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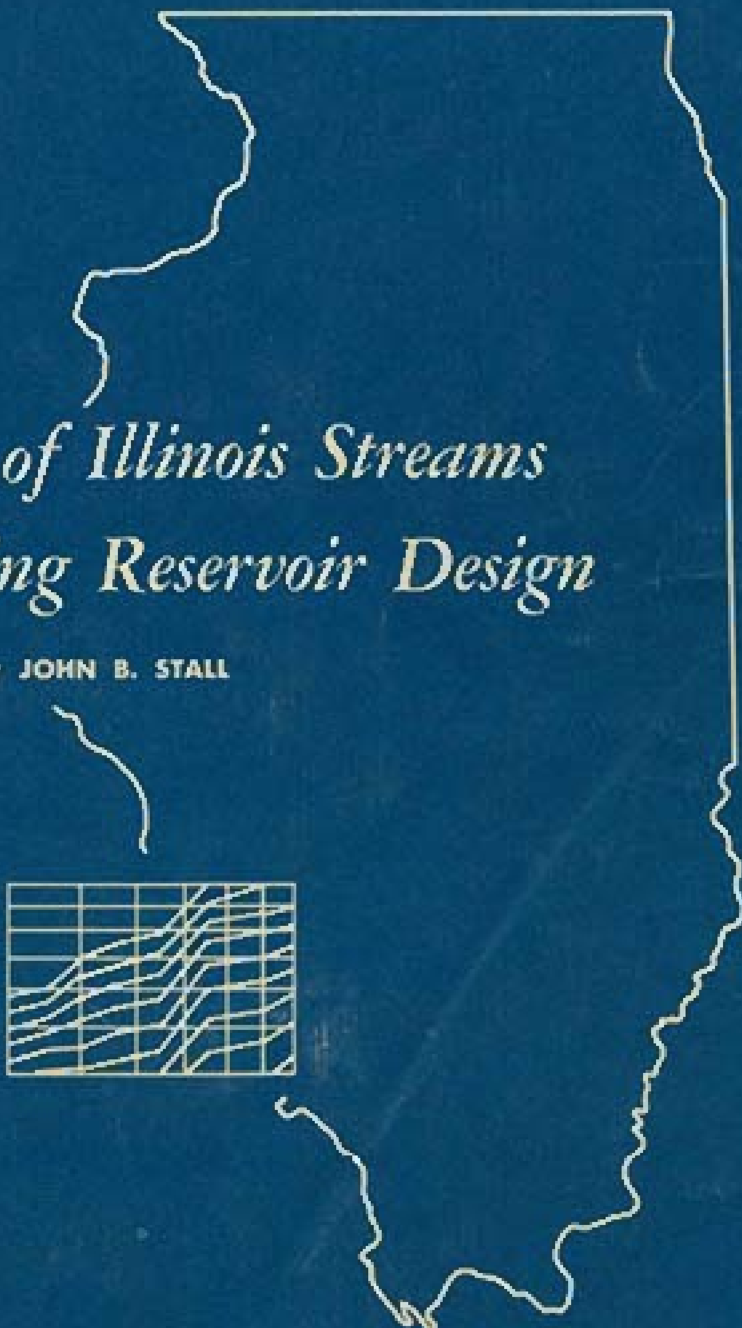

Low Flows of Illinois Streams for Impounding Reservoir Design

by JOHN B. STALL

ILLINOIS STATE WATER SURVEY

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Low Flows of Illinois Streams for Impounding Reservoir Design

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merit of a family of maximum net lake evaporation magnitudes for various durations and recurrence intervals;

7) the evaluation of reservoir sedimentation and provision for seepage losses; and

8) the subtraction of the losses from the gross reservoir yield to furnish the net reservoir yield.

One of the principal advantages of this design approach is the wide scope of the final results. The traditional mass-curve analysis would furnish the reservoir capacity and critical drawdown for the worst drouth of record. The approach here will furnish this same solution for the worst conditions of record, but it furnishes, also, a great number of additional solutions, all based on other recorded events. This background of solutions reveals the inter-relationship of draft rate, reservoir capacity, critical drawdown period, and drouth recurrence interval, and consequently aids the engineer's judgment in selecting an optimum design.

Draft-storage-recurrence data, to enable determination of gross reservoir yield in any region of the state, are presented in both graphic and tabular forms. Similar processed data on evaporation and sedimentation are included to allow the evaluation of these losses for determining the net yield for a reservoir site, either existing or proposed.

This report has two principal parts. Part 1 describes the development and support of the analytical methods for both gross and net yield computations, and includes a study of calculated risks associated with reservoir yield, for practical interpretation of low flow analyses.

Part 2 consists of the low flow data for the entire state, arranged by physiographic divisions. An example of the step-by-step use of the low flow data to compute the yield of a reservoir is given at the beginning of Part 2.

ACKNOWLEDGMENT

This study has been carried out by the author under the guidance of H. F. Smith, Head of the Engineering Section, and William C. Ackermann, Chief, Illinois State Water Survey. A number of Water Survey personnel have aided in the production of this report. Dr. James C. Neill, Statistician, furnished sustained help and advice. In the exploratory phase, Dr. Neill furnished counsel on the development, interpretation, and substantiation of the partial series of drouth events. He wrote a number of computer programs for different phases, including the major computer program finally used to furnish the tabular output of draft-storage-recurrence data and the outputs that enabled the machine-plotting of both the low-flow-recurrence curves and the draft-storage-recurrence curves. Dr. Neill also contributed to the development of the calculated risks study. W. J. Roberts, Engineer, furnished most of the pan evaporation data and aided in the compilation and interpretation of the total evaporation data used. Roger L. Corinth, Assistant Engineer, furnished the data on reservoir sedimentation. Stanley A. Changnon, Jr., Climatologist, aided in the compilation of Illinois climatic data for the computations of evaporation. Others assisting were Marvin Clevenger, Machine Supervisor for the card processing; Mrs. J. Loreena Ivens, Technical Editor; and John Brother, Engineering Assistant and advisor on drafting.

A number of part-time Water Survey employees, principally engineering students at the University of Illinois, contributed considerably to the production work. Robert Sinclair, directed by Dr. Neill, punched the streamflow data for all 164 stations onto tape for the Illiac computer, coordinated the processing of data by the Illiac, and spent many hours manipulating the automatic data-plotter for the low-flbw-recurrence and draft-storage-recurrence curves. Mr. Sinclair also punched the data and supervised the Illiac processing of numerous special-purpose programs and outputs in support of this report, and wrote the IBM 7090 computer program for evaporation. Others who assisted in carrying out various plotting, computing, and lettering tasks included: James Madden, Michael Terstriep, Bruce Barker, Wayne Stewart, Wayne Wolter, Richard Johnson, Richard L. Holmes, Willie Childress, Ramanand Prasad, and Ray Linaweaver.

Much information for this report was furnished by personnel of the Champaign District office of the U. S. Geological Survey, particularly Mr. William D. Mitchell, District Engineer; Warren Daniels, Assistant District Engineer; and Delbert Winget and John Lawrence, Hydraulic Engineers. The Division of Waterways, Illinois Department of Public Works and Buildings, also cooperated by furnishing data, through Thomas B. Casey, Chief Waterway Engineer; Ralph Fisher, Principal Hydraulic Engineer; and Murray Pipkin, Hydraulic Engineer.

The University of Illinois Digital Computer Laboratory's computer facilities, principally the Illiac computer and to a lesser extent the IBM 7090-1401 system, were used in carrying out the data processing for this report. Dr. Ven Te Chow, Professor of Hydraulic Engineering, Civil Engineering Department of the University, furnished valuable advice regarding some of the probability aspects of the methodology.

Part 1. Analytical Methods

STREAMFLOW DATA AVAILABLE

Total Stations

The data from 164 stream gaging station records were analyzed for this study. At the beginning, a search was made to locate all stream gaging records for Illinois both current and past. From this search, 210 stations were found which had, with very minor exceptions, at least three years of record. After considerable study, 46 of the 210 records were omitted from the analysis, leaving 164 to provide statewide coverage. One station is physically located in Buncombe, Wisconsin, but its records apply to an area of Illinois that otherwise lacks suitable coverage. Locations and names of all 210 gaging stations are given in Part 2.

To group the stations into regions of the state having some hydrologic uniformity, the physiographic divisions laid out by the State Geological Survey[3] were used. These divisions, with slight alterations, have been useful in several important studies of Illinois hydrology, including the latest study on floods.[4] Data for all stations in Part 2 are arranged according to these physiographic divisions (see *figure 26 in Part 2).*

The compilation of flow records for this study began extensively in 1960, and the machine-processing was completed in 1962. Therefore, all gaging records used, with a few exceptions, include the data for water year 1959 but exclude any later records.

Areal Primary or 'Index' Stations

Inspection of the records showed that 12 stream gaging stations in Illinois had been in continuous operation for either 44 or 45 years, up to and including the water year 1959. An additional 10 records of from 31 to 42 years were available; four of these had short record gaps which were filled synthetically, as described later, to bring them to 44 years. Thus, 22 "long-record" stations were selected for this study, of which 16 had records of 44 years or more and the remaining 6 had records of 30 years or more.

These 22 gages were considered areal primary stations, or "index" stations, in that each was located on a watershed truly representing its region. Further, records from these stations were generally free of intersectional influences and were of sufficient length to be useful in the "time sampling" of low flows. These 22 stations also were well distributed over the state and consequently furnished a fair "place - sampling."

Areal Secondary Stations

In addition to the 22 primary records, 142 stream gaging records varying in length from 3 to 29 years were available. Records from these areal secondary gages were the principal source of streamflow information in this study, and their use has furnished a suitable "place sampling" of virtually the entire state. It is believed that the hydrologic representation of the various regional conditions within the state is at least equal to that available for any other area of comparable size and complexity in the nation.

Ideally, to solve a particular reservoir design problem, a streamflow record and the derived low flow series of events should be available from a location near the problem site. Since ideal flow records seldom exist, information from a site hydrologically similar to the problem site must be substituted. The 142 short-term gaging records were used to provide this important areal coverage of the state.

In this investigation the principle of correlation of flows at the short-term "areal secondary station" with flows at a hydrologically similar long-record "index" station was employed to make use of the shorter records. By using a curve-of-relation of flows, described later, it was possible to extend the length of the short-term stream gaging record to equal that at the long-term station. The synthetic record thus produced was used in addition to the total actual record for these short-term stations.

The 46 gaging station records not used in the analysis were omitted for varying reasons. New stations had been established during 1959-62, as part of an effort to increase areal coverage of the state, but their records were not long enough to be of value in this study. Other records were omitted because of duplications or various interferences affecting regional significance. The reason for each omission is specified in the divisional listings of these stations in Part 2.

Extent of Stream Gaging Program

Stream gaging in Illinois, as well as in the entire United States, is carried out principally by one federal agency, the U.S. Geological Survey, Department of the Interior. In this national stream gaging program, which includes about 7000 gages, the U. S. Geological Survey is the action agency that provides the technical and administrative personnel to accomplish all the gaging, thus assuring uniform standards of results. This gaging work, however, is done under a long-standing 50-50 cooperative arrangement with other "sponsoring" agencies that pay half the cost of the gaging program. The sponsoring agencies are usually state, county, or other federal agencies, which sponsor particular gages and often obtain special flow data for their own use as well as data of general value.

As of 1963 in Illinois, 149 full-time or complete-record stream gaging stations were in operation under this cooperative program. Cooperating agencies contributing half the cost of these stations included: the Illinois State Water Survey; the Illinois Division of Waterways; the Cook County Highway Department; the Fountainhead Drainage District; and the offices of the U. S. Army Corps of Engineers at Chicago, Louisville, Rock Island, and St. Louis. Figure 1 shows the distribution of this sponsorship of Illinois gages.

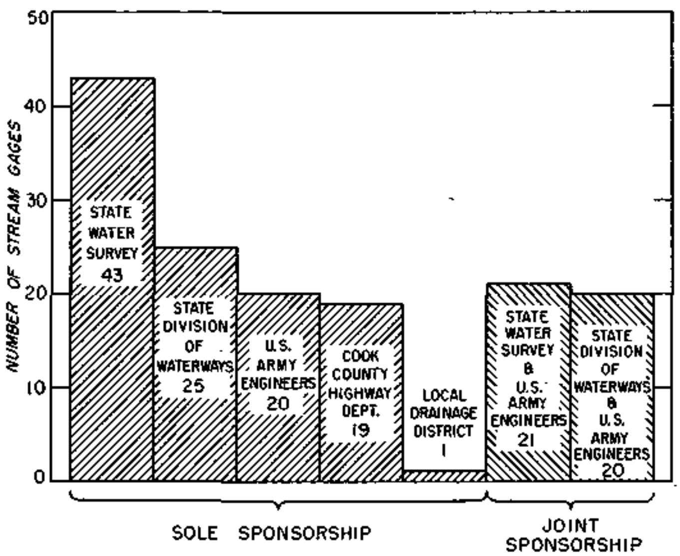

Figure 1. Distribution of sponsorship of stream gages in Illinois (All gages operated by U. S. Geological Survey)

The stream gaging stations in Illinois have been classified as to basic purpose, such as the "areal primary" and "areal secondary" stations explained earlier. Other categories include "mainstream primary" and "mainstream secondary" stations, and, although these have a relationship similar to that between areal stations, the mainstream network covers the over-all national system of rivers or main streams. One other category, called "water management" stations, includes special-purpose stations for administrative, legal, or research purposes. Figure 2 shows the distribution in 1963 of the 149 Illinois stations under these five classifications.

It will be noted in figure 2 that the totals for "areal primary" and "areal secondary" classifications differ from the totals used in this study. This occurs because many of the current 45 "areal primary" stations were so designated only recently, with the intention of continuing their operation without lapses; obviously such stations were not suitable for use as index stations in this study. Further, several of the 22 "long-record" stations used here have since been discontinued to avoid duplication with other stations found to be superior. Also in this changing of the gaging program, some areal secondary stations have been shifted to other classifications and some discontinued.

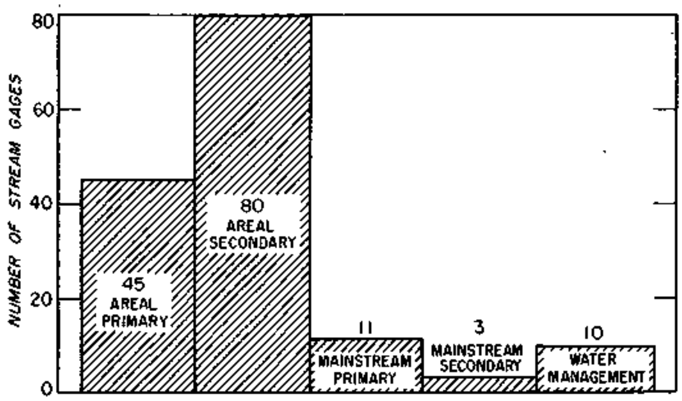

Figure 2. Distribution by classification of the 149 complete-record stream gages in Illinois

In addition to the network of 149 complete-record gaging stations, there are several special networks of partial-record stations. Since 1956 the U. S. Geological Survey in Illinois has, as a general policy, installed crest-stage gages at discontinued stations to maintain a record of annual peaks. In 1963 there were 13 such crest-stage gages.

The U. S. Geological Survey also currently operates four recently established networks of partial-record stations. These are:

1) A crest-stage gage network of 226 stations in northeastern Illinois established to collect data for the flood-inundation mapping program, for the Northeastern Illinois Metropolitan Area Planning Commission;

2) A statewide crest-stage gage network of 97 stations to collect data on flood flows from small drainage areas, for the Illinois Division of Highways;

3) A low flow network of 39 stations in northeastern Illinois to study base flow characteristics and water quality determinations, for the Illinois State Water Survey;

4) A low flow network of 40 stations in the East St. Louis area, to determine the base flow characteristics of streams at the sites of potential reservoirs, for the Illinois State Water Survey.

Sources of Data

The basic streamflow data used in this study were obtained principally from published records of the U. S. Geological Survey. Monthly flow values in inches were obtained in summarized form through the water year 1950 from USGS compilation reports covering the Upper Mississippi River Basin,[5] the Ohio River Basin,[6] and the St. Lawrence River Basin.[7] Similar monthly flow values for the water years 1951 through 1959 were obtained from the USGS annual Water Supply Papers[8] for the same basins. A secondary source of data was provided by the Illinois Division of Waterways.[9]

Previously unpublished flow data from three stream gaging stations have been used. These data were obtained directly from the Illinois Division of Waterways and are from special-purpose gages operated by that Division. Results are presented for stations at Lick Creek near Curran, Sugar Creek near Auburn, and Pecumsaugan Creek near Utica, which are described in Part 2.

Conversion of Units

Most of the terminology used in this report for volumes of water and rates of flow consists of units having a common meaning and understanding. To aid the user in applying the processed data to a selected drainage area, the results are presented in inches.

A volume of water expressed as inches, or "equivalent inches on drainage area," is that quantity which would have this depth in inches if allowed to cover the entire drainage area at a uniform depth. The mean flow at each gaging station is given as a mean rate of runoff, expressed as inches per month.

The following list provides several equalities which may be useful in converting volumes:

1 square mile = 640 acres
1 acre = 43,560 square feet
1 acre-foot = 43,560 cubic feet
1 acre-foot = 325,830 gallons
or .326 million gallons
1 cubic foot = 7.48 gallons

Considerable conversion of units often is required in the manipulation of the various rates and volumes involved in flpw rates, draft rates, and reservoir storage capacities. Furnished below are several useful conversion equations.

$$.01875\,(A/B) = C \qquad (1)$$

where:
A = volume in acre-feet
B = drainage area in square miles (sq mi)
C = volume in equivalent inches on drainage area

$$.88451D = E \qquad (2)$$

where:
D = flow rate in inches per month
E = flow in cubic feet per second per square mile (cfs/sq mi)

$$.646F = G \qquad (3)$$

where:
F = flow rate in cfs
G = flow rate in million gallons per day (mgd)

$$92.3G = H \qquad (4)$$

and

$$.011H = G \qquad (5)$$

where:
H = flow rate in acre-feet per month
G = flow rate in mgd, assuming 30.4 days per month

$$.5755DB = G \qquad (6)$$

where:
D = flow rate in inches per month
B = drainage area in sq mi
G = flow rate in mgd, assuming 30.4 days per month

$$17.3775CB = J \qquad (7)$$

where:
C = volume in equivalent inches on drainage area
B = drainage area in sq mi
J = volume in million gallons (mil gal)

$$1440K = L \qquad (8)$$

where:
K = flow rate in gallons per minute (gpm)
L = flow rate in gallons per day (gpd)

$$448.8F = K \qquad (9)$$

and

$$.002228K = F \qquad (10)$$

where:
K = flow rate in gpm
F = flow rate in cfs

Since all analytical work in this investigation has been carried, out utilizing runoff in inches, the nomograph in

Table I. Values of Mean Recurrence Interval and Extreme-Value Reduced Variate

MRI, *years*	Variate, *Z*	MRI, *years*	Variate, *Z*	MM, *years*	Variate, *Z*
2.0	.367	5.0	1.500	10	2.250
2.1	.437	5.2	1.546	11	2.350
2.2	.499	5.4	1.587	12	2.446
2.3	.560	5.6	1.623	13	2.524
2.4	.617	5.8	1.667	14	2.594
2.5	.672	6.0	1.700	15	2.669
2.6	.721	6.2	1.740	16	2.749
2.7	.772	6.4	1.774	17	2.800
2.8	.817	6.6	1.803	18	2.854
2.9	.860	6.8	1.839	19	2.910
3.0	.904	7.0	1.869	20	2.970
3.1	.941	7.2	1.899	21	3.012
3.2	.984	7.4	1.931	22	3.056
3.3	1.019	7.6	1.955	23	3.101
3.4	1.055	7.8	1.988	24	3.149
3.5	1.088	8.0	2.013	25	3.199
3.6	1.122	8.2	2.039	26	3.251
3.7	1.156	8.4	2.066	27	3.278
3.8	1.187	8.6	2.093	28	3.306
3.9	1.218	8.8	2.112	29	3.364
4.0	1.246	9.0	2.140	30	3.395
4.2	1.303	92	2.159	35	3.526
4.4	1.357	9.4	2.189	40	3.676
4.6	1.408	9.6	2.209	45	3.806
4.8	1.456	9.8	2.230	50	3.902
				60	4.066
				70	4.262
				80	4.336
				90	4.495
				100	4.600

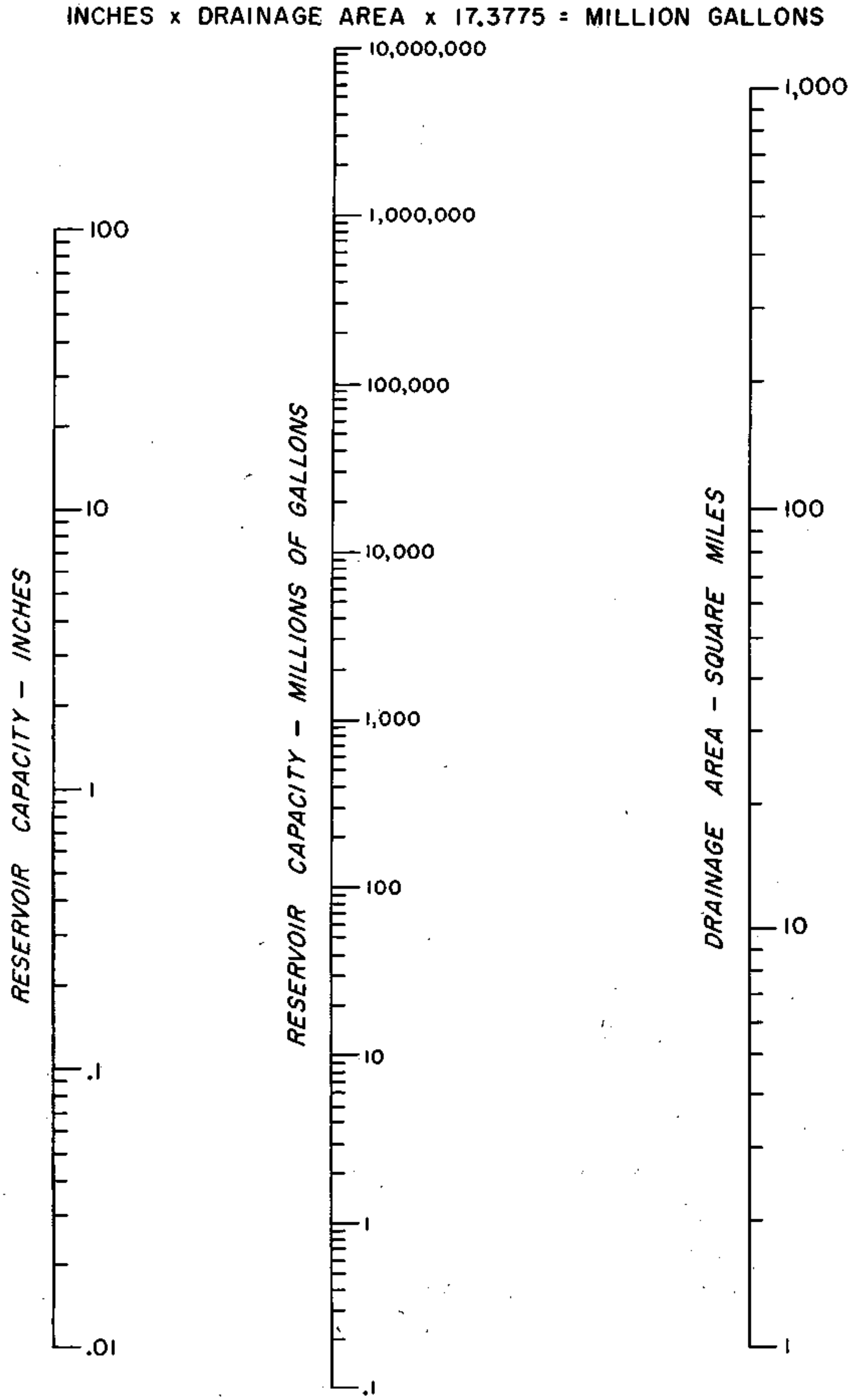

Figure 3. Nomograph and'equation relating reservoir capacity in units of inches and millions of gallons to drainage area
(Any straight line intersecting the three scales determines a solution)

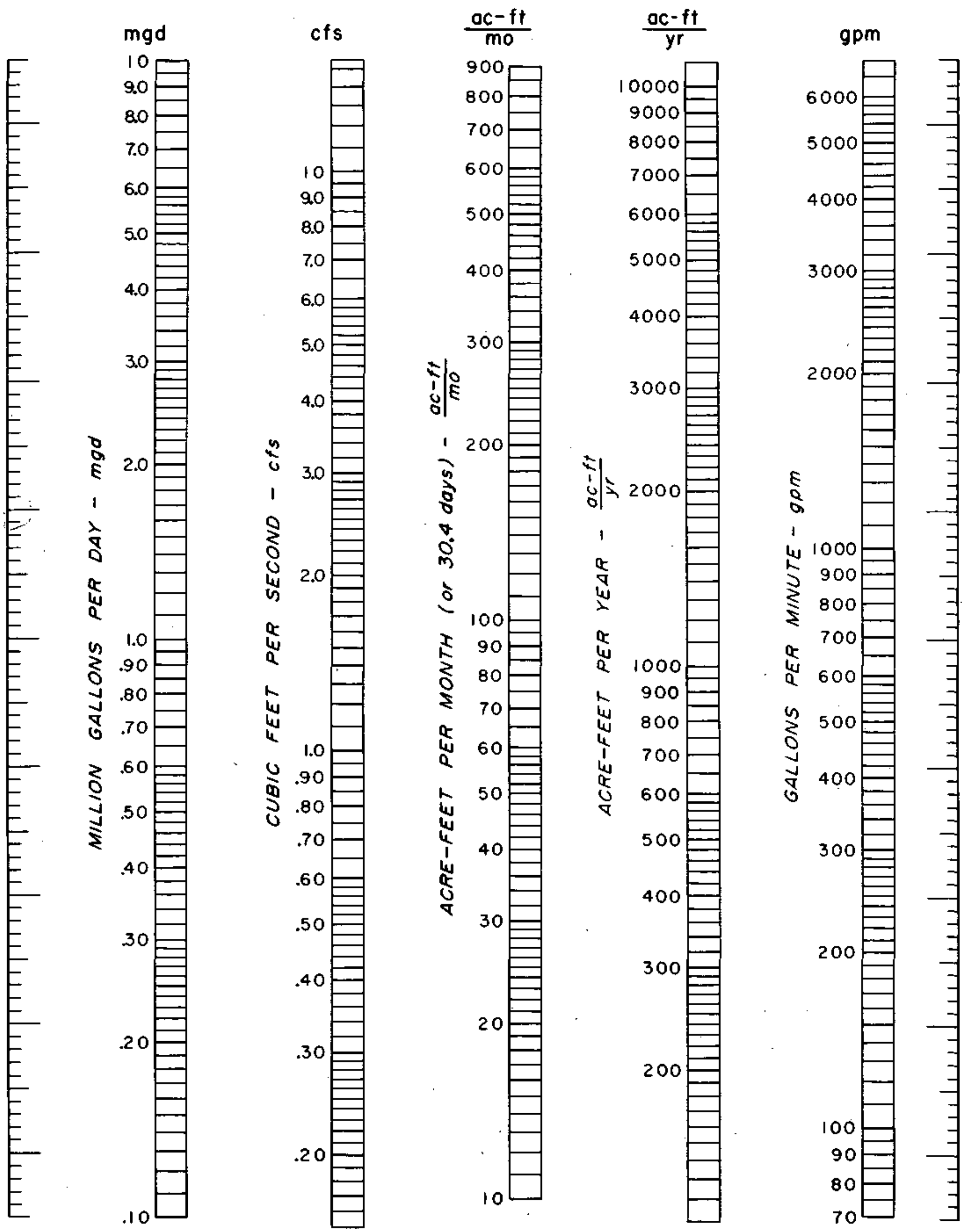

Figure 4. Nomograph for the conversion of wafer flow rates (Any straight horizontal line intersects equal flow rates on all scales)

figure 3 has been prepared for convenience in solving equation 7. This nomograph shows the relation between reservoir capacity in million gallons, the drainage area in square miles, and the reservoir capacity in equivalent inches on the drainage area. Reservoir capacity necessary to meet a particular draft rate given in inches of runoff at the particular drainage area can be converted to million gallons by use of figure 3. Figure 4 is a nomograph for the quick conversion of flow rates between the several units in common use.

The graphs for all stations in Part 2 of this publication, which will be exemplified in figures 7 and 9, use an abscissa scale that is laid out according to the theory of extreme values. In the use of the data, it may be desirable to replot portions of the draft-storage-recurrence curves for analysis of a particular reservoir *(see example in figure 11).* Table 1 is presented as a practical aid to this plotting. Given are corresponding values of the mean recurrence interval, *MRI,* in years, and the extreme-value reduced variate, *Z.* The Z values can be plotted on an arithmetic scale to produce the desired recurrence interval scale. The values in table 1 represent solutions of the equation:

$$Z = -\log_e\left[-\log_e(1 - 1/MRI)\right] \qquad (11)$$

This equation can be used to furnish additional values for table 1 if desired.

GROSS YIELD OF A RESERVOIR

Extending Streamflow Data

An empirical, graphical method of associating flow at one stream gage with the flow at another has been used to extend streamflow data in this study. The method of construction, the interpretation, and the use of curves-of-relation of flows were described by Langbein and Hardison[10] in 1955 and by Searcy[11] in 1960.

The construction and interpretation of a curve-of-relation is illustrated with the following example, based on stream gaging records from the Sangamon River at Monticello and from Salt Creek near Rowell, both in central Illinois. The Monticello gage has a total of 45 years of record, for water years 1915-59. This is one of the longest records available in Illinois, and the Monticello gage is considered an areal primary or "index" gaging station. Streamflow data are available on Salt Creek near Rowell for the water years 1943-59. a period of 17 years, and the Rowell gage is considered an areal secondary gaging station. In this example, the flows at Rowell were correlated with the flows at Monticello so that the 17-year record at Rowell could be extended to equal the 45-year record at Monticello.

To accomplish correlation, the flows at Rowell were plotted against the concurrent flows at Monticello for the 17 years 1943-59. or 204 months, the period for which data were available at both stations. This plot is shown in figure 5. The 45-degree dashed line represents the line of equality, and the solid curve represents the unique relation between the flows at these two gaging stations.' In the middle and upper ranges of flows shown, the flow at Rowell is slightly less than that at Monticello; that is, for a particular flow value at Monticello the corresponding Rowell value is slightly below the line of equality. Near the lower end of this curve-of-relation, however, there is a strong tendency for the flow to be better sustained at Rowell than at Monticello.

This curve-of-relation reveals a well correlated relation between the flows of the two stations. This relation is unique for these particular two stations; it illustrates the basic difference in their flow regimes. This difference is greatest during times when flow is low; consequently, the unique quality of the relation is doubly important in a study of low flow events.

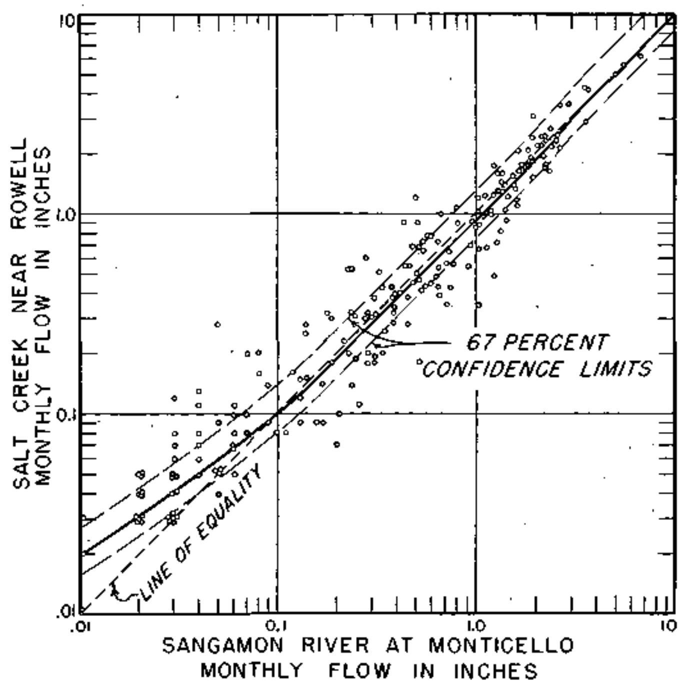

Figure 5. Example curve-of-relation for a primary and secondary gaging station

Confidence *Limits*

Another desirable feature of the graphical correlation method is that, once the curve-of-relation has been established, it is possible to draw graphical confidence limits. In figure 5 the two dashed curves are similar in shape to the solid curve-of-relation. However, these curves are displaced vertically by an amount that places two-thirds of the plotted points in the area between these two curves. Consequently, it can be stated that these lines, though graphically determined, represent the 67 percent confidence limits of the basic curve-of-relation.

Table 2. Runoff in Inches for Salt Creek near Rowell, for the 45 Water Years 1915-59

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Synthetic Data												
1915	.02	.02	.03	.03	.82	.18	.17	.17	.22	.45	3.02	1.08
1916	.28	.12	.17	3.13	2.12	1.04	.71	.56	.43	.09	.04	.03
1917	.03	.04	.04	.05	.05	.74	.61	.39	2.22	.29	.30	.11
1918	.04	.06	.05	.03	2.38	.30	1.18	1.21	.69	.84	.07	.45
1919	.23	.41	1.61	.68	.57	2.39	.53	.42	1.17	.26	.11	.03
1920	.15	.46	.61	.12	.22	1.97	3.42	2.21	.29	.09	.03	.03
1921	.03	.04	.05	.11	.23	.95	1.16	.93	.35	.06	.14	.52
1922	.21	1.55	.74	.67	.79	3.29	5.58	1.12	.39	.23	.07	.03
1923	.04	.07	.08	.15	.21	2.39	.75	2.82	.42	.11	.95	.14
1924	1.18	1.07	3.04	1.11	1.68	1.34	1.30	.62	1.87	1.14	1.72	.83
1925	.13	.08	1.07	.49	1.58	1.81	.54	.17	.09	.06	.05	.15
1926	.19	.54	.40	.55	1.30	1.25	3.12	.61	.40	.11	.40	4.93
1927	6.01	2.01	1.13	.56	2.47	2.75	5.50	2.52	1.92	.75	.31	.11
1928	1.26	1.19	4.53	1.73	1.80	.80	1.15	.41	.43	.59	.07	.08
1929	.27	.41	.95	3.04	.57	1.65	3.22	2.24	.71	3.08	.29	.05
1930	.11	.20	.38	3.10	1.49	1.12	1.80	.66	.13	.10	.02	.02
1931	.02	.03	.04	.03	.03	.05	.12	.32	.29	.20	.14	.55
1932	.14	.26	.43	1.27	.79	.50	.32	.20	.12	.08	.03	.03
1933	.04	.05	.37	.60	.58	1.87	1.81	4.23	.41	.08	.05	.12
1934	.23	.09	.09	.15	.09	.27	.37	.09	.05	.03	.06	.12
1935	.08	.75	.73	1.34	.94	1.18	.71	2.34	1.10	.74	.18	.05
1936	.05	.69	.28	.45	1.71	1.19	.41	1.00	.11	.03	.03	.09
1937	.17	.70	.26	2.82	1.26	.57	1.30	1.10	1.75	.63	.09	.09
1938	.14	.08	.38	.41	1.17	3.04	3.14	.74	1.36	.75	.27	.05
1939	.08	.05	.09	.16	2.27	4.07	1.98	.62	1.17	.42	.23	.04
1940	.04	.04	.04	.03	.15	.85	.34	.90	.65	.07	.05	.02
1941	.02	.03	.05	.07	.12	.13	.85	.44	.81	.54	.12	.17
1942	2.20	2.47	.90	.59	2.69	1.96	1.40	.72	.84	.40	.11	.12
Actual Data												
1943	.11	2.08	1.75	1.46	1.00	1.45	.66	6.15	.83	.29	1.21	.08
1944	.05	.16	.07	.07	.68	1.24	5.12	1.63	.45	.09	.06	.05
1945	.04	.05	.03	.03	.25	.38	1.04	1.10	1.18	.26	.30	.32
1946	.41	.34	.47	2.38	1.31	1.77	.53	2.46	2.22	.91	.28	.08
1947	.28	1.20	.60	1.09	.73	.79	1.86	1.53	2.21	.73	.10	.05
1948	.10	.16	.69	.55	.88	2.70	1.38	.70	.43	.90	.15	.05
1949	.03	.07	.23	1.72	2.20	1.03	.65	.57	.45	.32	.30	.04
1950	.49	.18	2.46	5.45	1.96	1.34	3.53	1.01	1.62	.35	.08	.09
1951	.07	.09	.11	.94	4.32	1.22	2.10	.57	1.00	1.76	.54	.18
1952	.20	1.01	.40	1.29	.87	1.90	2.47	1.25	2.47	.43	.09	.04
1953	.03	.05	.06	.11	.20	1.60	1.57	.43	.52	.90	.12	.03
1954	.02	.03	.04	.13	.08	.14	.43	.12	.35	.03	.07	.01
1955	.05	.02	.03	.18	.53	.57	.54	.43	.89	.19	.03	.03
1956	.20	.10	.08	.05	.49	.28	.19	2.33	.67	.18	.33	.03
1957	.01	.03	.04	.20	.39	.20	4.27	3.55	1.77	.71	.09	.05
1958	.06	.15	.68	.90	.31	.32	.36	.38	2.17	3.08	1.70	.14
1959	.08	.51	.32	.32	2.91	1.66	.96	.39	.14	.05	.03	.05

The accuracy of the basic curve-of-relation can be expressed as the standard error of the points about the basic curve, and the two dashed curves aid in the determination of this accuracy. Thus, in figure 5 it has been determined graphically that the 67 percent confidence limits expressed by the dashed curves represent a plus error of .153 log units, or +41 percent, and a minus error of .110 log units, or —22 percent.

Use of the Curve-of-Relation

After construction of the curve-of-relation and computation of the statistical measures necessary for understanding the limits of accuracies associated with the correlation, the curve was used to extend the 17-year record for Salt Creek near Rowell on the basis of the 45-year flow record for the Sangamon River at Monticello. Monthly flow values at Monticello for the period 1915-42 and the principal curve-of-relation shown in figure 5 were used to compile a synthetic table of monthly flows for Salt Creek near Rowell. These data are shown in table 2. The basic data used for all secondary stations in Part 2 of this report include synthetic flow data devised in this manner.

The estimated monthly runoff values in the synthetic portion of the record in table 2 contain considerably greater error than would be present if the stream were actually

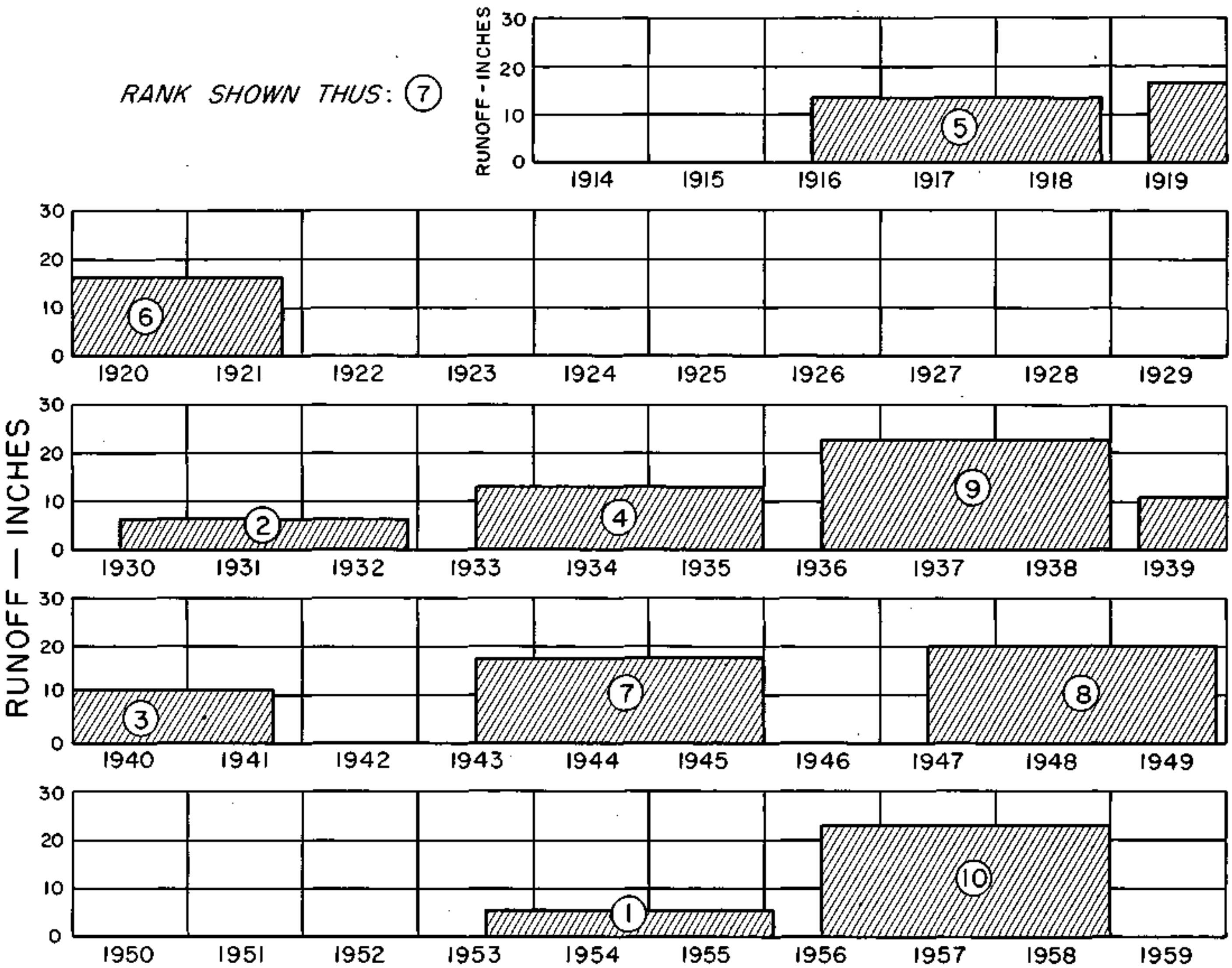

Figure 6. Magnitude and time of occurrence of the 30-month low flow events making up the partial series for Salt Creek near Rowell

gaged. However, for many purposes the synthetic record is extremely useful. It contains the same variability characteristics as would an actual record. The synthetic data are statistically similar to the actual record and are based upon the unique hydrologic relation exhibited in figure 5.

Low Flow Series

Past experience in analyzing the 1952-55 drouth in Illinois[12] revealed that impounding reservoirs in Illinois are frequently under draft and drawdown for periods in excess of one year and may possibly be subject to drawdowns for as long as five years. For this reason it was necessary that the series of low flow events be selected in a manner not restricted to the annual fluctuations of runoff. A partial duration series of low flow events was selected as being most flexible and meaningful in this type of analysis. However, the partial series was selected only after intensive study, comparison, and evaluation of both the partial series and the more common and more easily interpreted annual series. Development of the partial series and its theoretical support are described below.

Development

The initial step in the development of the partial low flow series was the selection of a duration with which to work. Eventually, separate series were developed for various durations, but for illustration, the development of a series of low flow events each having a length of 30 months will be described, again for Salt Creek at Rowell. These 30-month low flow periods were to be selected without regard to the calendar year and in such a manner as to insure their chronological independence.

The monthly flow data were converted to running totals for the 30-month duration, for the period of record 1914-59.

These running totals were then inspected, and the lowest 30-month period on record was noted. For Salt Creek near Rowell the lowest 30-month flow on record occurred between August 1953 and January 1956. This particular period was then marked off the tabulated data. For this lowest 30-month period on record, the runoff in inches amounted to 5.52 inches, and this quantity is plotted for the appropriate period in figure 6.

After the lowest-ranking flow value for a 30-month period was selected, all of the remaining running totals which overlapped to include any of the 30 months within this lowest period were excluded from further consideration. The remainder of the 45-year record then was inspected to locate the 30-month low flow periods of descending rank, which were in turn marked off the tabulated data. In this example only 10 independent low flow periods were selected, as explained below; these are shown in figure 6 and table 3.

Table 3. 30-Month Low Flow Series for Salt Creek near Rowell

(Runoff in inches for the 10 driest 30-month periods on record; based on partially synthetic 45-year flow record for water years 1915-59)

Mean flow = 0.79 inches per month or 23.70 inches in 30 months

Rank of event	Recurrence interval, *years*	30-month flow, *inches*	Dates of low Sow period: Beginning	Dates of low Sow period: Ending
1	45.0	5.52.	Aug 1953	Jan 1956
2	22.5	6.35	Jun 1930	Nov 1932
3	15.0	10.99	Apr 1939	Sep 1941
4	11.3	13.05	Jul 1933	Dec 1935
5	9.0	13.40	Jun 1916	Nov 1918
6	7.5	16.37	May 1919	Oct 1921
7	6.4	17.45	Jul 1943	Dec 1945
8	5.6	20.06	Jun 1947	Nov 1949
9	5.0	22.64	Jul 1936	Dec 1938
10	4.5	23.01	Jul 1956	Dec 1958

As this development progressed, some of the series produced low flow values which were greater than the mean flow at the station. This occurred because several months of record were usually lost between the periods selected. These high flow values thus were not a legitimate part of the series because they were generated by the selection procedure. For this reason every series was ended when the flow for the duration in question reached an amount equal to the mean flow for the station. This is illustrated in the 30-month example in table 3 where the 10th-ranking low flow value is 23.01 inches and the mean flow at this station is 23.70 inches; since the 11th-ranking value exceeded this mean flow, it was excluded from the series.

Theoretical Support

The basic series utilized in this study is exemplified by the 10 low flow events in table 3. This series is partial in nature in that it contains only a portion of the original data. Since the present study is concerned with only low flows, the mean flow at the station was selected as the base or upper limit, and the resulting partial series retains only events below this particular base.

The use of a partial duration series in the analysis of hydrologic events is not a new idea. Hudson and Roberts[12] used it; the development and interpretation of this series has been described elsewhere in published form by the author[13]; and other authors have used this series for flood data. Chow[14] used it for precipitation data and discussed it comparatively with the more familiar annual series.

As described by Chow, a series of annual extreme events is usually obtained by selecting the single most extreme event that occurred during each year of record; the number of extreme events is equal to the number of years of record. Another series, partial in nature, can be devised in which all of the events that occurred during the entire period of record are ranked without regard to the year. The top-ranking values are selected; the number included is made equal to the number of years of record, and these events are labeled annual exceedances. The extreme events that make up this partial series of exceedances are selected in such a manner that more than one may occur in one year. Some years may not be represented at all. Two extreme events occurring during the same year are included in the exceedance series, but the lesser one is excluded from the annual series because the two events may be dependent. In interpreting these two events it can be said that the combination of the many causative climatic and physical factors of the event of primary severity may have influenced the event of secondary severity in the same year.

The combination of causative factors which produces an extreme event is governed very strongly by the 12-month solar cycle. It is the established strength of this cycle that justifies the difference in interpretation between a series of annual extremes and a partial series of exceedances. This cycle justifies the exclusion of secondary events from the annual series and is the underlying factor in the conception that these events are dependent.

Knowledge of these important differences between a series of annual maximum events and a partial series of exceedances helps in the proper interpretation of the events included in the series presented in this study. For example, the selection procedure for the ten 30-month low flow events shown in table 3 insures that the events are independent chronologically. If two of these events were to be considered dependent in any other sense, it would be necessary to show that two 30-month events were the result of at least a portion of the same combination of causative climatic factors. In an exceedance series, the dependence of a secondary 30-month low flow event on a more extreme 30-month low flow event could be caused by the presence of a multi-year cycle in the causative climatic factors. Although multi-year cycles have been shown to exist to some degree by various authors, the magnitude of these cycles is not so pronounced as that of the 12-month solar cycle. Consequently, current evidence of multi-year cycles is hardly justification for assuming that any particular 30-month low flow event could be associated with the same causative factors that produced another 30-month low flow event.

Thus, the theoretical support for the use of the partial series is based on two main principles:

1) The events in this series are considered to be independent to the extent that each is the result of a separate combination of the complex causative climatic and physical factors which affect streamflow; and

2) The events in this series are considered to be the result of so many causative factors that their occurrence is distributed in accord with the laws of chance, and consequently the events are randomly distributed.

Recurrence *Interval*

The mean recurrence interval for the partial series of low flow events was computed as follows:

$$MRI = N/m \qquad (12)$$

where:

MRI = mean recurrence interval in years

N = number of years of data available

m = rank when the low flow events are arrayed in order of magnitude, number 1 being the lowest

For a 45-year record, the most extreme event had a recurrence interval of 45 years; the second event, a recurrence interval of 22.5 years, and so forth.

Table 3 shows the recurrence interval for each of the events in the 30-month low flow series. These ten 30-month flows and their assigned recurrence intervals furnish an estimate of the average length of time in years which can be expected to elapse between the beginnings of the various 30-month events. For example, the third-ranking event in this series has a recurrence interval of 15 years. Thus, it can be said that in any year the probability is 1 to 15 for the start of a 30-month period during which the total flow will be as low as 10.99 inches. The meanings of computed recurrence intervals and their further translation for practical use are discussed in a later section dealing with calculated risks.

The Resulting Series Family

A separate series of low flow events was determined by the procedure described above for 36 different durations, which were for multiples of one month from 1 to 12 months and for multiples of two months from 14 to 60 months.

Several of these series for Salt Creek near Rowell have been plotted in figure 7. Those series shown are for all multiples of 6 months through 60 months. The vertical scale in figure 7 is logarithmic, and the horizontal scale follows the extreme value law. By experimentation it was found that

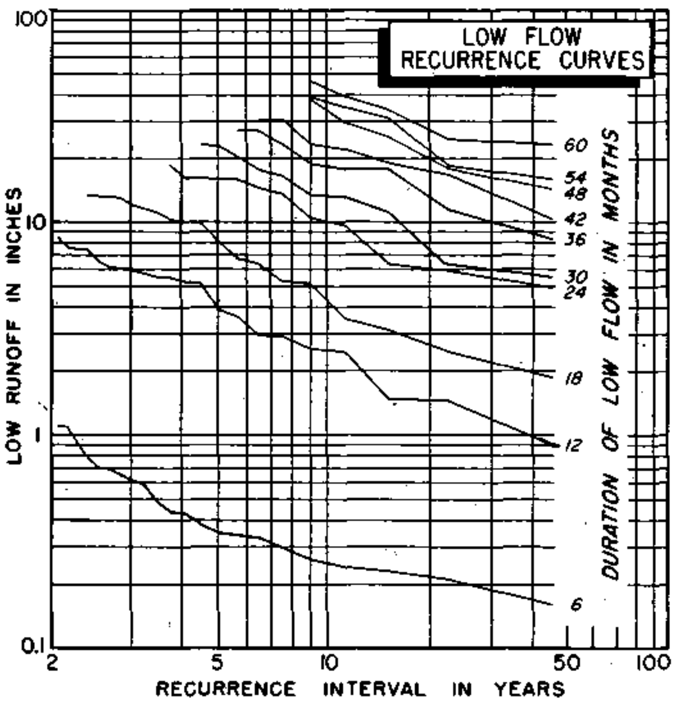

Figure 7. Low flow series for selected durations at Salt Creek near Rowell

this particular set of coordinates gave the most nearly straight family of curves. Moreover, the curves denote the "family" relation between the various series, thereby giving confidence in their use. This set of coordinates has also been used by Gumbel[15] and Velz.[16]

Table 4 contains the complete results of the low flow analysis for Salt Creek near Rowell, giving the actual series of low values for all the durations.

Nonsequential Mass Analysis

The most common method for determining the yield of an impounding reservoir is the Rippl mass diagram method.[17] Essentially the method determines the reservoir capacity necessary to meet a particular draft rate as the difference between accumulative draft and accumulative inflow for a critical period of time. For a particular mass curve of flow at a particular gaging station, the reservoir capacity necessary is determined by locating the critical period which gives the largest reservoir capacity for a particular draft rate. The length or duration of the critical period is also determined; the critical period occurs during the driest year or years of record.

Use of the partial series of low flow events previously described allows the mass-curve type of analysis to be carried out on a recurrence interval basis, which is depicted in figure 8. The lowermost irregular curve in figure 8 shows the most extreme low flow period on record for Salt Creek near Rowell for a particular duration in months. To illustrate, the series developed earlier for table 4 showed that

Table 4. Low Flow Series for Various Durations, Salt Creek near Rowell

Recurrence interval, years	Flow values, in inches, for given flow period, months: 1	2	3	4	5	6	7	8	9	10	11	12
45.0	.01	.04	.06	.09	.13	.16	.19	.24	.34	.46	.59	.91
22.5	.01	.04	.07	.10	.17	.21	.28	.37	.56	1.14	1.33	1.45
15.0	.02	.04	.07	.11	.18	.23	.31	.43	.80	1.21	1.40	1.49
11.3	.02	.04	.07	.11	.18	.24	.35	.59	.86	1.29	1.85	2.45
9.0	.02	.05	.08	.12	.18	.26	.38	.60	.90	1.36	2.07	2.54
7.5	.02	.05	.08	.12	.19	.27	.39	.61	.98	1.43	2.34	2.92
6.4	.02	.05	.09	.13	.20	.33	.45	.68	1.02	1.64	2.47	2.96
5.6	.02	.06	.10	.14	.23	.34	.55	.87	1.16	1.74	2.53	3.57
5.0	.02	.06	.10	.15	.24	.35	.57	.88	1.24	1.84	3.01	3.94
4.5	.02	.06	.10	.15	.27	.38	.58	.90	1.27	1.85	3.08	5.13
4.1	.02	.06	.11	.15	.29	.43	.65	.99	1.41	2.08	4.01	5.29
3.8	.03	.06	.11	.15	.29	.44	.68	1.01	1.45	2.11	4.04	5.53
3.5	.03	.06	.12	.18	.31	.49	.80	1.07	1.66	2.18	4.08	5.61
3.2	.03	.06	.13	.18	.34	.59	.81	1.17	1.76	2.39	4.41	5.78
3.0	.03	.06	.14	.21	.43	.62	.82	1.21	2.19	2.74	4.41	6.00
2.8	.03	.06	.14	.23	.43	.66	.88	1.44	2.45	3.30	4.61	6.05
2.6	.03	.07	.14	.26	.43	.70	1.25	1.65	2.61	3.55	4.84	6.21
2.5	.03	.07	.15	.27	.44	.71	1.27	1.96	2.80	3.99	5.13	6.64
2.4	.03	.07	.15	.30	.44	.79	1.39	2.02	2.92	4.10	5.47	7.47
2.3	.03	.07	.15	.33	.52	1.01	1.45	2.39	3.13	4.18	6.54	7.51
2.1	.03	.07	.18	.35	.53	1.10	1.67	2.56	3.44	4.39	6.96	7.71
2.0	.03	.07	.20	.35	.55	1.11	1.70	2.56	3.49	4.68	7.15	8.47

Recurrence interval, years	14	16	18	20	22	24	26	28	30	32	34	36
45.0	1.40	1.58	1.88	2.98	3.95	4.94	5.09	5.35	5.52	6.29	7.38	8.33
22.5	1.52	1.97	2.49	3.58	5.14	5.97	6.03	6.12	6.35	7.32	8.56	11.48
15.0	1.77	2.09	3.13	3.87	5.48	6.39	6.80	8.39	10.99	13.91	16.39	17.59
11.3	3.23	3.32	3.51	5.20	6.91	9.59	11.81	12.08	13.05	14.55	16.81	17.76
9.0	3.81	4.78	5.12	5.64	6.94	10.37	11.95	12.56	13.40	14.67	16.82	18.57
7.5	3.85	4.93	5.26	5.85	7.32	13.53	14.05	14.78	16.37	18.45	19.86	23.04
6.4	4.20	5.04	6.38	8.18	11.18	14.41	15.14	15.95	17.45	20.66	23.44	26.66
5.6	4.26	5.23	6.77	8.48	12.17	15.68	16.45	17.12	20.06	22.91	24.97	26.73
5.0	4.86	5.59	8.14	11.33	13.23	15.78	16.45	18.64	22.64	23.45	....	....
4.5	5.37	7.14	9.81	11.58	13.42	15.92	17.00	18.91	23.01	24.00	....	....
4.1	5.75	7.90	10.03	11.89	14.69	16.11	18.78	21.27	....	....	....	....
3.8	6.26	8.48	10.27	12.89	15.34	18.19	....	....	....	....	....	....
3.5	6.61	8.85	11.10	14.10	16.92	....	....	....	....	....	....	....
3.2	6.95	9.54	11.62	14.34	....	....	....	....	....	....	....	....
3.0	7.55	9.87	12.09	14.47	....	....	....	....	....	....	....	....
2.8	7.72	9.91	13.03	14.82	....	....	....	....	....	....	....	....
2.6	7.76	10.98	13.05	15.19	....	....	....	....	....	....	....	....
2.5	7.81	11.79	13.07	15.25	....	....	....	....	....	....	....	....
2.4	9.46	11.84	13.32	....	....	....	....	....	....	....	....	....
2.3	10.38	....	....	....	....	....	....	....	....	....	....	....
2.1	10.88	....	....	....	....	....	....	....	....	....	....	....

