2,358 | - | - |
| May | 22,781 | 1,700 | 255 | 735 | - | - |
| June | 19,622 | 1,900 | 258 | 654 | - | - |
| July | 6,563 | 330 | 160 | 212 | - | - |
| August | 5,923 | 292 | 124 | 191 | - | - |
| September | 25,837 | 7,880 | 231 | 861 | - | - |
| Water year 1941-42 | 276,820 | 7,880 | 124 | 758 | 2.08 | 28.20 |

Peak discharge.- Apr. 8 (12:30 a.m.) 7,320 sec.-ft.; Sept. 28 (4 a.m.) 10,300 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of constructed gage-height graph and records for stations on Middle Branch of Moose River at Old Forge and near McKeever.
Note.- Stage-discharge relation affected by ice Dec. 21-23, Jan. 7 to Mar. 15. Backwater from logs May 2-25.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Middle Branch of Moose River at Old Forge, N. Y.

Location.- Staff gage, lat. 43°42'50", long. 74°58'10", at Old Forge, Herkimer County, 400 feet downstream from State dam.
Drainage area.- 52 square miles.
Records available.- November 1911 to September 1942.
Average discharge.- 30 years (1912-42), 103 second-feet (unadjusted).
Extremes (regulated).- Maximum daily discharge during year, 333 second-feet Apr. 22; minimum daily, 0.8 second-foot Oct. 4-6, 8, when gates in dam were closed.
1911-42: Maximum daily discharge, 862 second-feet Mar. 23, 1921, from rating curve extended above 450 second-feet by logarithmic plotting; minimum daily, about 0.1 second-foot many times during 1938-39, when gates in dam were closed.
Remarks.- Records good except those for periods of backwater or shifting control, which are fair. On days of changes in gate openings the discharge is averaged for intervals of a day from graph based on gage readings and record of gate operations. Gage read twice daily. Flow regulated by Fulton Chain of Lakes.
Correction.- The decrease in combined storage in Old Forge and Sixth Lake Reservoirs during water year 1940-41 has been corrected to 36,400,000 cubic feet (equivalent mean discharge, 1.15 second-feet; run-off, 0.30 inch). These figures supersede those published in Water-Supply Paper 924.

**Rating table, water year 1941-42, except periods of backwater (gage height, in feet, and discharge, in second-feet)**
**(Shifting-control method used Oct. 1-9, Aug. 26 to Sept. 30)**

| | | | | | |
|---|---|---|---|---|---|
| 1.6 | 0.3 | 2.2 | 27 | 3.2 | 191 |
| 1.7 | .9 | 2.4 | 45 | 3.4 | 256 |
| 1.8 | 1.8 | 2.6 | 67 | 3.6 | 333 |
| 1.9 | 4.6 | 2.8 | 97 | | |
| 2.0 | 10.4 | 3.0 | 138 | | |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 239 | 1.6 | 1.8 | 20 | 293 | 222 | 2.9 | 108 | 1.3 | 46 | 3.5 | 127 |
| 2 | 239 | 1.6 | 1.8 | 20 | 293 | 206 | 2.9 | 97 | 1.3 | 45 | 4.0 | 127 |
| 3 | 167 | 1.4 | 2.9 | 20 | 293 | 206 | 2.9 | 97 | 1.3 | 45 | 3.8 | 127 |
| 4 | .8 | 1.4 | 2.9 | 22 | 293 | 206 | 2.9 | 97 | 1.2 | 45 | 3.5 | 134 |
| 5 | .8 | 1.4 | 2.6 | 22 | 293 | 228 | 1.8 | 97 | 1.3 | 45 | 3.5 | 136 |
| 6 | .8 | 1.4 | 2.9 | 22 | 293 | 206 | 1.8 | 97 | 1.3 | 45 | 3.5 | 136 |
| 7 | .9 | 1.4 | 2.9 | 22 | 274 | 206 | 1.8 | 97 | 1.3 | 45 | 3.8 | 131 |
| 8 | .8 | 1.4 | 2.9 | 22 | 274 | 206 | 1.8 | 126 | 1.4 | 46 | 4.6 | 148 |
| 9 | 44 | 1.4 | 2.9 | 22 | 274 | 145 | 1.8 | 148 | 1.4 | 46 | 4.6 | 158 |
| 10 | 129 | 1.4 | 2.4 | 22 | 274 | 4.0 | 1.8 | 148 | 1.4 | 49 | 4.6 | 14 |
| 11 | 129 | 1.4 | 99 | 22 | 274 | 4.0 | 1.8 | 148 | 1.4 | 49 | 4.6 | 12 |
| 12 | 129 | 1.3 | 174 | 22 | 274 | 3.5 | .9 | 148 | 1.4 | 49 | 5.2 | 14 |
| 13 | 129 | 1.3 | 174 | 39 | 256 | 3.5 | .9 | 148 | 1.4 | 47 | 6.9 | 13 |
| 14 | 125 | 1.3 | 206 | 123 | 256 | 3.5 | .9 | 134 | 2.1 | 47 | 7.5 | 8.7 |
| 15 | 125 | 1.3 | 191 | 189 | 256 | 3.5 | 8.1 | 134 | 141 | 47 | 9.8 | 7.5 |
| 16 | 125 | 1.3 | 185 | 206 | 256 | 3.5 | 26 | 125 | 256 | 47 | 8.1 | 151 |
| 17 | 125 | 1.3 | 163 | 206 | 165 | 3.5 | 45 | 129 | 171 | 46 | 8.1 | 174 |
| 18 | 125 | 1.3 | 165 | 206 | 97 | 3.5 | 53 | 129 | 131 | 45 | 8.1 | 174 |
| 19 | 125 | 1.3 | 174 | 206 | 97 | 3.5 | 67 | 129 | 129 | 45 | 8.1 | 169 |
| 20 | 125 | 1.3 | 174 | 222 | 97 | 3.5 | 67 | 125 | 134 | 45 | 8.1 | 169 |
| 21 | 125 | 1.3 | 174 | 222 | 97 | 3.5 | 138 | 125 | 134 | 45 | 8.1 | 169 |
| 22 | 125 | 1.3 | 174 | 222 | 97 | 3.5 | 333 | 129 | 134 | 43 | 8.1 | 169 |
| 23 | 94 | 1.4 | 174 | 222 | 153 | 3.5 | 274 | 129 | 134 | 43 | 9.8 | 169 |
| 24 | 1.4 | 1.6 | 89 | 222 | 293 | 2.9 | 274 | 129 | 134 | 45 | 9.2 | 169 |
| 25 | 1.4 | 1.6 | 20 | 222 | 293 | 2.9 | 256 | 129 | 102 | 45 | 9.2 | 163 |
| 26 | 1.4 | 1.6 | 20 | 222 | 293 | 2.9 | 256 | 92 | 84 | 45 | 30 | 163 |
| 27 | 1.4 | 1.6 | 20 | 222 | 222 | 2.9 | 256 | .9 | 84 | 45 | 73 | 144 |
| 28 | 1.4 | 1.7 | 20 | 222 | 222 | 2.9 | 256 | .9 | 37 | 45 | 73 | 3.2 |
| 29 | 1.6 | 1.8 | 20 | 222 | - | 2.9 | 211 | .9 | 29 | 44 | 73 | 2.9 |
| 30 | 1.6 | 1.8 | 20 | 222 | - | 2.9 | 116 | 1.2 | 47 | 24 | 105 | 3.2 |
| 31 | 1.6 | - | 20 | 272 | - | 2.9 | - | 1.2 | - | 4.0 | 125 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,439.9 | 239 | 0.8 | 78.7 | - | - |
| November | 43.2 | 1.8 | 1.3 | 1.44 | - | - |
| December | 2,522.0 | 206 | 1.8 | 81.4 | - | - |
| Calendar year 1941 | 20,861.7 | 250 | .5 | 57.2 | 1.10 | 14.91 |
| January | 4,147 | 272 | 20 | 134 | - | - |
| February | 6,552 | 293 | 97 | 234 | - | - |
| March | 1,904.2 | 228 | 2.9 | 61.4 | - | - |
| April | 2,663.0 | 333 | .9 | 88.8 | - | - |
| May | 3,199.1 | 148 | .9 | 103 | - | - |
| June | 1,900.5 | 256 | 1.2 | 63.4 | - | - |
| July | 1,352.0 | 49 | 4.0 | 43.6 | - | - |
| August | 637.3 | 125 | 3.5 | 20.6 | - | - |
| September | 3,285.5 | 174 | 2.9 | 110 | - | - |
| Water year 1941-42 | 30,645.7 | 333 | .8 | 84.0 | 1.62 | 21.94 |

Note.- Shifting-control method used Oct. 1-9, Aug. 26 to Sept. 30. Backwater from North Branch of Moose River Apr. 8-11; from log on control Aug. 24.
Increase in combined storage in Old Forge and Sixth Lake Reservoirs during calendar year 1941, about 297,600,000 cubic feet (equivalent mean discharge, 9.44 sec.-ft.; run-off, 2.47 inches); increase during water year 1941-42, about 205,600,000 cubic feet (equivalent mean discharge, 6.52 sec.-ft.; run-off 1.70 inches).
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Middle Branch of Moose River near McKeever, N. Y.

Location.- Water-stage recorder, lat. 43°37'45", long. 75°04'55", half a mile upstream from confluence with South Branch and 1½ miles northeast of McKeever, Herkimer County.

Drainage area.- 148 square miles.

Records available.- October 1925 to September 1942.

Average discharge.- 17 years, 318 second-feet (unadjusted).

Extremes.- Maximum discharge during year, 1,260 second-feet Apr. 9; maximum gage height, 6.80 feet Jan. 16 (ice jam); minimum discharge, 54 second-feet (regulated) Aug. 27 (gage height, 2.12 feet).
1925-42: Maximum discharge, 2,100 second-feet Apr. 27, 1926; maximum gage height, 7.15 feet Jan. 18, 1938 (ice jam); minimum discharge, 36 second-feet Aug. 15, 1940.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Flow partly regulated by Fulton Chain of Lakes.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1-22 | | Oct. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 2.6 | 117 | 2.1 | 52 | 3.6 | 354 |
| 2.9 | 169 | 2.4 | 85 | 4.0 | 499 |
| 3.2 | 238 | 2.7 | 127 | 4.5 | 724 |
| 3.6 | 354 | 3.0 | 184 | 5.0 | 1,000 |
| | | 3.3 | 261 | 5.4 | 1,260 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 322 | 303 | 176 | 370 | 380 | 300 | 316 | 579 | 130 | 161 | 101 | 165 |
| 2 | 319 | 325 | 169 | 423 | 380 | 300 | 306 | 513 | 159 | 155 | 92 | 169 |
| 3 | 332 | 328 | 169 | 388 | 400 | 290 | 344 | 328 | 159 | 146 | 85 | 174 |
| 4 | 277 | 335 | 169 | 360 | 400 | 300 | 402 | 427 | 146 | 137 | 77 | 174 |
| 5 | 161 | 325 | 171 | 330 | 390 | 300 | 449 | 420 | 137 | 132 | 71 | 171 |
| 6 | 148 | 319 | *167 | 300 | 390 | 320 | 520 | 402 | 124 | 124 | 65 | 171 |
| 7 | 136 | 335 | 159 | 270 | 390 | 320 | 868 | 402 | 121 | 114 | 62 | 167 |
| 8 | 133 | 322 | 154 | 240 | 370 | 330 | 1,070 | 420 | 116 | 112 | 60 | 167 |
| 9 | 130 | 306 | 152 | 215 | 370 | 340 | 1,230 | 420 | 108 | 112 | 62 | 258 |
| 10 | 205 | 288 | 150 | 200 | 370 | 310 | 1,200 | 402 | 105 | 111 | 62 | 233 |
| 11 | 281 | 276 | 155 | 195 | *370 | 228 | 1,070 | 381 | 101 | 114 | 61 | 121 |
| 12 | 292 | 264 | 245 | *190 | 370 | 228 | 958 | 368 | 101 | 112 | 61 | 93 |
| 13 | 298 | 247 | 320 | 190 | 360 | 244 | 770 | 368 | 104 | 109 | 59 | 81 |
| 14 | 304 | 236 | 320 | 190 | 340 | 233 | 666 | 354 | 130 | 102 | 94 | 75 |
| 15 | 310 | 228 | 320 | 290 | 340 | 217 | 628 | 319 | 178 | 86 | 90 | 78 |
| 16 | 316 | 217 | 320 | 380 | 350 | 205 | 666 | 267 | 424 | 93 | 81 | 97 |
| 17 | 316 | 202 | 320 | 360 | 360 | 278 | 700 | 316 | 532 | 97 | 79 | 198 |
| 18 | 322 | 191 | 310 | 360 | 290 | 361 | 817 | 322 | 540 | 109 | 73 | 282 |
| 19 | 344 | 182 | 310 | 370 | 210 | 364 | 894 | 328 | 524 | 102 | 68 | 282 |
| 20 | 338 | 178 | 310 | 360 | 210 | 351 | 917 | 332 | 515 | 105 | 63 | 285 |
| 21 | 341 | a189 | 300 | 360 | 205 | 371 | 872 | 319 | 495 | 102 | 61 | 276 |
| 22 | 344 | a191 | 300 | 360 | 195 | 398 | 894 | 319 | 460 | 98 | 60 | 270 |
| 23 | 357 | a186 | 300 | 360 | 185 | 381 | 912 | 406 | 420 | 99 | 59 | 264 |
| 24 | 318 | a184 | 340 | 360 | 230 | *361 | 856 | 374 | 392 | 105 | 58 | 258 |
| 25 | 247 | a180 | 360 | 360 | 380 | 341 | 817 | 348 | 364 | 99 | 57 | 255 |
| 26 | 241 | a178 | 350 | 350 | 370 | 316 | 791 | 332 | 306 | 95 | 56 | 253 |
| 27 | 247 | a174 | 340 | 350 | 360 | 303 | 775 | 260 | 279 | 101 | 55 | 472 |
| 28 | 313 | 167 | 340 | 340 | 300 | 306 | 750 | 198 | 255 | 118 | 81 | 464 |
| 29 | 300 | 161 | 330 | 340 | - | 306 | 719 | 180 | 174 | 130 | 120 | 374 |
| 30 | 297 | 180 | 330 | 340 | - | 313 | 666 | 126 | 161 | 148 | 122 | 378 |
| 31 | 303 | - | 320 | 340 | - | 306 | - | 122 | - | 115 | 137 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 8,592 | 357 | 130 | 277 | - | - |
| November | 7,197 | 335 | 161 | 240 | - | - |
| December | 8,176 | 360 | 150 | 264 | - | - |
| Calendar year 1941 | 86,023 | 1,200 | 44 | 236 | 1.59 | 21.60 |
| January | 9,841 | 423 | 190 | 317 | - | - |
| February | 9,265 | 400 | 185 | 331 | - | - |
| March | 9,521 | 398 | 205 | 307 | - | - |
| April | 22,843 | 1,230 | 306 | 761 | - | - |
| May | 10,642 | 579 | 122 | 343 | - | - |
| June | 7,760 | 540 | 101 | 259 | - | - |
| July | 3,543 | 161 | 86 | 114 | - | - |
| August | 2,332 | 137 | 55 | 75.2 | - | - |
| September | 6,705 | 472 | 75 | 224 | - | - |
| Water year 1941-42 | 106,417 | 1,230 | 55 | 292 | 1.97 | 26.74 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage and records for station at Old Forge and Moose River at McKeever.
Note.- Stage-discharge relation affected by ice Dec. 10 to Jan. 1, Jan. 4 to Mar. 9.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour

## Independence River at Sperryville, N. Y.

Location.- Staff gage, lat. 43°46'30", long. 75°18'05", half a mile upstream from highway bridge at Sperryville, Lewis County, and 9½ miles east of Lowville.
Drainage area.- 85 square miles.
Records available.- December 1927 to June 1942 (discontinued).
Average discharge.- 13 years (1928-41), 164 second-feet.
Extremes.- Maximum discharge during period, 2,550 second-feet Apr. 7 (gage height, 6.9 feet, from graph based on gage readings); minimum observed, 35 second-feet Oct. 2 (gage height, 1.27 feet).
1927-42: Maximum discharge, 4,700 second-feet Oct. 6, 1932 (gage height, 9.2 feet, from graph based on gage readings), from rating curve extended above 1,310 second-feet; minimum, 14 second-feet Aug. 31 to Sept. 2, 1934, Sept. 2, 3, 1939; minimum gage height, 0.88 foot Aug. 31 to Sept. 2, 1934.
Remarks.- Records poor except those for Oct. 1 to Dec. 5 and Apr. 5-11, which are good. Gage read twice daily.

Rating table, Oct. 1, 1941, to June 30, 1942, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.2 | 29 | 2.0 | 123 | 3.6 | 552 |
| 1.4 | 46 | 2.3 | 160 | 4.3 | 837 |
| 1.6 | 67 | 2.6 | 249 | 5.1 | 1,260 |
| 1.8 | 92 | 3.0 | 357 | 6.2 | 1,980 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 38 | 357 | 141 | 155 | 98 | 76 | a360 | a200 | a205 | | | |
| 2 | 35 | 357 | 141 | 170 | 94 | 76 | a390 | a195 | a410 | | | |
| 3 | 46 | 372 | 150 | 225 | 90 | 76 | a560 | a175 | a280 | | | |
| 4 | 148 | 328 | 150 | 195 | 86 | 70 | a640 | a430 | a200 | | | |
| 5 | 191 | 300 | *123 | 165 | e2 | 64 | 665 | a390 | a170 | | | |
| 6 | 202 | 287 | 108 | 150 | 78 | *60 | S61 | a240 | a140 | | | |
| 7 | 191 | 262 | 96 | 130 | 74 | 58 | 1,880 | a250 | a118 | | | |
| 8 | 180 | 249 | 90 | 118 | 70 | 56 | 1,960 | a270 | a124 | | | |
| 9 | 160 | 225 | e2 | 108 | *64 | a440 | 1,100 | a205 | a102 | | | |
| 10 | 132 | 202 | 76 | *100 | 62 | a360 | 665 | a150 | a90 | | | |
| 11 | 107 | 180 | 68 | 94 | 60 | a320 | 450 | a120 | a74 | | | |
| 12 | 92 | 170 | 60 | e6 | 58 | a370 | a410 | a122 | a84 | | | |
| 13 | e2 | 150 | 56 | 86 | 58 | a300 | a450 | a250 | a165 | | | |
| 14 | d106 | 150 | 58 | S4 | 56 | a250 | a480 | a185 | a195 | | | |
| 15 | d170 | 141 | 56 | 82 | 54 | a185 | a840 | 123 | a140 | | | |
| 16 | d150 | a150 | 56 | S0 | 56 | a150 | a1,600 | a112 | a114 | | | |
| 17 | 132 | 150 | 58 | e0 | 90 | 372 | a1,250 | a290 | a92 | | | |
| 18 | d122 | 141 | 6S | S6 | 160 | a760 | a1,160 | a220 | a104 | | | |
| 19 | d140 | 141 | 80 | 104 | 140 | 705 | a920 | a150 | a10e | | | |
| 20 | 115 | 141 | 76 | 145 | 124 | a470 | a720 | a118 | a84 | | | |
| 21 | 132 | 141 | 68 | 160 | 112 | a400 | a660 | a116 | a82 | | | |
| 22 | 180 | 132 | 64 | 140 | 102 | a500 | a520 | a140 | a7S | | | |
| 23 | 249 | 123 | 70 | 135 | 96 | 357 | a520 | a330 | a70 | | | |
| 24 | 314 | 123 | 300 | 125 | 90 | a290 | a560 | a280 | a5e | | | |
| 25 | 372 | 123 | a1,200 | 120 | 86 | 237 | a560 | a205 | a52 | | | |
| 26 | a200 | 115 | a620 | 114 | e0 | a225 | a520 | a185 | a52 | | | |
| 27 | a225 | 115 | a420 | 108 | 76 | a280 | a430 | a145 | a46 | | | |
| 28 | a420 | a115 | a300 | 102 | 74 | a540 | a320 | a122 | a46 | | | |
| 29 | 357 | a115 | 230 | 98 | - | 328 | a250 | a102 | 49 | | | |
| 30 | 342 | a190 | 185 | 94 | - | a310 | a210 | a88 | a39 | | | |
| 31 | 342 | - | 150 | 92 | - | a300 | - | a150 | - | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 5,674 | 420 | 35 | 183 | 2.15 | 2.48 |
| November | 5,745 | 372 | 115 | 192 | 2.26 | 2.52 |
| December | 5,402 | 1,200 | 56 | 174 | 2.05 | 2.36 |
| Calendar year 1941 | 53,965 | 1,840 | 16 | 148 | 1.74 | 23.59 |
| January | 3,733 | 225 | 30 | 120 | 1.41 | 1.63 |
| February | 2,360 | 160 | 54 | 85.0 | 1.00 | 1.04 |
| March | 8,787 | 760 | 56 | 283 | 3.33 | 3.84 |
| April | 21,911 | 1,960 | 210 | 730 | 8.59 | 9.58 |
| May | 6,058 | 430 | 86 | 195 | 2.29 | 2.64 |
| June | 3,561 | 410 | 39 | 119 | 1.40 | 1.56 |
| July | - | - | - | - | - | - |
| August | - | - | - | - | - | - |
| September | - | - | - | - | - | - |
| Water year | - | - | - | - | - | - |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Deer River at Copenhagen and East Branch of Fish Creek at Taberg.
d Doubtful gage-height record; discharge computed on same basis as for periods of no gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 6-24, Dec. 29 to Jan. 19, Jan. 22 to Mar. 8 (no gage-height record Dec. 11-24, Dec. 29 to Jan. 4, Jan. 6-9, 11, 25, Feb. 7, 8, 10-16, 22-25, Mar. 5, 7).
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Independence River at Donnattsburg, N. Y.

Location.- Wire-weight gage, lat. 43°44'50", long. 75°20'05", at highway bridge at Donnattsburg, Lewis County, 1¼ miles below Chase Lake Outlet, and 5 miles above mouth.

Drainage area.- 91.7 square miles.

Records available.- July to September 1942. December 1927 to June 1942 at site 3½ miles upstream, published as Independence River at Sperryville, N. Y. (drainage area, 85 square miles).

Extremes.- Maximum discharge observed during period, 1,170 second-feet Sept. 28 (gage height, 6.09 feet); minimum observed, 33 second-feet Aug. 31 (gage height, 3.03 feet).

Remarks.- Records good except those for Sept. 13-30, which are fair. Gage read twice daily.

Rating table, July 1 to Sept. 30, 1942 (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 3.0 | 31 | 3.6 | 109 | 4.6 | 415 |
| 3.2 | 48 | 3.9 | 178 | 5.1 | 640 |
| 3.4 | 73 | 4.2 | 267 | 5.9 | 1,060 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | 57 | 109 | 37 |
| 2 | | | | | | | | | | 55 | 105 | 35 |
| 3 | | | | | | | | | | 50 | 87 | 40 |
| 4 | | | | | | | | | | 44 | 66 | 38 |
| 5 | | | | | | | | | | 43 | 57 | 38 |
| 6 | | | | | | | | | | 43 | 44 | 38 |
| 7 | | | | | | | | | | 43 | 43 | 35 |
| 8 | | | | | | | | | | 43 | 37 | 35 |
| 9 | | | | | | | | | | 43 | 44 | 49 |
| 10 | | | | | | | | | | 41 | 44 | 94 |
| 11 | | | | | | | | | | 46 | 46 | 107 |
| 12 | | | | | | | | | | 42 | 44 | 80 |
| 13 | | | | | | | | | | 42 | 42 | 63 |
| 14 | | | | | | | | | | 39 | 118 | 55 |
| 15 | | | | | | | | | | 36 | 205 | 49 |
| 16 | | | | | | | | | | 35 | 181 | 70 |
| 17 | | | | | | | | | | 34 | 105 | 103 |
| 18 | | | | | | | | | | 39 | 76 | 87 |
| 19 | | | | | | | | | | 41 | 62 | 66 |
| 20 | | | | | | | | | | 41 | 48 | 60 |
| 21 | | | | | | | | | | 37 | 44 | 58 |
| 22 | | | | | | | | | | 36 | 41 | 55 |
| 23 | | | | | | | | | | 39 | 42 | 50 |
| 24 | | | | | | | | | | 40 | 37 | 46 |
| 25 | | | | | | | | | | 39 | 34 | 47 |
| 26 | | | | | | | | | | 37 | 34 | 49 |
| 27 | | | | | | | | | | 47 | 34 | 242 |
| 28 | | | | | | | | | | 66 | 37 | 1,060 |
| 29 | | | | | | | | | | 88 | 38 | 705 |
| 30 | | | | | | | | | | 98 | 37 | 337 |
| 31 | | | | | | | | | | 94 | 33 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | | | | | | |
| November | | | | | | |
| December | | | | | | |
| Calendar year | | | | | | |
| January | - | - | - | - | - | - |
| February | - | - | - | - | - | - |
| March | - | - | - | - | - | - |
| April | - | - | - | - | - | - |
| May | - | - | - | - | - | - |
| June | - | - | - | - | - | - |
| July | 1,478 | 98 | 34 | 47.7 | 0.520 | 0.60 |
| August | 1,974 | 205 | 33 | 63.7 | .695 | .80 |
| September | 3,828 | 1,060 | 35 | 128 | 1.40 | 1.56 |
| Water year | - | - | - | - | - | - |

Time basis: Eastern war time. To convert war time to standard time, subtract 1 hour.

## Stillwater Reservoir near Beaver River, N. Y.

Location.- Float-tape gage, lat. 43°53'50", long. 75°03'05", at Stillwater Reservoir Dam, 7½ miles west of Beaver River post office, Herkimer County. Datum of gage is at mean sea level, adjustment of 1912.

Drainage area.- 172 square miles.

Records available.- February 1925 to September 1942.

Extremes.- Maximum elevation during year, 1,679.41 feet June 14 (contents, 4,655,000,000 cubic feet); minimum, 1,665.65 feet Mar. 8 (contents, 1,535,000,000 cubic feet).
1925-42: Maximum elevation, 1,679.46 feet May 4, 1929 (contents, 4,669,000,000 cubic feet); minimum since first filling, 1,644.80 feet Mar. 25-27, 1940 (reservoir empty).

Remarks.- Reservoir originally formed about 1885; enlarged at various times and in 1924 enlarged to a usable capacity of 4,623,000,000 cubic feet between elevations 1,650.3 feet and 1,679.3 feet (high flow line) above mean sea level. Elevation of gate sill of lowest outlet, 1,642.3 feet. Capacity below elevation 1,650.3 feet, about 90,000,000 cubic feet. Reservoir is used to regulate flow of Beaver and Black Rivers for control of floods, for power development, and for general welfare of the public. Records of contents given herein represent those above elevation 1,650.3 feet. Daily observations are made about 8 a.m.

Cooperation.- Record furnished by Board of Black River Regulating District.

Elevation, in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 68.82 | 70.61 | 73.42 | 73.22 | 70.67 | 66.43 | 71.28 | 79.38 | 79.33 | 79.01 | 75.71 | 71.75 |
| 2 | 68.70 | 70.79 | 73.43 | 73.27 | 70.54 | 66.30 | 71.47 | 79.29 | 79.33 | 78.95 | 75.66 | 71.58 |
| 3 | 68.57 | 70.98 | 73.36 | 73.34 | 70.42 | 66.19 | 71.71 | 79.30 | 79.31 | 78.86 | 75.59 | 71.42 |
| 4 | 68.57 | 71.20 | 73.29 | 73.48 | 70.26 | 66.11 | 72.01 | 79.34 | 79.32 | 78.80 | 75.48 | 71.27 |
| 5 | 68.63 | 71.35 | 73.22 | 73.58 | 70.08 | 65.99 | 72.33 | 79.34 | 79.33 | 78.76 | 75.33 | 71.09 |
| 6 | 68.90 | 71.50 | 73.10 | 73.59 | 69.91 | 65.80 | 72.75 | 79.35 | 79.33 | 78.66 | 75.17 | 70.95 |
| 7 | 68.92 | 71.69 | 73.16 | 73.61 | 69.74 | 65.77 | 73.54 | 79.34 | 79.32 | 78.58 | 75.00 | 70.78 |
| 8 | 68.90 | 71.85 | 73.14 | 73.59 | 69.60 | 65.65 | 74.63 | 79.36 | 79.33 | 78.46 | 74.84 | 70.59 |
| 9 | 68.95 | 72.01 | 73.06 | 73.51 | 69.45 | 65.67 | 75.29 | 79.33 | 79.31 | 78.36 | 74.71 | 70.49 |
| 10 | 68.96 | 72.15 | 72.98 | 73.40 | 69.29 | 66.00 | 75.76 | 79.27 | 79.28 | 78.26 | 74.53 | 70.41 |
| 11 | 68.98 | 72.27 | 72.91 | 73.29 | 69.12 | 66.26 | 76.15 | 79.27 | 79.26 | 78.16 | 74.36 | 70.32 |
| 12 | 69.05 | 72.40 | 72.77 | 73.18 | 68.93 | 66.56 | 76.46 | 79.31 | 79.29 | 78.04 | 74.21 | 70.18 |
| 13 | 69.09 | 72.51 | 72.66 | 73.07 | 68.76 | 66.81 | 76.74 | 79.35 | 79.25 | 77.93 | 74.06 | 70.20 |
| 14 | 69.12 | 72.60 | 72.75 | 72.95 | 68.58 | 67.01 | 76.98 | 79.35 | 79.35 | 77.79 | 73.99 | 70.23 |
| 15 | 69.23 | 72.72 | 72.72 | 72.83 | 68.41 | 67.22 | 77.24 | 79.34 | 79.37 | 77.64 | 74.03 | 70.18 |
| 16 | 69.22 | 72.81 | 72.62 | 72.73 | 68.23 | 67.38 | 77.74 | 79.31 | 79.36 | 77.52 | 74.03 | 70.18 |
| 17 | 69.19 | 72.93 | 72.51 | 72.66 | 68.11 | 67.61 | 78.32 | 79.34 | 79.28 | 77.36 | 74.08 | 70.11 |
| 18 | 69.13 | 73.01 | 72.36 | 72.46 | 67.98 | 67.98 | 78.86 | 79.33 | 79.32 | 77.22 | 73.93 | 69.98 |
| 19 | 69.15 | 73.03 | 72.22 | 72.36 | 67.85 | 68.38 | 79.28 | 79.32 | 79.32 | 77.08 | 73.82 | 69.84 |
| 20 | 69.15 | 73.05 | 72.08 | 72.26 | 67.71 | 68.64 | 79.26 | 79.29 | 79.36 | 76.95 | 73.61 | 69.72 |
| 21 | 69.12 | 73.11 | 72.06 | 72.16 | 67.56 | 68.93 | 79.28 | 79.29 | 79.39 | 76.82 | 73.47 | 69.59 |
| 22 | 69.09 | 73.19 | 71.98 | 72.04 | 67.40 | 69.21 | 79.27 | 79.28 | 79.31 | 76.67 | 73.31 | 69.44 |
| 23 | 69.03 | 73.23 | 71.81 | 71.89 | 67.24 | 69.48 | 79.31 | 79.35 | 79.30 | 76.60 | 73.17 | 69.28 |
| 24 | 69.11 | 73.25 | 71.78 | 71.78 | 67.07 | 69.71 | 79.36 | 79.36 | 79.27 | 76.48 | 73.03 | 69.12 |
| 25 | 69.30 | 73.29 | 72.22 | 71.66 | 66.90 | 69.90 | 79.38 | 79.33 | 79.25 | 76.37 | 72.87 | 68.99 |
| 26 | 69.49 | 73.29 | 72.60 | 71.51 | 66.74 | 70.08 | 79.31 | 79.32 | 79.23 | 76.28 | 72.70 | 68.84 |
| 27 | 69.61 | 73.33 | 72.86 | 71.38 | 66.63 | 70.24 | 79.31 | 79.28 | 79.20 | 76.18 | 72.55 | 68.90 |
| 28 | 69.85 | 73.34 | 73.10 | 71.24 | 66.53 | 70.41 | 79.31 | 79.30 | 79.16 | 76.05 | 72.38 | 69.82 |
| 29 | 70.10 | 73.34 | 73.24 | 71.10 | - | 70.60 | 79.30 | 79.30 | 79.12 | 75.91 | 72.26 | 70.32 |
| 30 | 70.26 | 73.39 | 73.28 | 70.98 | - | 70.82 | 79.33 | 79.30 | 79.04 | 75.83 | 72.09 | 70.56 |
| 31 | 70.43 | - | 73.26 | 70.84 | - | 71.05 | - | 79.34 | - | 75.72 | 71.93 | - |

Elevation and contents, water year October 1941 to September 1942

| Date (midnight) | Elevation (feet)* | Contents (millions of cubic feet) | Change in contents during month (equivalent, second-feet) |
|---|---|---|---|
| Sept.30 | 68.87 | 2,116 | - |
| Oct. 31 | 70.55 | 2,454 | +126 |
| Nov. 30 | 73.41 | 3,084 | +243 |
| Dec. 31 | 73.23 | 3,043 | -15.3 |
| Calendar year 1941 | - | - | +24.2 |
| Jan. 31 | 70.73 | 2,491 | -206 |
| Feb. 28 | 66.46 | 1,673 | -338 |
| Mar. 31 | 71.20 | 2,591 | +343 |
| Apr. 30 | 79.37 | 4,643 | +792 |
| May 31 | 79.33 | 4,632 | -4.1 |
| June 30 | 79.02 | 4,542 | -34.7 |
| July 31 | 75.71 | 3,644 | -335 |
| Aug. 31 | 71.81 | 2,723 | -344 |
| Sept.30 | 70.67 | 2,479 | -94.1 |
| Water year 1941-42 | - | - | +11.5 |

* Reservoir elevations at midnight obtained by interpolation.
Note.- Add 1,600 feet to obtain elevations above mean sea level.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Beaver River below Stillwater Dam, near Beaver River, N. Y.

Location.- Float-tape gage, lat. 43°53'50", long. 75°03'05", at Stillwater Dam, 7½ miles west of Beaver River post office, Herkimer County.

Drainage area.- 172 square miles.

Records available.- May 1908 to September 1942.

Average discharge.- 34 years, 356 second-feet (unadjusted).

Extremes.- Maximum daily discharge during year, 1,310 second-feet (regulated) Apr. 25; minimum daily, 12 second-feet (regulated) Mar. 10-19.
1908-42: Maximum discharge, 3,700 second-feet May 3, 1926; practically no flow at times when gates in dam are closed.

Remarks.- Records good. Flow regulated by Stillwater Reservoir. (See preceding page.) Discharge determined from ratings for gates and spillway at Stillwater Dam. Gage read once daily.

Cooperation.- Records of gate openings and reservoir elevations furnished by Board of Black River Regulating District.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 464 | 13 | 217 | 411 | 575 | 388 | 13 | 753 | 247 | 486 | 282 | 538 |
| 2 | 463 | 13 | 386 | 413 | 573 | 386 | 13 | 512 | 300 | 486 | 257 | 535 |
| 3 | 418 | 13 | 504 | 296 | 572 | 386 | 13 | 417 | 222 | 426 | 343 | 535 |
| 4 | 202 | 13 | 503 | 131 | 570 | 384 | 13 | 426 | 197 | 248 | 467 | 533 |
| 5 | 203 | 13 | 503 | 414 | 567 | 384 | 13 | 426 | 200 | 273 | 569 | 530 |
| 6 | 204 | 13 | 359 | 414 | 567 | 384 | 14 | 430 | 200 | 483 | 568 | 530 |
| 7 | 204 | 13 | 152 | 414 | 564 | 382 | 14 | 442 | 197 | 482 | 566 | 528 |
| 8 | 204 | 13 | 503 | 467 | 562 | 382 | 14 | 507 | 200 | 480 | 566 | 525 |
| 9 | 204 | 13 | 501 | 604 | 561 | 179 | 14 | 493 | 195 | 480 | 563 | 525 |
| 10 | 204 | 13 | 501 | 603 | 559 | 12 | 14 | 390 | 194 | 479 | 563 | 525 |
| 11 | 204 | 13 | 501 | 601 | 556 | 12 | 14 | 231 | 194 | 476 | 561 | 523 |
| 12 | 204 | 13 | 499 | 601 | 556 | 12 | 14 | 225 | 194 | 476 | 560 | 216 |
| 13 | 204 | 14 | 372 | 598 | 553 | 12 | 15 | 357 | 194 | 519 | 558 | 13 |
| 14 | 204 | 14 | 135 | 598 | 551 | 12 | 15 | 357 | 548 | 545 | 424 | 220 |
| 15 | 337 | 14 | 499 | 595 | 550 | 12 | 15 | 353 | 824 | 545 | 252 | 313 |
| 16 | 410 | 14 | 548 | 595 | 548 | 12 | 17 | 347 | 651 | 544 | 14 | 433 |
| 17 | 410 | 56 | 606 | 595 | 545 | 12 | 21 | 353 | 460 | 540 | 363 | 520 |
| 18 | 409 | 215 | 604 | 592 | 545 | 12 | 23 | 350 | 347 | 540 | 558 | 520 |
| 19 | 410 | 215 | 602 | 592 | 543 | 12 | 1,010 | 347 | 350 | 538 | 556 | 518 |
| 20 | 410 | 215 | 428 | 592 | 542 | 13 | 1,260 | 344 | 361 | 538 | 553 | 517 |
| 21 | 409 | 215 | 185 | 589 | 540 | 13 | 1,120 | 344 | 566 | 536 | 553 | 515 |
| 22 | 408 | 216 | 600 | 589 | 539 | 13 | 958 | 331 | 443 | 536 | 551 | 515 |
| 23 | 408 | 216 | 598 | 589 | 537 | 13 | 879 | 405 | 344 | 486 | 550 | 515 |
| 24 | 203 | 216 | 427 | 586 | 534 | 13 | 1,010 | 503 | 344 | 391 | 548 | 510 |
| 25 | 13 | 216 | 13 | 586 | 534 | 13 | 1,310 | 398 | 344 | 391 | 548 | 510 |
| 26 | 13 | 216 | 14 | 584 | 446 | 13 | 1,010 | 347 | 344 | 391 | 545 | 374 |
| 27 | 13 | 216 | 14 | 583 | 390 | 13 | 800 | 244 | 344 | 504 | 545 | 13 |
| 28 | 13 | 216 | 14 | 581 | 388 | 13 | 745 | 194 | 343 | 576 | 543 | 66 |
| 29 | 13 | 216 | 204 | 578 | - | 13 | 506 | 194 | 425 | 576 | 543 | 13 |
| 30 | 13 | 217 | 413 | 578 | - | 13 | 370 | 194 | 486 | 500 | 540 | 13 |
| 31 | 13 | - | 413 | 576 | - | 13 | - | 203 | - | 345 | 540 | - |

| Month | Observed | | | | * | Adjusted for change in contents* | | |
|---|---|---|---|---|---|---|---|---|
| | Second-foot-days | Maximum | Minimum | Mean | | Mean | Per square mile | Run-off in inches |
| October | 7,491 | 464 | 13 | 242 | | 368 | 2.14 | 2.47 |
| November | 3,073 | 217 | 13 | 102 | | 345 | 2.01 | 2.24 |
| December | 11,818 | 606 | 13 | 381 | | 366 | 2.13 | 2.46 |
| Calendar year 1941 | 98,805 | 606 | 10 | 271 | | 295 | 1.72 | 23.28 |
| January | 16,545 | 604 | 131 | 534 | | 328 | 1.91 | 2.20 |
| February | 15,067 | 575 | 388 | 538 | | 200 | 1.16 | 1.21 |
| March | 3,531 | 388 | 12 | 114 | | 457 | 2.66 | 3.07 |
| April | 11,247 | 1,310 | 13 | 375 | | 1,167 | 6.78 | 7.56 |
| May | 11,417 | 753 | 194 | 368 | | 364 | 2.12 | 2.44 |
| June | 10,258 | 824 | 194 | 342 | | 307 | 1.78 | 1.99 |
| July | 14,816 | 576 | 248 | 478 | | 143 | .831 | .96 |
| August | 15,149 | 569 | 14 | 489 | | 145 | .843 | .97 |
| September | 12,141 | 538 | 13 | 405 | | 311 | 1.81 | 2.02 |
| Water year 1941-42 | 132,553 | 1,310 | 12 | 363 | | 375 | 2.18 | 29.59 |

* Adjusted for change in contents in Stillwater Reservoir.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Beaver River at Croghan, N. Y.

Location.- Water-stage recorder, lat. 43°53'50", long. 75°24'15", about 1,000 feet upstream from Black Creek and half a mile west of Croghan, Lewis County.
Drainage area.- 294 square miles.
Records available.- September 1930 to September 1942.
Average discharge.- 12 years, 528 second-feet.
Extremes (regulated).- Maximum discharge during year, 1,810 second-feet Apr. 22 (gage height, 4.43 feet); minimum, 58 second-feet Jan. 18 (gage height, 1.15 feet); minimum daily, 81 second-feet May 31.
1930-42: Maximum discharge, 3,390 second-feet Apr. 19, 1933 (gage height, 5.80 feet); minimum, about 18 second-feet Feb. 24, 1936 (gage height, 0.89 foot); minimum daily, 35 second-feet May 13, 1934.
Remarks.- Records excellent except those for periods of ice effect, which are good. Flow of Beaver River almost completely regulated by Stillwater Reservoir. (See p. 152.) Between Stillwater Dam and this station flow is further regulated and controlled by nine power-plant ponds. Diurnal fluctuation at low and medium stages.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Dec. 24 | | | | Dec. 25 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.4 | 89 | 2.4 | 406 | 1.3 | 81 | 2.1 | 290 | 3.3 | 910 |
| 1.5 | 110 | 2.9 | 656 | 1.5 | 121 | 2.4 | 506 | 3.8 | 1,270 |
| 1.7 | 161 | 3.5 | 1,050 | 1.8 | 196 | 2.8 | 800 | 4.4 | 1,780 |
| 2.0 | 254 | | | | | | | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 601 | 274 | 220 | 430 | 229 | 154 | 515 | 22 | 381 | 608 | 300 | 681 |
| 2 | 494 | 120 | 448 | 472 | 739 | 514 | 577 | 786 | 381 | 745 | 102 | 548 |
| 3 | 509 | 252 | 531 | 774 | 720 | 438 | 431 | 224 | 380 | 628 | 433 | 771 |
| 4 | 495 | 272 | 529 | 771 | 700 | 412 | 390 | 600 | 380 | 241 | 679 | 700 |
| 5 | 137 | 356 | *555 | 761 | 680 | *413 | 165 | 803 | 551 | 122 | 563 | 682 |
| 6 | 501 | 411 | 597 | 755 | 729 | 597 | 361 | 918 | 435 | 316 | 740 | 185 |
| 7 | 480 | 490 | 170 | 560 | *713 | 426 | 831 | 558 | 97 | 367 | 694 | 327 |
| 8 | 449 | 303 | 543 | 500 | *198 | 139 | 1,280 | 764 | 264 | 514 | 444 | 294 |
| 9 | 448 | 132 | 575 | *500 | 735 | 1,090 | 1,130 | 697 | 369 | 527 | 99 | 526 |
| 10 | 413 | 234 | 728 | 520 | 720 | 689 | 1,110 | 366 | 334 | 446 | 364 | 711 |
| 11 | 317 | 275 | 720 | 270 | 700 | 648 | 1,030 | 744 | 435 | 358 | 594 | 767 |
| 12 | 108 | 358 | 720 | 540 | 640 | 643 | 745 | 748 | 520 | 147 | 727 | 510 |
| 13 | 321 | 337 | 720 | 720 | 660 | 994 | 549 | 768 | 376 | 281 | 759 | 196 |
| 14 | 248 | 279 | 251 | 660 | 660 | 905 | 823 | 754 | 94 | 393 | 700 | 534 |
| 15 | 268 | 262 | 538 | 580 | 225 | 623 | 872 | 726 | 365 | 418 | 591 | 485 |
| 16 | 373 | 126 | 648 | 720 | 540 | 896 | 894 | 473 | 756 | 707 | 172 | 503 |
| 17 | 415 | 267 | 738 | 720 | 740 | 1,200 | 875 | 7 | 761 | 704 | 608 | 520 |
| 18 | 571 | 259 | 743 | 230 | 740 | 1,100 | 1,040 | 3 | 746 | 721 | 702 | 734 |
| 19 | 228 | 266 | 750 | 740 | 740 | 857 | 1,160 | 662 | 642 | 203 | 584 | 599 |
| 20 | 494 | 263 | 743 | 760 | 720 | 723 | 974 | 662 | 698 | 540 | 633 | 210 |
| 21 | 733 | 279 | 245 | 760 | 720 | 453 | 1,400 | 9 | 257 | 734 | 695 | 500 |
| 22 | 743 | 313 | 520 | 760 | 350 | 211 | 1,320 | 0 | 454 | 732 | 482 | 668 |
| 23 | 746 | 307 | 569 | 684 | 700 | 423 | 1,450 | 772 | 376 | 741 | 96 | 739 |
| 24 | 761 | 504 | 1,020 | 688 | 720 | 439 | 1,770 | 41 | 461 | 732 | 364 | 670 |
| 25 | 488 | 499 | 831 | 738 | 660 | 422 | 1,770 | 645 | 514 | 496 | 609 | 749 |
| 26 | 162 | 448 | 896 | 727 | 660 | 353 | 1,760 | 744 | 488 | 117 | 664 | 414 |
| 27 | 273 | 388 | 812 | 676 | 700 | 295 | 1,210 | 753 | 473 | 449 | 742 | 130 |
| 28 | 427 | 466 | 760 | 731 | 536 | 288 | 1,030 | 679 | 366 | 714 | 754 | 594 |
| 29 | 308 | 337 | 500 | 700 | - | 122 | 1,190 | 735 | 553 | 753 | 717 | 783 |
| 30 | 276 | 140 | 640 | 720 | - | 311 | 1,150 | 280 | 563 | 598 | 160 | 574 |
| 31 | 279 | - | 620 | 731 | - | 328 | - | 81 | - | 580 | 355 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 13,066 | 761 | 108 | 421 | - | - |
| November | 9,217 | 504 | 120 | 307 | - | - |
| December | 18,882 | 1,020 | 170 | 609 | - | - |
| Calendar year 1941 | 154,672 | 1,370 | 77 | 424 | 1.44 | 19.56 |
| January | 19,898 | 774 | 230 | 642 | - | - |
| February | 17,574 | 740 | 198 | 628 | - | - |
| March | 17,506 | 1,200 | 122 | 565 | - | - |
| April | 29,802 | 1,770 | 1[illegible] | 993 | - | - |
| May | 19,669 | 922 | [illegible] | 634 | - | - |
| June | 13,470 | 761 | 94 | 449 | - | - |
| July | 15,634 | 753 | 117 | 504 | - | - |
| August | 16,146 | 759 | 96 | 521 | - | - |
| September | 16,304 | 783 | 130 | 543 | - | - |
| Water year 1941-42 | 207,168 | 1,770 | 81 | 568 | 1.93 | 26.19 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 11-13, 21, 22, Dec. 28 to Jan. 1, Jan. 7-22, 29, 30, Feb. 3-5, 10-27.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Deer River at Copenhagen, N. Y.