Recurrence interval, years	38	40	42	44	46	48	50	52	54	56	58	60
45.0	9.91	9.98	10.30	10.89	12.31	14.31	15.53	15.61	15.90	16.49	19.39	23.11
22.5	14.84	15.55	16.52	16.99	17.39	17.70	17.86	18.06	18.85	20.33	22.61	24.50
15.0	17.98	18.24	19.20	22.30	23.29	25.04	27.74	30.03	30.46	30.80	31.79	33.45
11.3	18.03	19.98	21.78	26.30	27.78	29.13	29.42	31.80	34.20	36.03	37.31	38.60
9.0	19.90	20.14	23.08	27.86	33.97	37.10	35.55	38.21	38.53	40.61	43.93	45.15
7.5	23.10	24.15	30.06	31.46	36.07	....	38.08	38.40	....	....	....	....
6.4	27.83	28.50	30.22	33.65	....	....	....	....	....	....	....	....
5.6	29.86	....	....	....	....	....	....	....	....	....	....	....

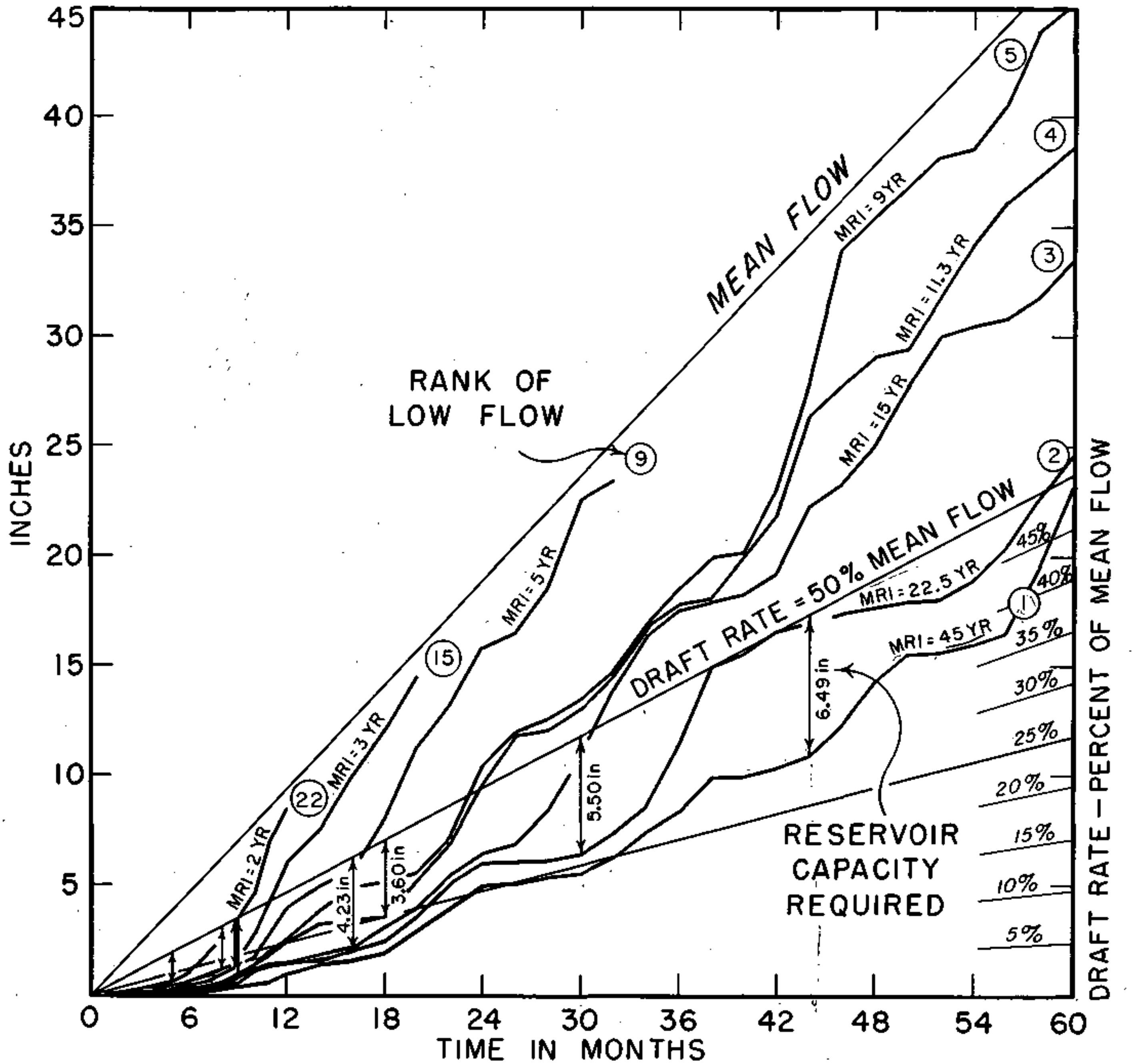

Figure 8. Determination of required reservoir capacity by mass-type analysis, for Salt Creek near Rowell

the lowest 30-month flow of record was 5.52 inches; in figure 8 the lowermost curve shows that for a duration of 30 months the inflow was 5.52 inches, this being the lowest of record. Similarly, the lowermost curve shows that the lowest 18-month flow of record was 1.88 inches and the lowest 12-month flow of record was .91 inches.

All the low flows (which occurred at nonrelated times) connected by the lowermost line in figure 8 have a recurrence interval of 45 years, since in every case the low flow shown on this curve was the lowest on record for that particular duration. This curve represents a nonsequential series.

In a similar manner, the second lowest curve in figure 8 connects the points showing the runoff in inches to be expected for a particular duration in months, this series being the second lowest of record. The points along this curve can be expected to have a recurrence interval of 22.5 years. Continuing in this manner, the third, fourth, and fifth curves represent low flows having recurrence intervals of 15, 11.3, and 9.0 years, respectively.

In figure 8 the mean flow at this gaging station is represented by a straight line having a slope of approximately 45 degrees. This represents the maximum draft that could be developed on this watershed. Also shown is a straight sloping line representing a draft rate of 50 percent of the mean flow which is used in the example of mass analysis below.

Since the following analysis concerns gross reservoir yield, no refined consideration is given to evaporation or other losses from the reservoir. These losses are detailed in later sections of this report, but at this point can be considered a part of the draft rate.

To determine the reservoir capacity to meet a draft rate equal to 50 percent of the mean, it was necessary to find the duration of low flow in months for which the maximum ordinate exists between the accumulative draft rate curve and accumulative inflow curve. Figure 8 shows that this occurs at a duration of 44 months, and that a reservoir capacity of 6.49 inches is necessary to meet this draft rate during the most severe 44-month period on record.

Figure 8 also indicates that to meet the draft rate of 50 percent of the mean during the second most severe low flow of record would require a reservoir capacity of 5.50 inches and that the critical duration would be 30 months. Reservoir capacity to meet the third, fourth, and fifth lowest drouths of record likewise are shown. These data and the associated recurrence intervals are itemized in table 5. In addition, results for the 9th, 15th, and 22nd most severe low flow periods of record are presented in figure 8 and table 5.

Table 5. Results of Mass Curve Analysis for a Draft Rate of 50 Percent of Mean Flow, for Salt Creek near Rowell

Mean flow = 0.79 inches per month

Draft rate = 0.395 inches per month

Rank of low flow period	Recurrence. interval of low flow, *years*	Duration of critical period, *months*	Total draft for critical period, *inches*	Total inflow during critical period, *inches*	Reservoir capacity required, *inches*
1	45	44	17.38	10.89	6.49
2	22.5	30	11.85	6.35	5.50
3	15	16	6.32	2.09	4.23
4	11.3	18	7.11	3.51	3.60
5	9	9	3.56	.90	2.66
9	5	9	3.56	1.24	2.32
15	3	8	3.16	1.21	1.95
22	2	5	1.48	.55	1.43

Draft-Storage-Recurrence Data

By means of the mass curve analysis it was possible to determine the reservoir capacity necessary for a particular gross draft rate or yield based upon various low flows having recurrence intervals ranging from 2 to 45 years. With the aid of an electronic computer, it was possible to produce a complete array of results for a particular stream gaging record for a number of different draft rates.

As an example, a complete series of draft rates was studied utilizing the flow records for Salt Creek near Rowell. An analysis was made for 20. different draft rates, expressed as various percentages of the mean flow ranging from 5 to 100 percent, as shown in figure 9. The mass-type analysis shows the reservoir capacity necessary to meet each of these draft rates for various recurrence intervals. This analytical method also produces, for every reservoir capacity, the duration of the critical period which is the period of time for which the reservoir will be under draft.

The complete mass analysis results for this station are given in table 6. This table presents, for the recurrence intervals ranging from 2 to 45 years, and to meet gross draft rates from 5 to 100 percent of the mean flow at this station, the required reservoir capacity in inches and the duration of the critical period in months. The draft-storage-recurrence curves of figure 9 are the graphical representation of the data in table 6, except that the duration of the critical period is shown only in the table.

This report provides in Part 2, for each of the 164 stream gaging records selected for analysis, a draft-storage-recurrence table similar to table 6 and a graph of draft-storage-recurrence curves similar to figure 9. The array of results furnished in the table and graph provides the designer with the essential information for an adequate design under particular circumstances based upon the actual draft rate necessary, the reservoir sites available, and the finances available for a reservoir.

Duration of the Critical Period

As was mentioned, the nonsequential mass analysis furnished the duration of the critical drawdown period, which represents the governing time period during which the draft from the reservoir would exceed the inflow by the greatest amount. At the beginning of the critical period the reservoir would be full, and at the end of the critical period it would be empty. Immediately after the critical period ends the reservoir would begin to refill. With the reservoir in actual operation, under a specified draft and during a specified recurrence interval drouth, many other periods would occur, both shorter and longer than the critical period, during which draft might exceed inflow. The mass analysis shows, however, that none of these periods would be more severe than the critical duration.

The change in the duration of the critical period is not continuous and may vary widely within selected ranges of draft, inflow, and recurrence interval. Because the critical period is the resultant of a great number of combinations of these three parameters, this variation can be expected. This lack of continuity is present in the traditional mass analysis and in the nonsequential mass analysis described above; it is due essentially to the 12-month cycle present in the flows of most streams of the world.

Table 6 reveals this noncontinuity. As an example, inspection of the values of critical periods for a recurrence interval of 9.0 years shows that, for draft rates from 5 to 50 percent of the mean, the critical period increases from 4 to 9 months; for a draft rate of 55 percent, the critical period jumps to

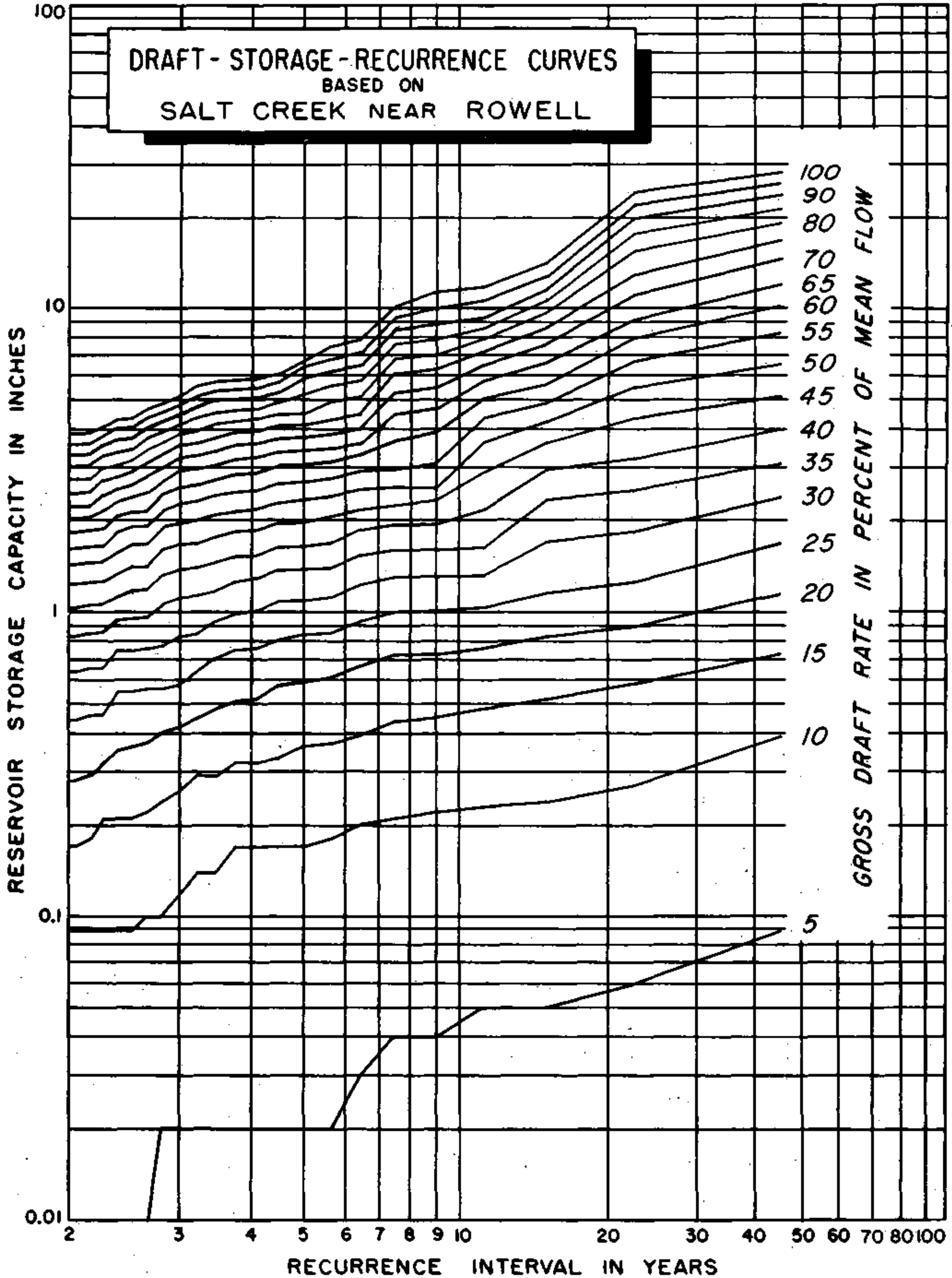

Figure 9. Reservoir capacity needed to meet various gross draft rates at various recurrence intervals

Table 6. Draft-Storage-Recurrence Data for Salt Creek near Rowell

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.09 7	.39 8	.73 10	1.15 11	1.68 18	2.39 18	3.10 18	3.96 30	5.15 30	6.49 44	8.23 44	10.05 56	12.27 56	14.48 56	16.69 56	18.90 56	21.11 56	23.33 56	25.54 56	27.75 56
22.5	.06 4	.27 7	.58 8	.89 8	1.25 14	1.82 16	2.49 18	3.20 18	4.32 30	5.50 30	6.69 30	7.87 30	9.11 32	11.01 54	13.15 54	15.28 54	17.41 54	19.54 54	21.70 56	23.91 56
15.0	.05 4	.24 7	.52 8	.83 8	1.15 8	1.70 16	2.33 16	2.97 16	3.60 16	4.23 16	4.86 16	5.61 20	6.55 26	7.58 26	8.61 26	9.63 26	10.66 26	11.69 26	12.71 26	14.03 58
11.3	.05 4	.23 6	.48 7	.76 7	1.03 7	1.31 8	1.63 9	2.18 18	2.89 18	3.60 18	4.31 18	5.02 18	5.73 18	6.44 18	7.16 18	7.87 18	8.58 18	9.29 18	10.45 38	11.99 38
9.0	.04 4	.22 5	.45 7	.73 7	1.00 7	1.30 8	1.61 8	1.94 9	2.30 9	2.66 9	3.05 20	3.84 20	4.63 20	5.42 20	6.21 20	7.00 20	7.83 22	8.70 22	9.88 40	11.46 40
7.5	.04 4	.21 5	.44 7	.72 7	.99 7	1.29 8	1.60 8	1.92 8	2.23 8	2.58 9	2.93 9	3.63 20	4.42 20	5.21 20	6.00 20	6.79 20	7.58 20	8.37 20	9.19 22	10.06 22
6.4	.03 4	.20 5	.39 5	.66 7	.93 7	1.22 8	1.53 8	1.85 8	2.18 9	2.54 9	2.89 9	3.25 9	3.60 9	3.96 9	4.44 16	5.07 16	5.71 18	6.42 18	7.13 18	7.84 18
5.6	.02 4	.18 4	.37 6	.61 6	.85 6	1.11 7	1.39 7	1.68 9	2.04 9	2.40 9	2.75 9	3.11 9	3.46 9	3.82 9	4.25 16	4.88 16	5.51 16	6.15 16	6.78 16	7.45 18
5.0	.02 3	.17 4	.36 6	.60 6	.84 6	1.09 7	1.37 7	1.65 8	1.96 9	2.32 9	2.67 9	3.03 9	3.38 9	3.74 9	4.09 10	4.52 16	5.15 16	5.79 16	6.42 16	7.05 16
4.5	.02 3	.17 4	.33 6	.57 6	.81 6	1.08 7	1.36 7	1.63 8	1.94 8	2.29 9	2.64 9	3.00 9	3.35 9	3.71 9	4.08 10	4.47 10	4.87 10	5.26 10	5.66 10	6.05 10
4.1	.02 2	.17 4	.32 4	.52 6	.76 6	1.01 7	1.29 7	1.56 7	1.85 8	2.17 8	2.50 9	2.86 9	3.21 9	3.57 9	3.92 9	4.28 9	4.64 10	5.03 10	5.43 10	5.82 10
3.8	.02 2	.17 4	.32 4	.51 6	.75 6	.98 7	1.26 7	1.53 7	1.83 8	2.15 8	2.47 8	2.82 9	3.17 9	3.53 9	3.88 9	4.24 9	4.61 10	5.00 10	5.40 10	5.79 10
3.5	.02 2	.14 4	.29 4	.48 5	.70 6	.93 6	1.17 6	1.46 8	1.77 8	2.09 8	2.41 8	2.72 8	3.04 8	3.35 10	3.75 10	4.14 10	4.54 10	4.93 10	5.33 10	5.72 10
3.2	.02 2	.14 4	.29 4	.45 5	.65 5	.85 7	1.13 7	1.40 7	1.68 7	1.99 8	2.31 8	2.62 8	2.94 8	3.25 8	3.57 9	3.93 10	4.33 10	4.72 10	5.12 10	5.51 10
3.0	.02 2	.11 4	.26 4	.42 4	.58 4	.84 7	1.12 7	1.39 7	1.67 7	1.95 8	2.27 8	2.58 8	2.90 8	3.21 8	3.53 8	3.85 8	4.16 8	4.48 8	4.79 8	5.16 10
2.8	.02 2	.10 3	.24 4	.40 4	.56 5	.78 7	1.06 7	1.33 7	1.61 7	1.89 7	2.16 7	2.44 7	2.71 7	2.99 7	3.30 8	3.62 8	3.93 8	4.25 8	4.56 8	4.88 8
2.6	.01 2	.10 3	.22 3	.37 4	.56 5	.76 5	.96 6	1.20 6	1.43 6	1.67 6	1.91 6	2.14 8	2.46 8	2.77 8	3.09 8	3.41 8	3.72 8	4.04 6	4.35 8	4.67 8
2.5	.01 2	.09 3	.21 3	.36 4	.55 5	.75 5	.95 6	1.19 6	1.42 6	1.66 6	1.90 6	2.13 6	2.37 6	2.61 6	2.88 7	3.15 7	3.43 7	3.73 8	4.04 8	4.36 8
2.4	.01 2	.09 3	.21 3	.35 5	.55 5	.75 5	.94 5	1.14 5	1.34 6	1.56 6	1.82 6	2.05 6	2.29 6	2.53 6	2.77 6	3.04 8	3.35 8	3.67 8	3.98 8	4.30 8
2.3	.01 2	.09 3	.21 3	.32 3	.47 5	.67 5	.86 5	1.06 5	1.26 5	1.46 5	1.65 5	1.87 7	2.14 7	2.42 7	2.70 7	2.97 7	3.25 7	3.53 7	3.80 7	4.08 7
2.1	.01 2	.09 2	.18 3	.29 3	.46 5	.66 5	.85 5	1.05 5	1.25 5	1.45 5	1.64 5	1.84 5	2.04 5	2.24 5	2.48 7	2.75 7	3.03 7	3.31 7	3.58 7	3.86 7
2.0	.01 2	.09 2	.17 2	.28 4	.44 5	.64 5	.83 5	1.03 5	1.23 5	1.43 5	1.62 5	1.82 5	2.02 5	2.22 5	2.45 7	2.72 7	3.00 7	3.28 7	3.55 7	3.83 7

20 months. Similarly, for a draft rate of 90 percent of the mean, the critical period is 22 months, but as the draft rate increases to 95 percent, the critical period jumps upward to 40 months.

These "jumps" or noncontinuity tendencies of the duration of the critical period are a legitimate result of the methodology. They are accounted for by the "steep" and "flat" portions of the mass curves of inflow. One draft rate may intersect the "steep" portion of the mass inflow curve; a slight increase in the draft rate may make it miss this "steep" portion so that it must continue past the next "flat" portion of the curve to intersect the next "steep" portion, many months later. As will be shown later, however, the net yields available from a particular reservoir are relatively continuous, and not seriously interrupted by the noncontinuity of the duration of the critical period involved.

Analysis at a Selected Recurrence Interval

Data in figure 9 and table 6 can be utilized to show the gross draft rate obtainable from reservoirs of various capacities during a drouth of selected recurrence interval. Table 7 shows the results of such an analysis, for Salt Creek near Rowell where the drainage area is 334 square miles. These

Table 7. Reservoir Capacities Required to Furnish Various Draft Rates During a 40-Year-Recurrence Drouth, Salt Creek near Rowell

Drainage area = 334 square miles

Gross draft rate: *percent of mean flow*	*mgd*	Reservoir capacity required: *equivalent inches on drainage area (from fig. 9)*	*million gallons*	*acre-feet*
5	7.5	.084	487	1,496
10	15	.37	2,147	6,590
15	23	.70	4,062	12,468
20	30	1.10	6,384	19,593
25	38	1.59	9,228	28,321
30	45	2.26	13,116	40,255
35	53	2.96	17,179	52,724
40	60	3.80	22,054	67,686
45	68	5.10	29,599	90,841
50	76	6.30	36,563	112,216
55	83	7.90	45,849	140,715
60	91	9.65	56,005	171,886
65	98	11.7	67,903	208,400
70	106	13.8	80,091	245,806
75	113	15.9	92,278	283,211
80	121	18.1	105,046	322,397
85	128	20.5	118,975	365,146
90	136	22.6	131,163	402,551
95	143	24.9	144,511	443,519
100	151	27.1	157,279	482,705

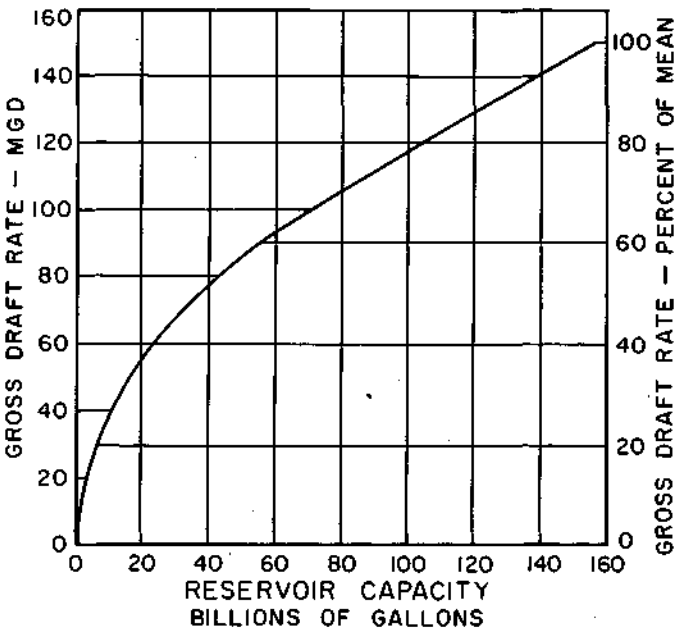

Figure 10. Gross draft rates available during a **40-year recurrence drouth** from various reservoir capacities, for Salt Creek near Rowell

results were obtained by taking a vertical section through figure 9 at the selected recurrence interval of 40 years. Table 7 gives the gross draft rate both in percent of mean flow and in million gallons per day. The reservoir capacities required during a 40-year-recurrence drouth to meet the various draft rates are given in equivalent inches on the drainage area, as read from figure 9, and are also expressed as million gallons and acre-feet.

The results shown in table 7 have been plotted in figure 10. and consideration of the shape of this curve allows the reservoir designer to choose an optimum design. For example, the slope of the curve is quite steep up to 40 billion gallons of reservoir capacity. Decrease of the curve slope above this value indicates that further increments of reservoir capacity provide lesser increments of available draft rate. As an added benefit to the designer, the reservoir capacity scale could easily be converted to dollar cost by applying appropriate construction cost data.

Analysis of a Particular Reservoir Site

The analytical results shown in figure 9 and table 6 can also be used effectively in the evaluation of a particular reservoir site. A theoretical reservoir on Salt Creek near Rowell that would have a storage capacity of 3 equivalent inches on the drainage area (17,411 million gallons or 53,437 acre-feet) was used as an example. That this size would be within reasonable limits was determined by comparison with two existing lakes in central Illinois.

To analyze the theoretical reservoir, a horizontal section was taken through figure 9 at a value of 3 inches of storage capacity, and this is shown at an enlarged scale in figure 11. Reservoir capacity for a range between 2.7 and 3.3 inches is included, and the heavy horizontal line at 3 inches represents the theoretical reservoir site. The gross draft rates in percent of mean flow which intersect the 3-inch reservoir capacity line are given. The durations of the critical drawdown periods in months, also shown, were taken from table 6. The durations of these critical periods vary, but the duration which would govern the proposed reservoir can be selected from figure 11.

The performance of the theoretical reservoir under various draft rates and various recurrence intervals also can be determined by using figure 11. Table 8 shows the results of such an analysis for five drouth recurrence intervals. It shows, for example, that during a 40-year-recurrence drouth the theoretical reservoir could serve a proposed draft rate of 53 million gallons per day (mgd) and would be subject to drawdown for an 18-month period.

The performance results in table 8 are also presented

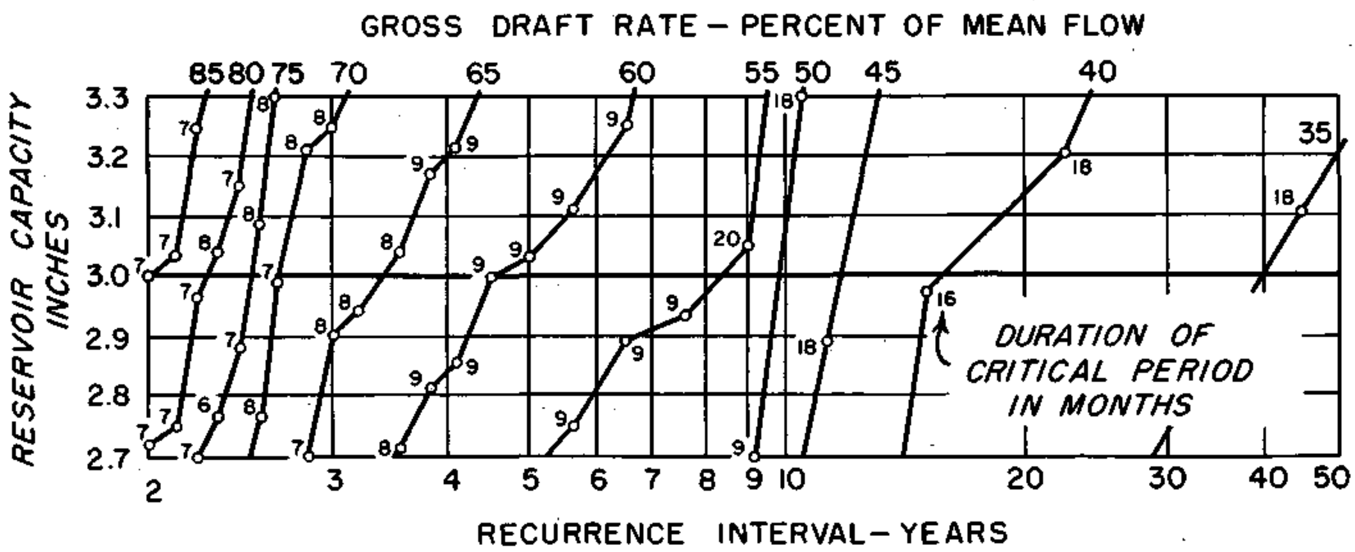

Figure 11. Enlarged section from figure 9 for evaluating a theoretical reservoir

Table 8. Gross Draft Rates During Selected Drouths for Theoretical Reservoir on Salt Creek near Rowell

Drainage area = 334 square miles

Reservoir capacity = 53,437 acre-feet or 3 equivalent inches on drainage area

Mean runoff = 0.79 inches per month, or 151 mgd

Drouth recurrence interval, years	Gross draft rate (from fig. 11) Percent of mean flow	mgd	Duration of critical period (from fig. 11), months
2	85	128	7
5	59	89	9
10	49	74	18
20	38	57	18
40	35	53	18

graphically in figure 12. The shape of the curve in figure 12 can be useful to the designer in the further evaluation of the proposed lake site. For example, the lower right end of this curve shows again that during a 40-year-recurrence drouth the proposed reservoir could furnish a gross draft rate of 53 mgd. If the reservoir were constructed to meet such a draft rate, its performance under an increased draft rate also can be evaluated; that is, if the draft rate were to increase from 53 to 60 mgd, the curve shows that a water shortage could then be expected during a drouth having a recurrence interval of 18 years.

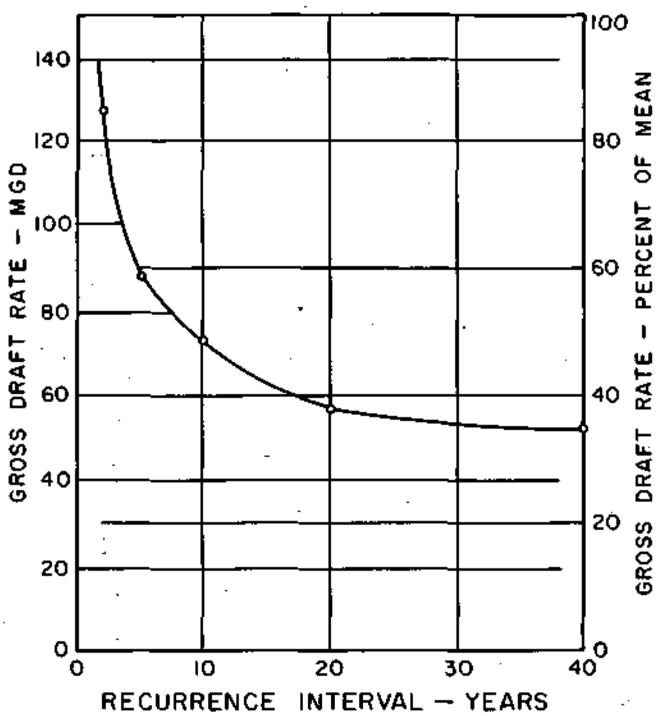

Figure 12. Gross draft rates during selected recurrence interval drouths from theoretical reservoir on Salt Creek near Rowell

RESERVOIR LOSSES

Evaporation Loss

Evaporation loss is of major importance in the operation of a surface water impounding reservoir. Thus, a means by which the evaporative loss can be evaluated so that the gross yield of a reservoir can be reduced to the net yield is likewise of importance to the designer. In this analysis the net evaporation loss is determined as. being the difference between a maximum expected gross evaporation minus the minimum expected precipitation for various recurrence intervals and for critical periods having various durations.

Data Available

The principal evaporation data used in this study consisted of records from two Class A evaporation pans in Illinois, operated by the State Water Survey at Rockford and Carbondale. Also used were data from a pan operated at Springfield by the U. S. Weather Bureau. Each pan is 48 inches in diameter, 12 inches deep, and is filled to a depth of 10 inches; Water level in the pan is measured daily with a hook gage in a stilling basin. Pan evaporation was observed generally during the months of April through October at each station. Stations were established at Springfield in 1941, at Carbondale in 1947, and at Rockford in 1950; locations are shown in figure 13. Through 1962, the observed records totaled 16 years at Carbondale, 13 years at Rockford, and 22 years at Springfield.

The variability of evaporation amounts in Illinois is believed to be far less than the variability of streamflow, and for this reason the use of only the three stations was considered a reasonable "place" sampling. To improve the "time" sampling, however, a considerable effort was made to synthesize these evaporation records for longer periods. This was done principally by computation of both pan evaporation and lake evaporation from equations using climatic data which are available for long periods of time at most first-order stations of the U.S. Weather Bureau. These equations, developed by the Weather Bureau[18] in 1955, utilize four principal climatic data items: air temperature, dew point temperature, wind movement, and solar radiation. In 1959, the Weather Bureau[19] used these equations extensively in computing evaporation data at 255 first-order weather stations in the United States for the 10-year period 1946-55.

For the present study, the required climatic data items were compiled for as long a period as possible. These enabled, the computation of evaporation and the confirmation of the equation by the comparison of computed pan evaporation with observed pan evaporation for the period both were available. This comparison of computed and observed pan

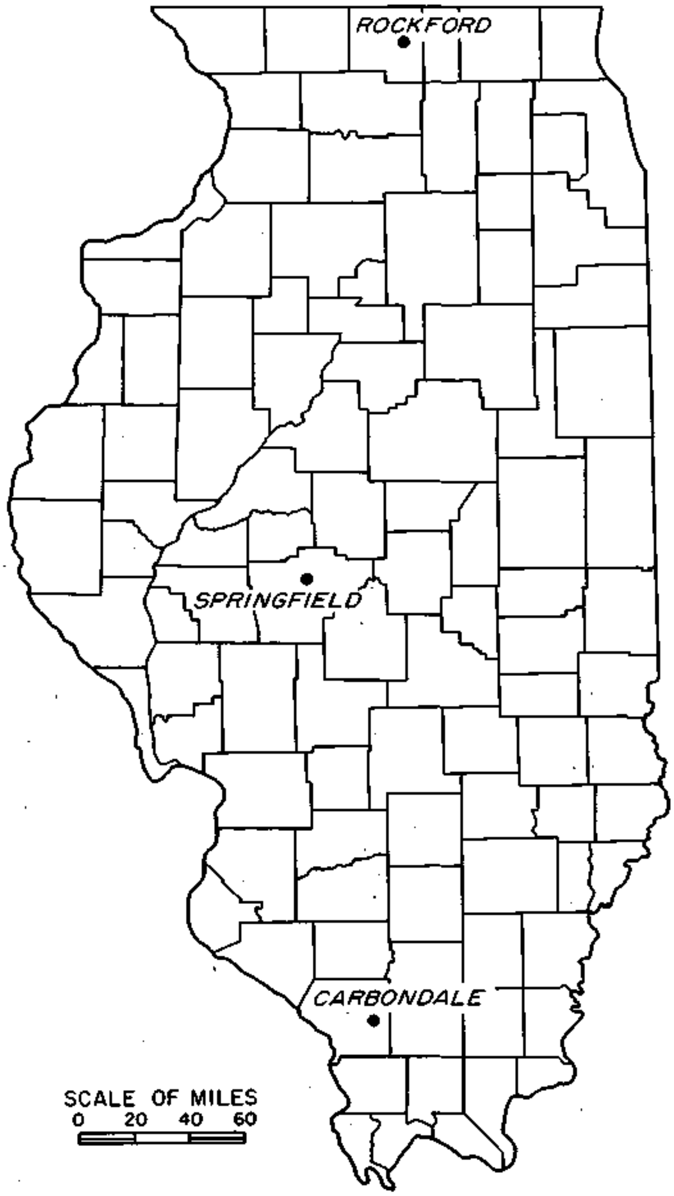

Figure 13. Locations of the three stations providing net lake evaporation data

evaporation values for the 22 years, 1941-62, for Springfield is shown in figure 14. At Rockford and Carbondale, no long-term climatic data were available, but "adjusted" relations were developed for the computation of Rockford evaporation using climatic data from Moline, and for the computation of Carbondale evaporation using Evansville, Indiana, climatic data.

For Springfield, the computation procedure for pan evaporation was used to compute the lake evaporation for the 31-year period 1910-40 for which only climatic data were available. The results, as shown in table 9, exemplify the basic evaporation data used in this study. In table 9 the lake evaporation values for the years 1910-40, and for the winter months November through March for the years 1941-

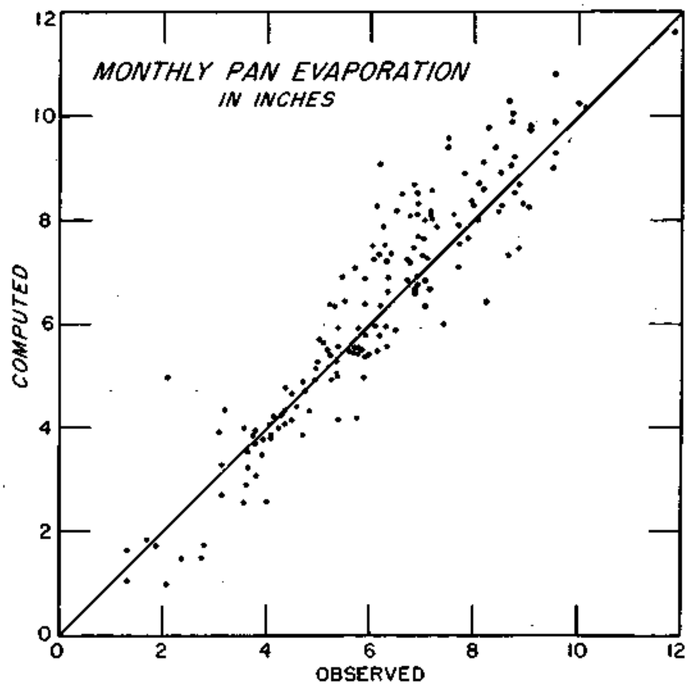

Figure 14. Observed pan evaporation at Springfield for the 22 years 1941-62 compared with evaporation computed from climatic data

62, were computed by the use of climatic data. The values for the summer months April through October for 1941-62 were computed from the actual observed pan evaporation and pan-to-lake coefficients.

Evaporation Data Analysis

The evaporation data for Springfield in table 9 form a continuous record of lake evaporation by months extending from January 1910 through December 1962. In order that these data furnish the most meaningful information for this study, a partial series of maximum gross evaporation magnitudes was developed for a number of durations varying from 1 to 60 months, and a recurrence interval was assigned to each event in the series. The methods for development of the series and the assignment of recurrence intervals were the same as those for the low flow series.

The magnitudes of the gross evaporation for various durations and recurrence intervals are shown graphically in figure 15. The lower portion of this figure shows the gross evaporation curves for periods of 1 to 26 months; the upper portion shows the gross evaporation curves at an enlarged vertical scale for periods varying from 28 through 60 months. The curves for some of the longer durations are foreshortened on the left because the table of basic data furnished only a few values for these durations.

Precipitation Data

Monthly precipitation data at Springfield, from the published records of the U. S. Weather Bureau,[20] were used to

Table 9. Monthly Lake Evaporation in Inches at Springfield

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1910	.42	.74	3.29	2.83	4.05	5.76	5.49	5.00	2.79	2.44	.97	.63
1911	.33	.78	2.18	2.51	6.19	6.41	6.42	4.74	2.23	1.49	.68	.32
1912	.23	.52	1.01	3.30	5.09	5.40	5.54	4.63	3.44	2.37	1.32	.87
1913	.32	.56	1.53	3.21	4.71	6.69	6.80	5.87	3.31	1.53	.88	.27
1914	.40	.43	1.39.	2.70	5.69	6.30	6.79	5.08	3.24	1.84	1.47	.09
1915	.16	.69	1.34	4.45	3.97	5.15	5.09	3.54	3.06	2.70	1.33	.34
1916	.36	.50	1.62	2.61	4.39	5.20	7.20	5.07	3.44	1.94	1.24	.48
1917	.62	.75	2.39	2.95	4.00	5.48	6.56	4.69	3.60	1.66	1.02	.36
1918	.25	.86	2.90	2.08	5.39	5.91	6.25	5.11	3.06	1.91	.99	.44
1919	.81	.77	1.86	2.93	3.63	6.11	7.31	5.58	4.29	1.66	.95	.24
1920	.35	.80	2.28	2.30	4.60	6.33	6.66	4.49	3.97	2.44	.89	.38
1921	.60	.80	2.25	3.34	5.50	6.19	6.91	4.44	3.23	2.58	.69	.38
1922	.63	1.06	1.48	3.00	4.95	6.87	6.14	5.58	4.29	2.62	.92	.49
1923	.52	.58	1.66	3.25	4.78	5.86	6.67	4.90	2.37	2.01	.95	.43
1924	.32	.53	.86	3.56	3.42	4.42	5.31	5.17	3.11	3.03	1.08	.24
1925	.42	.80	2.41	3.99	5.11	6.04	5.91	5.16	3.47	1.02	.89	.31
1926	.33	.61	1.19	2.65	5.24	5.46	6.46	4.56	2.22	1.64	.69	.35
1927	.34	1.02	1.67	2.56	3.53	5.13	6.27	4.32	3.18	2.57	.81	.29
1928	.43	.58	1.96	2.90	5.60	4.47	6.35	5.28	3.51	2.06	.61	.52
1929	.27	.48	2.16	3.26	3.94	4.85	5.92	5.01	3.19	1.85	.61	.17
1930	.20	1.05	2.02	3.57	5.14	5.84	7.12	5.82	3.73	1.94	1.19	.50
1931	.67	.94	1.28	3.54	3.95	6.13	6.88	4.96	4.06	2.20	1.19	.50
1932	.45	1.04	1.47	3.20	5.78	6.25	6.73	5.55	4.03	2.14	.86	.49
1933	.81	1.06	1.60	2.94	3.64	7.84	7.39	5.43	4.11	2.28	1.31	.44
1934	.56	.83	1.67	4.09	6.83	7.44	7.10	4.72	2.46	3.05	1.28	.19
1935	.44	.56	1.65	2.44	2.86	4.81	6.88	5.79	3.98	2.19	.46	.18
1936	.11	.31	2.04	3.04	5.95	6.66	8.08	6.71	3.35	2.06	1.25	.64
1937	.34	.81	1.85	2.45	4.82	5.43	6.66	5.57	4.28	2.09	1.11	.19
1938	.41	.63	2.21	3.57	4.28	5.63	6.69	5.62	4.17	3.61	1.57	.62
1939	.49	.63	2.51	2.64	5.73	4.94	5.66	5.14	5.25	3.00	1.04	.68
1940	.61	.32	1.31	2.36	3.73	5.57	7.06	4.63	4.65	3.15	.95	.37
1941	.22	.65	1.75	4.20	5.36	5.62	6.67	5.11	4.51	2.23	1.10	.76
1942	.57	.36	2.87	3.64	4.33	4.35	6.24	4.56	3.75	2.41	1.63	.12
1943	.27	1.24	2.22	3.50	4.04	4.94	6.26	5.88	3.91	2.28	1.01	.35
1944	.59	.81	2.02	2.20	4.60	6.02	7.04	5.34	3.45	2.00	1.24	.18
1945	.20	.55	2.25	3.07	3.48	3.23	4.54	4.99	3.26	1.94	1.42	.25
1946	.60	1.04	1.45	4.23	3.41	6.48	6.43	3.94	3.82	2.84	7.92	.63
1947	.50	.82	1.51	2.77	4.64	5.20	6.71	7.38	4.70	2.70	.55	.33
1948	.48	.63	1.41	4.48	4.07	4.50	4.74	4.60	3.77	2.32	2.12	.69
1949	.81	.88	1.95	3.30	5.19	5.04	4.88	4.35	3.72	2.33	2.05	1.56
1950	.67	.69	1.57	2.96	5.03	5.31	5.11	3.69	2.90	3.00	1.12	.58
1951	.61	.77	1.44	2.74	5.24	3.92	4.57	4.51	3.66	2.52	1.00	.63
1952	.66	.97	1.67	4.28	4.40	6.39	6.11	4.82	4.97	3.30	1.73	.62
1953	.45	1.26	1.82	3.19	4.75	7.38	6.45	5.58	6.29	3.69	1.73	1.06
1954	.82	1.47	2.06	4.23	4.74	7.01	8.77	4.23	5.43	2.60	1.06	.56
1955	.48	.94	2.19	3.85	4.76	5.32	5.54	6.47	5.41	2.77	1.27	.74
1956	.54	.76	2.57	4.61	5.86	6.20	5.19	5.07	6.06	4.10	1.38	.44
1957	.43	.96	2.06	2.75	4.73	5.81	6.47	5.08	3.51	2.57	1.22	.96
1958	.77	1.08	1.43	3.78	5.96	4.98	5.19	5.20	3.74	3.13	1.55	.71
1959	.58	.84	2.21	4.14	5.78	7.50	7.07	5.23	4.77	2.30	1.19	.66
1960	.65	.71	1.06	4.59	4.21	6.08	5.96	5.27	4.81	2.78	1.59	.77
1961	.89	.86	1.98	3.25	5.20	6.31	6.70	5.31	4.25	2.34	1.14	.72
1962	.56	.76	1.54	4.34	7.12	6.00	6.53	6.53	4.12	2.50	1.17	.76

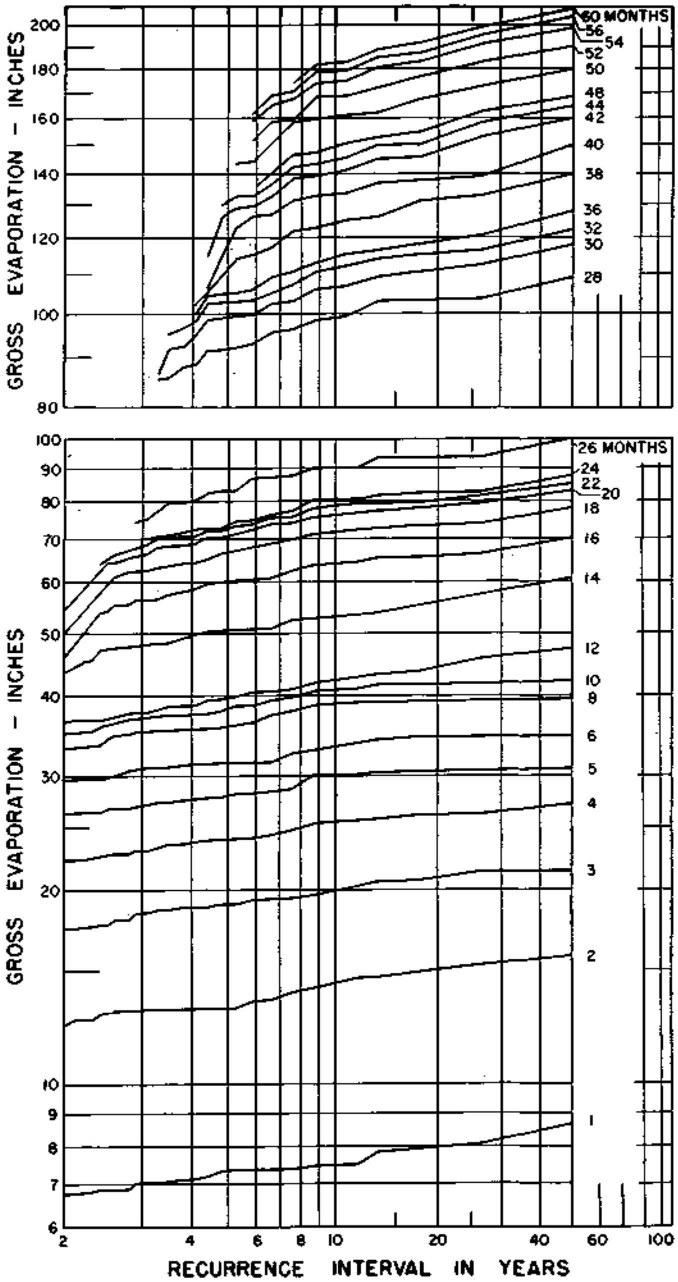

Figure 15. Maximum expected gross lake evaporation at Springfield, durations of 1 to 60 months

determine the recurrence interval of various low rainfall events. With this record, a partial series was developed for minimum precipitation expected at various recurrence intervals for various durations from 1 to 60 months. Methodology was identical to that used for the evaporation data. A graph of the minimum precipitation expected at Springfield based on this analysis is shown in figure 16.

Net Evaporation Loss

Values of maximum gross evaporation from figure 15 and the minimum expected precipitation from figure 16 were used to determine the net evaporation loss for various periods and various recurrence intervals. An example of this computation for a lake surface at Springfield is given in table 10. For a recurrence interval of 5 years, 7.06 inches of net evaporation loss can be expected during a 1-month period; this increases to a maximum of 24 inches net loss for an 18-month period, then decreases to 1 inch net loss for a 36-month period, and reaches a zero net loss for a 38-month period or longer. Table 11 provides the net lake evaporation at Springfield for various recurrence intervals and various durations, obtained by this procedure. Similar data for Rockford are given in table 12, and for Carbondale in table 13.

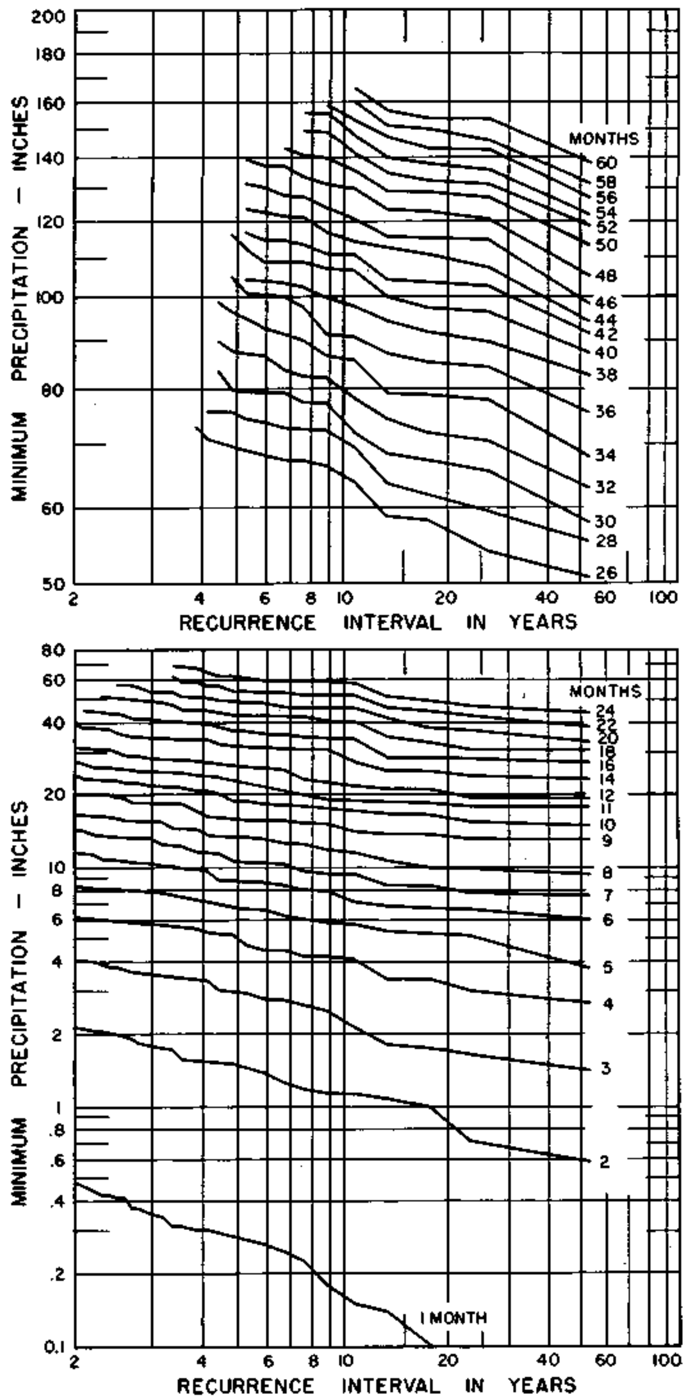

Figure 16. Minimum expected precipitation at Springfield, durations of 1 to 60 months

Table 10. Computation of Net Evaporation from a Lake Surface at Springfield

Duration of critical period, months	For a recurrence interval of 5 years: Maximum gross evaporation (from fig. 15), inches	Minimum precipitation (from fig. 16), inches	Maximum net evaporation, inches
1	7.35	0.29	7.06
2	13.1	1.5	11.6
3	19.0	3.0	16.0
4	23.9	5.2	18.7
5	28.0	6.8	21.2
6	31.5	8.8	22.7
7	34	11	23
8	36	13	23
9	37	16	21
10	38	19	19
11	39	23	16
12	40	27	13
14	51	32	19
16	60	37	23
18	67	43	24
20	71	49	22
22	73	55	18
24	73	63	10
26	83	69	14
28	92	75	17
30	99	80	19
32	103	88	15
34	104	96	8
36	105	104	1
38	112	115	

In this analysis the assumption has been made that the periods of maximum evaporation and minimum precipitation will coincide. Since both extreme phenomena are the result of the same complex of climatic factors, they logically could occur together.

Figure 17 was constructed to obtain a more complete picture of the variation of the net lake evaporation at Springfield. The over-all shape exhibited by this graph indicates that this net evaporation represents continuity for the range of values studied. Such continuity furnishes confidence for the further use of these data as here processed.

Use of Evaporation Data

To illustrate the computation of net reservoir yield, calculations are shown for a theoretical reservoir on Salt Creek near Rowell, described in table 8. Since Rowell is only 40 miles northeast of Springfield, it is reasonable to assume that the Springfield evaporation data apply. The evaporation computations are carried out for a recurrence interval of 40 years. The reservoir analysis is shown graphically in figure 18, and data are given in table 14.

Table 14 shows that for a 40-year recurrence interval the gross draft rate which this reservoir will yield is 53 mgd

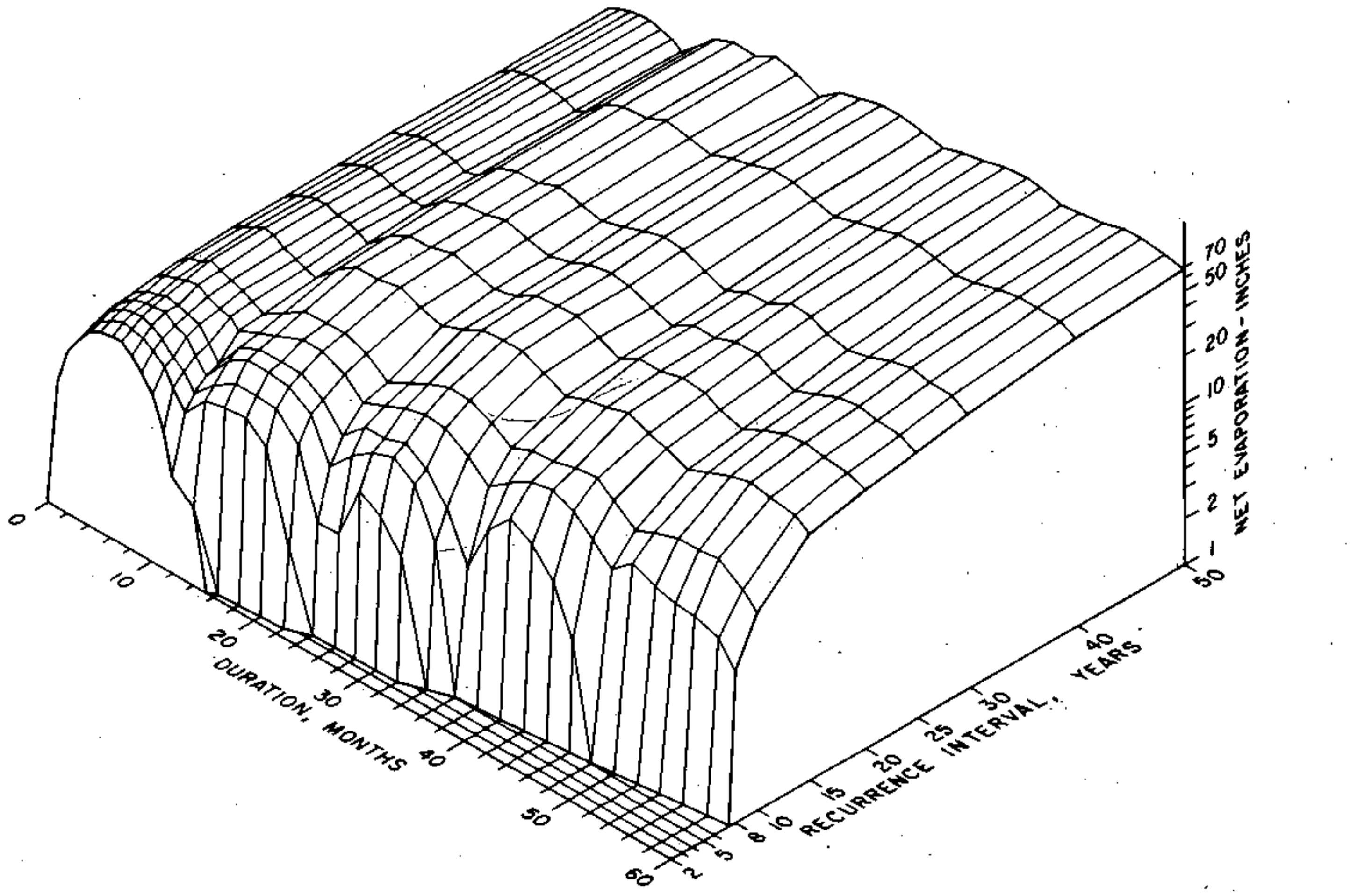

Figure 17. Variation of net lake evaporation at Springfield

Table 11. Net Evaporation from a Lake Surface at Springfield

Duration of critical period, *months*	Evaporation, in inches, for given recurrence interval, years												
	2	3	4	5	6	8	10	15	20	25	30	40	50
1	6.26	6.68	6.80	7.06	7.11	7.18	7.32	7.66	7.88	7.95	7.09	7.45	8.67
2	10.1	11.2	11.5	11.6	12.0	12.5	13.2	13.8	14.1	14.6	14.7	15.0	15.1
3	13.3	14.8	15.3	16.0	16.5	16.9	17.7	18.8	19.7	19.6	19.8	19.9	25.0
4	16.1	17.2	18.2	18.7	19.5	20.7	21.3	22.4	22.8	23.2	24.1	23.9	24.5
5	17.9	19.1	20.3	21.2	21.5	23.1	24.2	25.0	25.2	25.4	25.9	26.5	26.9
6	18.0	20.3	21.5	22.7	22.8	24.7	25.7	27.5	27.8	27.9	28.0	28.3	28.4
7	18	20	22	23	24	26	28	29	29	29	29	29	29
8	16	19	21	23	23	26	27	29	29	29	29	29	30
9	14	17	19	21	22	24	25	26	27	28	28	28	28
10	11	15	16	19	21	22	24	24	26	26	27	27	27
11	7	12	14	16	17	21	22	23	25	25	25	25	25
12	4	9	11	13	14	19	20	22	23	25	26	27	28
14	3	13	15	19	19	22	24	29	31	33	34	36	38
16	0	14	18	23	24	28	29	36	37	38	39	41	42
18	..	12	18	24	25	28	31	39	41	43	44	46	47
20	..	11	18	22	24	28	30	38	40	42	44	47	49
22	..	3	13	18	20	24	27	34	36	38	40	44	46
24	..	..	5	10	14	19	21	31	34	35	38	41	44
26	..	..	5	14	19	22	25	35	36	38	42	46	49
28	..	..	11	17	19	25	29	41	43	44	46	50	53
30	..	..	9	19	21	27	33	42	44	46	50	55	59
32	..	..	6	15	17	26	32	42	45	45	49	54	58
34	..	..	..	8	12	21	28	37	40	40	44	51	55
36	..	..	..	1	6	16	23	31	34	36	39	47	52
38	..	..	..	..	12	20	26	35	41	43	46	51	57
40	..	..	..	..	17	24	27	38	41	43	46	55	62
42	..	..	..	..	14	26	29	42	45	49	55	62	67
44	..	..	..	..	10	23	30	38	43	49	55	63	69
46	..	..	..	..	5	18	26	36	40	44	50	60	68
48	..	..	..	..	1	14	20	31	35	40	47	55	63
50	..	..	..	..	..	18	23	35	41	45	50	59	66
52	..	..	..	..	..	15	25	40	47	51	56	64	70
54	..	..	..	..	..	14	25	43	49	54	60	68	76
56	..	..	..	..	..	14	26	41	47	52	57	68	76
58	..	..	..	..	..	12	20	38	45	50	57	67	74
60	..	..	..	..	..	9	17	34	40	44	50	61	68

Table 12. Net Evaporation from a Lake Surface at Rockford

Duration of critical period, *months*	Evaporation, in inches, for given recurrence interval, years												
	2	3	4	5	6	8	10	15	20	25	30	40	50
1	4.85	5.24	5.38	5.55	5.71	6.01	6.13	6.21	6.50	6.89	7.14	7.23	7.37
2	7.7	8.8	9.2	9.5	9.6	10.2	10.5	10.9	11.4	11.8	12.2	12.5	12.7
3	10.4	11.3	11.6	12.0	12.4	13.1	13.8	14.5	15.3	16.3	16.5	16.7	16.8
4	11.9	13.4	13.9	14.8	15.3	16.0	16.5	17.3	18.3	19.2	19.8	20.5	20.9
5	13.1	14.6	15.1	15.9	16.6	17.3	17.7	18.3	19.8	21.5	22.2	22.7	23.1
6	13.4	15.0	16.2	16.6	17.3	18.3	18.6	19.7	20.7	21.9	22.8	23.8	24.6
7	12	15	16	16	17	18	19	20	22	23	24	25	25
8	11	13	15	16	16	17	18	19	21	23	24	25	26
9	10	12	12	13	14	16	16	18	18	20	21	24	25
10	6	10	11	11	12	15	15	16	17	19	20	22	23
11	4	6	8	8	9	10	11	12	13	17	18	20	22
12	0	2	5	6	7	9	9	12	12	14	15	17	18
14	..	4	8	11	12	13	15	17	19	20	22	23	24
16	..	3	11	13	15	18	19	21	22	23	23	25	25
18	..	3	11	16	17	20	20	23	23	24	25	26	25
20	..	0	9	15	16	18	20	22	22	22	23	25	26
22	..	..	2	8	9	13	16	18	18	20	20	21	21
24	..	..	0	1	3	6	10	13	12	13	14	16	16
26	..	..	..	2	4	9	16	17	18	18	19	20	21
28	..	..	..	1	6	11	18	22	22	23	24	25	25
30	..	..	..	2	7	12	18	23	24	24	25	26	27
32	..	..	..	0	3	12	16	23	24	25	25	26	26
34	..	..	..	..	0	3	10	18	19	20	20	22	24
36	..	..	..	..	..	0	7	10	13	16	17	19	20
38	..	..	..	..	..	..	6	12	19	22	23	24	26
40	..	..	..	..	..	..	9	21	24	24	26	28	30
42	..	..	..	..	..	..	7	20	26	26	27	29	30
44	..	..	..	..	..	..	6	19	25	27	28	29	29
46	..	..	..	..	..	..	1	14	20	23	25	25	25
48	..	..	..	..	..	..	0	10	17	21	21	21	21
50	..	..	..	..	..	..	..	15	21	25	26	26	26
52	..	..	..	..	..	..	..	17	26	27	29	29	29
54	..	..	..	..	..	..	..	17	25	28	28	30	30
56	..	..	..	..	..	..	..	16	24	28	29	30	30
58	..	..	..	..	..	..	..	10	18	23	25	26	28
60	..	..	..	..	..	..	..	6	13	17	19	22	23

Table 13. Net Evaporation from a Lake Surface at Carbondale

Duration of critical period, *months*	Evaporation, in inches, for given recurrence interval, years												
	2	3	4	5	6	8	10	15	20	25	30	40	50
1	5.20	5.47	5.66	5.77	5.80	6.01	6.05	6.17	6.23	6.26	6.26	6.27	6.2
2	8.5	9.1	9.7	9.9	10.0	10.3	10.4	10.8	10.9	11.1	11.3	11.6	11.7
3	10.6	12.1	12.9	13.3	13.4	13.8	14.0	14.7	14.8	15.0	15.2	15.6	15.8
4	12.3	14.0	15.0	15.8	16.1	16.6	16.9	17.6	18.2	18.5	18.8	19.5	20.1
5	13	15	15.9	17.5	18.0	18.5	18.8	19.7	20.3	20.7	21.3	22.4	23.1
6	12	15	16	18	19	19	20	20.4	21.2	22.0	22.7	23.4	24.0
7	10	14	15	17	18	19	20	21	22	23	23	24	24
8	9	12	15	17	18	18	19	20	20	20	21	23	23
9	6	9	12	14	15	18	18	18	19	19	20	22	22
10	2	6	8	11	12	14	16	18	18	19	19	20	20
11	0	3	6	8	9	13	13	17	17	18	18	19	20
12	..	0	3	5	7	11	13	14	16	17	17	15	20
14	..	..	5	7	9	15	17	20	20	22	23	24	25
16	..	..	7	11	12	16	19	22	22	22	24	28	30
18	..	..	4	11	13	16	21	22	23	24	25	27	28
20	..	..	2	6	9	12	16	19	21	22	24	27	29
22	..	..	0	1	2	8	10	17	19	19	19	24	27
24	..	..	..	0	0	3	6	13	15	15	18	23	26
26	..	..	..	..	..	6	9	13	15	17	21	27	32
28	..	..	..	..	..	10	10	15	17	20	24	29	33
30	..	..	..	..	..	7	12	18	22	23	25	28	30
32	..	..	..	..	..	2	10	15	19	22	24	26	28
34	..	..	..	..	..	0	4	9	14	17	18	22	23
36	..	..	..	..	..	..	0	3	9	11	14	18	21
38	..	..	..	..	..	..	..	3	8	15	19	21	25
40	..	..	..	..	..	..	..	6	14	20	22	24	25
42	..	..	..	..	..	..	..	3	14	23	25	27	28
44	..	..	..	..	..	..	..	2	10	20	22	26	29
46	..	..	..	..	..	..	..	0	4	16	20	22	25
48	..	..	..	..	..	..	..	..	1	11	14	16	18
50	..	..	..	..	..	..	..	..	7	14	16	18	19
52	..	..	..	..	[redacted]	[redacted]	..	..	8	17	19	20	19
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	..	..	7	18	20	21	23
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	..	..	4	17	19	22	22
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	..	..	2	12	16	16	18
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	..	..	0	7	9	12	13

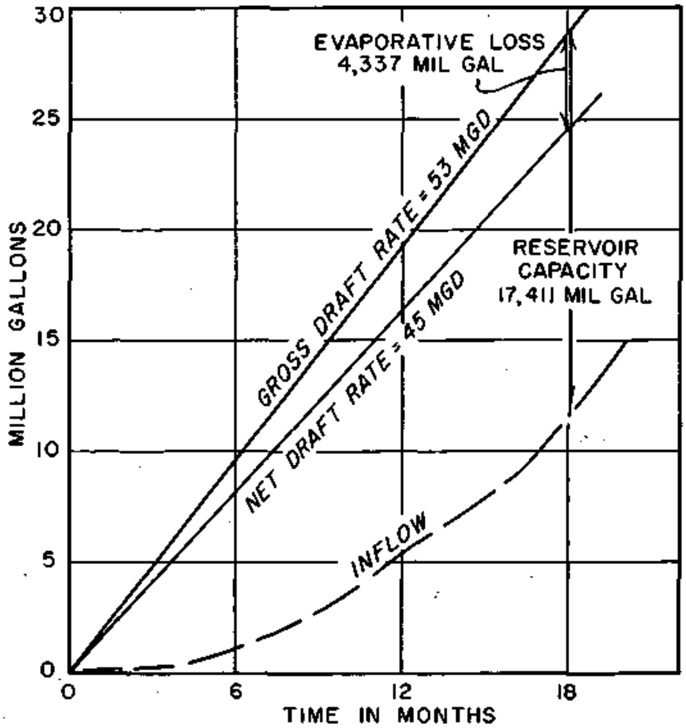

Figure 18. Mass curve analysis for theoretical reservoir on Salt Creek near Rowell, illustrating computations of evaporative loss and net draft rate

and the critical drawdown period is 18 months or 548 days. The net evaporation loss from the proposed reservoir during this 18 months, as read from table 11, will be 46 inches or 3.83 feet.

As discussed earlier, the reservoir will be full at the beginning of the critical drawdown period, which is 18 months in this example, and empty at the end of it; however, during this period, the lake level will fluctuate and the surface area exposed to evaporation will vary, in this case from 5344 acres to zero. Hudson and Roberts[12] recommend that the effective evaporative surface area for the critical period be 65 percent of the lake surface area when full, and this factor has been used in this study.

The following computations illustrate the determinations shown in figure 18 and table 14 for a 40-year recurrence interval which has an 18-month critical period.

The total gross draft is

53 *mgd* X 548 *days* = 29,044 *mil gal*

The inflow to the reservoir is total gross draft minus total reservoir capacity, or

29,044 — 17,411 = 11,633 *mil gpl*

The effective evaporative surface area of the lake is

5344 *acres* X .65 = 3474 *acres*

The evaporative loss is

3.83 *feet* X 3474 *acres* = *13,305 acre-feet,* or 4337 *mil gal*

The net usable reservoir capacity is the total reservoir capacity minus the evaporative loss, or

17,411 — 4337 = 13,074 *mil gal*

The total net draft which the reservoir can furnish is the net usable reservoir capacity plus the inflow, or

13,074 + 11,633 = 24,707 *mil gal*

The net draft rate, or the net yield, which the reservoir can furnish is the total net draft divided by total days in the critical period, or

24,707 *mil gal* / 548 *days* = 45 *mgd*

All of the net draft rates given in table 14 were determined by the computations just described. In each case the net draft rate is shown to be less than the gross draft rate in column 2 of the table. The differences are considered to be a rational evaluation of the probable evaporative losses. The designer would also make provision for seepage losses at this point.

Figure 19 shows a graph of gross reservoir yield versus the net reservoir yield for the theoretical reservoir on Salt Creek near Rowell. The departure of the curve below the line of equality represents the evaporative loss.

Table 14. Analysis of Evaporation Loss for Theoretical Reservoir on Salt Creek near Rowell

Reservoir capacity = 3 equivalent inches on drainage area, or 53,437 acre-feet, or 17,411 million gallons

Reservoir surface area = 5,344 acres

Drainage area = 334 square miles

Mean runoff = 0.79 inches per month, or 151 mgd

Gross yield data (from table 8)				
Drouth recurrence interval, *years*	Gross draft rate, *mgd*	Duration of critical period, *months*	Net evaporation loss (from table 11), *inches*	Net draft rate, *mgd*
2	128	7	18	122
5	89	9	21	83
10	74	18	31	68
20	57	18	41	52
40	53	18	46	45

Reservoir Sedimentation

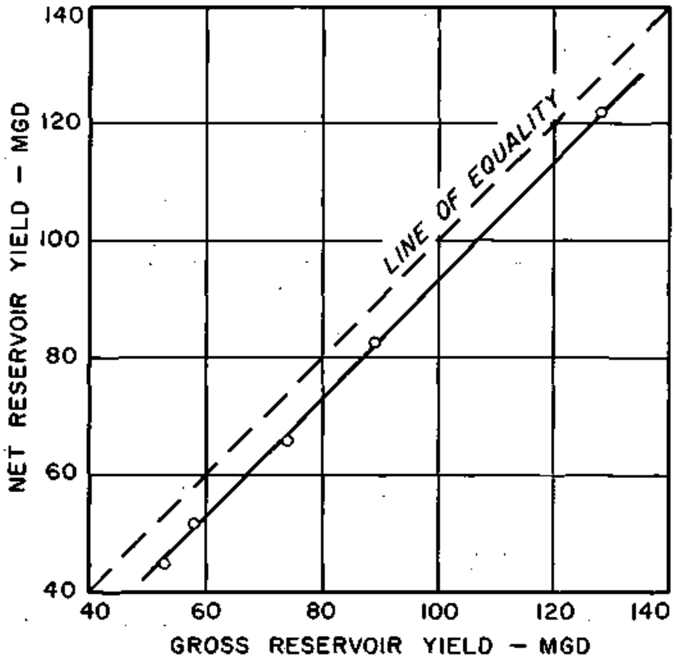

Figure 19. Reservoir gross yield versus net yield for theoretical reservoir on Salt Creek near Rowell

Data

The measurement of sediment in Illinois reservoirs and the evaluation of the various reservoir and watershed characteristics that affect sedimentation have been the subject of a comprehensive research project for about 30 years. The 85 reservoirs on which sedimentation surveys have been made are listed in table 15, and their locations are shown on the map in figure 20. This research has been carried out cooperatively by the State Water Survey, the Illinois Agricultural Experiment Station, and the U. S. Department of Agriculture.[21]

From these studies, 11 reports have been published for particular reservoirs and their respective watersheds, the most recent a study of Crab Orchard Lake[22] in southern Illinois. A regional analysis has been published of sedimentation data from 20 lakes and their watersheds located in the deep loess soils area of central Illinois near Springfield.[23] Two similar regional studies are underway, for lakes in the claypan soils of southern Illinois and in the deep loess soils of the Galesburg Plain in western Illinois. No statewide, comprehensive analysis is available; however, selected data have been used to provide an empirical equation[24] which is dimensionally correct and seems adequate to accommodate the complex reservoir and watershed factors influencing sedimentation rates in Illinois.

Several findings are evident from studies to date. One is that the rate of soil erosion on many watersheds in Illinois is excessive for the long-term protection of the land resource base. A second is that soil loss from erosion can be drastically reduced by the application of soil conservation practices such as contour farming. In many cases such a conservation program on a watershed has significantly reduced the rate of reservoir sedimentation.[25] The prevention of soil erosion is, of course, a primary measure in preventing reservoir sedimentation; and, in reservoir development, application of an intensive watershed conservation program should be considered.

Table 15. Impounding Reservoirs for which Sedimentation Data Are Available

(Numbers refer to locations on map in figure 20)

1. Lake Calhoun	45. Lake Oakland
2. Lake Bracken	46. Lake Charleston
3. Spring Lake	47. Ridge Lake
4. Lake Carthage	48. Stevenson Lake
5. Mount Sterling Reservoir	49. Craig and Davidson Lake
6. Lake Bloomington	50. Vevay Park Lake
7. Pittsfield Reservoir	51. Farina Sportsmen Lake
8. Lake Virginia	52. Ill. Central RR Lake, Kinmundy
9. Burlington RR Lake, Tallula	53. Salem Reservoir
10. Anderson Lake	54. Raccoon Lake
11. Morgan Lake	55. Patterson Lake
12. Mauvaise Terre Lake	56. Lake Greendale
13. Elliott Bank Pond	57. Brown Park Lake
14. Lake Jacksonville	58. Lake Olney
15. J. Langdon Lake	59. Steiner Lake
16. Franklin Country Club Lake	60. Lake Nashville
17. Lake Waverly	61. Lake Ashley
18. F. Reilly Pond	62. W. Farrell Lake
19. H. Ashauer Lake	63. Lake Miller
20. Lake Springfield	64. Heil Lake
21. J. Sudduth-Lake	65. Ill. Central RR Lake, Bluford
22. L. Schmidt Pond	66. Lake Coulterville
23. Lake Decatur	67. Lake DuQuoin
24. Lake Vermilion	68. Valier Outing Club Lake
25. H. Seely Pond	69. Lake Christopher
26. Roodhouse Park Dist. Lake	70. Ill. Central RR Lake, Thompsonville
27. Whitehall Reservoir	71. West Frankfort Reservoir
28. Woodbine Country Club Lake	72. Lake West Frankfort
29. Dale Cole Lake	73. Carbondale Reservoir
30. Rinaker Lake	74. Little Grassy Lake
31. Williamson Bible Camp Lake	75. Crab Orchard Lake
32. Lake Carlinville	76. Herrin Reservoir No. 1
33. Lake Gillespie	77. Johnston City Reservoir
34. Lake Bunker Hill	78. Fluck's Lake
35. Mine No. 4 Pond, Wilsonville	79. Marion Reservoir
36. Lake Edwards	80. Knights of Pythias Lake
37. Mount Olive Reservoir	81. Baker's Lake
38. King's Lake	82. Herrin Reservoir No. 2
39. Lake Staunton	83. Dering Coal Co. Pond
40. Walton Lake, Litchfield	84. Lake Eldorado
41. Schaeffer Pond	85. Anna State Hospital Lake
42. Panama Lake	
43. Ayers Reservoir	
44. Etcheson Lake	

Sedimentation Rates

Several of the published analyses of reservoir sedimentation mentioned provide methodology for determining the probable rate of sedimentation in a proposed reservoir by a detailed study of the characteristics of the watershed and the reservoir. On a statewide basis, only a simplified approach using generalized data is possible. Such a generalized

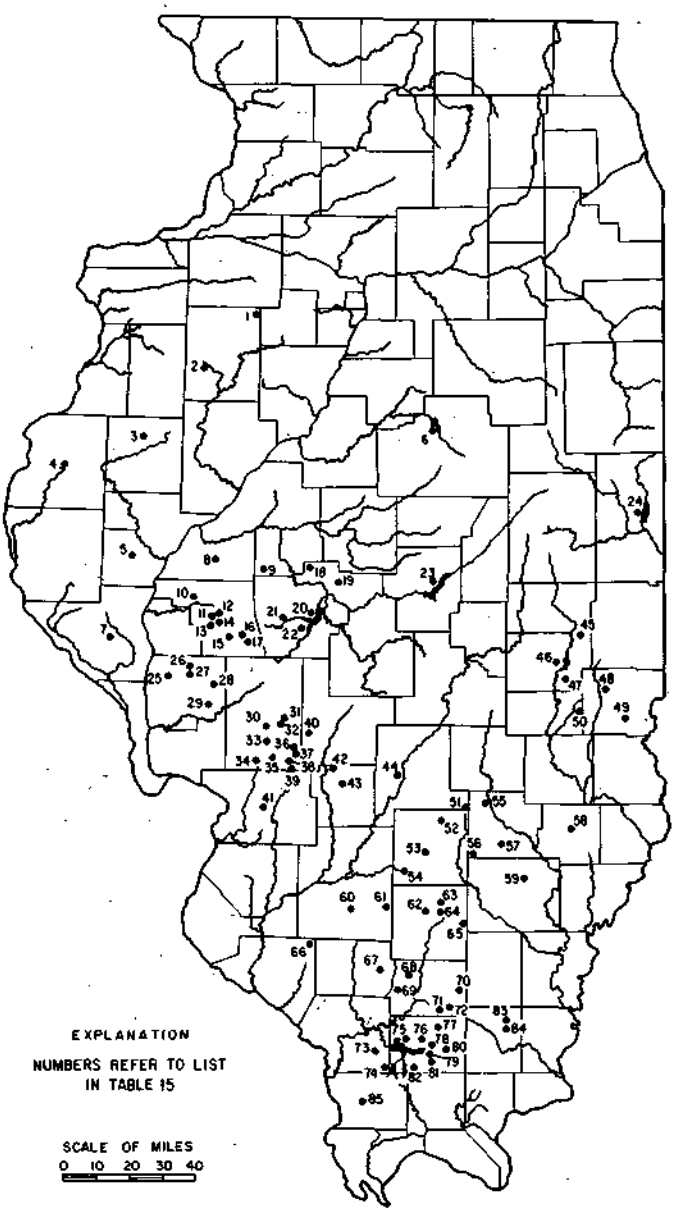

Figure 20. Locations of reservoir sedimentation surveys in Illinois

relation is shown in figure 21. This graph, compiled from results of the lake surveys located on the map in figure 20, shows the annual rate of reservoir capacity loss as a function of only two parameters: 1) the reservoir capacity expressed in inches on the drainage area, and 2) the size of the drainage area in square miles.

The first parameter reflects the size of the lake with respect to the drainage area. When this proportion is large, it indicates a relatively large space for storage of sediment with respect to the yield of sediment; a small proportion indicates a small capacity for sediment storage. Consequently, reservoirs with low proportionate capacities, expressed in inches on the drainage area, collect sediment more rapidly percentagewise than do reservoirs with large capacities. This tendency is reflected in the family of curves in figure 21 which depicts the decrease in annual percent loss of reservoir capacity as reservoir capacity increases.

The second parameter on which figure 21 is based is the actual size of the drainage area in square miles. As the drainage area increases, the unit rate of sediment production per square mile decreases. For any particular region in Illinois, it can be assumed that the average over-all rate of soil loss from erosion would be uniform for large and small drainage basins. For a relatively small drainage area, most of this sediment is transported the short distance downstream to the reservoir. For larger and larger drainage areas, however, there is an ever-increasing tendency for much of this sediment to be transported only a short distance where it is deposited at a fence, along ditches, streams, or on bottomlands along the major stream; thus, a smaller percentage of the total watershed soil loss is actually carried all the way downstream to deposit in the reservoir. This tendency is reflected in figure 21 in that all the curves slope downward to the right.

Figure 21 may be used to estimate annual capacity loss for a particular proposed reservoir. Starting with the size of the drainage area under consideration and following this line upward to the curve representing the capacity for the proposed reservoir will indicate the annual percent loss of reservoir storage capacity on the left scale. A determination of the accuracy of this graph by analysis of the 85 observations used to devise it showed that the chances are 2 out of 3 that the annual capacity loss determined will not be more than 60 percent in error in either direction.

This annual rate of capacity loss to sedimentation can be converted to total capacity loss by selecting a future time, say 25 years, as a basis for planning. This 25-year total to be allocated for sediment storage can then be subtracted from the original reservoir capacity estimate to provide the amount of capacity that would be available for water supply at the end of 25 years. This procedure is the most straightforward way to evaluate the effects of sedimentation on yield; however, this approach is conservative since the storage space allocated to sediment is actually filled with sediment gradually during the 25-year period.

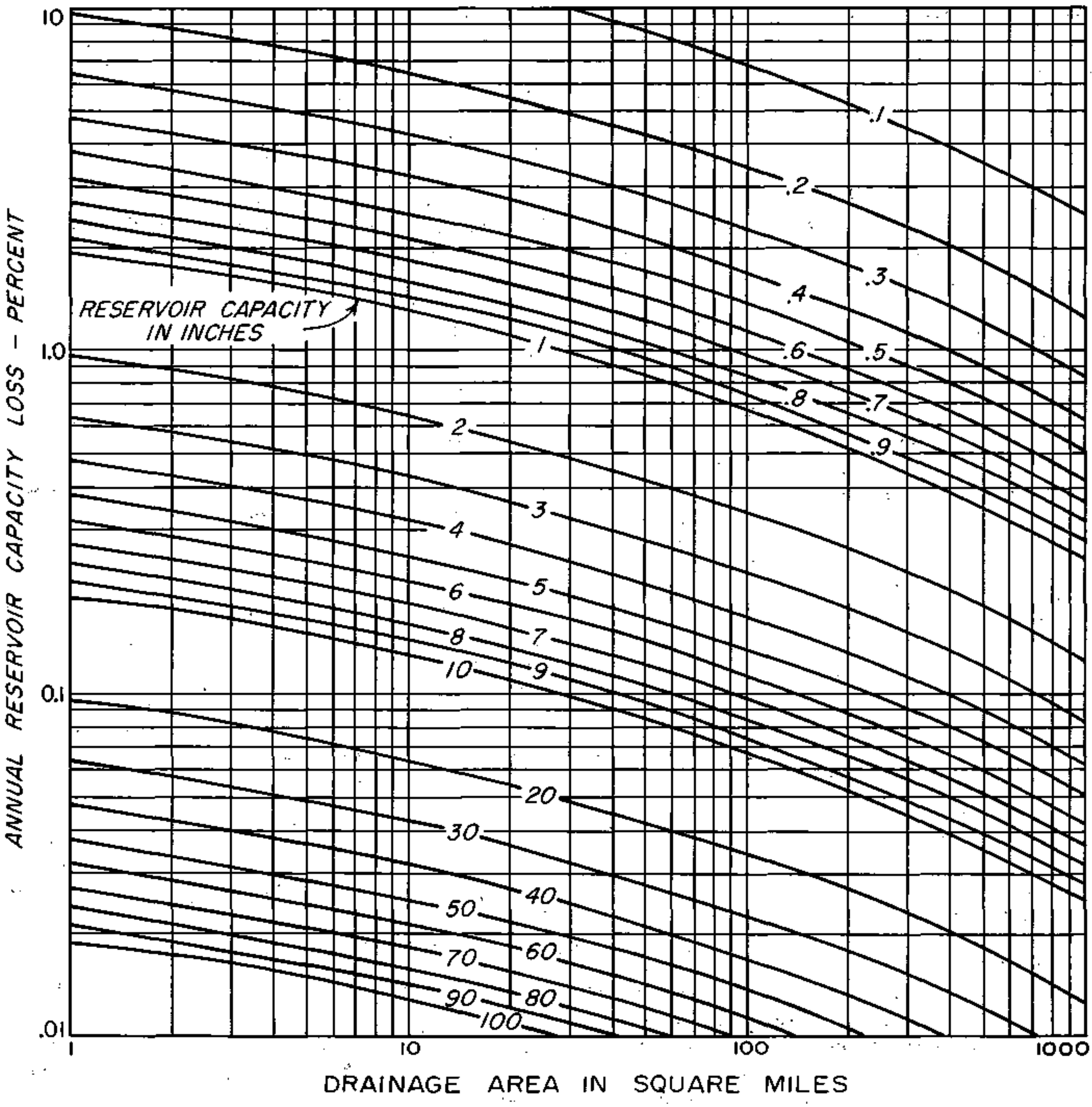

Figure 21. Generalized reservoir sedimentation relation for Illinois

CALCULATED RISKS OF IMPOUNDING RESERVOIR YIELD

Value of a Risk Outlook

One of the most meaningful ways to develop a common understanding of impounding reservoir yield is to interpret this yield on the basis of the associated risks. Risks are ever-present and easily understood. The advantages and the simplicity of water project analysis on a risk basis have been shown by several writers in recent years, notably Langbein and Alexander.[26] The following discussion shows how risks can be computed and interpreted; it comprises methods developed by the author and previously published.[27]

A water supply impounding reservoir is one of many hydrologic structures commonly designed to meet a natural event having a selected recurrence interval. For example, a reservoir may be designed to meet a 25-year recurrence interval drouth. The reservoir is subject to lesser and greater drouths, however, which affect the yield. Several significant characteristics are known regarding the distribution of drouths; and considerable evidence is available as to the probability that drouths of Various severities will occur during this year (any year), during the next five years (any five-year period), or during any selected design period. By developing an array of probabilities of occurrence of various drouths during various design periods, the design engineer can gain an improved concept of the risks associated with the development.

This array of risks allows the engineer to state the numerical odds accompanying various yields. These odds range from a virtual certainty that an extremely severe event will not happen soon to an identical certainty that a mildly severe event will happen soon. A statement of these risks in this objective numerical form allows the designer to select a series of risks that, in his judgment, are most appropriate for a particular reservoir operation.

Many authors have studied carefully the distribution of natural events and the confidence associated with the knowledge of their frequency and magnitude. Riggs[28] has been the most recent writer to bring together earlier thinking, and he has introduced the "design period" concept.

Because in this report the method of determining net yield of an impounding reservoir allows net yield to be associated with mean recurrence intervals by means of a cumulative frequency curve, it has been possible to use the design period approach. Although the design period concept is based on a frequency curve of annual events, the frequency curve of net yield developed from a partial series of events is considered adequate for application of this concept. It is believed that the simplicity of the design period approach and its support by deeply-rooted probability principles justify its broader acceptance and use.

Frequency Relations

The cumulative frequency curve is a common method of expressing the association between various magnitudes of natural events and their mean recurrence interval.

Implicit in the use of a frequency curve is the fact that the "most probable" magnitude that can be estimated anywhere along the curve is that value depicted by the mean curve. Where confidence intervals can be determined for the magnitudes, they indicate the reliability of the sample frequency relation. The mean curve and associated confidence intervals represent, from the practical viewpoint, the most efficient representation of the data. To more readily convey the "general" nature of a frequency relation Wilson[29] suggests that it be drawn by a brush technique rather than by a pen line.

Recurrence *Interval* Concept

The basic premise involved in the use of a cumulative frequency curve is that an event and the average length of time between exceedances of this event can be estimated from past records. Such a recurrence interval, however, is an average or mean. The actual intervals of time between exceedances of this magnitude vary widely from the mean.

However, the mean recurrence interval has considerable meaning as a representative value and as an aid to judgment. It has even more meaning if the dispersion of the individual intervals about the mean can be determined. Fortunately, for many natural hydrologic events the variations in actual intervals with respect to the mean recurrence interval can be considered random.

Two authors, Riggs[29] and Thorn,[30] recently examined methods of assessing the dispersion of individual time intervals about the mean recurrence interval. Thom suggested an application of the Poisson distribution, and Riggs used an application of the binomial distribution. The two applications have been compared, and the differences were relatively small for the commonly used design periods of five years and greater. Consequently, the Riggs approach was followed here since it stressed the design period concept.

Design Period Concept

A conventional cumulative frequency curve of annual events shows the probability P_1 that a single random event will exceed a given magnitude *E*. It is assumed that such a frequency curve based on observed experience is available to define the relationship between mean recurrence interval *MRI* in years and magnitude *E* of events. For this curve, *E* is expressed as a function of *MRI*, as

$$E = f(MRI) \qquad (13)$$

MRI is the reciprocal of P_1, stated as

$$1/MRI = P_1 \qquad (14)$$

where:

P_1 = the probability that event *E* will be exceeded during any one year

Further, $1 - P_1$ is the probability that *E* will *not* be exceeded in any one year.

Then, by the multiplicative law as described by Riggs,[28]

$$P_n = (1 - P_1)^n \qquad (15)$$

where:

P_n = the probability of not exceeding event *E* in *n* years

n = the number of years in the design period

Substituting $1/MRI$ for P_1 from equation 14 into equation 15, gives

$$P_n = [1 - (1/MRI)]^n \qquad (16)$$

from which,

$$n = \log P_n / \log[1 - (1/MRI)] \qquad (17)$$

Equation 17 relates the mean recurrence interval *MRI* of an event to the probability P_n that the magnitude of the event will not be exceeded during a selected design period *n*.

The solution of equation 17 for *n* using various selected values of mean recurrence interval and probabilities P_n furnishes values of the associated design period. Table 16 shows

Table 16. Design Periods for Various Recurrence Intervals and Probabilities

Mean recurrence interval, years	Design period, in years, for given probability that an event will not occur										
	.01	.1	.2	.3	.4	.5	.6	.7	.8	.9	.95
3	12	5.7	4.0	3.0	2.3	1.7	1.3	..	..	..	..
5	21	10	7	5.4	4.1	3.1	2.3	1.6	1.0	..	..
10	44	22	15	11	9	7	4.9	3.4	2.1	1.0	..
20	..	45	31	23	18	14	10	7	4.4	2.1	1.0
30	..	..	48	36	27	20	15	11	7	3.1	1.5
40	..	..	..	48	36	27	20	14	9	4.2	2.0
50	..	..	..	60	45	34	25	18	11	5.2	2.5

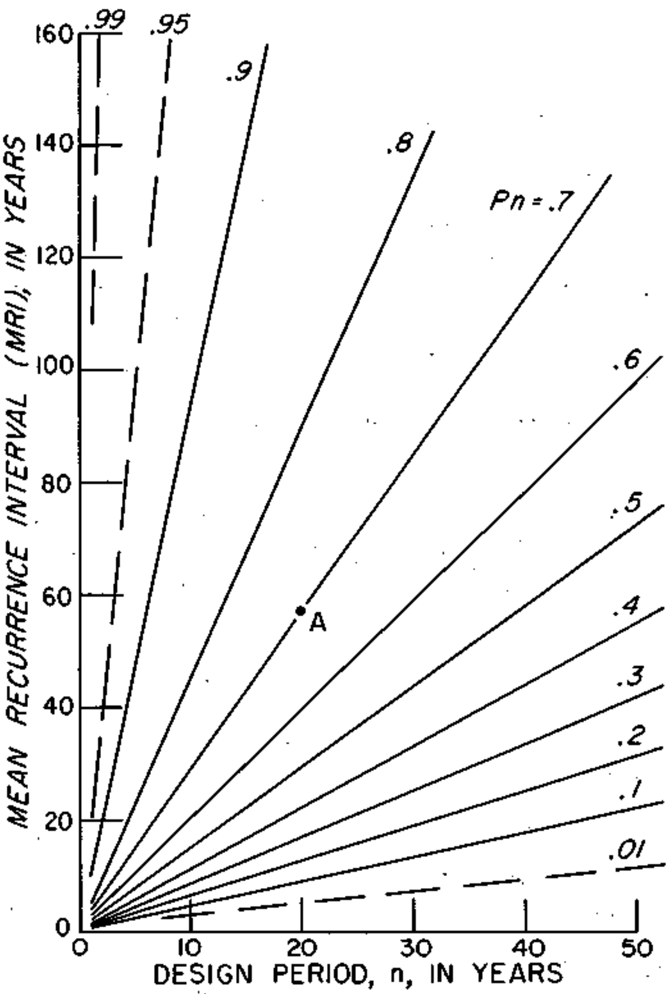

Figure 22. Relation (from equation 17) between recurrence interval, design period, and probability that an event will not be exceeded during design period (Point A refers to example in text)

a selected number of solutions of this equation, and these are presented graphically in figure 22. The relationships shown are general and are based only on the principle of the multiplication of probabilities. Point A, for example, represents a design period of 20 years, a probability P_n of .7, and a mean recurrence interval of about 57 years. This means that the event which is associated with a 57-year recurrence interval on a cumulative frequency curve has a probability of nonoccurrence of 7 chances in 10 during any particular 20-year period. In other words, this event has an average recurrence interval of 57 years; further, there are 7 chances in 10 that such an event will not occur during the next 20 years or during any particular 20-year period.

By the use of equations 13 and 17, a magnitude E from a particular frequency curve can be associated with selected probabilities P_n that the event will not be exceeded during a design period of selected length n in years. The development of a rather complete array of associated magnitudes, probabilities, and design periods covering adequate chosen ranges of these three variables furnishes the engineer with a complex of calculated risks that gives a thorough background for judgment in selecting a design.

Use of Design Period Information

The theoretical reservoir on Salt Creek near Rowell has been analyzed to illustrate the development of the calculated risks associated with a particular reservoir. Table 8 provides the physical data, and table 14 shows the net yield in million gallons per day available from this reservoir during drouths having recurrence intervals from 2 to 40 years. The availability of this type of yield data is one of the prerequisites to the development of the calculated risks associated with the yield.

A plot of the net yield data of this reservoir is shown in figure 23. The points represent the yield data values taken

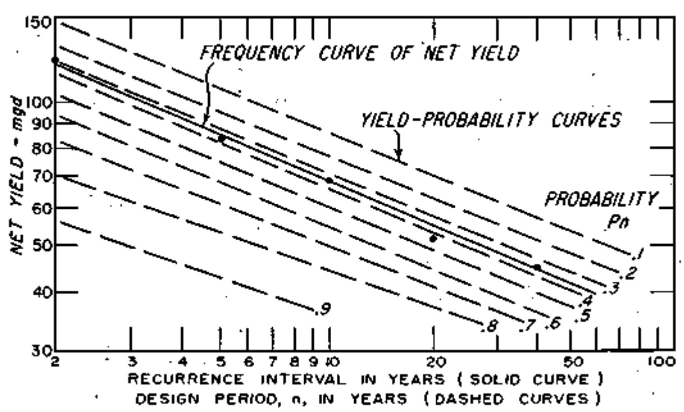

Figure 23. Frequency curve of net yield and yield-probability curves for theoretical reservoir on Salt Creek near Rowell

from table 14, and the solid line represents the generalized relation between the net yield of this reservoir and the recurrence interval. The dashed lines, called yield-probability curves, were drawn by use of the relationship shown in figure 22, and show the net yield versus the design period for various values of P_n which is the probability that such yield will be met successfully during a particular design period. This family of curves appears again in figure 24

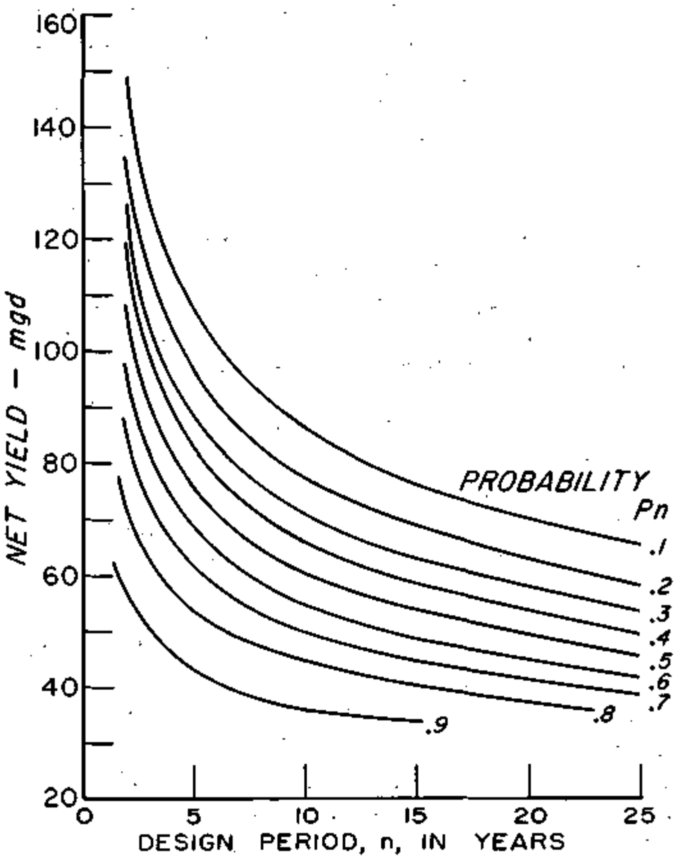

Figure 24. Yield-probability curves for theoretical reservoir on Salt Creek near Rowell

and shows the probability that various yields will be met by this reservoir. This can also be interpreted as being the "probability against failure."

The information in figure 24 furnishes a complete picture of the probabilities or the risks associated with various yields available from this particular reservoir. For the engineer to utilize this information to its best advantage in culminating a reservoir design, or in determining a pumpage pattern to minimize damage and inconvenience due to pumpage restrictions, it is desirable that the information be further processed as shown in figure 25.

In this case, pumpage from this reservoir is to be limited to an amount that could be met during a drouth having a recurrence interval of 25 years. Reference to the solid line in figure 23 shows that the 25-year recurrence interval drouth

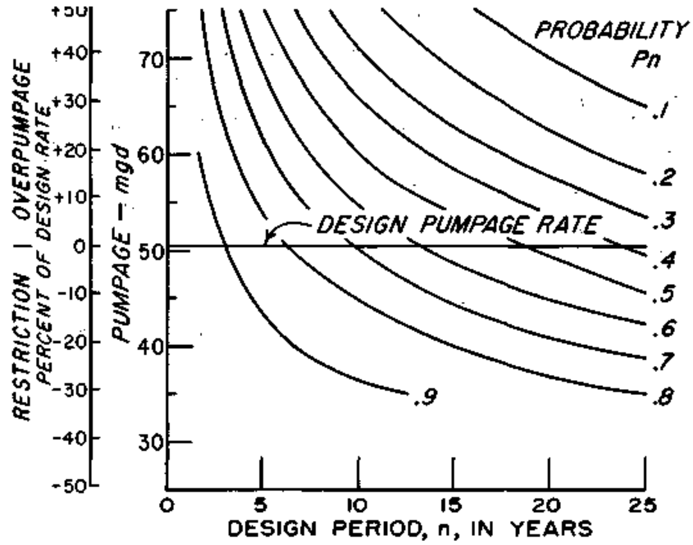

Figure 25. Yield-probability curves for a selected range in pumpage for theoretical reservoir on Salt Creek near Rowell

is of such a severity that the net yield of the proposed reservoir would be 50.5 mgd. It has been assumed in this example that the reservoir will be operated at a pumpage of 50.5 mgd. Consequently, this reservoir will be able to meet this pumpage during a 25-year recurrence drouth; but, during a more severe drouth, say one of 26-year severity, some water shortage would occur. The actual calculated risks associated with this reservoir development and its pumpage are shown in figure 25.

Figure 25 can be interpreted as follows: With this reservoir in operation at the design pumpage of 50.5 mgd there is a probability of .9 (or 9 chances out of 10) that this pumpage will be met during the next 3-year period without failure. There are 8 chances out of 10 that this pumpage will be met during the next 6-year period without fail. Continuing across, there is a .5 probability that this pumpage rate will be met during the next 19-year period, and a probability of about .4 that it will be met during the next 24 years.

If, however, pumpage were restricted by 30 percent, there is a probability of about .8 that such a pumpage could be met for 25 years without fail. And, if pumpage were increased above the design rate, say at an overpumpage of about + 30 percent, there is a .4 probability that such a rate could be met without failure for the next 10 years.

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Part 2. Low Flow Data

EXTENT OF DATA

Arrangement

Processed low flow data for each of 164 stream gaging stations in Illinois are presented in this section. The stations have been grouped according to physiographic divisions, as shown on figure 26, and as previously discussed under the heading "Total Stations." Page numbers on figure 26 show where each division starts.

An enlarged map at the beginning of each division provides locations of all gaging stations therein; stations are identified by numbers keyed to an accompanying list of stations. The processed data for the stations are then presented in the numerical order of this list.

Locations of all stream gage stations, by number, also are shown on the state map in figure 27, on which physiographic divisions and principal rivers are indicated. Some of the stations located near divisional boundaries have been included with the division, upstream from the gage, in which the major portion of its drainage area lies.

Major Data Items

Four major items of data, arranged on facing pages, are given for each of the 164 stations; these items include the station description, the low flow recurrence curves, the draft-storage-recurrence table, and the draft-storage-recurrence curves.

Station descriptions include the surveyor's location and the drainage area upstream from the gage, as well as pertinent facts about the gaging record. Periods of actual flow data are given up to and including the water year 1959. Where synthetic flow data have been used, the name of the index station and the period of the coincident record are given; the method of synthesis has been described under "Extending Streamflow Data." The total data analyzed includes both actual and synthetic data. The mean discharge, given in units of inches per month, represents the mean rate of runoff for the station for the entire period, and is equivalent to the total runoff rate available for development at that location.

The small graph for each station provides a family of 10 selected low flow recurrence curves. Low flow values for drouth durations from 6 to 60 months are given, and recurrence intervals for these low flow events are indicated. Derivation of the low flow recurrence curves was described with figure 7 in Part 1.

The table of data for each station, obtained by the mass analysis, is similar to table 6 in Part 1. These tabular data provide the required reservoir capacity, in inches, and the duration of the critical period, in months, for recurrence intervals of from 2 to 45 years, and to meet gross draft rates from 5 to 100 percent of the mean flow of the stations. The draft-storage-recurrence curves in the large graph on the facing page, which is similar to figure 9, represent the same data as in the table, except for the duration of the critical period. The table of complete data allows the user to replot, for his own use, any desired portion of the family of curves on the graph.

The enlarged maps and station information at the beginning of each physiographic division will provide the best guide to selection of the appropriate gaging station record for use with a particular reservoir site.

Example of Use of Data

To illustrate the procedure for using the low flow data in this publication to evaluate the yield of an impounding reservoir, a complete example of computations is given in table 17. Unit equivalents and conversion equations used throughout this example are given in Part 1 under the heading "Conversion of Units."

In this example the yield analysis has been made for a potential impounding reservoir on Maple Creek in the Embarrass River Basin, to be located in sec 21, T8N, R13W, Crawford County, or about 8 miles north of Oblong, Illinois. This potential site has been evaluated to provide necessary physical data on reservoir capacity, surface area, and drainage area, as shown at the top of table 17.

Figure 26 shows that Crawford County lies within the Springfield Plain physiographic division, and information from the enlarged division map indicates that the nearest gaging record is that for Station 6, North Fork of the Embarrass River near Oblong. The low flow data for Station 6 *(see pages* 130-131) have been used in the analysis.

As a first step in using these data, the reservoir capacity in acre-feet was converted to equivalent inches on the drainage area, hereafter referred to as "inches," as shown in lines 3 and 4 of the table.

Before going further in the analysis, the probable loss of this reservoir capacity to sedimentation was estimated (lines 5-8). The percent of capacity loss per year for this reservoir was obtained by reading the graph in figure 21, and 25 years was selected as a meaningful length of time for the sediment loss estimate. The reduced reservoir capacity in inches obtained (line 8) represents, conservatively, the useful reservoir capacity during the next 25 years, and this figure was used for the remaining yield computations.

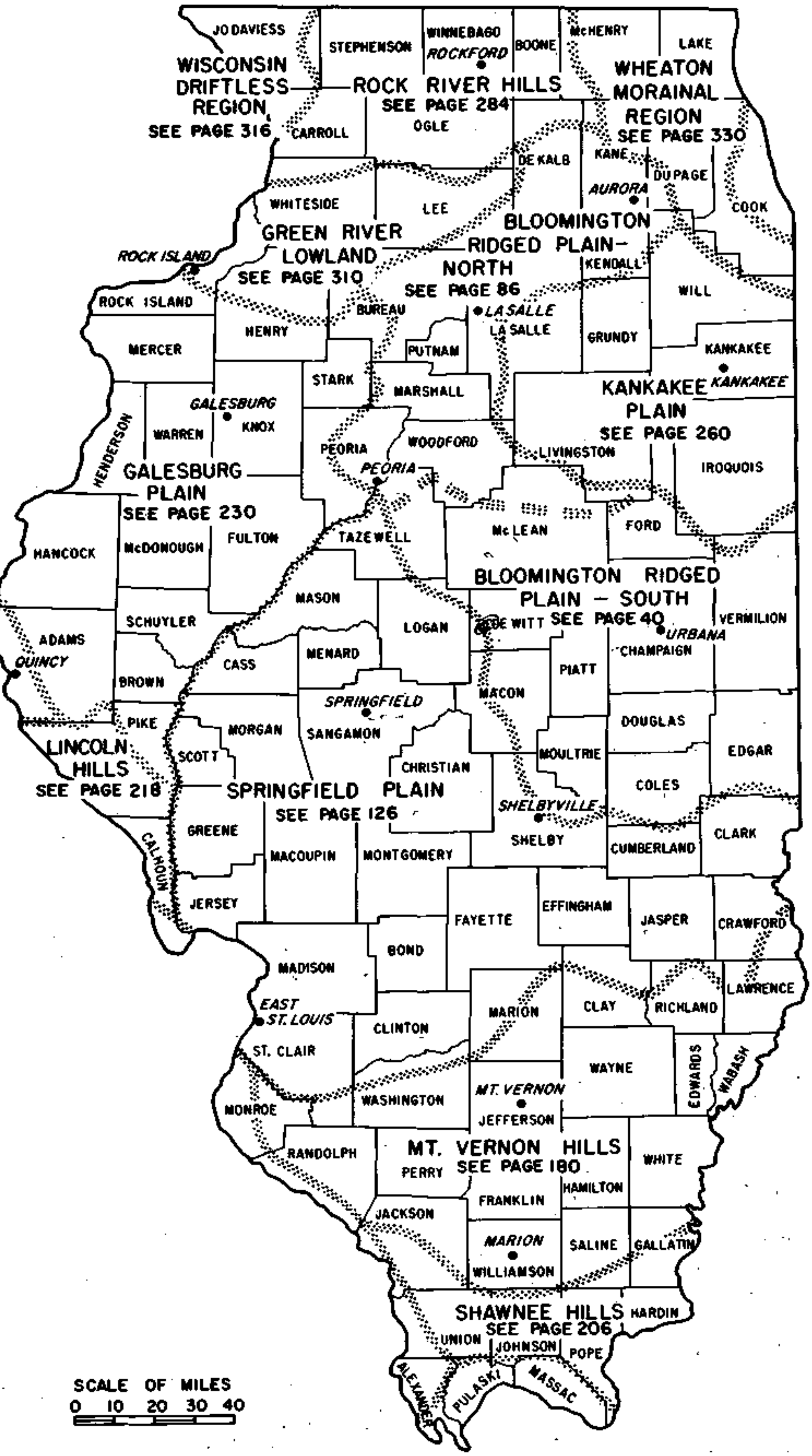


Figure 26. Physiographic divisions for Illinois keyed to pages that show enlarged divisional maps

The mean flow for Station 6, as given in the station description, was converted to appropriate units and then used with the drainage area for the new site to obtain the long-time mean flow into the proposed reservoir (lines 9-12).

At this point key items of gross yield (lines 13-14) were obtained by careful study of the draft-storage-recurrence curves and table for Station 6, North Fork, Embarrass River, near Oblong.

The selected drouth recurrence interval of 25 years and the computed reservoir capacity of 3.53 inches were applied to the drouth-storage-recurrence curves for North Fork, and the intersection of these two values showed a gross draft rate of 29 percent of the mean flow (line 13). The table of draft-storage-recurrence data for Station 6 was then examined to find the appropriate duration of critical drawdown. Although the conditions were not identical, the 22.5-year recurrence interval and 30 percent of mean flow on the table were nearest to the desired values, and their entry in the table showed 16 months as the duration of the critical drawdown period (line 14). Interpolation of the table to determine the (duration to use is not required.

As the next major step in the analysis, the evaporation loss for the proposed reservoir was determined (lines 15-19) . From figure 13 in Part 1, Springfield was located as the nearest evaporation station for the Crawford County site, and the Springfield evaporation data in table 11 were then used. Established values of recurrence interval and critical duration were applied to table 11, giving the net evaporation loss in inches (line 16). This value, converted to feet, was applied to the evaporative surface area (line 18) to determine total evaporative loss, in acre-feet, from this reservoir during the critical period of 16 months.

The gross draft rate from lines 12 and 13 was converted to acre-feet in order to compute in comparable units the total gross draft for the critical period (line 22). Total evaporative loss was then subtracted from the total draft to furnish the net draft for the critical period (line 25), Although no calculation was made here for seepage loss, the designer could include seepage estimates at this point for a still more refined net draft figure. As a final solution in this yield analysis, the net yield was computed as a rate (line 26) and converted to million gallons per day and rounded off (line 27).

The analysis in table 17 provides the information that the net yield of the potential Maple Creek reservoir during a drouth having a recurrence interval of 25 years is 1.9 mgd, and that this would be true even 25 years after construction since sedimentation loss for that time period was considered.