Location.- Water-stage recorder, lat. 43°53'55", long. 75°39'40", at power plant half a mile northeast of Copenhagen, Lewis County.

Drainage area.- 89 square miles.

Records available.- September 1929 to September 1942.

Average discharge.- 13 years, 208 second-feet.

Extremes.- Maximum discharge during year, 3,190 second-feet Apr. 7 (gage height, 6.34 feet); maximum gage height, 9.07 feet (ice jam) Dec. 24; minimum, 1.5 second-feet (regulated) July 14 (gage height, 0.24 foot); minimum daily, 4.3 second-feet (regulated) July 16.

1929-42: Maximum discharge, 14,400 second-feet Sept. 1, 1941 (gage height, 12.08 feet), by computation of flow over dam; minimum, 0.7 second-foot (regulated) Aug. 12, 1940 (gage height, 0.17 foot); minimum daily, 0.8 second-foot (regulated) July 22 to Aug. 2, 1933.

Remarks.- Records good except those for periods of ice effect, which are fair. Diurnal fluctuation at low and medium stages caused by power plant.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Nov. 20 | | | | | | Nov. 21 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 35 | 1.5 | 107 | 3.0 | 372 | 0.3 | 2.3 | 0.8 | 21 | 1.5 | 86 | 3.5 | 807 |
| 1.1 | 45 | 1.8 | 173 | 3.5 | 822 | .4 | 4.4 | .9 | 28 | 1.7 | 121 | 4.0 | 1,122 |
| 1.2 | 57 | 2.2 | 276 | 4.2 | 1,[illegible]0 | .5 | 7.3 | 1.0 | 36 | 2.0 | 196 | 4.5 | 1,475 |
| 1.3 | 71 | 2.6 | 408 | | | .6 | 11 | 1.1 | 43 | 2.5 | 358 | 5.0 | 1,875 |
| | | | | | | .7 | 16 | 1.3 | 62 | 3.0 | 555 | 5.7 | 2,520 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 44 | 360 | 181 | 164 | 91 | 66 | 589 | 129 | 103 | 13 | 121 | 15 |
| 2 | 44 | 390 | 186 | 380 | 102 | 68 | 735 | 128 | 163 | 14 | 64 | 16 |
| 3 | 69 | 429 | 231 | 460 | 100 | 68 | 1,080 | 119 | 108 | 11 | 40 | 17 |
| 4 | 460 | 321 | 200 | 418 | 89 | 67 | 1,240 | 461 | 77 | 8.1 | 27 | 15 |
| 5 | 323 | 227 | *169 | 278 | 80 | 72 | 1,710 | 366 | 66 | 7.1 | 18 | 15 |
| 6 | 224 | 171 | 148 | 179 | 71 | 76 | 1,700 | 194 | 52 | 10 | 14 | 15 |
| 7 | 148 | 501 | 109 | 93 | *70 | 76 | 2,520 | 179 | 44 | 7.7 | 14 | 13 |
| 8 | 140 | 373 | 91 | *112 | *73 | 87 | 1,560 | 185 | 43 | 6.6 | 13 | 13 |
| 9 | 118 | 245 | 97 | 130 | 78 | 960 | 902 | 142 | 36 | 6.6 | 14 | 28 |
| 10 | 110 | 200 | 67 | 108 | 70 | 747 | 587 | 97 | 29 | 8 | 14 | 63 |
| 11 | 208 | 219 | 63 | 94 | 64 | 730 | 394 | 73 | 24 | 8.5 | 17 | 66 |
| 12 | 168 | 233 | 60 | 8[illegible] | 60 | 999 | 362 | 83 | 32 | 7.5 | 17 | 50 |
| 13 | 138 | 265 | 56 | 7[illegible] | 56 | 858 | 436 | 227 | 71 | 6.6 | 15 | 47 |
| 14 | 199 | 562 | 56 | 72 | 54 | 755 | 462 | 144 | 70 | 4.6 | 16 | 39 |
| 15 | 378 | 604 | 64 | 76 | 52 | 614 | 940 | 85 | 48 | 4.6 | 50 | 31 |
| 16 | 224 | 609 | 66 | 7[illegible] | 60 | 515 | 1,670 | 70 | 36 | 4.3 | 50 | 34 |
| 17 | 170 | 407 | 74 | 7[illegible] | 112 | 1,350 | 1,170 | 191 | 29 | 4.4 | 75 | 38 |
| 18 | 150 | 274 | 82 | 82 | 430 | 1,640 | 1,130 | 140 | 31 | 17 | 44 | 31 |
| 19 | 258 | 246 | 102 | 210 | 390 | 963 | 964 | 86 | 34 | 19 | 28 | 24 |
| 20 | 188 | 423 | 98 | 400 | 310 | 678 | 762 | 66 | 26 | 13 | 20 | 122 |
| 21 | 149 | 723 | 82 | 393 | 240 | 606 | 673 | 50 | 23 | 12 | 16 | 140 |
| 22 | 132 | 379 | 74 | 305 | 195 | 721 | 465 | 63 | 22 | 9 | 16 | 66 |
| 23 | 417 | 289 | 82 | 236 | 155 | 565 | 421 | 131 | 20 | 16 | 14 | 46 |
| 24 | 532 | 302 | 1,500 | 184 | 130 | 440 | 437 | 115 | 16 | 20 | 14 | 48 |
| 25 | 425 | 201 | 1,840 | 159 | 108 | e362 | 419 | 98 | 14 | 14 | 14 | 78 |
| 26 | 225 | 152 | 838 | 142 | 92 | 337 | 377 | 83 | 14 | 9.7 | 14 | 88 |
| 27 | 630 | 148 | 597 | 125 | 82 | 424 | 312 | 64 | 11 | 9 | 13 | 819 |
| 28 | 1,200 | 148 | 386 | 110 | 74 | 518 | 231 | 55 | 11 | 23 | 13 | 834 |
| 29 | 508 | 150 | 263 | 98 | - | 482 | 166 | 46 | 12 | 44 | 13 | 366 |
| 30 | 311 | 347 | 145 | 91 | - | 460 | 136 | 41 | 8.9 | 86 | 14 | 170 |
| 31 | 309 | - | 166 | 84 | - | 450 | - | 93 | - | 66 | 15 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 8,599 | 1,200 | 44 | 277 | 3.11 | 3.58 |
| November | 9,898 | 723 | 148 | 330 | 3.71 | 4.14 |
| December | 8,173 | 1,840 | 56 | 264 | 2.97 | 3.42 |
| Calendar year 1941 | 74,007.0 | 4,010 | 1.2 | 203 | 2.28 | 30.91 |
| January | 5,493 | 460 | 72 | 177 | 1.99 | 2.29 |
| February | 3,488 | 430 | 52 | 125 | 1.40 | 1.46 |
| March | 16,754 | 1,640 | 66 | 540 | 6.07 | 7.00 |
| April | 24,550 | 2,520 | 136 | 818 | 9.19 | 10.25 |
| May | 4,004 | 461 | 41 | 129 | 1.45 | 1.67 |
| June | 1,273.9 | 163 | 8.9 | 42.5 | .478 | .53 |
| July | 490.1 | 86 | 4.3 | 15.8 | .178 | .21 |
| August | 827 | 121 | 13 | 26.7 | .300 | .35 |
| September | 3,365 | 834 | 13 | 112 | 1.26 | 1.41 |
| Water year 1941-42 | 86,915.0 | 2,520 | 4.3 | 238 | 2.67 | 36.31 |

Peak discharge.- Apr. 5 (8:15 p.m.) 2,420 sec.-ft.; Apr. 7 (4 a.m.) 3,190 sec.-ft.; Apr. 16 (7:30 a.m.) 1,890 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 12-24, Jan. 2, Jan. 8-19, Feb. 10 to Mar. 1, Mar. 9, 17.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## East Branch of Oswegatchie River at Cranberry Lake, N. Y.

Location.- Water-stage recorder, lat. 44°13'15", long. 74°51'00", in village of Cranberry Lake, St. Lawrence County, about 900 feet downstream from dam at outlet of Cranberry Lake.

Drainage area.- 144 square miles.

Records available.- May 1923 to September 1942.

Average discharge.- 19 years, 287 second-feet.

Extremes (regulated).- Maximum discharge during year, 1,280 second-feet Apr. 20 (gage height, 7.05 feet); minimum, 20 second-feet Nov. 20 (gage height, 3.14 feet); minimum daily, 21 second-feet Nov. 13-29.
1923-42: Maximum daily discharge, 1,620 second-feet Apr. 17-20, 1933; minimum daily, about 3 second-feet Apr. 9-16, 1931.

Remarks.- Records excellent except those for periods of no gage-height record, which are good. Flow completely regulated by Cranberry Lake.

Rating tables, water year 1941-42 (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Dec. 2 | | | | Dec. 2 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3.1 | 18 | 3.7 | 62 | 3.4 | 36 | 4.5 | 188 | 6.4 | 910 |
| 3.2 | 24 | 4.0 | 95 | 3.6 | 53 | 4.9 | 286 | 7.0 | 1,250 |
| 3.5 | 45 | 4.3 | 140 | 3.9 | 86 | 5.3 | 410 | | |
| | | | | 4.2 | 130 | 5.8 | 610 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 140 | 24 | 22 | 161 | a236 | 236 | 49 | 396 | 208 | 195 | 224 | 210 |
| 2 | 140 | 23 | 36 | 163 | a236 | 236 | 50 | 390 | 190 | 184 | 224 | 210 |
| 3 | 140 | 23 | 85 | 163 | a236 | 236 | 50 | a383 | 184 | 175 | 224 | 210 |
| 4 | 106 | 23 | 85 | 163 | a234 | 234 | 50 | a376 | 184 | 169 | 224 | 210 |
| 5 | 85 | 23 | 85 | 163 | 234 | 234 | a51 | a338 | 188 | 163 | 222 | 232 |
| 6 | 85 | 23 | 85 | 163 | 234 | 234 | a51 | a297 | 186 | 161 | 222 | 267 |
| 7 | 85 | 23 | 85 | 163 | 234 | 234 | a52 | a292 | 182 | 212 | 222 | 264 |
| 8 | 85 | 23 | 84 | 163 | 234 | 234 | a53 | a297 | 180 | 239 | 220 | 264 |
| 9 | 85 | 22 | 84 | 163 | 244 | 145 | a54 | a300 | 175 | 236 | 220 | 264 |
| 10 | 85 | 22 | 84 | 163 | 246 | 91 | a55 | 292 | 173 | 234 | 220 | 264 |
| 11 | 85 | 22 | 84 | 195 | 246 | 91 | a56 | 286 | 171 | 234 | 217 | 262 |
| 12 | 85 | 22 | 81 | 217 | 244 | 73 | 56 | 289 | 171 | 234 | 217 | 234 |
| 13 | 85 | 21 | 81 | 217 | 244 | 59 | 57 | 297 | 169 | 234 | 217 | 217 |
| 14 | 85 | 21 | 82 | 217 | 242 | 59 | 57 | 306 | a175 | 234 | 217 | 217 |
| 15 | 85 | 21 | 82 | 215 | a242 | 59 | 61 | 303 | a186 | 232 | 217 | 217 |
| 16 | 85 | 21 | 82 | 215 | a242 | 52 | 130 | 300 | a199 | 232 | 217 | 217 |
| 17 | 85 | 21 | 126 | 232 | a242 | 43 | 520 | 289 | a212 | 232 | 217 | 215 |
| 18 | 85 | 21 | 148 | 242 | a242 | 44 | 998 | 286 | a229 | 232 | 217 | 244 |
| 19 | 85 | 21 | 150 | 242 | a242 | 45 | 1,150 | 283 | a252 | 232 | 215 | 262 |
| 20 | 85 | 21 | 150 | 242 | a242 | 46 | 1,240 | 275 | 281 | 232 | 215 | 262 |
| 21 | 85 | 21 | 150 | 242 | a242 | 46 | 1,240 | 270 | 297 | 229 | 215 | 262 |
| 22 | 85 | 21 | 150 | 242 | a242 | 47 | 1,170 | 270 | 300 | 229 | 215 | 262 |
| 23 | 85 | 21 | 150 | 242 | a239 | 47 | 1,090 | 272 | 303 | 229 | 215 | 259 |
| 24 | 85 | 21 | 129 | 242 | a239 | 48 | 943 | 267 | 289 | 227 | 215 | 259 |
| 25 | 87 | 21 | 57 | a239 | a239 | 48 | 675 | 262 | 270 | 227 | 215 | 259 |
| 26 | 87 | 21 | 57 | a239 | a236 | 48 | 584 | 256 | 254 | 227 | 215 | 256 |
| 27 | 87 | 21 | 58 | a239 | a236 | 48 | 579 | 254 | 239 | 227 | 212 | 259 |
| 28 | 51 | 21 | 58 | a239 | a236 | 48 | 579 | 249 | 224 | 227 | 212 | 234 |
| 29 | 23 | 21 | 58 | a239 | - | 49 | 520 | 244 | 212 | 227 | 212 | 220 |
| 30 | 23 | 22 | 57 | a236 | - | 49 | 439 | 246 | 206 | 227 | 212 | 197 |
| 31 | 24 | - | 115 | a236 | - | 49 | - | 242 | - | 224 | 210 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,608 | 140 | 23 | 84.1 | - | - |
| November | 652 | 24 | 21 | 21.7 | - | - |
| December | 2,840 | 150 | 22 | 91.6 | - | - |
| Calendar year 1941 | 60,635 | 360 | 21 | 166 | 1.15 | 15.66 |
| January | 6,497 | 242 | 161 | 210 | - | - |
| February | 6,705 | 246 | 234 | 239 | - | - |
| March | 3,212 | 236 | 43 | 104 | - | - |
| April | 12,659 | 1,240 | 49 | 422 | - | - |
| May | 9,107 | 396 | 242 | 294 | - | - |
| June | 6,491 | 303 | 169 | 216 | - | - |
| July | 6,796 | 239 | 161 | 219 | - | - |
| August | 6,736 | 224 | 210 | 217 | - | - |
| September | 7,209 | 267 | 197 | 240 | - | - |
| Water year 1941-42 | 71,512 | 1,240 | 21 | 196 | 1.36 | 18.45 |

a No gage-height record; discharge computed on basis of recorded range in stage and records of gate openings and reservoir elevations at Cranberry Lake Dam.

Note. Increase in storage in Cranberry Lake Reservoir during calendar year 1941, about 19,000,000 cubic feet (equivalent mean discharge, 0.60 second-feet; run-off, 0.06 inch); increase in elevation, 0.09 foot; increase during water year 1941-42, about 1,224,000,000 cubic feet (equivalent mean discharge, 38.8 second-feet; run-off, 3.65 inches); increase in elevation, 5.67 feet.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## East Branch of Oswegatchie River near Oswegatchie, N. Y.

Location.- Water-stage recorder, lat. 44°13'25", long. 75°04'35", at Flat Rock hydro-electric plant of Northern New York Utilities, 2¾ miles north of Oswegatchie, St. Lawrence County.
Drainage area.- 263 square miles.
Records available.- October 1924 to September 1942.
Average discharge.- 17 years (1925-42), 507 second-feet.
Extremes (regulated).- Maximum discharge during year, 2,070 second-feet Apr. 7 (gage height, 5.40 feet); minimum, 7.1 second-feet May 25 (gage height, 0.92 foot); minimum daily, 10 second-feet Nov. 15.
1924-42: Maximum discharge, 4,010 second-feet Apr. 6, 1928 (gage height, 7.1 feet), from rating curve extended above 1,900 second-feet by logarithmic plotting; minimum, probably less than 1 second-foot during complete shut-down of power plant; minimum daily, 1 second-foot July 25, 1926.
Remarks.- Records excellent. Large diurnal fluctuation at low and medium stages caused by power plant; seasonal flow partly regulated by Cranberry Lake. (See p. 156.)

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 9.8 | 1.3 | 26 | 1.8 | 64 | 2.7 | 269 | 4.0 | 865 |
| 1.1 | 14 | 1.4 | 34 | 2.1 | 125 | 3.0 | 368 | 4.5 | 1,220 |
| 1.2 | 20 | 1.6 | 53 | 2.4 | 188 | 3.4 | 535 | 5.3 | 1,960 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 178 | 262 | 159 | 500 | 270 | 354 | 622 | 383 | 403 | 262 | 260 | 235 |
| 2 | 169 | 280 | 186 | 438 | 255 | 351 | 437 | 561 | 306 | 204 | 274 | 311 |
| 3 | 154 | 269 | 188 | 454 | 335 | 366 | 575 | 309 | 413 | 211 | 210 | 370 |
| 4 | 116 | 287 | 230 | 470 | 326 | 316 | 617 | 529 | 346 | 216 | 226 | 390 |
| 5 | 124 | 484 | 275 | 557 | 344 | 357 | 683 | 904 | 430 | 195 | 260 | 382 |
| 6 | 119 | 281 | 249 | 499 | 351 | 318 | 1,290 | 668 | 328 | 272 | 245 | 385 |
| 7 | 114 | 277 | 173 | 476 | 357 | 326 | 1,780 | 535 | 312 | 268 | 244 | 312 |
| 8 | 209 | 227 | 222 | 540 | 332 | 321 | 1,600 | 596 | 309 | 279 | 253 | 394 |
| 9 | 205 | 187 | 173 | 542 | 332 | 418 | 1,530 | 559 | 329 | 282 | 242 | 298 |
| 10 | 172 | 244 | 278 | 504 | 322 | 715 | 1,320 | 351 | 332 | 283 | 239 | 374 |
| 11 | 167 | 223 | 172 | 216 | 352 | 481 | 1,400 | 598 | 293 | 284 | 247 | 370 |
| 12 | 177 | 161 | 166 | 363 | 327 | 753 | 311 | 456 | 291 | 274 | 243 | 400 |
| 13 | 177 | 123 | 182 | 305 | 389 | 723 | 474 | 428 | 321 | 260 | 250 | 381 |
| 14 | 171 | 64 | 174 | 260 | 378 | 622 | 324 | 569 | 274 | 287 | 249 | 370 |
| 15 | 168 | 10 | 171 | 268 | 332 | 542 | 325 | 486 | 274 | 271 | 242 | 257 |
| 16 | 205 | 11 | 218 | 241 | 362 | 707 | 1,560 | 556 | 326 | 322 | 238 | 264 |
| 17 | 205 | 117 | 274 | 239 | 331 | 530 | 1,570 | 594 | 318 | 280 | 237 | 270 |
| 18 | 137 | 176 | 283 | 13 | 354 | 1,010 | 1,520 | 621 | 381 | 266 | 303 | 264 |
| 19 | 143 | 228 | 275 | 280 | 353 | 857 | 1,490 | 535 | 336 | 264 | 224 | 280 |
| 20 | 141 | 221 | 271 | 277 | 421 | 798 | 1,410 | 543 | 449 | 254 | 228 | 253 |
| 21 | 142 | 185 | 341 | 338 | 434 | 380 | 1,730 | 549 | 327 | 246 | 275 | 280 |
| 22 | 89 | 170 | 277 | 333 | 385 | 498 | 1,890 | 561 | 379 | 259 | 224 | 287 |
| 23 | 227 | 183 | 270 | 426 | 388 | 426 | 1,740 | 594 | 433 | 275 | 248 | 330 |
| 24 | 229 | 168 | 469 | 381 | 380 | 484 | 1,610 | 610 | 550 | 268 | 222 | 320 |
| 25 | 69 | 154 | 956 | 370 | 371 | 477 | 1,550 | 284 | 478 | 225 | 338 | 326 |
| 26 | 153 | 150 | 1,020 | 359 | 393 | 414 | 1,520 | 453 | 522 | 222 | 232 | 353 |
| 27 | 337 | 113 | 774 | 352 | 407 | 325 | 940 | 419 | 475 | 229 | 225 | 271 |
| 28 | 390 | 117 | 335 | 368 | 403 | 388 | 955 | 334 | 285 | 222 | 295 | 472 |
| 29 | 322 | 170 | 479 | 380 | - | 549 | 1,140 | 274 | 408 | 336 | 175 | 470 |
| 30 | 321 | 88 | 520 | 378 | - | 531 | 568 | 337 | 369 | 235 | 255 | 476 |
| 31 | 331 | - | 459 | 320 | - | 515 | - | 338 | - | 230 | 279 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 5,861 | 390 | 69 | 189 | - | - |
| November | 5,630 | 484 | 10 | 188 | - | - |
| December | 10,219 | 1,020 | 159 | 330 | - | - |
| Calendar year 1941 | 114,844 | 1,500 | 10 | 315 | 1.20 | 16.24 |
| January | 11,447 | 557 | 13 | 369 | - | - |
| February | 9,984 | 434 | 255 | 357 | - | - |
| March | 15,852 | 1,010 | 316 | 511 | - | - |
| April | 34,481 | 1,890 | 311 | 1,149 | - | - |
| May | 15,534 | 904 | 274 | 501 | - | - |
| June | 10,997 | 550 | 274 | 367 | - | - |
| July | 7,981 | 336 | 195 | 257 | - | - |
| August | 7,682 | 338 | 175 | 248 | - | - |
| September | 10,145 | 476 | 235 | 338 | - | - |
| Water year 1941-42 | 145,813 | 1,890 | 10 | 399 | 1.52 | 20.63 |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Oswegatchie River near Heuvelton, N. Y.

Location.- Water-stage recorder, lat. 44°36'00", long. 75°22'45", 2½ miles upstream from Heuvelton, St. Lawrence County.

Drainage area.- 973 square miles.

Records available.- June 1916 to September 1942.

Average discharge.- 26 years, 1,659 second-feet.

Extremes.- Maximum discharge during year, 8,030 second-feet Mar. 19 (gage height, 6.19 feet); minimum, 251 second-feet Oct. 3 (gage height, 0.86 foot).
1916-42: Maximum discharge, 15,600 second-feet Jan. 11, 1930 (gage height, 9.1 feet); minimum, 200 second-feet (regulated) Aug. 18, 1934 (gage height, 0.65 foot).

Remarks.- Records excellent except those for periods of ice effect, which are good, and those for periods of no gage-height record, which are fair. Seasonal flow slightly regulated by Cranberry Lake; slight diurnal fluctuation at low and medium stages caused by power plants. 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, 4½ miles above station.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 0.9 | 269 | 1.8 | 895 | 4.0 | 3,760 |
| 1.1 | 370 | 2.2 | 1,300 | 5.0 | 5,560 |
| 1.4 | 562 | 3.0 | 2,280 | 6.1 | 7,830 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 312 | 1,640 | 678 | 2,160 | 850 | 920 | 3,160 | 2,200 | 727 | 577 | 441 | 370 |
| 2 | 293 | 1,640 | 710 | 2,320 | 895 | 900 | 3,520 | 1,770 | 661 | 584 | 428 | 416 |
| 3 | 274 | 1,590 | 735 | 2,630 | 813 | 920 | 3,650 | 1,410 | 606 | 555 | 393 | 370 |
| 4 | 283 | 1,520 | 787 | 2,320 | 727 | 900 | 3,390 | 1,290 | 787 | 492 | 382 | 376 |
| 5 | 333 | 1,460 | 831 | 2,200 | 735 | 860 | 3,100 | 1,190 | 822 | 422 | 393 | 441 |
| 6 | 359 | 1,380 | 868 | 1,950 | 735 | 840 | 3,010 | 1,550 | 804 | 359 | 370 | 473 |
| 7 | 416 | 1,490 | 914 | 1,800 | 727 | 900 | 3,250 | 1,770 | 859 | 354 | 354 | 466 |
| 8 | 492 | 1,640 | 859 | 1,650 | 744 | 960 | 3,980 | 1,730 | 804 | 328 | 365 | 527 |
| 9 | 486 | 1,560 | *761 | 1,550 | *727 | *2,350 | 4,580 | 1,660 | 744 | 354 | 387 | 548 |
| 10 | 479 | 1,400 | 678 | 1,400 | 720 | 5,790 | 4,810 | 1,580 | 702 | 359 | 411 | 541 |
| 11 | 454 | 1,290 | 669 | 1,220 | 700 | 6,370 | 4,810 | 1,460 | 637 | 370 | 411 | 541 |
| 12 | 405 | 1,150 | 577 | *1,000 | 694 | 6,230 | 4,610 | 1,190 | 592 | 349 | 382 | 548 |
| 13 | 411 | 1,060 | 506 | 920 | 702 | 6,430 | 4,070 | 1,200 | a560 | 399 | 370 | 592 |
| 14 | 422 | 971 | 506 | 860 | 678 | 6,550 | 3,190 | 1,240 | a660 | 365 | 365 | 562 |
| 15 | 447 | 886 | 534 | 820 | 680 | 6,190 | 2,680 | 1,150 | a640 | 399 | 354 | 520 |
| 16 | 460 | 804 | 534 | 780 | 686 | 5,280 | 2,860 | 1,240 | a660 | 387 | 354 | 555 |
| 17 | 466 | 718 | 555 | 760 | 752 | 5,220 | 3,630 | 1,200 | a700 | 354 | 359 | 555 |
| 18 | 492 | 630 | 584 | 761 | 1,210 | 6,720 | 4,430 | 1,090 | a680 | 359 | 376 | 506 |
| 19 | 520 | 661 | 744 | 868 | 1,800 | 7,810 | 4,950 | 1,190 | a660 | 365 | 393 | 405 |
| 20 | 506 | 661 | 904 | 990 | 1,820 | 7,810 | 5,290 | 1,280 | a700 | 393 | 428 | 416 |
| 21 | 513 | 694 | 924 | 1,220 | 1,680 | 7,390 | 5,430 | 1,230 | 752 | 370 | 434 | 564 |
| 22 | 541 | 886 | 850 | 1,400 | 1,490 | 6,780 | 5,390 | 1,190 | 904 | 359 | 428 | 744 |
| 23 | 555 | 942 | 804 | 1,500 | 1,300 | 6,270 | 5,240 | 1,100 | 924 | 359 | 359 | 678 |
| 24 | 548 | 942 | 1,330 | 1,440 | 1,180 | *5,640 | 4,920 | 1,060 | 877 | 354 | 344 | 622 |
| 25 | 527 | 990 | 3,250 | 1,380 | 1,040 | 4,720 | 4,380 | 1,090 | 850 | 338 | 344 | 607 |
| 26 | 630 | 933 | 4,150 | 1,260 | 1,000 | 3,980 | 3,830 | 1,150 | 868 | 338 | 365 | 637 |
| 27 | 752 | 868 | 4,520 | 1,180 | 960 | 3,380 | 3,420 | 1,090 | 804 | 349 | 354 | 622 |
| 28 | 895 | 822 | 4,540 | 1,150 | 940 | 3,080 | 2,950 | 924 | 770 | 359 | 473 | 669 |
| 29 | 1,450 | 752 | 4,220 | 1,080 | - | 2,920 | 2,480 | 886 | 678 | 382 | 422 | 914 |
| 30 | 1,770 | 727 | 3,380 | 962 | - | 2,820 | 2,320 | 868 | 584 | 354 | 376 | 1,140 |
| 31 | 1,670 | - | 2,540 | 804 | - | 2,940 | - | 770 | - | 382 | 359 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 18,161 | 1,770 | 274 | 586 | 0.602 | 0.69 |
| November | 32,707 | 1,640 | 630 | 1,090 | 1.12 | 1.25 |
| December | 44,442 | 4,640 | 506 | 1,434 | 1.47 | 1.70 |
| Calendar year 1941 | 394,856 | 6,890 | 245 | 1,082 | 1.11 | 15.08 |
| January | 42,355 | 2,630 | 760 | 1,366 | 1.40 | 1.61 |
| February | 26,985 | 1,820 | 678 | 964 | .991 | 1.03 |
| March | 129,870 | 7,810 | 840 | 4,189 | 4.31 | 4.97 |
| April | 117,330 | 5,430 | 2,320 | 3,911 | 4.02 | 4.48 |
| May | 39,748 | 2,200 | 770 | 1,282 | 1.32 | 1.52 |
| June | 22,096 | 924 | 560 | 737 | .757 | .84 |
| July | 12,068 | 584 | 328 | 389 | .400 | .46 |
| August | 11,974 | 473 | 344 | 386 | .397 | .46 |
| September | 16,925 | 1,140 | 370 | 564 | .580 | .65 |
| Water year 1941-42 | 514,661 | 7,810 | 274 | 1,410 | 1.45 | 19.66 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage and comparison with sum of records for stations on East Branch of Oswegatchie River near Oswegatchie and West Branch of Oswegatchie River near Harrisville.
Note.- Stage-discharge relation affected by ice Jan. 5-17, Feb. 10, 11, 15, Feb. 23 to Mar. 9.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

West Branch of Oswegatchie River near Harrisville, N. Y.

Location.- Water-stage recorder, lat. 44°11'10", long. 75°19'55", at highway bridge, half a mile northeast of Geers Corners and 4 miles downstream from Harrisville, Lewis County.

Drainage area.- 258 square miles.

Records available.- July 1916 to September 1942.

Average discharge.- 26 years, 507 second-feet.

Extremes.- Maximum discharge during year, 2,700 second-feet Apr. 8 (gage height, 5.97 feet); minimum, 44 second-feet (regulated) July 26 (gage height, 1.08 feet).
1916-42: Maximum discharge, 6,920 second-feet Jan. 9, 1930 (gage height, 9.6 feet), from rating curve extended above 2,400 second-feet; minimum, 25 second-feet Sept. 1, 1934 (gage height, 0.86 foot).

Remarks.- Records good except those for periods of fragmentary gage-height record, which are fair. Slight diurnal fluctuations, principally during low flow, caused by pondage for pulp mill at Harrisville.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Dec. 25 | | | | | | Dec. 26 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.1 | 46 | 2.0 | 173 | 3.5 | 745 | 1.1 | 46 | 2.1 | 189 | 3.8 | 884 |
| 1.3 | 65 | 2.3 | 248 | 4.0 | 1,040 | 1.3 | 65 | 2.4 | 267 | 4.5 | 1,390 |
| 1.6 | 101 | 2.6 | 341 | 5.2 | 1,990 | 1.6 | 99 | 2.8 | 399 | 5.2 | 1,970 |
| 1.8 | 133 | 3.0 | 500 | | | 1.8 | 129 | 3.3 | 609 | 5.9 | 2,630 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 52 | 621 | 366 | 550 | 241 | 212 | 1,100 | 551 | 317 | 133 | 101 | 90 |
| 2 | 52 | 607 | 385 | 604 | 241 | 217 | 1,240 | 508 | 333 | f140 | 140 | 83 |
| 3 | 66 | 656 | 408 | 709 | 248 | 207 | 1,250 | 435 | 353 | f120 | 131 | 83 |
| 4 | 118 | 692 | 420 | 739 | 220 | 208 | 1,260 | 510 | 323 | f86 | 99 | 110 |
| 5 | 237 | 646 | 408 | 734 | *210 | 200 | 1,320 | 669 | 347 | 79 | 103 | 124 |
| 6 | 277 | 532 | 396 | 632 | *206 | 226 | 1,450 | 690 | 333 | 141 | 83 | 81 |
| 7 | 283 | 564 | 366 | 561 | 187 | 208 | 1,840 | 638 | 300 | f93 | 79 | 92 |
| 8 | 299 | 597 | *310 | b500 | 204 | 227 | 2,540 | 603 | 249 | f100 | 78 | 87 |
| 9 | 243 | 616 | 283 | 443 | 195 | *b700 | 2,540 | 579 | 228 | f112 | 67 | 91 |
| 10 | 204 | 518 | 265 | 386 | 190 | 1,140 | 2,090 | 534 | 196 | f88 | 76 | 155 |
| 11 | 196 | 483 | 216 | b340 | 194 | 1,620 | 1,600 | 470 | 189 | f74 | 92 | 200 |
| 12 | 196 | 449 | b235 | 301 | 173 | 1,680 | 1,270 | 422 | 290 | f61 | 83 | 180 |
| 13 | 206 | 400 | b220 | *300 | 174 | 1,550 | 1,050 | 456 | 309 | f86 | 77 | 172 |
| 14 | 236 | 363 | b210 | 285 | 166 | 1,390 | 905 | 538 | 303 | 85 | 72 | 160 |
| 15 | 265 | 348 | b220 | 271 | 166 | 1,150 | 914 | 483 | 306 | 77 | 76 | 142 |
| 16 | 296 | 345 | 243 | 265 | 159 | 1,010 | 1,220 | 414 | 306 | 74 | 90 | 125 |
| 17 | 289 | 345 | 262 | 264 | 246 | 1,080 | 1,960 | 420 | 282 | 69 | 134 | 126 |
| 18 | 271 | 341 | 277 | 265 | 311 | 1,930 | 2,070 | 502 | 250 | 60 | 167 | 117 |
| 19 | 262 | 305 | 299 | 294 | 355 | 2,210 | 2,090 | 488 | 270 | 55 | 135 | 115 |
| 20 | 315 | 302 | 302 | 393 | 368 | 1,760 | 2,190 | 438 | 394 | 80 | 105 | 143 |
| 21 | 311 | 359 | b250 | 477 | b350 | 1,520 | 2,060 | 402 | 529 | 71 | 99 | 211 |
| 22 | 299 | 445 | 257 | 483 | 301 | 1,360 | 1,790 | 360 | 460 | 71 | 86 | 245 |
| 23 | 288 | 441 | 257 | 457 | 283 | 1,280 | 1,470 | 368 | 356 | 72 | 82 | 221 |
| 24 | 381 | 416 | 615 | 420 | 268 | 1,120 | 1,240 | 421 | 293 | 67 | 82 | 202 |
| 25 | 496 | 393 | 1,950 | 394 | 256 | 932 | 1,130 | 445 | 243 | 77 | 78 | 199 |
| 26 | 496 | 359 | 2,490 | 353 | 247 | 794 | 1,030 | 417 | 222 | 46 | 67 | 192 |
| 27 | 478 | 328 | 2,090 | 322 | 230 | 741 | 958 | 386 | 186 | 77 | 69 | 207 |
| 28 | 672 | 311 | 1,610 | 309 | 222 | 781 | 860 | 348 | 145 | 82 | 76 | 463 |
| 29 | 806 | 292 | 1,200 | 276 | - | 835 | 745 | 317 | 150 | 107 | 81 | 646 |
| 30 | 800 | 299 | 890 | 253 | - | 911 | 636 | 284 | 136 | 102 | 121 | 695 |
| 31 | 687 | - | 658 | 238 | - | 985 | - | 280 | - | 106 | 106 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 10,077 | 806 | 52 | 325 | 1.26 | 1.45 |
| November | 13,373 | 692 | 292 | 446 | 1.73 | 1.93 |
| December | 18,358 | 2,490 | 210 | 592 | 2.29 | 2.64 |
| Calendar year 1941 | 128,437 | 2,950 | 49 | 352 | 1.36 | 18.51 |
| January | 12,818 | 739 | 238 | 413 | 1.60 | 1.84 |
| February | 6,611 | 368 | 159 | 236 | .915 | .95 |
| March | 30,184 | 2,210 | 200 | 974 | 3.78 | 4.36 |
| April | 43,818 | 2,540 | 636 | 1,461 | 5.66 | 6.32 |
| May | 14,376 | 690 | 280 | 464 | 1.80 | 2.08 |
| June | 8,598 | 529 | 136 | 287 | 1.11 | 1.24 |
| July | 2,711 | 141 | 46 | 87.5 | .339 | .39 |
| August | 2,935 | 167 | 67 | 94.7 | .367 | .42 |
| September | 5,754 | 695 | 81 | 192 | .744 | .83 |
| Water year 1941-42 | 169,613 | 2,540 | 46 | 465 | 1.80 | 24.45 |

Peak discharge.- Dec. 26 (2:30 a.m.) 2,620 sec.-ft.; Apr. 8 (10:30 p.m.) 2,700 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
f Fragmentary gage-height record; discharge computed on basis of reconstructed gage-height graph, utilizing recorded range in stage and partial gage-height record.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Grass River at Pyrites, N. Y.

Location.- Water-stage recorder, lat. 44°31'30", long. 75°11'50", 1,000 feet downstream from lower bridge in Pyrites, St. Lawrence County, and half a mile upstream from Harrison Creek.

Drainage area.- 335 square miles.

Records available.- August 1924 to September 1942.

Average discharge.- 18 years, 572 second-feet.

Extremes.- Maximum discharge during year, 4,200 second-feet Mar. 18 (gage height, 8.40 feet); maximum gage height, 10.89 feet Mar. 9 (ice jam); minimum, 72 second-feet Oct. 1 (gage height, 1.26 feet); minimum daily, 73 second-feet Oct. 1.
1924-42: Maximum discharge, about 8,300 second-feet Nov. 18, 1927 (gage height, 13.0 feet), from rating curve extended above 2,100 second-feet by logarithmic plotting; minimum, 37 second-feet July 15, 1933; minimum daily, 59 second-feet Aug. 29 to Sept. 1, 1934.

Remarks.- Records good except those for periods of ice effect or doubtful gage-height record, which are fair. Occasional diurnal fluctuation at low and medium stages caused by power plants.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 9 | | | | Mar. 9 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.2 | 62 | 2.4 | 415 | 1.2 | 70 | 2.5 | 447 | 6.0 | 2,340 |
| 1.4 | 96 | 3.0 | 680 | 1.4 | 109 | 3.1 | 684 | 7.0 | 3,080 |
| 1.6 | 141 | 4.0 | 1,190 | 1.6 | 159 | 4.0 | 1,100 | 8.3 | 4,120 |
| 1.9 | 230 | 5.0 | 1,800 | 2.0 | 277 | 5.0 | 1,690 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 73 | 515 | 363 | 400 | 290 | 280 | 1,190 | 534 | 373 | 151 | 162 | 176 |
| 2 | 80 | 604 | 371 | 430 | 320 | 270 | 1,270 | 499 | 309 | 156 | 216 | 141 |
| 3 | 102 | 637 | 371 | 500 | 340 | 260 | 1,240 | 473 | 280 | 154 | 187 | 128 |
| 4 | 158 | 582 | 383 | 580 | 320 | 260 | 1,420 | 526 | 268 | 143 | 149 | 154 |
| 5 | 395 | 481 | 375 | 470 | 310 | 250 | 1,490 | 714 | 280 | 128 | 126 | 179 |
| 6 | 363 | 407 | 356 | 390 | 290 | 250 | 1,650 | 659 | 280 | 128 | 111 | 151 |
| 7 | 292 | 436 | 336 | 320 | 270 | 245 | 2,270 | 569 | 255 | 162 | 103 | 133 |
| 8 | 303 | 541 | 258 | 270 | 250 | *270 | 2,780 | 581 | 228 | 181 | 94 | 119 |
| 9 | 314 | 511 | *278 | 230 | 230 | 1,750 | 2,360 | 577 | 213 | 154 | 105 | 123 |
| 10 | 268 | 423 | 274 | 200 | *215 | 3,800 | 1,800 | 530 | 193 | 146 | 126 | 243 |
| 11 | 244 | 383 | 245 | *170 | 205 | 2,250 | 1,410 | 466 | 179 | 136 | 149 | 369 |
| 12 | 264 | 359 | 225 | 155 | 195 | 2,700 | 1,160 | 436 | 197 | 126 | 143 | 319 |
| 13 | 250 | 329 | 205 | 150 | 190 | 2,450 | 1,040 | 473 | 380 | 119 | 128 | 252 |
| 14 | 230 | 303 | 245 | 175 | 185 | 2,100 | 952 | 495 | 352 | 116 | 116 | 202 |
| 15 | 214 | 299 | 280 | 160 | 180 | 1,750 | 1,110 | 440 | 397 | 109 | 128 | 165 |
| 16 | 211 | 303 | 330 | 150 | 180 | 1,410 | 2,540 | 383 | 503 | 98 | 173 | 193 |
| 17 | 192 | 296 | 350 | 145 | 245 | 2,540 | 3,420 | 373 | 443 | 94 | 181 | 170 |
| 18 | 174 | 274 | 360 | 140 | 330 | 4,060 | 2,870 | 458 | 383 | 92 | 196 | 184 |
| 19 | 186 | 261 | 370 | 150 | 450 | 3,190 | 2,940 | 425 | 349 | 96 | 162 | 159 |
| 20 | 233 | 261 | 350 | 280 | 430 | 2,050 | 3,100 | 366 | 352 | 101 | 133 | 248 |
| 21 | 237 | 350 | 310 | 420 | 400 | 1,540 | 2,720 | 335 | 383 | 96 | 119 | 319 |
| 22 | 208 | 452 | 280 | 500 | 370 | 1,590 | 2,030 | 335 | 335 | 92 | 107 | 303 |
| 23 | 201 | 403 | 270 | 470 | 350 | 1,420 | d1,500 | 359 | 290 | 90 | 103 | 234 |
| 24 | 313 | 353 | 640 | 440 | 330 | 1,080 | d1,180 | 425 | 246 | 98 | 98 | 187 |
| 25 | 490 | 371 | 1,500 | 410 | 310 | *881 | d995 | 394 | 219 | 111 | 96 | 184 |
| 26 | 473 | 336 | 1,800 | 380 | 300 | 780 | d881 | 349 | 204 | 111 | 92 | 204 |
| 27 | 395 | 321 | 1,600 | 340 | 290 | 789 | 784 | 326 | 190 | 109 | 86 | 228 |
| 28 | 710 | 303 | 1,400 | 320 | 280 | 881 | 710 | 362 | 170 | 119 | 96 | 486 |
| 29 | 1,020 | 285 | 1,070 | 290 | - | 981 | 638 | 335 | 154 | 121 | 211 | 630 |
| 30 | 790 | 314 | 760 | 270 | - | 1,080 | 573 | 319 | 146 | 119 | 296 | 526 |
| 31 | 564 | - | 540 | 260 | - | 1,130 | - | 408 | - | 128 | 228 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 9,977 | 1,020 | 73 | 322 | 0.961 | 1.11 |
| November | 11,723 | 637 | 261 | 391 | 1.17 | 1.30 |
| December | 16,495 | 1,800 | 205 | 532 | 1.59 | 1.83 |
| Calendar year 1941 | 133,126 | 3,030 | 65 | 365 | 1.09 | 14.77 |
| January | 9,565 | 580 | 140 | 309 | .922 | 1.06 |
| February | 8,055 | 450 | 180 | 288 | .860 | .90 |
| March | 44,287 | 4,060 | 245 | 1,429 | 4.27 | 4.92 |
| April | 50,023 | 3,420 | 573 | 1,667 | 4.98 | 5.56 |
| May | 13,924 | 714 | 319 | 449 | 1.34 | 1.54 |
| June | 8,551 | 503 | 146 | 285 | .851 | .95 |
| July | 3,784 | 181 | 90 | 122 | .364 | .42 |
| August | 4,420 | 296 | 86 | 143 | .427 | .49 |
| September | 7,109 | 630 | 119 | 237 | .707 | .79 |
| Water year 1941-42 | 187,913 | 4,060 | 73 | 515 | 1.54 | 20.87 |

* Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge computed on basis of weather records and engineer's and observers' notes or from reconstructed gage-height graph.
Notes.- Stage-discharge relation affected by ice Dec. 11-27, Dec. 30 to Mar. 16.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Raquette River at Piercefield, N. Y.