For a more complete evaluation of the potential reservoir, this analysis could be carried out for a number of different recurrence interval drouths. And, if further insight were desired, these additional computations would allow the plotting of a frequency curve of net yield and a family of yield-probability curves, as exemplified in figures 23, 24, and 25.

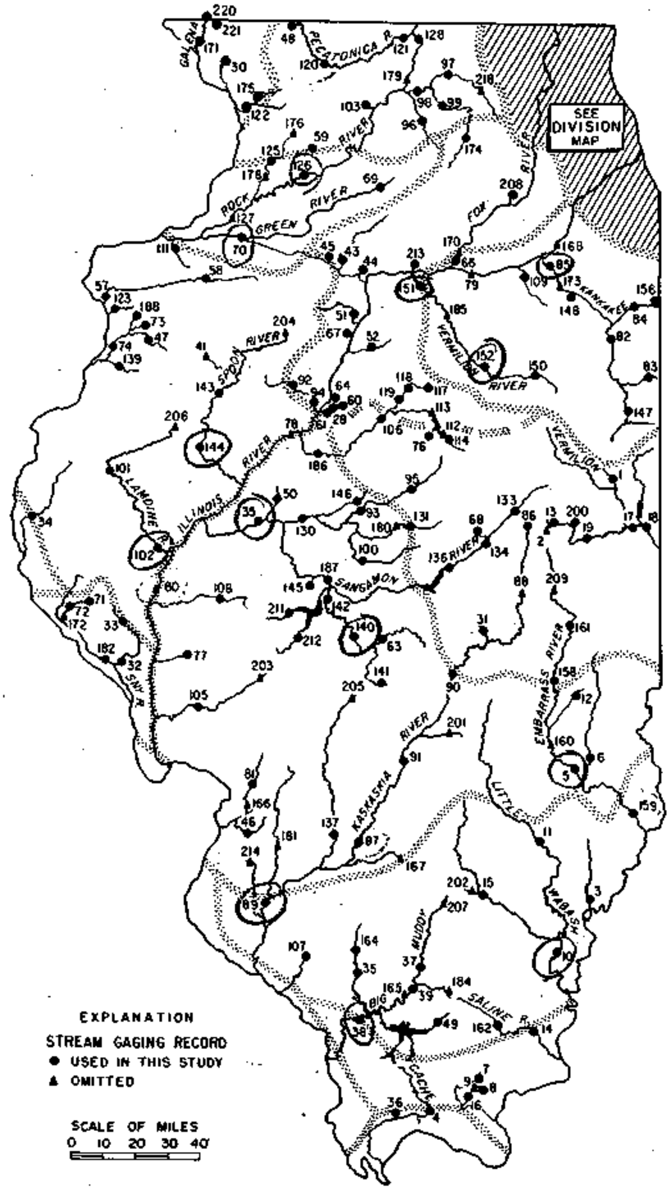


Figure 27. Stream gage locations and principal streams in Illinois

The choice as to the most representative gaging station record for use with a particular problem reservoir may not always be so clear-cut as in this example. Although the 164 processed records published here are believed to furnish {satisfactory areal coverage of the state, a particular site might happen to be almost midway between two or more of these stations. In such instances, it is suggested that yield analyses for the site based on more than one station record might provide a meaningful evaluation.

It is believed that the relatively high degree of processing of these data, and the relative brevity of the net yield computation, will allow the user to carry out in a reasonable length of time the net yield computation for a variety of conditions pertinent to a problem reservoir, and that these computations should furnish excellent support for the user's judgment concerning the net yield of the project.

Table 17. Yield Analysis Computations for a Potential Impounding Reservoir, for a 25-Year Recurrence Drouth

Maple Creek Reservoir, Embarrass River Basin, Crawford County,
Sec 21, T8N, R13W, or about 8 miles north of Oblong. Drainage area = 14.9 square miles
Reservoir capacity = 2970 acre-feet Reservoir surface area = 330 acres

1. PHYSIOGRAPHIC DIVISION: SPRINGFIELD PLAIN

2. GAGING STATION DATA USED: STATION 6, NORTH FORK, EMBARRASS RIVER

3. RESERVOIR CAPACITY CONVERTED TO INCHES: $\frac{2970 \text{ acre-feet}}{14.9 \text{ sq mi}}$ = 199 acre-feet/sq mi

4. 199 x .01875 = 3.73 inches on drainage area

5. SEDIMENTATION RATE, *from figure 21:* .21 *percent per year*

6. SEDIMENTATION LOSS, in 25 years: .21 *percent* x 25 *years* = 5.3 *percent*

7. REDUCED RESERVOIR CAPACITY, after 25 years: 100 *percent* − 5.3 = 94.7 *percent*

8. 3.73 *inches* x .947 = 3.53 *inches* 4

9. MEAN FLOW, *from Station 6 data:* .93 *inches per month*

10. .93 x .8845 = .82 *cfs/sq mi*

11. .82 x 14.9 *sq mi* = 12.2 *cfs*

12. 12.2 x .646 = 7.88 *mgd*

13. GROSS YIELD, *from Station 6 graph,* for 25 -year recurrence drouth: 29 *percent of mean flow*

14. DURATION OF CRITICAL DRAWDOWN, *from Station 6 table:* 16 *months*

15. EVAPORATION DATA USED: SPRINGFIELD

16. NET EVAPORATION LOSS, *from table 11:* 38 *inches*

17. EVAPORATIVE LOSS: $\frac{38}{12}$ *inches* = 3.17 *feet*

18. EVAPORATIVE SURFACE AREA: 330 *acres* x .65 = 215 *acres*

19. 3.17 *feet* x 215 *acres* = 682 *acre-feet*

20. GROSS DRAFT RATE: .29 x 7.88 *mgd* = 2.29 *mgd*

21. 2.29 x 92.3 = 211 *acre-feet per month*

22. GROSS CRITICAL PERIOD DRAFT: 211 x 16 *months* = 3376 *acre-feet*

23. Minus evaporative loss = 682 *acre-feet*

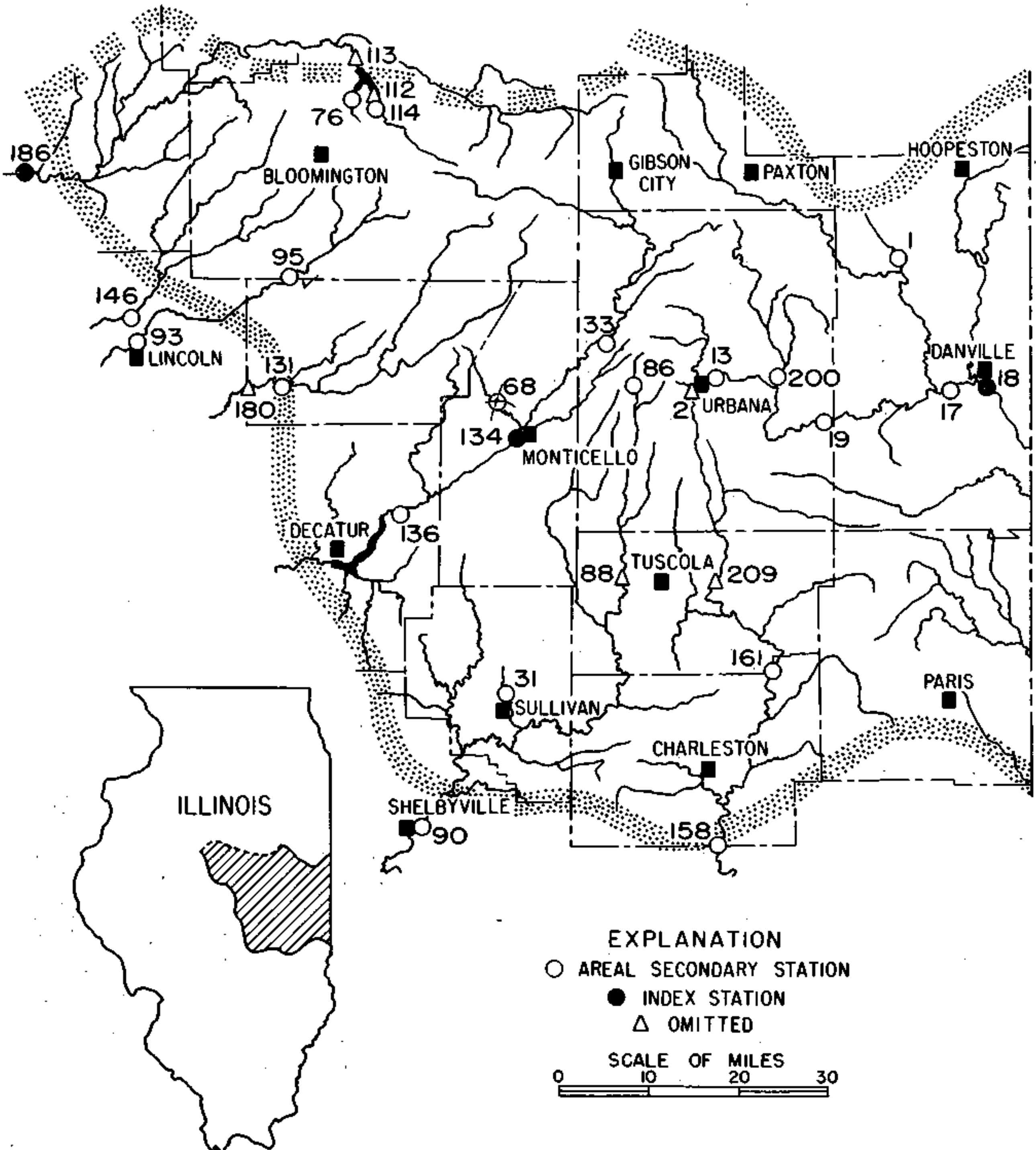
24. (Minus seepage loss = — *acre-feet)*

25. Net critical period draft = 2694 *acre-feet*

26. NET YIELD OF RESERVOIR: $\frac{2694 \text{ acre-feet}}{16 \text{ months}}$ = 168 *acre-feet per month*

27. 168 x .011 = 1.85 *mgd* = 1.9 *mgd*

72,340 AF
3093 A
906 mi

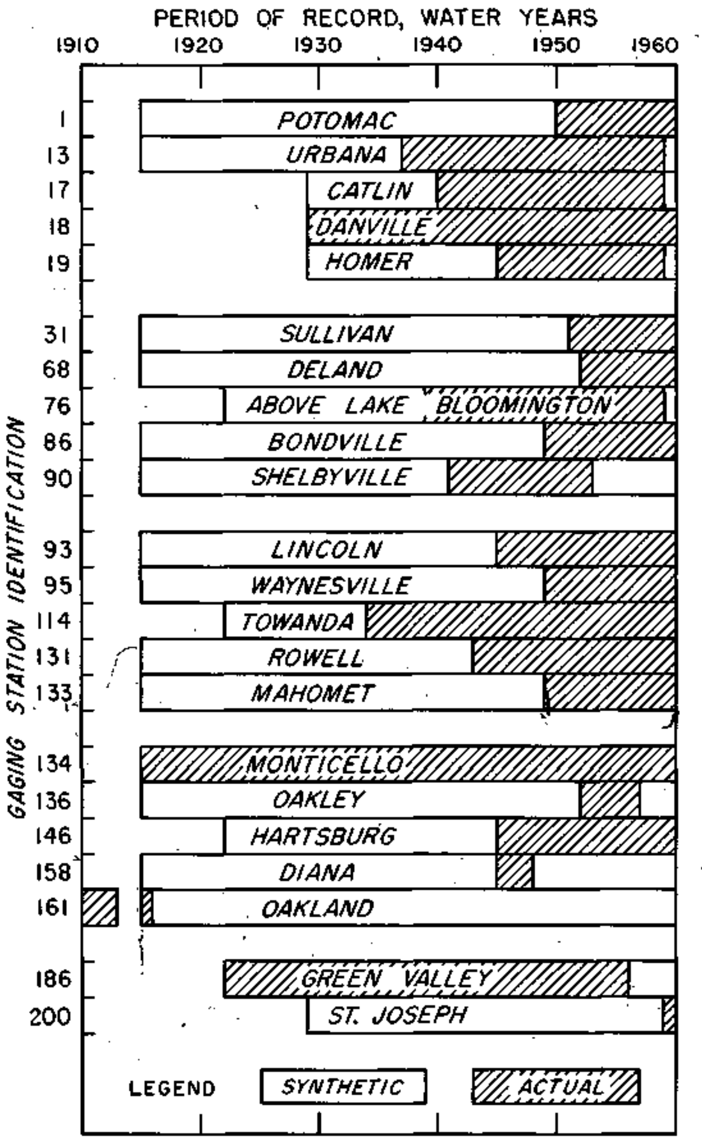


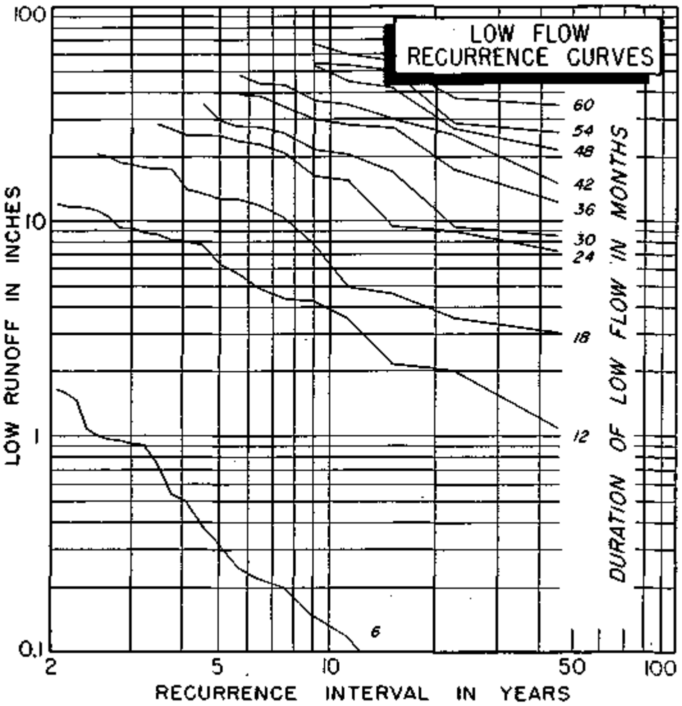
Bloomington Ridged Plain — South

Gaging Stations in Bloomington Ridged Plain — South

STATIONS OMITTED

		REASON
2	Boneyard Creek at Urbana	*Urban; regulation; unaccounted for ground-water contribution*
88	Kaskaskia River at Ficklin	*Regulation; diversion; unaccounted for ground-water contribution*
112	Money Creek above Lake Bloomington	*Combined with record for Station 114*
113	Money Creek at Lake Bloomington	*Regulation*
180	Salt Creek near Kenney	*Used Station 131 instead*
209	Embarrass River near Camargo	*Record too short*





STATION 1

LOCATION
In SE ¼ NE ¼ sec 34, T22N, R13W, Vermilion County, at highway bridge 1.0 mile north of Potomac

DRAINAGE AREA
34.5 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1949 thru Sept 1959
CONTINUOUS RECORD : 10 years; water years 1950-59

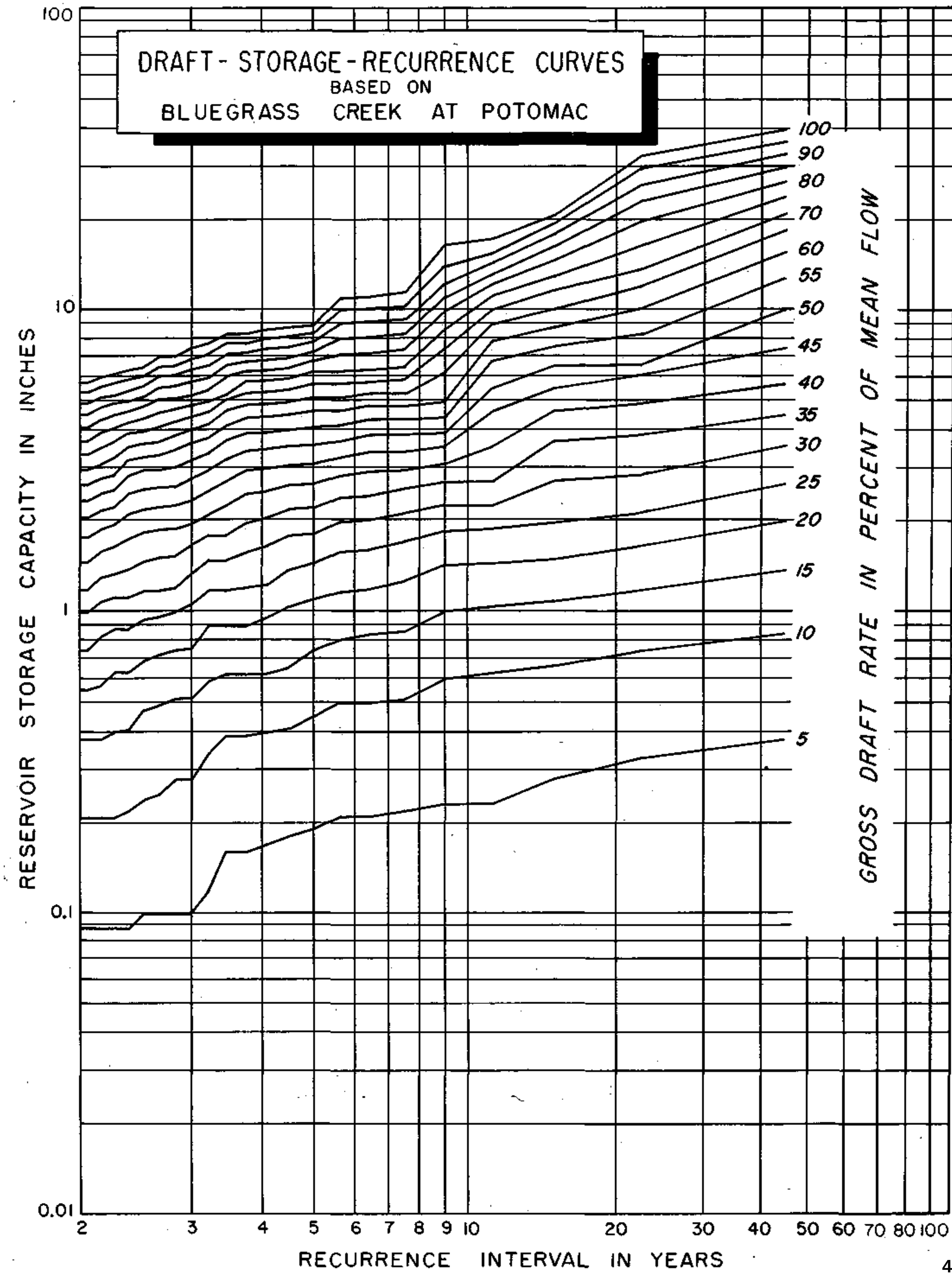
SYNTHETIC FLOW DATA
PERIOD: 35 years; water years 1915-49
INDEX STATION : Sangamon River at Monticello
COINCIDENT RECORD: 10 years; water years 1950-59

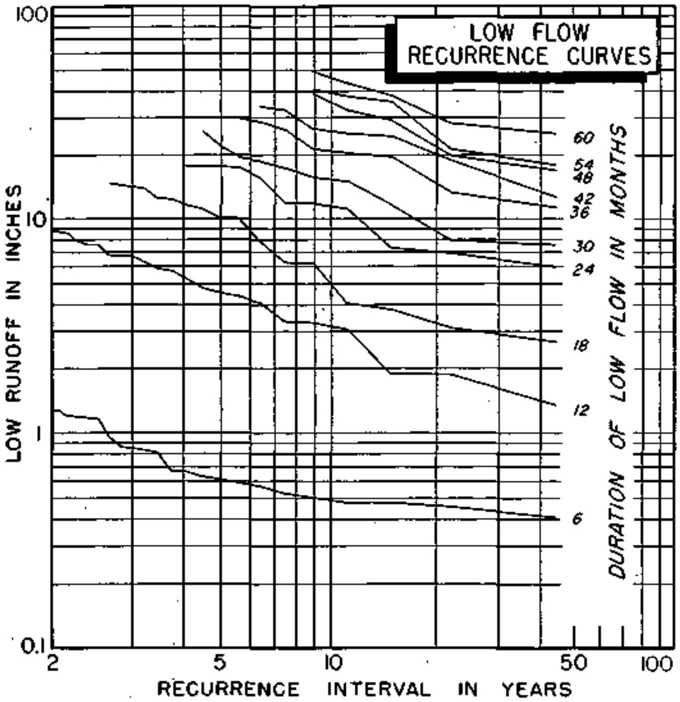
TOTAL DATA ANALYZED
PERIOD : 45 years; water years 1915-59
MEAN DISCHARGE : 1.18 inches per month

Draft-Storage-Recurrence Data for Bluegrass Creek at Potomac

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.38	.85	1.36	1.99	2.64	3.50	4.45	5.62	7.39	9.91	12.62	15.34	18.05	20.77	23.48	26.19	29.16	32.46	35.77	39.07
	8	8	10	11	11	16	16	30	30	46	46	46	46	46	46	46	56	56	56	56
22.5	.33	.75	1.18	1.65	2.12	2.63	3.85	4.92	6.49	8.26	10.03	11.80	13.58	16.16	19.35	22.54	25.72	28.91	32.09	35.34
	7	7	8	8	8	16	18	18	30	30	30	30	32	54	54	54	54	54	54	56
15.0	.28	.67	1.08	1.49	1.96	2.71	3.66	4.60	5.55	6.49	7.45	8.63	9.87	11.41	12.94	14.47	16.01	17.54	19.08	20.61
	6	7	7	8	8	16	16	16	16	16	20	20	26	26	26	26	26	26	26	26
11.3	.23	.63	1.04	1.45	1.87	2.28	2.69	3.51	4.57	5.63	6.69	7.75	8.82	9.88	10.94	12.00	13.06	14.13	15.19	16.93
	6	7	7	7	7	7	7	18	18	18	18	18	18	18	18	18	18	18	18	38
9.0	.23	.60	1.01	1.42	1.84	2.25	2.66	3.07	3.49	3.90	4.36	4.94	6.12	7.30	8.48	9.66	10.84	12.13	13.79	16.15
	5	7	7	7	7	7	7	7	7	7	8	20	20	20	20	20	22	22	40	40
7.5	.22	.51	.86	1.27	1.69	2.10	2.51	2.92	3.36	3.83	4.30	4.77	5.25	5.83	6.42	7.33	8.28	9.22	10.17	11.36
	5	6	7	7	7	7	7	7	8	6	8	8	8	10	10	16	16	16	16	22
6.4	.21	.50	.84	1.20	1.59	2.00	2.41	2.89	3.36	3.83	4.30	4.77	5.25	5.73	6.30	7.09	8.04	8.98	9.93	10.87
	5	5	6	6	7	7	8	8	8	8	8	8	8	9	10	16	16	16	16	16
5.6	.21	.50	.81	1.17	1.57	1.98	2.39	2.80	3.22	3.65	4.12	4.59	5.12	5.65	6.19	7.03	7.98	8.92	9.87	10.81
	5	5	6	6	7	7	7	7	7	8	8	9	9	9	9	16	16	16	16	16
5.0	.19	.45	.75	1.10	1.45	1.81	2.22	2.63	3.06	3.53	4.05	4.58	5.11	5.64	6.18	6.71	7.24	7.77	8.30	8.83
	4	5	5	6	6	7	7	7	8	8	9	9	9	9	9	9	9	9	9	9
4.5	.18	.41	.69	1.03	1.38	1.78	2.19	2.60	3.05	3.52	3.99	4.46	4.94	5.41	5.88	6.35	6.85	7.44	8.03	8.62
	4	4	5	6	6	7	7	7	8	8	8	8	8	8	8	8	10	10	10	10
4.1	.17	.40	.66	.95	1.25	1.64	2.05	2.50	2.97	3.44	3.91	4.38	4.86	5.33	5.80	6.27	6.77	7.36	7.95	8.54
	4	4	5	5	6	7	7	8	8	8	8	8	8	8	8	8	10	10	10	10
3.8	.16	.39	.63	.89	1.22	1.57	1.97	2.45	2.92	3.39	3.86	4.33	4.81	5.28	5.75	6.22	6.69	7.17	7.66	8.25
	4	4	4	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8	10	10
3.5	.16	.39	.63	.89	1.19	1.48	1.78	2.23	2.70	3.17	3.64	4.11	4.59	5.06	5.53	6.00	6.48	7.07	7.66	8.25
	4	4	4	5	5	5	5	8	8	8	8	8	8	8	8	8	10	10	10	10
3.2	.12	.34	.60	.89	1.19	1.48	1.78	2.09	2.51	2.92	3.33	3.75	4.16	4.57	4.99	5.43	5.90	6.48	7.07	7.66
	3	4	5	5	5	5	5	7	7	7	7	7	7	7	7	8	8	10	10	10
3.0	.10	.28	.52	.76	1.06	1.35	1.65	1.94	2.34	2.75	3.16	3.58	3.99	4.40	4.82	5.23	5.74	6.27	6.80	7.33
	3	4	4	5	5	5	5	5	7	7	7	7	7	7	7	7	9	9	9	9
2.8	.10	.28	.52	.75	.99	1.23	1.52	1.87	2.23	2.58	2.99	3.41	3.82	4.23	4.65	5.07	5.54	6.02	6.49	6.96
	2	4	4	4	4	4	6	6	6	7	7	7	7	7	7	8	8	8	8	8
2.6	.10	.25	.49	.72	.96	1.20	1.51	1.86	2.22	2.57	2.92	3.28	3.63	4.07	4.54	5.01	5.48	5.96	6.43	6.90
	2	4	4	4	4	5	6	6	6	6	6	6	6	8	8	8	8	8	8	8
2.5	.10	.24	.47	.70	.94	1.18	1.47	1.82	2.18	2.53	2.88	3.24	3.59	3.95	4.34	4.75	5.16	5.57	5.99	6.42
	2	3	4	4	4	4	6	6	6	6	6	6	6	6	7	7	7	7	7	8
2.4	.09	.22	.41	.64	.88	1.12	1.39	1.74	2.10	2.45	2.80	3.16	3.51	3.87	4.22	4.57	4.95	5.36	5.83	6.30
	2	3	4	4	4	4	6	6	6	6	6	6	6	6	6	6	7	8	8	8
2.3	.09	.21	.40	.63	.87	1.11	1.34	1.63	1.93	2.22	2.52	2.81	3.22	3.63	4.05	4.46	4.87	5.28	5.70	6.11
	2	3	4	4	4	4	5	5	5	5	5	7	7	7	7	7	7	7	7	7
2.1	.09	.21	.38	.59	.83	1.07	1.30	1.57	1.87	2.16	2.46	2.75	3.06	3.47	3.89	4.30	4.71	5.12	5.54	5.95
	2	2	3	4	4	4	4	5	5	5	5	5	7	7	7	7	7	7	7	7
2.0	.09	.21	.38	.56	.75	.99	1.22	1.46	1.75	2.04	2.34	2.63	2.94	3.30	3.65	4.06	4.47	4.88	5.30	5.71
	2	2	3	3	4	4	4	4	5	5	5	5	6	6	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BLUEGRASS CREEK AT POTOMAC
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 13

LOCATION
In NE ¼ SW ¼ sec 9, T19N, R9E, Champaign County, at Champaign-Urbana sewage plant 1.0 mile east of Urbana

DRAINAGE AREA
71.4 square miles

ACTUAL FLOW DATA
PERIOD: July 1936 thru Sept 1958; gaging discontinued Oct 1,1958
CONTINUOUS RECORD: 22 years; water years 1937-58

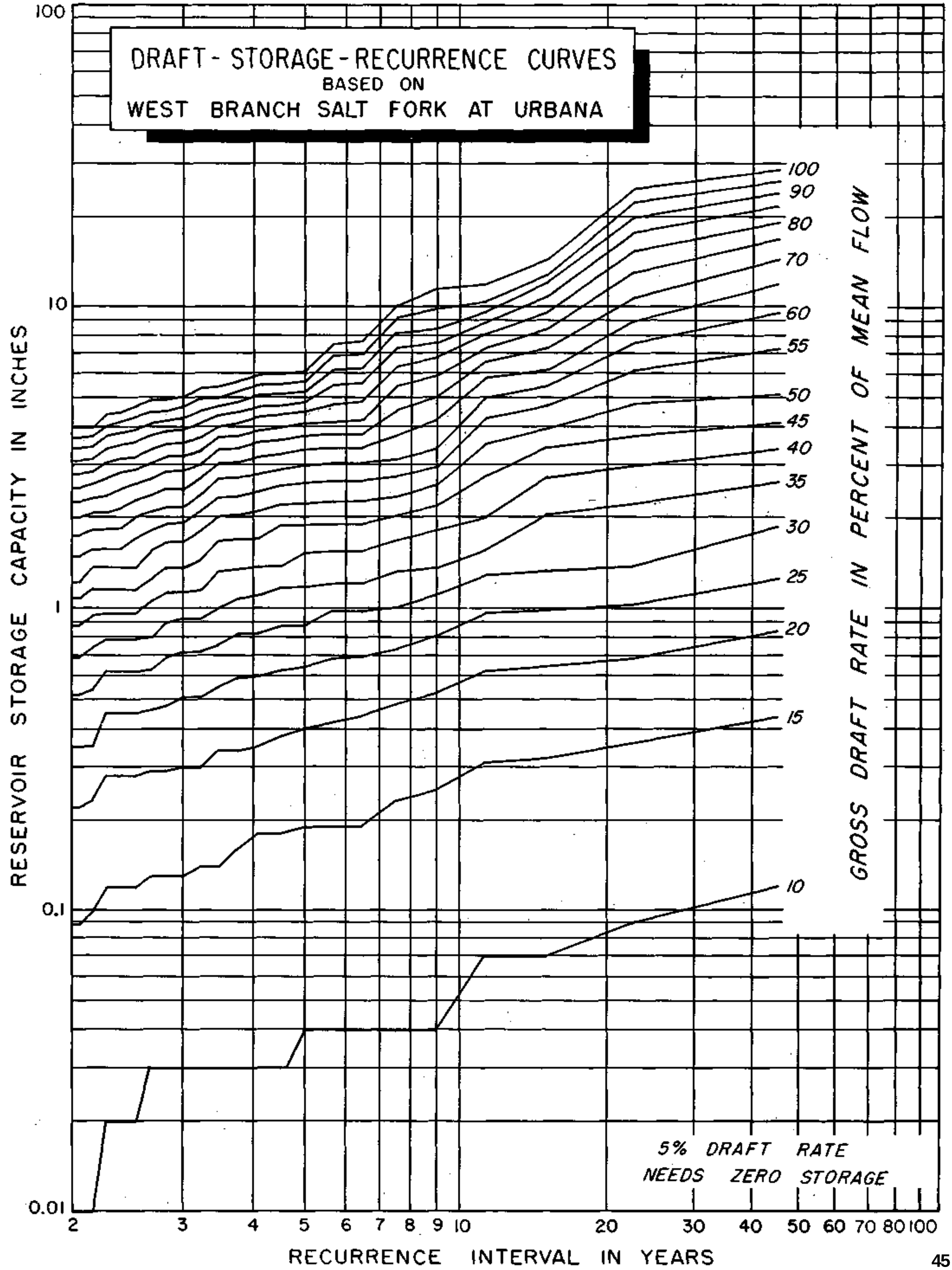
SYNTHETIC FLOW DATA
PERIOD: 23 years; water years 1915-36, 1959
INDEX STATION : Sangamon River at Monticello
COINCIDENT RECORD: 22 years; water years 1937-58

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 0.83 inch per month

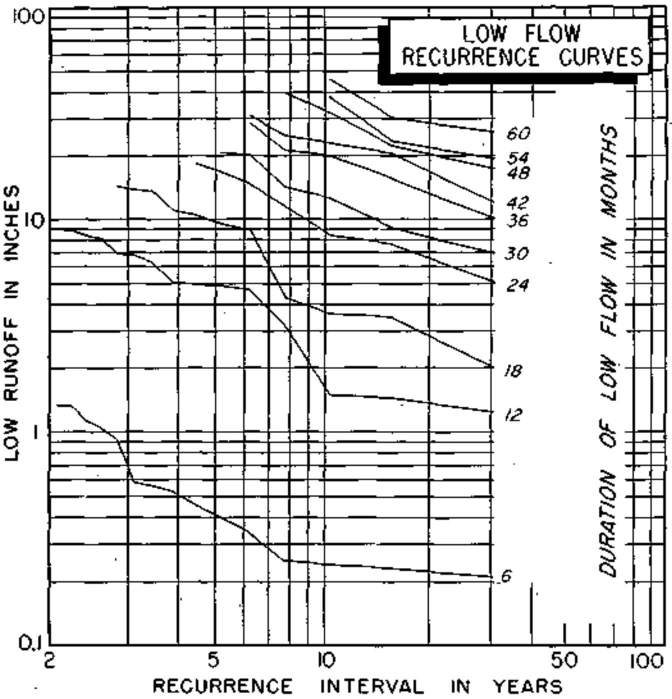
Draft-Storage-Recurrence Data for West Branch, Salt Fork at Urbana

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.12	.44	.84	1.29	1.86	2.61	3.36	4.10	5.10	7.20	9.46	11.78	14.11	16.43	18.75	21.08	23.40	25.73	28.05
	1	5	8	11	11	18	18	18	18	42	54	56	56	56	56	56	56	56	56	56
22.5	.00	.09	.36	.69	1.02	1.54	2.21	2.94	3.68	4.78	6.11	7.44	8.76	10.56	12.81	15.05	17.29	19.53	21.77	24.06
	0	5	8	8	9	16	16	18	18	32	32	32	32	54	54	54	54	54	54	56
15.0	.00	.07	.32	.65	.98	1.38	2.05	2.71	3.38	4.04	4.70	5.37	6.12	7.20	8.29	9.45	10.61	11.78	12.94	14.10
	0	4	8	8	8	16	16	16	16	16	16	16	26	26	28	28	28	28	28	28
11.3	.00	.07	.31	.63	.96	1.29	1.62	1.98	2.72	3.47	4.22	4.96	5.71	6.46	7.21	7.95	8.70	9.45	10.19	11.68
	0	4	7	8	8	8	8	18	18	18	18	18	18	18	18	18	18	18	18	38
9.0	.00	.04	.25	.52	.81	1.11	1.44	1.80	2.17	2.55	2.92	3.33	4.16	4.99	5.82	6.65	7.48	8.31	9.65	11.31
	0	5	6	7	7	8	8	9	9	9	9	20	20	20	20	20	20	20	40	40
7.5	.00	.04	.23	.48	.73	1.00	1.33	1.67	2.00	2.34	2.71	3.08	3.69	4.52	5.35	6.24	7.15	8.06	8.98	9.89
	0	3	6	6	6	8	8	8	8	9	9	9	20	20	20	22	22	22	22	22
6.4	.00	.04	.19	.44	.69	.97	1.26	1.55	1.88	2.24	2.61	2.98	3.36	3.73	4.17	4.83	5.50	6.16	6.83	7.55
	0	2	6	6	6	7	7	8	8	9	9	9	9	10	16	16	16	16	16	20
5.6	.00	.04	.19	.42	.68	.97	1.26	1.55	1.88	2.24	2.61	2.98	3.36	3.73	4.10	4.73	5.40	6.06	6.73	7.39
	0	2	4	6	7	7	7	8	8	9	9	9	9	9	9	16	16	16	16	16
5.0	.00	.03	.19	.40	.65	.89	1.20	1.54	1.87	2.21	2.58	2.95	3.33	3.70	4.07	4.45	4.82	5.19	5.57	6.06
	0	3	4	6	6	6	8	8	8	9	9	9	9	9	9	9	9	9	9	14
4.5	.00	.03	.18	.38	.63	.87	1.20	1.54	1.87	2.20	2.53	2.86	3.21	3.58	3.95	4.33	4.70	5.07	5.45	5.86
	0	3	4	6	6	8	8	8	8	8	8	8	9	9	9	9	9	9	10	10
4.1	.00	.03	.18	.35	.60	.84	1.10	1.44	1.77	2.10	2.43	2.77	3.15	3.52	3.89	4.27	4.64	5.02	5.44	5.85
	0	2	4	6	6	6	8	8	8	8	8	9	9	9	9	9	9	10	10	10
3.8	.00	.03	.16	.34	.59	.83	1.08	1.36	1.69	2.02	2.35	2.68	3.02	3.35	3.68	4.06	4.43	4.80	5.18	5.57
	0	2	4	6	6	6	6	8	8	8	8	8	8	8	9	9	9	9	9	10
3.5	.00	.03	.14	.34	.55	.76	.99	1.33	1.66	1.99	2.32	2.65	2.99	3.32	3.65	3.98	4.31	4.65	4.98	5.38
	0	2	4	5	5	5	8	8	8	8	8	8	8	8	8	8	8	8	8	10
3.2	.00	.03	.14	.30	.51	.72	.92	1.21	1.50	1.80	2.09	2.38	2.67	2.96	3.29	3.64	4.06	4.47	4.89	5.30
	0	2	4	5	5	5	7	7	7	7	7	7	7	8	8	10	10	10	10	10
3.0	.00	.03	.13	.30	.51	.72	.92	1.15	1.40	1.65	1.90	2.15	2.48	2.81	3.14	3.49	3.86	4.23	4.61	4.98
	0	2	4	5	5	5	5	6	6	6	6	6	8	8	8	9	9	9	9	9
2.8	.00	.03	.13	.29	.48	.69	.89	1.14	1.39	1.64	1.89	2.14	2.48	2.81	3.14	3.47	3.80	4.14	4.47	4.84
	−1	2	4	4	5	5	6	6	6	6	6	8	8	8	8	8	8	8	9	9
2.6	.00	.03	.13	.29	.46	.63	.80	1.05	1.30	1.55	1.80	2.07	2.36	2.65	2.97	3.33	3.70	4.07	4.45	4.82
	−1	2	4	4	4	4	6	6	6	6	6	7	7	7	8	9	9	9	9	9
2.5	.00	.02	.12	.28	.45	.62	.78	.96	1.17	1.40	1.69	1.98	2.27	2.56	2.85	3.14	3.51	3.88	4.26	4.63
	−1	2	4	4	4	4	4	5	5	7	7	7	7	7	7	9	9	9	9	9
2.4	.00	.02	.12	.28	.45	.62	.78	.96	1.17	1.38	1.58	1.83	2.13	2.46	2.79	3.12	3.45	3.79	4.12	4.45
	−1	2	4	4	4	4	4	5	5	5	6	6	8	8	8	8	8	8	8	8
2.3	.00	.02	.12	.28	.45	.62	.78	.96	1.17	1.38	1.58	1.81	2.06	2.34	2.67	3.00	3.33	3.67	4.00	4.33
	−1	2	4	4	4	4	4	5	5	5	5	6	6	8	8	8	8	8	8	8
2.1	.00	.01	.10	.23	.35	.54	.74	.95	1.16	1.37	1.57	1.80	2.05	2.30	2.55	2.81	3.10	3.39	3.68	3.97
	−1	2	3	3	4	5	5	5	5	5	5	6	6	6	6	7	7	7	7	7
2.0	.00	.01	.09	.22	.35	.52	.68	.87	1.08	1.29	1.49	1.73	1.98	2.23	2.48	2.76	3.05	3.34	3.63	3.92
	−1	2	3	3	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	7



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
WEST BRANCH SALT FORK AT URBANA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5% DRAFT RATE
NEEDS ZERO STORAGE
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS



STATION 17

LOCATION
In SE ¼ SE ¼ sec 16, T19N, R12W, Vermilion County, 12.5 miles northwest of Catlin and 14.5 miles southwest of Danville

DRAINAGE AREA
959 square miles

ACTUAL FLOW DATA
PERIOD: May 1940 thru Sept 1958; gaging discontinued Oct. 1, 1958
CONTINUOUS RECORD : 19 years; water years 1940-58

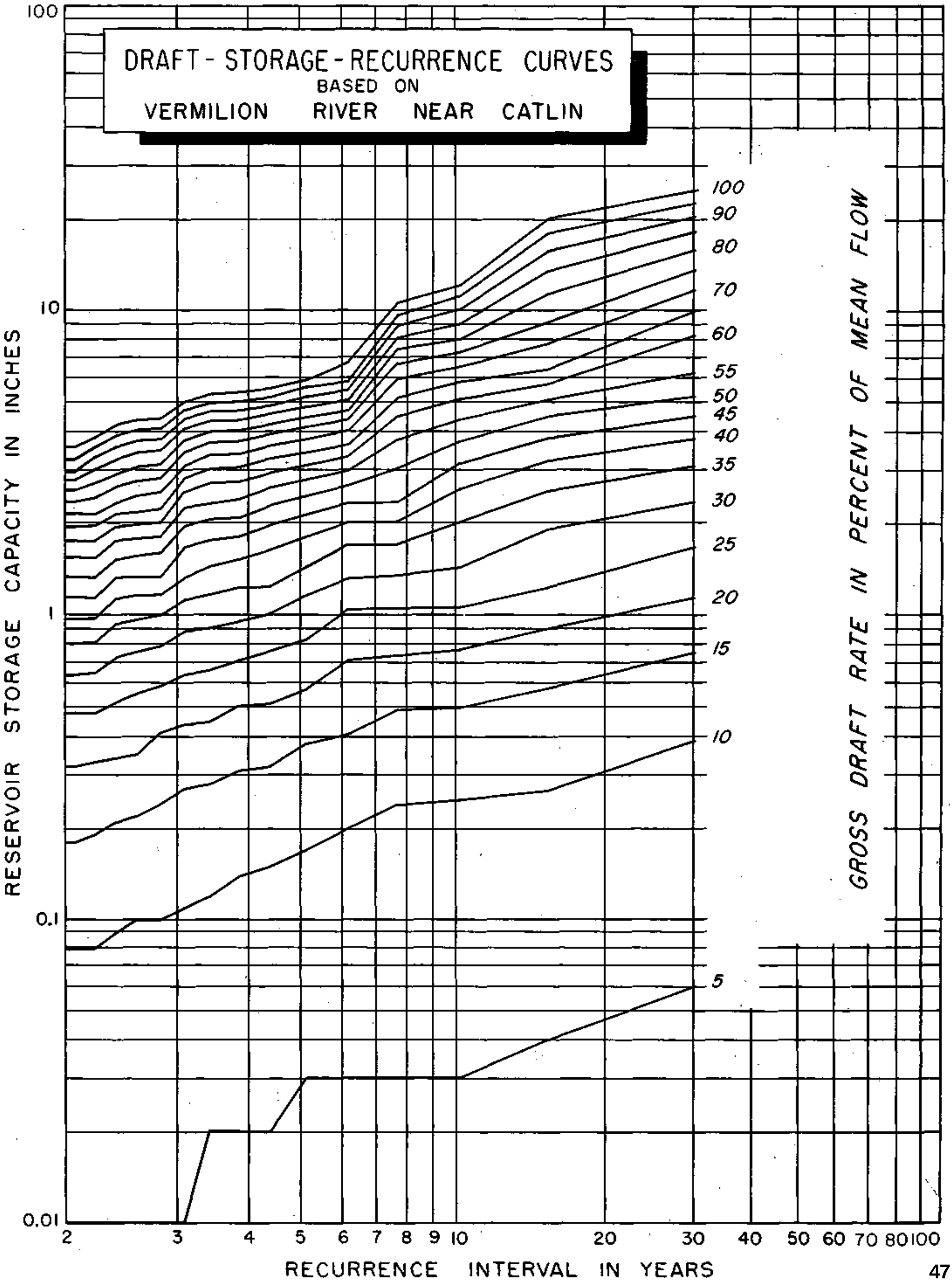
SYNTHETIC FLOW DATA
PERIOD: 12 years; water years 1929-39, 1959
INDEX STATION : Vermilion River near Danville
COINCIDENT RECORD: 19 years; water years 1940-58

TOTAL DATA ANALYZED
PERIOD: 31 years; water years 1929-59
MEAN DISCHARGE : 0.82 inch per month

Draft-Storage-Recurrence Data for Vermilion River near Catlin

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
31.0	.06 4	.39 9	.76 9	1.15 10	1.69 16	2.39 18	3.13 18	3.66 18	4.60 18	5.34 18	6.67 42	8.39 42	10.12 42	11.89 46	13.81 56	16.11 56	18.40 56	20.70 56	22.99 56	25.29 56
15.5	.04 4	.27 7	.58 8	.91 8	1.27 16	1.93 16	2.58 16	3.24 16	3.89 16	4.55 16	5.21 16	5.86 16	6.69 30	7.92 30	9.28 54	11.49 54	13.71 54	15.92 54	18.14 54	20.35 54
10.3	.03 4	.25 6	.50 6	.78 7	1.07 7	1.46 14	2.04 14	2.61 14	3.19 14	3.76 14	4.46 18	5.20 18	5.93 18	6.67 18	7.41 18	8.16 20	9.16 26	10.23 26	11.29 26	12.36 26
7.8	.03 3	.24 6	.49 6	.74 7	1.06 8	1.39 8	1.72 8	2.04 8	2.37 8	3.05 18	3.79 18	4.53 18	5.26 18	6.00 18	6.74 18	7.48 18	8.22 18	8.95 18	9.69 18	10.68 32
6.2	.03 2	.20 5	.41 7	.72 8	1.05 8	1.38 8	1.71 8	2.03 8	2.36 8	2.69 8	3.02 8	3.35 8	3.69 9	4.06 9	4.43 9	4.79 9	5.16 9	5.53 9	5.94 22	6.84 22
5.2	.03 2	.17 5	.38 5	.58 6	.84 8	1.17 8	1.50 8	1.82 8	2.15 8	2.48 8	2.81 8	3.14 8	3.46 8	3.81 9	4.18 9	4.54 9	4.91 9	5.28 9	5.65 9	6.02 9
4.4	.02 2	.15 4	.32 5	.52 6	.77 6	1.02 6	1.33 8	1.65 8	1.98 8	2.31 8	2.64 8	2.97 8	3.29 8	3.62 8	3.95 8	4.28 8	4.61 8	4.93 8	5.26 8	5.59 8
3.9	.02 2	.14 4	.31 5	.51 5	.72 5	.96 7	1.25 7	1.54 7	1.82 7	2.11 7	2.43 8	2.76 8	3.08 8	3.41 8	3.74 8	4.07 8	4.40 8	4.72 8	5.06 9	5.43 9
3.4	.02 2	.12 4	.28 4	.45 4	.66 6	.91 7	1.20 7	1.49 7	1.77 7	2.07 8	2.40 8	2.73 8	3.05 8	3.38 8	3.71 8	4.04 8	4.37 8	4.69 8	5.02 8	5.35 8
3.1	.01 2	.11 4	.27 4	.44 4	.64 6	.89 6	1.13 6	1.40 7	1.68 7	1.97 7	2.26 7	2.54 7	2.83 7	3.12 8	3.45 8	3.78 8	4.11 8	4.43 8	4.76 8	5.09 8
2.8	.01 2	.10 3	.24 4	.41 4	.59 5	.79 5	1.00 5	1.20 5	1.41 5	1.61 5	1.82 5	2.02 6	2.27 6	2.54 7	2.83 7	3.15 8	3.48 8	3.80 8	4.13 8	4.46 8
2.6	.01 1	.10 3	.22 3	.35 5	.56 5	.76 5	.97 5	1.17 5	1.38 5	1.58 5	1.79 5	1.99 5	2.20 7	2.49 7	2.78 7	3.10 8	3.43 8	3.75 8	4.08 8	4.41 8
2.4	.01 1	.09 3	.21 3	.34 4	.53 5	.73 5	.94 5	1.14 5	1.35 5	1.55 5	1.76 5	1.96 5	2.17 5	2.37 5	2.65 7	2.93 7	3.25 8	3.57 8	3.90 8	4.23 8
2.2	.01 1	.08 2	.19 3	.33 4	.49 4	.65 4	.82 4	.98 4	1.15 5	1.35 5	1.56 5	1.76 5	1.97 5	2.17 5	2.45 7	2.73 7	3.02 7	3.31 7	3.59 7	3.88 7
2.1	.01 1	.08 2	.18 3	.32 4	.48 4	.64 4	.81 4	.97 4	1.15 5	1.35 5	1.56 5	1.76 5	1.97 5	2.17 5	2.38 5	2.58 5	2.79 5	2.99 5	3.26 8	3.59 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
VERMILION RIVER NEAR CATLIN
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
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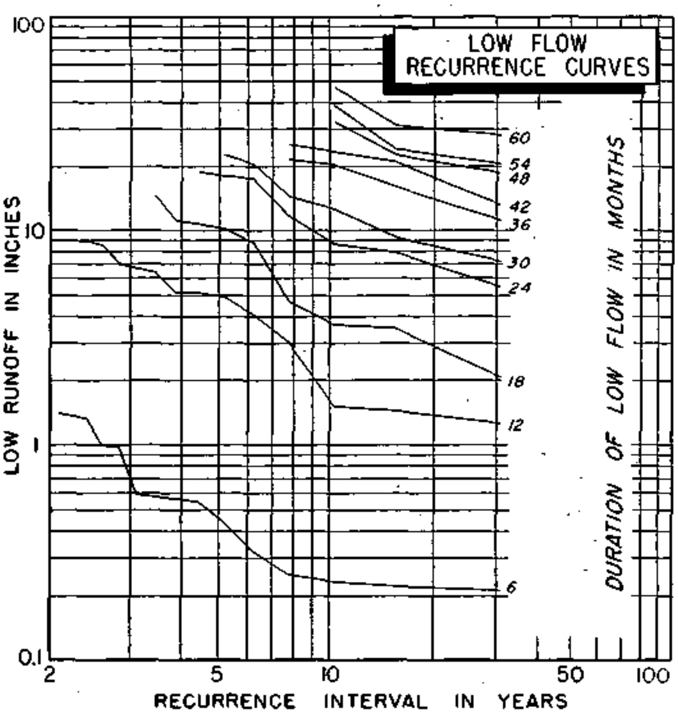
5



STATION 18

LOCATION
In SE ¼ NW ¼ sec 22, T19N, R11W, Vermilion County, 0.25 mile downstream from sewage treatment plant, 2.5 miles southeast of Danville

DRAINAGE AREA
1280 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Oct 1914 thru Sept 1921, June 1928 thru Sept 1959
CONTINUOUS RECORD: 31 years; water years 1929-59

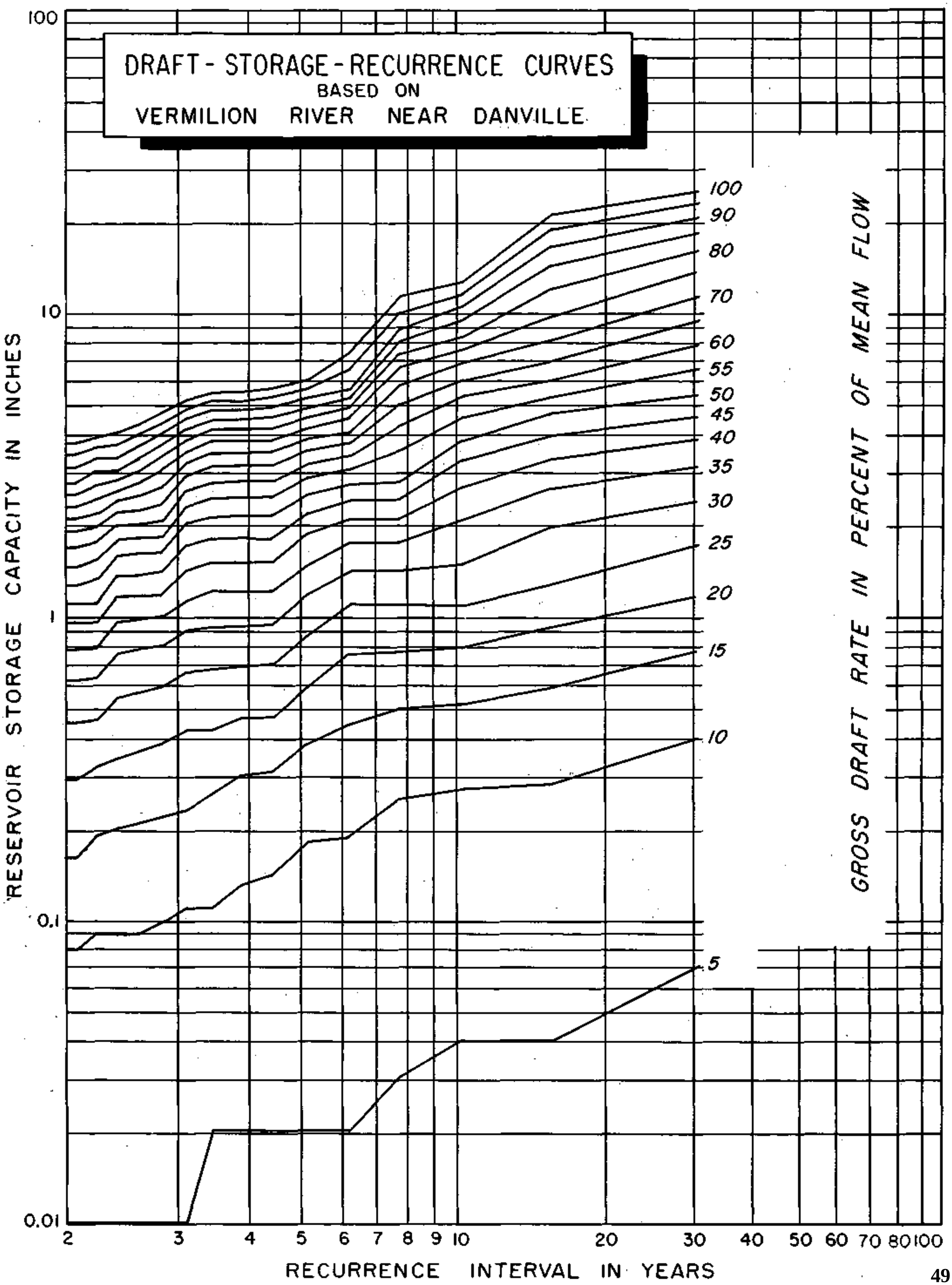
SYNTHETIC FLOW DATA
None; this station utilized as an index station

TOTAL DATA ANALYZED
PERIOD: 31 years; water years 1929-59
MEAN DISCHARGE : 0.83 inch per month

Draft-Storage-Recurrence Data for Vermilion River near Danville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
31.0	.07	.40	.77	1.17	1.73	2.40	3.15	3.90	4.64	5.39	6.53	7.77	9.47	11.32	13.64	15.96	18.29	20.61	22.94	25.26
	4	9	9	10	16	18	18	18	18	18	30	30	42	56	56	56	56	56	56	56
15.5	.04	.28	.59	.92	1.31	1.97	2.64	3.30	3.97	4.63	5.29	5.96	6.89	8.13	9.69	11.93	14.17	16.41	18.65	20.89
	4	7	8	8	16	16	16	16	16	16	16	16	30	30	54	54	54	54	54	54
10.3	.04	.27	.52	.79	1.09	1.51	2.09	2.67	3.25	3.83	4.56	5.30	6.05	6.80	7.55	8.30	9.38	10.46	11.54	12.63
	4	6	6	7	8	14	14	14	14	14	18	18	18	18	18	26	26	26	26	28
7.8	.03	.25	.50	.76	1.09	1.42	1.75	2.09	2.42	2.78	3.53	4.27	5.02	5.77	6.52	7.26	8.01	8.76	9.92	11.25
	4	6	6	8	8	8	8	8	8	18	18	18	18	18	18	18	18	18	32	32
6.2	.02	.19	.44	.75	1.08	1.41	1.74	2.08	2.41	2.74	3.07	3.40	3.75	4.12	4.49	4.87	5.24	5.61	6.49	7.40
	3	5	7	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9	22	22
5.2	.02	.18	.38	.59	.86	1.19	1.52	1.86	2.19	2.52	2.85	3.18	3.52	3.85	4.18	4.53	4.90	5.27	5.65	6.02
	2	5	5	5	8	8	8	8	8	8	8	8	8	8	8	9	9	9	9	9
4.4	.02	.14	.31	.47	.70	.94	1.23	1.52	1.82	2.15	2.48	2.81	3.15	3.48	3.81	4.16	4.53	4.90	5.28	5.65
	2	4	4	4	6	7	7	7	8	8	8	8	8	8	8	9	9	9	9	9
3.9	.02	.13	.30	.46	.68	.93	1.22	1.51	1.81	2.14	2.47	2.80	3.14	3.47	3.80	4.13	4.46	4.80	5.13	5.48
	2	4	4	4	6	7	7	7	8	8	8	8	8	8	8	8	8	8	8	9
3.4	.02	.11	.26	.42	.67	.92	1.21	1.50	1.79	2.11	2.44	2.77	3.11	3.44	3.77	4.10	4.43	4.77	5.10	5.43
	2	3	4	6	6	7	7	7	7	8	8	8	8	8	8	8	8	8	8	8
3.1	.01	.11	.23	.42	.66	.90	1.15	1.42	1.71	2.01	2.30	2.59	2.88	3.17	3.47	3.80	4.13	4.47	4.80	5.13
	2	3	4	5	6	6	6	7	7	7	7	7	7	7	8	8	8	8	8	8
2.8	.01	.10	.22	.38	.59	.80	1.00	1.21	1.42	1.63	1.83	2.07	2.36	2.69	3.02	3.35	3.68	4.02	4.35	4.68
	2	3	3	5	5	5	5	5	5	5	5	7	8	8	8	8	8	8	8	8
2.6	.01	.09	.21	.36	.57	.78	.98	1.19	1.40	1.61	1.81	2.02	2.25	2.50	2.75	2.99	3.30	3.64	3.97	4.30
	1	3	3	5	5	5	5	5	5	5	5	5	6	6	6	6	8	8	8	8
2.4	.01	.09	.20	.34	.54	.75	.95	1.16	1.37	1.58	1.78	1.99	2.20	2.41	2.61	2.82	3.03	3.30	3.68	4.05
	1	2	3	4	5	5	5	5	5	5	5	5	5	5	5	5	5	9	9	9
2.2	.01	.09	.19	.32	.46	.63	.79	.96	1.14	1.35	1.55	1.76	1.97	2.18	2.43	2.72	3.01	3.30	3.59	3.88
	1	2	3	3	4	4	4	4	5	5	5	5	5	5	7	7	7	7	7	9
2.1	.01	.08	.16	.29	.45	.62	.78	.95	1.11	1.28	1.48	1.69	1.90	2.11	2.31	2.52	2.76	3.10	3.43	3.76
	1	2	3	3	4	4	4	4	4	5	5	5	5	5	5	5	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
VERMILION RIVER NEAR DANVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
80
70
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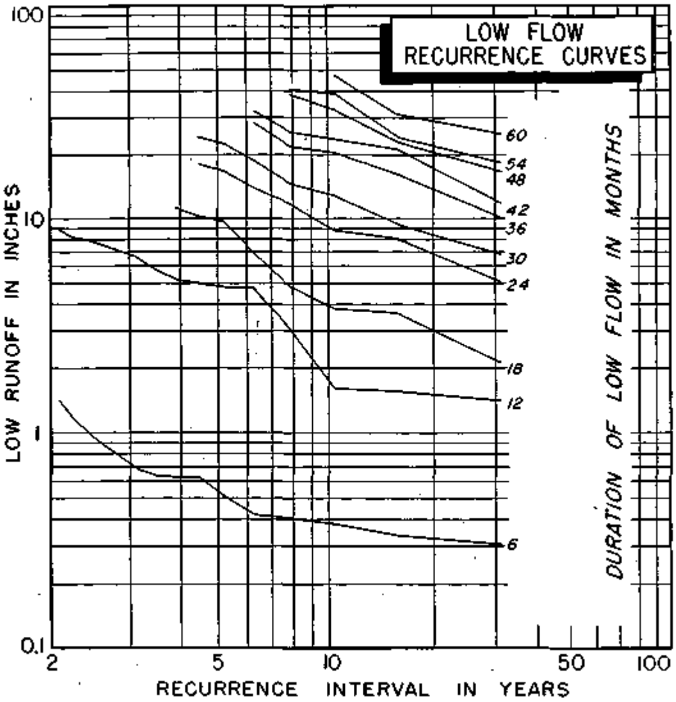
20
15
10
5



STATION 19

LOCATION
In SW ¼ SW ¼ sec 33, T19N, R14W, Champaign County, at Ill. 49 bridge 1.1 miles north of Homer

DRAINAGE AREA
344 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1945 thru Sept 1958; gaging discontinued Oct 1,1958
CONTINUOUS RECORD: 14 years; water years 1945-58

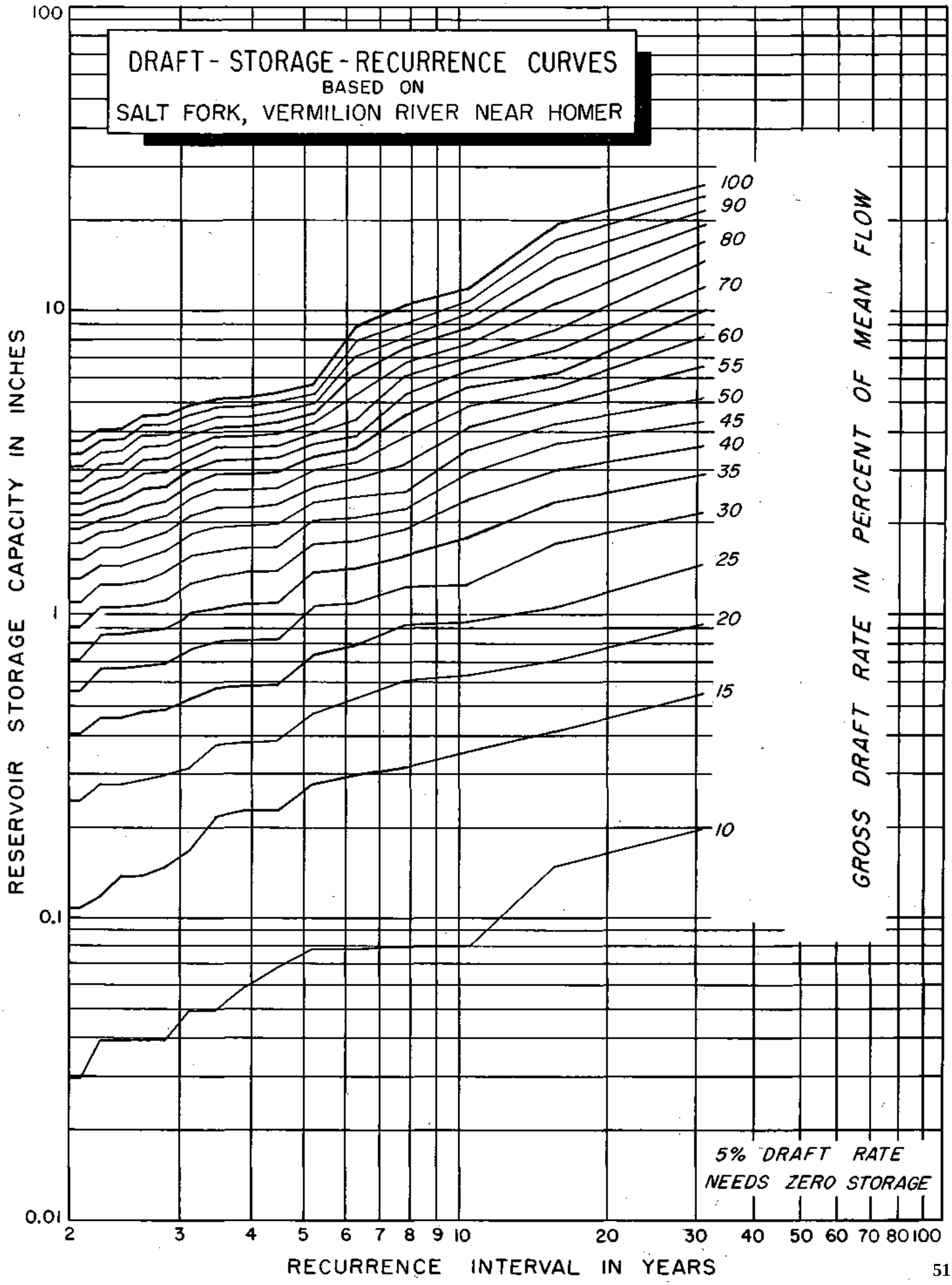
SYNTHETIC FLOW DATA
PERIOD: 17 years; water years 1929-44,1959
INDEX STATION : Vermilion River near Danville
COINCIDENT RECORD: 14 years; water years 1945-58

TOTAL DATA ANALYZED
PERIOD: 31 years; water years 1929-59
MEAN DISCHARGE : 0.81 inch per month

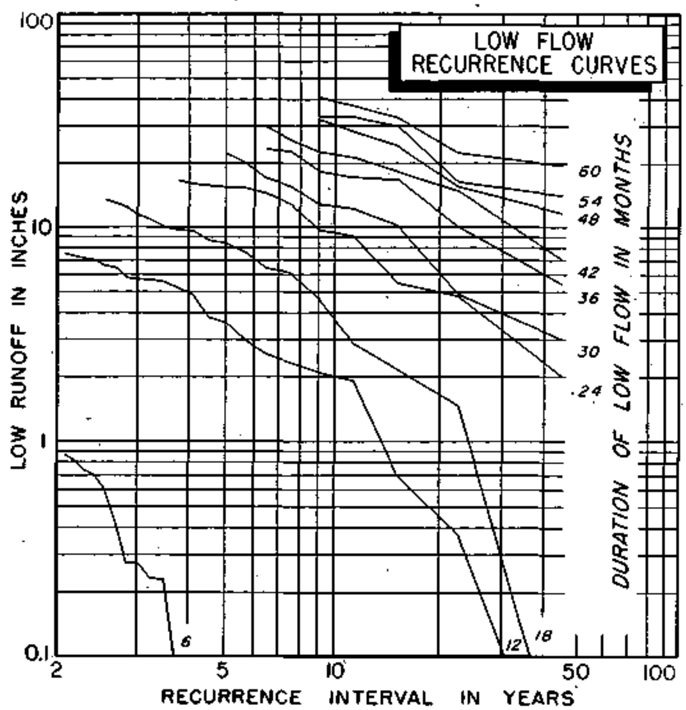
Draft-Storage-Recurrence Data for Salt Fork, Vermilion River near Homer

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
31.0	.00 2	.20 9	.56 9	.95 10	1.48 18	2.20 13	2.93 18	3.66 18	4.39 18	5.24 30	6.59 42	8.29 42	10.15 56	12.42 56	14.69 56	16.96 56	19.23 56	21.49 56	23.76 56	26.03 56
15.5	.00 1	.15 6	.42 7	.72 8	1.08 15	1.73 16	2.38 16	3.02 16	3.67 16	4.32 16	4.97 16	5.62 16	6.27 30	7.48 30	8.70 30	10.68 54	12.87 54	15.06 54	17.24 54	19.43 54
10.3	.00 1	.11 6	.36 7	.64 8	.96 8	1.28 12	1.81 14	2.38 14	2.94 14	3.51 14	4.18 18	4.91 18	5.64 18	6.37 18	7.10 18	7.82 18	8.74 26	9.79 26	10.85 26	11.90 26
7.8	.00 1	.10 5	.32 6	.62 8	.94 8	1.26 8	1.59 8	1.91 8	2.24 8	2.56 8	3.15 18	3.88 18	4.61 18	5.34 18	6.07 18	6.79 18	7.52 18	8.25 18	9.12 32	10.42 32
6.2	.00 1	.08 5	.30 6	.54 6	.80 7	1.11 8	1.44 8	1.76 8	2.10 9	2.47 9	2.83 9	3.19 9	3.56 9	3.92 9	4.45 22	5.34 22	6.23 22	7.12 22	8.01 22	8.90 22
5.2	.00 1	.08 5	.28 5	.48 5	.75 8	1.07 8	1.40 8	1.72 8	2.05 8	2.37 8	2.69 8	3.02 8	3.34 8	3.67 8	3.99 8	4.31 8	4.66 9	5.02 9	5.39 9	5.75 9
4.4	.00 1	.07 3	.23 4	.39 5	.59 6	.84 7	1.12 7	1.41 7	1.69 8	2.01 8	2.33 8	2.66 8	2.98 8	3.31 8	3.63 8	3.96 9	4.33 9	4.69 9	5.06 9	5.42 9
3.9	.00 1	.06 4	.23 4	.39 4	.59 6	.83 7	1.11 7	1.40 7	1.68 7	1.97 7	2.27 8	2.60 8	2.92 8	3.25 8	3.57 8	3.89 8	4.22 8	4.54 8	4.87 9	5.23 9
3.4	.00 1	.05 4	.22 4	.38 4	.58 6	.82 6	1.06 7	1.35 7	1.63 8	1.95 8	2.27 8	2.60 8	2.92 8	3.25 8	3.57 8	3.89 8	4.22 8	4.54 8	4.87 8	5.19 8
3.1	.00 1	.05 3	.17 3	.32 5	.54 6	.78 6	1.02 6	1.29 7	1.57 7	1.86 7	2.14 7	2.42 7	2.71 7	2.99 7	3.28 8	3.60 8	3.93 8	4.25 8	4.58 8	4.90 8
2.8	.00 1	.04 2	.15 3	.30 4	.49 5	.70 5	.91 6	1.15 6	1.40 6	1.64 6	1.88 6	2.13 6	2.37 7	2.65 8	2.97 8	3.29 8	3.62 8	3.94 8	4.27 8	4.59 8
2.6	.00 1	.04 2	.14 3	.29 4	.48 5	.69 5	.89 5	1.09 5	1.30 6	1.54 6	1.78 6	2.03 6	2.29 8	2.62 8	2.94 8	3.26 8	3.59 8	3.91 8	4.24 8	4.56 8
2.4	.00 1	.04 2	.14 3	.28 4	.46 5	.67 5	.87 5	1.07 5	1.27 5	1.48 5	1.68 5	1.90 6	2.14 6	2.38 6	2.63 6	2.87 6	3.16 8	3.48 8	3.81 8	4.14 9
2.2	.00 1	.04 2	.12 4	.28 4	.46 5	.67 5	.87 5	1.07 5	1.27 5	1.48 5	1.68 5	1.88 5	2.08 5	2.29 5	2.49 5	2.79 8	3.12 8	3.44 8	3.77 8	4.09 8
2.1	.00 1	.03 2	.11 3	.25 4	.41 4	.57 4	.73 4	.92 5	1.12 5	1.33 5	1.53 5	1.73 5	1.93 5	2.14 5	2.34 5	2.54 5	2.77 8	3.09 8	3.42 8	3.74 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SALT FORK, VERMILION RIVER NEAR HOMER
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5% DRAFT RATE
NEEDS ZERO STORAGE

ASA CREEK AT SULLIVAN



STATION 31

LOCATION
In NW ¼ NW ¼ sec 36, T14N, R5E, Moultrie County, at highway bridge 0.8 mile north of Sullivan

DRAINAGE AREA
7.93 square miles

ACTUAL FLOW DATA
PERIOD: July 1950 thru Sept 1959
CONTINUOUS RECORD: 9 years; water years 1951-59

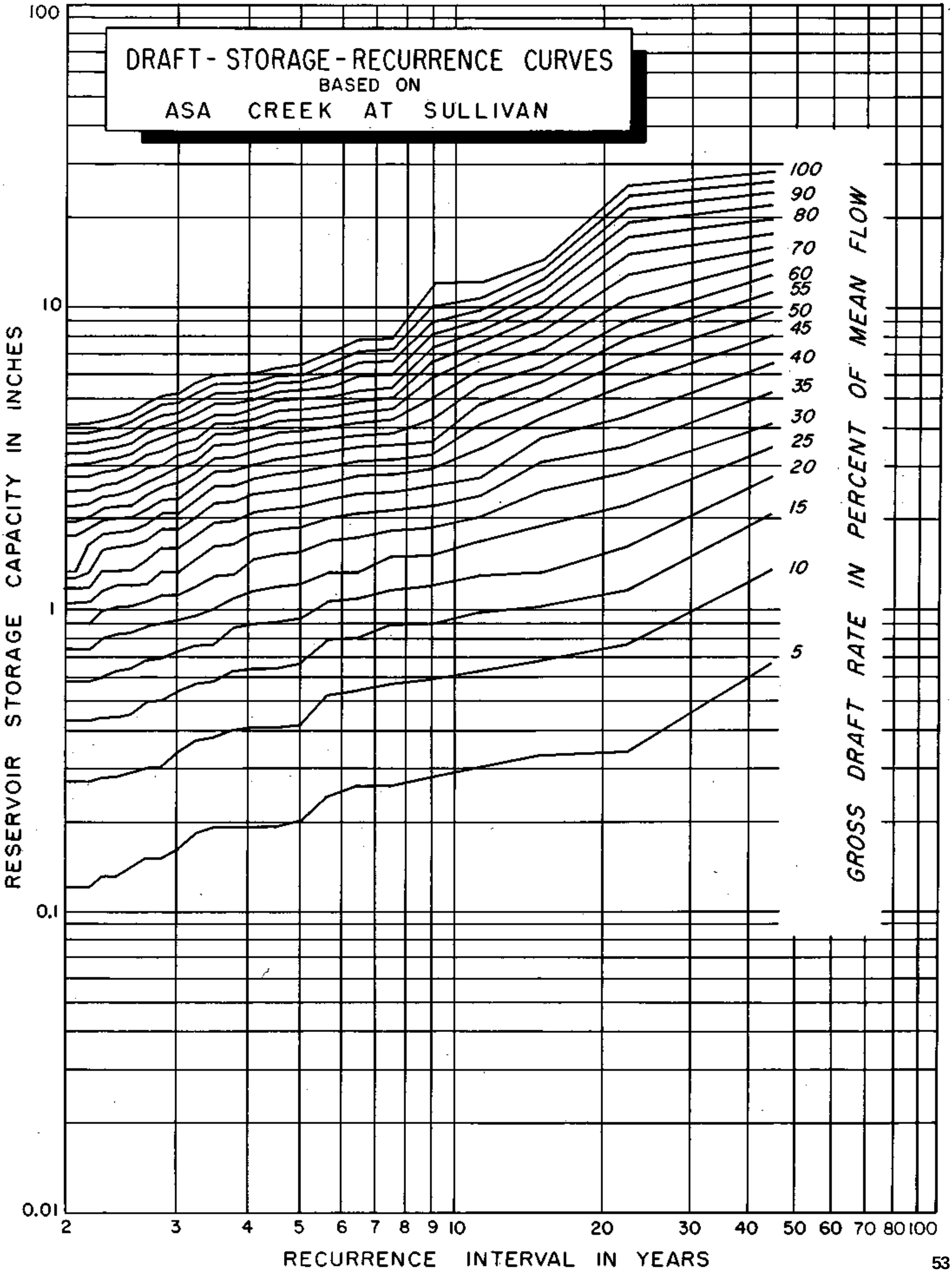
SYNTHETIC FLOW DATA
PERIOD: 36 years; water years 1915-50
INDEX STATION : Sangamon River at Monticello
COINCIDENT RECORD: 9 years; water years 1951-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.78 inch per month

Draft-Storage-Recurrence Data for Asa Creek at Sullivan

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.67	1.37	2.08	2.78	3.48	4.21	5.26	6.58	8.14	9.70	11.26	12.82	14.38	15.94	17.50	19.65	21.84	24.02	26.21	28.39
	18	18	18	18	18	20	32	40	40	40	40	40	40	40	40	56	56	56	56	56
22.5	.34	.77	1.20	1.63	2.24	2.86	3.49	4.41	5.58	6.75	7.92	9.13	10.82	12.92	15.03	17.14	19.24	21.35	23.45	25.57
	11	11	11	11	16	16	16	30	30	30	30	32	54	54	54	54	54	54	54	56
15.0	.33	.68	1.03	1.38	1.90	2.48	3.11	3.73	4.36	4.99	5.69	6.39	7.33	8.35	9.36	10.37	11.39	12.40	13.42	14.43
	9	9	9	9	14	16	16	16	16	18	18	18	26	26	26	26	26	26	26	26
11.3	.30	.63	.98	1.33	1.69	2.04	2.39	2.74	3.43	4.13	4.83	5.53	6.24	6.94	7.64	8.34	9.04	9.80	10.73	12.22
	8	9	9	9	9	9	9	9	18	18	18	18	18	18	18	18	18	20	38	40
9.0	.28	.59	.91	1.22	1.53	1.86	2.21	2.56	2.91	3.26	3.61	4.30	5.08	5.86	6.64	7.42	8.20	8.98	10.08	11.64
	8	8	8	8	8	9	9	9	9	9	9	20	20	20	20	20	20	20	40	40
7.5	.26	.57	.89	1.20	1.51	1.82	2.13	2.45	2.80	3.15	3.50	3.88	4.27	4.66	5.05	5.44	6.02	6.64	7.27	7.89
	8	8	8	8	8	8	8	9	9	9	9	10	10	10	10	10	16	16	16	16
6.4	.26	.54	.81	1.09	1.40	1.72	2.07	2.42	2.77	3.12	3.47	3.82	4.17	4.53	4.92	5.31	5.94	6.56	7.19	7.81
	7	7	7	8	8	9	9	9	9	9	9	9	9	10	10	16	16	16	16	16
5.6	.24	.52	.79	1.07	1.38	1.69	2.00	2.32	2.64	2.99	3.34	3.69	4.04	4.39	4.75	5.10	5.47	5.98	6.52	7.07
	7	7	7	8	8	8	8	8	9	9	9	9	9	9	9	9	10	14	14	14
5.0	.20	.42	.67	.94	1.25	1.56	1.87	2.19	2.53	2.88	3.23	3.58	3.93	4.28	4.64	4.99	5.34	5.69	6.04	6.50
	5	6	7	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9	10	16
4.5	.19	.41	.64	.91	1.22	1.53	1.84	2.16	2.47	2.82	3.17	3.52	3.87	4.22	4.58	4.93	5.28	5.63	5.98	6.33
	5	6	7	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	9
4.1	.19	.41	.64	.90	1.18	1.48	1.79	2.11	2.42	2.73	3.04	3.35	3.67	3.98	4.29	4.63	4.98	5.33	5.68	6.07
	5	6	6	7	7	8	8	8	8	8	8	8	8	8	8	9	9	9	10	10
3.8	.19	.40	.63	.87	1.10	1.33	1.64	1.96	2.27	2.58	2.89	3.20	3.52	3.83	4.14	4.45	4.81	5.20	5.59	5.98
	5	6	6	6	6	8	8	8	8	8	8	8	8	8	8	8	10	10	10	10
3.5	.19	.38	.58	.77	1.01	1.31	1.62	1.94	2.25	2.56	2.87	3.18	3.50	3.81	4.12	4.43	4.80	5.19	5.58	5.97
	5	5	5	5	7	8	8	8	8	8	8	8	8	8	8	8	10	10	10	10
3.2	.18	.37	.57	.76	.96	1.21	1.48	1.75	2.03	2.30	2.57	2.85	3.12	3.39	3.69	4.08	4.47	4.86	5.25	5.64
	5	5	5	5	5	7	7	7	7	7	7	7	7	7	10	10	10	10	10	10
3.0	.16	.34	.54	.73	.93	1.13	1.37	1.60	1.84	2.07	2.32	2.63	2.95	3.26	3.57	3.88	4.19	4.51	4.86	5.21
	4	5	5	5	5	6	6	6	6	6	8	8	8	8	8	8	8	9	9	9
2.8	.15	.30	.50	.69	.90	1.13	1.37	1.60	1.84	2.07	2.30	2.54	2.77	3.01	3.36	3.71	4.06	4.41	4.76	5.11
	4	5	5	5	6	6	6	6	6	6	6	6	6	6	9	9	9	9	9	9
2.6	.15	.30	.49	.68	.88	1.07	1.27	1.46	1.69	1.92	2.15	2.39	2.63	2.94	3.25	3.56	3.87	4.19	4.50	4.81
	4	4	5	5	5	5	5	5	6	6	6	6	8	8	8	8	8	8	8	8
2.5	.14	.29	.45	.64	.84	1.03	1.23	1.42	1.62	1.81	2.01	2.20	2.47	2.74	3.02	3.29	3.56	3.87	4.18	4.49
	4	4	5	5	5	5	5	5	5	5	5	7	7	7	7	7	7	8	8	8
2.4	.13	.28	.44	.63	.83	1.02	1.22	1.41	1.61	1.80	2.00	2.19	2.39	2.62	2.90	3.17	3.44	3.71	3.99	4.33
	4	4	5	5	5	5	5	5	5	5	5	5	5	7	7	7	7	7	7	9
2.3	.13	.28	.44	.60	.80	.99	1.19	1.38	1.58	1.77	1.97	2.16	2.36	2.57	2.85	3.12	3.39	3.66	3.94	4.21
	4	4	4	5	5	5	5	5	5	5	5	5	5	7	7	7	7	7	7	7
2.1	.12	.27	.43	.58	.74	.90	1.06	1.25	1.45	1.64	1.84	2.03	2.23	2.48	2.76	3.03	3.30	3.57	3.85	4.12
	4	4	4	4	4	4	5	5	5	5	5	5	5	7	7	7	7	7	7	7
2.0	.12	.27	.43	.58	.74	.90	1.05	1.21	1.37	1.56	1.76	1.95	2.20	2.47	2.75	3.02	3.29	3.56	3.84	4.11
	4	4	4	4	4	4	4	4	5	5	5	5	7	7	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
ASA CREEK AT SULLIVAN
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
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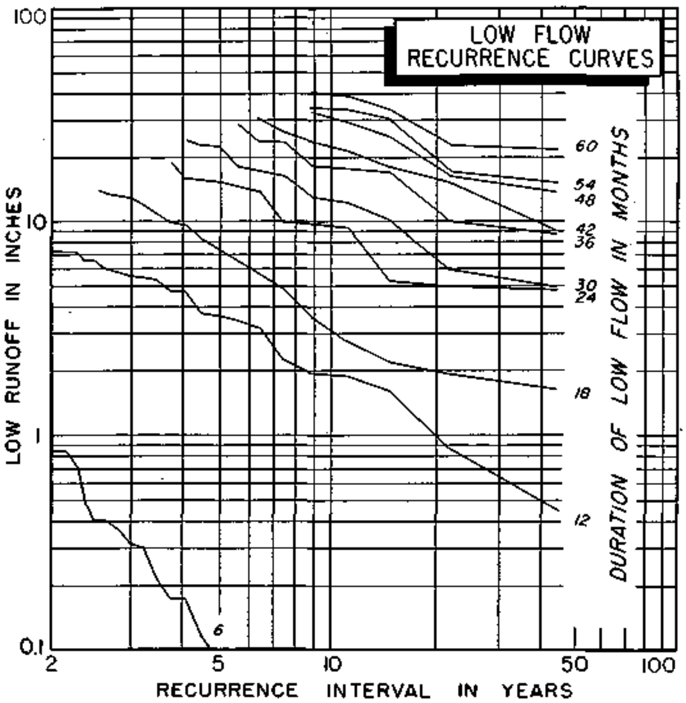


STATION 68

LOCATION
In NW ¼ sec 22, T19N, R5E, Piatt County, at bridge 2.0 miles southeast of DeLand

DRAINAGE AREA
47.3 square miles

ACTUAL FLOW DATA
PERIOD: May 1951 thru Sept 1959; gaging discontinued Oct 1, 1959
CONTINUOUS RECORD: 8 years; water years 1952-59

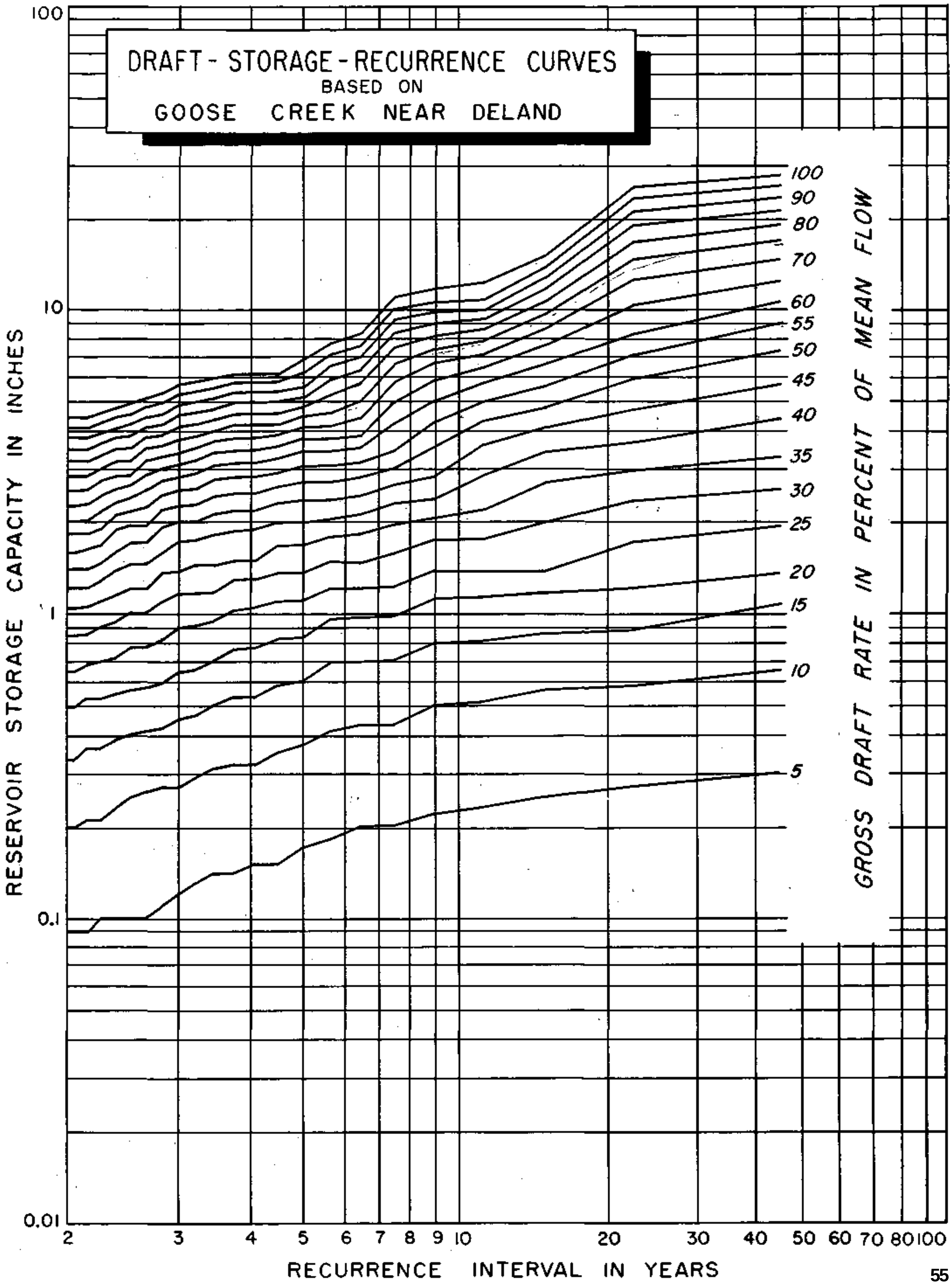
SYNTHETIC FLOW DATA
PERIOD: 37 years; water years 1915-51
INDEX STATION : Sangamon River at Monticello
COINCIDENT RECORD: 8 years; water years 1952-59

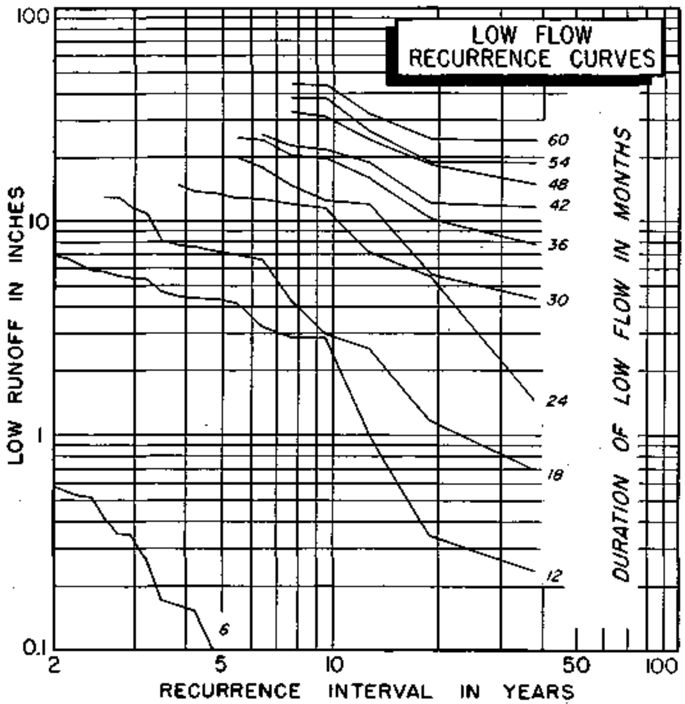
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.77 inch per month

Draft-Storage-Recurrence Data for Goose Creek near DeLand

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.30	.65	1.07	1.49	1.94	2.56	3.26	4.41	5.60	7.22	8.84	10.45	12.25	14.40	16.56	18.72	20.87	23.03	25.18	27.34
	8	11	11	11	16	16	30	30	42	42	42	42	56	56	56	56	56	56	56	56
22.5	.27	.58	.88	1.21	1.71	2.33	2.94	3.63	4.69	5.84	7.00	8.21	10.27	12.35	14.43	16.50	18.58	20.70	22.85	25.01
	8	8	8	9	16	16	18	18	30	30	30	32	54	54	54	54	54	56	56	56
15.0	.25	.56	.86	1.17	1.48	1.99	2.68	3.37	4.07	4.76	5.53	6.52	7.52	8.52	9.53	10.53	11.53	12.53	13.53	14.82
	8	8	8	6	8	18	18	18	18	20	20	26	26	26	26	26	26	26	28	42
11.3	.23	.51	.81	1.12	1.43	1.74	2.17	2.86	3.56	4.25	4.94	5.64	6.33	7.02	7.72	5.41	9.10	9.79	10.57	12.03
	7	8	8	8	8	8	18	18	18	18	18	18	18	18	18	18	18	18	38	38
9.0	.22	.50	.80	1.11	1.42	1.73	2.04	2.35	2.80	3.49	4.22	4.99	5.76	6.53	7.30	8.07	8.84	9.61	10.38	11.50
	7	8	8	8	8	8	8	9	18	18	20	20	20	20	20	20	20	20	20	40
7.5	.20	.43	.70	.97	1.26	1.58	1.93	2.27	2.62	2.97	3.38	4.15	4.92	5.69	6.49	7.33	8.18	9.03	9.87	10.72
	6	7	7	7	8	9	9	9	9	9	20	20	20	20	22	22	22	22	22	22
6.4	.20	.43	.69	.96	1.23	1.50	1.80	2.10	2.43	2.78	3.12	3.47	3.81	4.35	4.97	5.59	6.20	6.82	7.43	8.19
	6	6	7	7	7	7	8	8	9	9	9	9	9	16	16	16	16	16	16	20
5.6	.18	.41	.68	.95	1.22	1.49	1.76	2.03	2.33	2.68	3.02	3.37	3.71	4.06	4.56	5.18	5.79	6.41	7.02	7.64
	6	7	7	7	7	7	7	7	9	9	9	9	9	9	16	16	16	16	16	16
5.0	.17	.37	.60	.83	1.10	1.37	1.68	1.98	2.33	2.68	3.02	3.37	3.71	4.06	4.41	4.75	5.10	5.48	6.09	6.71
	5	6	6	7	7	8	8	9	9	9	9	9	9	9	9	9	9	16	16	16
4.5	.15	.35	.58	.82	1.09	1.36	1.66	1.96	2.27	2.58	2.89	3.20	3.50	3.81	4.15	4.53	4.92	5.30	5.69	6.07
	5	6	6	7	7	7	8	8	8	8	8	8	8	8	10	10	10	10	10	10
4.1	.15	.32	.53	.77	1.04	1.31	1.58	1.86	2.17	2.48	2.79	3.10	3.40	3.75	4.14	4.52	4.91	5.29	5.68	6.06
	4	5	6	7	7	7	7	8	8	8	8	8	8	10	10	10	10	10	10	10
3.8	.14	.32	.53	.76	1.02	1.29	1.56	1.85	2.16	2.47	2.78	3.09	3.39	3.72	4.11	4.49	4.88	5.26	5.65	6.03
	4	5	6	6	7	7	7	8	8	8	8	8	8	10	10	10	10	10	10	10
3.5	.14	.31	.50	.70	.94	1.19	1.50	1.80	2.11	2.42	2.73	3.04	3.34	3.65	3.96	4.29	4.68	5.06	5.45	5.83
	4	5	5	6	6	8	8	8	8	8	8	8	8	8	8	10	10	10	10	10
3.2	.13	.29	.46	.65	.91	1.18	1.45	1.72	1.99	2.26	2.55	2.86	3.16	3.47	3.78	4.15	4.54	4.92	5.31	5.69
	4	4	5	5	7	7	7	7	7	7	8	8	8	8	8	10	10	10	10	10
3.0	.12	.27	.45	.64	.90	1.17	1.44	1.71	1.98	2.25	2.51	2.78	3.05	3.32	3.67	4.05	4.44	4.82	5.21	5.59
	3	4	5	5	7	7	7	7	7	7	7	7	7	8	10	10	10	10	10	10
2.8	.11	.27	.42	.59	.82	1.09	1.36	1.63	1.90	2.17	2.43	2.70	2.97	3.24	3.52	3.83	4.14	4.48	4.87	5.25
	4	4	4	5	7	7	7	7	7	7	7	7	7	7	8	8	8	10	10	10
2.6	.10	.26	.41	.57	.77	1.00	1.23	1.46	1.69	1.92	2.22	2.53	2.83	3.14	3.45	3.76	4.07	4.37	4.71	5.06
	4	4	4	4	6	6	6	6	6	6	8	8	8	8	8	8	8	9	9	9
2.5	.10	.25	.40	.56	.77	1.00	1.23	1.46	1.69	1.92	2.15	2.38	2.61	2.84	3.13	3.44	3.79	4.14	4.48	4.83
	3	4	4	5	6	6	6	6	6	6	6	6	6	6	8	9	9	9	9	9
2.4	.10	.23	.38	.54	.71	.93	1.16	1.39	1.62	1.85	2.08	2.31	2.54	2.80	3.11	3.42	3.73	4.03	4.34	4.65
	3	4	4	4	5	6	6	6	6	6	6	6	6	8	8	8	8	8	8	8
2.3	.10	.21	.36	.52	.70	.90	1.09	1.28	1.47	1.67	1.88	2.15	2.42	2.69	2.96	3.27	3.58	3.88	4.19	4.50
	3	4	4	4	5	5	5	5	5	5	7	7	7	7	8	8	8	8	8	8
2.1	.09	.21	.36	.52	.67	.85	1.04	1.23	1.42	1.62	1.81	2.00	2.26	2.53	2.80	3.11	3.42	3.72	4.03	4.34
	3	4	4	4	4	5	5	5	5	5	5	5	7	7	8	8	8	8	8	8
2.0	.09	.20	.33	.49	.64	.84	1.03	1.22	1.41	1.61	1.80	1.99	2.23	2.50	2.80	3.11	3.42	3.72	4.03	4.34
	3	3	4	4	5	5	5	5	5	5	5	5	7	7	8	8	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
GOOSE CREEK NEAR DELAND
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 76

LOCATION

In SE ¼ sec 11, T25N, R2E, McLean County, 0.25 mile upstream from Lake Blbomington and 3.0 miles northeast of Hudson

DRAINAGE AREA

10.1 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1938 thru Sept 1958; gaging discontinued Oct 1, 1958

CONTINUOUS RECORD: 20 years; water years 1939-58

SYNTHETIC FLOW DATA

PERIOD: 18 years; water years 1922-38, 1959

INDEX STATION : Mackinaw River near Green Valley

COINCIDENT RECORD : 18 years; water years 1939-56

TOTAL DATA ANALYZED

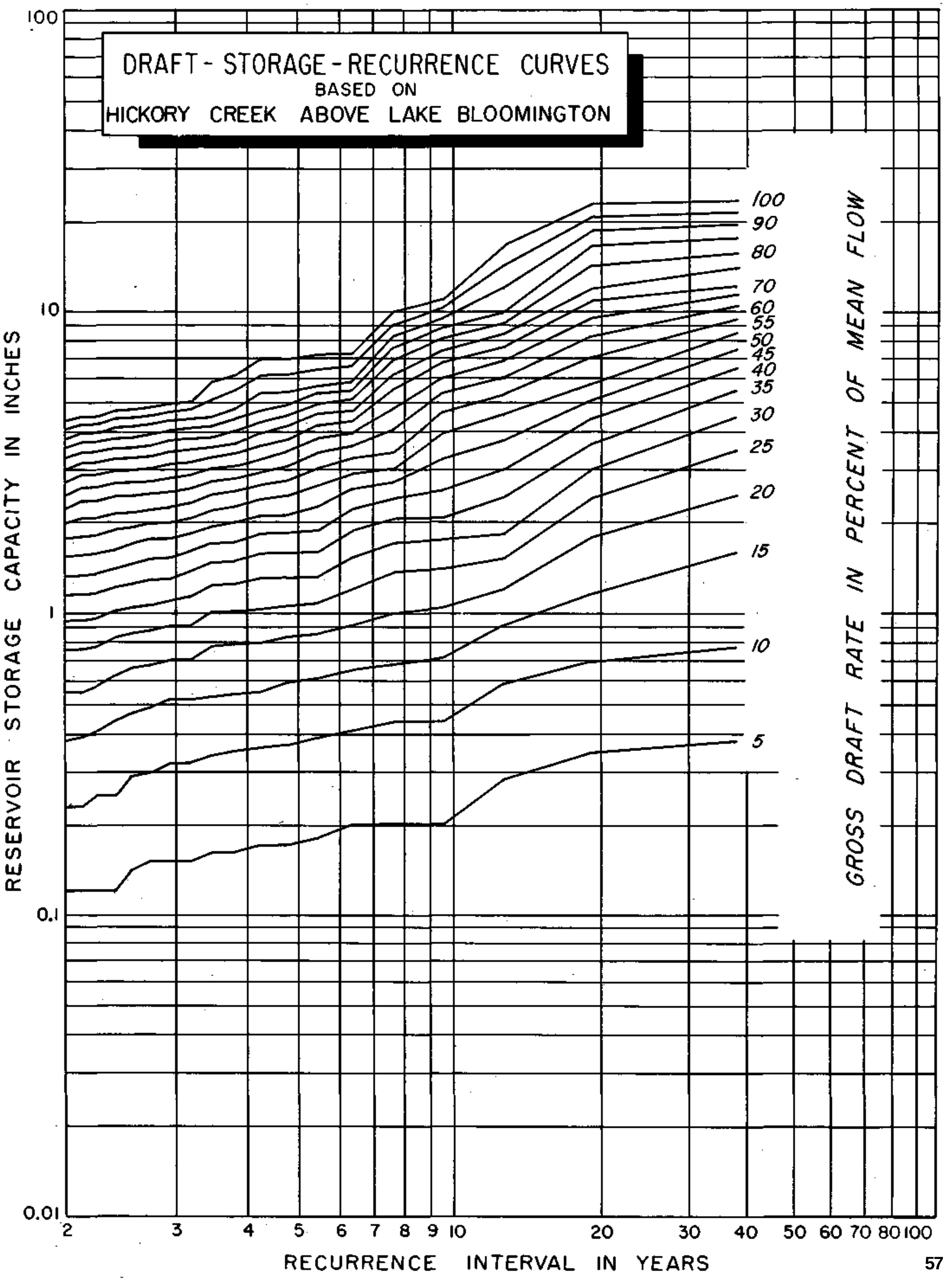
PERIOD: 38 years; water years 1922-59

MEAN DISCHARGE: 0.78 inch per month

Draft-Storage-Recurrence Data for Hickory Creek above Lake Bloomington

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.38 10	.78 20	1.61 22	2.48 26	3.49 26	4.50 26	5.52 26	6.53 26	7.55 26	8.56 26	9.57 26	10.59 26	11.60 26	12.64 38	14.12 38	15.77 50	17.72 50	19.67 50	21.62 50	23.57 50
19.0	.35 9	.71 10	1.16 16	1.79 16	2.41 16	3.03 16	3.71 18	4.42 18	5.12 18	5.86 30	7.10 32	8.35 32	9.59 32	10.84 32	12.26 54	14.37 54	16.47 54	18.58 54	20.68 54	22.79 54
12.7	.28 8	.59 8	.91 8	1.22 8	1.53 8	1.85 9	2.45 16	3.07 16	3.79 20	4.57 20	5.35 20	6.13 20	6.91 20	7.69 20	8.47 20	9.25 20	10.03 20	12.20 56	14.39 56	16.59 58
9.5	.20 6	.44 6	.72 8	1.05 9	1.41 9	1.76 9	2.11 9	2.56 18	3.26 18	3.96 18	4.66 18	5.36 18	6.07 18	6.77 18	7.47 18	8.17 18	8.87 18	9.58 18	10.35 20	11.13 20
7.6	.20 6	.44 6	.68 8	1.00 9	1.36 9	1.71 9	2.06 9	2.41 9	2.76 9	3.11 9	3.46 9	4.08 18	4.79 18	5.49 18	6.19 18	6.89 18	7.59 18	8.30 18	9.00 18	9.90 42
6.3	.20 5	.41 6	.65 7	.92 7	1.20 7	1.53 9	1.88 9	2.23 9	2.58 9	2.93 9	3.28 9	3.63 9	3.99 10	4.38 10	4.77 10	5.16 10	5.55 10	5.94 10	6.63 16	7.33 18
5.4	.18 5	.39 6	.62 6	.86 6	1.09 6	1.33 7	1.60 7	1.90 9	2.27 10	2.66 10	3.05 10	3.44 10	3.83 10	4.22 10	4.61 10	5.00 10	5.39 10	5.78 10	6.47 20	7.25 20
4.8	.17 5	.37 6	.60 6	.84 6	1.07 6	1.32 7	1.59 7	1.86 7	2.15 8	2.46 8	2.77 8	3.10 9	3.45 9	3.80 9	4.18 10	4.57 10	4.96 10	5.45 20	6.23 20	7.01 20
4.2	.17 5	.36 5	.56 6	.80 6	1.04 7	1.31 7	1.58 7	1.85 7	2.13 7	2.40 7	2.67 7	2.95 7	3.26 9	3.61 9	3.97 9	4.33 10	4.72 10	5.37 20	6.15 20	6.93 20
3.8	.16 5	.35 5	.55 6	.79 6	1.02 6	1.25 6	1.49 6	1.72 7	2.00 7	2.27 7	2.54 7	2.82 7	3.09 8	3.40 8	3.71 8	4.02 10	4.41 10	4.80 10	5.48 18	6.18 18
3.5	.16 4	.34 5	.54 6	.78 6	1.01 6	1.24 6	1.48 6	1.71 6	1.95 6	2.20 7	2.47 7	2.75 7	3.02 7	3.29 7	3.57 7	3.85 8	4.16 8	4.48 8	5.14 18	5.64 18
3.2	.15 4	.32 5	.52 5	.71 5	.91 6	1.14 6	1.38 6	1.61 6	1.85 6	2.08 6	2.32 7	2.60 7	2.89 8	3.20 8	3.51 8	3.82 8	4.13 8	4.45 8	4.76 8	5.07 8
2.9	.15 4	.32 5	.52 5	.71 5	.91 5	1.10 5	1.30 6	1.53 6	1.77 6	2.00 6	2.25 7	2.53 7	2.82 8	3.13 8	3.44 8	3.75 8	4.06 8	4.38 8	4.69 8	5.00 8
2.7	.15 4	.30 4	.49 5	.68 5	.88 5	1.07 5	1.29 6	1.52 6	1.76 6	1.99 6	2.22 7	2.50 7	2.77 7	3.04 7	3.32 7	3.62 8	3.93 8	4.25 8	4.56 8	4.87 8
2.5	.14 4	.29 4	.47 5	.66 5	.86 5	1.05 5	1.25 5	1.46 6	1.70 6	1.93 6	2.18 7	2.46 7	2.73 7	3.00 7	3.28 7	3.55 7	3.84 8	4.16 8	4.47 8	4.78 8
2.4	.12 3	.25 4	.44 5	.63 5	.83 5	1.02 5	1.22 5	1.41 5	1.62 7	1.89 7	2.16 7	2.44 7	2.71 7	2.98 7	3.26 7	3.53 7	3.80 8	4.12 8	4.43 8	4.74 8
2.2	.12 3	.25 4	.41 4	.58 5	.78 5	.97 5	1.17 5	1.36 5	1.59 6	1.82 6	2.08 7	2.36 7	2.63 7	2.90 7	3.18 7	3.45 7	3.72 7	3.99 7	4.27 7	4.57 8
2.1	.12 3	.23 4	.39 4	.56 5	.76 5	.95 5	1.15 5	1.34 5	1.56 6	1.79 7	2.06 7	2.34 7	2.61 7	2.88 7	3.16 7	3.43 7	3.70 7	3.97 7	4.25 7	4.52 7
2.0	.12 3	.23 3	.38 4	.56 5	.76 5	.95 5	1.15 5	1.34 5	1.54 6	1.77 6	2.00 6	2.24 6	2.47 6	2.73 7	3.01 7	3.28 7	3.55 7	3.82 7	4.10 7	4.37 7



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
HICKORY CREEK ABOVE LAKE BLOOMINGTON
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
100
2
3
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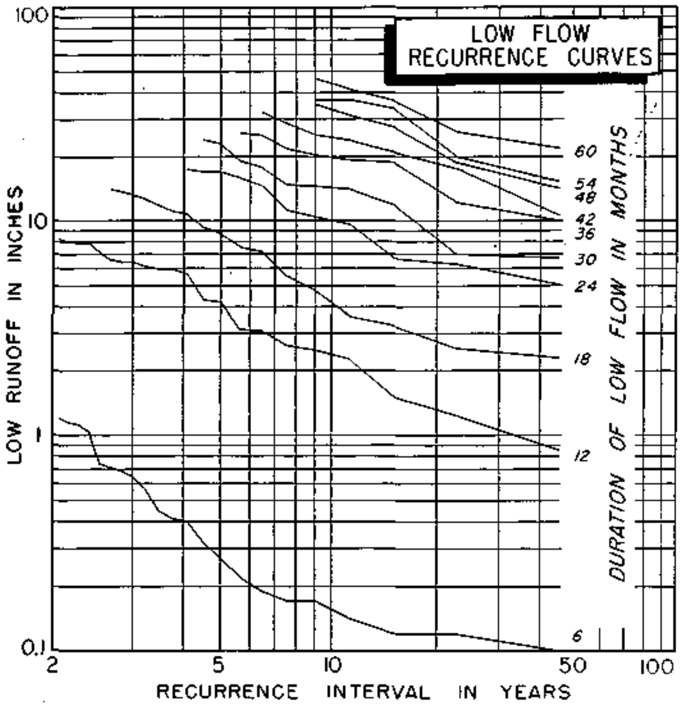
30
40
50
60
70
80
100

KASKASKIA RIVER AT BONDVILLE



STATION 86

LOCATION

In NW ¼ NW ¼ sec 18, T19N, R8E, Champaign County, at bridge on Ill. 10, 1.0 mile east of Bondville and 3.8 miles west of Champaign

DRAINAGE AREA

12.3 square miles

ACTUAL FLOW DATA

PERIOD: Dec 1948 thru Sept 1959

CONTINUOUS RECORD: 11 years; water years 1949-59

SYNTHETIC FLOW DATA

PERIOD: 34 years; water years 1915-48

INDEX STATION : Sangamon River at Monticello

COINCIDENT RECORD: 11 years; water years 1949-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