Location.- Water-stage recorder, lat. 44°14'05", long. 74°34'20", half a mile downstream from dam of International Paper Co. and Piercefield, St. Lawrence County.

Drainage area.- 722 square miles.

Records available.- August 1908 to September 1942.

Average discharge.- 34 years, 1,260 second-feet.

Extremes (regulated).- Maximum discharge during year, 5,110 second-feet Apr. 22 (gage height, 9.97 feet); minimum, 130 second-feet July 31 (gage height, 2.46 feet); minimum daily, 134 second-feet Aug. 13.
1908-42: Maximum discharge, 7,580 second-feet Apr. 17, 1922 (gage height, 11.8 feet); minimum, about 10 second-feet Sept. 2, 1913 (gage height, 0.85 foot); minimum daily, 11 second-feet Sept. 2, 1913.

Remarks.- Records excellent except those for periods of doubtful gage-height record, which are good. Large diurnal fluctuation in flow for short periods caused by paper mill. Seasonal distribution of flow appreciably modified by natural storage in lakes and ponds above station.

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2.4 | 121 | 3.7 | 389 | 6.0 | 1,310 | 9.0 | 3,900 |
| 2.8 | 184 | 4.3 | 564 | 7.0 | 1,980 | 10.0 | 5,150 |
| 3.2 | 264 | 5.0 | 829 | 8.0 | 2,850 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 532 | 418 | 768 | 988 | 620 | 562 | 1,350 | 3,700 | 1,130 | 1,240 | 197 | 566 |
| 2 | 524 | 408 | 749 | 1,070 | 614 | 533 | 1,350 | 3,580 | 1,130 | 1,170 | 201 | 441 |
| 3 | 505 | 382 | 725 | 1,320 | 690 | 526 | 1,370 | 3,430 | 1,080 | 1,140 | 198 | 420 |
| 4 | 513 | 580 | 702 | 1,300 | 696 | 504 | 1,390 | 3,300 | 1,050 | 1,090 | 193 | 482 |
| 5 | 514 | 662 | 614 | 1,250 | 720 | 508 | 1,450 | 3,130 | 1,010 | 1,030 | 266 | 548 |
| 6 | 507 | 772 | 606 | 1,210 | 710 | 398 | 1,560 | 3,010 | 994 | 949 | 393 | 549 |
| 7 | 515 | 963 | 616 | 1,180 | 698 | 490 | 1,930 | 2,880 | 967 | 836 | 406 | 544 |
| 8 | 500 | 1,050 | 632 | d1,140 | 691 | 492 | 2,350 | 2,760 | 933 | 932 | 396 | 542 |
| 9 | 472 | 1,080 | 653 | d1,150 | 666 | 542 | 2,690 | 2,620 | 893 | 893 | 390 | 546 |
| 10 | 478 | 1,100 | 682 | 969 | 641 | 614 | 2,990 | 2,440 | 874 | 857 | 382 | 548 |
| 11 | 474 | 1,100 | 668 | 683 | 643 | 758 | 3,210 | 2,290 | 840 | 638 | 278 | 551 |
| 12 | 469 | 1,080 | 636 | 639 | 644 | 794 | 3,290 | 2,000 | 822 | 579 | 152 | 360 |
| 13 | 466 | 1,090 | 642 | 586 | 641 | 806 | 3,370 | 1,690 | 816 | 562 | 134 | 475 |
| 14 | 456 | 1,070 | 670 | 590 | 656 | 844 | 3,420 | 1,670 | 906 | 540 | 143 | 498 |
| 15 | 453 | 1,060 | 700 | 536 | 692 | 857 | 3,520 | 1,640 | 1,170 | 534 | 144 | 502 |
| 16 | 462 | 1,030 | 690 | 618 | 707 | 860 | 3,900 | 1,640 | 1,550 | 498 | 145 | 533 |
| 17 | 456 | 1,010 | 684 | 610 | 734 | 894 | 4,150 | 1,550 | 2,050 | 460 | 330 | 531 |
| 18 | 474 | 997 | 658 | 612 | d729 | 944 | 4,400 | 1,500 | 2,300 | 471 | 344 | 528 |
| 19 | 478 | 975 | 650 | 606 | d712 | 960 | 4,600 | 1,480 | 2,290 | 376 | 388 | 546 |
| 20 | 480 | 957 | 648 | 602 | d712 | 976 | 4,810 | 1,450 | 2,310 | 290 | 394 | 568 |
| 21 | 480 | 919 | 641 | 711 | 683 | 1,000 | 4,880 | 1,420 | 2,340 | 224 | 398 | 566 |
| 22 | 495 | 958 | 628 | 769 | 682 | 1,040 | 4,880 | 1,390 | 2,280 | 200 | 402 | 552 |
| 23 | 483 | 912 | 610 | 782 | 676 | 1,060 | 4,720 | 1,380 | 2,240 | 145 | 390 | 546 |
| 24 | 465 | 868 | 613 | 757 | 644 | 1,110 | 4,580 | 1,350 | 2,270 | 138 | 294 | 534 |
| 25 | 460 | 874 | 674 | 725 | 640 | 1,200 | 4,400 | 1,190 | 2,060 | 136 | 295 | 515 |
| 26 | 465 | 866 | 672 | 700 | 613 | 1,200 | 4,240 | 902 | 1,780 | 142 | 230 | 498 |
| 27 | 454 | 844 | 777 | 724 | 600 | 1,190 | 4,120 | 989 | 1,690 | 248 | 252 | 633 |
| 28 | 443 | 816 | 929 | 672 | 606 | 1,200 | 4,030 | 1,050 | 1,570 | 268 | 335 | 785 |
| 29 | 476 | 801 | 1,050 | 582 | - | 1,210 | 3,910 | 1,070 | 1,330 | 230 | 400 | 1,090 |
| 30 | 475 | 795 | 1,020 | d623 | - | 1,220 | 3,800 | 1,100 | 1,250 | 216 | 432 | 1,760 |
| 31 | 479 | - | 1,000 | 612 | - | 1,270 | - | 1,120 | - | 213 | 438 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 14,903 | 532 | 443 | 481 | 0.666 | 0.77 |
| November | 26,437 | 1,100 | 382 | 881 | 1.22 | 1.36 |
| December | 22,007 | 1,050 | 606 | 710 | .983 | 1.13 |
| Calendar year 1941 | 297,095 | 3,940 | 144 | 814 | 1.13 | 15.30 |
| January | 25,316 | 1,320 | 536 | 817 | 1.13 | 1.30 |
| February | 18,760 | 734 | 600 | 670 | .928 | .97 |
| March | 26,562 | 1,270 | 398 | 857 | 1.19 | 1.37 |
| April | 100,660 | 4,880 | 1,350 | 3,355 | 4.65 | 5.19 |
| May | 60,721 | 3,700 | 902 | 1,959 | 2.71 | 3.12 |
| June | 43,925 | 2,340 | 816 | 1,464 | 2.03 | 2.26 |
| July | 17,245 | 1,240 | 136 | 556 | .770 | .89 |
| August | 9,340 | 438 | 134 | 301 | .417 | .48 |
| September | 17,757 | 1,760 | 360 | 592 | .820 | .91 |
| Water year 1941-42 | 383,633 | 4,880 | 134 | 1,051 | 1.46 | 19.75 |

d Doubtful gage-height record; discharge computed on basis of fragmentary gage-height record, weather records, and daily-discharge hydrograph.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## St. Regis River at Brasher Center, N. Y.

Location.- Water-stage recorder, lat. 44°51'50", long. 74°46'45", 600 feet upstream from highway bridge at Brasher Center, St. Lawrence County, and 6½ miles downstream from confluence of East and West Branches at Winthrop.
Drainage area.- 316 square miles.
Records available.- August 1910 to November 1917, January 1919 to September 1942.
Average discharge.- 29 years (1910-13, 1914-17, 1919-42), 1,052 second-feet.
Extremes.- Maximum discharge during year, 7,050 second-feet Apr. 16 (gage height, 9.89 feet); minimum, 129 second-feet (estimated) Oct. 3 (gage height, 5.70 feet, from reconstructed gage-height graph).
1910-17, 1919-42: Maximum discharge, 16,800 second-feet Apr. 6, 1937 (gage height, 12.82 feet), from rating curve extended above 8,300 second-feet by logarithmic plotting; maximum gage height recorded, about 15.3 feet Apr. 6, 1937 (ice jam); minimum discharge, about 34 second-feet Aug. 8, 1917 (gage height, 5.25 feet).
Remarks.- Records good except those for periods of ice effect, fragmentary, or doubtful gage-height record, which are fair.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 5.7 | 129 | 6.3 | 569 | 8.8 | 4,550 |
| 5.8 | 181 | 6.6 | 887 | 9.7 | 6,560 |
| 5.9 | 243 | 7.0 | 1,420 | | |
| 6.1 | 392 | 7.8 | 2,670 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | d145 | 830 | 462 | 560 | 390 | 400 | *2,020 | 1,410 | 514 | 363 | 330 | 257 |
| 2 | d134 | 899 | 508 | 600 | 420 | 390 | 2,050 | 1,280 | 532 | 337 | 369 | 218 |
| 3 | d134 | 912 | 589 | 640 | 430 | 390 | 2,120 | 1,200 | 460 | 330 | 353 | 206 |
| 4 | d165 | 830 | 541 | 660 | 410 | 380 | 2,360 | 1,140 | 460 | 314 | 322 | 200 |
| 5 | 330 | 763 | 523 | 660 | 390 | 380 | 2,500 | 1,380 | 514 | 314 | 257 | 200 |
| 6 | 426 | 648 | 541 | 560 | 380 | 380 | 3,020 | 1,310 | 523 | 300 | 237 | 206 |
| 7 | 330 | 609 | 551 | 440 | 360 | *400 | 3,890 | 1,200 | 579 | 293 | 212 | 206 |
| 8 | 307 | 742 | 443 | 380 | 350 | 430 | 4,090 | 1,290 | 625 | 293 | 193 | 193 |
| 9 | 477 | 710 | *426 | 340 | 340 | 1,800 | 3,530 | 1,310 | 560 | 361 | 231 | 206 |
| 10 | 452 | 700 | 360 | *320 | 330 | 4,170 | 3,060 | 1,200 | 477 | 307 | 300 | 250 |
| 11 | 400 | 679 | 310 | 300 | 320 | 2,470 | 2,580 | 1,180 | 392 | 314 | 307 | 300 |
| 12 | 361 | 618 | 270 | 290 | *310 | 2,950 | 2,370 | 998 | 361 | 307 | 300 | 392 |
| 13 | 353 | 426 | 231 | 310 | 300 | 2,770 | 2,200 | 1,010 | 385 | 278 | 264 | 314 |
| 14 | 337 | 369 | 250 | 300 | 290 | 2,210 | 2,070 | 1,050 | 569 | 264 | 231 | 278 |
| 15 | 322 | 353 | 361 | 290 | 290 | 1,760 | 2,730 | 998 | 710 | 231 | 224 | 243 |
| 16 | 307 | 443 | 392 | 280 | 280 | 1,480 | 6,560 | 887 | 973 | 224 | 224 | 264 |
| 17 | 286 | 400 | 418 | 270 | 340 | 3,000 | 6,170 | 864 | 1,020 | 193 | 237 | 466 |
| 18 | 264 | 409 | 426 | 270 | 450 | 4,400 | 5,360 | 853 | 924 | 187 | 293 | 330 |
| 19 | 271 | 452 | 505 | 390 | 540 | 3,900 | 6,000 | 830 | 912 | 187 | 257 | 394 |
| 20 | 314 | 418 | 468 | 480 | 560 | 2,800 | 6,140 | 774 | 899 | 176 | 218 | 718 |
| 21 | 337 | 495 | 376 | 540 | 540 | 2,200 | 5,140 | 609 | 853 | 171 | 212 | 887 |
| 22 | 345 | 523 | 350 | 560 | 520 | 2,100 | 4,050 | 628 | 830 | 171 | 224 | 721 |
| 23 | 369 | 560 | 340 | 540 | 490 | 1,800 | 3,270 | 721 | 774 | 171 | 193 | 505 |
| 24 | 486 | 599 | 660 | 520 | 470 | 1,600 | 2,840 | f742 | 732 | 165 | 187 | 392 |
| 25 | 699 | 541 | 1,650 | 480 | 450 | *1,400 | 2,570 | f721 | 732 | 165 | 157 | 369 |
| 26 | 668 | 486 | 1,940 | 450 | 430 | 1,300 | 2,310 | 785 | 689 | 165 | 187 | 384 |
| 27 | 579 | 452 | 1,780 | 420 | 420 | 1,350 | 1,960 | 628 | 579 | 160 | 181 | 400 |
| 28 | 696 | 384 | 1,480 | 400 | 410 | 1,450 | 1,820 | 551 | 505 | 171 | 212 | 828 |
| 29 | 1,310 | 369 | 1,090 | 390 | - | 1,600 | 1,680 | 551 | 452 | 193 | 250 | 1,150 |
| 30 | 1,040 | 434 | 774 | 380 | - | 1,750 | 1,520 | 541 | 392 | 224 | 278 | 1,110 |
| 31 | 797 | - | 640 | 370 | - | 1,900 | - | 569 | - | 278 | 314 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 13,431 | 1,310 | 134 | 433 | 0.703 | 0.81 |
| November | 17,053 | 912 | 353 | 568 | .922 | 1.03 |
| December | 19,655 | 1,940 | 231 | 634 | 1.03 | 1.19 |
| Calendar year 1941 | 203,313 | 5,470 | 108 | 557 | .904 | 12.28 |
| January | 13,390 | 660 | 270 | 432 | .701 | .81 |
| February | 11,210 | 560 | 280 | 400 | .649 | .68 |
| March | 55,310 | 4,400 | 380 | 1,784 | 2.90 | 3.34 |
| April | 97,980 | 6,560 | 1,520 | 3,266 | 5.30 | 5.91 |
| May | 29,210 | 1,410 | 541 | 942 | 1.53 | 1.76 |
| June | 18,930 | 1,020 | 361 | 631 | 1.02 | 1.14 |
| July | 7,597 | 361 | 160 | 245 | .398 | .46 |
| August | 7,784 | 369 | 181 | 251 | .407 | .47 |
| September | 12,587 | 1,150 | 193 | 420 | .682 | .76 |
| Water year 1941-42 | 304,137 | 6,560 | 134 | 833 | 1.35 | 18.36 |

* Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge computed on basis of reconstructed gage-height graph and record for station on Grass River at Pyrites.
f Fragmentary gage-height record; discharge computed on basis of reconstructed gage-height graph and records for station on Grass River at Pyrites.
Note.- Stage-discharge relation affected by ice Dec. 10-12, 22-25, Dec. 31 to Mar. 9, Mar. 17-31 (no gage-height record Feb. 8-11, Feb. 15 to Mar. 6, Mar. 17-21, 28-31).
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Salmon River at Chasm Falls, N. Y.

Location.- Water-stage recorder, lat. 44°45'20", long. 74°13'10", at Chasm Falls, Franklin County, a quarter of a mile downstream from power plant of Central New York Power Corp.
Drainage area.- 132 square miles.
Records available.- July 1925 to September 1942.
Average discharge.- 17 years, 222 second-feet.
Extremes.- Maximum discharge during year, 1,900 second-feet Apr. 16 (gage height, 4.08 feet); minimum, 23 second-feet (regulated) Jan. 8 (gage height, 0.52 foot); minimum daily, 68 second-feet Aug. 26, 27.
1925-42: Maximum discharge, 2,890 second-feet Apr. 25, 1926 (gage height, 5.0 feet), from rating curve extended above 2,400 second-feet on basis of velocity-area studies; minimum, 20 second-feet (regulated) Oct. 25, 1934 (gage height, 0.46 foot); minimum daily, 28 second-feet Sept. 4, 1934.
Remarks.- Records excellent except those for period of no gage-height record, which are good. Diurnal fluctuation at low and medium stages caused by power plant. A small diversion from tributary stream above station is used as water supply for village of Malone.

Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.0 | 67 | 1.5 | 165 | 2.5 | 605 |
| 1.1 | 80 | 1.6 | 194 | 3.0 | 960 |
| 1.2 | 95 | 1.8 | 260 | 3.5 | 1,360 |
| 1.3 | 115 | 2.0 | 340 | 3.9 | 1,720 |
| 1.4 | 139 | 2.2 | 435 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 83 | 117 | 97 | 134 | 94 | 100 | 242 | 236 | 134 | 104 | 179 | 86 |
| 2 | 84 | 186 | 131 | 183 | 91 | 94 | 248 | 231 | 111 | 95 | 137 | 83 |
| 3 | 87 | 122 | 158 | 182 | 92 | 92 | 368 | 223 | 120 | 93 | 123 | 78 |
| 4 | 99 | 115 | 132 | 174 | 89 | 100 | 395 | 313 | 136 | 79 | 100 | 87 |
| 5 | 95 | 92 | 163 | 149 | 86 | 100 | 406 | 330 | 346 | 79 | 89 | 77 |
| 6 | 94 | 83 | 168 | 136 | 92 | 99 | 594 | 270 | 215 | 120 | 85 | 74 |
| 7 | 117 | 156 | 141 | 125 | 90 | 98 | 723 | 238 | 211 | 111 | 82 | 78 |
| 8 | 140 | 197 | 106 | 125 | 92 | 103 | 696 | 287 | 229 | 109 | 82 | 102 |
| 9 | 118 | 162 | 132 | 113 | 89 | 242 | 628 | 271 | 163 | 125 | 86 | 118 |
| 10 | 107 | 150 | 123 | 116 | 88 | 291 | 526 | 240 | 137 | 104 | 114 | 136 |
| 11 | 115 | 139 | 120 | 113 | 88 | 276 | 386 | 216 | 128 | 93 | 132 | 120 |
| 12 | 111 | 157 | 130 | 106 | 90 | 308 | 358 | 210 | 164 | 97 | 95 | 122 |
| 13 | 123 | 157 | 134 | 104 | 89 | 253 | 326 | 221 | 145 | 94 | 93 | 118 |
| 14 | 118 | 177 | 127 | 110 | 81 | 225 | 325 | 216 | 264 | 85 | 92 | 115 |
| 15 | 89 | 179 | 148 | 103 | 86 | 199 | 608 | 169 | 645 | 70 | 94 | 109 |
| 16 | 136 | 176 | 137 | 106 | 86 | 180 | 1,690 | 162 | 469 | 82 | 84 | 122 |
| 17 | 125 | 179 | 132 | 105 | 110 | 287 | 1,650 | 187 | 320 | 79 | 97 | 126 |
| 18 | 118 | 162 | 130 | 104 | 133 | 465 | 1,540 | 183 | 327 | 74 | 81 | 122 |
| 19 | 126 | 162 | 119 | 124 | 137 | 384 | 1,380 | 168 | 322 | 78 | 82 | 107 |
| 20 | 118 | 151 | 130 | 129 | 118 | 297 | 1,280 | 161 | 253 | 74 | 74 | 151 |
| 21 | 107 | 209 | 100 | 127 | 117 | 268 | 917 | 152 | 220 | 79 | 76 | 136 |
| 22 | 114 | 178 | 108 | 115 | 100 | 294 | 645 | 156 | 174 | 75 | 72 | 126 |
| 23 | 131 | 167 | 115 | 112 | 102 | 274 | a560 | 162 | 158 | 84 | 72 | 111 |
| 24 | 203 | 183 | 192 | 108 | 98 | 243 | a600 | 181 | 135 | 84 | 76 | 126 |
| 25 | 159 | 129 | 342 | 90 | 100 | 219 | a620 | 174 | 131 | 76 | 69 | 135 |
| 26 | 134 | 118 | 276 | 106 | 98 | 205 | a640 | 165 | 127 | 74 | 68 | 117 |
| 27 | 122 | 104 | 227 | 104 | 95 | 203 | a580 | 153 | 114 | 85 | 68 | 177 |
| 28 | 215 | 93 | 188 | 104 | 94 | 232 | a500 | 145 | 113 | 75 | 126 | 272 |
| 29 | 138 | 113 | 166 | 86 | - | 259 | a450 | 133 | 106 | 104 | 138 | 151 |
| 30 | 97 | 102 | 124 | 93 | - | 275 | a270 | 139 | 100 | 119 | 111 | 172 |
| 31 | 96 | - | 136 | 92 | - | 246 | - | 159 | - | 107 | 92 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 3,719 | 215 | 83 | 120 | 0.909 | 1.05 |
| November | 4,415 | 209 | 83 | 147 | 1.11 | 1.24 |
| December | 4,632 | 342 | 97 | 149 | 1.13 | 1.30 |
| Calendar year 1941 | 53,744 | 1,850 | 49 | 147 | 1.11 | 15.15 |
| January | 3,678 | 183 | 86 | 119 | .902 | 1.04 |
| February | 2,725 | 137 | 81 | 97.3 | .737 | .77 |
| March | 6,911 | 465 | 92 | 223 | 1.69 | 1.95 |
| April | 20,151 | 1,690 | 242 | 672 | 5.09 | 5.68 |
| May | 6,251 | 330 | 133 | 202 | 1.53 | 1.76 |
| June | 6,217 | 645 | 100 | 207 | 1.57 | 1.75 |
| July | 2,807 | 125 | 70 | 90.5 | .686 | .79 |
| August | 2,969 | 179 | 68 | 95.8 | .726 | .84 |
| September | 3,654 | 272 | 74 | 122 | .924 | 1.03 |
| Water year 1941-42 | 68,129 | 1,690 | 68 | 187 | 1.42 | 19.20 |

a No gage-height record; discharge computed on basis of power-plant records.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Chateaugay River near Chateaugay, N. Y.

Location.- Water-stage recorder, lat. 44°54'35", long. 74°05'10", 150 feet downstream from dam of International Paper Co. and 1 mile south of Chateaugay, Franklin County.
Drainage area.- 112 square miles.
Records available.- September to December 1908, October 1926 to September 1942.
Average discharge.- 16 years (1926-42), 172 second-feet.
Extremes (regulated).- Maximum discharge during year, 1,190 second-feet Apr. 19 (gage height, 5.24 feet); minimum, 43 second-feet Nov. 28 (gage height, 1.08 feet); minimum daily, 59 second-feet Oct. 1.
1908, 1926-42: Maximum discharge, 2,060 second-feet Apr. 8, 1928 (gage height, 7.3 feet), from rating curve extended above 970 second-feet by logarithmic plotting; minimum, 6 second-feet Nov. 20, 1928 (gage height, 0.23 foot); minimum daily, 26 second-feet July 8, 1934.
Remarks.- Records excellent except those for periods of ice effect or fragmentary gage-height record, which are fair. Flow regulated by Upper and Lower Chateaugay Lakes. Large diurnal fluctuation at all stages caused by power operations.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Dec. 24 | | Dec. 24 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|
| 1.3 | 59 | 1.4 | 74 | 2.5 | 234 | 4.3 | 765 |
| 1.6 | 78 | 1.7 | 111 | 3.0 | 340 | 5.1 | 1,120 |
| 1.9 | 125 | 2.0 | 151 | 3.5 | 479 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 59 | 74 | 67 | 100 | 100 | 90 | 256 | 445 | 140 | 108 | 98 | 86 |
| 2 | 60 | 72 | 73 | 116 | 94 | 94 | 283 | 250 | 142 | 109 | 99 | 84 |
| 3 | 64 | 70 | 67 | 121 | 90 | 90 | 287 | 242 | 136 | 107 | 98 | e7 |
| 4 | 61 | 66 | 67 | 112 | 92 | 92 | 282 | 160 | 132 | 107 | 95 | 86 |
| 5 | 65 | 69 | 67 | 118 | 94 | 94 | 308 | 157 | 130 | 107 | 96 | 84 |
| 6 | 63 | 66 | 67 | 110 | 96 | *96 | 323 | 1e7 | 129 | 109 | 96 | 82 |
| 7 | 64 | 69 | 63 | 104 | 94 | 91 | 348 | 193 | 125 | 110 | 96 | 85 |
| 8 | 61 | 70 | 64 | 100 | 94 | 99 | 352 | 184 | 106 | 10e | 97 | 87 |
| 9 | 61 | 65 | 65 | *102 | 92 | 380 | 375 | 184 | 106 | 110 | 99 | 85 |
| 10 | 65 | 70 | *62 | 100 | 90 | 196 | 492 | 183 | 108 | 107 | 106 | 89 |
| 11 | 66 | f66 | 62 | 100 | 90 | 185 | 488 | 179 | 110 | 106 | 100 | 89 |
| 12 | 67 | f68 | 62 | 100 | 90 | 191 | 475 | 162 | 103 | 108 | 99 | 82 |
| 13 | 66 | f66 | 64 | 104 | *88 | 189 | 475 | 160 | 100 | 107 | 95 | 85 |
| 14 | 65 | f68 | 64 | 108 | 90 | 185 | 462 | 158 | 120 | 106 | 96 | f81 |
| 15 | 66 | f70 | 70 | 100 | 92 | 174 | 673 | 154 | 112 | 105 | 96 | f85 |
| 16 | 67 | f62 | 72 | 104 | 94 | 164 | 724 | 159 | 106 | 107 | 98 | 86 |
| 17 | 67 | 71 | 69 | 104 | 96 | 338 | 912 | 156 | 116 | 106 | 98 | 85 |
| 18 | 73 | f70 | 71 | 110 | 94 | 295 | 1,000 | 152 | 130 | 108 | 87 | e7 |
| 19 | 62 | f72 | 85 | 118 | 92 | 244 | 1,100 | 154 | 138 | 106 | 90 | 82 |
| 20 | 65 | f76 | 78 | 114 | 90 | 235 | 1,040 | 153 | 137 | 109 | 85 | 91 |
| 21 | 66 | f70 | 74 | 107 | 90 | 235 | 980 | 151 | 137 | 106 | e6 | 87 |
| 22 | 63 | f66 | 76 | 105 | 90 | 265 | e77 | 154 | 128 | 106 | 85 | e1 |
| 23 | 66 | f70 | 80 | 103 | 94 | 270 | e17 | 155 | 124 | 106 | e6 | 87 |
| 24 | 68 | f64 | 122 | 103 | 92 | 263 | 777 | 153 | 118 | 104 | 86 | 82 |
| 25 | 65 | 68 | 101 | 100 | 90 | 257 | 722 | 150 | 114 | 107 | e7 | 79 |
| 26 | 64 | 67 | 87 | 98 | 94 | *254 | 710 | 151 | 113 | 96 | 88 | 80 |
| 27 | 67 | 66 | 96 | 96 | 90 | 264 | 673 | 151 | 110 | 94 | 82 | 94 |
| 28 | 70 | 65 | 99 | 94 | 92 | 266 | 611 | 145 | 112 | 98 | 93 | 94 |
| 29 | 65 | 68 | 9e | 90 | - | 269 | 568 | 141 | 109 | 97 | 87 | 80 |
| 30 | 65 | 64 | 98 | 90 | - | 258 | 470 | 140 | 110 | 97 | 83 | 84 |
| 31 | 69 | - | 96 | 96 | - | 258 | - | 141 | - | 98 | 89 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,015 | 73 | 59 | 65.0 | - | - |
| November | 2,048 | 76 | 62 | 68.3 | - | - |
| December | 2,386 | 122 | 62 | 77.0 | - | - |
| Calendar year 1941 | 40,028 | 737 | 55 | 110 | 0.982 | 13.29 |
| January | 3,229 | 121 | 90 | 104 | - | - |
| February | 2,584 | 100 | 88 | 92.3 | - | - |
| March | 6,401 | 380 | 90 | 206 | - | - |
| April | 17,860 | 1,100 | 256 | 595 | - | - |
| May | 5,404 | 445 | 140 | 174 | - | - |
| June | 3,601 | 142 | 100 | 120 | - | - |
| July | 3,259 | 110 | 94 | 105 | - | - |
| August | 2,876 | 106 | 82 | 92.8 | - | - |
| September | 2,556 | 94 | 79 | 85.2 | - | - |
| Water year 1941-42 | 54,219 | 1,100 | 59 | 149 | 1.33 | 17.98 |

* Winter discharge measurement made on this day.
f Fragmentary gage-height record; discharge computed on basis of normal daily gage-height pattern for adjacent days, recorded range in stage, weather records, and records of gate operation at Chateaugay Lake.
Note.- Stage-discharge relation affected by ice Dec. 11-16, 20-24, Dec. 30 to Jan. 1, Jan. 4-19, Jan. 25 to Mar. 1, Mar. 9.
Decrease in storage in Chateaugay Lakes during the calendar year 1941, about 146,990,000 cubic feet (equivalent mean discharge, 4.66 second-feet; run-off, 0.56 inch), decrease in elevation, 1.11 foot. Increase during water year 1941-42, about 79,450,000 cubic feet (equivalent mean discharge, 2.52 second-feet; run-off, 0.31 inch), increase in elevation, 0.60 foot.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Richelieu River (Lake Champlain) at Rouses Point, N. Y.

Location.- Water-stage recorder, lat. 44°59'45", long. 73°21'40", in Rouses Point, Clinton County, at outlet of Lake Champlain, 90 feet north of Rutland Railroad bridge and 1 mile south of Fort Montgomery. Datum of gage is 93.00 feet above mean sea level, datum of 1929.

Drainage area.- 8,277 square miles.

Records available.- October 1863 to December 1870 (maximum and minimum monthly gage heights at St. Johns, Quebec, published in Water-Supply Paper 97) and March 1871 to September 1942 (daily gage heights; those for 1871-1907 published in Water-Supply Paper 894). January 1875 to September 1916 (monthly discharge) at Chambly, Quebec, published in Water-Supply Paper 424. Gage heights prior to Oct. 1, 1925, published as Richelieu River at Fort Montgomery, Rouses Point, N. Y.

Extremes.- Maximum gage height during year, 6.26 feet Apr. 29; minimum, -0.83 foot Oct. 23.
1871-1942: Maximum gage height observed, 8.80 feet Mar. 30, 1903; minimum observed, that of Oct. 23, 1941.
Observations at St. Johns, Quebec, indicate a maximum gage height of 8.83 feet (computed) during April 1869.

Gage height, in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.02 | 0.32 | 0.51 | 1.13 | 1.18 | 1.12 | 3.61 | 5.77 | 3.40 | 3.26 | 1.66 | 0.96 |
| 2 | -.02 | .19 | .63 | 1.09 | 1.18 | 1.12 | 3.68 | 5.78 | 3.40 | 3.13 | 1.67 | .94 |
| 3 | .30 | .34 | .52 | 1.14 | 1.17 | 1.09 | 3.64 | 5.66 | 3.24 | 3.05 | 1.55 | .80 |
| 4 | -.07 | .45 | .59 | 1.29 | 1.14 | 1.15 | 3.72 | 5.53 | 3.18 | 3.03 | 1.50 | .81 |
| 5 | .12 | .40 | .60 | 1.30 | 1.13 | 1.19 | 3.83 | 5.39 | 3.09 | 2.96 | 1.45 | .83 |
| 6 | -.05 | .44 | .51 | 1.39 | 1.15 | 1.19 | 3.82 | 5.33 | 3.06 | 2.94 | 1.44 | .81 |
| 7 | .25 | .52 | .41 | 1.32 | 1.11 | 1.18 | 3.95 | 5.21 | 3.03 | 2.86 | 1.44 | .85 |
| 8 | -.03 | .59 | .53 | 1.36 | 1.14 | 1.19 | 4.13 | 5.14 | 2.92 | 2.77 | 1.43 | .72 |
| 9 | -.02 | .61 | .51 | 1.43 | 1.17 | 1.34 | 4.26 | 5.08 | 2.93 | 2.66 | 1.46 | .83 |
| 10 | .06 | .62 | .51 | 1.30 | 1.16 | 1.68 | 4.35 | 4.90 | 2.86 | 2.62 | 1.42 | .86 |
| 11 | -.09 | .62 | .49 | 1.42 | 1.16 | 1.97 | 4.39 | 4.87 | 2.85 | 2.77 | 1.39 | .69 |
| 12 | .00 | .54 | .54 | 1.30 | 1.17 | 2.18 | 4.39 | 4.83 | 2.82 | 2.51 | 1.36 | .78 |
| 13 | .03 | .65 | .57 | 1.22 | 1.18 | 2.30 | 4.46 | 4.66 | 2.78 | 2.58 | 1.33 | .65 |
| 14 | .29 | .62 | .63 | 1.36 | 1.20 | 2.40 | 4.54 | 4.68 | 2.72 | 2.43 | 1.32 | .66 |
| 15 | .02 | .71 | .65 | 1.28 | 1.21 | 2.51 | 4.52 | 4.66 | 3.04 | 2.32 | 1.34 | .67 |
| 16 | -.10 | .50 | .69 | 1.25 | 1.22 | 2.57 | 4.78 | 4.57 | 3.37 | 2.25 | 1.34 | .71 |
| 17 | .00 | .56 | .55 | 1.27 | 1.07 | 2.71 | 5.29 | 4.33 | 3.57 | 2.24 | 1.33 | .70 |
| 18 | .04 | .62 | .65 | 1.21 | 1.06 | 2.83 | 5.36 | 4.29 | 3.68 | 2.25 | 1.29 | .70 |
| 19 | -.06 | .64 | .56 | 1.23 | 1.09 | 2.94 | 5.50 | 4.31 | 3.76 | 2.20 | 1.31 | .87 |
| 20 | -.01 | .71 | .41 | 1.25 | 1.09 | 3.00 | 5.70 | 4.15 | 3.76 | 2.08 | 1.40 | .62 |
| 21 | .01 | .56 | .50 | 1.31 | 1.10 | 3.08 | 5.84 | 4.06 | 3.80 | 2.03 | 1.23 | .57 |
| 22 | .02 | .59 | .56 | 1.29 | 1.10 | 3.22 | 5.90 | 4.07 | 3.75 | 1.99 | 1.28 | .64 |
| 23 | .05 | .70 | .62 | 1.36 | 1.10 | 3.36 | 5.91 | 4.00 | 3.68 | 1.98 | 1.15 | .60 |
| 24 | .01 | .47 | .62 | 1.33 | 1.11 | 3.43 | 5.91 | 3.93 | 3.65 | 1.95 | 1.04 | .76 |
| 25 | -.01 | .78 | .72 | 1.16 | 1.10 | 3.43 | 5.91 | 3.87 | 3.57 | 1.85 | 1.02 | .62 |
| 26 | .23 | .69 | .87 | 1.21 | 1.11 | 3.46 | 5.91 | 3.81 | 3.51 | 1.81 | 1.07 | .75 |
| 27 | .38 | .47 | .95 | 1.26 | 1.10 | 3.48 | 5.97 | 3.69 | 3.46 | 1.94 | 1.11 | .74 |
| 28 | -.10 | .50 | 1.03 | 1.19 | 1.09 | 3.49 | 6.12 | 3.67 | 3.41 | 1.82 | 1.07 | .82 |
| 29 | .00 | .55 | 1.04 | 1.20 | - | 3.51 | 6.25 | 3.64 | 3.34 | 1.70 | .96 | .97 |
| 30 | .16 | .42 | 1.03 | 1.24 | - | 3.51 | 6.32 | 3.50 | 3.41 | 1.67 | .94 | 1.06 |
| 31 | .03 | - | 1.08 | 1.21 | - | 3.57 | - | 3.36 | - | 1.80 | .95 | - |

Monthly gage height, in feet, water year October 1941 to September 1942

| Month | Maximum | Minimum | Mean |
|---|---|---|---|
| October | 0.38 | -0.10 | 0.05 |
| November | .78 | .19 | .55 |
| December | 1.08 | .41 | .65 |
| Calendar year 1941 | 4.51 | -.10 | 1.54 |
| January | 1.43 | 1.09 | 1.27 |
| February | 1.22 | 1.06 | 1.14 |
| March | 3.57 | 1.09 | 2.43 |
| April | 6.12 | 3.61 | 4.91 |
| May | 5.78 | 3.36 | 4.54 |
| June | 3.80 | 2.72 | 3.30 |
| July | 3.26 | 1.67 | 2.37 |
| August | 1.67 | .94 | 1.30 |
| September | 1.06 | .57 | .77 |
| Water year 1941-42 | 6.12 | -.10 | 1.94 |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Lake Champlain at Burlington, Vt.

Location.- Water-stage recorder, lat. 44°29'00", long. 73°13'30", in Burlington, Chittenden County, 0.6 mile north of railroad station. Datum of gage is 92.86 feet above mean sea level, datum of 1929.

Records available.- May 1907 to September 1942.

Extremes.- Maximum gage height during year, 6.06 feet Apr. 26, from graph based on gage readings; minimum, -0.10 foot Oct. 14, 27.
1907-42: Maximum gage height observed, 8.65 feet Mar. 27, 28, 1936; minimum, -0.25 foot Dec. 4, 1908.

Gage height, in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.10 | 0.57 | 1.04 | 1.20 | 1.11 | 3.66 | 5.88 | 3.44 | 3.23 | 1.71 | 0.97 |
| 2 | -.03 | .23 | .52 | 1.09 | 1.20 | 1.11 | 3.68 | 5.74 | 3.34 | 3.18 | 1.67 | .96 |
| 3 | -.03 | .33 | .54 | 1.17 | 1.18 | 1.14 | 3.72 | 5.63 | 3.28 | 3.13 | 1.66 | .97 |
| 4 | .03 | .40 | .52 | 1.24 | 1.16 | 1.15 | 3.80 | 5.57 | 3.22 | 3.08 | 1.62 | .96 |
| 5 | .05 | .47 | .53 | 1.30 | 1.16 | 1.15 | 3.85 | 5.48 | 3.20 | 2.99 | 1.58 | .91 |
| 6 | .08 | .52 | .55 | 1.30 | 1.17 | 1.19 | 3.94 | 5.38 | 3.14 | 2.93 | 1.55 | .85 |
| 7 | .06 | .55 | .55 | 1.30 | 1.18 | 1.20 | 4.09 | 5.32 | 3.10 | 2.87 | 1.51 | .80 |
| 8 | .06 | .57 | .56 | 1.29 | 1.18 | 1.22 | 4.27 | 5.24 | 3.06 | 2.81 | 1.45 | .80 |
| 9 | .07 | .62 | .56 | 1.25 | 1.17 | 1 35 | 4.40 | 5.13 | 2.99 | 2.76 | 1.44 | .77 |
| 10 | .06 | .63 | .55 | 1.26 | 1.17 | 1.66 | 4.47 | 5.02 | 2.94 | 2.68 | 1.43 | .74 |
| 11 | .07 | .64 | .55 | 1.23 | 1.16 | 1.94 | 4.52 | 4.91 | 2.88 | 2.59 | 1.45 | .76 |
| 12 | .06 | .65 | .53 | 1.23 | 1.15 | 2.12 | 4.56 | 4.80 | 2.82 | 2.54 | 1.43 | .76 |
| 13 | .06 | .64 | .53 | 1.23 | 1.13 | 2.25 | 4.57 | 4.74 | 2.79 | 2.49 | 1.42 | .74 |
| 14 | .01 | .62 | .61 | 1.19 | 1.13 | 2.35 | 4.54 | 4.66 | 2.91 | 2.46 | 1.40 | .73 |
| 15 | .04 | .61 | .59 | 1.21 | 1.13 | 2.46 | 4.59 | 4.54 | 3.22 | 2.42 | 1.38 | .71 |
| 16 | .06 | .64 | .57 | 1.21 | 1.11 | 2.52 | 4.91 | 4.44 | 3.53 | 2.37 | 1.37 | .73 |
| 17 | .05 | .65 | .59 | 1.15 | 1.14 | 2.63 | 5.21 | 4.41 | 3.71 | 2.32 | 1.37 | .74 |
| 18 | .04 | .62 | .55 | 1.14 | 1.15 | 2.79 | 5.47 | 4.35 | 3.80 | 2.24 | 1.36 | .74 |
| 19 | .07 | .61 | .58 | 1.17 | 1.15 | 2.93 | 5.75 | 4.27 | 3.84 | 2.18 | 1.34 | .70 |
| 20 | .06 | .58 | .61 | 1.18 | 1.14 | 3.02 | 5.93 | 4.20 | 3.87 | 2.16 | 1.28 | .70 |
| 21 | .04 | .61 | .58 | 1.20 | 1.14 | 3.07 | 6.00 | 4.15 | 3.83 | 2.13 | 1.27 | .74 |
| 22 | .06 | .62 | .55 | 1.21 | 1.14 | 3.22 | 6.00 | 4.09 | 3.78 | 2.09 | 1.25 | .73 |
| 23 | .04 | .58 | .52 | 1.21 | 1.15 | 3.37 | 6.00 | 4.04 | 3.76 | 2.04 | 1.22 | .70 |
| 24 | .07 | .62 | .57 | 1.22 | 1.14 | 3.45 | 5.99 | 4.01 | 3.69 | 1.98 | 1.18 | .66 |
| 25 | .10 | .57 | .70 | 1.22 | 1.14 | 3.48 | 6.02 | 3.95 | 3.65 | 1.95 | 1.16 | .63 |
| 26 | .05 | .52 | .84 | 1.21 | 1.13 | 3.50 | 6.05 | 3.88 | 3.59 | 1.9[illegible] | 1.10 | .60 |
| 27 | -.04 | .58 | .94 | 1.21 | 1.11 | 3.52 | 6.04 | 3.79 | 3.52 | 1.85 | 1.03 | .67 |
| 28 | .04 | .59 | 1.00 | 1.21 | 1.11 | 3.54 | 6.01 | 3.73 | 3.45 | 1.79 | 1.02 | .90 |
| 29 | .08 | .57 | 1.03 | 1.19 | - | 3.55 | 6.00 | 3.63 | 3.38 | 1.81 | 1.06 | 1.01 |
| 30 | .07 | .58 | 1.04 | 1.19 | - | 3.57 | 5.98 | 3.59 | 3.30 | 1.81 | 1.05 | 1.03 |
| 31 | .11 | - | 1.04 | 1.17 | - | 3.62 | - | 3.54 | - | 1.76 | 1.01 | - |

Monthly gage height, in feet, water year October 1941 to September 1942

| Month | Maximum | Minimum | Mean |
|---|---|---|---|
| October | 0.11 | -0.04 | 0.05 |
| November | .65 | .10 | .55 |
| December | 1.04 | .52 | .64 |
| Calendar year 1941 | 4.53 | -.04 | 1.57 |
| January | 1.30 | 1.04 | 1.21 |
| February | 1.20 | 1.11 | 1.15 |
| March | 3.62 | 1.11 | 2.43 |
| April | 6.05 | 3.66 | 5.00 |
| May | 5.88 | 3.54 | 4.58 |
| June | 3.87 | 2.79 | 3.37 |
| July | 3.23 | 1.76 | 2.40 |
| August | 1.71 | 1.01 | 1.35 |
| September | 1.03 | .60 | .79 |
| Water year 1941-42 | 6.05 | -.04 | 1.96 |

Note.- Gage heights for period Apr. 20 to May 1 computed from graph based on once-daily readings of float gage in pump house of Burlington Water Department.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

Smaller reservoirs in Richelieu River Basin, Vt.