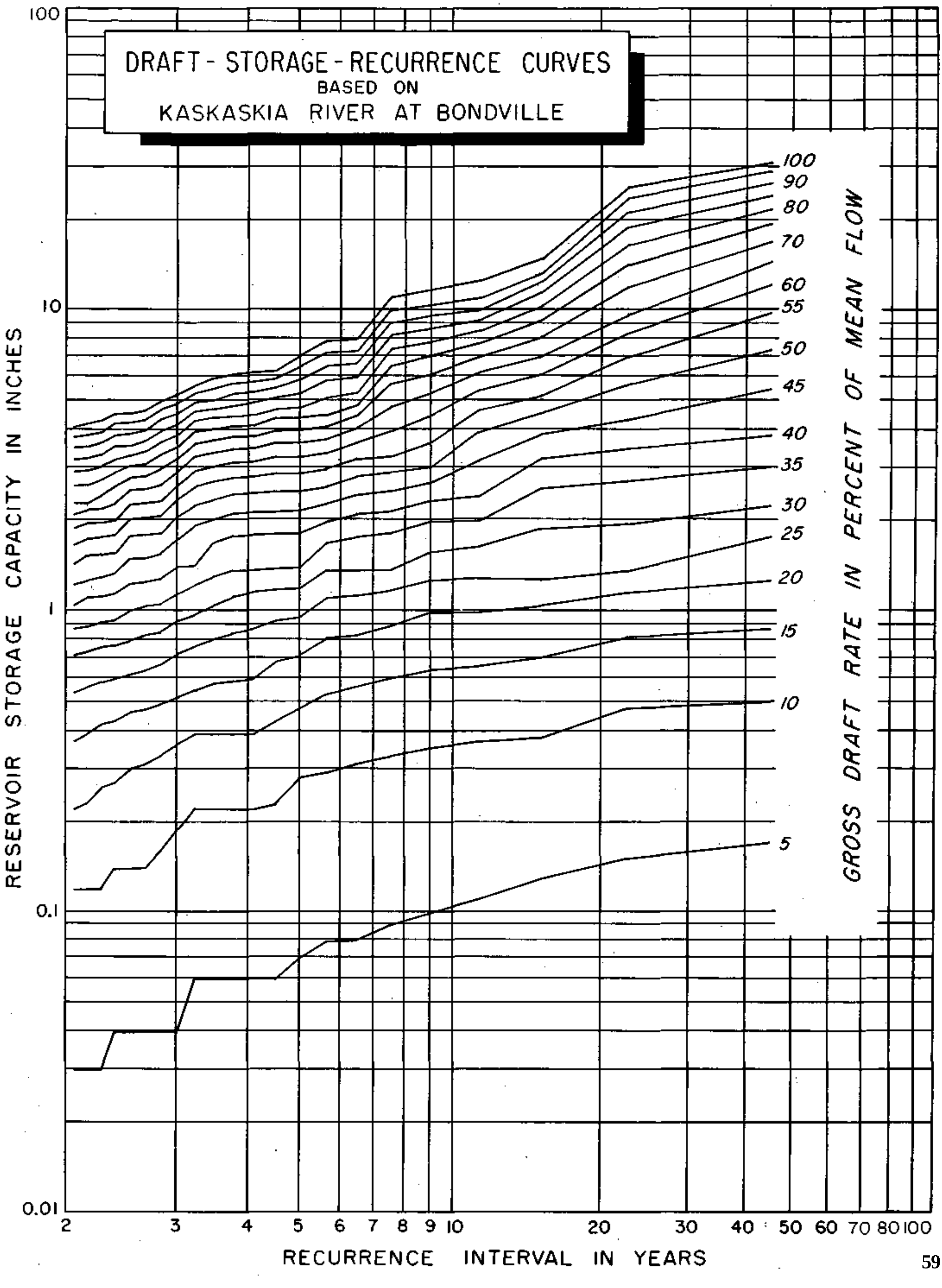
MEAN DISCHARGE : 0.83 inch per month

Draft-Storage-Recurrence Data for Kaskaskia River at Bondville

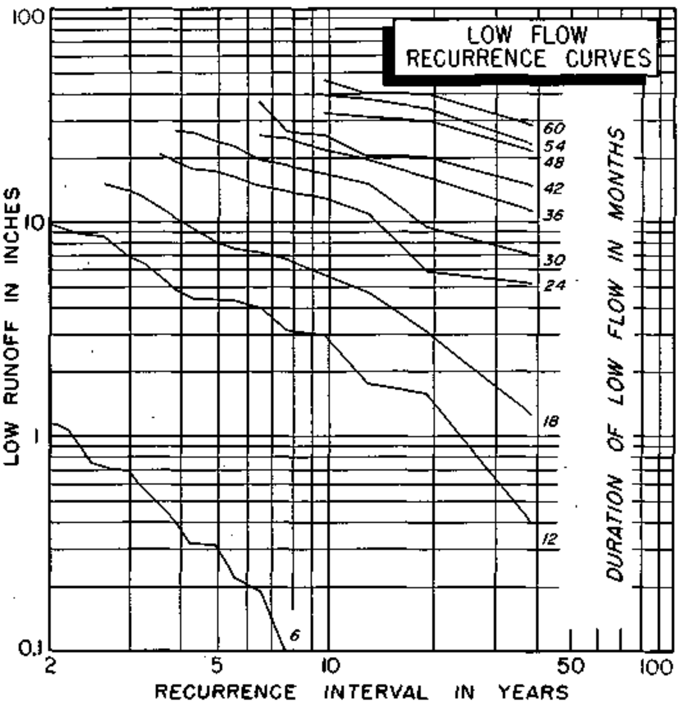
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.17	.50	.87	1.31	1.76	2.22	3.00	3.83	5.40	7.33	9.65	11.98	14.30	16.63	18.95	21.27	23.60	25.92	28.25	30.57
	8	8	10	11	11	11	20	20	44	56	56	56	56	56	56	56	56	56	56	56
22.5	.15	.48	.82	1.15	1.48	1.93	2.68	3.43	4.29	5.57	6.90	8.23	9.55	11.74	13.99	16.23	18.47	20.71	22.95	25.26
	8	6	8	8	8	18	13	18	30	32	32	32	32	54	54	54	54	54	54	56
15.0	.13	.38	.70	1.03	1.36	1.66	2.53	3.19	3.86	4.52	5.18	6.01	6.95	8.03	9.11	10.18	11.26	12.34	13.42	14.50
	6	6	8	8	8	16	16	16	16	16	20	20	26	26	26	26	26	26	26	26
11.3	.11	.37	.66	.98	1.31	1.64	1.97	2.40	3.14	3.89	4.64	5.38	6.13	6.88	7.63	8.37	9.12	9.87	10.75	12.33
	6	7	7	8	8	8	8	18	18	18	18	18	18	18	18	18	18	18	38	38
9.0	.10	.35	.65	.98	1.31	1.64	1.97	2.31	2.64	2.98	3.58	4.41	5.24	6.07	6.90	7.73	8.56	9.39	10.22	11.88
	5	7	8	8	8	8	8	8	8	9	20	20	20	20	20	20	20	20	40	40
7.5	.09	.33	.60	.89	1.18	1.47	1.79	2.13	2.48	2.86	3.23	3.94	4.77	5.60	6.43	7.26	8.09	8.92	9.75	10.81
	4	6	7	7	7	7	8	8	9	9	9	20	20	20	20	20	20	20	20	32
6.4	.08	.31	.56	.83	1.12	1.42	1.75	2.09	2.42	2.76	3.18	3.59	4.01	4.42	4.84	5.25	5.88	6.54	7.21	7.87
	5	6	6	7	7	8	8	8	8	10	10	10	10	10	10	10	16	16	16	16
5.6	.06	.29	.53	.81	1.10	1.39	1.58	1.97	2.26	2.57	2.93	3.30	3.68	4.05	4.44	5.08	5.75	6.41	7.08	7.74
	5	5	6	7	7	7	7	7	7	8	9	9	9	9	10	16	16	16	16	16
5.0	.07	.28	.46	.70	.95	1.21	1.50	1.80	2.13	2.46	2.85	3.22	3.60	3.97	4.34	4.75	5.24	5.82	6.40	6.98
	5	5	5	6	6	7	7	8	8	9	9	9	9	9	10	10	14	14	14	14
4.5	.06	.23	.43	.68	.93	1.20	1.49	1.79	2.12	2.47	2.84	3.21	3.59	3.96	4.33	4.71	5.08	5.45	5.83	6.20
	4	5	6	6	6	7	7	8	8	9	9	9	9	9	9	9	9	9	9	9
4.1	.05	.22	.39	.60	.87	1.16	1.45	1.78	2.11	2.44	2.77	3.10	3.44	3.77	4.10	4.46	4.86	5.27	5.69	6.10
	4	4	4	6	7	7	7	8	8	8	8	8	8	8	8	9	10	10	10	10
3.8	.06	.22	.39	.59	.84	1.12	1.42	1.76	2.09	2.42	2.75	3.08	3.42	3.75	4.08	4.41	4.80	5.21	5.63	6.04
	4	4	4	6	6	7	8	8	8	8	8	8	8	8	8	8	10	10	10	10
3.5	.06	.22	.39	.58	.80	1.04	1.33	1.67	2.00	2.33	2.66	2.99	3.33	3.66	3.99	4.32	4.65	5.00	5.42	5.83
	4	4	4	5	6	6	8	8	8	8	8	8	8	8	8	8	8	10	10	10
3.2	.06	.22	.39	.55	.76	.97	1.23	1.57	1.90	2.23	2.56	2.89	3.23	3.56	3.89	4.22	4.55	4.89	5.22	5.55
	4	4	4	5	5	5	6	8	8	8	8	8	8	8	6	8	8	8	8	8
3.0	.04	.19	.36	.52	.72	.93	1.15	1.44	1.73	2.03	2.32	2.61	2.90	3.19	3.49	3.82	4.15	4.49	4.82	5.19
	3	4	4	4	5	5	7	7	7	7	7	7	7	7	8	8	8	8	9	9
2.8	.04	.16	.33	.49	.66	.85	1.05	1.30	1.55	1.80	2.05	2.30	2.61	2.94	3.27	3.60	3.93	4.27	4.60	4.93
	2	4	4	4	4	5	6	6	6	6	6	6	8	8	8	8	8	8	8	8
2.6	.04	.14	.31	.47	.64	.83	1.03	1.27	1.52	1.77	2.02	2.27	2.52	2.77	3.05	3.34	3.63	3.92	4.25	4.58
	2	4	4	4	4	5	5	6	6	6	6	6	6	6	7	7	7	8	8	8
2.5	.04	.14	.30	.46	.63	.80	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.24	3.49	3.83	4.16	4.49
	2	3	4	4	4	4	6	6	6	6	6	6	6	6	6	6	8	8	8	8
2.4	.04	.14	.27	.43	.60	.77	.93	1.14	1.35	1.56	1.76	1.99	2.28	2.57	2.86	3.15	3.48	3.82	4.15	4.48
	2	3	4	4	4	4	5	5	5	5	5	7	7	7	7	8	8	8	8	8
2.3	.03	.12	.26	.42	.59	.76	.92	1.12	1.33	1.54	1.74	1.95	2.16	2.40	2.69	2.98	3.27	3.57	3.90	4.23
	2	3	4	4	4	4	4	5	5	5	5	5	5	7	7	7	7	8	8	8
2.1	.03	.12	.23	.39	.56	.73	.89	1.10	1.31	1.52	1.72	1.93	2.14	2.35	2.60	2.89	3.18	3.47	3.80	4.13
	2	2	4	4	4	4	5	5	5	5	5	5	5	5	7	7	7	8	8	8
2.0	.03	.12	.22	.37	.54	.71	.87	1.04	1.24	1.45	1.65	1.86	2.07	2.29	2.58	2.87	3.16	3.45	3.74	4.03
	2	2	3	4	4	4	4	4	5	5	5	5	5	7	7	7	7	7	7	7



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KASKASKIA RIVER AT BONDVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 90

LOCATION

In SE ¼ SW ¼ sec 8, T11N, R4E, Shelby County, 50 feet upstream from bridge on Ill. 16 in Shelbyville

DRAINAGE AREA

1030 square miles, approximately

ACTUAL FLOW DATA

PERIOD: Feb 1908 thru Sept 1912, Aug. thru Dec 1914, Oct 1940 thru Sept 1959

CONTINUOUS RECORD: 19 years; water years 1941-59

SYNTHETIC FLOW DATA

PERIOD: 26 years; water years 1915-40

INDEX STATION : Kaskaskia River at Vandalia

COINCIDENT RECORD : 13 years; water years 1941-53

Note: Some regulation present during water years 1954-59 at this station and the index station; these years omitted

TOTAL DATA ANALYZED

PERIOD: 39 years; water years 1915-53

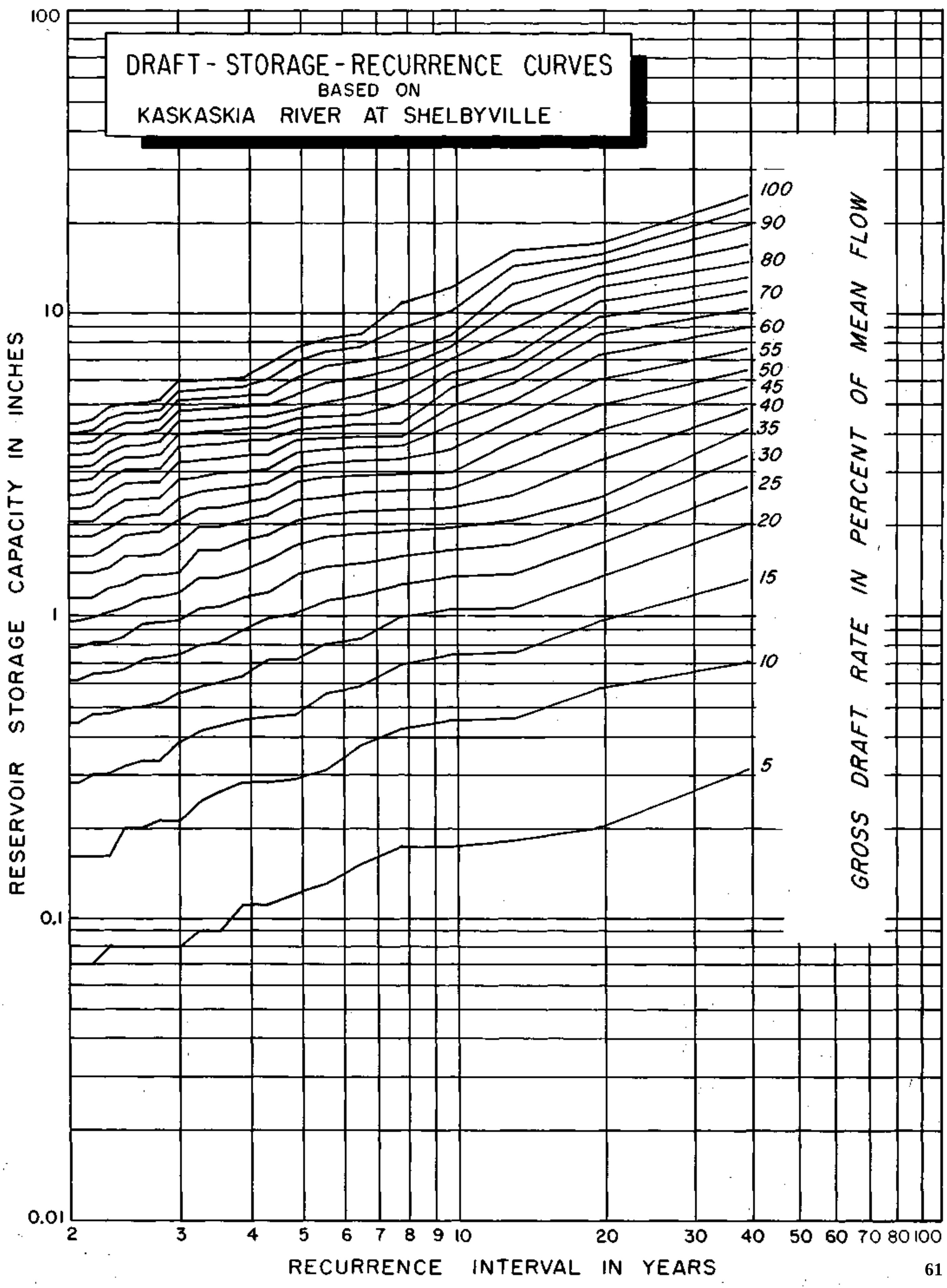
MEAN DISCHARGE : 0.85 inch per month

Draft-Storage-Recurrence Data for Kaskaskia River at Shelbyville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50
39.0	.31 8	.71 14	1.31 16	1.99 16	2.67 16	3.35 16	4.11 18	4.87 18	5.64 18	6.40 18
19.5	.20 8	.58 9	.96 9	1.34 9	1.72 9	2.11 9	2.49 9	3.24 20	4.09 20	4.94 20
13.0	.18 6	.46 7	.75 7	1.05 7	1.37 8	1.71 8	2.05 8	2.49 14	3.09 14	3.71 16
9.8	.17 6	.45 7	.74 7	1.04 7	1.34 7	1.64 7	1.93 7	2.26 8	2.60 8	2.94 8
7.8	.17 6	.42 6	.68 7	.98 7	1.28 7	1.58 7	1.88 8	2.22 8	2.56 8	2.90 8
6.5	.15 5	.37 5	.58 6	.83 6	1.16 8	1.50 8	1.84 8	2.18 8	2.52 8	2.86 8
5.6	.13 4	.31 5	.55 6	.80 6	1.11 8	1.45 8	1.79 8	2.13 8	2.47 8	2.81 8
4.9	.12 4	.29 4	.47 5	.71 6	1.01 8	1.35 8	1.69 8	2.03 8	2.37 8	2.71 8
4.3	.11 4	.28 4	.46 6	.71 6	.97 6	1.23 7	1.52 7	1.82 7	2.12 7	2.42 7
3.9	.11 4	.28 4	.45 4	.63 6	.89 6	1.15 7	1.44 7	1.74 7	2.04 7	2.34 7
3.5	.09 4	.26 4	.43 4	.60 4	.81 6	1.06 6	1.33 7	1.63 7	1.93 7	2.24 8
3.3	.09 3	.24 4	.41 4	.58 5	.79 5	1.04 7	1.33 7	1.63 7	1.93 7	2.23 7
3.0	.08 3	.21 4	.38 4	.55 4	.74 5	.96 5	1.20 6	1.45 6	1.71 6	2.04 8
2.8	.08 3	.21 3	.33 4	.51 5	.72 5	.94 5	1.15 5	1.36 5	1.61 6	1.86 6
2.6	.08 2	.20 3	.33 4	.50 5	.71 5	.93 5	1.14 5	1.35 5	1.60 6	1.85 6
2.4	.08 2	.20 3	.32 4	.49 4	.66 4	.85 5	1.06 6	1.31 6	1.57 6	1.82 6
2.3	.08 2	.16 3	.30 4	.47 4	.64 4	.81 5	1.02 5	1.23 5	1.44 5	1.66 5
2.2	.07 2	.16 3	.30 4	.47 4	.64 4	.81 4	.98 4	1.17 5	1.38 5	1.60 5
2.1	.07 2	.16 3	.28 3	.44 4	.61 4	.78 4	.95 5	1.16 5	1.37 5	1.59 5

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
39.0	7.52 32	8.88 32	10.24 32	11.60 32	12.96 32	14.46 40	16.59 60	19.14 60	21.69 60	24.24 60
19.5	5.95 28	7.14 28	8.33 28	9.52 28	10.71 28	11.90 28	13.09 28	14.28 28	15.47 28	16.72 40
13.0	4.39 16	5.07 16	5.75 16	6.43 16	7.11 16	8.67 42	10.46 42	12.24 42	14.03 42	15.81 42
9.8	3.51 16	4.19 16	4.87 16	5.55 15	6.23 16	6.91 16	7.59 16	8.27 18	10.00 44	11.87 44
7.8	3.24 8	3.58 8	3.92 8	4.26 8	4.99 18	5.75 18	6.52 18	7.28 18	8.70 44	10.57 44
6.5	3.20 8	3.54 8	3.88 8	4.22 8	4.56 8	5.25 18	6.02 18	6.78 18	7.55 18	8.31 18
5.6	3.15 8	3.49 8	3.83 8	4.17 8	4.51 8	5.01 18	5.78 18	6.54 18	7.31 18	8.07 18
4.9	3.05 8	3.39 8	3.73 8	4.07 8	4.41 8	4.75 8	5.25 18	6.01 18	6.78 18	7.54 18
4.3	2.71 7	3.02 8	3.36 8	3.74 9	4.12 9	4.50 9	4.88 9	5.27 16	5.95 16	6.63 16
3.9	2.63 7	2.95 9	3.33 9	3.72 9	4.10 9	4.48 9	4.86 9	5.25 9	5.63 9	6.01 9
3.5	2.58 8	2.92 8	3.26 8	3.63 9	4.01 9	4.39 9	4.77 9	5.16 9	5.54 9	5.92 9
3.3	2.52 7	2.82 9	3.20 9	3.59 9	3.97 9	4.35 9	4.73 9	5.12 9	5.50 9	5.88 9
3.0	2.39 9	2.77 9	3.15 9	3.54 9	3.92 9	4.30 9	4.68 9	5.07 9	5.45 9	5.83 9
2.8	2.12 6	2.41 7	2.71 7	3.01 8	3.35 8	3.69 8	4.03 8	4.37 8	4.71 8	5.05 8
2.6	2.11 6	2.40 7	2.70 7	3.00 7	3.29 7	3.59 7	3.92 8	4.26 8	4.60 8	4.95 9
2.4	2.09 7	2.39 7	2.69 7	2.99 7	3.28 7	3.58 7	3.91 8	4.25 8	4.59 8	4.93 8
2.3	1.91 6	2.20 7	2.50 7	2.80 7	3.09 7	3.39 7	3.69 7	4.03 9	4.41 9	4.79 9
2.2	1.81 5	2.02 6	2.28 6	2.53 6	2.80 7	3.10 7	3.40 7	3.70 7	4.03 8	4.37 8
2.1	1.80 5	2.01 5	2.22 5	2.47 7	2.76 7	3.06 7	3.36 7	3.66 7	3.95 7	4.25 7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KASKASKIA RIVER AT SHELBYVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
100
2
3
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30
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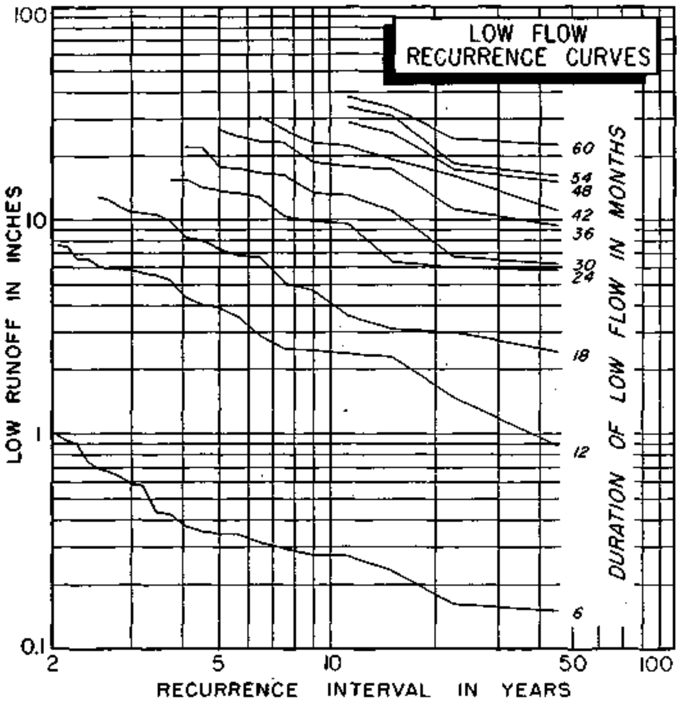
70
80
100

KICKAPOO CREEK NEAR LINCOLN



STATION 93

LOCATION
In NE ¼ NW ¼ sec 18, T20N, R2W, DeWitt County, at highway bridge 3.0 miles north of Lincoln

DRAINAGE AREA
306 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1944 thru Sept 1959
CONTINUOUS RECORD: 15 years; water years 1945-59

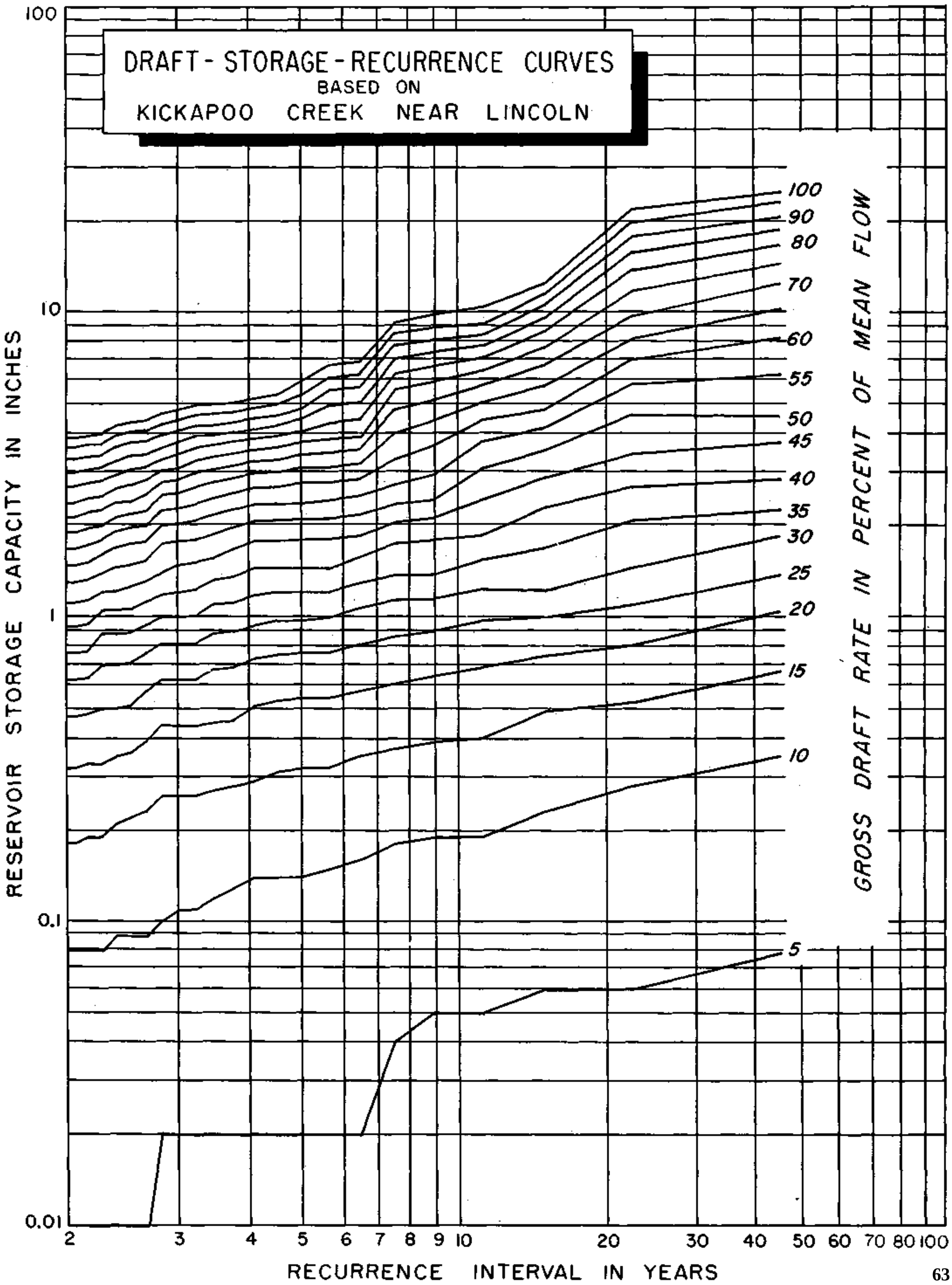
SYNTHETIC FLOW DATA
PERIOD: 30 years; water years 1915-44
INDEX STATION: Sangamon River at Monticello
COINCIDENT RECORD: 15 years; water years 1945-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.73 inch per month

Draft-Storage-Recurrence Data for Kickapoo Creek near Lincoln

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.08	.35	.66	1.04	1.44	1.84	2.24	2.85	3.70	4.79	6.23	8.12	10.16	12.21	14.25	16.29	18.34	20.38	22.43	24.47
	7	8	10	11	11	11	11	18	30	30	44	56	56	56	56	56	56	56	56	56
22.5	.06	.28	.52	.80	1.09	1.47	2.06	2.64	3.40	4.57	5.74	6.91	8.07	9.57	11.55	13.52	15.49	17.46	19.43	21.41
	6	6	7	8	8	16	16	16	32	32	32	32	32	54	54	54	54	54	54	56
15.0	.06	.23	.49	.74	1.00	1.26	1.69	2.27	2.86	3.50	4.16	4.81	5.67	6.62	7.57	8.51	9.46	10.41	11.36	12.31
	4	7	7	7	7	8	16	16	16	18	18	18	26	26	26	26	26	26	26	26
11.3	.05	.19	.40	.68	.97	1.26	1.55	1.85	2.41	3.07	3.73	4.38	5.04	5.70	6.36	7.01	7.67	8.33	8.98	10.21
	4	5	7	8	8	8	8	8	18	18	18	18	18	18	18	18	18	18	18	40
9.0	.05	.19	.39	.64	.90	1.16	1.45	1.76	2.09	2.42	2.90	3.63	4.36	5.09	5.82	6.55	7.28	8.01	8.74	9.65
	4	4	7	7	7	8	8	9	9	9	20	20	20	20	20	20	20	20	20	40
7.5	.04	.18	.37	.60	.86	1.14	1.43	1.73	2.02	2.32	2.69	3.25	3.98	4.71	5.44	6.17	6.90	7.63	8.36	9.09
	4	4	6	7	7	8	8	8	8	10	10	20	20	20	20	20	20	20	20	20
6.4	.02	.16	.35	.57	.81	1.06	1.32	1.57	1.83	2.15	2.47	2.80	3.15	3.51	3.88	4.42	5.01	5.59	6.18	6.76
	4	5	6	6	7	7	7	7	7	9	9	9	10	10	10	16	16	16	16	16
5.6	.02	.15	.32	.54	.76	.99	1.25	1.50	1.79	2.08	2.40	2.73	3.06	3.42	3.79	4.27	4.86	5.44	6.03	6.61
	2	4	6	6	6	7	7	8	8	9	9	9	10	10	10	16	16	16	16	16
5.0	.02	.14	.32	.54	.76	.97	1.23	1.50	1.79	2.08	2.40	2.73	3.06	3.39	3.72	4.05	4.42	4.78	5.23	5.89
	2	4	6	6	6	7	7	8	8	9	9	9	9	9	9	10	10	10	18	18
4.5	.02	.14	.31	.53	.75	.97	1.23	1.49	1.78	2.07	2.36	2.65	2.95	3.24	3.56	3.89	4.21	4.54	4.90	5.30
	1	4	6	6	6	7	7	8	8	8	8	8	8	8	9	9	9	9	10	16
4.1	.02	.14	.29	.51	.73	.94	1.17	1.47	1.76	2.05	2.34	2.63	2.93	3.22	3.51	3.80	4.09	4.44	4.81	5.17
	1	4	6	6	6	6	8	8	8	8	8	8	8	8	8	8	8	10	10	10
3.8	.02	.13	.28	.46	.68	.89	1.11	1.37	1.66	1.95	2.24	2.53	2.83	3.12	3.41	3.70	3.99	4.31	4.64	5.00
	1	4	5	6	6	6	7	8	8	8	8	8	8	8	8	8	8	9	10	10
3.5	.02	.12	.27	.45	.67	.88	1.10	1.32	1.57	1.86	2.15	2.44	2.74	3.03	3.32	3.61	3.90	4.21	4.57	4.93
	1	4	5	6	6	6	6	6	8	8	8	8	8	8	8	8	8	9	10	10
3.2	.02	.11	.26	.44	.62	.81	1.00	1.25	1.51	1.77	2.05	2.34	2.64	2.93	3.22	3.54	3.86	4.19	4.52	4.87
	1	4	5	5	5	5	7	7	7	7	8	8	8	8	8	9	9	9	9	10
3.0	.02	.11	.26	.44	.62	.81	.99	1.23	1.49	1.75	2.00	2.26	2.51	2.77	3.03	3.36	3.68	4.01	4.34	4.67
	1	4	5	5	5	5	5	7	7	7	7	7	7	7	9	9	9	9	9	9
2.8	.02	.10	.26	.44	.62	.81	.99	1.19	1.45	1.71	1.96	2.22	2.47	2.73	2.98	3.24	3.53	3.89	4.26	4.62
	1	3	5	5	5	5	5	7	7	7	7	7	7	7	7	7	10	10	10	10
2.6	.01	.09	.23	.39	.57	.76	.94	1.12	1.31	1.53	1.75	1.97	2.21	2.50	2.79	3.08	3.37	3.70	4.03	4.36
	2	3	4	5	5	5	5	5	6	6	6	6	8	8	8	8	9	9	9	9
2.5	.01	.09	.22	.36	.51	.70	.88	1.06	1.28	1.50	1.72	1.94	2.16	2.38	2.69	3.02	3.34	3.67	4.00	4.33
	2	3	4	4	5	5	5	6	6	6	6	6	6	8	9	9	9	9	9	9
2.4	.01	.09	.21	.35	.50	.69	.87	1.05	1.23	1.45	1.67	1.89	2.11	2.36	2.61	2.89	3.21	3.54	3.87	4.20
	2	2	4	4	5	5	5	5	6	6	6	6	6	7	7	9	9	9	9	9
2.3	.01	.08	.19	.33	.50	.69	.87	1.05	1.23	1.42	1.60	1.78	1.97	2.23	2.48	2.77	3.06	3.36	3.65	3.94
	1	3	4	4	5	5	5	5	5	5	5	5	7	7	8	8	8	8	8	8
2.1	.01	.08	.19	.33	.48	.63	.77	.95	1.13	1.32	1.50	1.71	1.93	2.18	2.43	2.72	3.01	3.31	3.60	3.89
	1	2	4	4	4	4	5	5	5	5	5	6	6	7	8	8	8	8	8	8
2.0	.01	.08	.18	.32	.47	.62	.76	.93	1.11	1.30	1.48	1.66	1.88	2.10	2.36	2.65	2.94	3.24	3.53	3.82
	1	2	4	4	4	4	4	5	5	5	5	6	6	6	8	8	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KICKAPOO CREEK NEAR LINCOLN
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
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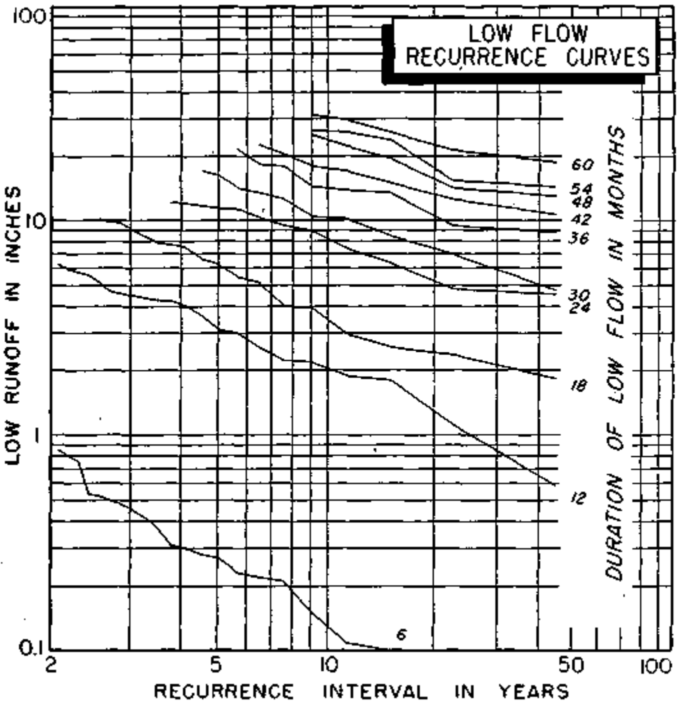


STATION 95

LOCATION

On line between sec 19 and 20, T21N, R1E, DeWitt County, at bridge 0.7 mile north of Waynesville and 5.5 miles east of Atlanta

DRAINAGE AREA

227 square miles

ACTUAL FLOW DATA

PERIOD: Jan 1948 thru Sept 1959

CONTINUOUS RECORD: 11 years; water years 1949-59

SYNTHETIC FLOW DATA

PERIOD: 34 years; water years 1915-48

INDEX STATION: Sangamon River at Monticello

COINCIDENT RECORD: 11 years; water years 1949-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

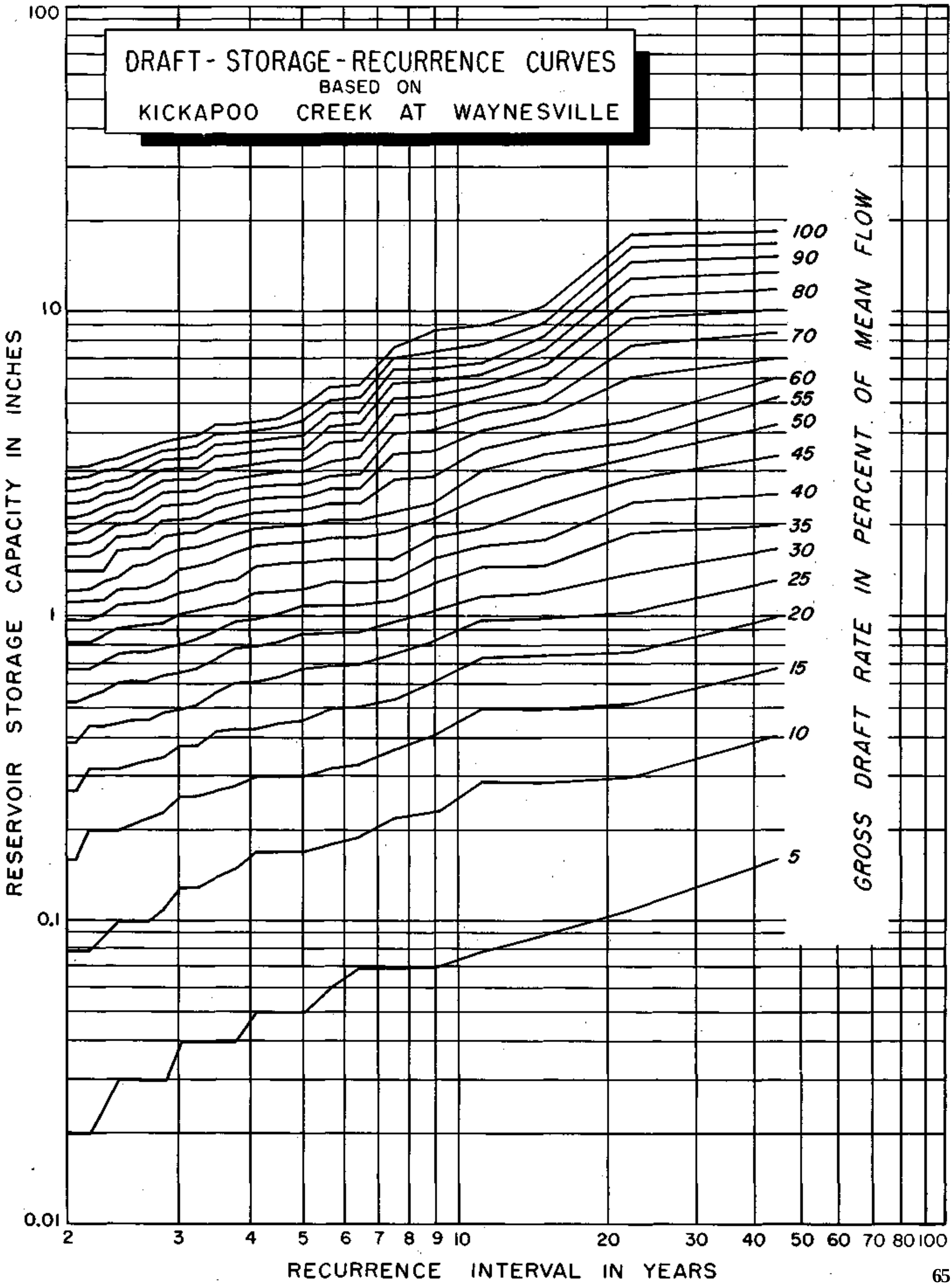
MEAN DISCHARGE : 0.61 inch per month

Draft-Storage-Recurrence Data for Kickapoo Creek at Waynesville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.16 8	.41 8	.68 10	1.00 11	1.34 11	1.67 11	2.01 14	2.54 18	3.40 30	4.31 30	5.23 30	6.14 30	7.08 32	8.57 54	10.22 54	11.86 54	13.51 54	15.16 54	16.80 54	18.49 56
22.5	.11 6	.30 6	.52 8	.77 9	1.04 9	1.40 16	1.69 16	2.37 16	2.86 16	3.35 16	3.84 16	4.45 56	6.15 56	7.86 56	9.57 56	11.28 56	12.99 56	14.69 56	16.40 56	18.11 56
15.0	.09 5	.29 7	.50 8	.75 8	.99 8	1.23 8	1.48 8	1.78 18	2.33 18	2.88 18	3.43 18	3.98 18	4.53 18	5.08 18	5.84 28	6.69 28	7.55 28	8.40 28	9.26 28	10.51 42
11.3	.08 4	.29 7	.50 7	.74 8	.98 8	1.22 8	1.47 8	1.71 8	1.96 8	2.48 18	3.03 18	3.58 18	4.13 18	4.68 18	5.23 18	5.77 18	6.32 18	6.87 18	7.88 38	9.07 40
9.0	.07 5	.23 5	.41 7	.62 7	.84 7	1.05 8	1.30 8	1.56 9	1.83 9	2.11 9	2.38 10	2.92 20	3.53 20	4.14 20	4.75 20	5.36 20	5.97 20	6.58 20	7.48 40	8.70 40
7.5	.07 4	.22 5	.37 5	.54 7	.76 7	.97 7	1.18 8	1.42 8	1.67 8	1.91 8	2.21 20	2.82 20	3.43 20	4.04 20	4.65 20	5.26 20	5.87 20	6.48 20	7.09 20	7.70 20
6.4	.07 4	.19 4	.33 6	.51 6	.70 6	.90 7	1.11 7	1.33 7	1.57 8	1.82 9	2.09 9	2.36 9	2.65 10	2.95 10	3.36 16	3.85 16	4.34 16	4.82 16	5.31 16	5.82 20
5.6	.06 4	.18 4	.32 6	.50 6	.69 6	.89 7	1.10 7	1.32 7	1.56 8	1.82 9	2.09 9	2.36 9	2.64 9	2.91 9	3.24 16	3.73 16	4.22 16	4.70 16	5.19 16	5.68 16
5.0	.05 4	.17 4	.30 5	.46 7	.68 7	.89 7	1.10 7	1.32 7	1.53 7	1.76 8	2.00 8	2.25 8	2.49 8	2.75 9	3.03 9	3.30 9	3.60 10	3.97 16	4.46 16	4.95 16
4.5	.05 4	.17 4	.30 4	.45 6	.64 6	.83 7	1.04 7	1.26 8	1.51 8	1.75 8	1.99 8	2.24 8	2.48 8	2.73 8	2.99 10	3.29 10	3.60 10	3.90 10	4.21 10	4.51 10
4.1	.05 4	.17 4	.30 4	.43 6	.62 6	.80 6	.99 8	1.23 8	1.48 8	1.72 8	1.96 8	2.21 8	2.45 8	2.70 8	2.94 8	3.22 10	3.53 10	3.83 10	4.14 10	4.44 10
3.8	.04 3	.15 4	.28 5	.43 5	.61 6	.79 6	.97 6	1.15 6	1.39 8	1.63 8	1.87 8	2.12 8	2.36 8	2.61 8	2.85 8	3.12 10	3.43 10	3.73 10	4.04 10	4.34 10
3.5	.04 2	.14 4	.27 5	.42 5	.57 5	.73 5	.90 6	1.10 7	1.31 7	1.54 8	1.78 8	2.03 8	2.27 8	2.52 8	2.78 9	3.07 10	3.38 10	3.68 10	3.99 10	4.29 10
3.2	.04 2	.13 4	.26 4	.38 4	.52 5	.68 6	.86 6	1.06 7	1.27 7	1.49 7	1.70 7	1.91 7	2.13 8	2.38 8	2.62 8	2.86 8	3.11 8	3.36 10	3.67 10	3.97 10
3.0	.04 2	.13 4	.26 4	.38 4	.50 5	.66 5	.82 6	1.03 7	1.24 7	1.46 7	1.67 7	1.88 7	2.10 8	2.35 8	2.59 8	2.83 8	3.08 8	3.32 8	3.60 10	3.90 10
2.8	.03 2	.11 3	.23 4	.35 4	.49 5	.65 5	.80 5	.97 6	1.16 6	1.35 8	1.59 8	1.84 8	2.08 8	2.33 8	2.57 8	2.81 8	3.06 8	3.30 8	3.55 8	3.79 8
2.6	.03 2	.10 3	.22 4	.34 4	.46 5	.62 5	.77 6	.95 6	1.14 6	1.32 6	1.50 6	1.69 6	1.90 8	2.15 8	2.39 8	2.63 8	2.88 8	3.12 8	3.37 8	3.61 8
2.5	.03 2	.10 3	.21 4	.33 4	.46 5	.62 5	.77 5	.93 6	1.12 6	1.30 6	1.48 6	1.67 6	1.85 6	2.03 7	2.24 7	2.46 7	2.67 9	2.94 9	3.22 9	3.49 9
2.4	.03 2	.10 3	.20 4	.32 4	.45 5	.61 5	.76 5	.92 6	1.11 6	1.29 6	1.47 6	1.66 6	1.84 6	2.02 6	2.21 6	2.39 6	2.58 8	2.82 8	3.07 9	3.34 9
2.3	.02 2	.09 3	.20 4	.32 4	.44 4	.58 5	.73 5	.88 5	1.03 5	1.19 5	1.34 5	1.49 5	1.67 7	1.88 7	2.09 7	2.31 7	2.55 8	2.79 8	3.04 8	3.28 8
2.1	.02 2	.08 2	.20 4	.32 4	.44 4	.56 4	.68 5	.83 5	.98 5	1.14 5	1.29 5	1.44 5	1.59 5	1.77 7	1.98 7	2.20 7	2.42 8	2.66 8	2.91 8	3.15 8
2.0	.02 2	.08 2	.16 3	.27 4	.39 4	.53 5	.68 5	.83 5	.98 5	1.14 5	1.29 5	1.44 5	1.59 5	1.75 5	1.90 5	2.13 8	2.38 8	2.62 8	2.87 8	3.11 8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KICKAPOO CREEK AT WAYNESVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
90
80
70
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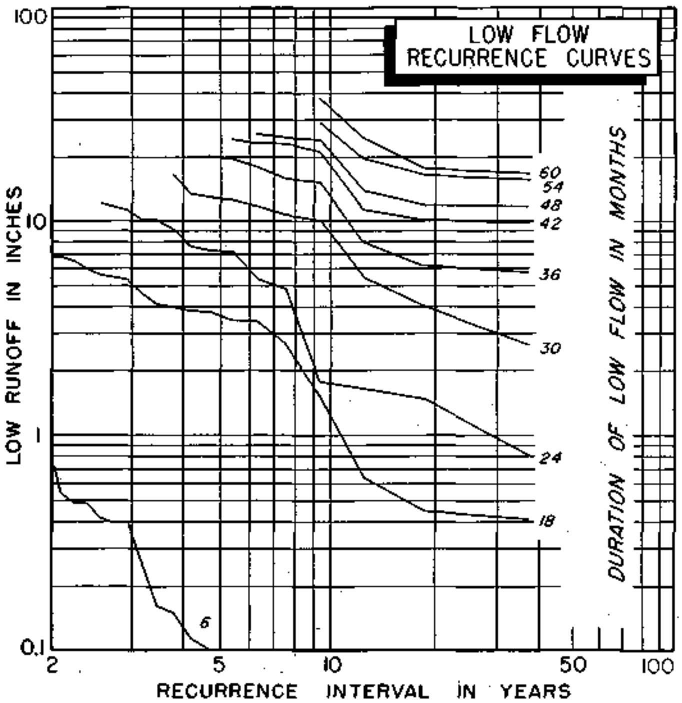
10
5

MONEY CREEK NEAR TOWANDA



STATION 114

LOCATION

In SW ¼ SW ¼ sec 20, T25N, R3E, McLean County, at highway bridge 3.0 miles north of Towanda and 8.0 miles northeast of Normal

DRAINAGE AREA

47.9 square miles

ACTUAL FLOW DATA

PERIOD: May 1958 thru Sept 1959

Note: For 25 years, water years 1934-58, this stream was gaged one mile downstream "above Lake Bloomington"; records have been combined

CONTINUOUS RECORD: 26 years; water years 1934-59

SYNTHETIC FLOW DATA

PERIOD: 12 years; water years 1922-33

INDEX STATION : Mackinaw River at Green Valley

COINCIDENT RECORD: 23 years; water years 1934-56

TOTAL DATA ANALYZED

PERIOD: 38 years; water years 1922-59

MEAN DISCHARGE : 0.72 inch per month

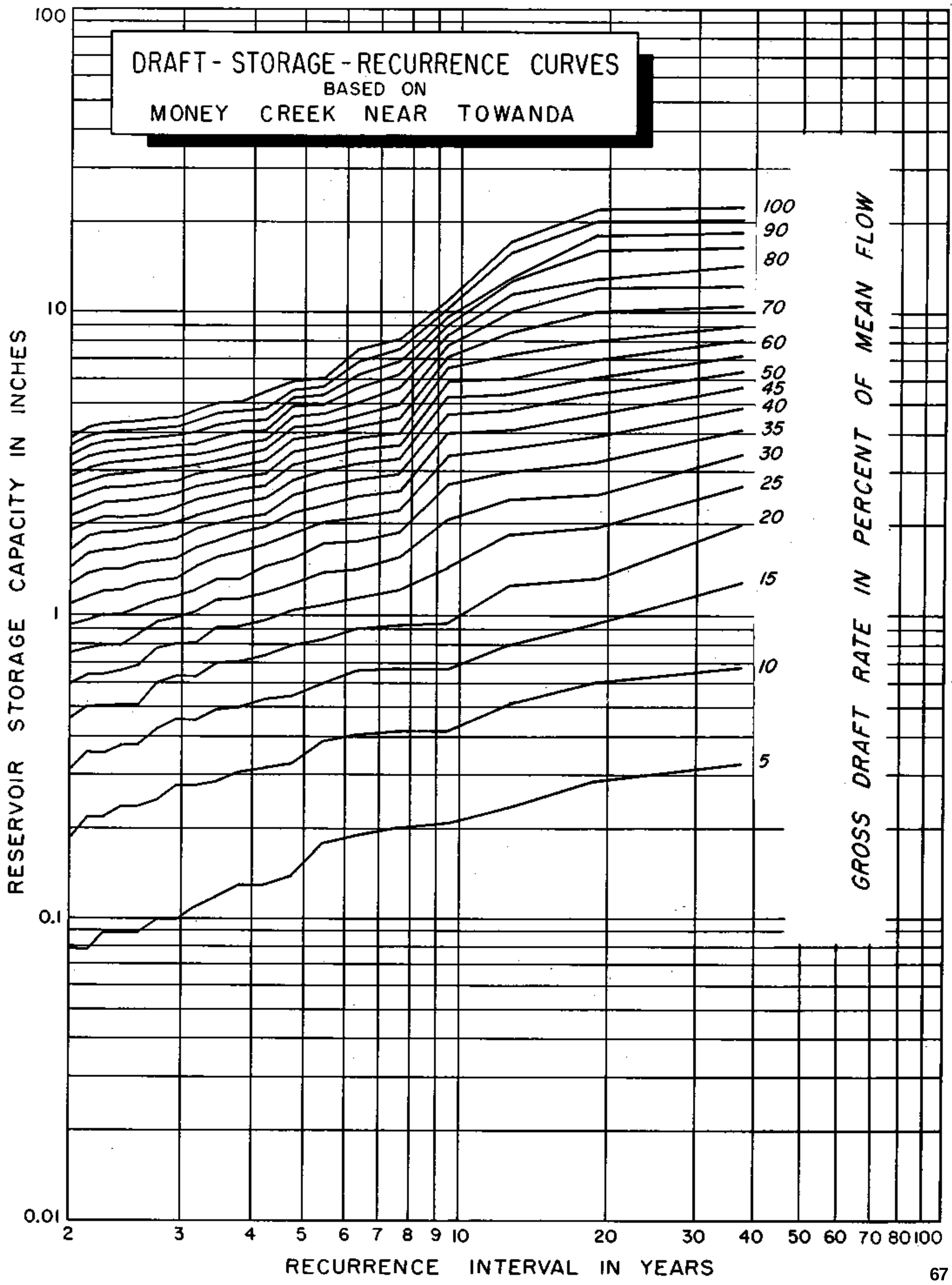
Draft-Storage-Recurrence Data for Money Creek near Towanda

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50
38.0	.33 10	.69 10	1.31 20	2.03 20	2.75 20	3.47 20	4.19 20	4.98 22	5.77 22	6.56 22
19.0	.29 9	.62 9	.96 10	1.40 16	1.98 16	2.56 16	3.27 20	3.99 20	4.72 22	5.51 22
12.7	.24 8	.53 8	.81 8	1.30 16	1.88 16	2.46 16	3.03 16	3.61 16	4.19 18	4.54 18
9.5	.21 6	.42 7	.68 7	.96 9	1.47 18	2.12 18	2.77 18	3.41 18	4.06 18	4.71 18
7.6	.20 6	.42 7	.68 7	.94 9	1.26 9	1.58 9	1.91 10	2.27 10	2.63 10	2.99 10
6.3	.19 6	.41 7	.67 7	.92 7	1.17 7	1.45 9	1.79 10	2.15 10	2.51 10	2.87 10
5.4	.18 6	.39 6	.61 6	.85 7	1.10 9	1.42 9	1.75 9	2.07 9	2.40 9	2.72 9
4.8	.14 4	.33 6	.56 7	.81 7	1.06 7	1.31 7	1.57 9	1.89 9	2.22 9	2.54 9
4.2	.13 5	.32 6	.54 6	.75 6	.98 7	1.23 7	1.48 7	1.74 7	1.99 7	2.24 7
3.8	.13 5	.31 5	.51 6	.72 6	.94 6	1.16 6	1.39 7	1.65 7	1.90 7	2.15 7
3.5	.12 4	.29 5	.50 6	.71 6	.93 6	1.15 6	1.36 6	1.58 6	1.79 7	2.04 7
3.2	.11 3	.28 5	.46 5	.64 5	.83 6	1.05 6	1.26 6	1.48 6	1.71 7	1.96 7
2.9	.10 5	.28 5	.46 5	.64 5	.82 5	1.00 5	1.18 5	1.36 5	1.57 7	1.82 7
2.7	.10 4	.25 5	.43 5	.61 5	.79 5	.97 5	1.15 5	1.34 6	1.55 6	1.77 6
2.5	.09 4	.24 4	.38 4	.53 4	.70 5	.88 6	1.09 6	1.31 6	1.52 6	1.74 6
2.4	.09 4	.24 4	.38 4	.53 4	.67 4	.82 6	1.03 6	1.25 6	1.46 6	1.68 6
2.2	.09 3	.22 4	.36 4	.51 4	.65 4	.81 6	1.02 6	1.24 6	1.45 6	1.67 6
2.1	.08 3	.22 4	.36 4	.51 4	.65 4	.80 5	.98 6	1.20 6	1.41 6	1.63 6
2.0	.08 3	.19 3	.32 4	.47 4	.61 4	.77 5	.95 5	1.13 5	1.31 5	1.49 5

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
38.0	7.37 26	8.30 26	9.24 26	10.74 56	12.76 56	14.78 56	16.79 56	18.81 56	20.82 56	22.84 56
19.0	6.30 22	7.09 22	8.22 56	10.23 56	12.25 56	14.27 56	16.28 56	18.30 56	20.31 56	22.33 56
12.7	5.49 18	6.20 34	7.42 34	8.79 40	10.23 40	11.67 40	13.11 40	14.55 40	15.99 40	17.43 40
9.5	5.36 18	6.01 18	6.65 18	7.30 18	7.95 18	8.60 18	9.25 18	9.89 18	10.54 18	11.19 18
7.6	3.35 10	3.71 10	4.07 10	4.54 16	5.12 16	5.73 18	6.38 18	7.02 18	7.67 18	8.32 18
6.3	3.23 10	3.59 10	3.95 10	4.31 10	4.67 10	5.17 16	5.74 16	6.35 18	7.00 18	7.65 18
5.4	3.04 9	3.37 9	3.69 9	4.02 9	4.35 10	4.71 10	5.07 10	5.43 10	5.79 10	6.22 20
4.8	2.86 9	3.19 9	3.51 10	3.87 10	4.23 10	4.59 10	4.95 10	5.31 10	5.67 10	6.03 10
4.2	2.49 7	2.74 7	3.00 8	3.29 8	3.58 8	3.87 8	4.16 8	4.50 11	4.92 18	5.57 18
3.8	2.40 7	2.65 7	2.91 7	3.16 7	3.41 7	3.73 10	4.09 10	4.45 10	4.81 10	5.17 10
3.5	2.29 7	2.54 7	2.80 7	3.05 7	3.30 7	3.57 8	3.93 11	4.33 11	4.72 11	5.12 11
3.2	2.21 7	2.46 7	2.72 7	2.97 7	3.22 7	3.47 7	3.76 10	4.12 10	4.48 10	4.84 10
2.9	2.07 7	2.32 7	2.58 7	2.84 8	3.13 8	3.42 8	3.71 8	3.99 8	4.28 8	4.57 8
2.7	1.99 6	2.23 6	2.51 8	2.80 8	3.09 8	3.38 8	3.67 8	3.95 8	4.24 8	4.53 8
2.5	1.96 6	2.20 7	2.46 7	2.73 8	3.02 8	3.31 8	3.60 8	3.88 8	4.17 8	4.46 8
2.4	1.92 7	2.17 7	2.43 7	2.70 8	2.99 8	3.28 8	3.57 8	3.85 8	4.14 8	4.43 8
2.2	1.91 7	2.16 7	2.42 7	2.67 7	2.94 8	3.23 8	3.52 8	3.80 8	4.09 8	4.38 8
2.1	1.85 6	2.06 7	2.32 7	2.57 7	2.82 8	3.11 8	3.40 8	3.68 8	3.97 8	4.26 8
2.0	1.70 7	1.95 7	2.21 7	2.46 7	2.71 7	2.96 7	3.21 7	3.47 7	3.72 7	3.97 7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
MONEY CREEK NEAR TOWANDA
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
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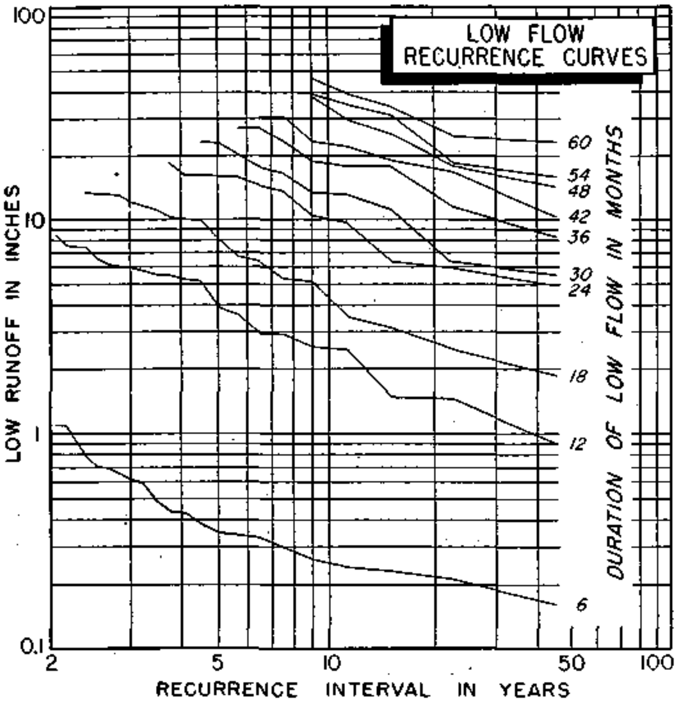
20
15
10
5