Chittenden and East Pittsford Reservoirs on East Creek are operated as a unit for conservation for hydroelectric power development. Their downstream order and the usable capacity of each are as follows: Chittenden Reservoir, 5 miles northeast of Chittenden, Vt., completed in 1902, has usable capacity of 819,800,000 cubic feet; East Pittsford Reservoir, at East Pittsford, Vt., completed in 1901, has usable capacity of 150,000,000 cubic feet. Records furnished by Central Vermont Public Service Corporation.

Peacham Pond and Mollys Falls Reservoir are operated as a unit for conservation for hydroelectric power development. Their downstream order and the usable capacity of each are as follows: Peacham Pond on Peacham Brook, 4 miles east of Marshfield, Vt., 128,000,000 cubic feet; Mollys Falls Reservoir on Mollys Brook, 2 miles east of Marshfield, Vt., 366,000,000 cubic feet. Records furnished by Green Mountain Power Corporation.

**Monthly change in reservoir contents, in equivalent mean second-feet, water year October 1941 to September 1942**

| Month | Chittenden and East Pittsford Reservoirs on East Creek | Peacham Pond and Mollys Falls Reservoir in Winooski River Basin |
|---|---|---|
| October | -24.8 | +12.1 |
| November | +7.21 | +23.0 |
| December | -6.27 | -6.35 |
| Calendar year 1941 | -5.27 | -.330 |
| January | +3.73 | -29.8 |
| February | -25.3 | -28.4 |
| March | +23.2 | +21.8 |
| April | +132 | +98.0 |
| May | +28.2 | +13.1 |
| June | +5.25 | +1.31 |
| July | -18.4 | -25.2 |
| August | -40.8 | -14.0 |
| September | -18.4 | -11.0 |
| Water year 1941-42 | +5.39 | +4.57 |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Great Chazy River at Perry Mills, N. Y.

Location.- Water-stage recorder, lat. 45°00'00", long. 73°30'05", 500 feet upstream from highway bridge at Perry Mills, Clinton County.
Drainage area.- 247 square miles.
Records available.- September 1928 to September 1942.
Average discharge.- 14 years, 258 second-feet.
Extremes.- Maximum discharge during year, 3,970 second-feet Apr. 16 (gage height, 8.13 feet); minimum daily, 17 second-feet (regulated) Oct. 19.
1928-42: Maximum discharge, 6,000 second-feet Apr. 7, 1937 (gage height, 9.74 feet); maximum gage height, 11.2 feet Mar. 15, 1929, ice jam; minimum discharge, about 0.8 second-foot (regulated) Sept. 18, 1932 (gage height, 1.33 feet); minimum daily, 10 second-feet (regulated) Sept. 18, 1932.
Remarks.- Records good except those for periods of ice effect, which are fair. Diurnal fluctuation at low and medium stages caused by sawmill. Partial regulation by Chazy Lake. Clinton Prison at Dannemora obtains its water supply from Chazy Lake.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Apr. 16 | | | | | | Apr. 16 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.8 | 17 | 2.3 | 78 | 4.0 | 627 | 1.8 | 22 | 3.6 | 457 | 5.8 | 1,730 |
| 1.9 | 26 | 2.4 | 98 | 4.7 | 1,000 | 2.1 | 52 | 4.0 | 631 | 6.4 | 2,220 |
| 2.0 | 36 | 2.6 | 146 | 5.4 | 1,480 | 2.4 | 100 | 4.4 | 829 | 7.0 | 2,770 |
| 2.1 | 47 | 3.0 | 249 | | | 2.8 | 196 | 4.8 | 1,050 | 7.6 | 3,380 |
| 2.2 | 61 | 3.4 | 380 | | | 3.2 | 310 | 5.3 | 1,370 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 39 | 46 | 40 | 52 | 60 | 74 | 781 | 253 | 88 | 59 | 48 | 73 |
| 2 | 40 | 58 | 32 | 56 | 62 | 120 | 683 | 227 | 84 | 76 | 51 | 87 |
| 3 | 42 | 71 | 79 | 122 | 62 | 108 | 988 | 219 | 83 | 74 | 93 | 84 |
| 4 | 48 | 53 | 66 | 94 | 60 | 96 | 1,020 | 246 | 91 | 72 | 62 | 86 |
| 5 | 53 | 40 | 89 | 76 | 58 | 96 | 807 | 296 | 180 | 62 | 56 | 88 |
| 6 | 46 | 39 | 72 | 68 | 58 | *98 | 1,130 | 248 | 137 | 64 | 46 | 88 |
| 7 | 35 | 46 | 112 | 62 | 62 | 100 | 1,420 | 228 | 114 | 66 | 58 | 87 |
| 8 | 28 | 64 | 49 | 56 | 72 | 106 | 1,020 | 305 | 119 | 64 | 47 | 87 |
| 9 | 34 | 65 | 34 | *52 | 72 | 400 | 709 | 283 | 100 | 44 | 36 | 88 |
| 10 | 50 | 51 | 39 | 52 | 70 | 1,140 | 579 | 233 | 86 | 32 | 30 | 101 |
| 11 | 49 | 45 | *33 | 52 | 70 | 680 | 511 | 198 | 80 | 33 | 53 | 112 |
| 12 | 47 | 40 | 30 | 50 | 68 | 720 | 522 | 190 | 118 | 34 | 50 | 102 |
| 13 | 49 | 34 | 28 | 50 | *68 | 660 | 596 | 234 | 105 | 43 | 42 | 57 |
| 14 | 48 | 34 | 27 | 48 | 66 | 640 | 579 | 261 | 383 | 35 | 81 | 47 |
| 15 | 44 | 38 | 27 | 48 | 68 | 480 | 1,040 | 208 | 1,500 | 28 | 56 | 47 |
| 16 | 26 | 38 | 33 | 47 | 70 | 410 | 3,370 | 181 | 840 | 24 | 47 | 31 |
| 17 | 25 | 40 | 35 | 47 | 78 | 680 | 1,990 | 179 | 463 | 27 | 54 | 48 |
| 18 | 25 | 36 | 35 | 47 | 124 | 1,350 | 1,470 | 186 | 375 | 22 | 53 | 36 |
| 19 | 17 | 36 | 34 | 58 | 106 | *1,200 | 1,670 | 178 | 361 | 26 | 66 | 28 |
| 20 | 38 | 37 | 44 | 84 | 90 | 840 | 2,020 | 170 | 260 | 26 | 66 | 30 |
| 21 | 29 | 36 | 40 | 82 | 84 | 700 | 1,310 | 164 | 200 | 30 | 66 | 34 |
| 22 | 28 | 49 | 37 | 72 | 80 | 760 | 865 | 175 | 168 | 26 | 65 | 56 |
| 23 | 27 | 46 | 39 | 64 | 78 | 740 | 831 | 199 | 134 | 25 | 64 | 35 |
| 24 | 36 | 45 | 78 | 62 | 76 | 572 | 797 | 280 | 119 | 25 | 82 | 32 |
| 25 | 45 | 39 | 290 | 62 | 76 | 500 | 760 | 190 | 107 | 35 | 83 | 44 |
| 26 | 38 | 38 | 220 | 60 | 74 | *523 | 667 | 154 | 103 | 26 | 86 | 40 |
| 27 | 38 | 42 | 150 | 58 | 74 | 454 | 511 | 130 | 89 | 33 | 87 | 39 |
| 28 | 37 | 34 | 112 | 56 | 72 | 543 | 404 | 113 | 67 | 35 | 94 | 139 |
| 29 | 45 | 28 | 86 | 56 | - | 564 | 339 | 101 | 67 | 36 | 98 | 128 |
| 30 | 47 | 37 | 62 | 56 | - | 619 | 273 | 101 | 78 | 36 | 99 | 74 |
| 31 | 40 | - | 47 | 54 | - | 647 | - | 94 | - | 45 | 68 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,193 | 53 | 17 | 38.5 | 0.156 | 0.18 |
| November | 1,305 | 71 | 28 | 43.5 | .176 | .20 |
| December | 2,099 | 290 | 27 | 67.7 | .274 | .32 |
| Calendar year 1941 | 47,726 | 2,230 | 13 | 131 | .530 | 7.20 |
| January | 1,903 | 122 | 47 | 61.4 | .249 | .29 |
| February | 2,058 | 124 | 58 | 73.5 | .298 | .31 |
| March | 16,620 | 1,350 | 74 | 536 | 2.17 | 2.50 |
| April | 29,662 | 3,370 | 273 | 989 | 4.00 | 4.46 |
| May | 6,224 | 305 | 94 | 201 | .814 | .94 |
| June | 6,699 | 1,500 | 67 | 223 | .903 | 1.01 |
| July | 1,263 | 76 | 22 | 40.7 | .165 | .19 |
| August | 1,957 | 99 | 30 | 64.1 | .260 | .30 |
| September | 2,028 | 139 | 28 | 67.6 | .274 | .31 |
| Water year 1941-42 | 73,041 | 3,370 | 17 | 200 | .810 | 11.01 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 10 to Mar. 23.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Saranac River at Saranac, N. Y.

Location.- Water-stage recorder, lat. 44°38'45", long. 73°44'40", 500 feet upstream from highway bridge at Saranac, Clinton County.
Drainage area.- 521 square miles.
Records available.- September 1930 to September 1942.
Average discharge.- 12 years, 647 second-feet.
Extremes.- Maximum discharge during year, 4,380 second-feet Apr. 16 (gage height, 6.27 feet); minimum, 102 second-feet (regulated) Oct. 7 (gage height, 1.76 feet); minimum gage height, 1.74 feet (regulated) Dec. 1; minimum daily discharge, 105 second-feet Oct. 16.
1930-42: Maximum discharge, 5,780 second-feet Apr. 17, 1933, from rating curve extended above 3,700 second-feet by logarithmic plotting; maximum gage height, 12.74 feet Dec. 2, 1936 (ice jam); minimum discharge, 67 second-feet (regulated) Aug. 27, 1934 (gage height, 1.63 feet); minimum daily, 78 second-feet Sept. 15, 1941.
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Records during periods of backwater from ice consist essentially of adjusted daily discharge at Kents Falls hydroelectric plant 7 miles downstream. Considerable diurnal fluctuation caused by power operations. Flow partly regulated by storage in Lower Saranac Lake and elsewhere.

Rating tables, water year 1941-42, except periods of ice effect, (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to 18 | | | | Oct. 18 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.7 | 65 | 1.8 | 128 | 2.5 | 469 | 4.0 | 1,730 |
| 1.8 | 114 | 2.0 | 206 | 2.9 | 742 | 5.0 | 2,810 |
| 2.0 | 184 | 2.2 | 299 | 3.4 | 1,150 | 6.0 | 4,020 |
| 2.2 | 268 | | | | | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 228 | 235 | 225 | 550 | 340 | 280 | 868 | 1,370 | 568 | 580 | 326 | 236 |
| 2 | 214 | 358 | 410 | 550 | 380 | 400 | 900 | 1,270 | 618 | 439 | 372 | 268 |
| 3 | 198 | 604 | 386 | 550 | 360 | 360 | 1,190 | 1,190 | 591 | 290 | 306 | 303 |
| 4 | 221 | 391 | 266 | 600 | 360 | 400 | 1,240 | 1,200 | 594 | 278 | 312 | 310 |
| 5 | 194 | 424 | 282 | 600 | 360 | *440 | 1,260 | 1,130 | 713 | 356 | 384 | 326 |
| 6 | 138 | 582 | 255 | 500 | 320 | 360 | 1,660 | 1,000 | 624 | 362 | 332 | 222 |
| 7 | 114 | 576 | 290 | 400 | 300 | 460 | 2,230 | 678 | 668 | 348 | 418 | 206 |
| 8 | 176 | 592 | 220 | *360 | 240 | 480 | 1,960 | 718 | 626 | 366 | 368 | 256 |
| 9 | 199 | 376 | 270 | 400 | 300 | 1,200 | 1,790 | 522 | 466 | 402 | 384 | 260 |
| 10 | 186 | 586 | 280 | 400 | 340 | 1,100 | 1,750 | 401 | 458 | 303 | 450 | 260 |
| 11 | 197 | 556 | *320 | 340 | 340 | 750 | 1,610 | 456 | 428 | 303 | 466 | 235 |
| 12 | 222 | 469 | 260 | 360 | 360 | 700 | 1,470 | 558 | 507 | 262 | 378 | 240 |
| 13 | 176 | 426 | 260 | 340 | 360 | 650 | 1,380 | 520 | 545 | 242 | 310 | 350 |
| 14 | 111 | 364 | 260 | 300 | *340 | 600 | 1,340 | 477 | 1,390 | 215 | 281 | 386 |
| 15 | 106 | 313 | 320 | 300 | 260 | 550 | 2,020 | 432 | 2,600 | 222 | 358 | 402 |
| 16 | 105 | 328 | 340 | 340 | 340 | 550 | 3,800 | 428 | 2,080 | 332 | 350 | 425 |
| 17 | 186 | 304 | 320 | 360 | 260 | 850 | 3,400 | 589 | 1,730 | 267 | 262 | 568 |
| 18 | 259 | 333 | 340 | 320 | 400 | *1,000 | 3,390 | 556 | 1,800 | 324 | 258 | 438 |
| 19 | 178 | 416 | 320 | 360 | 460 | 900 | 2,990 | 538 | 1,500 | 300 | 351 | 400 |
| 20 | 130 | 317 | 340 | 360 | 340 | 939 | 2,650 | 612 | 1,450 | 420 | 324 | 450 |
| 21 | 150 | 352 | 280 | 380 | 400 | 942 | 2,350 | 526 | 1,250 | 466 | 274 | 420 |
| 22 | 182 | 329 | 340 | 360 | 300 | 1,160 | 2,140 | 468 | 1,300 | 393 | 276 | 560 |
| 23 | 169 | 332 | 320 | 360 | 380 | 1,030 | 2,070 | 540 | 1,280 | 377 | 366 | 560 |
| 24 | 208 | 267 | 320 | 340 | 380 | 945 | 2,040 | 618 | 1,230 | 376 | 272 | 560 |
| 25 | 194 | 390 | 320 | 340 | 360 | 858 | 1,960 | 706 | 1,140 | 350 | 307 | 540 |
| 26 | 164 | 290 | 400 | 420 | 360 | 802 | 1,890 | 690 | 996 | 342 | 304 | 440 |
| 27 | 152 | 290 | 360 | 420 | 340 | *773 | 1,780 | 638 | 958 | 276 | 278 | 600 |
| 28 | 207 | 250 | 360 | 380 | 340 | 808 | 1,720 | 570 | 616 | 280 | 277 | 620 |
| 29 | 210 | 230 | 380 | 380 | - | 822 | 1,550 | 539 | 888 | 317 | 270 | 520 |
| 30 | 198 | 260 | 400 | 380 | - | 873 | 1,440 | 496 | 630 | 340 | 250 | 350 |
| 31 | 202 | - | 480 | 380 | - | 843 | - | 528 | - | 386 | 203 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 5,574 | 259 | 105 | 180 | 0.345 | 0.40 |
| November | 11,560 | 604 | 230 | 385 | .739 | .82 |
| December | 9,924 | 480 | 220 | 320 | .614 | .71 |
| Calendar year 1941 | 157,561 | 3,450 | 78 | 432 | .829 | 11.24 |
| January | 12,450 | 600 | 300 | 402 | .772 | .89 |
| February | 9,620 | 460 | 240 | 344 | .660 | .69 |
| March | 22,825 | 1,200 | 280 | 736 | 1.41 | 1.63 |
| April | 57,838 | 3,800 | 668 | 1,928 | 3.70 | 4.13 |
| May | 20,964 | 1,370 | 401 | 676 | 1.30 | 1.50 |
| June | 30,644 | 2,800 | 428 | 1,021 | 1.96 | 2.19 |
| July | 10,536 | 580 | 215 | 340 | .653 | .75 |
| August | 10,069 | 466 | 203 | 325 | .624 | .72 |
| September | 11,711 | 620 | 206 | 390 | .749 | .84 |
| Water year 1941-42 | 213,715 | 3,800 | 105 | 586 | 1.12 | 15.27 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 25 to Dec. 2, Dec. 7 to Mar. 19 (no gage-height record Dec. 11-20, Feb. 16-23).
No gage-height record June 18-22, Aug. 29, 30, Sept. 10-13, 19-30; discharge computed on basis of weather records, recorded range in stage, and plant records at Kents Falls.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## West Branch of Ausable River near Newman, N. Y.

Location.- Water-stage recorder, lat. 44°18'40", long. 73°55'00", 4 miles northeast of Newman, Essex County, and 4 miles downstream from Lake Placid Outlet.

Drainage area.- 116 square miles.

Records available.- June 1916 to December 1917, July 1919 to September 1942.

Average discharge.- 23 years (1919-42), 214 second-feet.

Extremes.- Maximum discharge during year, 5,360 second-feet Sept. 27 (gage height, 9.05 feet); minimum, 27 second-feet (regulated) Aug. 20 (gage height, 2.22 feet); minimum daily, 35 second-feet Oct. 2, Aug. 17, 19, 20, 21, 26.
1916-17, 1919-42: Maximum discharge, 10,800 second-feet Sept. 22, 1938 (gage height, 12.20 feet), from rating curve extended above 3,200 second-feet by logarithmic plotting; practically no flow Sept. 13, 1920 (gage height, 1.60 feet) caused by closing gates in logging dam; minimum daily, 7.2 second-feet (regulated), July 29, 1920.

Remarks.- Records excellent except those for periods of ice effect or no gage-height record, which are good. Diurnal fluctuation at low and medium stages caused by power plants.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Apr. 15 | | | | | | Apr. 16 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.3 | 30 | 2.8 | 90 | 4.4 | 682 | 2.3 | 33 | 3.5 | 269 | 5.5 | 1,380 |
| 2.4 | 39 | 3.0 | 126 | 4.8 | 915 | 2.5 | 52 | 3.8 | 388 | 6.0 | 1,790 |
| 2.5 | 49 | 3.2 | 173 | 5.2 | 1,170 | 2.7 | 78 | 4.2 | 576 | 6.6 | 2,350 |
| 2.6 | 61 | 3.6 | 306 | 5.8 | 1,620 | 2.9 | 112 | 4.6 | 796 | | |
| 2.7 | 75 | 4.0 | 478 | | | 3.2 | 178 | 5.0 | 1,040 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 111 | 93 | 95 | 62 | 50 | 121 | 664 | 146 | 98 | 77 | 67 |
| 2 | 35 | 527 | 89 | 178 | 60 | 52 | 117 | 644 | 124 | 94 | 61 | 42 |
| 3 | 43 | 237 | 75 | 250 | 58 | 49 | 201 | 600 | 125 | 79 | 51 | 45 |
| 4 | 187 | 158 | 74 | 179 | 56 | *45 | 265 | 589 | 117 | 73 | 44 | 48 |
| 5 | 110 | 124 | 82 | 125 | 54 | 47 | 367 | 456 | 154 | 67 | 44 | 43 |
| 6 | 97 | 109 | 185 | *82 | 52 | 62 | 634 | 285 | 122 | 71 | 40 | 47 |
| 7 | 73 | 320 | 133 | 74 | *50 | 70 | 1,550 | 261 | 116 | 70 | 36 | 43 |
| 8 | 72 | 311 | 105 | 76 | 49 | 82 | 1,200 | 404 | 116 | 64 | 37 | 40 |
| 9 | 63 | 172 | 90 | 76 | 47 | 350 | *660 | 346 | 97 | 60 | 41 | 42 |
| 10 | 61 | 120 | 75 | 72 | 45 | 560 | 430 | 265 | 86 | 60 | 44 | 85 |
| 11 | 128 | 101 | 58 | 70 | 44 | 350 | 332 | 217 | 78 | 58 | 52 | 101 |
| 12 | 110 | 94 | 57 | a66 | 43 | 270 | 279 | 191 | 73 | 57 | 47 | 83 |
| 13 | 158 | 70 | 63 | a64 | 42 | 206 | 234 | 313 | 68 | 52 | 42 | 73 |
| 14 | 116 | 85 | 70 | a60 | 41 | 173 | 212 | 279 | 705 | 49 | 46 | 57 |
| 15 | 130 | 83 | 73 | a58 | 40 | 137 | 715 | 238 | 1,590 | 46 | 57 | 52 |
| 16 | 114 | 81 | 70 | a58 | 40 | 121 | 2,330 | 197 | 613 | 45 | 39 | 78 |
| 17 | 73 | 79 | 67 | a56 | 58 | 189 | 1,470 | 316 | 360 | 43 | 35 | 107 |
| 18 | 63 | 75 | 65 | a64 | 78 | 333 | 1,410 | 293 | 436 | 46 | 39 | 78 |
| 19 | 77 | 74 | 64 | a74 | 66 | 259 | 815 | 209 | 412 | 44 | 35 | 60 |
| 20 | 80 | 79 | 61 | a86 | 60 | 187 | 614 | 176 | 333 | 43 | 35 | 68 |
| 21 | 72 | 158 | 53 | a104 | 54 | 149 | 486 | 164 | 267 | 43 | 35 | 115 |
| 22 | 76 | 134 | 58 | a90 | 52 | 277 | 392 | 389 | 230 | 41 | 36 | 86 |
| 23 | 109 | 89 | 63 | a78 | 54 | 262 | 521 | 822 | 201 | 40 | 37 | 68 |
| 24 | 209 | 96 | 352 | 81 | 52 | 195 | 840 | 544 | 161 | 42 | 41 | 62 |
| 25 | 151 | 86 | -830 | 71 | 50 | 153 | 1,070 | 318 | 146 | 40 | 39 | 65 |
| 26 | 104 | 75 | 328 | 65 | 49 | 132 | 1,170 | 239 | 134 | 39 | 35 | 67 |
| 27 | 88 | 76 | 216 | 68 | 48 | 123 | 865 | 232 | 118 | 44 | 38 | 1,600 |
| 28 | 380 | 74 | 146 | 64 | 47 | 138 | 793 | 234 | 106 | 43 | 46 | 1,940 |
| 29 | 202 | 66 | 115 | 60 | - | 138 | 855 | 180 | 98 | 43 | 120 | 515 |
| 30 | 118 | 88 | 102 | 46 | - | 136 | 747 | 171 | 91 | 44 | 78 | 265 |
| 31 | 100 | - | 72 | 56 | - | 125 | - | 172 | - | 44 | 64 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 3,435 | 380 | 35 | 111 | 0.957 | 1.10 |
| November | 3,952 | 527 | 66 | 132 | 1.14 | 1.27 |
| December | 3,984 | 830 | 53 | 129 | 1.11 | 1.28 |
| Calendar year 1941 | 47,547 | 2,270 | 24 | 130 | 1.12 | 15.26 |
| January | 2,648 | 250 | 48 | 85.4 | .736 | .85 |
| February | 1,451 | 78 | 40 | 51.8 | .447 | .47 |
| March | 5,420 | 560 | 45 | 175 | 1.51 | 1.74 |
| April | 21,695 | 2,330 | 117 | 723 | 6.23 | 6.95 |
| May | 10,408 | 822 | 164 | 336 | 2.90 | 3.34 |
| June | 7,413 | 1,590 | 68 | 247 | 2.13 | 2.38 |
| July | 1,682 | 98 | 39 | 54.3 | .468 | .54 |
| August | 1,471 | 120 | 35 | 47.5 | .409 | .47 |
| September | 6,042 | 1,940 | 40 | 201 | 1.73 | 1.93 |
| Water year 1941-42 | 69,601 | 2,330 | 35 | 191 | 1.65 | 22.32 |

Peak discharge.- Apr. 7 (11 a.m.) 1,700 sec.-ft.; Apr. 16 (6 a.m.) 3,160 sec.-ft.; June 15 (1 a.m.) 2,440 sec.-ft.; Sept. 27 (9:15 p.m.) 5,360 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of engineer's and observer's notes, weather records, and records for nearby stations.

Note.- Stage-discharge relation affected by ice Jan. 5-11, Feb. 2 to Mar. 12.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Ausable River near Ausable Forks, N. Y.

Location.- Water-stage recorder, lat. 44°27'05", long. 73°38'35", 1¾ miles downstream from confluence of East and West Branches and Ausable Forks, Clinton County. Datum of gage is 505.61 feet above mean sea level, adjustment of 1912.
Drainage area.- 448 square miles.
Records available.- September 1924 to September 1942. August 1910 to September 1925 at Ausable Forks, 1½ miles upstream.
Average discharge.- 18 years (1924-42), 660 second-feet.
Extremes.- Maximum discharge during year, 10,600 second-feet Sept. 28 (gage height, 7.91 feet); minimum, 68 second-feet (regulated) Oct. 1 (gage height, 0.97 foot).
1910-42: Maximum discharge, 24,200 second-feet Sept. 22, 1938 (gage height, 11.65 feet), from rating curve extended above 9,100 second-feet by logarithmic plotting; maximum gage height, about 14.0 feet Mar. 27, 1934 (ice jam); practically no flow July 21, 1912.
Remarks.- Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow partly regulated, principally by Taylor Pond and Fern Lake. Diurnal fluctuations at low and medium stages caused by power plants above station.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to June 14, Sept. 28-30 | | | | | | June 15 to Sept. 27 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.1 | 94 | 1.9 | 391 | 4.2 | 2,610 | 1.2 | 128 | 2.3 | 632 | 4.5 | 3,060 |
| 1.2 | 116 | 2.3 | 630 | 5.0 | 3,850 | 1.4 | 189 | 2.8 | 1,000 | 5.0 | 3,650 |
| 1.4 | 178 | 2.9 | 1,080 | 6.0 | 5,740 | 1.6 | 264 | 3.3 | 1,470 | 5.6 | 4,930 |
| 1.6 | 252 | 3.5 | 1,690 | 6.7 | 7,330 | 1.9 | 402 | 3.9 | 2,190 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 98 | 290 | 162 | 364 | 165 | 150 | 485 | 1,820 | 404 | 269 | 238 | 189 |
| 2 | 96 | 1,260 | a215 | 488 | 170 | 160 | 485 | 1,700 | 356 | 260 | 250 | 178 |
| 3 | 110 | 891 | a200 | 750 | 165 | *160 | 805 | 1,580 | 332 | 236 | 214 | 174 |
| 4 | 354 | 579 | a190 | 557 | 160 | 155 | 974 | 1,480 | 321 | 221 | 196 | 184 |
| 5 | 473 | 416 | a190 | 410 | *155 | 170 | 1,030 | 1,220 | 420 | 196 | 188 | 170 |
| 6 | 354 | 337 | a350 | *240 | 150 | 240 | 1,830 | 869 | 366 | 205 | 172 | 157 |
| 7 | 257 | 867 | a370 | 230 | 150 | 260 | 3,890 | 786 | 329 | 204 | 164 | 154 |
| 8 | 200 | 1,130 | a260 | 235 | 145 | 330 | 3,640 | 1,200 | 333 | 178 | 158 | 145 |
| 9 | 180 | 676 | a245 | 230 | 140 | 1,500 | 2,220 | 1,100 | 286 | 175 | 166 | 152 |
| 10 | 163 | 441 | 205 | 215 | 135 | 1,850 | 1,440 | 859 | 246 | 168 | 201 | 264 |
| 11 | 226 | 344 | 166 | 200 | 130 | 914 | 1,110 | 701 | 214 | 163 | 258 | 426 |
| 12 | 286 | 299 | *140 | 185 | 130 | 778 | 928 | 615 | 196 | 192 | 246 | 345 |
| 13 | 348 | 232 | 140 | 175 | 125 | 595 | 807 | 791 | 192 | 208 | 204 | 276 |
| 14 | 309 | 240 | 170 | 165 | 124 | 504 | 791 | 799 | 1,280 | 190 | 204 | 215 |
| 15 | 314 | 226 | 180 | 160 | 122 | 418 | 1,970 | 676 | 4,760 | 180 | 299 | 182 |
| 16 | 323 | 221 | 165 | 155 | 120 | 381 | 7,260 | 582 | 1,970 | 177 | 250 | 220 |
| 17 | 258 | 222 | 175 | 150 | 150 | 601 | 4,630 | 716 | 1,140 | 175 | 228 | 436 |
| 18 | 198 | 199 | 165 | 160 | 215 | 949 | 4,330 | 801 | 1,410 | 180 | 223 | 332 |
| 19 | 204 | 194 | 165 | 160 | 200 | *829 | 2,610 | 606 | 1,370 | 175 | 196 | 250 |
| 20 | 208 | 196 | 155 | 210 | 185 | 592 | 1,930 | 510 | 1,050 | 173 | 177 | 222 |
| 21 | 192 | 268 | 135 | 245 | 165 | 490 | 1,490 | 470 | 846 | 160 | 160 | 331 |
| 22 | 182 | 363 | 140 | 220 | 160 | 773 | 1,200 | 1,140 | 966 | 161 | 150 | 288 |
| 23 | 206 | 257 | 165 | 200 | 160 | 808 | 1,500 | 1,950 | 717 | 160 | 148 | 232 |
| 24 | 382 | 253 | 1,220 | 190 | 155 | 591 | 2,600 | 1,600 | 540 | 162 | 152 | 202 |
| 25 | 394 | 210 | 2,390 | 180 | 150 | 471 | 3,350 | 998 | 476 | 157 | 150 | 202 |
| 26 | 301 | 192 | 1,040 | 170 | 150 | 433 | 3,640 | 808 | 427 | 150 | 140 | 194 |
| 27 | 238 | 207 | 745 | 165 | 145 | 379 | 2,700 | 684 | 330 | 157 | 139 | 2,430 |
| 28 | 665 | 182 | 494 | 160 | 145 | 449 | 2,230 | 647 | 300 | 176 | 168 | 5,800 |
| 29 | 663 | 184 | 398 | 145 | - | 474 | 2,330 | 516 | 294 | 173 | 258 | 1,730 |
| 30 | 408 | 210 | 286 | 135 | - | 512 | 2,080 | 481 | 274 | 176 | 263 | 896 |
| 31 | 304 | - | 289 | 140 | - | 479 | - | 488 | - | 187 | 229 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 6,894 | 665 | 96 | 287 | 0.641 | 0.74 |
| November | 11,586 | 1,260 | 182 | 386 | .862 | .96 |
| December | 11,330 | 2,390 | 135 | 365 | .815 | .94 |
| Calendar year 1941 | 141,975 | 7,060 | 77 | 389 | .868 | 11.79 |
| January | 7,409 | 750 | 135 | 239 | .533 | .61 |
| February | 4,266 | 215 | 120 | 152 | .339 | .35 |
| March | 17,395 | 1,850 | 150 | 561 | 1.25 | 1.44 |
| April | 66,285 | 7,260 | 485 | 2,210 | 4.93 | 5.50 |
| May | 29,193 | 1,950 | 470 | 942 | 2.10 | 2.42 |
| June | 22,150 | 4,760 | 192 | 738 | 1.65 | 1.84 |
| July | 5,744 | 269 | 150 | 185 | .413 | .48 |
| August | 6,189 | 299 | 139 | 200 | .446 | .51 |
| September | 16,976 | 5,800 | 145 | 566 | 1.26 | 1.41 |
| Water year 1941-42 | 207,417 | 7,260 | 96 | 568 | 1.27 | 17.20 |

Peak discharge.- Apr. 16 (4:30 a.m.) 9,500 sec.-ft.; June 15 (4:30 a.m.) 6,130 sec.-ft.; Sept. 28 (12:30 a.m.) 10,600 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for nearby stations.
Note.- Stage-discharge relation affected by ice Dec. 12-24, Jan. 5 to Mar. 9 (no gage-height record Dec. 21-24).
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Black Brook at Black Brook, N. Y.

Location.- Water-stage recorder, lat. 44°26'50", long. 73°44'45", 100 feet downstream from abandoned hydroelectric plant of Associated Gas & Electric System and three-quarters of a mile south of town of Black Brook, Clinton County.

Drainage area.- 49.4 square miles.

Records available.- September 1924 to September 1942.

Average discharge.- 18 years, 48.8 second-feet.

Extremes.- Maximum discharge during year, 605 second-feet June 15 (gage height, 5.38 feet); minimum, 5.0 second-feet (regulated) Oct. 17 (gage height, 1.395 feet).
1924-42: Maximum discharge, 1,050 second-feet Apr. 6, 1937 (gage height, 6.95 feet), from rating curve extended above 450 second-feet by logarithmic plotting; minimum, 0.8 second-foot (regulated) July 2 and Aug. 29, 1931.

Remarks.- Records good except those for periods of ice effect, which are fair. Flow regulated by Fern Lake and Taylor Pond.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 15

| | | | | | |
|---|---|---|---|---|---|
| 1.4 | 5.1 | 1.8 | 22 | 3.0 | 144 |
| 1.5 | S.1 | 2.0 | 36 | 3.4 | 206 |
| 1.6 | 12 | 2.3 | 60 | | |
| 1.7 | 17 | 2.6 | 91 | | |

Apr. 16 to Sept. 30

| | | | |
|---|---|---|---|
| 2.0 | 36 | 3.5 | 222 |
| 2.2 | 52 | 4.0 | 314 |
| 2.5 | S2 | 4.7 | 467 |
| 3.0 | 144 | | |

Note.- Same as preceding table below 2.0 feet.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13 | 10 | 10 | 11 | 30 | 25 | 57 | 29 | 17 | 13 | 62 | 47 |
| 2 | 13 | 19 | 8.9 | 12 | 34 | 27 | 61 | 28 | 16 | 11 | 59 | 46 |
| 3 | 14 | 20 | 8.5 | 13 | 33 | *25 | 96 | 27 | 15 | 10 | 59 | 47 |
| 4 | 16 | 15 | S.9 | 12 | 32 | 22 | 117 | 28 | 17 | 9.7 | 57 | 46 |
| 5 | 15 | 11 | 9.3 | 11 | 31 | 20 | 101 | 27 | 3S | 9.3 | 56 | 44 |
| 6 | 9.6 | 11 | 9.7 | 10 | 30 | 20 | 117 | 24 | 31 | 12 | 56 | 42 |
| 7 | 7.5 | 15 | 9.2 | *9.6 | 29 | 21 | 181 | 2S | 27 | 13 | 56 | 39 |
| 8 | 6.9 | 21 | S.S | 9.2 | *29 | 18 | 175 | 50 | 30 | 10 | 55 | 39 |
| 9 | 5.7 | 17 | S.2 | 9.0 | 28 | 34 | 117 | 46 | 21 | 9.3 | 57 | 39 |
| 10 | 5.7 | 13 | 7.4 | S.S | 27 | 46 | S7 | 36 | 16 | 8.5 | 59 | 39 |
| 11 | 6.0 | 12 | 6.6 | S.4 | 27 | 48 | 70 | 30 | 13 | 9.0 | 58 | 27 |
| 12 | 5.7 | 10 | 6.0 | S.2 | 26 | 46 | 60 | 28 | 12 | 41 | 55 | 23 |
| 13 | 6.3 | S.7 | *6.2 | S.0 | 26 | 3S | 56 | 36 | 10 | 62 | 54 | 20 |
| 14 | 6.3 | S.5 | 9.6 | 7.S | 25 | 36 | 62 | 34 | 86 | 62 | 55 | 17 |
| 15 | 6.0 | S.9 | 9.S | 7.6 | 24 | 30 | 102 | 26 | 459 | 61 | 55 | 16 |
| 16 | 6.2 | 9.7 | 9.2 | 7.4 | 24 | 27 | 370 | 20 | 209 | 62 | 54 | 20 |
| 17 | 5.1 | S.1 | 9.2 | 7.2 | 2S | 45 | 241 | 22 | 101 | 61 | 54 | 21 |
| 1S | 5.6 | S.1 | S.e | 7.S | 35 | S0 | 162 | 20 | S0 | 61 | 53 | 17 |
| 19 | 7.2 | S.1 | S.9 | S.S | 34 | 92 | 154 | 16 | 74 | 61 | 53 | 15 |
| 20 | 7.2 | S.1 | S.6 | 10 | 31 | 72 | 11S | 16 | 55 | 61 | 52 | 17 |
| 21 | 7.2 | S.1 | S.4 | 12 | 29 | 56 | 95 | 16 | 39 | 60 | 51 | 16 |
| 22 | 6.9 | 7.S | S.2 | 11 | 2S | 63 | 7S | 26 | 34 | 59 | 50 | 14 |
| 23 | S.2 | 7.S | e.0 | 9.6 | 27 | 67 | 67 | 36 | 27 | 60 | 50 | 13 |
| 24 | S.3 | S.5 | 32 | S.9 | 26 | 57 | 62 | 37 | 22 | 60 | 50 | 13 |
| 25 | 10 | 7.S | 41 | S.6 | 26 | 47 | 5S | 31 | 1S | 5S | 49 | 15 |
| 26 | 9.4 | S.1 | 23 | S.2 | 25 | 40 | 52 | 44 | 16 | 5S | 49 | 11 |
| 27 | 9.0 | S.5 | 21 | 7.S | 24 | 39 | 45 | 39 | 14 | 59 | 49 | 25 |
| 2S | 9.3 | 7.5 | 1S | 7.S | 24 | *47 | 40 | 2S | 13 | 59 | 56 | 49 |
| 29 | S.1 | S.1 | 15 | 7.4 | - | 53 | 36 | 21 | 12 | 59 | 53 | 23 |
| 30 | 7.5 | 10 | 13 | 7.2 | - | 61 | 33 | 22 | 12 | 60 | 50 | 14 |
| 31 | S.1 | - | 12 | 10 | - | 56 | - | 23 | - | 60 | 4S | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 260.0 | 16 | 5.1 | S.39 | - | - |
| November | 324.4 | 21 | 7.5 | 10.S | - | - |
| December | 371.4 | 41 | 6.0 | 12.0 | - | - |
| Calendar year 1941 | 10,545.1 | 362 | 5.1 | 2S.9 | 0.585 | 7.92 |
| January | 2S5.3 | 13 | 7.2 | 9.20 | - | - |
| February | 792 | 35 | 24 | 2S.3 | - | - |
| March | 1,358 | 92 | 1S | 43.S | - | - |
| April | 3,070 | 370 | 33 | 102 | - | - |
| May | 894 | 50 | 16 | 2S.S | - | - |
| June | 1,534 | 459 | 10 | 51.1 | - | - |
| July | 1,29S.S | 62 | S.5 | 41.9 | - | - |
| August | 1,674 | 62 | 4S | 54.0 | - | - |
| September | S14 | 49 | 11 | 27.1 | - | - |
| Water year 1941-42 | 12,675.9 | 459 | 5.1 | 34.7 | .702 | 9.52 |

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 1, Dec. 7-18, Dec. 20 to Jan. 1, Jan. 3-23, 25, 26, Jan. 2S to Mar. 4.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## East Branch of Ausable River at Ausable Forks, N. Y.

Location.- Water-stage recorder, lat. 44°26'20", long. 73°40'55", 700 feet upstream from upper highway bridge in Ausable Forks, Essex County, and half a mile upstream from confluence with West Branch. Datum of gage is 545.32 feet above mean sea level, adjustment of 1912.

Drainage area.- 198 square miles.

Records available.- September 1924 to September 1942.

Average discharge.- 18 years, 298 second-feet.

Extremes.- Maximum discharge during year, 7,900 second-feet Sept. 27 (gage height, 8.07 feet); maximum gage height, 8.82 feet Dec. 24 (ice jam); minimum discharge, 27 second-feet Oct. 1 (gage height, 0.94 foot)
1924-42: Maximum discharge, 20,100 second-feet Sept. 22, 1938 (gage height, 12.91 feet, present site and datum, or 11.2 feet, site and datum then in use, from flood-marks); minimum observed, 20 second-feet Aug. 11, 14, 28, 1934.

Remarks.- Records good except those for periods of ice effect, which are fair.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to June 14, Sept. 28-30

| | | | | | |
|---|---|---|---|---|---|
| 1.0 | 32 | 1.8 | 170 | 3.7 | 1,170 |
| 1.2 | 53 | 2.1 | 269 | 4.4 | 1,780 |
| 1.4 | 79 | 2.5 | 437 | 5.1 | 2,600 |
| 1.6 | 117 | 3.0 | 704 | 5.9 | 3,740 |

June 15 to Sept. 27

| | | | | | |
|---|---|---|---|---|---|
| 1.0 | 32 | 1.6 | 126 | 3.5 | 1,030 |
| 1.2 | 53 | 1.8 | 185 | 4.0 | 1,410 |
| 1.3 | 66 | 2.1 | 290 | 4.5 | 1,880 |
| 1.4 | 82 | 2.5 | 458 | 5.0 | 2,470 |
| 1.5 | 102 | 3.0 | 713 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 29 | 142 | 81 | 269 | 60 | 60 | 213 | 947 | 150 | 102 | 80 | 62 |
| 2 | 30 | 768 | 78 | 400 | 58 | 66 | 213 | 874 | 132 | 92 | 75 | 54 |
| 3 | 36 | 528 | 76 | 474 | 54 | 70 | 376 | 790 | 127 | 88 | 72 | 57 |
| 4 | 212 | 333 | 76 | 333 | 52 | *68 | 456 | 741 | 120 | 84 | 66 | 61 |
| 5 | 281 | 223 | 79 | 235 | 50 | 84 | 509 | 580 | 140 | 72 | 56 | 52 |
| 6 | 223 | 170 | 147 | *120 | *50 | 130 | 967 | 401 | 111 | 77 | 48 | 48 |
| 7 | 142 | 624 | 165 | 112 | 49 | 125 | 2,010 | 370 | 104 | 76 | 44 | 45 |
| 8 | 102 | 666 | 91 | 114 | 49 | 190 | 1,770 | 623 | 113 | 66 | 41 | 43 |
| 9 | 84 | 382 | 108 | 108 | 48 | 1,000 | 1,100 | 536 | 93 | 66 | 42 | 45 |
| 10 | 72 | 247 | 88 | 98 | 47 | 1,030 | 716 | 410 | 81 | 63 | 66 | 158 |
| 11 | 112 | 182 | 74 | 90 | 46 | 459 | 536 | 328 | 73 | 61 | 121 | 279 |
| 12 | 132 | 145 | 62 | 84 | 45 | 375 | 428 | 281 | 71 | 66 | 114 | 222 |
| 13 | 170 | 111 | *56 | 78 | 44 | 277 | 358 | 353 | 69 | 58 | 84 | 157 |
| 14 | 142 | 104 | 70 | 74 | 44 | 233 | 358 | 333 | 707 | 51 | 72 | 112 |
| 15 | 160 | 98 | 76 | 72 | 43 | 194 | 1,250 | 292 | 1,780 | 46 | 169 | 86 |
| 16 | 164 | 94 | 80 | 70 | 43 | 170 | 3,570 | 251 | 760 | 45 | 126 | 140 |
| 17 | 117 | 93 | 74 | 66 | 50 | 309 | 2,270 | 342 | 482 | 44 | 116 | 302 |
| 18 | 94 | 84 | 70 | 68 | 80 | 432 | 2,000 | 362 | 778 | 44 | 119 | 205 |
| 19 | 91 | 82 | 72 | 78 | 76 | 324 | 1,110 | 277 | 686 | 44 | 88 | 140 |
| 20 | 86 | 86 | 66 | 90 | 68 | 220 | 834 | 226 | 525 | 42 | 71 | 112 |
| 21 | 78 | 132 | 56 | 102 | 64 | 188 | 651 | 203 | 404 | 40 | 60 | 195 |
| 22 | 73 | 148 | 54 | 90 | 62 | 439 | 527 | 722 | 511 | 38 | 52 | 143 |
| 23 | 78 | 115 | 78 | 84 | 62 | 365 | 794 | 1,020 | 341 | 36 | 48 | 107 |
| 24 | 151 | 109 | 820 | 78 | 60 | 255 | 1,430 | 799 | 246 | 38 | 50 | 84 |
| 25 | 164 | 87 | 1,280 | 74 | 60 | 207 | 1,820 | 495 | 218 | 36 | 46 | 86 |
| 26 | 126 | 82 | 570 | 70 | 58 | 182 | 1,890 | 392 | 195 | 35 | 44 | 79 |
| 27 | 98 | 84 | 401 | 68 | 56 | *164 | 1,370 | 316 | 154 | 36 | 41 | 2,090 |
| 28 | 395 | 78 | 263 | 66 | 56 | 188 | 1,180 | 281 | 132 | 40 | 50 | 3,070 |
| 29 | 366 | 73 | 197 | 60 | - | 194 | 1,190 | 220 | 119 | 39 | 89 | 984 |
| 30 | 226 | 84 | 123 | 56 | - | 210 | 1,060 | 203 | 104 | 42 | 90 | 508 |
| 31 | 162 | - | 173 | 52 | - | 203 | - | 191 | - | 45 | 74 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 4,396 | 395 | 29 | 142 | 0.717 | 0.83 |
| November | 6,154 | 768 | 73 | 205 | 1.04 | 1.16 |
| December | 5,704 | 1,280 | 54 | 184 | .929 | 1.07 |
| Calendar year 1941 | 63,315 | 3,740 | 22 | 173 | .874 | 11.89 |
| January | 3,839 | 474 | 56 | 124 | .626 | .72 |
| February | 1,534 | 80 | 43 | 54.8 | .277 | .29 |
| March | 8,411 | 1,030 | 60 | 271 | 1.37 | 1.58 |
| April | 32,956 | 3,570 | 213 | 1,099 | 5.55 | 6.19 |
| May | 14,159 | 1,020 | 191 | 457 | 2.31 | 2.66 |
| June | 9,526 | 1,780 | 69 | 318 | 1.61 | 1.80 |
| July | 1,712 | 102 | 35 | 55.2 | .279 | .32 |
| August | 2,314 | 169 | 41 | 74.6 | .377 | .43 |
| September | 9,726 | 3,070 | 43 | 324 | 1.64 | 1.83 |
| Water year 1941-42 | 100,431 | 3,570 | 29 | 275 | 1.39 | 18.88 |

Peak discharge.- Apr. 16 (3:15 a.m.) 5,660 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 2-4, 9-24, Jan. 2, Jan. 5 to Mar. 9.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter.
To convert war time to standard time, subtract 1 hour.

## Bouquet River at Willsboro, N. Y.

Location.- Water-stage recorder, lat. 44°21'30", long. 73°23'50", half a mile southwest of Willsboro, Essex County.
Drainage area.- 275 square miles.
Records available.- August and September 1904 (gage heights and discharge measurements only), August to November 1908, July 1923 to September 1942.
Average discharge.- 19 years (1923-42), 291 second-feet.
Extremes.- Maximum discharge during year, 3,380 second-feet Apr. 16; maximum gage height, 6.75 feet Mar. 9 (ice jam); minimum discharge, 10 second-feet Nov. 26 (gage height, 1.87 feet).
1923-42: Maximum discharge, about 11,800 second-feet Oct. 1, 1924 (gage height, 10.85 feet), from rating curve extended above 4,600 second-feet by logarithmic plotting; minimum, that of Nov. 26, 1941.
Remarks.- Records good except those for periods of ice effect, backwater from leaves, or no gage-height record, which are fair. Occasional slight diurnal fluctuation at low stages caused by power plants above station.

Rating tables, water year 1941-42, except periods of ice effect or backwater from leaves (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 9 | | | | | | Mar. 10 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 20 | 2.5 | 89 | 3.3 | 438 | 2.2 | 40 | 2.7 | 146 | 4.2 | 1,125 |
| 2.1 | 29 | 2.6 | 113 | 3.7 | 719 | 2.3 | 53 | 2.8 | 182 | 4.8 | 1,690 |
| 2.2 | 40 | 2.7 | 142 | 4.2 | 1,125 | 2.4 | 70 | 3.0 | 272 | 5.6 | 2,660 |
| 2.3 | 53 | 2.8 | 177 | 4.8 | 1,690 | 2.5 | 91 | 3.3 | 448 | | |
| 2.4 | 69 | 3.0 | 267 | | | 2.6 | 116 | 3.7 | 726 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | c21 | 78 | 54 | 78 | 60 | 46 | 391 | 501 | 150 | 137 | 80 | 60 |
| 2 | c22 | 196 | 50 | 240 | 56 | *70 | 404 | 429 | 137 | 125 | 83 | 55 |
| 3 | c24 | 247 | 49 | 310 | 54 | 76 | 521 | 398 | 128 | 122 | 74 | 53 |
| 4 | c30 | 144 | 50 | 230 | *52 | 62 | 675 | 356 | 131 | 114 | 65 | 56 |
| 5 | c44 | 101 | 54 | *180 | 49 | 60 | 625 | 310 | 157 | 106 | 60 | 55 |
| 6 | 65 | 84 | 65 | 135 | 47 | 280 | 888 | 267 | 146 | 101 | 56 | 56 |
| 7 | 53 | 174 | 85 | 106 | 47 | 290 | 1,380 | 272 | 134 | 101 | 55 | 50 |
| 8 | 50 | 501 | 70 | 90 | 45 | 350 | 1,410 | 448 | 140 | 94 | 53 | 49 |
| 9 | 46 | 224 | 56 | 78 | 43 | 1,600 | 984 | 423 | 125 | 94 | 56 | 49 |
| 10 | 44 | 156 | 48 | 70 | 40 | 2,460 | 704 | 326 | 108 | 91 | 50 | 64 |
| 11 | 40 | 116 | 43 | 64 | 38 | 1,420 | 596 | 267 | 101 | 89 | 89 | 111 |
| 12 | 41 | 98 | 39 | 58 | 36 | 767 | 534 | 243 | 94 | 91 | 83 | 106 |
| 13 | 45 | 84 | *37 | 54 | 34 | 668 | 481 | 267 | 94 | 91 | 63 | 91 |
| 14 | 49 | 71 | 36 | 50 | 33 | 555 | 494 | 262 | 396 | 85 | 73 | 78 |
| 15 | 50 | 71 | 38 | 47 | 32 | 398 | 632 | 224 | 2,070 | 72 | 101 | 68 |
| 16 | 49 | 64 | 46 | 44 | 31 | 356 | 2,660 | 199 | 906 | 68 | 100 | 67 |
| 17 | 55 | 66 | 66 | 41 | 34 | 716 | 1,810 | 224 | 548 | 68 | 104 | 60 |
| 18 | 53 | 70 | 58 | 40 | 70 | 704 | 1,760 | 262 | 720 | 68 | 96 | 94 |
| 19 | 53 | 63 | 50 | 46 | 100 | 582 | 1,130 | 220 | 823 | 67 | 83 | 74 |
| 20 | 52 | 59 | 41 | 62 | 114 | 461 | 1,060 | 195 | 514 | 65 | 72 | 72 |
| 21 | 50 | 59 | 34 | 90 | 90 | 361 | 841 | 190 | 416 | 63 | 67 | 74 |
| 22 | 49 | 64 | 29 | 160 | 54 | 732 | 668 | 256 | 476 | 60 | 62 | 78 |
| 23 | 46 | 74 | 34 | 140 | 46 | 686 | 652 | 555 | 384 | 60 | 56 | 72 |
| 24 | 48 | 73 | 80 | 114 | 37 | 423 | 928 | 461 | 277 | 60 | 50 | 67 |
| 25 | 49 | 65 | 600 | 130 | 40 | 338 | 1,070 | 332 | 243 | 53 | 49 | 62 |
| 26 | 52 | 59 | 540 | 102 | 40 | 304 | 1,100 | 272 | 229 | 55 | 46 | 58 |
| 27 | 56 | 64 | 315 | 80 | 39 | 294 | 864 | 248 | 195 | 56 | 46 | 170 |
| 28 | 53 | 61 | 165 | 74 | 36 | *326 | 660 | 211 | 178 | 62 | 51 | 1,970 |
| 29 | 135 | 58 | 135 | 68 | - | 344 | 618 | 182 | 164 | 76 | 74 | 627 |
| 30 | 95 | 57 | 106 | 64 | - | 367 | 582 | 171 | 160 | 74 | 78 | 329 |
| 31 | 73 | - | 90 | 60 | - | 385 | - | 168 | - | 72 | 67 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,589 | 135 | 21 | 51.3 | 0.187 | 0.22 |
| November | 3,301 | 501 | 57 | 110 | .400 | .45 |
| December | 3,188 | 600 | 29 | 103 | .375 | .43 |
| Calendar year 1941 | 48,496 | 2,410 | 17 | 133 | .484 | 6.57 |
| January | 3,105 | 310 | 40 | 100 | .364 | .42 |
| February | 1,397 | 114 | 31 | 49.9 | .181 | .19 |
| March | 16,491 | 2,460 | 46 | 532 | 1.93 | 2.22 |
| April | 27,152 | 2,660 | 391 | 905 | 3.29 | 3.67 |
| May | 9,139 | 555 | 168 | 295 | 1.07 | 1.23 |
| June | 10,344 | 2,070 | 94 | 345 | 1.25 | 1.40 |
| July | 2,540 | 137 | 53 | 81.9 | .298 | .34 |
| August | 2,172 | 104 | 46 | 70.1 | .255 | .29 |
| September | 4,895 | 1,970 | 49 | 163 | .593 | .66 |
| Water year 1941-42 | 85,313 | 2,660 | 21 | 234 | .851 | 11.52 |

Peak discharge.- Mar. 10 (6 p.m.) 3,070 sec.-ft.; Apr. 16 (2 p.m.) 3,380 sec.-ft.; June 15 (9:30 a.m.) 2,580 sec.-ft.; Sept. 28 (11 a.m.) 2,690 sec.-ft.
* Winter discharge measurement made on this day.
c Backwater from leaves.
Note.- Stage-discharge relation affected by ice Dec. 1-5, 7-25, Dec. 28 to Mar. 9 (no gage-height record Dec. 8-13, 21, Jan. 6-14, 17-20, Jan. 29 to Feb. 13).
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Lake George at Rogers Rock, N. Y.

Location.- Water-stage recorder, lat. 43°48'10", long. 73°27'25", about 500 feet north of Hooper's dock on south side of Stones Bay, Rogers Rock, Essex County. Datum of gage is 315.93 feet above mean sea level, adjustment of 1912.

Records available.- July 1913 to September 1942.

Extremes.- Maximum gage height during year, 3.98 feet June 11; minimum, 0.64 foot Dec. 20. 1913-42: Maximum gage height observed, 5.09 feet Apr. 9, 1936; minimum, that of Dec. 20, 1941.

Remarks.- Elevation of lake surface regulated by power plants and flood gates at Ticonderoga. Lake George has been controlled by a dam at its outlet for more than 100 years.

Gage height, in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.08 | 0.84 | 0.80 | 1.33 | 1.58 | 1.46 | 3.12 | 3.58 | 3.72 | 3.74 | 3.27 | 2.74 |
| 2 | 1.04 | .98 | .84 | 1.44 | 1.57 | 1.47 | 3.17 | 3.61 | 3.73 | 3.72 | 3.27 | 2.74 |
| 3 | 1.08 | .98 | .83 | 1.43 | 1.55 | 1.45 | 3.17 | 3.60 | 3.73 | 3.69 | 3.23 | 2.65 |
| 4 | 1.05 | .97 | .85 | 1.46 | 1.55 | 1.49 | 3.25 | 3.62 | 3.72 | 3.70 | 3.19 | 2.68 |
| 5 | 1.07 | .95 | .83 | 1.52 | 1.53 | 1.48 | 3.33 | 3.61 | 3.68 | 3.66 | 3.14 | 2.66 |
| 6 | 1.03 | .92 | .84 | 1.54 | 1.55 | 1.47 | 3.35 | 3.59 | 3.67 | 3.65 | 3.09 | 2.62 |
| 7 | 1.08 | 1.00 | .79 | 1.55 | 1.55 | 1.46 | 3.42 | 3.59 | 3.65 | 3.64 | 3.08 | 2.64 |
| 8 | 1.06 | 1.02 | .80 | 1.52 | 1.61 | 1.47 | 3.51 | 3.60 | 3.65 | 3.62 | 3.05 | 2.56 |
| 9 | .98 | 1.00 | .80 | 1.53 | 1.60 | 1.57 | 3.54 | 3.61 | 3.68 | 3.55 | 3.04 | 2.60 |
| 10 | 1.01 | .98 | .80 | 1.50 | 1.58 | 1.73 | 3.58 | 3.57 | 3.69 | 3.55 | 3.08 | 2.67 |
| 11 | .99 | .99 | .74 | 1.53 | 1.56 | 1.76 | 3.63 | 3.60 | 3.69 | 3.59 | 3.09 | 2.61 |
| 12 | .97 | .95 | .72 | 1.53 | 1.55 | 1.82 | 3.65 | 3.59 | 3.70 | 3.58 | 3.04 | 2.66 |
| 13 | .95 | .93 | .74 | 1.48 | 1.57 | 1.84 | 3.64 | 3.59 | 3.70 | 3.61 | 3.02 | 2.63 |
| 14 | 1.00 | .93 | .89 | 1.50 | 1.55 | 1.86 | 3.65 | 3.60 | 3.67 | 3.59 | 3.00 | 2.61 |
| 15 | .95 | .93 | .89 | 1.48 | 1.52 | 1.91 | 3.64 | 3.63 | 3.72 | 3.53 | 3.03 | 2.60 |
| 16 | .92 | .93 | .89 | 1.46 | 1.51 | 1.94 | 3.66 | 3.61 | 3.69 | 3.49 | 3.06 | 2.59 |
| 17 | .88 | .88 | .85 | 1.48 | 1.57 | 2.08 | 3.69 | 3.58 | 3.76 | 3.48 | 3.05 | 2.58 |
| 18 | .90 | .92 | .88 | 1.47 | 1.56 | 2.20 | 3.67 | 3.57 | 3.78 | 3.46 | 3.05 | 2.56 |
| 19 | .87 | .91 | .86 | 1.47 | 1.57 | 2.27 | 3.65 | 3.60 | 3.82 | 3.49 | 3.04 | 2.58 |
| 20 | .90 | .93 | .79 | 1.52 | 1.57 | 2.30 | 3.63 | 3.60 | 3.82 | 3.48 | 3.04 | 2.53 |
| 21 | .91 | .91 | .81 | 1.52 | 1.56 | 2.32 | 3.64 | 3.58 | 3.83 | 3.41 | 2.97 | 2.47 |
| 22 | .90 | .88 | .82 | 1.52 | 1.56 | 2.59 | 3.64 | 3.61 | 3.85 | 3.40 | 2.95 | 2.52 |
| 23 | .91 | .92 | .84 | 1.53 | 1.53 | 2.75 | 3.63 | 3.69 | 3.84 | 3.39 | 2.94 | 2.47 |
| 24 | .88 | .89 | .97 | 1.50 | 1.51 | 2.80 | 3.60 | 3.74 | 3.81 | 3.37 | 2.86 | 2.50 |
| 26 | .84 | .90 | 1.18 | 1.47 | 1.50 | 2.84 | 3.58 | 3.74 | 3.77 | 3.31 | 2.83 | 2.43 |
| 26 | .84 | .92 | 1.20 | 1.49 | 1.50 | 2.86 | 3.56 | 3.73 | 3.76 | 3.29 | 2.82 | 2.41 |
| 27 | .88 | .85 | 1.27 | 1.50 | 1.48 | 2.88 | 3.59 | 3.69 | 3.72 | 3.32 | 2.81 | 2.56 |
| 28 | .83 | .85 | 1.26 | 1.48 | 1.46 | 2.92 | 3.61 | 3.69 | 3.71 | 3.31 | 2.77 | 2.65 |
| 29 | .81 | .85 | 1.27 | 1.48 | - | 2.96 | 3.61 | 3.70 | 3.70 | 3.25 | 2.73 | 2.64 |
| 30 | .82 | .80 | 1.29 | 1.49 | - | 3.02 | 3.58 | 3.68 | 3.73 | 3.26 | 2.74 | 2.63 |
| 31 | .78 | - | 1.33 | 1.50 | - | 3.06 | - | 3.65 | - | 3.29 | 2.74 | - |

Monthly gage height, in feet, water year October 1941 to September 1942

| Month | Maximum | Minimum | Mean |
|---|---|---|---|
| October | 1.08 | 0.78 | 0.94 |
| November | 1.02 | .80 | .92 |
| December | 1.33 | .72 | .92 |
| Calendar year 1941 | 3.38 | .72 | 2.11 |
| January | 1.55 | 1.33 | 1.49 |
| February | 1.61 | 1.46 | 1.55 |
| March | 3.06 | 1.45 | 2.13 |
| April | 3.69 | 3.12 | 3.53 |
| May | 3.74 | 3.57 | 3.63 |
| June | 3.85 | 3.65 | 3.73 |
| July | 3.74 | 3.25 | 3.50 |
| August | 3.27 | 2.73 | 3.00 |
| September | 2.74 | 2.41 | 2.59 |
| Water year 1941-42 | 3.85 | .72 | 2.33 |

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Poultney River below Fair Haven, Vt.

Location.- Water-stage recorder, lat. 43°37'40", long. 73°18'50", a third of a mile downstream from Carver Falls, 1.9 miles upstream from Hubbardton River, and 3¼ miles northwest of Fair Haven, Rutland County.

Drainage area.- 187 square miles.

Records available.- October 1928 to September 1942.

Average discharge.- 14 years, 237 second-feet.

Extremes.- Maximum gage height during year, 14.42 feet Mar. 9, affected by ice (discharge not determined); minimum discharge, 11 second-feet (regulated) Oct. 26, Aug. 15, 16, 21-24; minimum daily, 11 second-feet Oct. 26, Aug. 23.

1928-42: Maximum discharge, 10,300 second-feet Sept. 22, 1938, from rating curve extended above 1,200 second-feet on basis of computations of flow over dam at gage heights 16.10 feet and 21.40 feet; maximum gage height, 22.90 feet Mar. 12, 1936 (ice jam); minimum discharge, 2.3 second-feet (regulated) July 18, 1937; minimum daily, 2.9 second-feet Oct. 13, 1935.

Remarks.- Records fair. Flow regulated by power plant above station and by Lake Bomoseen.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 64 | 69 | 97 | 145 | 50 | 30 | 512 | 166 | 105 | 68 | 32 | 55 |
| 2 | 69 | 240 | 97 | 311 | 65 | 120 | 450 | 146 | 98 | 50 | 16 | 55 |
| 3 | 97 | 234 | 70 | 323 | 95 | 145 | 474 | 162 | 88 | 61 | 34 | 63 |
| 4 | 43 | 157 | 88 | 196 | 100 | 100 | 474 | 130 | 82 | 73 | 25 | 60 |
| 5 | 25 | 142 | 112 | 212 | 105 | 140 | 462 | 123 | 92 | 20 | 24 | 14 |
| 6 | 66 | 127 | 71 | 180 | 75 | 220 | 486 | 116 | 72 | 60 | 23 | 13 |
| 7 | 72 | 122 | 52 | 130 | 65 | 200 | 550 | 118 | 50 | 52 | 23 | 14 |
| 8 | 72 | 142 | 76 | 110 | 15 | 170 | 1,180 | 163 | 102 | 53 | 23 | 59 |
| 9 | 87 | 113 | 70 | 120 | 85 | 1,100 | 855 | 108 | 85 | 49 | 13 | 49 |
| 10 | 91 | 120 | 70 | 70 | 75 | *1,800 | 622 | 93 | 74 | 43 | 16 | 59 |
| 11 | 53 | 79 | 76 | 110 | 80 | *700 | 538 | 116 | 70 | 61 | 21 | 55 |
| 12 | 13 | 103 | 77 | 80 | 77 | 566 | 566 | 100 | 43 | 38 | 23 | 15 |
| 13 | 54 | 91 | 39 | 76 | 90 | 427 | 562 | 114 | 73 | 84 | 22 | 13 |
| 14 | 64 | 94 | 41 | 80 | 40 | 363 | 647 | 120 | 41 | 51 | 22 | 26 |
| 15 | 64 | 72 | 119 | *76 | 20 | 289 | 620 | 128 | 251 | 43 | 12 | 59 |
| 16 | 70 | 56 | 105 | 80 | 80 | 300 | 790 | 147 | 256 | 43 | 12 | 66 |
| 17 | 67 | 71 | 90 | 60 | 125 | 1,210 | 688 | 20 | 225 | 50 | 26 | 59 |
| 18 | 13 | 82 | 91 | 30 | 135 | 1,230 | 620 | 156 | 148 | 26 | 26 | 50 |
| 19 | 33 | 57 | *86 | 130 | 150 | 745 | 594 | 113 | 143 | 19 | 26 | 26 |
| 20 | 76 | 63 | 182 | 280 | 110 | 512 | 581 | 115 | 171 | 59 | 23 | 13 |
| 21 | 69 | 101 | 37 | 300 | 80 | 427 | 556 | 173 | 183 | 41 | 35 | 42 |
| 22 | 70 | 60 | 92 | 190 | 40 | 1,770 | 506 | 202 | 144 | 42 | 12 | 50 |
| 23 | 66 | 94 | 80 | 150 | 95 | 1,260 | 457 | 188 | 118 | 33 | 11 | 54 |
| 24 | 75 | 140 | 150 | 100 | 88 | 709 | 410 | 321 | 114 | 31 | 28 | 62 |
| 25 | 29 | 113 | 850 | 95 | 90 | 526 | 297 | 260 | 86 | 17 | 41 | 58 |
| 26 | 11 | 119 | 438 | 100 | 88 | 450 | 260 | 194 | 91 | 16 | 60 | 14 |
| 27 | 71 | 60 | 342 | 110 | 130 | 405 | 257 | 160 | 74 | 30 | 50 | 26 |
| 28 | 70 | 110 | 279 | 120 | 60 | 364 | 243 | 131 | 64 | 39 | 57 | 111 |
| 29 | 84 | 68 | 240 | 80 | - | 352 | 207 | 121 | 73 | 28 | 33 | 34 |
| 30 | 87 | 61 | 200 | 90 | - | 352 | 188 | 111 | 60 | 47 | 14 | 48 |
| 31 | 91 | - | 176 | 80 | - | 384 | - | 89 | - | 30 | 41 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 1,936 | 97 | 11 | 62.5 | 0.334 | 0.39 |
| November | 3,162 | 240 | 57 | 105 | .561 | .63 |
| December | 4,595 | 850 | 37 | 148 | .791 | .91 |
| Calendar year 1941 | 51,702.2 | 1,900 | 8.2 | 142 | .759 | 10.29 |
| January | 4,214 | 323 | 30 | 136 | .727 | .84 |
| February | 2,328 | 150 | 15 | 83.1 | .444 | .46 |
| March | 17,386 | 1,800 | 30 | 561 | 3.00 | 3.46 |
| April | 15,652 | 1,180 | 188 | 522 | 2.79 | 3.11 |
| May | 4,404 | 321 | 20 | 142 | .759 | .88 |
| June | 3,276 | 256 | 41 | 109 | .583 | .65 |
| July | 1,357 | 84 | 16 | 43.8 | .234 | .27 |
| August | 824 | 60 | 11 | 26.6 | .142 | .16 |
| September | 1,322 | 111 | 13 | 44.1 | .236 | .26 |
| Water year 1941-42 | 60,456 | 1,800 | 11 | 166 | .888 | 12.02 |

Peak discharge.- Mar. 22 (2 p.m.) 2,570 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 21-25, Jan. 6 to Mar. 11. Shifting-control method used Oct. 24 to Apr. 12, Apr. 19 to June 15, July 19 to Sept. 30; discharge computed on basis of twenty discharge measurements and gage heights. Discharge in second-feet per square mile and run-off in inches may not represent the natural flow because of regulation.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Otter Creek at Center Rutland, Vt.

Location.- Water-stage recorder, lat. 43°36'15", long. 73°00'50", at highway bridge in Center Rutland, Rutland County, 200 feet downstream from dam, 1.2 miles downstream from East Creek, and 1½ miles west of Rutland.

Drainage area.- 307 square miles.

Records available.- May 1928 to September 1942.

Average discharge.- 14 years, 544 second-feet.

Extremes.- Maximum discharge during year, 5,620 second-feet Apr. 8 (gage height, 7.78 feet, from high-water mark in gage well); minimum daily, 65 second-feet Aug. 30.
1928-42: Maximum discharge, 13,700 second-feet Sept. 22, 1938 (gage height, 12.45 feet), by computation of flow over dam; minimum daily, 55 second-feet July 5, 1941.

Remarks.- Records good. Flow regulated by power plants and by East Pittsford and Chittenden Reservoirs on East Creek. (See p. 167.)

**Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)**

| | | | | | |
|---|---|---|---|---|---|
| 0.3 | 55 | 1.6 | 306 | 4.0 | 1,550 |
| .5 | 78 | 2.0 | 442 | 5.0 | 2,380 |
| .7 | 105 | 2.5 | 650 | 6.0 | 3,400 |
| 1.0 | 156 | 3.0 | 910 | 7.2 | 4,640 |
| 1.3 | 222 | 3.5 | 1,210 | | |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 147 | 421 | 227 | 345 | 175 | 148 | 850 | 655 | 323 | 188 | 166 | 106 |
| 2 | 133 | 1,090 | 247 | 780 | 205 | 192 | 775 | 578 | 265 | 196 | 137 | 107 |
| 3 | 178 | 785 | 233 | 1,070 | 230 | 237 | 1,270 | 497 | 242 | 208 | 142 | 102 |
| 4 | 170 | 477 | 246 | 614 | 220 | 259 | 1,480 | 461 | 261 | 160 | 143 | 114 |
| 5 | 154 | 379 | 244 | 490 | 210 | 270 | 1,380 | 439 | 360 | 149 | 126 | 93 |
| 6 | 217 | 353 | 191 | 340 | 185 | 340 | 1,780 | 373 | 322 | 172 | 129 | 68 |
| 7 | 195 | 362 | 182 | 300 | 160 | 259 | 2,110 | 436 | 250 | 167 | 139 | 71 |
| 8 | 225 | 405 | 206 | 330 | 145 | 352 | 4,760 | 583 | 446 | 153 | 91 | 91 |
| 9 | 190 | 291 | 210 | 335 | 180 | 1,870 | a2,700 | 500 | 316 | 161 | 87 | 128 |
| 10 | 214 | 298 | 214 | 280 | 200 | *2,930 | a1,600 | 430 | 224 | 154 | 123 | 188 |
| 11 | 243 | 240 | 167 | 250 | *185 | 1,780 | a1,400 | 382 | 197 | 214 | 133 | 200 |
| 12 | 223 | 269 | 163 | 300 | 195 | 1,360 | a1,200 | 342 | 201 | 245 | 123 | 133 |
| 13 | 215 | 247 | 129 | 290 | 190 | 1,090 | 1,120 | 382 | 187 | 214 | 127 | 104 |
| 14 | 226 | 260 | 214 | 270 | 140 | 910 | 1,090 | 333 | 510 | 174 | 127 | 129 |
| 15 | 212 | 198 | 367 | *245 | 135 | 650 | 1,240 | 277 | 1,580 | 163 | 112 | 122 |
| 16 | 191 | 169 | 360 | 260 | 170 | 628 | 2,290 | 249 | 1,050 | 159 | 92 | 123 |
| 17 | 175 | 246 | 323 | 220 | 195 | 1,210 | 2,570 | 512 | 662 | 134 | 144 | 129 |
| 18 | 134 | 216 | 293 | 180 | 240 | 1,210 | 2,340 | 625 | 608 | 129 | 142 | 126 |
| 19 | 173 | 221 | 277 | 375 | 260 | 1,000 | 1,900 | 498 | 582 | 112 | 124 | 103 |
| 20 | 224 | 205 | 234 | 940 | 210 | 805 | 1,520 | 455 | 795 | 238 | 123 | 109 |
| 21 | 220 | 249 | 167 | 660 | 175 | 720 | 1,210 | 1,060 | 560 | 162 | 115 | 176 |
| 22 | 205 | 228 | 221 | 467 | 152 | 1,580 | 1,030 | 985 | 530 | 140 | 103 | 100 |
| 23 | 192 | 217 | 244 | 383 | 155 | 1,480 | 1,060 | 751 | 435 | 108 | 66 | 101 |
| 24 | 191 | 291 | 695 | 307 | 185 | 1,000 | 1,270 | 1,130 | 336 | 99 | 105 | 107 |
| 25 | 182 | 256 | 1,440 | 265 | 190 | 795 | 1,360 | 676 | 295 | 87 | 112 | 111 |
| 26 | 156 | 235 | 1,100 | 265 | 165 | 720 | 1,410 | 508 | 294 | 81 | 118 | 94 |
| 27 | 193 | 188 | 715 | 245 | 190 | 680 | 1,240 | 428 | 235 | 138 | 114 | 154 |
| 28 | 256 | 206 | 556 | 230 | 143 | 785 | 940 | 374 | 200 | 160 | 112 | 1,030 |
| 29 | 256 | 178 | 478 | 200 | - | 720 | 600 | 333 | 201 | 142 | 95 | 440 |
| 30 | 232 | 201 | 282 | 210 | - | 800 | 725 | 268 | 203 | 206 | 65 | 225 |
| 31 | 264 | - | 303 | 165 | - | 725 | - | 274 | - | 257 | 102 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 6,168 | 264 | 133 | 200 | 0.651 | 0.75 |
| November | 9,403 | 1,090 | 178 | 313 | 1.02 | 1.14 |
| December | 10,948 | 1,440 | 129 | 353 | 1.15 | 1.33 |
| Calendar year 1941 | 122,613 | 2,680 | 55 | 336 | 1.09 | 14.86 |
| January | 11,631 | 1,070 | 165 | 375 | 1.22 | 1.41 |
| February | 5,205 | 260 | 135 | 186 | .606 | .63 |
| March | 27,525 | 2,930 | 148 | 888 | 2.89 | 3.33 |
| April | 46,640 | 4,760 | 725 | 1,555 | 5.07 | 5.65 |
| May | 15,994 | 1,130 | 249 | 516 | 1.68 | 1.94 |
| June | 12,672 | 1,580 | 187 | 422 | 1.37 | 1.54 |
| July | 5,070 | 257 | 81 | 164 | .534 | .61 |
| August | 3,637 | 166 | 65 | 117 | .381 | .44 |
| September | 4,884 | 1,030 | 68 | 163 | .531 | .59 |
| Water year 1941-42 | 159,797 | 4,760 | 65 | 438 | 1.43 | 19.36 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Batten Kill at Arlington.
Note.- Stage-discharge relation affected by ice Jan. 5-19, Jan. 25 to Feb. 27.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter.
To convert war time to standard time, subtract 1 hour.

## Otter Creek at Middlebury, Vt.

Location.- Water-stage recorder, lat. 44°00'45", long. 73°10'05", 150 feet upstream from highway bridge at Middlebury, Addison County, and 3½ miles downstream from Middlebury River.

Drainage area.- 628 square miles.

Records available.- April 1903 to May 1907, October 1910 to January 1920, October 1928 to September 1942.

Average discharge.- 26 years (1903-6, 1910-19, 1928-42), 964 second-feet.

Extremes.- Maximum discharge during year, 3,020 second-feet Apr. 14 (gage height, 4.74 feet); minimum, 121 second-feet Aug. 24.

1903-7, 1910-20, 1928-42: Maximum discharge, 11,000 second-feet Mar. 20, 21, 1936 (gage height, 10.3 feet), minimum, 93 second-feet Mar. 5, 1929.

Maximum discharge known, 13,600 second-feet Nov. 4, 1927 (gage height, 13.3 feet, present datum, at chain-gage site 1,800 feet upstream), from rating curve extended above 9,000 second-feet by logarithmic plotting.

Remarks.- Records good except those for periods of ice effect or backwater from aquatic vegetation, which are fair. Some regulation by Chittenden and East Pittsford Reservoirs on East Creek. (See p. 167.)

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 205 | 431 | 289 | 508 | 258 | 270 | 1,400 | 1,520 | 445 | 351 | 284 | 167 |
| 2 | 214 | 1,080 | 372 | 720 | 275 | 245 | 1,400 | 1,280 | 487 | 397 | 267 | 178 |
| 3 | 228 | 1,420 | 378 | 1,280 | 360 | 352 | 1,490 | 1,020 | 445 | 346 | 200 | 178 |
| 4 | 262 | 1,160 | 352 | 1,320 | 420 | 397 | 1,790 | 882 | 417 | 318 | 232 | 190 |
| 5 | 256 | 818 | 352 | 1,060 | 410 | 466 | 1,960 | 842 | 592 | 284 | 225 | 183 |
| 6 | 251 | 634 | 341 | 740 | 370 | 515 | 2,060 | 754 | 606 | 271 | 208 | 167 |
| 7 | 317 | 585 | 297 | 640 | 320 | 585 | 2,340 | 683 | 522 | 332 | 205 | 144 |
| 8 | 322 | 634 | 265 | 590 | 290 | 648 | 2,560 | 794 | 487 | 309 | 205 | 141 |
| 9 | 322 | 613 | 293 | 600 | 330 | 1,710 | 2,560 | 898 | 634 | 275 | 197 | 165 |
| 10 | 322 | 515 | 293 | 600 | 400 | 2,010 | 2,670 | 778 | 515 | 252 | 162 | 192 |
| 11 | 322 | 473 | 270 | 550 | 380 | *1,960 | 2,780 | 683 | 378 | 275 | 180 | 217 |
| 12 | 322 | 397 | 219 | 510 | *380 | 2,060 | 2,900 | 627 | 346 | 332 | 214 | 256 |
| 13 | 322 | 391 | 251 | 470 | 350 | *2,340 | 3,020 | 606 | 378 | 332 | 211 | 228 |
| 14 | 336 | 378 | 225 | 440 | 320 | 2,780 | 3,020 | 627 | 341 | 332 | 205 | 180 |
| 15 | 331 | 365 | 255 | 410 | 280 | 2,720 | 2,960 | 557 | 1,290 | 309 | 211 | 190 |
| 16 | 317 | 317 | 445 | *425 | 250 | 2,500 | 2,960 | 466 | 1,590 | 288 | 183 | 197 |
| 17 | 317 | 312 | 501 | 420 | 350 | 2,340 | 2,960 | 431 | 1,440 | 249 | 165 | 205 |
| 18 | 285 | 341 | 445 | 300 | 420 | 2,340 | 2,960 | 780 | 1,180 | 222 | 171 | 197 |
| 19 | 245 | 336 | 424 | 300 | 460 | 2,280 | 2,900 | 986 | 1,100 | 211 | 203 | 187 |
| 20 | 255 | 317 | 410 | 973 | 490 | 2,120 | 2,960 | 770 | 1,010 | 197 | 205 | 190 |
| 21 | 322 | 317 | 380 | 1,320 | 450 | 1,960 | 2,960 | 778 | 1,060 | 255 | 200 | 200 |
| 22 | 341 | 346 | *265 | 1,100 | 320 | 1,960 | 2,960 | 1,280 | 956 | 275 | 197 | 225 |
| 23 | 326 | 346 | 280 | 842 | 275 | 2,180 | 2,900 | 1,280 | 837 | 242 | 169 | 225 |
| 24 | 346 | 359 | 463 | 676 | 300 | 2,230 | 2,780 | 1,370 | 711 | 217 | 130 | 183 |
| 25 | 326 | 424 | 1,270 | 536 | 340 | 2,180 | 2,670 | 1,420 | 612 | 197 | 158 | 173 |
| 26 | 289 | 391 | 1,570 | 459 | 360 | 1,960 | 2,560 | 1,090 | 552 | 173 | 190 | 178 |
| 27 | 255 | 346 | 1,570 | 473 | 360 | 1,690 | 2,450 | 834 | 516 | 158 | 192 | 194 |
| 28 | 326 | 302 | 1,370 | 450 | 331 | 1,490 | 2,340 | 698 | 458 | 197 | 190 | 636 |
| 29 | 391 | 317 | 1,110 | 410 | - | 1,360 | 2,140 | 606 | 397 | 235 | 192 | 940 |
| 30 | 424 | 281 | 750 | 350 | - | 1,260 | 1,870 | 529 | 372 | 239 | 173 | 642 |
| 31 | 391 | - | 494 | 307 | - | 1,310 | - | 445 | - | 249 | 154 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 9,490 | 424 | 205 | 306 | 0.487 | 0.66 |
| November | 14,946 | 1,420 | 281 | 498 | .793 | .89 |
| December | 16,219 | 1,570 | 219 | 523 | .833 | .96 |
| Calendar year 1941 | 223,163 | 2,840 | 152 | 611 | .973 | 13.22 |
| January | 19,779 | 1,320 | 300 | 638 | 1.02 | 1.17 |
| February | 9,849 | 490 | 250 | 352 | .561 | .58 |
| March | 50,218 | 2,780 | 245 | 1,620 | 2.58 | 2.97 |
| April | 75,280 | 3,020 | 1,400 | 2,509 | 4.00 | 4.46 |
| May | 26,314 | 1,520 | 431 | 849 | 1.35 | 1.56 |
| June | 20,674 | 1,590 | 341 | 689 | 1.10 | 1.22 |
| July | 8,319 | 397 | 158 | 268 | .427 | .49 |
| August | 6,078 | 284 | 130 | 196 | .312 | .36 |
| September | 7,348 | 940 | 141 | 245 | .390 | .44 |
| Water year 1941-42 | 264,514 | 3,020 | 130 | 725 | 1.15 | 15.66 |

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 21-23, 30, Jan. 2, 6-19, 28-30, Feb. 2-27. Backwater from aquatic vegetation Oct. 1-31, June 21 to Sept. 28; discharge computed on basis of eight discharge measurements, gage heights, weather records, and records for station at Center Rutland.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## East Creek at Rutland, Vt.

Location.- Water-stage recorder, lat. 43°37'40", long. 72°59'20", at Rutland, Rutland County, on grounds of Rutland Country Club, 280 feet downstream from Grove Street covered bridge, and 2 miles upstream from mouth.

Drainage area.- 51.1 square miles.

Records available.- August 1940 to September 1942.

Extremes.- Maximum discharge during year, 796 second-feet Apr. 8 (gage height, 3.13 feet); minimum daily, 14 second-feet (regulated) Nov. 27, Aug. 30, Sept. 13, 20, 22, 30.

1940-42: Maximum discharge, 1,480 second-feet Sept. 2, 1940 (gage height, 3.96 feet), from rating curve extended above 600 second-feet by logarithmic plotting; minimum daily, that of Nov. 27, 1941, Aug. 30, Sept. 13, 20, 22, 30, 1942.

Maximum discharge known, 5,300 second-feet Sept. 21, 1938, by computation of flow over dam a quarter of a mile above gage.

Remarks.- Records excellent. Diversion above station from Mendon Brook for municipal supply of Rutland. Flow regulated by power plants and by Chittenden and East Pittsford Reservoirs (see p. 167), which have a combined usable capacity of 969,800,000 cubic feet.

Rating tables, water year 1941-42 (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to June 14 | | | | | | June 15 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.8 | 11 | 1.2 | 40 | 1.8 | 163 | 0.8 | 11 | 1.2 | 40 | 1.7 | 147 |
| .9 | 15 | 1.3 | 53 | 2.0 | 228 | .9 | 15 | 1.3 | 54 | 2.0 | 245 |
| 1.0 | 20 | 1.4 | 69 | 2.3 | 342 | 1.0 | 20 | 1.4 | 72 | 2.3 | 362 |
| 1.1 | 28 | 1.6 | 110 | 2.6 | 480 | 1.1 | 28 | 1.5 | 94 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 80 | 65 | 49 | 29 | 22 | 19 | 96 | 84 | 34 | 46 | 30 | 66 |
| 2 | 67 | 108 | 85 | 107 | 54 | 68 | 96 | 88 | 28 | 52 | 18 | 59 |
| 3 | 94 | 68 | 54 | 61 | 66 | 70 | 134 | 30 | 24 | 44 | 44 | 60 |
| 4 | 29 | 51 | 74 | 27 | 53 | 67 | 121 | 69 | 42 | 18 | 56 | 65 |
| 5 | 16 | 58 | 76 | 37 | 71 | 70 | 91 | 78 | 32 | 19 | 51 | 35 |
| 6 | 83 | 77 | 15 | 58 | 63 | 77 | 201 | 46 | 35 | 44 | 69 | 15 |
| 7 | 79 | 60 | 15 | 41 | 27 | 30 | 302 | 69 | 31 | 44 | 70 | 15 |
| 8 | 93 | 36 | 75 | 58 | 17 | 60 | 474 | 58 | 51 | 47 | 28 | 44 |
| 9 | 71 | 15 | 62 | 66 | 54 | 406 | 211 | 36 | 21 | 33 | 16 | 66 |
| 10 | 92 | 71 | 72 | 29 | 76 | 201 | 118 | 30 | 18 | 55 | 55 | 77 |
| 11 | 31 | 22 | 76 | 15 | 56 | 121 | 107 | 40 | 28 | 52 | 66 | 86 |
| 12 | 32 | 72 | 78 | 65 | 68 | 136 | 71 | 42 | 55 | 17 | 56 | 22 |
| 13 | 27 | 72 | 27 | 70 | 66 | 121 | 104 | 62 | 17 | 52 | 72 | 14 |
| 14 | 80 | 80 | 42 | 65 | 16 | 111 | 111 | 40 | 122 | 42 | 58 | 58 |
| 15 | 78 | 20 | 72 | 63 | 21 | 41 | 165 | 30 | 316 | 44 | 47 | 53 |
| 16 | 68 | 16 | 79 | 70 | 63 | 94 | 245 | 31 | 195 | 56 | 26 | 72 |
| 17 | 62 | 75 | 68 | 32 | 78 | 181 | 239 | 71 | 144 | 39 | 62 | 55 |
| 18 | 20 | 59 | 56 | 15 | 51 | 156 | 218 | 48 | 130 | 32 | 72 | 71 |
| 19 | 26 | 66 | 48 | 101 | 68 | 128 | 134 | 32 | 104 | 21 | 64 | 37 |
| 20 | 64 | 48 | 22 | 82 | 63 | 116 | 158 | 65 | 154 | 89 | 67 | 14 |
| 21 | 84 | 61 | 15 | 32 | 32 | 93 | 161 | 95 | 42 | 56 | 58 | 107 |
| 22 | 73 | 27 | 61 | 34 | 16 | 181 | 136 | 58 | 127 | 53 | 44 | 14 |
| 23 | 66 | 28 | 78 | 51 | 26 | 123 | 137 | 80 | 105 | 24 | 15 | 46 |
| 24 | 40 | 56 | 197 | 16 | 80 | 123 | 151 | 112 | 73 | 20 | 58 | 42 |
| 25 | 15 | 50 | 151 | 19 | 75 | 93 | 137 | 44 | 63 | 18 | 74 | 53 |
| 26 | 15 | 63 | 63 | 49 | 68 | 97 | 128 | 46 | 64 | 15 | 77 | 29 |
| 27 | 61 | 14 | 48 | 46 | 60 | 83 | 120 | 42 | 32 | 73 | 63 | 54 |
| 28 | 80 | 47 | 33 | 40 | 22 | 67 | 101 | 32 | 18 | 60 | 67 | 122 |
| 29 | 71 | 25 | 57 | 39 | - | 59 | 91 | 54 | 33 | 55 | 44 | 26 |
| 30 | 74 | 27 | 30 | 49 | - | 85 | 79 | 17 | 52 | 57 | 14 | 14 |
| 31 | 84 | - | 52 | 21 | - | 98 | - | 26 | - | 52 | 54 | - |

| Month | Observed | | | | Change in contents and diversion (equivalent, second-feet)† | Adjusted | | |
|---|---|---|---|---|---|---|---|---|
| | Second-foot-days | Maximum | Minimum | Mean | | Mean | Per square mile | Run-off in inches |
| October | 1,855 | 94 | 15 | 59.8 | -20.2 | 39.6 | 0.775 | 0.89 |
| November | 1,537 | 108 | 14 | 51.2 | +12.2 | 63.4 | 1.24 | 1.38 |
| December | 1,930 | 197 | 15 | 62.3 | -1.23 | 61.0 | 1.19 | 1.38 |
| Calendar year 1941 | 24,362 | 447 | 14 | 66.7 | -.206 | 66.5 | 1.30 | 17.68 |
| January | 1,487 | 107 | 15 | 48.0 | +9.00 | 57.0 | 1.12 | 1.29 |
| February | 1,432 | 80 | 16 | 51.1 | -19.9 | 31.2 | .611 | .64 |
| March | 3,375 | 406 | 19 | 109 | +28.4 | 137 | 2.68 | 3.10 |
| April | 4,637 | 474 | 71 | 155 | +136 | 291 | 5.69 | 6.36 |
| May | 1,655 | 112 | 17 | 53.4 | +32.5 | 85.9 | 1.68 | 1.94 |
| June | 2,190 | 316 | 17 | 73.0 | +9.77 | 82.8 | 1.62 | 1.81 |
| July | 1,329 | 69 | 15 | 42.9 | -13.8 | 29.1 | .569 | .66 |
| August | 1,615 | 82 | 14 | 52.1 | -36.2 | 15.9 | .311 | .36 |
| September | 1,491 | 122 | 14 | 49.7 | -14.2 | 35.5 | .695 | .78 |
| Water year 1941-42 | 24,533 | 474 | 14 | 67.2 | +10.2 | 77.4 | 1.51 | 20.59 |

† Change in contents in Chittenden and East Pittsford Reservoirs and diversion from Mendon Brook for municipal supply of Rutland.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Winooski River at Montpelier, Vt.