STATION 131

LOCATION
In NE ¼ SE ¼ sec 11, T19N, R1E, DeWitt County, at highway bridge 0.5 mile upstream from U. S. 54, 3.2 miles northwest of Rowell, and 7.0 miles southwest of Clinton

DRAINAGE AREA
334 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1942 thru Sept 1959
CONTINUOUS RECORD: 17 years; water years 1943-59

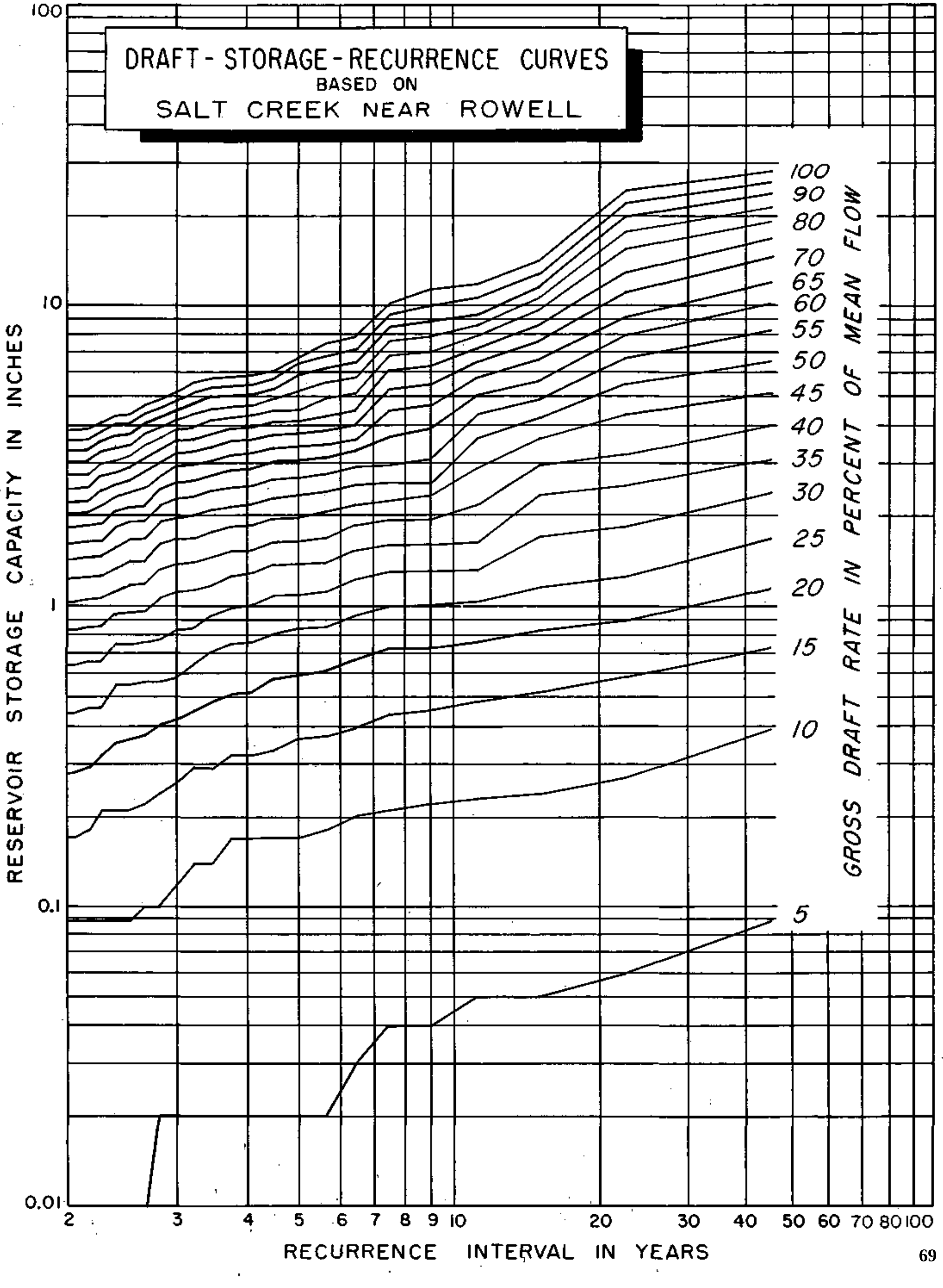
SYNTHETIC FLOW DATA
PERIOD: 28 years; water years 1915-42
INDEX STATION: Sangamon River at Monticello
COINCIDENT RECORD: 17 years; water years 1943-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.79 inch per month

Draft-Storage-Recurrence Data for Salt Creek near Rowell

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.09 7	.39 8	.73 10	1.15 11	1.68 18	2.39 18	3.10 18	3.96 30	5.15 30	6.49 44	8.23 44	10.05 56	12.27 56	14.48 56	16.69 56	18.90 56	21.11 56	23.33 56	25.54 56	27.75 56
22.5	.06 4	.27 7	.58 8	.89 8	1.25 14	1.82 16	2.49 18	3.20 18	4.32 30	5.50 30	6.69 30	7.87 30	9.11 32	11.01 54	13.15 54	15.28 54	17.41 54	19.54 54	21.70 56	23.91 56
15.0	.05 4	.24 7	.52 8	.83 8	1.15 8	1.70 16	2.33 16	2.97 16	3.60 16	4.23 16	4.86 16	5.61 20	6.55 26	7.58 26	8.61 26	9.63 26	10.66 26	11.69 26	12.71 26	14.03 56
11.3	.05 4	.23 6	.48 7	.76 7	1.03 7	1.31 8	1.63 9	2.18 18	2.89 18	3.60 18	4.31 18	5.02 18	5.73 18	6.44 18	7.16 18	7.87 18	8.58 18	9.29 18	10.49 38	11.99 38
9.0	.04 4	.22 5	.45 7	.73 7	1.00 7	1.30 8	1.61 8	1.94 9	2.30 9	2.66 9	3.05 20	3.84 20	4.63 20	5.42 20	6.21 20	7.00 20	7.83 22	8.70 22	9.88 40	11.46 40
7.5	.04 4	.21 5	.44 7	.72 7	.99 7	1.29 8	1.60 8	1.92 8	2.23 8	2.58 9	2.93 9	3.63 20	4.42 20	5.21 20	6.00 20	6.79 20	7.58 20	8.37 20	9.19 22	10.06 22
6.4	.03 4	.20 5	.39 5	.66 7	.93 7	1.22 8	1.53 8	1.85 8	2.18 9	2.54 9	2.89 9	3.25 9	3.60 9	3.96 9	4.44 16	5.07 16	5.71 18	6.42 18	7.13 18	7.84 18
5.6	.02 4	.18 4	.37 6	.61 6	.85 6	1.11 7	1.39 7	1.68 9	2.04 9	2.40 9	2.75 9	3.11 9	3.46 9	3.82 9	4.25 16	4.88 16	5.51 16	6.15 16	6.78 16	7.45 18
5.0	.02 3	.17 4	.36 6	.60 6	.84 6	1.09 7	1.37 7	1.65 8	1.96 9	2.32 9	2.67 9	3.03 9	3.38 9	3.74 9	4.09 10	4.52 16	5.15 16	5.79 16	6.42 16	7.05 16
4.5	.02 3	.17 4	.33 6	.57 6	.81 6	1.08 7	1.36 7	1.63 8	1.94 8	2.29 9	2.64 9	3.00 9	3.35 9	3.71 9	4.08 10	4.47 10	4.87 10	5.26 10	5.66 10	6.05 10
4.1	.02 2	.17 4	.32 4	.52 6	.76 6	1.01 7	1.29 7	1.56 7	1.85 8	2.17 8	2.50 9	2.86 9	3.21 9	3.57 9	3.92 9	4.28 9	4.64 10	5.03 10	5.43 10	5.82 10
3.8	.02 2	.17 4	.32 4	.51 6	.75 6	.98 7	1.26 7	1.53 7	1.83 8	2.15 8	2.47 8	2.82 9	3.17 9	3.53 9	3.88 9	4.24 9	4.61 10	5.00 10	5.40 10	5.79 10
3.5	.02 2	.14 4	.29 4	.48 5	.70 6	.93 6	1.17 6	1.46 8	1.77 8	2.09 8	2.41 8	2.72 8	3.04 8	3.35 10	3.75 10	4.14 10	4.54 10	4.93 10	5.33 10	5.72 10
3.2	.02 2	.14 4	.29 4	.45 5	.65 5	.85 7	1.13 7	1.40 7	1.68 7	1.99 8	2.31 8	2.62 8	2.94 8	3.25 8	3.57 9	3.93 10	4.33 10	4.72 10	5.12 10	5.51 10
3.0	.02 2	.11 4	.26 4	.42 4	.58 4	.84 7	1.12 7	1.39 7	1.67 7	1.95 8	2.27 8	2.58 8	2.90 8	3.21 8	3.53 8	3.85 8	4.16 8	4.48 8	4.79 8	5.16 10
2.8	.02 2	.10 3	.24 4	.40 4	.56 5	.78 7	1.06 7	1.33 7	1.61 7	1.89 7	2.16 7	2.44 7	2.71 7	2.99 7	3.30 8	3.62 8	3.93 8	4.25 8	4.56 8	4.88 8
2.6	.01 2	.10 3	.22 3	.37 4	.56 5	.76 5	.96 6	1.20 6	1.43 6	1.67 6	1.91 6	2.14 8	2.46 8	2.77 8	3.09 8	3.41 8	3.72 8	4.04 8	4.35 8	4.67 8
2.5	.01 2	.09 3	.21 3	.36 4	.55 5	.75 5	.95 6	1.19 6	1.42 6	1.66 6	1.90 6	2.13 6	2.37 6	2.61 6	2.88 7	3.15 7	3.43 7	3.73 8	4.04 8	4.36 8
2.4	.01 2	.09 3	.21 3	.35 5	.55 5	.75 5	.94 5	1.14 5	1.34 6	1.58 6	1.82 6	2.05 6	2.29 6	2.53 6	2.77 6	3.04 8	3.35 8	3.67 8	3.98 8	4.30 8
2.3	.01 2	.09 3	.21 3	.32 3	.47 5	.67 5	.86 5	1.06 5	1.26 5	1.46 5	1.65 5	1.87 7	2.14 7	2.42 7	2.70 7	2.97 7	3.25 7	3.53 7	3.80 7	4.08 7
2.1	.01 2	.09 2	.18 3	.29 3	.46 5	.66 5	.85 5	1.05 5	1.25 5	1.45 5	1.64 5	1.84 5	2.04 5	2.24 5	2.48 7	2.75 7	3.03 7	3.31 7	3.58 7	3.86 7
2.0	.01 2	.09 2	.17 2	.28 4	.44 5	.64 5	.83 5	1.03 5	1.23 5	1.43 5	1.62 5	1.82 5	2.02 5	2.22 5	2.45 7	2.72 7	3.00 7	3.28 7	3.55 7	3.83 7


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
SALT CREEK NEAR ROWELL
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
65
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
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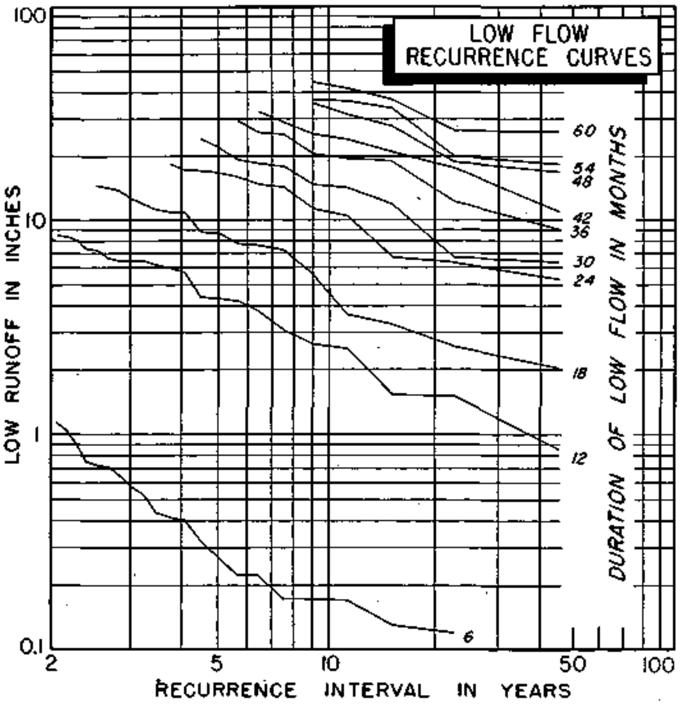
70
80
100



STATION 133

LOCATION

In NE ¼ SW ¼ sec 15, T20N, R7E, Champaign County, at bridge on U. S. 150 in Mahomet

DRAINAGE AREA

356 square miles

ACTUAL FLOW DATA

PERIOD: Mar 1948 thru Sept 1959

CONTINUOUS RECORD: 11 years; water years 1949-59

SYNTHETIC FLOW DATA

PERIOD: 34 years; water years 1915-48

INDEX STATION : Sangamon River at Monticello

COINCIDENT RECORD: 11 years; water years 1949-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

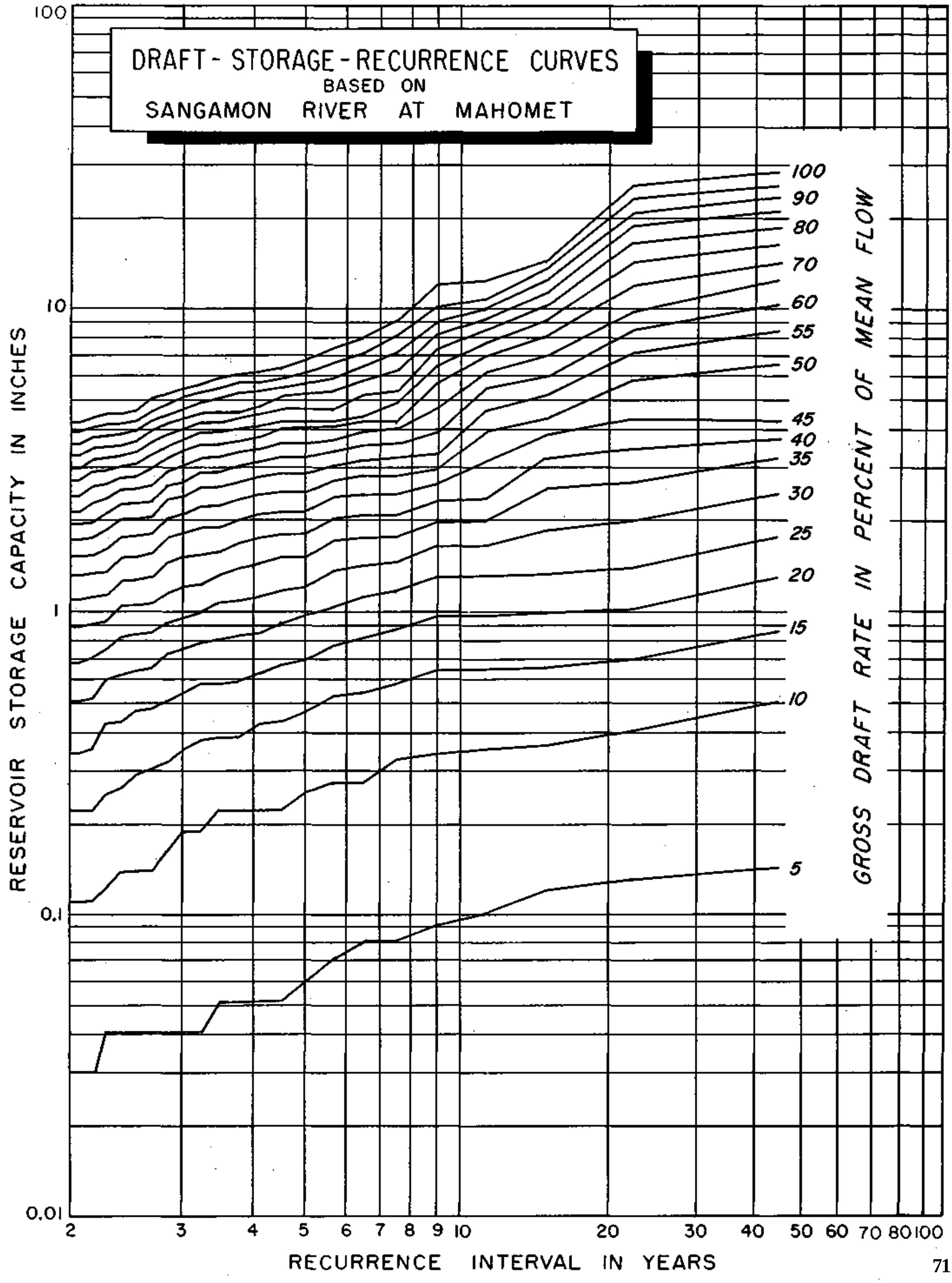
MEAN DISCHARGE : 0.82 inch per month

Draft-Storage-Recurrence Data for Sangamon River at Mahomet

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.17 8	.50 8	.85 10	1.28 11	1.74 11	2.40 18	3.14 18	3.87 18	4.76 30	6.35 42	8.13 46	10.01 46	11.90 46	13.78 46	15.79 56	18.09 56	20.38 56	22.68 56	24.97 56	27.27 56
22.5	.13 6	.40 7	.69 7	1.01 8	1.37 9	1.95 16	2.62 18	3.35 18	4.44 30	5.67 30	6.90 30	8.13 30	9.40 32	11.37 54	13.58 54	15.79 54	18.01 54	20.22 54	22.44 54	24.70 56
15.0	.12 6	.36 7	.65 8	.98 8	1.31 8	1.82 16	2.47 16	3.13 16	3.78 16	4.44 16	5.10 16	5.89 20	6.78 26	7.84 26	8.91 26	9.98 26	11.04 26	12.11 26	13.17 26	14.24 26
11.3	.10 5	.35 7	.64 7	.96 8	1.29 8	1.62 8	1.95 8	2.32 18	3.06 18	3.80 18	4.54 18	5.28 18	6.01 18	6.75 18	7.49 18	8.23 18	8.97 18	9.70 18	10.44 18	11.95 38
9.0	.09 4	.34 7	.63 7	.95 8	1.28 8	1.61 8	1.94 8	2.26 8	2.59 8	2.92 8	3.25 8	3.82 20	4.64 20	5.46 20	6.28 20	7.10 20	7.92 20	8.74 20	9.84 40	11.48 40
7.5	.08 6	.32 6	.57 7	.86 7	1.15 7	1.43 7	1.73 8	2.05 8	2.38 8	2.75 10	3.16 10	3.57 10	3.98 10	4.39 10	4.80 10	5.21 10	6.06 22	6.97 22	7.87 22	8.77 22
6.4	.08 4	.27 6	.53 7	.82 7	1.11 7	1.39 8	1.72 8	2.04 8	2.37 8	2.73 9	3.10 9	3.47 9	3.84 9	4.24 10	4.65 10	5.06 10	5.61 16	6.27 16	6.92 16	7.72 20
5.6	.07 4	.27 6	.52 6	.76 6	1.02 7	1.34 8	1.67 8	1.99 8	2.32 8	2.65 8	2.98 8	3.31 8	3.63 8	3.99 9	4.36 10	4.77 10	5.18 10	5.75 16	6.40 16	7.13 18
5.0	.06 4	.25 5	.46 5	.68 6	.93 6	1.19 7	1.48 7	1.77 7	2.09 8	2.43 9	2.80 9	3.17 9	3.54 9	3.91 9	4.28 9	4.67 10	5.08 10	5.49 10	5.90 10	6.54 16
4.5	.05 4	.22 5	.43 5	.66 6	.91 6	1.18 7	1.47 7	1.76 7	2.08 8	2.42 9	2.79 9	3.16 9	3.53 9	3.90 9	4.27 9	4.63 9	5.00 9	5.37 9	5.74 9	6.14 10
4.1	.05 4	.22 4	.42 5	.62 5	.83 6	1.10 7	1.40 8	1.72 8	2.05 8	2.38 8	2.71 8	3.04 8	3.36 8	3.69 8	4.02 8	4.36 10	4.77 10	5.18 10	5.59 10	6.00 10
3.8	.05 4	.22 4	.38 5	.58 5	.82 6	1.07 7	1.36 7	1.65 7	1.96 8	2.29 8	2.62 8	2.95 8	3.27 8	3.60 8	3.93 8	4.30 10	4.71 10	5.12 10	5.53 10	5.94 10
3.5	.05 4	.22 4	.38 4	.57 5	.80 6	1.05 6	1.29 6	1.54 6	1.86 8	2.19 8	2.52 8	2.85 8	3.17 8	3.50 8	3.83 8	4.16 8	4.50 10	4.91 10	5.32 10	5.73 10
3.2	.04 3	.19 4	.37 5	.57 5	.78 5	.98 5	1.21 7	1.51 8	1.84 8	2.17 8	2.50 8	2.83 8	3.15 8	3.48 8	3.81 8	4.14 8	4.47 8	4.79 9	5.16 9	5.53 9
3.0	.04 2	.19 4	.35 4	.54 5	.75 5	.95 5	1.20 7	1.49 7	1.77 7	2.06 7	2.35 7	2.64 8	2.96 8	3.29 8	3.62 8	3.95 8	4.28 8	4.60 8	4.96 9	5.33 10
2.8	.04 2	.16 4	.32 4	.50 5	.71 5	.91 5	1.13 7	1.42 7	1.70 7	1.99 7	2.28 7	2.56 7	2.85 7	3.14 7	3.43 8	3.76 8	4.09 8	4.41 8	4.74 8	5.10 9
2.6	.04 2	.14 4	.30 4	.47 4	.64 5	.84 5	1.05 5	1.28 6	1.52 6	1.77 6	2.02 6	2.26 6	2.55 8	2.88 8	3.21 8	3.54 8	3.87 8	4.19 8	4.52 8	4.85 8
2.5	.04 2	.14 3	.29 4	.46 4	.63 5	.83 5	1.04 5	1.25 6	1.49 6	1.74 6	1.99 6	2.23 6	2.48 6	2.72 6	3.00 7	3.28 7	3.57 7	3.86 7	4.17 8	4.50 8
2.4	.04 2	.13 3	.26 4	.43 4	.61 5	.81 5	1.02 5	1.23 6	1.47 6	1.72 6	1.97 6	2.21 6	2.46 6	2.70 6	2.95 6	3.20 6	3.44 6	3.75 8	4.08 8	4.41 8
2.3	.04 2	.12 3	.25 4	.42 4	.58 4	.74 4	.92 5	1.12 5	1.33 5	1.57 6	1.82 6	2.06 6	2.31 6	2.57 7	2.66 7	3.14 7	3.43 7	3.74 8	4.07 8	4.40 8
2.1	.03 2	.11 2	.22 3	.35 4	.51 4	.69 5	.90 5	1.10 5	1.31 5	1.51 5	1.72 5	1.94 7	2.23 7	2.52 7	2.81 7	3.09 7	3.38 7	3.67 7	3.95 8	4.28 8
2.0	.03 2	.11 2	.22 3	.34 4	.50 4	.67 5	.88 5	1.08 5	1.29 5	1.49 5	1.70 5	1.90 5	2.11 5	2.35 7	2.64 7	2.92 7	3.21 7	3.50 7	3.82 8	4.15 8


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
SANGAMON RIVER AT MAHOMET
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
100
2
3
4
5
6
7
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9
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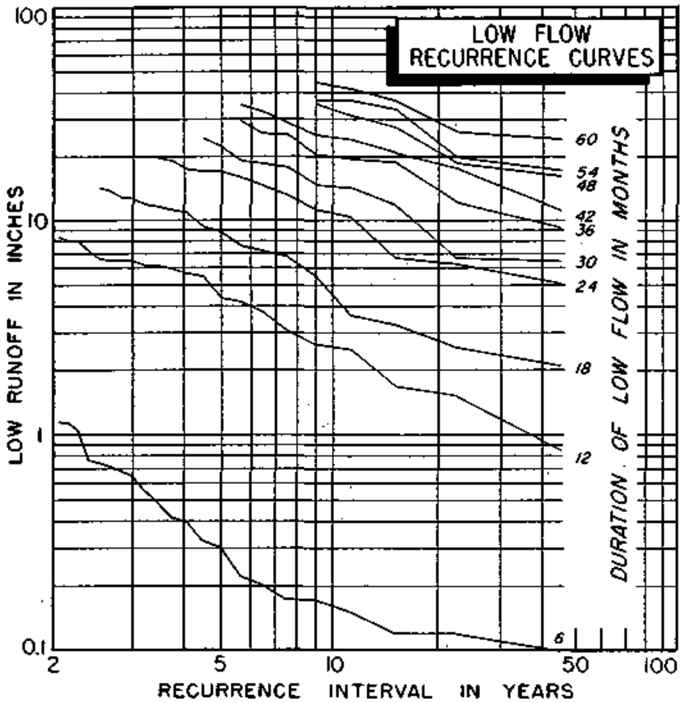
20
30
40
50
60
70
80
100



STATION 134

LOCATION
In SW ¼ sec 12, T18N, R5E, Piatt County, at Illinois Central Railroad bridge 0.5 mile west of Monticello

DRAINAGE AREA
550 square miles

ACTUAL FLOW DATA
PERIOD: Feb 1908 thru Dec 1912, June 1914 thru Sept 1959
CONTINUOUS RECORD: 45 years; water years 1915-59

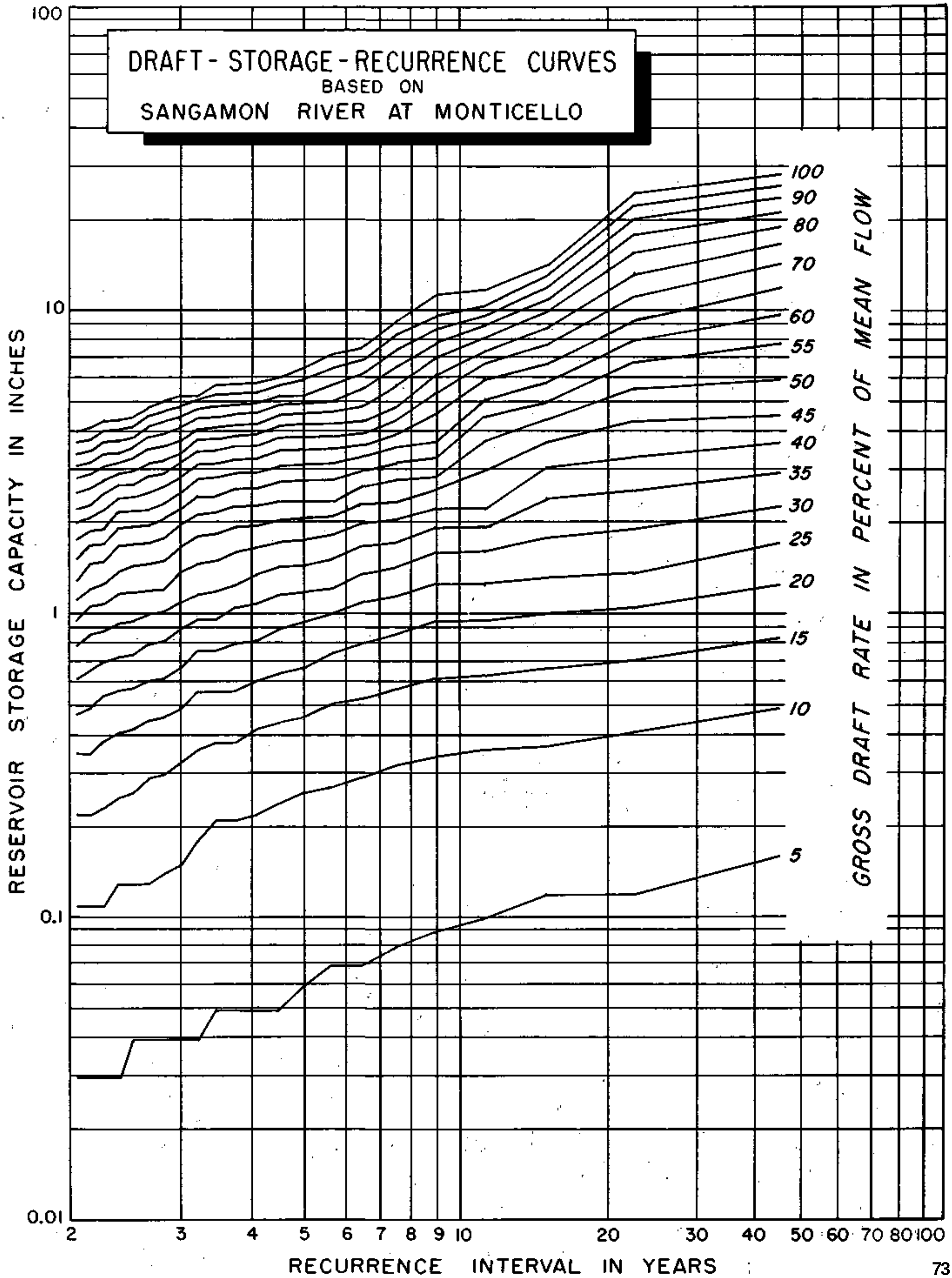
SYNTHETIC FLOW DATA
None; this station utilized as an index station

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.81 inch per month

Draft-Storage-Recurrence Data for Sangamon River at Monticello

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.16	.49	.84	1.26	1.71	2.26	2.99	3.72	4.51	5.96	7.75	9.62	11.85	14.12	16.39	18.66	20.93	23.19	25.46	27.73
	8	8	10	11	11	18	18	18	30	42	46	46	56	56	56	56	56	56	56	56
22.5	.12	.41	.72	1.05	1.37	1.90	2.55	3.28	4.31	5.52	6.74	7.95	9.19	10.99	13.18	15.36	17.55	19.74	21.92	24.14
	7	7	8	8	8	16	18	18	30	30	30	30	32	54	54	54	54	54	54	56
15.0	.12	.37	.67	1.00	1.32	1.77	2.42	3.06	3.71	4.36	5.01	5.77	6.61	7.66	8.72	9.77	10.82	11.87	12.93	13.98
	6	6	8	8	8	16	16	16	16	16	16	20	26	26	26	26	26	26	26	26
11.3	.10	.36	.64	.95	1.27	1.59	1.92	2.25	2.98	3.71	4.44	5.17	5.90	6.63	7.36	8.08	8.81	9.54	10.27	11.57
	4	7	7	8	8	8	8	18	18	18	18	18	18	18	16	18	18	18	18	38
9.0	.09	.34	.62	.95	1.27	1.59	1.92	2.24	2.57	2.89	3.25	3.70	4.51	5.32	6.13	6.94	7.75	8.56	9.46	11.08
	4	7	8	8	8	8	8	8	8	9	9	20	20	20	20	20	20	20	40	40
7.5	.08	.32	.58	.86	1.15	1.43	1.71	2.04	2.40	2.77	3.13	3.51	3.92	4.32	4.81	5.62	6.48	7.37	8.26	9.15
	4	6	7	7	7	7	7	9	9	9	9	10	10	10	20	20	22	22	22	22
6.4	.07	.29	.53	.80	1.09	1.37	1.66	1.98	2.31	2.63	2.95	3.28	3.60	3.93	4.29	4.83	5.48	6.12	6.77	7.44
	5	6	6	7	7	7	8	8	8	8	8	8	8	8	10	16	16	16	16	20
5.6	.07	.27	.51	.75	1.00	1.24	1.52	1.81	2.09	2.39	2.75	3.11	3.48	3.84	4.21	4.59	5.00	5.64	6.37	7.10
	4	6	6	6	6	7	7	7	7	9	9	9	9	9	9	10	10	18	18	18
5.0	.06	.26	.46	.67	.92	1.17	1.45	1.74	2.05	2.38	2.74	3.10	3.47	3.83	4.20	4.56	4.93	5.30	5.86	6.43
	4	5	5	6	6	7	7	7	8	9	9	9	9	9	9	9	9	14	14	14
4.5	.05	.24	.44	.65	.90	1.16	1.44	1.73	2.02	2.35	2.71	3.07	3.44	3.80	4.17	4.53	4.90	5.26	5.63	5.99
	4	5	5	6	6	7	7	7	8	9	9	9	9	9	9	9	9	9	9	9
4.1	.05	.22	.42	.62	.82	1.08	1.36	1.65	1.95	2.27	2.59	2.92	3.24	3.57	3.89	4.21	4.56	4.95	5.36	5.76
	4	5	5	5	6	7	7	7	8	8	8	8	8	8	8	8	9	10	10	10
3.8	.05	.21	.38	.57	.81	1.05	1.29	1.60	1.93	2.25	2.57	2.90	3.22	3.55	3.87	4.19	4.52	4.87	5.28	5.68
	4	4	4	5	6	6	6	8	8	8	8	8	8	8	8	8	8	10	10	10
3.5	.05	.21	.38	.56	.76	.97	1.21	1.50	1.83	2.15	2.47	2.80	3.12	3.45	3.77	4.09	4.42	4.82	5.23	5.63
	4	4	4	5	5	6	6	8	8	8	8	8	8	8	8	8	10	10	10	10
3.2	.04	.18	.36	.56	.76	.97	1.17	1.47	1.80	2.12	2.44	2.77	3.09	3.42	3.74	4.06	4.39	4.71	5.04	5.42
	3	4	5	5	5	5	7	8	8	8	8	8	8	8	8	8	8	8	8	10
3.0	.04	.15	.32	.49	.69	.90	1.10	1.39	1.67	1.96	2.24	2.52	2.81	3.09	3.37	3.72	4.09	4.45	4.83	5.23
	2	4	4	5	5	5	7	7	7	7	7	7	7	7	8	9	9	9	10	10
2.8	.04	.14	.30	.46	.62	.82	1.02	1.25	1.50	1.77	2.05	2.33	2.62	2.90	3.19	3.55	3.92	4.28	4.65	5.01
	2	3	4	4	4	5	5	6	6	7	7	7	7	7	9	9	9	9	9	9
2.6	.04	.13	.29	.45	.61	.80	1.00	1.22	1.47	1.71	1.95	2.20	2.50	2.83	3.15	3.47	3.80	4.12	4.45	4.77
	2	3	4	4	4	5	5	6	6	6	6	6	8	8	8	8	8	8	8	8
2.5	.04	.13	.26	.42	.58	.74	.96	1.20	1.45	1.69	1.93	2.18	2.42	2.66	2.94	3.23	3.51	3.79	4.10	4.42
	2	3	4	4	4	4	6	6	6	6	6	6	6	7	7	7	7	7	8	8
2.4	.03	.13	.25	.41	.57	.73	.94	1.18	1.43	1.67	1.91	2.16	2.40	2.64	2.89	3.13	3.37	3.68	4.01	4.33
	2	3	4	4	4	4	6	6	6	6	6	6	6	6	6	6	7	8	8	8
2.3	.03	.11	.23	.38	.54	.70	.88	1.08	1.28	1.49	1.69	1.90	2.19	2.47	2.75	3.04	3.35	3.67	4.00	4.32
	2	3	3	4	4	4	5	5	5	5	5	7	7	7	7	7	8	8	8	8
2.1	.03	.11	.22	.35	.50	.66	.86	1.06	1.26	1.47	1.67	1.87	2.07	2.30	2.58	2.87	3.15	3.43	3.75	4.07
	2	2	3	3	4	5	5	5	5	5	5	5	5	7	7	7	7	7	8	8
2.0	.03	.11	.22	.35	.47	.63	.79	.96	1.12	1.32	1.52	1.75	1.99	2.23	2.49	2.78	3.06	3.34	3.65	3.97
	2	2	3	3	4	4	4	4	4	5	5	6	6	6	7	7	7	7	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SANGAMON RIVER AT MONTICELLO
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
100
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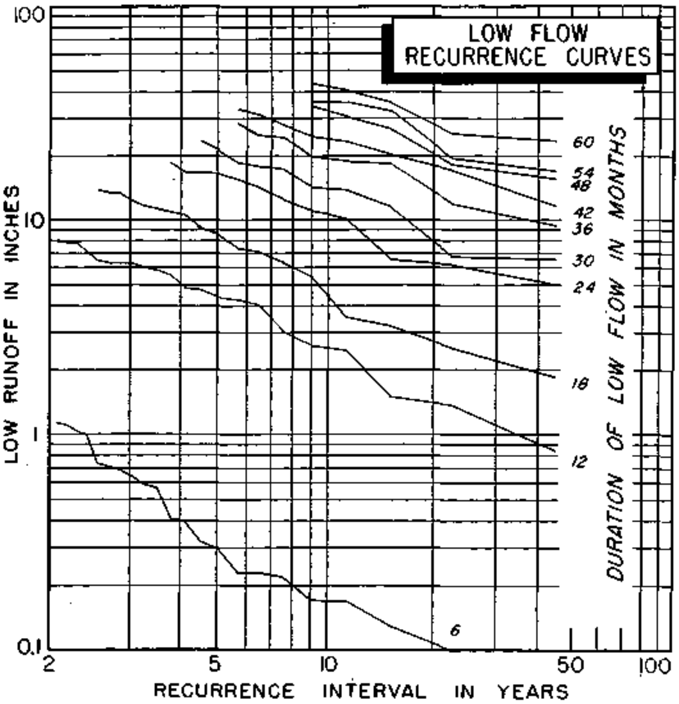
70
80
100



STATION 136

LOCATION
In SW ¼ NE ¼ sec 24, T17N, R3E, Macon County, at bridge 3.0 miles north of Oakley and 9.0 miles northeast of Decatur

DRAINAGE AREA
750 square miles

ACTUAL FLOW DATA
PERIOD: July 1951 thru Sept 1959; fragmentary since Sept 1956
CONTINUOUS RECORD : 5 years; water years 1952-56

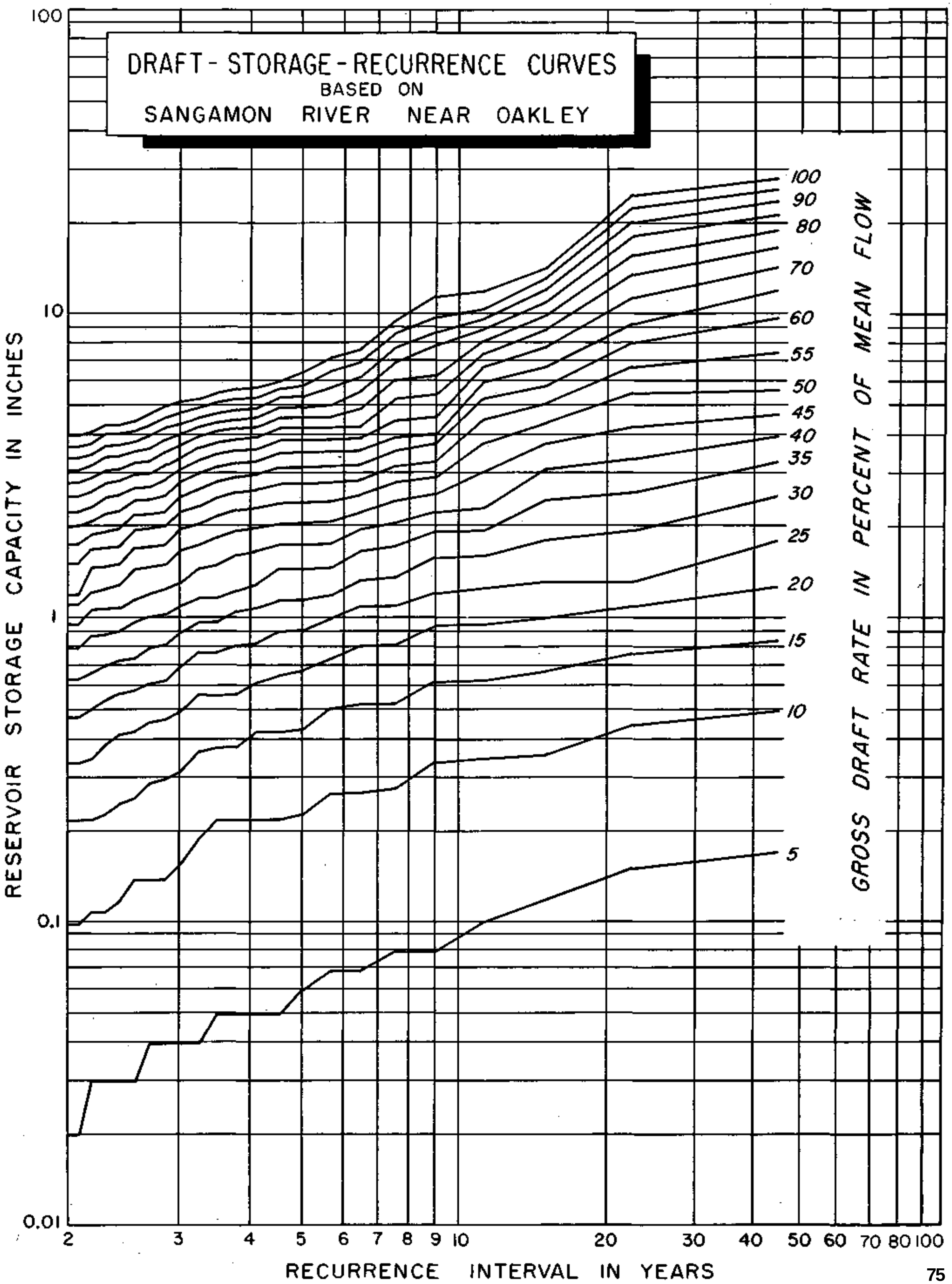
SYNTHETIC FLOW DATA
PERIOD: 40 years; water years 1915-51, 1957-59
INDEX STATION : Sangamon River at Monticello
COINCIDENT RECORD: 5 years; water years 1952-56

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.82 inch per month

Draft-Storage-Recurrence Data for Sangamon River near Oakley

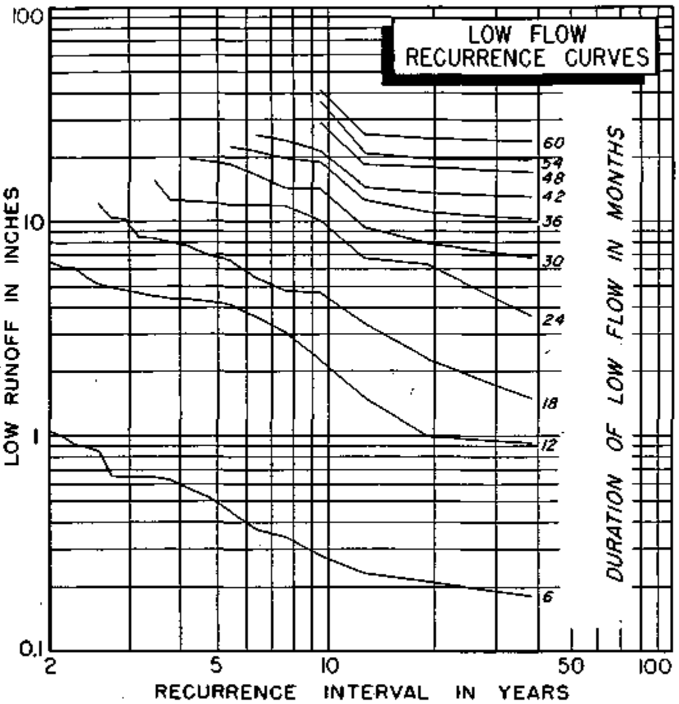
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.17	.50	.85	1.28	1.81	2.55	3.29	4.02	4.76	5.67	7.51	9.80	12.10	14.39	16.69	18.99	21.28	23.58	25.87	28.17
	8	8	10	11	18	18	18	18	18	30	56	56	56	56	56	56	56	56	56	56
22.5	.15	.45	.77	1.10	1.43	1.95	2.62	3.35	4.30	5.53	6.76	8.05	9.37	11.37	13.58	15.79	18.01	20.22	22.44	24.70
	7	8	8	8	8	16	18	18	30	30	30	32	32	54	54	54	54	54	54	56
15.0	.12	.36	.66	1.01	1.34	1.82	2.47	3.13	3.78	4.44	5.10	5.89	6.78	7.84	8.91	9.98	11.04	12.11	13.17	14.24
	6	8	8	8	8	16	16	16	16	16	16	20	26	26	26	26	26	26	26	26
11.3	.10	.35	.64	.96	1.29	1.62	1.95	2.32	3.06	3.80	4.54	5.28	6.01	6.75	7.49	8.23	8.97	9.70	10.44	11.95
	5	7	7	8	8	8	8	18	18	18	18	18	18	18	18	18	18	18	18	38
9.0	.08	.34	.63	.95	1.28	1.61	1.94	2.26	2.59	2.93	3.30	3.82	4.64	5.46	6.28	7.10	7.92	8.74	9.84	11.48
	6	7	7	8	8	8	8	8	8	9	9	20	20	20	20	20	20	20	40	40
7.5	.08	.28	.53	.82	1.11	1.40	1.73	2.07	2.44	2.81	3.18	3.57	3.98	4.50	5.32	6.14	6.96	7.79	8.69	9.59
	5	5	7	7	7	8	8	9	9	9	9	10	10	20	20	20	20	22	22	22
6.4	.07	.27	.53	.82	1.11	1.39	1.68	1.97	2.25	2.57	2.90	3.25	3.62	3.99	4.36	4.96	5.61	6.27	6.92	7.72
	5	5	7	7	7	7	7	7	7	8	8	9	9	9	10	16	16	16	16	20
5.6	.07	.27	.51	.75	1.00	1.25	1.49	1.77	2.09	2.44	2.81	3.18	3.55	3.92	4.29	4.67	5.08	5.79	6.53	7.27
	5	5	6	6	6	6	6	7	8	9	9	9	9	9	9	10	10	18	18	18
5.0	.06	.23	.44	.68	.93	1.18	1.47	1.76	2.08	2.43	2.80	3.17	3.54	3.91	4.28	4.64	5.01	5.38	5.88	6.54
	4	5	6	6	6	7	7	7	8	9	9	9	9	9	9	9	9	9	16	16
4.5	.05	.22	.43	.66	.91	1.18	1.47	1.76	2.05	2.42	2.79	3.16	3.53	3.90	4.27	4.63	5.00	5.37	5.74	6.11
	4	5	5	6	6	7	7	7	9	9	9	9	9	9	9	9	9	9	9	9
4.1	.05	.22	.43	.63	.84	1.10	1.39	1.68	2.01	2.34	2.67	3.00	3.32	3.65	3.98	4.31	4.64	4.98	5.39	5.80
	4	5	5	5	5	7	7	8	8	8	8	8	8	8	8	8	8	10	10	10
3.8	.05	.22	.38	.56	.82	1.07	1.31	1.63	1.96	2.29	2.62	2.95	3.27	3.60	3.93	4.26	4.59	4.91	5.32	5.73
	4	4	5	5	6	6	8	8	8	8	8	8	8	8	8	8	6	10	10	10
3.5	.05	.22	.38	.57	.78	.98	1.21	1.53	1.86	2.19	2.52	2.85	3.17	3.50	3.83	4.16	4.49	4.83	5.20	5.57
	4	4	4	5	5	6	8	8	8	8	6	8	8	8	8	8	8	9	9	9
3.2	.04	.19	.37	.57	.78	.98	1.19	1.48	1.76	2.05	2.36	2.69	3.01	3.34	3.67	4.00	4.33	4.65	4.98	5.33
	3	4	5	5	5	5	7	7	7	7	8	8	8	8	8	8	8	8	8	10
3.0	.04	.16	.32	.50	.71	.91	1.13	1.42	1.70	1.99	2.28	2.56	2.85	3.14	3.43	3.76	4.09	4.41	4.81	5.22
	2	4	4	5	5	5	7	7	7	7	7	7	7	7	8	8	8	8	10	10
2.8	.04	.14	.30	.47	.63	.83	1.04	1.28	1.52	1.77	2.02	2.26	2.55	2.88	3.21	3.54	3.91	4.28	4.65	5.02
	2	4	4	4	5	5	5	6	6	6	6	6	8	8	8	9	9	9	9	9
2.6	.04	.14	.29	.46	.62	.81	1.02	1.25	1.49	1.74	1.99	2.23	2.48	2.72	3.01	3.32	3.66	4.03	4.40	4.77
	2	3	4	4	4	5	5	6	6	6	6	6	6	7	7	8	9	9	9	9
2.5	.03	.14	.26	.43	.59	.75	.98	1.23	1.47	1.72	1.97	2.21	2.46	2.71	3.00	3.28	3.57	3.86	4.17	4.50
	2	3	4	4	4	4	6	6	6	6	6	6	6	7	7	7	7	7	8	8
2.4	.03	.12	.25	.42	.58	.74	.92	1.12	1.33	1.53	1.74	1.99	2.28	2.57	2.86	3.14	3.43	3.75	4.08	4.41
	2	3	4	4	4	4	5	5	5	5	5	7	7	7	7	7	8	8	8	8
2.3	.03	.11	.23	.39	.55	.71	.90	1.10	1.31	1.51	1.72	1.94	2.23	2.52	2.61	3.09	3.42	3.74	4.07	4.40
	2	3	3	4	4	4	5	5	5	5	5	7	7	7	7	8	8	8	8	8
2.1	.03	.11	.22	.35	.51	.67	.88	1.08	1.29	1.49	1.70	1.90	2.11	2.35	2.64	2.92	3.21	3.50	3.82	4.15
	2	2	3	4	4	5	5	5	5	5	5	5	5	7	7	7	7	7	8	8
2.0	.02	.10	.22	.34	.48	.64	.81	.97	1.14	1.30	1.54	1.78	2.03	2.27	2.55	2.83	3.12	3.41	3.72	4.05
	2	3	3	3	4	4	4	4	4	4	6	6	6	6	7	7	7	7	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SANGAMON RIVER NEAR OAKLEY
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
100
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100

SUGAR CREEK NEAR HARTSBURG



STATION 146

LOCATION

In NE ¼ NE ¼ sec 3, T20N, R3W, DeWitt County, at bridge on Ill. 121, 2.5 miles southeast of Hartsburg and 4.0 miles northwest of Lincoln

DRAINAGE AREA

335 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1944 thru Sept 1959

CONTINUOUS RECORD: 15 years; water years 1945-59

SYNTHETIC FLOW DATA

PERIOD: 23 years; water years 1922-44

INDEX STATION: Mackinaw River near Green Valley

COINCIDENT RECORD: 12 years; water years 1945-56

TOTAL DATA ANALYZED

PERIOD: 38 years; water years 1922-59

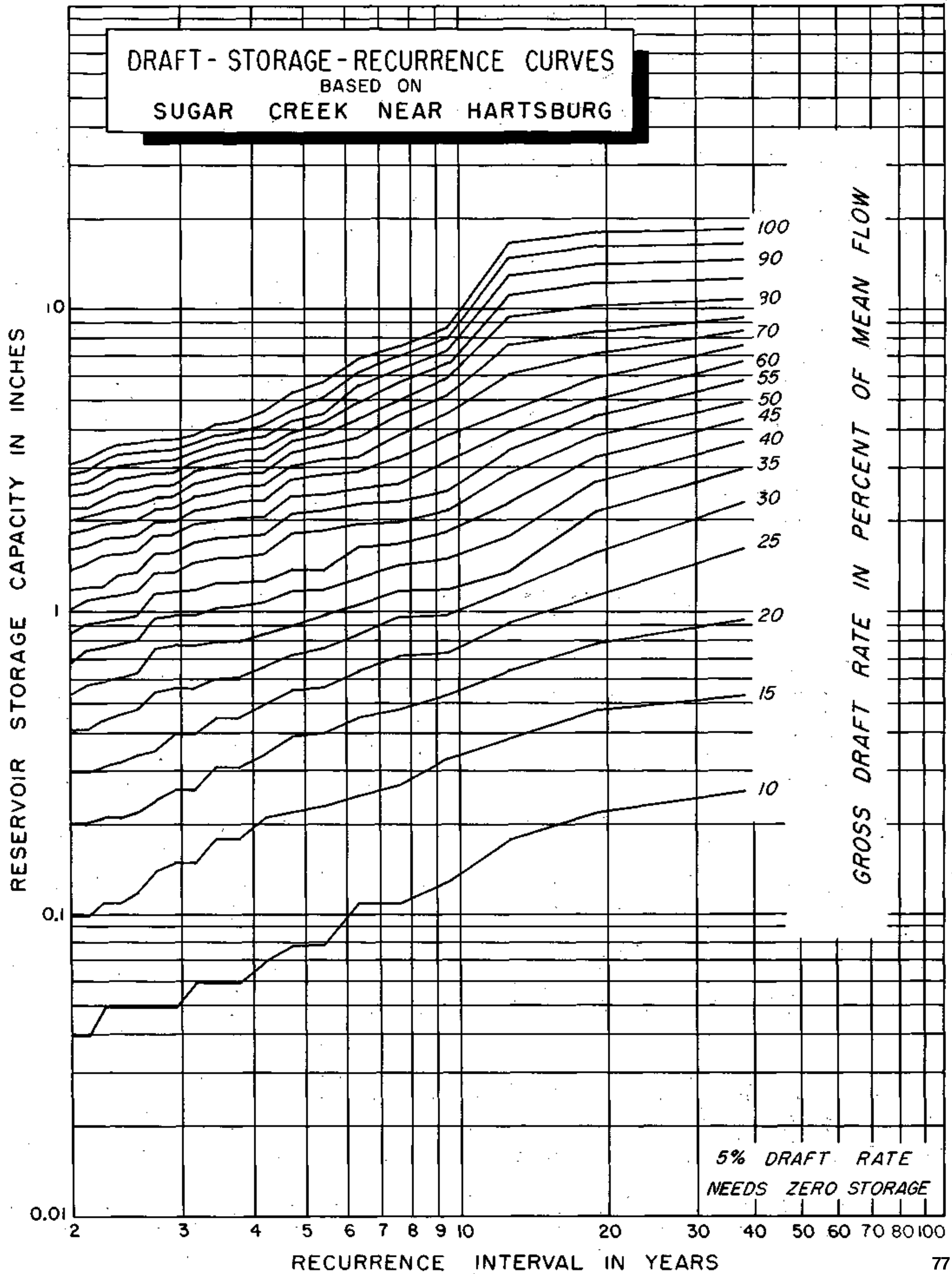
MEAN DISCHARGE : 0.68 inch per month

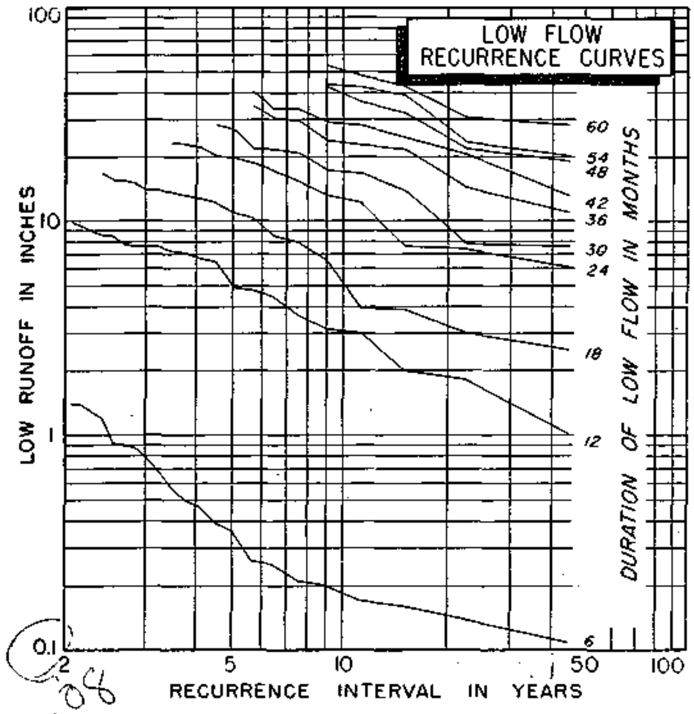
Draft-Storage-Recurrence Data for Sugar Creek near Hartsburg