Location.- Water-stage recorder, lat. 44°15'25", long. 72°35'35", three-eighths of a mile upstream from Dog River and 1 mile downstream from depot in Montpelier, Washington County. Datum of gage is 499.99 feet above mean sea level, datum of 1929.
Drainage area.- 397 square miles.
Records available.- May 1909 to September 1923, August 1928 to September 1942.
Average discharge.- 23 years (1914-23, 1928-42), 580 second-feet (adjusted for change in reservoir contents since October 1938).
Extremes.- Maximum discharge during year, 6,440 second-feet Apr. 16; maximum gage height, 16.05 feet Mar. 9, ice jam; minimum daily discharge, 30 second-feet Sept. 6.
1909-23, 1928-42: Maximum discharge, 20,200 second-feet Apr. 7, 1912 (gage height, about 16.7 feet, present datum), from rating curve extended above 10,000 second-feet on basis of slope-area determination at gage height 27.1 feet; minimum, 6 second-feet (regulated) Sept. 30, 1921 (gage height, 2.58 feet); minimum daily, 17 second-feet Sept. 3, 1933.
Maximum discharge known, 57,000 second-feet Nov. 3, 1927 (gage height, 27.1 feet), by slope-area method.
Remarks.- Records good except those for period of ice effect, which are fair. Flow regulated by several small power plants above station, by Peacham Pond and Mollys Falls Reservoir on Mollys Brook (combined usable capacity, 492,000,000 cubic feet), (see p. 167), which regulate run-off from 24 square miles, and since 1935 by East Barre detention reservoir (see p. 182) and Wrightsville detention reservoir (see p. 184), (combined usable capacity, 1,379,500,000 cubic feet).

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 76 | 374 | 193 | 260 | 145 | 130 | 943 | 1,280 | 246 | 216 | 98 | 60 |
| 2 | 90 | 1,560 | 261 | 550 | 155 | 140 | 1,150 | 1,110 | 273 | 204 | 71 | 64 |
| 3 | 95 | 1,110 | 276 | 770 | 210 | 170 | 2,140 | 990 | 267 | 211 | 88 | 96 |
| 4 | 234 | 788 | 265 | 550 | 230 | 210 | 2,080 | 880 | 268 | 151 | 105 | 95 |
| 5 | 237 | 649 | 246 | 450 | 220 | 220 | 1,860 | 694 | 576 | 126 | 84 | 78 |
| 6 | 278 | 537 | 335 | 370 | 230 | 250 | 2,360 | 555 | 454 | 150 | 83 | 30 |
| 7 | 212 | 822 | 342 | 350 | 240 | 320 | 3,070 | 555 | 385 | 171 | 85 | 50 |
| 8 | 182 | 887 | 222 | 330 | 140 | 240 | 3,290 | 740 | 416 | 166 | 83 | 88 |
| 9 | 155 | 597 | 281 | 320 | 135 | 2,400 | 2,630 | 374 | 292 | 179 | 53 | 66 |
| 10 | 153 | 460 | 289 | 300 | 210 | 2,900 | 2,190 | 507 | 247 | 174 | 69 | 110 |
| 11 | 316 | 387 | 210 | 190 | 240 | 1,900 | 1,920 | 468 | 214 | 154 | 134 | 140 |
| 12 | 322 | 358 | 190 | 180 | 220 | 1,560 | 1,760 | 430 | 238 | 176 | 99 | 121 |
| 13 | 298 | 301 | 210 | 300 | 210 | 1,320 | 1,710 | 526 | 270 | 203 | 80 | 59 |
| 14 | 271 | 313 | *150 | 290 | 170 | 1,070 | 1,660 | 532 | 718 | 188 | 62 | 106 |
| 15 | 260 | 321 | 170 | 270 | 120 | *727 | 2,950 | 427 | 3,330 | 166 | 76 | 90 |
| 16 | 264 | 300 | 310 | 260 | 125 | 645 | 4,860 | 378 | 1,900 | 157 | 106 | 170 |
| 17 | 213 | 290 | 260 | 240 | 155 | 720 | 3,400 | 332 | 1,340 | 174 | 199 | 195 |
| 18 | 147 | 273 | 250 | 160 | 210 | 894 | 3,290 | 1,280 | 1,100 | 131 | 151 | 164 |
| 19 | 178 | 268 | 300 | 300 | *200 | 950 | 2,850 | 915 | 902 | 94 | 108 | 120 |
| 20 | 207 | 266 | 220 | 680 | 190 | 727 | 2,630 | 654 | 672 | 172 | 90 | 66 |
| 21 | 182 | 276 | 125 | 480 | 180 | 688 | 2,300 | 587 | 463 | 186 | 93 | 152 |
| 22 | 188 | 262 | 170 | 400 | 125 | 894 | 2,100 | 711 | 403 | 156 | 80 | 154 |
| 23 | 215 | 240 | 230 | 360 | 120 | 880 | 2,000 | 572 | 339 | 138 | 54 | 132 |
| 24 | 244 | 302 | 450 | 360 | 160 | 675 | 2,100 | 819 | 305 | 135 | 74 | 109 |
| 25 | 252 | 258 | 1,200 | 260 | 180 | 621 | 2,200 | 591 | 275 | 131 | 77 | 110 |
| 26 | 244 | 262 | 850 | 250 | 200 | 657 | 2,190 | 492 | 253 | 60 | 110 | 85 |
| 27 | 246 | 230 | 620 | 340 | 180 | 824 | 1,970 | 444 | 307 | 61 | 84 | 142 |
| 28 | 315 | 210 | 480 | 350 | 190 | 982 | 1,810 | 419 | 296 | 148 | 81 | 911 |
| 29 | 323 | 217 | 390 | 270 | - | 950 | 1,710 | 355 | 255 | 147 | 74 | 437 |
| 30 | 272 | 250 | 350 | 250 | - | 1,070 | 1,560 | 309 | 235 | 158 | 49 | 252 |
| 31 | 253 | - | 300 | 220 | - | 852 | - | 277 | - | 137 | 74 | - |

| Month | Observed | | | | Change in contents (equivalent, second-feet)† | Adjusted for change in reservoir contents | | |
|---|---|---|---|---|---|---|---|---|
| | Second-foot-days | Maximum | Minimum | Mean | | Mean | Per square mile | Run-off in inches |
| October | 6,952 | 323 | 76 | 224 | +14.7 | 239 | 0.602 | 0.69 |
| November | 13,368 | 1,560 | 210 | 446 | +22.4 | 468 | 1.18 | 1.32 |
| December | 10,145 | 1,200 | 125 | 327 | -6.12 | 321 | .809 | .93 |
| Calendar year 1941 | 139,962 | 2,700 | 43 | 383 | -3.55 | 380 | .957 | 12.99 |
| January | 10,660 | 770 | 160 | 344 | -30.6 | 313 | .788 | .91 |
| February | 5,090 | 240 | 120 | 182 | -28.9 | 153 | .385 | .40 |
| March | 26,586 | 2,900 | 130 | 858 | +26.6 | 884 | 2.23 | 2.57 |
| April | 68,683 | 4,860 | 943 | 2,289 | +140 | 2,429 | 6.12 | 6.83 |
| May | 20,003 | 1,280 | 277 | 645 | -31.9 | 613 | 1.54 | 1.78 |
| June | 17,239 | 3,330 | 214 | 575 | +.76 | 575 | 1.45 | 1.62 |
| July | 4,840 | 216 | 60 | 156 | -26.0 | 130 | .327 | .38 |
| August | 2,774 | 199 | 49 | 89.5 | -14.3 | 75.2 | .189 | .22 |
| September | 4,452 | 911 | 30 | 148 | -8.96 | 139 | .350 | .39 |
| Water year 1941-42 | 190,792 | 4,860 | 30 | 523 | +4.71 | 527 | 1.33 | 18.04 |

Peak discharge.- Apr. 8 (4 a.m.) 3,730 sec.-ft.; Apr. 16 (1:30 a.m.) 6,440 sec.-ft.; June 15 (4 a.m.) 3,730 sec.-ft.
* Winter discharge measurement made on this day.
† Change in contents in Peacham Pond, Mollys Falls Reservoir, and East Barre and Wrightsville detention reservoirs.
Note.- Stage-discharge relation affected by ice Dec. 11 to Mar. 11.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Winooski River near Essex Junction, Vt.

Location.- Water-stage recorder, lat. 44°28'40", long. 73°08'20", half a mile downstream from Muddy Brook and 2 miles southwest of Essex Junction, Chittenden County.
Drainage area.- 1,044 square miles.
Records available.- October 1928 to September 1942.
Average discharge.- 14 years, 1,589 second-feet (adjusted for change in reservoir contents since October 1938).
Extremes.- Maximum discharge during year, 22,400 second-feet Apr. 16 (gage height, 13.15 feet); minimum daily, 88 second-feet Aug. 29.

1928-42: Maximum discharge, 45,300 second-feet Mar. 19, 1936 (gage height, 23.54 feet), from rating curve extended above 25,000 second-feet on basis of slope-area determination and computations of flow over dam at gage heights 18.72 feet, 23.54 feet, and 50.4 feet; minimum daily, 70 second-feet (regulated) Sept. 25, 1937.

Maximum discharge known, 113,000 second-feet Nov. 4, 1927 (gage height, 50.4 feet, from floodmarks), by slope-area determination and computation of flow over dam.

Remarks.- Records good except those for periods of ice effect, which are fair. Flow regulated by power plants above station and by Peacham Pond and Mollys Fall Reservoir (see p. 167) and Waterbury Reservoir (see p. 188), (combined usable capacity, 3,304,300,000 cubic feet), which regulate run-off from 24 square miles and 109 square miles, respectively, and by East Barre and Wrightsville detention reservoirs (see pp. 182, 184), (combined usable capacity, 1,379,500,000 cubic feet).

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 315 | 638 | 616 | 500 | 560 | 390 | 2,220 | 2,950 | 930 | 619 | 182 | 420 |
| 2 | 314 | 3,390 | 736 | 1,100 | 820 | 660 | 2,380 | 2,950 | 834 | 614 | 231 | 364 |
| 3 | 342 | 2,900 | 780 | 1,950 | 820 | 740 | 4,360 | 2,550 | 670 | 720 | 648 | 414 |
| 4 | 454 | 1,920 | 934 | 1,600 | 850 | 800 | 5,380 | 2,300 | 581 | 460 | 744 | 404 |
| 5 | 217 | 1,500 | 793 | 1,150 | 930 | 680 | 4,320 | 2,010 | 826 | 230 | 674 | 171 |
| 6 | 497 | 1,220 | 393 | 630 | 920 | 740 | 5,960 | 1,610 | 650 | 766 | 430 | 140 |
| 7 | 468 | 1,010 | 590 | 700 | 700 | 620 | 8,580 | 1,360 | 756 | 644 | 604 | 95 |
| 8 | 430 | 1,500 | 740 | 600 | 440 | 580 | 6,580 | 1,700 | 892 | 612 | 196 | 340 |
| 9 | 364 | 1,450 | 753 | 880 | 780 | 4,800 | 6,580 | 1,680 | 748 | 632 | 126 | 505 |
| 10 | 410 | 1,110 | 776 | 1,000 | 830 | 6,400 | 4,970 | 1,390 | 626 | 640 | 613 | 374 |
| 11 | 349 | 850 | 800 | 700 | 860 | 5,000 | 4,110 | 1,230 | 664 | 237 | 582 | 422 |
| 12 | 428 | 815 | 750 | 800 | 920 | *3,900 | 3,600 | 1,080 | 532 | 317 | 663 | 114 |
| 13 | 539 | 790 | 330 | 880 | 840 | *3,100 | 3,220 | 1,050 | 228 | 582 | 640 | 203 |
| 14 | 625 | 738 | 436 | 840 | 540 | 2,700 | 3,500 | 1,360 | 2,860 | 646 | 556 | 397 |
| 15 | 474 | 556 | 678 | 920 | 500 | 2,220 | 5,660 | 1,270 | 10,400 | 631 | 140 | 344 |
| 16 | 454 | 390 | 860 | 800 | 880 | 1,800 | 19,400 | 784 | 6,380 | 712 | 227 | 507 |
| 17 | 466 | 750 | 700 | 660 | 840 | 2,150 | 10,800 | 1,160 | 4,540 | 674 | 550 | 516 |
| 18 | 352 | 690 | 630 | 700 | 820 | 2,450 | 11,000 | 2,060 | 4,540 | 162 | 538 | 770 |
| 19 | 122 | 558 | 718 | 770 | 870 | 2,700 | 7,960 | 1,770 | 4,320 | 236 | 474 | 235 |
| 20 | 412 | 634 | 590 | 1,500 | 850 | 2,000 | 7,380 | 1,260 | 3,400 | 676 | 508 | 158 |
| 21 | 418 | 553 | 190 | 1,200 | 460 | 1,740 | 6,360 | 1,160 | 1,870 | 734 | 433 | 532 |
| 22 | 380 | 318 | 740 | 900 | 500 | 2,090 | 5,780 | 1,310 | 1,130 | 756 | 130 | 518 |
| 23 | 456 | 446 | 780 | 820 | 800 | 2,300 | 5,980 | 1,260 | 984 | 770 | 95 | 468 |
| 24 | 568 | 682 | 870 | 750 | 740 | 1,800 | 6,780 | 1,260 | 1,040 | 757 | 408 | 718 |
| 25 | 534 | 664 | 2,100 | 650 | 660 | 1,520 | 6,980 | 1,450 | 936 | 122 | 516 | 358 |
| 26 | 523 | 706 | 1,800 | 900 | 630 | 2,450 | 6,980 | 1,310 | 912 | 143 | 426 | 122 |
| 27 | 470 | 402 | 1,400 | 850 | 620 | 2,780 | 6,180 | 1,140 | 675 | 766 | 416 | 478 |
| 28 | 654 | 722 | 1,100 | 930 | 460 | 2,700 | 4,220 | 938 | 769 | 762 | 374 | 2,560 |
| 29 | 874 | 534 | 960 | 990 | - | 2,700 | 3,800 | 932 | 814 | 750 | 88 | 1,940 |
| 30 | 622 | 279 | 700 | 930 | - | 2,450 | 3,500 | 320 | 968 | 716 | 92 | 958 |
| 31 | 703 | - | 550 | 780 | - | 2,150 | - | 394 | - | 760 | 394 | - |

| Month | Observed | | | | Change in contents (equivalent, second-feet)† | Adjusted for change in reservoir contents | | |
|---|---|---|---|---|---|---|---|---|
| | Second-foot-days | Maximum | Minimum | Mean | | Mean | Per square mile | Run-off in inches |
| October | 14,224 | 874 | 122 | 459 | +129 | 587 | 0.562 | 0.65 |
| November | 28,615 | 3,390 | 279 | 954 | +213 | 1,167 | 1.12 | 1.25 |
| December | 25,013 | 2,100 | 190 | 807 | -12.6 | 794 | .761 | .88 |
| Calendar year 1941 | 377,297 | 10,200 | 73 | 1,034 | -7.13 | 1,027 | .984 | 13.34 |
| January | 28,780 | 1,950 | 500 | 928 | -115 | 813 | .779 | .90 |
| February | 20,420 | 930 | 440 | 729 | -337 | 392 | .375 | .39 |
| March | 69,110 | 6,400 | 390 | 2,229 | +112 | 2,341 | 2.24 | 2.59 |
| April | 136,580 | 19,400 | 2,220 | 6,219 | +633 | 6,852 | 6.56 | 7.32 |
| May | 44,998 | 2,950 | 320 | 1,452 | -3.40 | 1,448 | 1.39 | 1.60 |
| June | 55,395 | 10,400 | 228 | 1,846 | +22.3 | 1,869 | 1.79 | 2.00 |
| July | 17,846 | 770 | 122 | 576 | -205 | 370 | .354 | .41 |
| August | 12,698 | 744 | 88 | 410 | -188 | 222 | .213 | .24 |
| September | 15,545 | 2,560 | 95 | 518 | -16.0 | 502 | .481 | .54 |
| Water year 1941-42 | 519,224 | 19,400 | 88 | 1,423 | +20.1 | 1,443 | 1.38 | 18.77 |

Peak discharge.- Apr. 16 (12 m.) 22,400 sec.-ft.; June 15 (9 a.m.) 13,100 sec.-ft.
* Winter discharge measurement made on this day.
† Change in contents in Peacham Pond and Mollys Falls Reservoir, East Barre and Wrightsville detention reservoirs, and Waterbury Reservoir.
Note.- Stage-discharge relation affected by ice Dec. 11-13, 16-18, Dec. 20 to Mar. 14.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## East Barre detention reservoir at East Barrs, Vt.

Location.- Staff gage, lat. 44°10', long. 72°27', on reservoir on Jail Branch at East Barre, Washington County, 3½ miles upstream from mouth of Jail Branch. Datum of gage is 1,127.9 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 32.2 square miles.

Records available.- March and April 1936, September 1938 to September 1942.

Extremes.- Maximum gage height observed during year, 18.0 feet Apr. 18; minimum, 0.15 foot Sept. 1-9.
1936, 1938-42: Maximum gage height, 36.0 feet Mar. 22, 1936; minimum, 0.1 foot on several days in August and September 1939.

Remarks.- Reservoir is formed by earth-fill dam completed by Corps of Engineers, U. S. Army, in 1935 for flood control. Capacity of reservoir is 506,000,000 cubic feet between gage heights 0.0 foot (bottom of outlet opening) and 37.1 feet (crest of spillway). Dam has no gates; outflow from reservoir is dependent on capacity of fixed outlet opening, 4 feet square, near base of dam. Gage read at 8 a.m.

Cooperation.- Gage readings furnished by State of Vermont Board of Public Works.

Gage height at 8 a.m., in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.3 | 1.45 | 1.2 | 1.25 | - | 0.75 | - | 5.3 | 1.4 | 1.2 | 0.5 | 0.15 |
| 2 | .3 | - | 1.2 | 2.8 | - | .75 | 3.8 | 4.8 | 1.2 | 1.0 | .5 | .15 |
| 3 | .3 | - | 1.2 | 4.2 | - | .75 | 8.75 | 4.0 | 1.4 | .9 | .4 | .15 |
| 4 | 2.2 | 3.3 | 1.2 | 2.7 | 0.9 | .8 | 10.7 | 3.6 | 1.4 | .e5 | .4 | .15 |
| 5 | - | 2.2 | 1.5 | 2.0 | .e | .95 | 9.8 | 3.3 | - | .8 | .4 | .15 |
| 6 | 1.6 | 1.9 | 1.5 | 1.85 | .75 | 1.0 | 10.1 | 2.8 | 1.6 | .8 | .3 | .15 |
| 7 | 1.3 | 6.1 | 1.3 | 1.7 | .75 | 1.3 | 12.8 | 3.1 | 1.5 | .8 | .3 | .15 |
| 8 | 1.2 | 3.3 | 1.1 | 1.6 | .7 | 1.5 | 16.7 | 4.2 | 2.3 | .8 | .3 | .15 |
| 9 | 1.1 | 2.4 | 1.1 | 1.5 | .65 | 3.25 | 16.1 | 3.0 | 1.7 | .8 | .3 | .15 |
| 10 | 1.0 | 1.85 | 1.1 | 1.45 | .8 | 17.1 | 15.3 | 3.2 | - | .7 | .25 | .2 |
| 11 | 1.4 | 1.8 | .9 | 1.3 | .8 | 16.2 | 14.3 | 2.85 | - | .6 | .25 | .3 |
| 12 | 1.9 | 1.75 | .8 | 1.3 | .8 | 14.8 | 12.7 | 2.4 | 1.1 | .9 | .25 | .45 |
| 13 | 2.45 | 1.65 | .8 | 1.1 | .8 | 12.5 | 10.4 | 2.1 | 1.0 | .7 | .25 | .3 |
| 14 | 1.6 | 1.5 | .8 | .9 | .8 | 8.5 | 7.85 | 1.9 | - | .6 | .25 | .2 |
| 15 | 1.25 | 1.4 | .8 | .9 | .75 | 3.1 | - | 1.7 | 13.4 | .6 | .3 | .2 |
| 16 | 1.1 | 1.35 | .8 | .9 | .75 | 2.5 | 16.2 | 1.6 | 12.7 | .6 | .3 | .4 |
| 17 | .9 | 1.3 | .95 | .85 | .75 | 2.35 | 17.4 | 6.2 | 7.8 | .5 | .3 | .25 |
| 18 | .8 | 1.3 | .85 | 1.0 | .75 | 3.1 | 18.0 | 11.7 | 5.2 | .4 | .25 | .2 |
| 19 | 1.0 | 1.3 | .e | 1.1 | .75 | 4.7 | 17.9 | 8.3 | 4.0 | .3 | .25 | .2 |
| 20 | 1.0 | 1.3 | .8 | 4.2 | .75 | 4.2 | 17.e | 3.1 | 3.2 | .3 | .2 | 1.5 |
| 21 | 1.0 | 1.5 | .7 | 2.4 | .75 | 3.0 | 17.0 | 4.2 | 2.3 | .3 | .2 | .9 |
| 22 | - | 1.45 | .7 | 2.0 | .7 | 4.1 | 16.2 | - | 2.0 | .25 | .2 | .5 |
| 23 | 1.0 | - | .65 | 1.75 | .7 | 3.0 | 15.4 | - | 1.8 | .25 | .2 | - |
| 24 | - | 1.85 | 3.7 | 1.6 | .7 | 2.7 | 15.0 | - | 1.7 | .25 | .2 | .6 |
| 25 | 1.1 | 1.6 | 9.9 | 1.5 | .7 | 2.2 | 14.7 | - | 1.5 | .25 | .2 | .5 |
| 26 | 1.1 | 1.4 | 4.2 | 1.5 | .7 | 2.1 | 14.2 | 2.8 | 1.4 | .25 | .2 | .4 |
| 27 | 1.3 | 1.3 | 2.8 | 1.45 | .7 | 2.5 | 13.6 | 2.6 | 1.35 | .25 | .2 | - |
| 28 | 2.35 | 1.3 | 2.1 | 1.3 | .7 | 4.1 | 12.2 | 2.5 | 1.7 | .3 | .2 | - |
| 29 | 1.5 | 1.3 | 1.e | 1.1 | - | 4.1 | 10.6 | 2.4 | 1.4 | .3 | .2 | 1.5 |
| 30 | 1.3 | 1.25 | 1.3 | - | - | 4.3 | 6.4 | 1.6 | 1.3 | .3 | .2 | 1.3 |
| 31 | 1.2 | - | 1.3 | - | - | - | - | 1.5 | - | .5 | .2 | - |

Gage height and contents, water year October 1941 to September 1942

| Date | Gage height (feet)† | Contents (millions of cubic feet) | Change in contents during month | |
|---|---|---|---|---|
| | | | (Millions of cubic feet) | (Equivalent second-feet) |
| Sept.30 | 0.3 | 0.15 | - | - |
| Oct. 31 | 1.4 | .74 | +0.59 | +0.22 |
| Nov. 30 | 1.2 | .62 | -.12 | -.05 |
| Dec. 31 | 1.3 | .68 | +.06 | +.02 |
| Calendar year 1941 | - | - | -15.07 | -.48 |
| Jan. 31 | 1.0 | .50 | -.18 | -.07 |
| Feb. 28 | .7 | .35 | -.15 | -.06 |
| Mar. 31 | 3.2 | 2.04 | +1.69 | +.63 |
| Apr. 30 | 5.3 | 4.16 | +2.12 | +.82 |
| May 31 | 1.4 | .74 | -3.42 | -1.28 |
| June 30 | 1.2 | .62 | -.12 | -.05 |
| July 31 | .5 | .25 | -.37 | -.14 |
| Aug. 31 | .2 | .10 | -.15 | -.06 |
| Sept.30 | 1.2 | .62 | +.52 | +.20 |
| Water year 1941-42 | - | - | +.47 | +.01 |

† Gage height at midnight determined from graph based on observer's readings and on gage-height graph for station on Jail Branch, below reservoir.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Jail Branch at East Barre, Vt.

Location.- Water-stage recorder, lat. 44°10', long. 72°27', in East Barre, Washington County, just downstream from highway bridge, three-quarters of a mile downstream from East Barre detention reservoir, and 2⅝ miles upstream from Stevens Branch. Datum of gage is 1,071.59 feet above mean sea level (levels by Corps of Engineers, U. S. Army).
Drainage area.- 33.0 square miles.
Records available.- August 1920 to September 1923, November 1933 to September 1942.
Extremes.- Maximum discharge during year, 319 second-feet Apr. 17-20; maximum gage height, 3.92 feet Mar. 9, ice jam; minimum daily discharge, 2.5 second-feet several days in August and September.
1920-23, 1933-42: Maximum discharge observed, 1,350 second-feet Apr. 10, 1922 (gage height, 8.38 feet, site and datum then in use), from rating curve extended above 900 second-feet; minimum observed, 0.5 second-foot Sept. 11, 1921.
Remarks.- Records good except those below 20 second-feet and those for periods of ice effect or no gage-height record, which are fair, and those for July 15 to Sept. 26, which are poor. Run-off affected by East Barre detention reservoir since November 1935. (See p. 182.) Diversion from reservoir on Orange Brook, a tributary upstream, for municipal use of city of Barre.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.8 | 42 | 17 | 18 | 13 | e.5 | 80 | 117 | 22 | 16 | 5.6 | e2.5 |
| 2 | 4.1 | 166 | 17 | 58 | 12 | 9 | 93 | 99 | 21 | 15 | 4.2 | e2.5 |
| 3 | 5.9 | 63 | 17 | 85 | 11 | 9.5 | 220 | 93 | 22 | 11 | 3.4 | e2.5 |
| 4 | 18 | 37 | 18 | 48 | 10 | 10 | 237 | 93 | 24 | 11 | 3.1 | e2.5 |
| 5 | 16 | 29 | 21 | 34 | 9.5 | 12 | 224 | 75 | 79 | 10 | e3 | e3 |
| 6 | 19 | 27 | 24 | 30 | 9 | 14 | 252 | 65 | 35 | 10 | e3 | e3 |
| 7 | 14 | 82 | 19 | 27 | e.5 | 15 | 286 | 88 | 34 | 10 | e3 | e2.5 |
| 8 | 12 | 74 | 16 | 25 | 8 | 16 | 314 | 102 | 67 | 10 | e3 | e2.5 |
| 9 | 10 | 39 | 15 | 23 | 9 | 170 | 309 | 73 | 26 | 9.5 | e2.5 | e2.5 |
| 10 | 13 | 31 | 13 | 21 | 10 | 310 | 304 | 63 | 19 | 8 | e3 | 3.8 |
| 11 | 37 | 28 | 11 | 19 | 10 | 300 | 288 | 52 | 15 | 7.5 | e3 | 5.4 |
| 12 | 29 | 27 | 9.5 | 18 | 10 | 288 | 269 | 49 | 13 | 11 | e3 | 6.9 |
| 13 | 35 | 22 | *8.5 | 15 | 10 | 264 | 252 | 58 | 13 | 8 | e3 | 3.9 |
| 14 | 23 | 23 | 10 | 13 | 10 | 181 | 194 | 39 | 46 | 7.1 | e3 | 3 |
| 15 | 21 | 25 | *13 | 12 | 9 | 73 | 234 | 34 | 269 | 5.4 | 3.0 | 2.5 |
| 16 | 16 | 23 | 13 | 11 | 9 | *54 | 314 | 28 | 255 | 6.4 | 3.0 | 3 |
| 17 | 12 | 20 | 12 | 11 | 10 | 54 | 319 | 188 | 185 | 4.6 | 3.0 | 5.2 |
| 18 | 13 | 19 | 11 | 14 | 10 | *70 | 319 | 260 | 102 | 4.4 | 3.4 | 3.8 |
| 19 | 18 | 23 | 10 | 37 | 9.5 | 83 | 319 | 177 | 101 | 4.4 | 3.0 | 3.1 |
| 20 | 16 | *21 | 9.5 | 75 | 9 | 54 | 319 | 75 | 54 | 4.4 | e3 | 8.4 |
| 21 | 13 | 23 | 9 | 44 | 8.5 | 56 | 314 | 116 | 35 | 3.8 | e2.5 | 8.4 |
| 22 | 18 | 20 | 8.5 | 34 | 8 | 86 | 304 | 114 | 35 | 3.4 | e2.5 | 5.1 |
| 23 | 15 | 20 | 8 | 28 | 8 | 74 | 293 | 104 | 27 | 3.1 | e2.5 | 4.3 |
| 24 | 19 | 25 | 56 | 26 | 8 | 46 | 288 | 202 | 27 | e3 | e2.5 | 5.7 |
| 25 | 22 | 24 | 210 | 24 | 7.5 | 39 | 286 | 98 | 23 | e3 | e2.5 | 6.6 |
| 26 | 18 | 22 | 115 | 22 | 7.5 | 39 | 285 | 65 | 21 | e3 | e2.5 | 4.7 |
| 27 | 17 | 20 | 58 | 20 | 7.5 | 54 | 274 | 61 | 48 | e3 | e2.5 | 27 |
| 28 | 30 | 20 | 42 | 18 | 8 | 86 | 255 | 49 | 27 | 4.5 | e2.5 | 191 |
| 29 | 25 | 19 | 29 | 16 | - | 105 | 228 | 37 | 21 | 3.7 | e2.5 | 45 |
| 30 | 18 | 18 | 22 | 15 | - | 105 | 162 | 34 | 19 | 57 | e2.5 | 19 |
| 31 | 23 | - | 19 | 14 | - | 61 | - | 29 | - | 5.6 | e2.5 | - |

| Month | Observed | | | | Change in contents (equivalent, second-feet)† | Adjusted for change in reservoir contents | | |
|---|---|---|---|---|---|---|---|---|
| | Second-foot-days | Maximum | Minimum | Mean | | Mean | Per square mile | Run-off in inches |
| October | 553.8 | 37 | 3.8 | 17.9 | +0.22 | 18.1 | 0.548 | 0.63 |
| November | 1,032 | 166 | 18 | 34.4 | -.06 | 34.4 | 1.04 | 1.16 |
| December | 861.0 | 210 | 8 | 27.8 | +.02 | 27.8 | .842 | .97 |
| Calendar year 1941 | 12,344.7 | 290 | 2.5 | 33.8 | -.46 | 33.3 | 1.01 | 13.71 |
| January | 855 | 85 | 11 | 27.6 | -.07 | 27.5 | .833 | .96 |
| February | 259.5 | 13 | 7.5 | 9.27 | -.06 | 9.21 | .279 | .29 |
| March | 2,746.0 | 310 | 8.5 | 88.6 | +.63 | 89.2 | 2.70 | 3.12 |
| April | 7,817 | 319 | 80 | 261 | +.82 | 261 | 7.91 | 8.84 |
| May | 2,737 | 260 | 28 | 88.3 | -1.28 | 87.0 | 2.64 | 3.04 |
| June | 1,685 | 269 | 13 | 56.2 | -.05 | 56.1 | 1.70 | 1.90 |
| July | 215.5 | 16 | 3 | 6.95 | -.14 | 6.81 | .206 | .24 |
| August | 91.7 | 5.6 | 2.5 | 2.96 | -.08 | 2.90 | .088 | .10 |
| September | 389.3 | 191 | 2.5 | 13.0 | +.20 | 13.2 | .400 | .45 |
| Water year 1941-42 | 19,242.8 | 319 | 2.5 | 52.7 | +.01 | 52.7 | 1.60 | 21.70 |

* Winter discharge measurement made on this day.
† Change in contents in East Barre detention reservoir.
e Discharge entirely, or almost entirely, leakage around control; computed on basis of two discharge measurements and gage heights.
Note.- Stage-discharge relation affected by ice Nov. 26 to Jan. 26, Jan. 29 to Mar. 6, Mar. 9-11, 20, 21, 24, 27-30. No gage-height record Jan. 9-12, 17-19, Jan. 29 to Feb. 17, June 27 to July 13, Sept. 14-16; discharge computed on basis of one discharge measurement, range in stage when shown on recorder chart, weather records, records for East Barre detention reservoir, and records for stations on nearby streams.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Wrightsville detention reservoir at Wrightsville, Vt.

Location.- Staff gage, lat. 44°18'35", long. 72°34'30", on reservoir on North Branch of Winooski River at Wrightsville, Washington County, a third of a mile downstream from Long Meadow Brook and 4¼ miles upstream from mouth. Datum of gage is 612.75 feet above mean sea level (levels by Corps of Engineers, U. S. Army).
Drainage area.- 66.5 square miles.
Records available.- March and April 1936, September 1938 to September 1942.
Extremes.- Maximum gage height observed during year, 43.6 feet Apr. 19; minimum observed, 0.3 foot several days in August and September.
1936, 1938-42: Maximum gage height, 63.7 feet Mar. 22, 1936, from graph based on gage readings; minimum observed, that of August and September 1942.
Remarks.- Reservoir is formed by earth-fill dam completed by Corps of Engineers, U. S. Army, in 1935 for flood control. Usable capacity of reservoir is 873,500,000 cubic feet between gage heights 0.0 foot (bottom of outlet opening) and 72.25 feet (crest of spillway). Dam has no gates; outflow from reservoir is dependent on capacity of fixed outlet opening, 5¼ feet square, near base of dam. Gage read at 8 a.m.
Cooperation.- Gage readings furnished by State of Vermont Board of Public Works.

Gage height at 8 a.m., in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.7 | 3.5 | 2.2 | 2.8 | 2.0 | - | - | 22.0 | - | - | 0.6 | 0.3 |
| 2 | .6 | - | 2.0 | 3.0 | 1.9 | - | 5.6 | 18.0 | 1.4 | 1.0 | .6 | .3 |
| 3 | .5 | 17.4 | 2.0 | - | 1.9 | - | - | 13.8 | 1.4 | 1.0 | .6 | .4 |
| 4 | 3.2 | 14.8 | 2.0 | 5.2 | 1.8 | - | - | 8.9 | 1.4 | 1.0 | .6 | .3 |
| 5 | 3.0 | 11.5 | 2.0 | - | 1.6 | - | 16.0 | 5.0 | 3.4 | 1.0 | .5 | .4 |
| 6 | - | 7.4 | 3.2 | 4.0 | 1.5 | - | - | 3.8 | 4.0 | 1.0 | .5 | .3 |
| 7 | - | 7.0 | - | 3.0 | 1.5 | - | 25.5 | 2.6 | 2.8 | .9 | .4 | .3 |
| 8 | - | - | 2.8 | 3.8 | 1.8 | - | 26.0 | - | 2.5 | .8 | .4 | .3 |
| 9 | - | - | 2.5 | 3.2 | 2.0 | 3.8 | 27.0 | 3.9 | 2.0 | 1.0 | .4 | .4 |
| 10 | - | 5.0 | 2.0 | 2.8 | 2.0 | 10.5 | - | 3.5 | 1.8 | 1.2 | .4 | .5 |
| 11 | - | 4.0 | 2.0 | 2.5 | - | 11.8 | - | 3.0 | 1.4 | 1.0 | .6 | .8 |
| 12 | 4.0 | 3.5 | 2.2 | 2.3 | - | - | - | 2.8 | 1.2 | 1.2 | .5 | 1.0 |
| 13 | - | 3.0 | 2.2 | 2.0 | - | 7.8 | 18.8 | 2.9 | 1.2 | 1.8 | .5 | .8 |
| 14 | 3.2 | - | 2.1 | 2.0 | - | 6.3 | 15.1 | 3.0 | 4.8 | 1.4 | .6 | .8 |
| 15 | 3.6 | - | 2.0 | 1.8 | - | - | 13.5 | - | 21.8 | 1.2 | .6 | .8 |
| 16 | - | - | 2.0 | 1.5 | - | - | 33.4 | 2.2 | 23.2 | 1.0 | .5 | 1.0 |
| 17 | - | 3.0 | 2.2 | 1.3 | - | - | 38.7 | 2.6 | 20.0 | 1.0 | .5 | 1.2 |
| 18 | - | 2.8 | 2.5 | 1.8 | 1.9 | - | 42.0 | 4.6 | 16.5 | .8 | .5 | 1.0 |
| 19 | - | 3.0 | - | 2.0 | - | - | 43.6 | 3.8 | 13.0 | .8 | .4 | .8 |
| 20 | - | - | 2.4 | 3.0 | - | - | 41.8 | 3.0 | - | .6 | .4 | - |
| 21 | 2.3 | 3.2 | 2.3 | 3.0 | - | - | 39.8 | 2.8 | 5.0 | .5 | .4 | 1.0 |
| 22 | - | 3.4 | 2.2 | 2.8 | - | - | 36.9 | 3.0 | 3.5 | .4 | .3 | .8 |
| 23 | - | 3.1 | 2.0 | 2.9 | - | 4.5 | 36.0 | - | 2.2 | .5 | .3 | .6 |
| 24 | 2.8 | 2.8 | 2.0 | 2.9 | - | 4.0 | 36.0 | 4.4 | 2.0 | .4 | .3 | .8 |
| 25 | 3.2 | - | 6.2 | 3.0 | - | 3.8 | 36.0 | 4.0 | 2.0 | .4 | .4 | - |
| 26 | - | 2.5 | - | 2.8 | - | 3.8 | 36.8 | 3.2 | - | .4 | .4 | - |
| 27 | 3.0 | 2.5 | - | - | - | - | 34.2 | 2.8 | 1.8 | .4 | .4 | - |
| 28 | 3.4 | - | 5.0 | 2.6 | - | - | 32.2 | 2.4 | 1.6 | .4 | .4 | 7.0 |
| 29 | 3.8 | - | 4.0 | 2.0 | - | - | 29.3 | 2.0 | 1.6 | .4 | .4 | 5.5 |
| 30 | - | 2.5 | 3.0 | 2.0 | - | - | 26.9 | 1.8 | - | .4 | .4 | 2.8 |
| 31 | - | - | 2.8 | 2.0 | - | - | - | 2.0 | - | .6 | .3 | - |

Gage height and contents, water year October 1941 to September 1942

| Date | Gage height (feet)† | Contents (millions of cubic feet) | Change in contents during month | |
|---|---|---|---|---|
| | | | (Millions of cubic feet) | (Equivalent, second-feet) |
| Sept.30 | 0.6 | 1.35 | - | - |
| Oct. 31 | 3.1 | 7.85 | +6.5 | +2.43 |
| Nov. 30 | 2.6 | 6.45 | -1.4 | -.54 |
| Dec. 31 | 2.8 | 7.0 | +.55 | +.21 |
| Calendar year 1941 | - | - | -86.4 | -2.74 |
| Jan. 31 | 2.0 | 4.8 | -2.2 | -.82 |
| Feb. 28 | 1.6 | 3.75 | -1.05 | -.43 |
| Mar. 31 | 5.3 | 14.9 | +11.15 | +4.16 |
| Apr. 30 | 23.7 | 121.6 | +106.7 | +41.2 |
| May 31 | 1.9 | 4.55 | -117.05 | -43.7 |
| June 30 | 1.4 | 3.25 | -1.3 | -.50 |
| July 31 | .6 | 1.35 | -1.9 | -.71 |
| Aug. 31 | .3 | .7 | -.65 | -.24 |
| Sept.30 | 2.2 | 5.35 | +4.65 | +1.79 |
| Water year 1941-42 | - | - | +4.0 | +.13 |

† Gage height at midnight determined from graph based on observer's readings and on gage-height graph for station on North Branch of Winooski River downstream from Reservoir.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## North Branch of Winooski River at Wrightsville, Vt.

Location.- Water-stage recorder and concrete control, lat. 44°18'00", long. 72°34'45", in Wrightsville, Washington County, three-quarters of a mile downstream from Wrightsville detention reservoir and 3½ miles upstream from mouth. Datum of gage is 550.53 feet above mean sea level (levels by Corps of Engineers, U. S. Army).
Drainage area.- 69.2 square miles.
Records available.- October 1933 to September 1942.
Extremes.- Maximum discharge during year, 795 second-feet Apr. 19 (gage height, 3.69 feet); minimum daily, 3.0 second-feet Oct. 1.
1933-42: Maximum discharge, 2,170 second-feet Apr. 12, 1934 (gage height, 6.53 feet), from rating curve extended above 920 second-feet; minimum daily, 0.2 second-foot Aug. 13, 1941.
Maximum discharge known, 17,200 second-feet Nov. 3, 1927, by computation of flow over dam three-quarters of a mile above gage.
Remarks.- Records good except those for periods of ice effect, which are fair. Run-off affected by Wrightsville detention reservoir since November 1935. (See p. 184.)
Diurnal fluctuation at low stages caused by small mill above station.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 18

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.1 | 2.7 | 0.5 | 17 | 0.9 | 48 | 2.3 | 301 |
| .2 | 5.9 | .6 | 22 | 1.1 | 75 | 2.8 | 434 |
| .3 | 9.5 | .7 | 28 | 1.4 | 123 | 3.3 | 610 |
| .4 | 13 | .8 | 37 | 1.8 | 195 | 3.7 | 795 |

Apr. 19 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 0.1 | 3.3 | 0.4 | 14 | 0.7 | 30 |
| .2 | 6.7 | .5 | 18 | .8 | 38 |
| .3 | 10 | .6 | 24 | .9 | 48 |

Note.- Same as preceding table above 0.9 foot.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.0 | 116 | 46 | 67 | 34 | 17 | 187 | 552 | 43 | 27 | 9.6 | 5.7 |
| 2 | 5.5 | 474 | 44 | 93 | 32 | 17 | 208 | 482 | 35 | 22 | 10 | 6.6 |
| 3 | 9.8 | 498 | 47 | 178 | 30 | 19 | 364 | 419 | 32 | 21 | 12 | 4.2 |
| 4 | 76 | 434 | 48 | 154 | 27 | 22 | 465 | 313 | 31 | 20 | 12 | 6.3 |
| 5 | 86 | 363 | 54 | 130 | 25 | 25 | 465 | 127 | 100 | 19 | 11 | 4.5 |
| 6 | 100 | 260 | 98 | 110 | 23 | 28 | 498 | 109 | 118 | 18 | 9.7 | 4.6 |
| 7 | 68 | 224 | 116 | 90 | 23 | 32 | 590 | 92 | 84 | 18 | 8.8 | 8.9 |
| 8 | 52 | 280 | 86 | 75 | 23 | 34 | 630 | 137 | 67 | 20 | 6.4 | 7.7 |
| 9 | 42 | 210 | 74 | 64 | 22 | 110 | 630 | 128 | 49 | 22 | 6.0 | 8.9 |
| 10 | 45 | 153 | 61 | 54 | 21 | 350 | *630 | 103 | 38 | 21 | 8.5 | 8.5 |
| 11 | 136 | 120 | 50 | 45 | 20 | 363 | 590 | 87 | 32 | 20 | 12 | 15 |
| 12 | 130 | 103 | 41 | 37 | 19 | 338 | 552 | 75 | 27 | 32 | 10 | 18 |
| 13 | 106 | 86 | 41 | 31 | 18 | 290 | 498 | 87 | 25 | 38 | 11 | 16 |
| 14 | 87 | 78 | 48 | 30 | 18 | 213 | 465 | 86 | 106 | 30 | 11 | 14 |
| 15 | 95 | 78 | *44 | 26 | 18 | *169 | 527 | 72 | 570 | 23 | 11 | 12 |
| 16 | 84 | 76 | 41 | 22 | 18 | 142 | 720 | 61 | 570 | 19 | 8.9 | 18 |
| 17 | 64 | 76 | 41 | 20 | 19 | 125 | 770 | 89 | 533 | 18 | 8.4 | 20 |
| 18 | 48 | 69 | 46 | 23 | *23 | 135 | 770 | 156 | 482 | 16 | 8.3 | 17 |
| 19 | 49 | 67 | 41 | 40 | 21 | 154 | 795 | 123 | 404 | 14 | 9.2 | 15 |
| 20 | 51 | 68 | 40 | 90 | 20 | 138 | 770 | 95 | 313 | 12 | 9.5 | 15 |
| 21 | 45 | 72 | 38 | 140 | 19 | 125 | 745 | 80 | 167 | 11 | 7.4 | 16 |
| 22 | 46 | 74 | 36 | 110 | 18 | 137 | 720 | 86 | 100 | 9.2 | 5.3 | 15 |
| 23 | 52 | 67 | 35 | 81 | 17 | 145 | 695 | 92 | 68 | 9.6 | 4.6 | 14 |
| 24 | 74 | 72 | 66 | 65 | 17 | 126 | 720 | 138 | 53 | 9.4 | 5.3 | 13 |
| 25 | 87 | 65 | 245 | 58 | 16 | 111 | 720 | 125 | 47 | 6.7 | 5.2 | 13 |
| 26 | 82 | 58 | 274 | 51 | 17 | 108 | 720 | 95 | 42 | 6.4 | 8.2 | 9.6 |
| 27 | 69 | 57 | 201 | 45 | 17 | 120 | 695 | 76 | 41 | 5.9 | 7.0 | 24 |
| 28 | 95 | 51 | 154 | 42 | 17 | 154 | 672 | 64 | 38 | 5.3 | 7.4 | 241 |
| 29 | 104 | 49 | 115 | 40 | - | 180 | 630 | 53 | 34 | 7.0 | 6.1 | 163 |
| 30 | 82 | 56 | 74 | 37 | - | 211 | 590 | 46 | 32 | 8.5 | 6.0 | 81 |
| 31 | 74 | - | 68 | 35 | - | 189 | - | 49 | - | 10 | 6.7 | - |

| Month | Observed | | | | Change in contents (equivalent, second-feet)† | Adjusted for change in reservoir contents | | |
|---|---|---|---|---|---|---|---|---|
| | Second-foot-days | Maximum | Minimum | Mean | | Mean | Per square mile | Run-off in inches |
| October | 2,147.3 | 136 | 3.0 | 69.3 | +2.43 | 71.7 | 1.04 | 1.19 |
| November | 4,454 | 498 | 49 | 148 | -.54 | 147 | 2.14 | 2.38 |
| December | 2,413 | 274 | 35 | 77.8 | +.21 | 78.0 | 1.13 | 1.30 |
| Calendar year 1941 | 31,682.3 | 750 | .2 | 86.8 | -2.74 | 84.1 | 1.22 | 16.49 |
| January | 2,083 | 178 | 20 | 67.2 | -.82 | 66.4 | .960 | 1.11 |
| February | 592 | 34 | 16 | 21.1 | -.43 | 20.7 | .299 | .31 |
| March | 4,327 | 363 | 17 | 140 | +4.16 | 144 | 2.08 | 2.39 |
| April | 18,031 | 795 | 187 | 601 | +41.2 | 642 | 9.28 | 10.35 |
| May | 4,297 | 552 | 46 | 139 | -43.7 | 95.3 | 1.37 | 1.58 |
| June | 4,281 | 570 | 25 | 143 | -.50 | 142 | 2.05 | 2.29 |
| July | 519.0 | 38 | 5.3 | 16.7 | -.71 | 16.0 | .231 | .27 |
| August | 262.5 | 12 | 4.6 | 8.47 | -.24 | 8.23 | .119 | .14 |
| September | 815.5 | 241 | 4.2 | 27.2 | +1.79 | 29.0 | .419 | .47 |
| Water year 1941-42 | 44,222.3 | 795 | 3.0 | 121 | +.13 | 121 | 1.75 | 23.78 |

* Winter discharge measurement made on this day.
† Change in contents in Wrightsville detention reservoir.
Note.- Stage-discharge relation affected by ice Dec. 9-18, 20-25, 29-31, Jan. 5-22, 25, 26, Jan. 28 to Mar. 10, Mar. 17, 18, 21.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Dog River at Northfield Falls, Vt.

Location.- Water-stage recorder, lat. 44°10'55", long. 72°38'30", 1 mile downstream from Northfield Falls, Washington County, and 1½ miles downstream from Cox Branch. Datum of gage is 603.00 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 76.1 square miles.

Records available.- November 1934 to September 1942.

Extremes.- Maximum discharge during year, 3,620 second-feet Apr. 15 (gage height, 6.67 feet), from rating curve extended above 610 second-feet on basis of computations of flow over dam and slope-area determinations at gage heights 8.49 feet and 11.53 feet; minimum discharge, 4.3 second-feet (regulated) Aug. 31, Sept. 7.
1934-42: Maximum discharge, 9,750 second-feet Sept. 21, 1938 (gage height, 11.53 feet), by slope-area method; minimum, that of Aug. 31 and Sept. 7, 1942.

Remarks.- Records good except those for periods of ice effect and those below 15 second-feet during period July to September, which are fair. Some regulation at low stages caused by power plant above station.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 15

| | | | | | |
|---|---|---|---|---|---|
| 0.6 | S.1 | 1.0 | 33 | 1.6 | 123 |
| .7 | 13 | 1.1 | 42 | 1.8 | 175 |
| .8 | 18 | 1.2 | 53 | 2.1 | 271 |
| .9 | 25 | 1.4 | S2 | | |

Note.- Same as following table above 2.1 feet.

Apr. 16 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 0.5 | 3.5 | 1.1 | 36 | 2.1 | 271 |
| .6 | 6.2 | 1.2 | 48 | 2.5 | 431 |
| .7 | 10 | 1.3 | 62 | 3.0 | 680 |
| .8 | 16 | 1.4 | 78 | 3.5 | 960 |
| .9 | 22 | 1.6 | 118 | 4.0 | 1,260 |
| 1.0 | 28 | 1.8 | 168 | 4.7 | 1,770 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.4 | 59 | 32 | 58 | 39 | 29 | 216 | 139 | 39 | 39 | 11 | 9.3 |
| 2 | 8.0 | 327 | 32 | 155 | 39 | 28 | 264 | 127 | 35 | 47 | 14 | 8.5 |
| 3 | 13 | 117 | 36 | 166 | 36 | 33 | 657 | 116 | 33 | 41 | 20 | 7.4 |
| 4 | 14 | 75 | 35 | 113 | 36 | 34 | 573 | 101 | 34 | 34 | 14 | 8.4 |
| 5 | 20 | 61 | 39 | 95 | 36 | 32 | 619 | 91 | 78 | 32 | 10 | 5.9 |
| 6 | 27 | 52 | 45 | 75 | 34 | 39 | 947 | 82 | 53 | 34 | 11 | 4.8 |
| 7 | 20 | 105 | 44 | 70 | 35 | 34 | 1,230 | 100 | 47 | 31 | 12 | 4.3 |
| 8 | 17 | 103 | 34 | 66 | 35 | 84 | 1,100 | 108 | 53 | 29 | 7.0 | 7.4 |
| 9 | 14 | 73 | 38 | 62 | 34 | 760 | 684 | 89 | 40 | 27 | 5.4 | 9.5 |
| 10 | 17 | 62 | 37 | 57 | 33 | 669 | 490 | 82 | 34 | 23 | 17 | 15 |
| 11 | 16 | 56 | 27 | 50 | 32 | 351 | 380 | 75 | 30 | 22 | 14 | 19 |
| 12 | 20 | 52 | 26 | 55 | 31 | 290 | 320 | f72 | 29 | 32 | 13 | 11 |
| 13 | 29 | 45 | *20 | 52 | 30 | 254 | 308 | 78 | 20 | 31 | 9.5 | 11 |
| 14 | 24 | 53 | 27 | 49 | 29 | 226 | 320 | 66 | 209 | 26 | 12 | 16 |
| 15 | 21 | 38 | *32 | 46 | 30 | 184 | 1,080 | 60 | 620 | f20 | 7.4 | 10 |
| 16 | 18 | 42 | 30 | 43 | 31 | *162 | 1,760 | 56 | 208 | 14 | 13 | 11 |
| 17 | 20 | 43 | 31 | 39 | *32 | 172 | 1,110 | 87 | 148 | 21 | 25 | 15 |
| 18 | 16 | 34 | 27 | 42 | 37 | 190 | 925 | 83 | 154 | 13 | 14 | 14 |
| 19 | 12 | 38 | 31 | 110 | 34 | 181 | 647 | 66 | 138 | 17 | 14 | 9.1 |
| 20 | 23 | 37 | 24 | 140 | 31 | 158 | 523 | 59 | 105 | 22 | 10 | 12 |
| 21 | 18 | 39 | 25 | *83 | 30 | 156 | 436 | 68 | 88 | 18 | 11 | 21 |
| 22 | 19 | 31 | 30 | 66 | 30 | 250 | 392 | 87 | 86 | 15 | 7.0 | 15 |
| 23 | 17 | 37 | 26 | 59 | 31 | 186 | 476 | 87 | 73 | 16 | 5.1 | 9.8 |
| 24 | 21 | 46 | 70 | 56 | 29 | 156 | 543 | 132 | 65 | 12 | 12 | 9.6 |
| 25 | 19 | 38 | 262 | 53 | 31 | 146 | 490 | 86 | 59 | 7.4 | 9.0 | 13 |
| 26 | 22 | 37 | 142 | 48 | 28 | 144 | 397 | 72 | 53 | 9.1 | 8.4 | 7.8 |
| 27 | 27 | 33 | 109 | 48 | 29 | 170 | 290 | 67 | 67 | 19 | 7.5 | 90 |
| 28 | 30 | 39 | 91 | 45 | 29 | 209 | 232 | 55 | 58 | 17 | 7.2 | 230 |
| 29 | 28 | 29 | 74 | 45 | - | 225 | 194 | 49 | 50 | 14 | 5.9 | 59 |
| 30 | 27 | 40 | 55 | 38 | - | 236 | 163 | 44 | 43 | 16 | 4.8 | 38 |
| 31 | 27 | - | 58 | 37 | - | 198 | - | 44 | - | 16 | 7.2 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 613.4 | 30 | 8.0 | 19.8 | 0.260 | 0.30 |
| November | 1,841 | 327 | 29 | 61.4 | .807 | .90 |
| December | 1,589 | 262 | 20 | 51.3 | .674 | .78 |
| Calendar year 1941 | 24,225.9 | 960 | 5.2 | 66.4 | .873 | 11.84 |
| January | 2,121 | 166 | 37 | 68.4 | .899 | 1.04 |
| February | 911 | 39 | 28 | 32.5 | .427 | .45 |
| March | 5,956 | 760 | 28 | 192 | 2.52 | 2.91 |
| April | 17,766 | 1,760 | 163 | 592 | 7.78 | 8.68 |
| May | 2,527 | 159 | 44 | 81.5 | 1.07 | 1.23 |
| June | 2,749 | 620 | 20 | 91.6 | 1.20 | 1.34 |
| July | 714.5 | 47 | 7.4 | 23.0 | .302 | .35 |
| August | 336.4 | 25 | 4.8 | 10.9 | .143 | .17 |
| September | 701.6 | 230 | 4.3 | 23.4 | .307 | .34 |
| Water year 1941-42 | 37,828.1 | 1,760 | 4.3 | 104 | 1.37 | 18.49 |

Peak discharge.- Mar. 9 (6 to 7 p.m.) 1,540 sec.-ft.; Apr. 6 (12 p.m.) 1,470 sec.-ft.; Apr. 15 (11:30 p.m.) 3,620 sec.-ft.; June 15 (1:30 a.m.) 1,230 sec.-ft.
* Winter discharge measurement made on this day.
f Computed on basis of partly estimated gage-height record.
Note.- Stage-discharge relation affected by ice Dec. 14-24, Dec. 31 to Jan. 2, Jan. 5 to Mar. 9.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Mad River near Moretown, Vt.

Location.- Water-stage recorder and concrete control, lat. 44°16'40", long. 72°44'35", at highway bridge, 2.4 miles downstream from Moretown, Washington County, and 3.8 miles upstream from mouth.
Drainage area.- 139 square miles.
Records available.- November 1928 to September 1942.
Average discharge.- 14 years, 243 second-feet.
Extremes.- Maximum discharge during year, 6,070 second-feet Apr. 16, from rating curve extended above 2,700 second-feet on basis of computations of flow over dam at gage heights 9.98 feet, 16.34 feet, and 19.4 feet; maximum gage height, 12.60 feet Mar. 9, ice jam; minimum discharge, 3.6 second-feet (regulated) July 18.
1928-42: Maximum discharge, 18,400 second-feet Sept. 22, 1938 (gage height, 16.34 feet, from floodmarks), from rating curve extended above 2,700 second-feet on basis of computations of flow over dam at gage heights 9.98 feet, 16.34 feet, and 19.4 feet; minimum, 1.4 second-feet (regulated) Oct. 1, 1930.
Maximum discharge known, 23,000 second-feet Nov. 3, 1927 (gage height, 19.4 feet, from floodmarks), by computation of flow over dam.
Remarks.- Records excellent except those below 50 second-feet and above 2,000 second-feet, which are good, and those for period of ice effect, which are fair. Regulation at low flow by mill in Moretown.

Rating tables, water year 1941-42, except period of ice effect (gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 9 | | | | | | Mar. 10 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.1 | 15 | 3.6 | 107 | 4.6 | 670 | 2.9 | 2.0 | 3.4 | 54 | 3.9 | 210 | 5.5 | 1,460 |
| 3.2 | 26 | 3.7 | 139 | 5.0 | 1,000 | 3.0 | 6.e | 3.5 | 75 | 4.0 | 260 | 6.0 | 1,970 |
| 3.3 | 40 | 3.8 | 177 | 5.6 | 1,560 | 3.1 | 14 | 3.6 | 100 | 4.3 | 440 | 7.1 | 3,260 |
| 3.4 | 58 | 4.0 | 270 | | | 3.2 | 24 | 3.7 | 130 | 4.6 | 665 | | |
| 3.5 | 80 | 4.3 | 450 | | | 3.3 | 37 | 3.8 | 167 | 5.0 | 1,000 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21 | 352 | 66 | 130 | 82 | 59 | 318 | 527 | 81 | 60 | 29 | 19 |
| 2 | 23 | 1,140 | 102 | 470 | 80 | 56 | 462 | 468 | 71 | 163 | 32 | 14 |
| 3 | 20 | 417 | 99 | 440 | 73 | 56 | 1,030 | 394 | 69 | 88 | 37 | 12 |
| 4 | 107 | 267 | 98 | 290 | 69 | 65 | 777 | 333 | 73 | 67 | 24 | 18 |
| 5 | 71 | 198 | 108 | 235 | 69 | 61 | 928 | 258 | 194 | 55 | 20 | 14 |
| 6 | 74 | 169 | 124 | 180 | 70 | 81 | 1,460 | 210 | 112 | 59 | 18 | 8.7 |
| 7 | 57 | 341 | 107 | 155 | 69 | 78 | 1,970 | 254 | 115 | 66 | 21 | 28 |
| 8 | 48 | 314 | 73 | 135 | 68 | 83 | 1,710 | 280 | 135 | 55 | 14 | 17 |
| 9 | 40 | 219 | 95 | 125 | 67 | 1,500 | 1,030 | 225 | 83 | 58 | 9.4 | 15 |
| 10 | 36 | 176 | 86 | 120 | 66 | 1,100 | 741 | 220 | 67 | 51 | 34 | 38 |
| 11 | 112 | 152 | 54 | 115 | 65 | 850 | 585 | 176 | 57 | 52 | 38 | 93 |
| 12 | 94 | 140 | 52 | 121 | 64 | 650 | 482 | 166 | 52 | 67 | 37 | 77 |
| 13 | 121 | 115 | 60 | 115 | 63 | 520 | 479 | 190 | 55 | 51 | 34 | 47 |
| 14 | 87 | 118 | 70 | *110 | 62 | 420 | 512 | 150 | 416 | 46 | 26 | 46 |
| 15 | 72 | 116 | 80 | 105 | 62 | *316 | 2,380 | 130 | 1,070 | 45 | 23 | 31 |
| 16 | 62 | 107 | *78 | 100 | 64 | 246 | 3,180 | 110 | 374 | 34 | 25 | 78 |
| 17 | 56 | 104 | 76 | 97 | 70 | 289 | 2,160 | 180 | 253 | 32 | 40 | 63 |
| 18 | 48 | 92 | 70 | 115 | 68 | 368 | 1,820 | 165 | 354 | 27 | 33 | 50 |
| 19 | 63 | 94 | 73 | 250 | 66 | 355 | 1,140 | 125 | 315 | 28 | 25 | 28 |
| 20 | 63 | 89 | 63 | 410 | 64 | 268 | 876 | 114 | 207 | 40 | 22 | 27 |
| 21 | 54 | 127 | 67 | 270 | 60 | 256 | 697 | 152 | 152 | 35 | 17 | 70 |
| 22 | 61 | 110 | 73 | 200 | *56 | 289 | 637 | 195 | 153 | 21 | 13 | 51 |
| 23 | 71 | 104 | 68 | 175 | 58 | 240 | 915 | 235 | 122 | 31 | 5.6 | 34 |
| 24 | 177 | 141 | 300 | 155 | 58 | 203 | 1,350 | 358 | 105 | 21 | 23 | 33 |
| 25 | 160 | 106 | 700 | 130 | 58 | 188 | 1,510 | 197 | 96 | 20 | 22 | 30 |
| 26 | 113 | 97 | 410 | 120 | 58 | 192 | 1,400 | 160 | 88 | 14 | 15 | 14 |
| 27 | 99 | 94 | 290 | 120 | 57 | 250 | 942 | 152 | 121 | 31 | 13 | 205 |
| 28 | 204 | 89 | 255 | 110 | 60 | 339 | 764 | 134 | 101 | 19 | 13 | 677 |
| 29 | 141 | 87 | 190 | 85 | - | 350 | 748 | 108 | 83 | 44 | 16 | 180 |
| 30 | 104 | 118 | 120 | 80 | - | 340 | 638 | 102 | 67 | 35 | 7.4 | 109 |
| 31 | 136 | - | 130 | 82 | - | 268 | - | 93 | - | 31 | 24 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,595 | 204 | 20 | 83.7 | 0.602 | 0.69 |
| November | 5,793 | 1,140 | 87 | 193 | 1.39 | 1.55 |
| December | 4,237 | 700 | 52 | 137 | .986 | 1.13 |
| Calendar year 1941 | 58,249 | 2,780 | 12 | 160 | 1.15 | 15.58 |
| January | 5,349 | 470 | 80 | 173 | 1.24 | 1.43 |
| February | 1,826 | 82 | 56 | 65.2 | .469 | .49 |
| March | 10,336 | 1,500 | 56 | 333 | 2.40 | 2.77 |
| April | 33,641 | 3,180 | 318 | 1,121 | 8.06 | 9.00 |
| May | 6,611 | 527 | 93 | 213 | 1.53 | 1.77 |
| June | 5,241 | 1,070 | 52 | 175 | 1.26 | 1.40 |
| July | 1,446 | 163 | 14 | 46.6 | .335 | .39 |
| August | 710.4 | 40 | 5.6 | 22.9 | .165 | .19 |
| September | 2,126.7 | 677 | 8.7 | 70.9 | .510 | .57 |
| Water year 1941-42 | 79,912.1 | 3,180 | 5.6 | 219 | 1.58 | 21.38 |

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 13 to Mar. 14.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

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## Waterbury Reservoir near Waterbury, Vt.

Location.- Water-stage recorder, lat. 44°22'55", long. 72°46'15", at dam on Waterbury River, 2 2/3 miles upstream from mouth and 3½ miles north of Waterbury, Washington County. Datum of gage is at mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 109 square miles.

Records available.- September 1938 to September 1942.

Extremes.- Maximum elevation during year, 611.93 feet June 15; minimum, 543.28 feet Mar. 6.
1938-42: Maximum elevation, 613.45 feet May 4, 1940; minimum observed, 501.3 feet Oct. 16, 1938.

Remarks.- Reservoir is formed by earth-fill dam completed by Corps of Engineers, U. S. Army, during summer of 1937 for conservation and flood control. Total usable capacity for flood control, 2,812,300,000 cubic feet between elevations 500.0 feet (bottom of lowest outlet) and 617.5 feet (crest of spillway) above mean sea level. Usable capacity for conservation, 1,582,700,000 cubic feet between elevations 500.00 feet and 592.0 feet (sill of taintor gate) above mean sea level.

Elevation at midnight, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 559.16 | 574.67 | 588.05 | 588.41 | 580.88 | 549.65 | 562.89 | 601.91 | 602.65 | 603.87 | 593.20 | 579.30 |
| 2 | 558.39 | 578.30 | 587.40 | 589.64 | 579.62 | 548.24 | 564.56 | 601.91 | 602.79 | 603.99 | 592.72 | 578.74 |
| 3 | 558.33 | 579.37 | 586.96 | 590.35 | 576.20 | 546.64 | 567.86 | 601.95 | 602.53 | 604.13 | 591.65 | 578.17 |
| 4 | 559.88 | 580.09 | 586.79 | 590.79 | 576.89 | 545.46 | 570.14 | 601.84 | 602.80 | 604.23 | 591.18 | 577.20 |
| 5 | 560.55 | 580.57 | 587.16 | 591.15 | 575.51 | 544.30 | 572.27 | 601.61 | 603.30 | 603.82 | 590.31 | 577.27 |
| 6 | 560.99 | 580.97 | 587.72 | 591.39 | 574.50 | 543.41 | 575.54 | 601.51 | 603.54 | 603.51 | 589.38 | 577.36 |
| 7 | 561.29 | 582.04 | 588.04 | 590.83 | 574.40 | 543.87 | 579.58 | 601.74 | 603.81 | 603.61 | 588.89 | 576.79 |
| 8 | 561.53 | 582.90 | 587.86 | 589.95 | 573.86 | 543.83 | 582.23 | 601.98 | 604.02 | 603.38 | 588.94 | 576.26 |
| 9 | 561.74 | 583.42 | 587.66 | 589.50 | 572.48 | 549.11 | 583.97 | 602.05 | 604.17 | 602.64 | 588.98 | 575.88 |
| 10 | 562.28 | 583.82 | 587.30 | 589.34 | 571.02 | 553.17 | 585.22 | 602.17 | 604.29 | 602.73 | 587.48 | 575.65 |
| 11 | 563.29 | 584.18 | 586.68 | 588.90 | 569.26 | 554.78 | 586.21 | 602.26 | 604.07 | 602.87 | 586.51 | 575.87 |
| 12 | 563.85 | 584.50 | 586.37 | 588.16 | 567.93 | 556.19 | 586.99 | 602.38 | 603.94 | 603.05 | 585.96 | 576.04 |
| 13 | 564.46 | 584.77 | 586.59 | 587.53 | 566.99 | 557.46 | 587.86 | 602.38 | 604.08 | 602.72 | 585.00 | 575.66 |
| 14 | 564.93 | 585.03 | 586.31 | 586.92 | 566.65 | 558.53 | 588.69 | 602.01 | 609.00 | 602.40 | 585.11 | 575.77 |
| 15 | 565.49 | 585.35 | 585.48 | 586.31 | 565.50 | 559.39 | 594.79 | 602.02 | 611.73 | 602.07 | 585.22 | 576.08 |
| 16 | 565.86 | 585.68 | 585.23 | 585.89 | 563.71 | 560.21 | 600.02 | 602.24 | 610.28 | 601.42 | 584.73 | 574.32 |
| 17 | 566.13 | 585.96 | 585.17 | 585.65 | 562.01 | 561.12 | 602.41 | 602.10 | 608.47 | 601.50 | 584.61 | 573.65 |
| 18 | 566.39 | 586.23 | 585.11 | 585.15 | 560.34 | 562.18 | 603.25 | 602.01 | 606.91 | 601.56 | 584.76 | 573.79 |
| 19 | 566.68 | 586.47 | 585.16 | 585.23 | 558.80 | 563.11 | 602.52 | 602.30 | 604.96 | 601.12 | 584.16 | 573.89 |
| 20 | 566.96 | 586.77 | 585.37 | 586.00 | 557.98 | 563.85 | 601.12 | 602.18 | 603.67 | 600.74 | 583.65 | 573.67 |
| 21 | 567.22 | 587.14 | 584.71 | 586.40 | 557.59 | 564.53 | 599.40 | 602.12 | 603.97 | 599.47 | 583.24 | 573.00 |
| 22 | 567.55 | 587.41 | 584.11 | 586.73 | 556.40 | 565.74 | 597.71 | 601.95 | 604.25 | 599.00 | 583.31 | 572.45 |
| 23 | 568.04 | 587.70 | 583.77 | 586.71 | 554.65 | 566.55 | 596.73 | 602.30 | 604.21 | 597.46 | 583.31 | 572.17 |
| 24 | 568.84 | 587.97 | 584.47 | 586.42 | 553.16 | 567.17 | 596.69 | 602.67 | 604.47 | 597.52 | 582.08 | 571.94 |
| 25 | 569.47 | 588.20 | 585.96 | 586.42 | 551.78 | 566.19 | 597.32 | 602.91 | 604.69 | 597.58 | 581.54 | 572.14 |
| 26 | 569.87 | 588.40 | 586.63 | 585.78 | 550.67 | 562.42 | 597.37 | 602.45 | 604.88 | 597.26 | 581.01 | 572.27 |
| 27 | 570.32 | 588.63 | 587.14 | 584.96 | 550.04 | 560.21 | 597.14 | 602.29 | 604.25 | 596.51 | 580.47 | 575.86 |
| 28 | 571.32 | 588.66 | 587.50 | 584.02 | 550.34 | 559.02 | 598.47 | 602.46 | 604.40 | 595.42 | 580.56 | 578.45 |
| 29 | 571.79 | 588.63 | 587.77 | 582.81 | - | 559.49 | 600.06 | 602.62 | 604.48 | 594.30 | 580.66 | 579.00 |
| 30 | 572.18 | 588.66 | 587.95 | 581.81 | - | 560.76 | 601.31 | 602.94 | 604.15 | 593.52 | 580.19 | 579.10 |
| 31 | 572.70 | - | 588.17 | 581.44 | - | 561.71 | - | 602.95 | - | 593.11 | 579.73 | - |

Elevation and contents, water year October 1941 to September 1942

| Date | Elevation (feet)† | Contents (millions of cubic feet) | Change in contents during month | |
|---|---|---|---|---|
| | | | (Millions of cubic feet) | (Equivalent, second-feet) |
| Sept.30 | 559.97 | 658.2 | - | - |
| Oct. 31 | 572.70 | 962.9 | +304.7 | +114 |
| Nov. 30 | 588.66 | 1,457.5 | +494.6 | +191 |
| Dec. 31 | 588.17 | 1,440.2 | -17.3 | -6.46 |
| Calendar year 1941 | - | - | -112.9 | -3.58 |
| Jan. 31 | 581.44 | 1,214.4 | -225.8 | -84.3 |
| Feb. 28 | 550.34 | 468.1 | -746.3 | -308 |
| Mar. 31 | 561.71 | 697.1 | +229.0 | +85.5 |
| Apr. 30 | 601.31 | 1,974.2 | +1,277.1 | +493 |
| May 31 | 602.95 | 2,050.6 | +76.4 | +28.5 |
| June 30 | 604.15 | 2,106.5 | +55.9 | +21.6 |
| July 31 | 593.11 | 1,626.0 | -480.5 | -179 |
| Aug. 31 | 579.73 | 1,160.7 | -465.3 | -174 |
| Sept.30 | 579.10 | 1,142.4 | -18.3 | -7.06 |
| Water year 1941-42 | - | - | +484.2 | +15.4 |

† Elevation at midnight.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Waterbury River near Waterbury, Vt.

Location.- Water-stage recorder and concrete control, lat. 44°22'10", long. 72°46'10", 1 2/3 miles upstream from mouth and 2½ miles north of Waterbury, Washington County. Datum of gage is 428.00 feet above mean sea level (levels by Corps of Engineers, U. S. Army).

Drainage area.- 111 square miles.

Records available.- December 1935 to September 1942.

Extremes.- Maximum discharge during year, 1,550 second-feet (regulated) June 14 (gage height, 9.55 feet); minimum daily, 0.7 second-foot Oct. 9, 17, 20, 21, Sept. 26.
1935-42: Maximum discharge, 6,520 second-feet Mar. 18, 1936 (gage height, 19.38 feet); minimum daily, 0.6 second-foot (regulated) several times during summers of 1938, 1939, and 1941.

Remarks.- Records excellent except those below 25 second-feet, which are good. Flow completely regulated by Waterbury Reservoir. (See preceding page.)

**Rating table, water year 1941-42 (gage height, in feet, and discharge, in second-feet)**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4.74 | 0.7 | 5.1 | 6.6 | 6.0 | 71 | 8.0 | 665 |
| 4.8 | 1.2 | 5.2 | 9.6 | 6.2 | 98 | 8.5 | 935 |
| 4.85 | 1.7 | 5.3 | 14 | 6.5 | 150 | 9.4 | 1,450 |
| 4.9 | 2.4 | 5.4 | 19 | 6.8 | 216 | | |
| 4.95 | 3.2 | 5.6 | 32 | 7.1 | 301 | | |
| 5.0 | 4.2 | 5.8 | 49 | 7.5 | 450 | | |

**Discharge, in second-feet, water year October 1941 to September 1942**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 221 | 7.0 | 269 | 1.8 | 271 | 154 | 7.9 | 180 | 242 | 219 | 1.4 | 133 |
| 2 | 221 | 7.4 | 381 | 8.2 | 470 | 335 | 11 | 494 | 1.7 | 2.0 | 259 | 207 |
| 3 | 115 | 2.7 | 267 | 4.9 | 530 | 380 | 18 | 406 | 197 | 1.6 | 537 | 225 |
| 4 | 1.6 | 2.1 | 187 | 3.6 | 506 | 299 | 13 | 406 | 3.3 | 1.2 | 256 | 334 |
| 5 | 1.2 | 1.6 | 2.0 | 2.9 | 502 | 264 | 12 | 372 | 3.3 | 245 | 421 | 3.2 |
| 6 | .9 | 1.5 | 1.5 | 2.5 | 376 | 259 | 18 | 237 | 1.6 | 280 | 396 | .9 |
| 7 | .8 | 4.4 | 1.2 | 341 | 95 | 2.5 | 23 | 174 | 1.6 | 1.6 | 229 | 219 |
| 8 | .9 | 2.9 | 160 | 452 | 228 | 96 | 19 | 174 | 1.5 | 169 | 1.0 | 219 |
| 9 | .7 | 2.1 | 169 | 276 | 518 | 17 | 14 | 174 | 1.2 | 391 | 12 | 167 |
| 10 | 1.2 | 1.8 | 257 | 160 | 494 | 9.7 | 11 | 130 | 1.0 | 38 | 708 | g164 |
| 11 | 1.4 | 1.7 | 280 | 254 | 490 | 5.6 | 9.5 | 108 | 176 | 1.4 | 470 | 1.9 |
| 12 | 1.0 | 1.5 | 220 | 387 | 442 | 5.4 | 7.9 | 106 | 124 | 2.1 | 263 | g1.0 |
| 13 | 1.0 | 1.4 | 1.5 | 332 | 314 | 5.4 | 9.0 | 203 | 1.4 | 277 | 429 | g168 |
| 14 | .9 | 1.4 | 187 | 328 | 148 | 5.4 | 8.8 | 365 | 827 | 227 | 2.9 | g1.9 |
| 15 | .9 | 1.4 | 404 | 328 | 327 | 4.4 | 229 | 115 | 617 | 226 | 1.2 | 209 |
| 16 | .8 | 1.5 | 176 | 230 | 526 | 3.8 | 38 | 2.5 | 1,450 | 383 | 238 | 180 |
| 17 | .7 | 1.3 | 101 | 158 | 498 | 5.2 | 384 | 396 | 1,450 | 2.1 | 229 | 164 |
| 18 | .8 | 1.2 | 101 | 268 | 470 | 5.9 | 962 | 275 | 1,450 | 1.0 | 33 | 2.3 |
| 19 | 1.1 | 1.3 | 60 | 195 | 418 | 5.9 | 1,230 | 2.9 | 1,450 | 263 | 251 | 1.4 |
| 20 | .7 | 1.2 | 1.7 | 5.4 | 276 | 4.7 | 1,450 | 201 | 948 | 276 | 240 | 90 |
| 21 | .7 | 1.5 | 265 | 2.9 | 144 | 4.4 | 1,450 | 156 | 4.0 | 685 | 180 | 255 |
| 22 | .8 | 1.3 | 297 | 2.4 | 326 | 8.6 | 1,450 | 248 | 3.2 | 278 | 1.0 | 225 |
| 23 | 1.2 | 1.5 | 211 | 103 | 450 | 6.1 | 1,450 | 3.6 | 179 | 763 | 33 | 112 |
| 24 | 1.3 | 1.5 | 82 | 224 | 383 | 4.7 | 1,350 | 3.0 | 3.5 | 64 | 483 | 93 |
| 25 | 1.3 | 1.3 | 6.1 | 86 | 357 | 370 | 1,140 | 2.2 | 2.9 | 1.1 | 220 | 1.1 |
| 26 | 1.0 | 1.3 | 3.8 | 325 | 282 | 1,200 | 1,290 | 345 | 2.2 | 159 | 210 | .7 |
| 27 | 1.0 | 1.4 | 3.0 | 393 | 192 | 332 | 952 | 199 | 459 | 356 | 206 | 7.1 |
| 28 | 1.1 | 59 | 2.7 | 436 | 2.1 | 575 | 6.4 | 2.5 | 2.7 | 561 | 2.0 | 2.7 |
| 29 | .9 | 101 | 1.8 | 490 | - | 217 | 5.6 | 1.7 | 2.0 | 593 | .9 | 1.3 |
| 30 | .8 | 101 | 1.5 | 429 | - | 7.9 | 4.7 | 2.2 | 283 | 391 | 179 | 54 |
| 31 | 1.2 | - | 2.1 | 209 | - | 6.6 | - | 115 | - | 266 | 143 | - |

| Month | Observed | | | | Change in contents (equivalent, second-feet)† | Adjusted for change in reservoir contents | | |
|---|---|---|---|---|---|---|---|---|
| | Second-foot-days | Maximum | Minimum | Mean | | Mean | Per square mile | Run-off in inches |
| October | 584.9 | 221 | 0.7 | 18.9 | +114 | 133 | 1.20 | 1.38 |
| November | 318.2 | 101 | 1.2 | 10.6 | +191 | 201 | 1.81 | 2.02 |
| December | 4,102.9 | 404 | 1.2 | 132 | -6.46 | 126 | 1.14 | 1.31 |
| Calendar year 1941 | 53,381.8 | 690 | .6 | 146 | -3.58 | 143 | 1.29 | 17.44 |
| January | 6,440.6 | 490 | 1.8 | 208 | -84.3 | 123 | 1.11 | 1.28 |
| February | 10,035.1 | 530 | 2.1 | 358 | -308 | 49.9 | .450 | .47 |
| March | 5,100.2 | 1,200 | 2.5 | 165 | +85.5 | 250 | 2.25 | 2.60 |
| April | 13,573.8 | 1,450 | 4.7 | 452 | +493 | 945 | 8.51 | 9.50 |
| May | 5,599.6 | 494 | 1.7 | 181 | +28.5 | 209 | 1.88 | 2.17 |
| June | 9,869.1 | 1,450 | 1.0 | 330 | +21.6 | 351 | 3.16 | 3.53 |
| July | 7,124.1 | 763 | 1.0 | 230 | -179 | 50.4 | .454 | .52 |
| August | 6,636.4 | 708 | .9 | 214 | -174 | 40.3 | .363 | .42 |
| September | 3,243.5 | 334 | .7 | 108 | -7.06 | 101 | .910 | 1.02 |
| Water year 1941-42 | 72,647.4 | 1,450 | .7 | 199 | +15.4 | 214 | 1.93 | 26.22 |

† Change in contents in Waterbury Reservoir.
g Computed from stage graph based on observer's twice-daily readings and records of gate operations at Waterbury Reservoir.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Lamoille River at Johnson, Vt.

Location.- Water-stage recorder, lat. 44°37'20", long. 72°40'50", at falls 0.9 mile upstream from bridge in Johnson, Lamoille County, and 1 1/8 miles upstream from Gihon River.
Drainage area.- 310 square miles.
Records available.- July 1910 to December 1913, September 1928 to September 1942.
Average discharge.- 14 years (1928-42), 508 second-feet.
Extremes.- Maximum discharge during year, 10,600 second-feet June 15 (gage height, 15.12 feet), from rating curve extended above 4,500 second-feet on basis of computation of flow by critical depth method at gage height 13.58 feet and by computation of flow over dam at gage height 16.48 feet; minimum, 12 second-feet (regulated) Aug. 31; minimum daily, 26 second-feet Aug. 30.
1910-13, 1928-42: Maximum discharge, 31,000 second-feet Mar. 18, 1936 (gage height, 16.48 feet), by computation of flow over dam; minimum, 11 second-feet (regulated Sept. 2, 1935; minimum daily, 20 second-feet Aug. 18, 1940.
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by power plant above station.

Rating tables, water year 1941-42, except periods of ice effect or backwater from debris on control (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Sept. 29, 30)

| Oct. 1 to Apr. 15 | | | | | | Apr. 16 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.7 | 84 | 2.2 | 235 | 3.5 | 780 | 1.5 | 23 | 2.4 | 284 | 7.5 | 2,930 |
| 1.8 | 111 | 2.5 | 349 | 4.5 | 1,270 | 1.6 | 41 | 2.8 | 445 | 9.0 | 4,050 |
| 2.0 | 169 | 3.0 | 555 | | | 1.7 | 62 | 3.5 | 770 | 10.5 | 5,440 |
| Note.- Same as following table above | | | | | | 1.8 | 87 | 4.5 | 1,270 | 12.0 | 7,130 |
| 4.5 feet. | | | | | | 2.0 | 146 | 6.0 | 2,020 | 13.1 | 8,500 |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 108 | 389 | 225 | 250 | 150 | 125 | 739 | 920 | 267 | 129 | 130 | 105 |
| 2 | 93 | 2,380 | 181 | 450 | 190 | 185 | 862 | 766 | 236 | 147 | 130 | 100 |
| 3 | 114 | 1,200 | 220 | 1,150 | 160 | 200 | 2,000 | 670 | 200 | 176 | 170 | 100 |
| 4 | 247 | 667 | 212 | 750 | 150 | 210 | 2,190 | 717 | 212 | 149 | 150 | 90 |
| 5 | 282 | 477 | 226 | 550 | 160 | 220 | 1,570 | 241 | 305 | 101 | 130 | 106 |
| 6 | 325 | 392 | 312 | 360 | 160 | 230 | 2,240 | 207 | 324 | 240 | 135 | 48 |
| 7 | 233 | 455 | 325 | 310 | 130 | 250 | 3,540 | 336 | 294 | 194 | 105 | 76 |
| 8 | 186 | 787 | 300 | 290 | 115 | 270 | 2,670 | 553 | 361 | 160 | 85 | 110 |
| 9 | 167 | 518 | 220 | 270 | 190 | 1,200 | 2,280 | 580 | 316 | 155 | 60 | 109 |
| 10 | 216 | 500 | 220 | 260 | 145 | 4,300 | 1,670 | 468 | 231 | 162 | 100 | 118 |
| 11 | 289 | 342 | 190 | 220 | 140 | 2,340 | 1,270 | 463 | 212 | 197 | 130 | 152 |
| 12 | 269 | 347 | 180 | 260 | 145 | 1,340 | 1,040 | 369 | 222 | 224 | 90 | 136 |
| 13 | 311 | 319 | 190 | 230 | 135 | 1,060 | 995 | 491 | 157 | 242 | 117 | 47 |
| 14 | 272 | 305 | 140 | 225 | 110 | 860 | 1,100 | 512 | 2,460 | 190 | 138 | 77 |
| 15 | 265 | 288 | 220 | 220 | 100 | 734 | 3,620 | 386 | 8,480 | 197 | 129 | 117 |
| 16 | 246 | 243 | 200 | 215 | 150 | 693 | 6,880 | 286 | 2,370 | 144 | 40 | 125 |
| 17 | 231 | 332 | *250 | 215 | 150 | 695 | 4,360 | 536 | 1,220 | 135 | 272 | 180 |
| 18 | 225 | 306 | 280 | 180 | 150 | 670 | 3,930 | 1,040 | 1,320 | 147 | 199 | 176 |
| 19 | 112 | *292 | 250 | 310 | 150 | 726 | 3,000 | 576 | 1,120 | 99 | 160 | 115 |
| 20 | 228 | *281 | 260 | 380 | 145 | 666 | 2,360 | 424 | 695 | 203 | 126 | 75 |
| 21 | 235 | 291 | 150 | 450 | *140 | 535 | 1,870 | 370 | 486 | 162 | 105 | 146 |
| 22 | 225 | 219 | 240 | *400 | 110 | 580 | 1,520 | 387 | 458 | 160 | 107 | 145 |
| 23 | 240 | 224 | 250 | 330 | 190 | 769 | 2,020 | 385 | 475 | 145 | 88 | 138 |
| 24 | 275 | 295 | 460 | 300 | 150 | 581 | 2,540 | 440 | 129 | 115 | 83 | 146 |
| 25 | 306 | 277 | 1,200 | 260 | 125 | 543 | 2,540 | 428 | 199 | 100 | 130 | 152 |
| 26 | 222 | 238 | 1,000 | 280 | 150 | 573 | 2,360 | 295 | 256 | 70 | 108 | 143 |
| 27 | 291 | 120 | 700 | 260 | 170 | 587 | 1,820 | 290 | 275 | 115 | 121 | 582 |
| 28 | 319 | 160 | 500 | 220 | 160 | 719 | 1,420 | 257 | 199 | 125 | 132 | 1,830 |
| 29 | 335 | 155 | 530 | 230 | - | 804 | 1,220 | 273 | 254 | 160 | 92 | 719 |
| 30 | 284 | 192 | 500 | 210 | - | 956 | 1,140 | 223 | 494 | 100 | 26 | 352 |
| 31 | 265 | - | 430 | 200 | - | 729 | - | 222 | - | 125 | 54 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 7,416 | 335 | 93 | 239 | 0.771 | 0.89 |
| November | 12,991 | 2,380 | 120 | 433 | 1.40 | 1.56 |
| December | 10,561 | 1,200 | 140 | 341 | 1.10 | 1.27 |
| Calendar year 1941 | 127,542 | 4,640 | 26 | 349 | 1.13 | 15.31 |
| January | 10,235 | 1,150 | 180 | 330 | 1.06 | 1.23 |
| February | 4,150 | 190 | 100 | 148 | .477 | .50 |
| March | 24,350 | 4,300 | 125 | 785 | 2.53 | 2.92 |
| April | 66,766 | 6,880 | 739 | 2,226 | 7.18 | 8.01 |
| May | 14,111 | 1,040 | 207 | 455 | 1.47 | 1.69 |
| June | 24,227 | 8,480 | 129 | 808 | 2.61 | 2.91 |
| July | 4,798 | 242 | 70 | 155 | .500 | .58 |
| August | 3,567 | 272 | 26 | 116 | .374 | .43 |
| September | 6,515 | 1,830 | 47 | 217 | .700 | .78 |
| Water year 1941-42 | 189,707 | 8,480 | 26 | 520 | 1.68 | 22.77 |

Peak discharge.- Apr. 16 (4 a.m.) 8,630 sec.-ft.; June 15 (8:30 a.m.) 10,600 sec.-ft.
* Winter discharge measurement made on this day.
Note.- No gage-height record Oct. 21, 22, July 22 to Aug. 12, Sept. 2, 3; discharge computed on basis of one discharge measurement, recorded range in stage, power-plant records, and weather records. Stage-discharge relation affected by ice Dec. 1, Dec. 7 to Mar. 10, Mar. 17, 18.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Lamoille River at East Georgia, Vt.

Location.- Water-stage recorder, lat. 44°40'45", long. 73°04'20", at East Georgia, Franklin County, 0.5 mile upstream from railroad bridge and 1 mile downstream from Beaver Meadow Brook.
Drainage area.- 686 square miles.
Records available.- October 1937 to September 1942. August 1929 to November 1937 at site near Milton, 3½ miles downstream, published as Lamoille River near Milton, Vt.
Average discharge.- 13 years, 1,195 second-feet, adjusted to present drainage area.
Extremes.- Maximum discharge during year, 19,400 second-feet June 15 (gage height, 11.57 feet), from rating curve extended above 11,000 second-feet on basis of computations of flow over dams at gage height 11.76 feet; minimum, 60 second-feet (regulated) Oct. 1; minimum daily, 144 second-feet Oct. 1.
1929-42: Maximum discharge, 23,200 second-feet Mar. 19, 1936 (gage height, 12.52 feet, site and datum then in use), by computation of flow over dam; minimum, 49 second-feet (regulated) July 30, 1933; minimum daily, 91 second-feet July 30, 1933.
Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated at low stages by power plants above station.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 2.2 | 140 | 3.6 | 725 | 7.0 | 5,050 |
| 2.3 | 164 | 4.0 | 1,020 | 8.0 | 7,150 |
| 2.5 | 219 | 4.5 | 1,470 | 9.0 | 9,700 |
| 2.7 | 283 | 5.0 | 2,000 | 10.0 | 12,900 |
| 3.0 | 400 | 5.5 | 2,620 | 11.0 | 16,800 |
| 3.3 | 545 | 6.0 | 3,350 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 144 | 539 | 468 | 1,100 | 380 | 380 | 1,600 | 2,120 | 596 | 782 | 240 | 226 |
| 2 | 172 | 4,500 | 601 | 1,900 | 340 | 310 | 2,000 | 1,780 | 481 | 480 | 325 | 164 |
| 3 | 223 | 3,460 | 590 | 2,500 | 380 | 400 | 3,350 | 1,570 | 456 | 350 | 303 | 192 |
| 4 | 376 | 1,820 | 610 | 1,900 | 340 | 370 | 4,330 | 1,420 | 446 | 368 | 353 | 170 |
| 5 | 918 | 1,290 | 611 | 1,200 | 330 | 400 | 3,510 | 1,220 | 630 | 338 | 274 | 146 |
| 6 | 902 | 1,040 | 820 | 820 | 340 | 510 | 4,150 | 754 | 782 | 452 | 258 | 216 |
| 7 | 725 | 1,040 | 910 | 700 | 330 | 540 | 6,050 | 650 | 706 | 484 | 256 | 200 |
| 8 | 543 | 1,770 | 608 | 640 | 310 | 560 | 5,850 | 1,060 | 829 | 462 | 216 | 168 |
| 9 | 436 | 1,440 | 607 | 580 | 310 | 2,500 | 4,690 | 1,160 | 728 | 410 | 175 | 174 |
| 10 | 378 | 1,070 | 588 | 620 | 350 | 8,000 | 3,590 | 1,030 | 580 | 364 | 193 | 233 |
| 11 | 756 | 962 | 430 | 460 | 370 | 5,000 | 2,760 | 972 | 449 | 419 | 320 | 414 |
| 12 | 837 | 836 | 400 | 500 | 330 | 3,000 | 2,360 | 872 | 408 | 672 | 370 | 310 |
| 13 | 752 | 765 | 510 | 580 | 310 | 2,400 | 2,060 | 1,030 | 402 | 666 | 324 | 225 |
| 14 | 732 | 697 | 430 | 520 | 290 | 2,000 | 2,120 | 1,180 | 3,050 | 488 | 280 | 232 |
| 15 | 690 | 724 | 540 | 540 | 240 | 1,650 | 4,730 | 932 | 16,100 | 402 | 249 | 181 |
| 16 | 678 | 704 | 560 | 490 | 230 | 1,550 | 14,800 | 752 | 11,400 | 383 | 268 | 207 |
| 17 | 594 | 692 | 580 | 470 | 350 | 1,600 | 10,900 | 786 | 3,640 | 327 | 632 | 349 |
| 18 | 508 | 739 | 560 | 470 | 370 | 1,550 | 8,620 | 1,730 | 3,190 | 280 | 776 | 464 |
| 19 | 508 | 680 | 680 | 700 | 390 | 1,600 | 7,150 | 1,250 | 3,050 | 230 | 471 | 342 |
| 20 | 459 | 649 | 600 | 1,000 | 350 | 1,500 | 5,650 | 932 | 1,940 | 294 | 331 | 327 |
| 21 | 466 | 666 | 470 | 980 | 320 | 1,270 | 4,150 | 793 | 1,380 | 406 | 288 | 362 |
| 22 | 541 | 736 | 370 | 860 | 270 | 1,350 | 3,280 | 822 | 1,100 | 284 | 266 | 391 |
| 23 | 598 | 586 | *420 | 720 | 260 | 1,700 | 3,590 | 800 | 959 | 268 | 186 | 293 |
| 24 | 1,030 | 648 | 1,000 | 660 | 340 | 1,450 | 5,050 | 759 | 1,060 | 278 | 228 | 267 |
| 25 | 1,010 | *662 | 2,600 | 600 | 310 | 1,500 | 5,650 | 807 | 594 | 286 | 216 | 326 |
| 26 | 858 | 614 | 2,100 | 560 | 280 | 1,350 | 5,650 | 716 | 630 | 176 | 208 | 363 |
| 27 | 706 | 578 | 1,500 | 580 | 330 | 1,400 | 4,420 | 606 | 670 | 214 | 202 | 539 |
| 28 | 590 | 414 | 1,200 | 560 | 370 | 1,550 | 3,200 | 634 | 623 | 224 | 258 | 5,500 |
| 29 | 964 | 404 | 960 | 500 | - | 1,800 | 2,760 | 560 | 626 | 224 | 239 | 2,320 |
| 30 | 780 | 566 | 820 | 430 | - | 2,000 | 2,560 | 552 | 486 | 319 | 200 | 1,160 |
| 31 | 719 | - | 800 | 420 | - | 1,800 | - | 518 | - | 316 | 200 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 20,393 | 1,030 | 144 | 658 | 0.959 | 1.11 |
| November | 31,591 | 4,500 | 404 | 1,053 | 1.53 | 1.71 |
| December | 25,945 | 2,600 | 370 | 772 | 1.13 | 1.30 |
| Calendar year 1941 | 302,057 | 10,300 | 130 | 828 | 1.21 | 16.37 |
| January | 24,560 | 2,500 | 420 | 792 | 1.15 | 1.33 |
| February | 9,120 | 390 | 230 | 326 | .475 | .49 |
| March | 52,790 | 8,000 | 310 | 1,703 | 2.48 | 2.86 |
| April | 140,580 | 14,800 | 1,600 | 4,686 | 6.83 | 7.62 |
| May | 30,767 | 2,120 | 518 | 992 | 1.45 | 1.67 |
| June | 57,991 | 16,100 | 402 | 1,933 | 2.82 | 3.14 |
| July | 11,646 | 782 | 176 | 376 | .548 | .63 |
| August | 9,105 | 776 | 175 | 294 | .429 | .49 |
| September | 16,461 | 5,500 | 146 | 549 | .800 | .89 |
| Water year 1941-42 | 428,947 | 16,100 | 144 | 1,175 | 1.71 | 23.24 |

Peak discharge.- Apr. 16 (3 p.m.) 17,250 sec.-ft.; June 15 (6 p.m.) 19,400 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 11 to Mar. 18 (no gage-height record Mar. 9-12). No gage-height record Mar. 19 to Apr. 2; discharge computed on basis of weather records, records for station at Johnson, and records for stations on nearby streams.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Missisquoi River near North Troy, Vt.

Location.- Water-stage recorder, lat. 44°58'20", long. 72°23'15", just upstream from Big Falls, 1⅛ miles downstream from Jay Branch, and 2¼ miles upstream from North Troy, Troy County.

Drainage area.- 131 square miles.

Records available.- August 1931 to September 1942.

Average discharge.- 11 years, 262 second-feet.

Extremes.- Maximum discharge during year, 6,620 second-feet June 15 (gage height, 11.70 feet); minimum daily, 24 second-feet Sept. 9.
1931-42: Maximum discharge, 7,980 second-feet May 3, 1940 (gage height, 12.87 feet), from rating curve extended above 3,600 second-feet by logarithmic plotting, verified by computation of flow over dam at gage height 11.70 feet; minimum, 10 second-feet Aug. 22, 1934 (gage height, 0.81 foot).

Remarks.- Records good except those for periods of ice effect, which are fair, and those for period of no gage-height record, which are poor. Some regulation from small power plant above station.

Rating table, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.0 | 17 | 2.3 | 164 | 6.0 | 1,700 |
| 1.2 | 25 | 2.6 | 234 | 7.0 | 2,350 |
| 1.4 | 36 | 3.0 | 346 | 8.0 | 3,100 |
| 1.6 | 53 | 3.5 | 518 | 9.0 | 3,950 |
| 1.8 | 75 | 4.0 | 718 | 10.0 | 4,850 |
| 2.0 | 105 | 5.0 | 1,170 | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 33 | 541 | *82 | 152 | 75 | 62 | 315 | 576 | 84 | 100 | 56 | 29 |
| 2 | 31 | 2,460 | 125 | 497 | *71 | 65 | 415 | 467 | 70 | 144 | 51 | 26 |
| 3 | 92 | 748 | 130 | 710 | 68 | 66 | 1,200 | 380 | 58 | 163 | 125 | 25 |
| 4 | 492 | 454 | 167 | 343 | 67 | 68 | 1,000 | 307 | 63 | 103 | 62 | 25 |
| 5 | 266 | 302 | 257 | 273 | 66 | 67 | 811 | 232 | 158 | 93 | 52 | 25 |
| 6 | 247 | 235 | 379 | 175 | 65 | 66 | 1,280 | 191 | 118 | 129 | 36 | 26 |
| 7 | 125 | 484 | 233 | 155 | 65 | 67 | 1,720 | 190 | 143 | 122 | 38 | 25 |
| 8 | 108 | 607 | 121 | 145 | 65 | 74 | 1,100 | 288 | 146 | 87 | 34 | 27 |
| 9 | 107 | 324 | 130 | 135 | 66 | 690 | 916 | 219 | 96 | 88 | 35 | 24 |
| 10 | 112 | 235 | 115 | 125 | 64 | 1,950 | 697 | 204 | 68 | 76 | 61 | 27 |
| 11 | 362 | 201 | 99 | 115 | 62 | 1,180 | 500 | 184 | 56 | 73 | 110 | 60 |
| 12 | 258 | 194 | 96 | 120 | 61 | 697 | 387 | 164 | 55 | 150 | 85 | 50 |
| 13 | 193 | 158 | 94 | 110 | 64 | 595 | 381 | 387 | 52 | 108 | 53 | 45 |
| 14 | 189 | 201 | 115 | 105 | 61 | 452 | 464 | 263 | 933 | 68 | 41 | 40 |
| 15 | 284 | 262 | 125 | 100 | 63 | 368 | 2,820 | 184 | 4,700 | 53 | 45 | 35 |
| 16 | 176 | 268 | 110 | 98 | 60 | 290 | 4,490 | 141 | 915 | 53 | 48 | 140 |
| 17 | 131 | 278 | 117 | 96 | 65 | 290 | 2,440 | 323 | 473 | 42 | 167 | 330 |
| 18 | 108 | 198 | 114 | 94 | 80 | 465 | 2,390 | 336 | 518 | 46 | 109 | 130 |
| 19 | 141 | 197 | *125 | 200 | 70 | 545 | 1,590 | 202 | 424 | 44 | 53 | 75 |
| 20 | 134 | 185 | 117 | 310 | 62 | 338 | 1,100 | 166 | 259 | 63 | 50 | 75 |
| 21 | 117 | 288 | 90 | 250 | 62 | 257 | 740 | 143 | 177 | 55 | 52 | 80 |
| 22 | 238 | 215 | 115 | 200 | 60 | 325 | 694 | 139 | 142 | 48 | 35 | 70 |
| 23 | 344 | 184 | 110 | 160 | 61 | 313 | 1,280 | 123 | 119 | 46 | 34 | 55 |
| 24 | 517 | 215 | 240 | 140 | 61 | 247 | 1,880 | 107 | 115 | 37 | 34 | 100 |
| 25 | 295 | 150 | 920 | 120 | *59 | 216 | 2,080 | 101 | 116 | 38 | 36 | 90 |
| 26 | 210 | 140 | 607 | 105 | 54 | *221 | 1,860 | 93 | 113 | 31 | 33 | 75 |
| 27 | 194 | 130 | 376 | 94 | 55 | 317 | 1,210 | 104 | 93 | 29 | 29 | 400 |
| 28 | 504 | 107 | 253 | 85 | 59 | 443 | 939 | 130 | 74 | 33 | 28 | 1,500 |
| 29 | 287 | 141 | 199 | 80 | - | 441 | 985 | 95 | 80 | 33 | 28 | 600 |
| 30 | 185 | 154 | 135 | 75 | - | 448 | 805 | 84 | 63 | 44 | 28 | 250 |
| 31 | 217 | - | 132 | 70 | - | 320 | - | 105 | - | 41 | 26 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 6,697 | 517 | 31 | 216 | 1.65 | 1.90 |
| November | 10,256 | 2,460 | 107 | 342 | 2.61 | 2.91 |
| December | 6,028 | 920 | 82 | 194 | 1.48 | 1.71 |
| Calendar year 1941 | 70,474 | 3,610 | 12 | 193 | 1.47 | 20.00 |
| January | 5,437 | 710 | 70 | 175 | 1.34 | 1.54 |
| February | 1,791 | 80 | 54 | 64.0 | .489 | .51 |
| March | 11,943 | 1,950 | 62 | 385 | 2.94 | 3.39 |
| April | 38,489 | 4,490 | 315 | 1,283 | 9.79 | 10.93 |
| May | 6,628 | 576 | 84 | 214 | 1.63 | 1.88 |
| June | 10,481 | 4,700 | 52 | 349 | 2.66 | 2.98 |
| July | 2,240 | 163 | 29 | 72.3 | .552 | .64 |
| August | 1,674 | 167 | 26 | 54.0 | .412 | .48 |
| September | 4,459 | 1,500 | 24 | 149 | 1.14 | 1.27 |
| Water year 1941-42 | 106,123 | 4,700 | 24 | 291 | 2.22 | 30.14 |

Peak discharge.- Apr. 16 (2:30 a.m.) 5,850 sec.-ft.; June 15 (8:30 a.m.) 6,620 sec.-ft.
* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 1, 12-15, 21-25, Jan. 3, Jan. 6 to Mar. 10, Mar. 18, Mar. 31 to Apr. 2. No gage-height record Sept. 10-30; discharge computed on basis of one discharge measurement, weather records, records for station near Richford, and records for stations on nearby streams.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Missisquoi River near Richford, Vt.

Location.- Water-stage recorder, lat. 44°57'30", long. 72°41'55", 1 2/3 miles upstream from Trout River, 3 miles south of Richford, Franklin County, and 3¾ miles downstream from North Branch.
Drainage area.- 479 square miles.
Records available.- May 1909 to November 1910, July 1911 to September 1923, October 1928 to September 1942.
Average discharge.- 22 years (1911-19, 1928-42), 924 second-feet.
Extremes.- Maximum discharge during year, 11,600 second-feet Apr. 16 (gage height, 12.97 feet); minimum, 58 second-feet Oct. 1 (gage height, 2.38 feet).

1909-10, 1911-23, 1928-42: Maximum discharge, 17,200 second-feet May 4, 1940 (gage height, 15.15 feet), from rating curve extended above 9,300 second-feet on basis of computation of flow over dam at gage height 14.70 feet, slope-area determination at gage height 12.90 feet, and study of discharge per foot of width at measuring section; maximum gage height, 17.64 feet Apr. 1, 1918, ice jam; minimum discharge, 8 second-feet July 14, 1911.

Maximum discharge known, 45,000 second-feet during flood of November 1927 (gage height, 23.1 feet, from floodmarks), from rating curve extended above 9,300 second-feet by method explained above.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Slight diurnal fluctuation at low stages.

Rating tables, water year 1941-42, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 16

| | | | | | |
|---|---|---|---|---|---|
| 2.3 | 46 | 3.1 | 247 | 6.0 | 2,240 |
| 2.4 | 61 | 3.5 | 422 | 7.5 | 3,810 |
| 2.5 | 78 | 4.0 | 670 | 9.0 | 5,600 |
| 2.7 | 119 | 4.5 | 990 | 11.0 | 8,350 |
| 2.9 | 175 | 5.0 | 1,370 | 12.7 | 11,000 |

Apr. 17 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 2.5 | 68 | 3.0 | 182 | 3.9 | 580 |
| 2.6 | 85 | 3.3 | 284 | 4.4 | 910 |
| 2.8 | 128 | 3.6 | 420 | 5.0 | 1,370 |

Note.- Same as preceding table above 5.0 feet.

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 60 | 1,000 | 500 | 700 | 220 | 235 | 1,740 | 1,880 | 233 | 210 | 128 | 97 |
| 2 | 76 | 4,660 | *450 | 1,600 | 225 | 245 | 1,920 | 1,450 | 198 | 765 | 158 | 85 |
| 3 | 91 | 4,490 | 520 | 2,200 | 230 | 255 | 3,370 | 1,210 | 174 | 385 | 219 | 85 |
| 4 | 612 | 2,350 | 570 | 1,600 | 220 | 260 | 4,040 | 1,020 | 165 | 330 | 240 | 83 |
| 5 | 742 | 1,410 | 682 | 1,100 | 215 | 265 | 3,480 | 805 | 233 | 313 | 154 | 76 |
| 6 | 706 | 1,060 | 920 | 650 | 215 | 265 | 3,920 | 646 | 330 | 348 | 128 | 75 |
| 7 | 436 | 1,350 | 878 | 560 | 215 | 265 | 5,120 | 560 | 292 | 395 | 116 | 70 |
| 8 | 314 | 2,240 | 570 | 520 | 210 | 280 | 4,520 | 670 | 296 | 284 | 91 | 73 |
| 9 | 276 | 1,490 | 460 | 480 | 210 | 2,500 | 3,590 | 682 | 258 | 247 | 87 | 71 |
| 10 | 331 | 1,020 | 430 | 450 | 210 | 5,600 | 2,940 | 622 | 204 | 220 | 128 | 97 |
| 11 | 670 | 850 | 390 | 420 | 215 | 5,000 | 2,290 | 598 | 168 | 287 | 304 | 157 |
| 12 | 772 | 766 | 370 | 440 | 215 | 3,200 | 1,790 | 520 | 165 | 445 | 244 | 191 |
| 13 | 560 | 660 | 370 | 400 | 210 | 2,400 | 1,530 | 1,240 | 171 | 420 | 182 | 171 |
| 14 | 519 | 645 | 410 | 380 | 200 | 2,100 | 1,790 | 1,370 | 1,900 | 273 | 144 | 149 |
| 15 | 772 | 748 | 440 | 370 | 200 | 1,500 | 5,120 | 945 | 8,270 | 201 | 146 | 128 |
| 16 | 610 | 766 | 420 | 360 | 190 | 1,300 | 10,900 | 694 | 7,920 | 191 | 1,370 | 548 |
| 17 | 436 | 784 | 430 | 350 | 220 | 1,300 | 9,780 | 745 | 3,920 | 157 | 1,870 | 1,020 |
| 18 | 344 | 670 | 420 | 350 | 270 | 1,900 | 8,050 | 1,090 | 2,490 | 146 | 732 | 466 |
| 19 | 372 | 615 | 430 | 550 | 290 | 2,400 | 7,320 | 805 | 2,240 | 138 | 410 | 280 |
| 20 | 362 | 605 | 410 | 1,000 | 270 | 1,800 | 5,730 | 616 | 1,420 | 188 | 277 | 278 |
| 21 | 336 | 1,020 | 390 | 850 | 250 | 1,250 | 3,810 | 538 | 910 | 201 | 244 | 292 |
| 22 | 540 | 864 | 360 | 700 | 240 | 1,550 | 2,740 | 544 | 676 | 160 | 204 | 247 |
| 23 | 1,070 | 700 | 380 | 550 | 230 | 1,500 | 3,260 | 490 | 526 | 154 | 185 | 204 |
| 24 | 1,700 | 772 | 700 | 470 | 225 | 1,300 | 4,670 | 440 | 470 | 133 | 160 | 212 |
| 25 | 1,170 | 645 | 2,600 | 420 | 230 | 1,130 | 5,600 | 380 | 430 | 116 | 144 | 321 |
| 26 | 796 | 560 | 2,400 | 360 | *225 | 1,170 | 5,860 | 343 | 420 | 101 | 126 | 247 |
| 27 | 665 | 535 | 1,600 | 320 | 230 | 1,450 | 4,880 | 334 | 343 | 105 | 121 | 1,430 |
| 28 | 990 | 485 | 1,100 | 290 | 230 | 1,790 | 3,480 | 338 | 288 | 97 | 114 | 3,720 |
| 29 | 1,020 | 510 | 800 | 260 | - | 1,970 | 2,840 | 313 | 247 | 101 | 119 | 2,200 |
| 30 | 718 | 540 | 600 | 240 | - | 2,100 | 2,440 | 254 | 230 | 97 | 103 | 1,060 |
| 31 | 754 | - | 560 | *225 | - | 1,790 | - | 237 | - | 93 | 87 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 18,820 | 1,700 | 60 | 607 | 1.27 | 1.46 |
| November | 34,810 | 4,660 | 485 | 1,160 | 2.42 | 2.70 |
| December | 21,580 | 2,600 | 360 | 696 | 1.45 | 1.68 |
| Calendar year 1941 | 242,598 | 10,300 | 38 | 665 | 1.39 | 18.83 |
| January | 19,165 | 2,200 | 225 | 618 | 1.29 | 1.49 |
| February | 6,310 | 290 | 190 | 225 | .470 | .49 |
| March | 50,070 | 5,600 | 235 | 1,615 | 3.37 | 3.89 |
| April | 128,520 | 10,900 | 1,530 | 4,284 | 8.94 | 9.98 |
| May | 22,399 | 1,880 | 237 | 723 | 1.51 | 1.74 |
| June | 35,577 | 8,270 | 165 | 1,186 | 2.46 | 2.76 |
| July | 7,321 | 785 | 93 | 236 | .493 | .57 |
| August | 8,715 | 1,670 | 87 | 281 | .587 | .68 |
| September | 14,135 | 3,720 | 70 | 471 | .983 | 1.10 |
| Water year 1941-42 | 367,422 | 10,900 | 60 | 1,007 | 2.10 | 28.54 |

Peak discharge.- Apr. 16 (10 p.m.) 11,600 sec.-ft.; Apr. 25 (11:30 p.m.) 6,380 sec.-ft.; June 16 (5:30 a.m.) 9,270 sec.-ft.; Aug. 16 (8:30 p.m.) 6,510 sec.-ft.

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Nov. 30 to Dec. 3, Dec. 8 to Mar. 9. No gage-height record Jan. 6-30, Mar. 10-25; discharge computed on basis of weather records, records for station near North Troy, and records for stations on nearby streams.

Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Lake Memphremagog at Newport, Vt.

Location.- Chain gage, lat. 44°56'10", long. 72°12'15", on concrete highway bridge in Newport, Orleans County. Datum of gage is 673.00 feet above mean sea level, datum of 1929.

Records available.- May 1931 to September 1942.

Extremes.- Maximum gage height observed during year, 11.42 feet Apr. 20; minimum observed, 7.28 feet Oct. 3.
1931-42: Maximum gage height observed, 12.92 feet Apr. 20, 1933; minimum observed, 6.69 feet Nov. 4, 1934.

Remarks.- Gage read twice daily.

Gage height, in feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.41 | 7.86 | 9.21 | 9.61 | 9.39 | 8.67 | 8.88 | 10.89 | 9.78 | 9.98 | 8.90 | 8.18 |
| 2 | 7.31 | 8.25 | 9.15 | 9.70 | 9.41 | 8.63 | 8.90 | 10.75 | 9.70 | 9.91 | 8.82 | 8.12 |
| 3 | 7.30 | 8.44 | 9.19 | 9.80 | 9.47 | 8.61 | 8.94 | 10.57 | 9.65 | 9.93 | 8.90 | 8.16 |
| 4 | 7.50 | 8.60 | 9.11 | 9.88 | 9.39 | 8.57 | 8.94 | 10.45 | 9.59 | 9.93 | 8.85 | 8.14 |
| 5 | 7.45 | 8.66 | 9.16 | 9.95 | 9.39 | 8.57 | 9.14 | 10.26 | 9.65 | 9.84 | 8.80 | 8.06 |
| 6 | 7.54 | 8.73 | 9.34 | 9.94 | 9.47 | 8.51 | 9.12 | 10.13 | 9.57 | 9.85 | 8.71 | 8.01 |
| 7 | 7.47 | 8.80 | 9.35 | 9.94 | 9.47 | 8.46 | 9.49 | 10.15 | 9.62 | 9.77 | 8.62 | 7.97 |
| 8 | 7.56 | 8.88 | 9.36 | 9.94 | 9.47 | 8.48 | 9.54 | 10.16 | 9.60 | 9.70 | 8.59 | 8.01 |
| 9 | 7.49 | 8.97 | 9.34 | 9.94 | 9.47 | 8.48 | 9.78 | 10.11 | 9.59 | 9.75 | 8.57 | 7.95 |
| 10 | 7.46 | 9.02 | 9.26 | 9.94 | 9.47 | 8.48 | 9.79 | 10.16 | 9.47 | 9.58 | 8.58 | 7.98 |
| 11 | 7.67 | 9.05 | 9.28 | 9.94 | 9.47 | 8.50 | 9.82 | 10.06 | 9.40 | 9.66 | 8.60 | 8.05 |
| 12 | 7.55 | 9.14 | 9.28 | 9.94 | 9.47 | 9.00 | 9.86 | 10.07 | 9.42 | 9.64 | 8.58 | 7.99 |
| 13 | 7.60 | 9.04 | 9.30 | 9.94 | 9.47 | 9.02 | 9.86 | 10.12 | 9.40 | 9.62 | 8.54 | 8.03 |
| 14 | 7.55 | 9.11 | 9.29 | 9.94 | 9.51 | 9.20 | 9.80 | 10.04 | 9.54 | 9.55 | 8.50 | 7.99 |
| 15 | 7.57 | 9.05 | 9.36 | 9.94 | 8.99 | 9.28 | 9.77 | 9.85 | 10.87 | 9.55 | 8.54 | 7.97 |
| 16 | 7.66 | 9.15 | 9.32 | 9.94 | 8.99 | 9.44 | 9.84 | 9.87 | 11.11 | 9.44 | 8.46 | 7.95 |
| 17 | 7.60 | 9.15 | 9.32 | 9.94 | 8.99 | 9.54 | 9.84 | 9.98 | 11.02 | 9.39 | 8.56 | 7.95 |
| 18 | 7.56 | 9.08 | 9.28 | 9.94 | 8.95 | 9.44 | 10.56 | 10.06 | 10.94 | 9.30 | 8.51 | 8.03 |
| 19 | 7.73 | 9.11 | 9.34 | 9.91 | 8.97 | 9.30 | 11.32 | 10.04 | 10.86 | 9.28 | 8.44 | 8.03 |
| 20 | 7.70 | 9.14 | 9.35 | 9.90 | 8.97 | 9.25 | 11.40 | 10.05 | 10.69 | 9.33 | 8.42 | 8.15 |
| 21 | 7.66 | 9.19 | 9.32 | 9.90 | 8.99 | 9.17 | 11.37 | 10.02 | 10.60 | 9.28 | 8.42 | 8.13 |
| 22 | 7.71 | 9.19 | 9.34 | 9.90 | 8.99 | 9.10 | 11.33 | 10.03 | 10.50 | 9.24 | 8.36 | 8.04 |
| 23 | 7.69 | 9.13 | 9.32 | 9.90 | 8.85 | 9.18 | 11.20 | 10.03 | 10.30 | 9.16 | 8.41 | 7.97 |
| 24 | 7.78 | 9.33 | 9.28 | 9.90 | 8.85 | 9.10 | 11.22 | 10.04 | 10.19 | 9.10 | 8.44 | 7.91 |
| 25 | 7.75 | 9.18 | 9.40 | 9.90 | 8.84 | 9.03 | 11.22 | 10.06 | 10.16 | 9.06 | 8.34 | 7.91 |
| 26 | 7.76 | 9.16 | 9.51 | 9.88 | 8.77 | 8.91 | 11.27 | 10.02 | 10.08 | 9.06 | 8.26 | 7.76 |
| 27 | 7.74 | 9.26 | 9.49 | 9.88 | 8.75 | 8.86 | 11.22 | 10.08 | 10.06 | 9.00 | 8.24 | 7.75 |
| 28 | 7.84 | 9.30 | 9.56 | 9.87 | 8.75 | 8.86 | 11.15 | 10.02 | 10.03 | 8.98 | 8.24 | 8.15 |
| 29 | 7.90 | 9.17 | 9.60 | 9.87 | - | 8.83 | 11.08 | 9.84 | 10.02 | 8.98 | 8.24 | 8.22 |
| 30 | 7.90 | 9.26 | 9.58 | 9.39 | - | 8.86 | 11.02 | 9.83 | 9.96 | 8.96 | 8.18 | 8.23 |
| 31 | 7.91 | - | 9.62 | 9.39 | - | 8.86 | - | 9.86 | - | 8.82 | 8.12 | - |

Note.- Gage heights for periods Dec. 12-14, 21-26, Dec. 30 to Jan. 1, Jan. 3-29, Feb. 2-14, 20-22, 26, were taken to top of ice.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

## Clyde River at Newport, Vt.

Location.- Water-stage recorder, lat. 44°56'20", long. 72°11'25", in Newport, Orleans County, just downstream from unnamed tributary entering from north and 1 mile upstream from mouth. Datum of gage is 682.36 feet above mean sea level, datum of 1929.
Drainage area.- 142 square miles.
Records available.- September 1938 to September 1942. May 1909 to September 1924 and November 1928 to May 1936 at site 0.65 mile upstream.
Average discharge.- 20 years (1909-19, 1929-35, 1938-42), 243 second-feet.
Extremes.- Maximum discharge during year, 1,700 second-feet Apr. 18 (gage height, 7.04 feet); minimum daily, 18 second-feet Oct. 5.
1909-24, 1928-36, 1938-42: Maximum discharge, 3,900 second-feet Mar. 20, 1936 (gage height, 5.76 feet, site and datum then in use), by computation of flow over dam; minimum daily, 3.0 second-feet Oct. 27, 1930; practically no flow at times because of regulation.
Remarks.- Records excellent except those for periods of ice effect or no gage-height record, those computed on basis of partly estimated gage-height record or from graph based on gage readings, and those below 80 second-feet, all of which are good. Flow regulated by power plant and reservoirs above station.

Rating tables, water year 1941-42, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 13

| | | | | | |
|---|---|---|---|---|---|
| 3.0 | 76 | 3.9 | 272 | | |
| 3.2 | 105 | 4.4 | 440 | | |
| 3.5 | 167 | | | | |

Note.- Same as following table below 3.0 feet.

Mar. 14 to Sept. 30

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.2 | 15 | 2.8 | 55 | 3.5 | 160 | 4.5 | 445 | 6.0 | 1,120 | | |
| 2.4 | 25 | 3.0 | 76 | 3.8 | 230 | 5.0 | 640 | 7.0 | 1,700 | | |
| 2.6 | 38 | 3.2 | 104 | 4.1 | 313 | 5.5 | 860 | | | | |

Discharge, in second-feet, water year October 1941 to September 1942

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 39 | 174 | 170 | 161 | *57 | 84 | 228 | 1,280 | 207 | g256 | 65 | 85 |
| 2 | 45 | 176 | 174 | 189 | 115 | 130 | 234 | 1,200 | 185 | g230 | 30 | 85 |
| 3 | 25 | 281 | 162 | 167 | 105 | 137 | 277 | 1,060 | 178 | 190 | 130 | 110 |
| 4 | 25 | 312 | 161 | 161 | 110 | 142 | 326 | 960 | 180 | 155 | 155 | 65 |
| 5 | 18 | 323 | 159 | 180 | 120 | 135 | 400 | 860 | 174 | 160 | 150 | 50 |
| 6 | 42 | 326 | 163 | 180 | 110 | 155 | 483 | 792 | 190 | 200 | 110 | 35 |
| 7 | 48 | 345 | 121 | 175 | 98 | 133 | 600 | 725 | 161 | 180 | 105 | 45 |
| 8 | 48 | 331 | 131 | 180 | 55 | 88 | 640 | 660 | 153 | 170 | 100 | 93 |
| 9 | 74 | 306 | 115 | 181 | 95 | 189 | 680 | 620 | 168 | 180 | 150 | 105 |
| 10 | 140 | 285 | 100 | 174 | 110 | 176 | 725 | 559 | 183 | 169 | 180 | 90 |
| 11 | 159 | 272 | 100 | 160 | 120 | 233 | 702 | 537 | 179 | 175 | 175 | 57 |
| 12 | 142 | 234 | 134 | 183 | 125 | 332 | 660 | 509 | 182 | 117 | 115 | 47 |
| 13 | f136 | 217 | 130 | 152 | 115 | 427 | 600 | 484 | 181 | 126 | 110 | 30 |
| 14 | f81 | 212 | 108 | 162 | 150 | 415 | 560 | 460 | g180 | 131 | 115 | 65 |
| 15 | 69 | 190 | 141 | 136 | 82 | 346 | 640 | 450 | f885 | 122 | 110 | 57 |
| 16 | 93 | 173 | 149 | 145 | 155 | 320 | 935 | 287 | f1,090 | 120 | 140 | 150 |
| 17 | 104 | 178 | 145 | 110 | 161 | 350 | 1,250 | 218 | f1,200 | 150 | 110 | 175 |
| 18 | f161 | 180 | 156 | 56 | 161 | 395 | 1,580 | 302 | 1,120 | 158 | 110 | 135 |
| 19 | f144 | 163 | *140 | 70 | 150 | 341 | 1,640 | 364 | f985 | 90 | 90 | 85 |
| 20 | 133 | 161 | 108 | 74 | 95 | 264 | 1,520 | 372 | f860 | 135 | 96 | 65 |
| 21 | 112 | 157 | 55 | 67 | 65 | 291 | 1,310 | 197 | f748 | 120 | 90 | 85 |
| 22 | 131 | 147 | 150 | 72 | 75 | 294 | 1,120 | 249 | g640 | 135 | 140 | 80 |
| 23 | 140 | 111 | 178 | 146 | 120 | 285 | 1,010 | 325 | g540 | 100 | 170 | 95 |
| 24 | 124 | 159 | 139 | 134 | 111 | 261 | 1,040 | 294 | g520 | 96 | 190 | 128 |
| 25 | 95 | 154 | 37 | 115 | 134 | 250 | 1,200 | 280 | g344 | 80 | 140 | 133 |
| 26 | 34 | 165 | 76 | 167 | 152 | *243 | 1,430 | 261 | g376 | 55 | 160 | 128 |
| 27 | 109 | 130 | 145 | 134 | 165 | 231 | 1,580 | 248 | g360 | 105 | 170 | 133 |
| 28 | 109 | 152 | 166 | 120 | 152 | 168 | 1,640 | 234 | g344 | 115 | 80 | 175 |
| 29 | 110 | 168 | 171 | 165 | - | 169 | 1,520 | 233 | g313 | 110 | 75 | 172 |
| 30 | 132 | *147 | 171 | 170 | - | 219 | 1,370 | 222 | g284 | 105 | 55 | 159 |
| 31 | 157 | - | 168 | 116 | - | 224 | - | 206 | - | 105 | 90 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Run-off in inches |
|---|---|---|---|---|---|---|
| October | 2,979 | 161 | 18 | 96.1 | 0.677 | 0.78 |
| November | 6,329 | 345 | 111 | 211 | 1.49 | 1.66 |
| December | 4,223 | 178 | 37 | 136 | .958 | 1.11 |
| Calendar year 1941 | 65,828 | 1,330 | 18 | 180 | 1.27 | 17.25 |
| January | 4,422 | 189 | 56 | 143 | 1.01 | 1.16 |
| February | 3,283 | 165 | 55 | 117 | .824 | .86 |
| March | 7,427 | 427 | 84 | 240 | 1.69 | 1.95 |
| April | 27,900 | 1,640 | 228 | 930 | 6.56 | 7.31 |
| May | 15,448 | 1,280 | 197 | 498 | 3.51 | 4.05 |
| June | 13,110 | 1,200 | 153 | 437 | 3.08 | 3.43 |
| July | 4,340 | 256 | 55 | 140 | .986 | 1.14 |
| August | 3,706 | 190 | 30 | 120 | .845 | .97 |
| September | 2,917 | 175 | 30 | 97.2 | .685 | .76 |
| Water year 1941-42 | 96,084 | 1,640 | 18 | 263 | 1.85 | 25.18 |

* Winter discharge measurement made on this day.
f Computed on basis of partly estimated gage-height record.
g Computed from graph based on gage readings.
Note.- No gage-height record Oct. 3, 4, 7, 10, 23, July 3-9, July 19 to Aug. 14, Aug. 17 to Sept. 23; discharge computed on basis of three discharge measurements, power-plant records, recorded range in stage, and weather records. Stage-discharge relation affected by ice Dec. 10, 11, 21, 22, Jan. 5-8, 11, 16, 17, 29, 30, Feb. 2-6, 9-14, 16, 19-23. Discharge in second-feet per square mile and run-off in inches may not represent the natural flow because of regulation.
Time basis: Eastern standard time prior to 2 a.m., Feb. 9, 1942; eastern war time thereafter. To convert war time to standard time, subtract 1 hour.

In addition to the records of stream flow obtained at gaging stations and reported in the preceding pages, measurements of flow were made at the points in the St. Lawrence River Basin indicated in the following table:

Miscellaneous discharge measurements in St. Lawrence River Basin during water year October 1941 to September 1942

Streams tributary to Lake Superior

| Date | Stream | Tributary to or diverting from- | Locality | Discharge (sec.-ft.) |
|---|---|---|---|---|
| June 15 | Bond Falls Reservoir diversion canal. | South Branch of Ontonagon River. | Paulding, Mich. | 5.75 |
| 16 | ....do.... | ....do.... | ....do.... | 37.9 |
| 17 | ....do.... | ....do.... | ....do.... | 70.6 |
| 18 | ....do.... | ....do.... | ....do.... | 19.6 |
| 19 | ....do.... | ....do.... | ....do.... | 12.3 |
| 19 | ....do.... | ....do.... | ....do.... | 12.0 |
| 22 | ....do.... | ....do.... | ....do.... | 9.03 |
| July 6 | ....do.... | ....do.... | ....do.... | 174 |
| 16 | ....do.... | ....do.... | ....do.... | 312 |
| Mar. 8 | West Branch of Ontonagon River. | Ontonagon River.... | Below Lake Gogebic, Mich. | 62.2 |
| June 15 | Lower by-pass weir at Bond Falls Reservoir. | ....do.... | ....do.... | 2.87 |
| 15 | ....do.... | ....do.... | ....do.... | 3.88 |
| 16 | ....do.... | ....do.... | ....do.... | 9.63 |
| 16 | ....do.... | ....do.... | ....do.... | 17.5 |
| 16 | ....do.... | ....do.... | ....do.... | 25.6 |
| 17 | ....do.... | ....do.... | ....do.... | 34.8 |
| 17 | ....do.... | ....do.... | ....do.... | 50.6 |
| 18 | ....do.... | ....do.... | ....do.... | 6.21 |
| July 6 | Middle Branch of Ontonagon River. | ....do.... | Paulding, Mich. | 26.7 |
| Aug. 10 | ....do.... | ....do.... | ....do.... | 26.4 |
| 13 | ....do.... | ....do.... | ....do.... | 35.0 |
| 18 | ....do.... | ....do.... | ....do.... | 40.0 |
| 20 | ....do.... | ....do.... | ....do.... | 62.0 |
| Mar. 7 | ....do.... | ....do.... | Trout Creek, Mich. | 47.5 |

Streams tributary to Lake Michigan

| | | | | |
|---|---|---|---|---|
| Apr. 16 | South Manistique Lake Outlet. | Manistique Lake.... | Curtis, Mich. | 75.9 |
| Aug. 24 | Allen Creek..... | Kalamazoo River.... | Comstock, Mich. | 8.23 |
| 25 | Portage Creek.... | ....do.... | Kalamazoo, Mich. | 64.1 |
| 25 | Axtell Creek..... | Portage Creek..... | ....do.... | 1.86 |
| 25 | Spring Brook..... | Kalamazoo River.... | East Cooper, Mich. | 19.2 |
| 25 | Silver Creek..... | ....do.... | Plainwell, Mich. | 14.0 |
| 26 | Gun River..... | ....do.... | ....do.... | 87.9 |
| July 15 | Rogue River..... | Grand River..... | Rockford, Mich. | 95.6 |
| Apr. 1 | Whitefish Lake Outlet. | Tamarack River..... | Pierson, Mich. | 12.5 |
| May 5 | ....do.... | ....do.... | ....do.... | 6.61 |
| July 6 | ....do.... | ....do.... | ....do.... | 3.98 |
| Sept.25 | ....do.... | ....do.... | ....do.... | 5.21 |
| May 19 | Little Whitefish Lake Outlet. | ....do.... | ....do.... | 12.8 |
| Sept.25 | ....do.... | ....do.... | ....do.... | 7.45 |
| Jan. 24 | Hersey Creek..... | Muskegon River..... | Reed City, Mich. | 52.7 |
| June 10 | Big Sable River.. | Lake Michigan..... | Ludington, Mich. | 213 |
| July 14 | ....do.... | ....do.... | ....do.... | 121 |
| Aug. 24 | ....do.... | ....do.... | ....do.... | 99.1 |
| May 6 | Portage Creek.... | Manistee River..... | Grayling, Mich. | 8.24 |
| 14 | ....do.... | ....do.... | ....do.... | 10.8 |
| 15 | ....do.... | ....do.... | ....do.... | 21.7 |
| 24 | ....do.... | ....do.... | ....do.... | 29.9 |
| June 1 | ....do.... | ....do.... | ....do.... | 45.6 |
| 6 | ....do.... | ....do.... | ....do.... | 54.7 |
| July 15 | ....do.... | ....do.... | ....do.... | 11.8 |
| 30 | ....do.... | ....do.... | ....do.... | 18.9 |
| Aug. 28 | ....do.... | ....do.... | ....do.... | 13.3 |
| June 8 | Grass Lake Outlet | North Branch of Manistee River. | Darragh, Mich. | 10.3 |
| Aug. 22 | ....do.... | ....do.... | ....do.... | .92 |

Streams tributary to Lake Huron

| | | | | |
|---|---|---|---|---|
| May 25 | Maple River..... | Burt Lake..... | Brutus, Mich. | 146 |
| June 16 | ....do.... | ....do.... | ....do.... | 136 |
| July 21 | ....do.... | ....do.... | ....do.... | 105 |
| Aug. 20 | ....do.... | ....do.... | ....do.... | 110 |
| Sept.30 | ....do.... | ....do.... | ....do.... | 106 |
| June 16 | East Fork of Maple River. | Maple River..... | Pellston, Mich. | 36.3 |
| July 21 | ....do.... | ....do.... | ....do.... | 17.0 |
| Aug. 20 | ....do.... | ....do.... | ....do.... | 4.56 |
| Sept.30 | ....do.... | ....do.... | ....do.... | 5.61 |
| Apr. 14 | Pinconning River. | Lake Huron..... | Pinconning, Mich. | 2.74 |
| 14 | ....do.... | ....do.... | ....do.... | 4.19 |
| July 24 | Shiawassee River. | Saginaw River..... | Shiawasseetown, Mich. | 23.6 |
| Aug. 10 | Cass River..... | ....do.... | Cass City, Mich. | 11.8 |
| June 9 | East Branch of Pinnebog River. | Pinnebog River..... | Bad Axe, Mich. | 4.38 |
| 10 | ....do.... | ....do.... | ....do.... | 3.84 |

Miscellaneous discharge measurements in St. Lawrence River Basin during water year October 1941 to September 1942--Continued

Streams tributary to Lake Erie

| Date | Stream | Tributary to or diverting from- | Locality | Discharge (sec.-ft.) |
|---|---|---|---|---|
| Mar. 2 | North Branch of Raisin River. | Raisin River..... | Adrian, Mich..... | 195 |
| Apr. 9 | ....do..... | ....do..... | ....do..... | 457 |
| Feb. 23 | South Branch of Raisin River. | ....do..... | ....do..... | 73.1 |
| 24 | ....do..... | ....do..... | ....do..... | 59.2 |
| Mar. 2 | ....do..... | ....do..... | ....do..... | 41.5 |
| Apr. 9 | ....do..... | ....do..... | ....do..... | 348 |
| Feb. 11 | Slater Creek.... | South Branch of Raisin River. | ....do..... | 5.07 |
| 23 | ....do..... | ....do..... | ....do..... | 3.30 |
| Oct. 22 | Miami & Erie Canal | Maumee River..... | Florida, Ohio..... | †17 |
| Nov. 25 | ....do..... | ....do..... | ....do..... | †27 |
| Mar. 19 | ....do..... | ....do..... | ....do..... | †42 |
| June 4 | ....do..... | ....do..... | ....do..... | †29 |
| July 22 | ....do..... | ....do..... | ....do..... | †29 |
| Sept.11 | ....do..... | ....do..... | ....do..... | †40 |

† Discharge obtained from rating curve.

Streams tributary to Lake Ontario

| | | | | |
|---|---|---|---|---|
| July 18 | Angelica Creek.. | Genesee River..... | Angelica, N. Y..... | ‡14,000 |

‡ Slope-area determination; drainage area, 61.0 square miles.

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