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.05 4	.26 7	.54 10	.95 18	1.62 20	2.30 20	2.98 20	3.66 20	4.34 20	5.02 20	5.79 26	6.68 26	7.56 26	8.45 26	9.33 26	10.66 56	12.57 56	14.47 56	16.38 56	18.28 56
19.0	.02 2	.22 7	.48 9	.80 10	1.14 10	1.60 16	2.15 16	2.69 16	3.24 16	3.83 18	4.44 18	5.05 18	5.92 34	7.07 34	8.40 40	10.20 56	12.11 56	14.01 56	15.92 56	17.82 56
12.7	.01 2	.18 6	.40 7	.66 8	.93 8	1.20 8	1.47 8	1.78 16	2.33 16	2.87 16	3.41 16	3.98 18	4.60 18	6.07 44	7.57 44	9.28 52	11.05 52	12.81 52	14.58 52	16.35 52
9.5	.01 2	.13 6	.33 6	.54 6	.74 6	.97 7	1.21 7	1.50 9	1.83 10	2.17 10	2.51 10	3.15 20	3.83 20	4.51 20	5.19 20	5.87 20	6.55 20	7.23 20	7.91 20	8.59 20
7.6	.00 2	.11 4	.27 6	.48 7	.72 7	.96 7	1.20 7	1.43 7	1.67 7	1.97 9	2.30 10	2.64 10	3.22 18	3.83 18	4.44 18	5.05 18	5.66 18	6.28 18	6.89 18	7.50 18
6.3	.00 2	.11 4	.25 4	.45 6	.65 6	.85 6	1.06 6	1.34 9	1.64 9	1.95 9	2.26 9	2.56 9	2.89 10	3.23 10	3.72 18	4.33 18	4.94 18	5.56 18	6.17 18	6.78 18
5.4	.00 2	.08 4	.23 5	.40 5	.57 6	.77 6	.98 6	1.24 9	1.54 9	1.85 9	2.16 10	2.50 10	2.84 10	3.18 10	3.52 10	3.86 10	4.20 10	4.54 10	5.10 18	5.71 18
4.8	.00 2	.08 4	.22 5	.39 5	.56 5	.73 5	.90 6	1.20 9	1.50 9	1.81 9	2.12 9	2.42 9	2.73 9	3.03 9	3.34 9	3.65 9	3.95 9	4.26 9	4.69 18	5.30 18
4.2	.00 1	.07 4	.21 4	.34 5	.51 5	.68 5	.85 7	1.08 7	1.32 7	1.56 7	1.80 7	2.06 8	2.34 8	2.61 8	2.88 8	3.15 9	3.45 10	3.79 10	4.13 10	4.59 18
3.8	.00 1	.06 3	.18 4	.31 4	.45 5	.62 5	.81 7	1.04 7	1.28 7	1.52 7	1.77 8	2.04 8	2.32 8	2.59 8	2.86 8	3.13 8	3.40 8	3.68 8	3.95 8	4.26 16
3.5	.00 1	.06 2	.18 4	.31 4	.45 4	.61 5	.80 7	1.03 7	1.27 7	1.51 7	1.75 7	1.99 7	2.22 7	2.47 8	2.74 8	3.01 8	3.28 8	3.56 8	3.83 8	4.17 16
3.2	.00 1	.06 2	.15 3	.26 4	.40 4	.57 6	.78 6	.98 7	1.22 7	1.46 7	1.70 7	1.94 7	2.17 7	2.41 7	2.65 7	2.89 7	3.13 7	3.36 7	3.60 7	3.84 7
2.9	.00 1	.05 2	.15 3	.26 4	.40 4	.57 6	.78 6	.98 6	1.19 6	1.39 6	1.59 6	1.80 6	2.00 6	2.21 6	2.41 6	2.61 8	2.88 8	3.16 8	3.43 8	3.70 8
2.7	.00 0	.05 2	.14 3	.24 3	.35 6	.55 6	.76 6	.96 6	1.17 6	1.37 6	1.57 6	1.78 6	1.98 6	2.19 6	2.39 6	2.60 8	2.87 8	3.15 8	3.42 8	3.69 8
2.5	.00 0	.05 2	.12 3	.22 3	.34 4	.48 4	.64 5	.81 5	.98 6	1.18 6	1.38 6	1.59 6	1.79 6	2.01 7	2.25 8	2.52 8	2.79 8	3.07 8	3.34 8	3.61 8
2.4	.00 -1	.05 2	.11 3	.21 3	.32 4	.46 4	.62 5	.79 5	.96 5	1.14 6	1.34 6	1.55 6	1.75 6	1.96 6	2.21 8	2.48 8	2.75 8	3.03 8	3.30 8	3.57 8
2.2	.00 -1	.05 2	.11 3	.21 3	.31 3	.44 4	.60 5	.77 5	.94 5	1.12 6	1.32 6	1.53 6	1.73 6	1.94 6	2.14 6	2.34 6	2.58 8	2.86 8	3.13 8	3.40 8
2.1	.00 -1	.04 2	.10 3	.20 3	.30 3	.41 5	.58 5	.75 5	.92 5	1.09 5	1.26 5	1.45 6	1.65 6	1.86 6	2.06 6	2.26 6	2.47 6	2.67 6	2.92 8	3.19 8
2.0	.00 -1	.04 2	.10 3	.20 3	.30 3	.41 4	.54 4	.68 5	.85 5	1.02 5	1.19 6	1.40 6	1.60 6	1.81 6	2.01 6	2.21 6	2.42 6	2.62 6	2.83 6	3.07 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SUGAR CREEK NEAR HARTSBURG
RESERVOIR STORAGE CAPACITY IN INCHES
10
1
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5% DRAFT RATE NEEDS ZERO STORAGE
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS



STATION 158

LOCATION
In NW ¼ sec 2, T10N, R9E, Cumberland County, at highway bridge 2.7 miles southwest of Diona and 6.0 miles north of Greenup

DRAINAGE AREA
903 square miles

ACTUAL FLOW DATA
PERIOD: Jan 1939 thru June 1940, July 1944 thru Sept 1947; gaging discontinued Oct 1, 1947
CONTINUOUS RECORD: 3 years; water years 1945-47

SYNTHETIC FLOW DATA
PERIOD: 42 years; water years 1915-44, 1948-59
INDEX STATION : Sangamon River at Monticello
COINCIDENT RECORD: 8 years; water years 1939-47 (fragmentary)

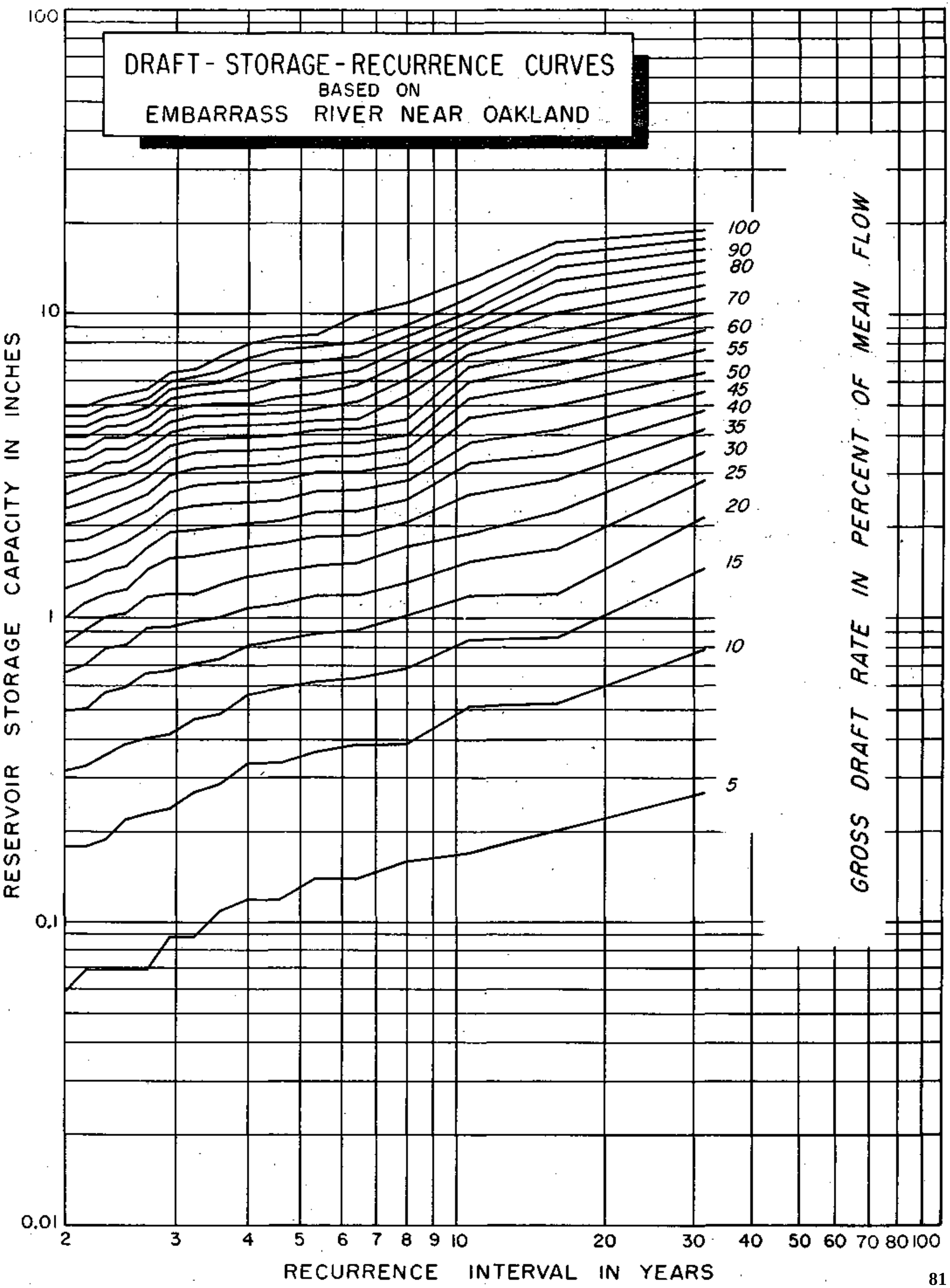
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 0.97 inch per month

Draft-Storage-Recurrence Data for Embarrass River near Diana

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.21	.60	1.01	1.51	2.05	2.69	3.56	4.43	5.38	7.09	9.22	11.45	14.14	16.85	19.57	22.29	25.00	27.72	30.43	33.15
	8	8	10	11	11	18	18	18	30	42	46	46	56	56	56	56	56	56	55	56
22.5	.15	.49	.66	1.25	1.54	2.25	3.05	3.92	5.18	6.63	8.09	9.54	11.02	13.09	15.71	18.32	20.94	23.56	26.18	28.81
	7	7	8	8	8	16	18	18	30	30	30	30	32	54	54	54	54	54	54	56
15.0	.13	.45	.79	1.18	1.57	2.12	2.89	3.67	4.44	5.22	6.00	6.92	7.89	9.14	10.41	11.67	12.93	14.19	15.45	16.71
	6	7	8	8	8	16	16	16	15	16	20	20	20	26	26	26	26	26	26	26
11.3	.13	.42	.77	1.15	1.55	1.94	2.33	3.03	3.91	4.78	5.65	6.53	7.40	8.27	9.15	10.02	10.89	11.76	12.64	14.24
	4	7	8	8	8	$\boxed{8}$	8	15	18	18	18	18	18	18	18	18	18	18	18	40
9.0	.12	.41	.75	1.13	1.52	1.91	2.30	2.68	3.07	3.45	3.85	4.40	5.37	6.34	7.31	8.28	9.25	10.22	11.70	13.64
	4	7	7	8	8	8	8	8	8	8	8	20	20	20	20	20	20	20	40	40
7.5	.11	.37	.69	1.03	1.37	1.71	2.05	2.42	2.82	3.26	3.69	4.13	4.56	5.00	5.74	6.71	7.74	8.81	9.87	10.94
	4	6	7	7	7	7	7	8	9	9	9	9	9	9	20	20	22	22	22	22
6.4	.09	.33	.63	.97	1.31	1.65	1.99	2.36	2.75	3.14	3.53	3.92	4.30	4.69	5.12	5.80	6.57	7.35	8.12	8.97
	4	6	7	7	7	7	7	8	8	8	8	8	8	8	9	16	16	16	16	20
5.6	.09	.33	.61	.90	1.20	1.50	1.84	2.18	2.52	2.85	3.28	3.72	4.15	4.59	5.03	5.46	5.92	6.60	7.28	7.96
	3	5	6	6	6	7	7	7	7	7	9	9	9	9	9	9	14	14	14	16
5.0	.08	.30	.54	.80	1.10	1.40	1.74	2.08	2.44	2.85	3.28	3.72	4.15	4.59	5.03	5.46	5.90	6.34	7.00	7.68
	3	5	5	6	6	7	7	7	8	9	9	9	9	9	9	9	9	9	14	14
4.5	.07	.28	.52	.77	1.07	1.36	1.68	2.02	2.40	2.80	3.23	3.67	4.10	4.54	4.98	5.41	5.85	6.29	6.72	7.16
	3	5	5	6	6	6	7	7	8	9	9	9	9	9	9	9	9	9	9	9
4.1	.07	.26	.50	.74	.99	1.30	1.64	1.98	2.34	2.73	3.12	3.55	3.98	4.42	4.86	5.29	5.73	6.17	6.60	7.04
	3	5	5	5	6	7	7	7	8	8	9	9	9	9	9	9	9	9	9	9
3.8	.07	.26	.45	.69	.96	1.25	1.54	1.83	2.18	2.57	2.96	3.35	3.73	4.14	4.58	5.01	5.45	5.89	6.32	6.76
	3	4	5	5	6	6	6	6	8	8	8	8	8	9	9	9	9	9	9	9
3.5	.06	.25	.44	.67	.91	1.16	1.45	1.78	2.17	2.56	2.95	3.34	3.72	4.11	4.50	4.90	5.34	5.78	6.21	6.65
	2	4	4	5	5	6	6	8	8	8	8	8	8	8	8	9	9	9	9	9
3.2	.06	.22	.42	.66	.90	1.15	1.40	1.75	2.14	2.53	2.92	3.31	3.69	4.08	4.47	4.86	5.25	5.63	6.02	6.43
	2	4	5	5	5	5	7	8	8	8	8	8	8	8	8	8	8	8	8	10
3.0	.05	.19	.38	.58	.82	1.07	1.33	1.67	2.01	2.35	2.68	3.02	3.36	3.70	4.04	4.43	4.87	5.31	5.75	6.23
	2	4	4	5	5	5	7	7	7	7	7	7	7	7	7	9	9	9	10	10
2.8	.06	.16	.34	.54	.73	.96	1.20	1.46	1.77	2.11	2.44	2.76	3.12	3.46	3.80	4.22	4.66	5.10	5.53	5.97
	2	3	4	4	4	5	5	6	7	7	7	7	7	7	7	9	9	9	9	9
2.6	.06	.16	.34	.54	.73	.92	1.14	1.43	1.72	2.01	2.30	2.59	2.97	3.36	3.75	4.14	4.53	4.91	5.30	5.69
	2	3	4	4	4	4	6	6	6	6	6	8	6	8	8	8	8	8	8	8
2.5	.05	.16	.31	.50	.69	.88	1.12	1.41	1.70	1.99	2.28	2.57	2.86	3.17	3.51	3.85	4.19	4.53	4.89	5.28
	2	3	3	4	4	4	6	6	6	6	6	6	6	7	7	7	7	7	8	8
2.4	.04	.16	.31	.45	.64	.83	1.05	1.29	1.53	1.78	2.02	2.32	2.66	3.00	3.34	3.68	4.02	4.39	4.78	5.17
	2	3	3	4	4	4	5	5	5	5	5	7	7	7	7	7	7	8	8	8
2.3	.04	.14	.29	.45	.64	.83	1.03	1.26	1.50	1.75	1.99	2.23	2.47	2.83	3.22	3.61	4.00	4.38	4.77	5.16
	2	3	3	4	4	4	4	5	5	5	5	5	5	8	8	8	8	8	8	8
2.1	.04	.13	.27	.41	.59	.78	.98	1.21	1.45	1.70	1.94	2.18	2.42	2.68	3.00	3.39	3.78	4.16	4.55	4.94
	2	2	3	3	4	4	4	5	5	5	5	5	5	6	8	8	8	8	8	8
2.0	.04	.13	.27	.41	.56	.75	.95	1.14	1.34	1.57	1.81	2.08	2.37	2.66	2.97	3.31	3.65	3.99	4.35	4.74
	2	2	3	3	4	4	4	4	4	5	5	6	6	6	7	7	7	7	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
EMBARRASS RIVER NEAR OAKLAND
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
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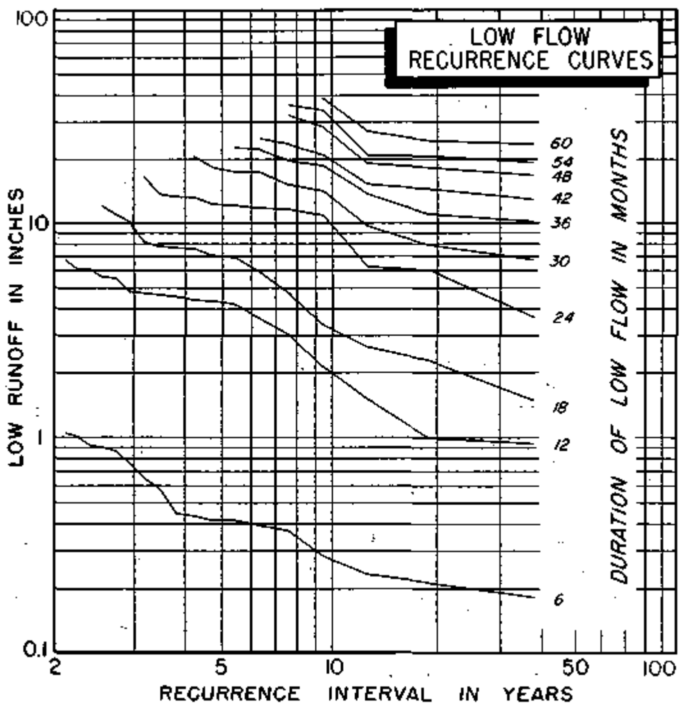
100



STATION 186

LOCATION
In SE ¼, NW ¼ sec 15, T23N, R5W, Tazewell County, at bridge on Ill. 29, 3.0 miles north of Green Valley and 3.5 miles south of South Pekin

DRAINAGE AREA
1100 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Apr 1921 thru Sept 1956; gaging discontinued Oct 1,1956
CONTINUOUS RECORD: 35 years; water years 1922-56

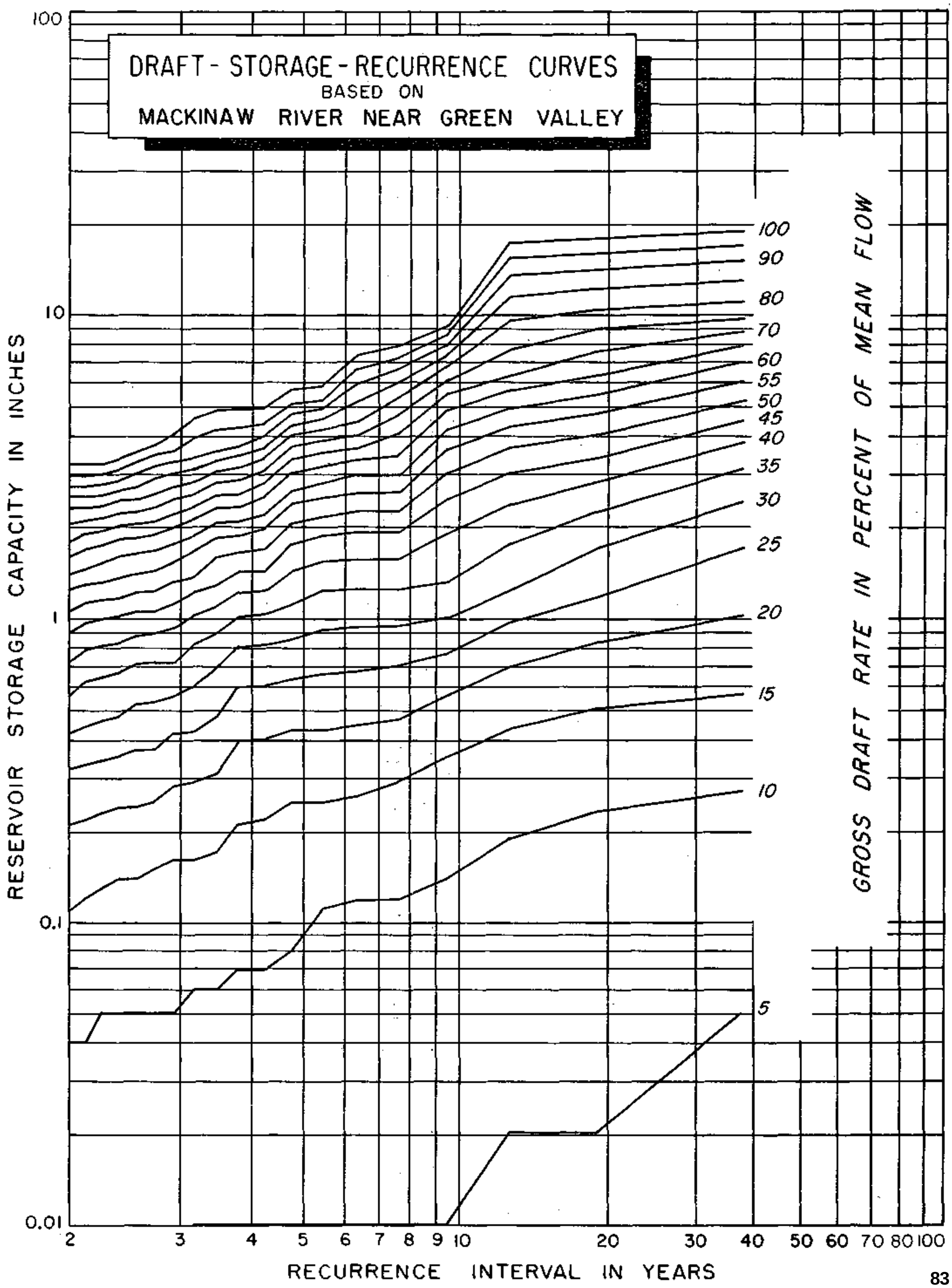
SYNTHETIC FLOW DATA
PERIOD: 3 years; water years 1957-59
INDEX STATION : Mackinaw River at Congerville
COINCIDENT RECORD : 12 years; water years 1945-56
This station utilized as an index station

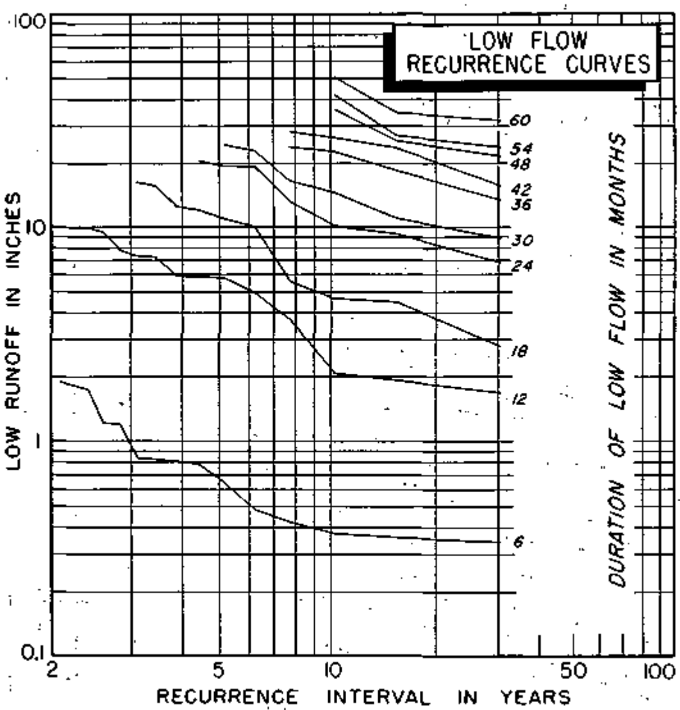
TOTAL DATA ANALYZED
PERIOD: 38 years; water years 1922-59
MEAN DISCHARGE : 0.70 inch per month

Draft-Storage-Recurrence Data for Mackinaw River near Green Valley

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.05	.27	.57	1.02	1.72	2.42	3.12	3.82	4.52	5.22	6.08	6.99	7.90	8.81	9.72	11.10	13.06	15.02	16.98	18.94
	5	7	10	20	20	20	20	20	20	20	26	26	26	26	26	56	56	56	56	56
19.0	.02	.23	.51	.84	1.19	1.70	2.26	2.82	3.38	4.04	4.74	5.44	6.36	7.60	9.00	10.43	12.25	14.08	16.04	18.00
	2	7	9	10	10	16	16	16	18	20	20	20	34	40	40	52	52	56	56	56
12.7	.02	.19	.43	.69	.97	1.25	1.76	2.39	3.02	3.65	4.28	4.91	5.60	6.30	7.65	9.54	11.43	13.35	15.31	17.27
	1	6	7	8	8	8	18	18	18	18	18	18	20	20	54	54	54	56	56	56
9.5	.01	.14	.35	.56	.77	1.01	1.35	1.91	2.47	3.03	3.59	4.20	4.33	5.46	6.09	6.72	7.35	7.98	8.61	9.24
	3	6	6	6	7	7	16	16	16	16	16	18	18	18	18	18	18	18	18	18
7.6	.01	.12	.29	.47	.71	.95	1.27	1.58	1.93	2.28	2.63	2.96	3.45	4.08	4.71	5.34	5.97	6.60	7.23	7.86
	1	4	5	6	7	9	9	10	10	10	10	10	18	18	18	18	18	18	18	18
6.3	.01	.12	.26	.45	.67	.94	1.26	1.57	1.92	2.27	2.62	2.97	3.32	3.67	4.02	4.49	5.19	5.89	6.59	7.29
	1	4	5	6	7	9	9	10	10	10	10	10	10	10	10	20	20	20	20	20
5.4	.01	.11	.25	.43	.66	.92	1.24	1.55	1.87	2.18	2.50	2.81	3.16	3.51	3.86	4.21	4.56	4.91	5.26	5.84
	1	4	5	6	7	9	9	9	9	9	9	10	10	10	10	10	10	10	10	20
4.8	.01	.08	.25	.43	.64	.86	1.12	1.43	1.75	2.06	2.38	2.69	3.01	3.32	3.67	4.02	4.37	4.72	5.07	5.68
	1	4	5	6	6	7	9	9	9	9	9	9	9	10	10	10	10	10	10	20
4.2	.01	.07	.22	.40	.61	.82	1.03	1.24	1.45	1.69	1.97	2.25	2.53	2.81	3.09	3.37	3.65	4.00	4.39	4.95
	1	3	5	6	6	6	6	6	6	8	8	8	8	8	8	8	8	11	11	18
3.8	.01	.07	.21	.39	.60	.81	1.02	1.23	1.44	1.65	1.86	2.08	2.33	2.59	2.86	3.14	3.42	3.70	4.26	4.89
	1	3	5	6	6	6	6	6	6	6	6	7	7	8	8	8	8	8	18	18
3.5	.01	.06	.17	.31	.48	.68	.89	1.10	1.34	1.58	1.83	2.07	2.32	2.56	2.81	3.05	3.30	3.55	4.18	4.81
	1	3	4	4	5	6	6	6	7	7	7	7	7	7	7	7	7	18	18	18
3.2	.01	.06	.16	.29	.43	.61	.82	1.03	1.24	1.45	1.66	1.87	2.11	2.35	2.60	2.84	3.10	3.38	3.92	4.55
	1	2	3	4	4	6	6	6	6	6	6	6	7	7	7	7	8	8	18	18
2.9	.00	.05	.16	.28	.42	.56	.73	.92	1.13	1.34	1.55	1.76	1.98	2.22	2.47	2.73	3.01	3.29	3.57	4.04
	1	3	3	4	4	4	5	6	6	6	6	6	7	7	7	8	8	8	8	16
2.7	.00	.05	.15	.25	.37	.54	.72	.89	1.07	1.24	1.45	1.66	1.87	2.08	2.33	2.61	2.89	3.17	3.45	3.73
	1	2	3	3	5	5	5	5	5	6	6	6	6	6	6	8	8	8	8	8
2.5	.00	.05	.14	.24	.37	.53	.71	.88	1.06	1.23	1.41	1.62	1.83	2.04	2.25	2.46	2.72	3.00	3.28	3.56
	1	2	3	3	4	5	5	5	5	5	6	6	6	6	6	6	8	8	8	8
2.4	.00	.05	.14	.24	.35	.48	.66	.83	1.01	1.16	1.39	1.60	1.81	2.02	2.23	2.44	2.65	2.86	3.07	3.34
	1	2	3	3	3	5	5	5	5	6	6	6	6	6	6	6	6	6	6	8
2.2	.00	.05	.13	.23	.34	.46	.64	.81	.99	1.16	1.34	1.52	1.73	1.94	2.15	2.36	2.57	2.78	2.99	3.23
	1	2	3	3	3	5	5	5	5	5	5	6	6	6	6	6	6	6	6	8
2.1	.00	.04	.12	.22	.33	.44	.62	.79	.97	1.14	1.32	1.49	1.68	1.89	2.10	2.31	2.52	2.73	2.95	3.23
	1	2	3	3	3	5	5	5	5	5	5	5	6	6	6	6	6	6	6	8
2.0	.00	.04	.11	.21	.32	.42	.56	.72	.90	1.07	1.25	1.42	1.60	1.78	1.99	2.20	2.41	2.62	2.86	3.14
	1	2	3	3	3	4	4	5	5	5	5	5	5	6	6	6	6	6	6	6


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
MACKINAW RIVER NEAR GREEN VALLEY
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 100



STATION 200

LOCATION
In NW ¼ SE ¼ sec 35, T20N, R10E, Champaign County, at township highway bridge 2.5 miles north of St. Joseph

DRAINAGE AREA
134 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1958 thru Sept 1959
CONTINUOUS RECORD: 1 year; water year 1959

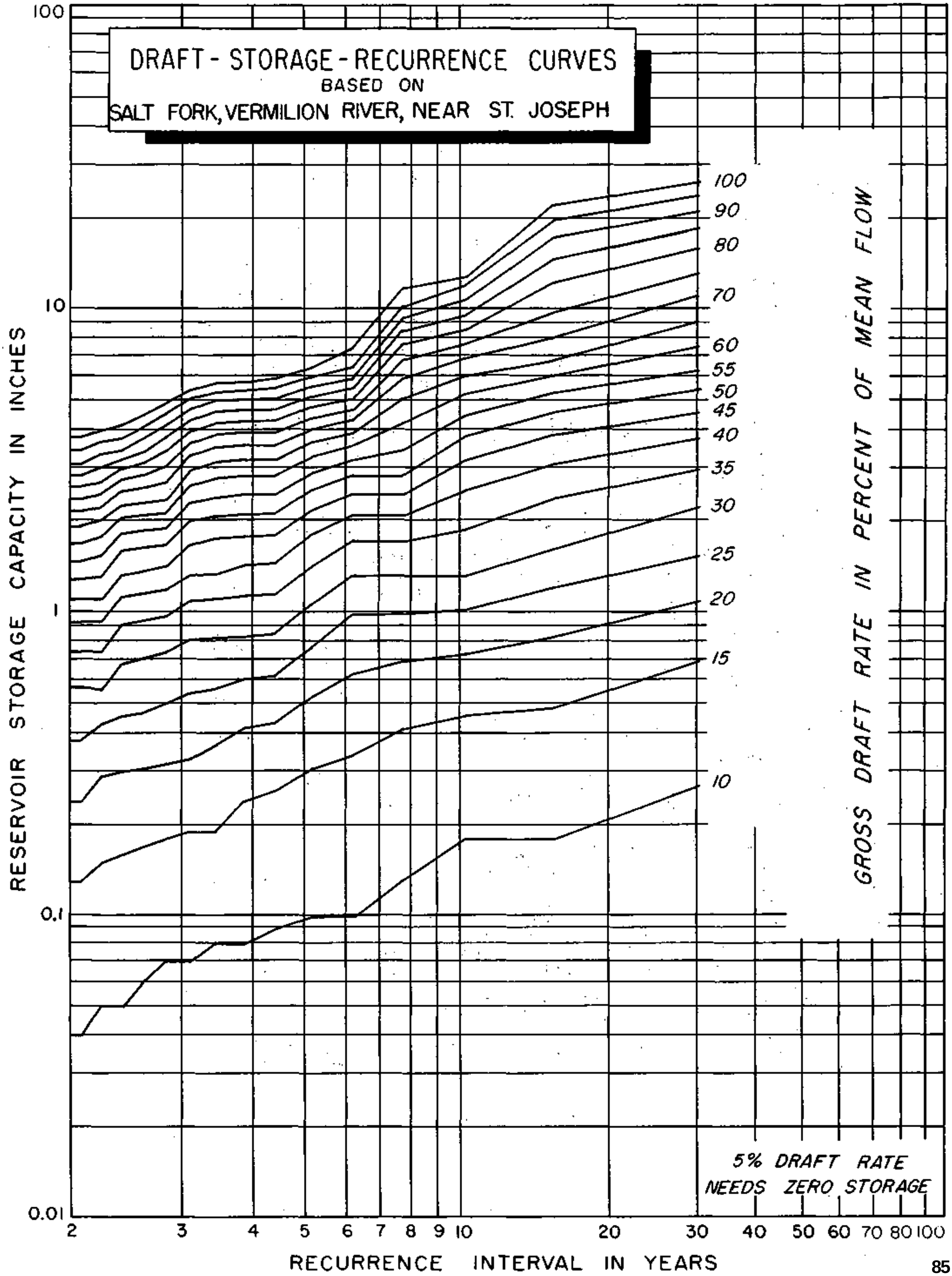
SYNTHETIC FLOW DATA
PERIOD: 30 years; water years 1929-58
INDEX STATION : Vermilion River near Danville
COINCIDENT RECORD: 1 year; water year 1959

TOTAL DATA ANALYZED
PERIOD: 31 years; water years 1929-59
MEAN DISCHARGE : 0.93. inch per month

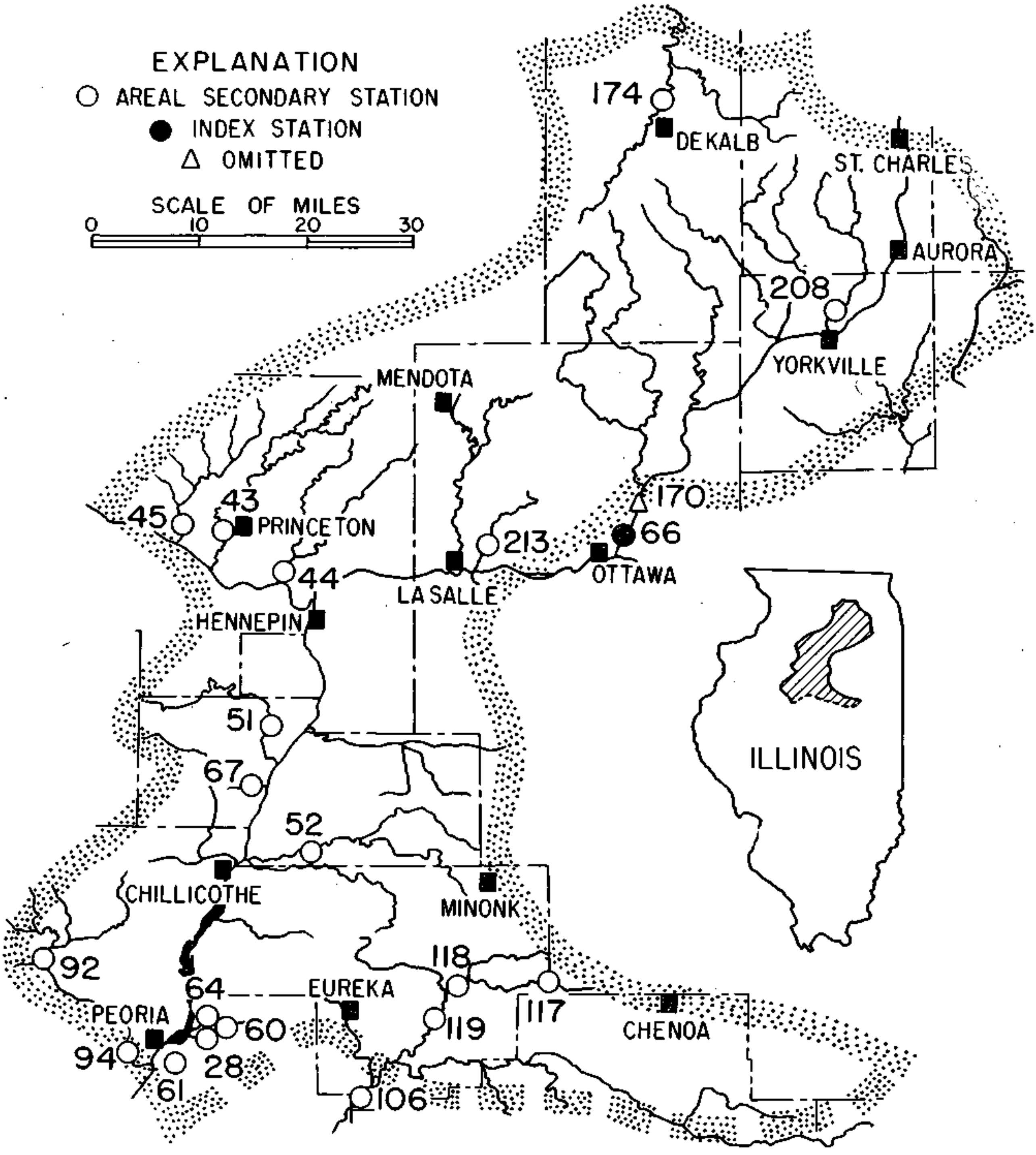
Draft-Storage-Recurrence Data for Salt Fork, Vermilion River near St. Joseph

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
31.0	.01	.27	.69	1.10	1.56	2.24	3.00	3.84	4.67	5.51	6.35	7.61	9.25	11.20	13.51	16.11	18.72	21.32	23.93	26.53
	4	9	9	9	10	16	18	18	18	18	18	30	42	42	56	56	56	56	56	56
15.5	.01	.18	.49	.84	1.21	1.63	2.38	3.12	3.87	4.61	5.35	6.10	6.84	8.12	9.84	12.35	14.86	17.37	19.88	22.39
	1	6	7	8	8	16	16	16	16	16	16	16	16	30	54	54	54	54	54	54
10.3	.01	.18	.46	.74	1.03	1.37	1.90	2.55	3.20	3.85	4.50	5.28	6.12	6.96	7.80	8.63	9.64	10.85	12.06	13.27
	1	6	6	6	7	8	14	14	14	14	14	18	18	18	18	18	26	26	26	28
7.8	.01	.13	.41	.69	.99	1.36	1.73	2.11	2.48	2.85	3.45	4.28	5.12	5.96	6.80	7.63	8.47	9.31	10.28	11.77
	1	6	6	6	8	8	8	8	8	8	18	18	18	18	18	18	18	18	32	32
6.2	.01	.10	.34	.64	.99	1.36	1.73	2.11	2.48	2.85	3.22	3.59	3.97	4.34	4.71	5.13	5.54	5.96	6.52	7.54
	1	5	6	7	8	8	8	8	8	8	8	8	8	8	9	9	9	9	22	22
5.2	.01	.10	.31	.54	.77	1.07	1.44	1.82	2.19	2.56	2.93	3.30	3.68	4.05	4.42	4.80	5.21	5.63	6.05	6.47
	1	3	5	5	5	8	8	8	8	8	8	8	8	8	8	9	9	9	9	9
4.4	.00	.09	.26	.44	.63	.86	1.16	1.48	1.81	2.14	2.48	2.85	3.23	3.60	3.97	4.34	4.72	5.14	5.56	5.98
	1	2	4	4	4	6	7	7	7	7	8	8	8	8	8	8	9	9	9	9
3.9	.00	.08	.24	.42	.61	.84	1.14	1.46	1.79	2.12	2.48	2.85	3.23	3.60	3.97	4.34	4.71	5.09	5.46	5.83
	1	2	4	4	4	6	7	7	7	7	8	8	8	8	8	8	8	8	8	8
3.4	.00	.08	.19	.37	.57	.83	1.12	1.44	1.77	2.10	2.42	2.79	3.17	3.54	3.91	4.28	4.65	5.03	5.40	5.77
	1	2	4	4	5	6	7	7	7	7	8	8	8	8	8	8	8	8	8	8
3.1	.00	.07	.19	.33	.55	.82	1.10	1.38	1.67	2.00	2.32	2.65	2.97	3.30	3.62	3.98	4.35	4.73	5.10	5.47
	1	2	3	4	6	6	6	6	7	7	7	7	7	7	7	8	8	8	8	8
2.8	.00	.07	.18	.32	.51	.75	.98	1.21	1.44	1.68	1.91	2.14	2.38	2.71	3.07	3.44	3.81	4.19	4.56	4.93
	1	2	3	3	5	5	5	5	5	5	5	5	7	7	8	8	8	8	8	8
2.6	.00	.06	.17	.31	.48	.72	.95	1.18	1.41	1.65	1.88	2.11	2.34	2.60	2.88	3.15	3.43	3.77	4.14	4.51
	1	2	3	3	5	5	5	5	5	5	5	5	5	6	6	6	6	8	8	8
2.4	.00	.05	.16	.30	.46	.68	.91	1.14	1.37	1.61	1.84	2.07	2.30	2.54	2.77	3.00	3.23	3.47	3.79	4.21
	1	2	3	3	4	5	5	5	5	5	5	5	5	5	5	5	5	5	9	9
2.2	.00	.05	.15	.29	.43	.57	.75	.94	1.12	1.34	1.57	1.80	2.03	2.27	2.50	2.73	3.05	3.38	3.70	4.03
	1	2	3	3	3	4	4	4	4	5	5	5	5	5	5	7	7	7	7	7
2.1	.00	.04	.13	.24	.38	.57	.75	.94	1.12	1.31	1.50	1.71	1.94	2.18	2.41	2.64	2.87	3.11	3.47	3.84
	1	2	2	3	4	4	4	4	4	4	4	5	5	5	5	5	5	5	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SALT FORK, VERMILION RIVER, NEAR ST. JOSEPH
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5% DRAFT RATE NEEDS ZERO STORAGE

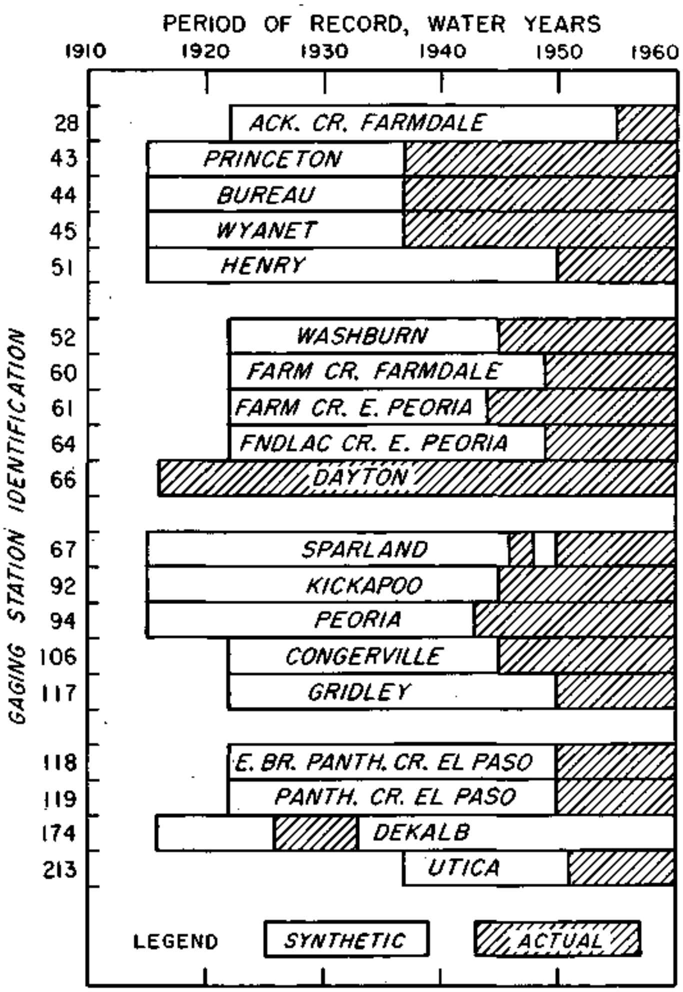


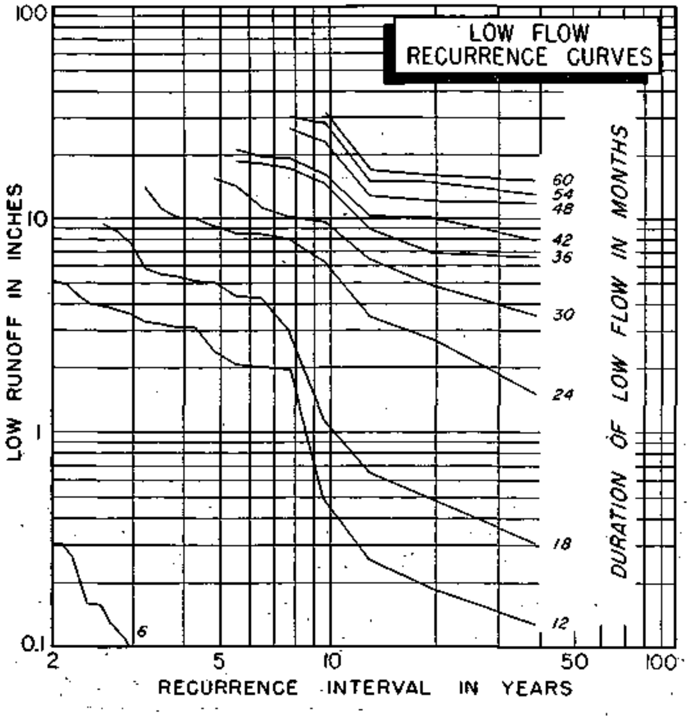
Bloomington Ridged Plain — North

Gaging Stations in Bloomington Ridged Plain — North

STATIONS OMITTED

	STATION	REASON
170	Fox River at Wedron	*Combined with record for Station 66*
208	Blackberry Creek near Yorkville	*Record too short*





STATION 28

LOCATION

In SE ¼ SE ¼ sec 36, T26N, R4W, Tazewell County, at New York, Chicago and St. Louis Railroad bridge 0.45 miles southeast of Farmdale

DRAINAGE AREA

11.8 square miles

ACTUAL FLOW DATA

PERIOD: Dec 1954 thru Sept 1959
CONTINUOUS RECORD: 5 years; water years 1955-59

SYNTHETIC FLOW DATA

PERIOD: 33 years; water years 1922-54
INDEX STATION: Mackinaw River at Green Valley
COINCIDENT RECORD: 2 years; water years 1955-56

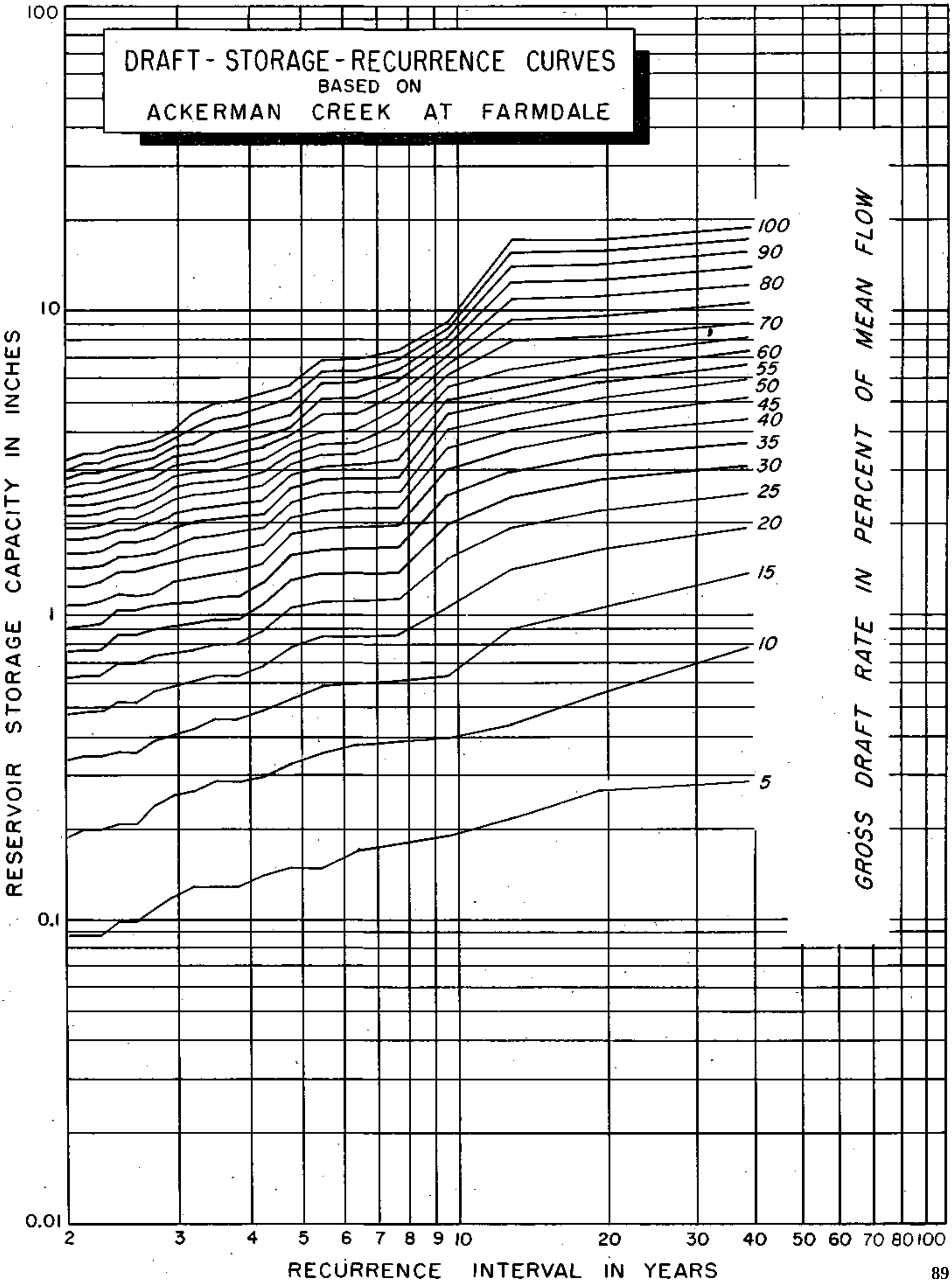
TOTAL DATA ANALYZED

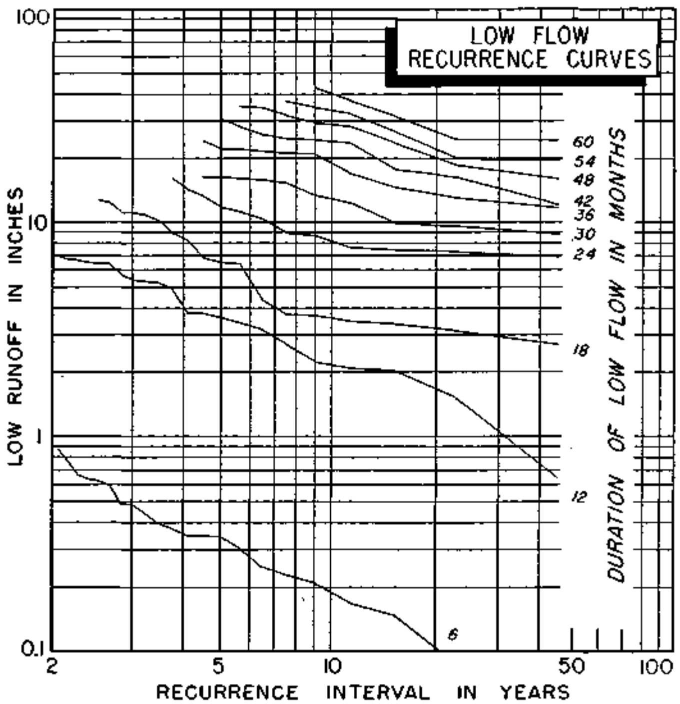
PERIOD: 38 years; water years 1922-59
MEAN DISCHARGE: 0.58 inch per month

Draft-Storage-Recurrence Data for Ackerman Creek at Farmdale

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.29 10	.80 20	1.38 20	1.96 20	2.54 20	3.12 20	3.71 26	4.46 26	5.22 26	5.97 26	6.72 26	7.48 26	8.23 26	9.13 42	10.72 56	12.34 56	13.97 56	15.59 56	17.22 56	18.84 56
19.0	.27 10	.56 10	1.07 20	1.65 20	2.23 20	2.81 20	3.39 20	3.97 20	4.55 20	5.15 22	5.79 22	6.43 22	7.10 38	8.20 38	9.66 52	11.17 52	12.68 52	14.18 52	15.69 52	17.20 52
12.7	.22 8	.45 8	.91 18	1.43 18	1.95 18	2.47 18	2.99 18	3.52 18	4.04 18	4.56 18	5.08 18	5.60 18	6.43 52	7.94 52	9.45 52	10.96 52	12.47 52	13.97 52	15.48 52	16.99 52
9.5	.19 7	.40 7	.64 9	1.09 16	1.55 16	2.01 16	2.50 18	3.03 18	3.55 18	4.07 18	4.59 18	5.11 18	5.64 18	6.16 18	6.68 18	7.20 18	7.72 18	8.25 18	8.77 18	9.29 18
7.6	.18 7	.39 7	.62 8	.87 9	1.14 9	1.40 10	1.69 10	1.98 10	2.27 10	2.56 10	2.85 10	3.26 18	3.79 18	4.31 18	4.83 18	5.35 18	5.87 18	6.40 18	6.92 18	7.44 18
6.3	.17 7	.38 7	.60 9	.86 9	1.13 9	1.39 10	1.68 10	1.97 10	2.26 10	2.55 10	2.84 10	3.13 10	3.42 10	3.71 10	4.04 20	4.62 20	5.20 20	5.78 20	6.36 20	6.94 20
5.4	.15 7	.36 7	.60 9	.86 9	1.13 9	1.39 9	1.65 9	1.93 10	2.22 10	2.51 10	2.80 10	3.09 10	3.38 10	3.67 10	4.01 20	4.59 20	5.17 20	5.75 20	6.33 20	6.91 20
4.8	.15 6	.33 6	.54 9	.80 9	1.07 9	1.33 9	1.59 9	1.85 9	2.11 9	2.37 9	2.63 9	2.89 9	3.15 9	3.41 9	3.68 9	3.94 9	4.20 9	4.57 20	5.15 20	5.73 20
4.2	.14 5	.30 6	.49 7	.69 7	.90 7	1.10 7	1.30 7	1.50 7	1.71 8	1.94 8	2.17 8	2.41 9	2.69 10	2.98 10	3.27 10	3.56 10	3.85 10	4.33 18	4.85 18	5.37 18
3.8	.13 5	.25 6	.46 6	.64 6	.81 6	.98 6	1.19 8	1.43 8	1.56 8	1.89 8	2.12 8	2.35 8	2.59 8	2.83 10	3.12 10	3.41 10	3.70 10	4.12 16	4.59 16	5.09 18
3.5	.13 5	.29 6	.46 6	.64 6	.81 6	.98 6	1.16 7	1.38 8	1.61 8	1.84 8	2.07 8	2.30 8	2.54 8	2.77 8	3.00 8	3.23 8	3.53 16	3.99 16	4.46 16	4.96 18
3.2	.13 5	.27 5	.43 6	.61 6	.78 6	.95 6	1.13 6	1.34 8	1.57 8	1.80 8	2.03 8	2.26 8	2.50 8	2.73 8	2.96 8	3.19 8	3.42 8	3.66 8	4.11 18	4.63 18
2.9	.12 5	.26 5	.41 6	.59 5	.76 5	.93 5	1.11 6	1.30 7	1.51 7	1.71 8	1.94 8	2.17 8	2.41 8	2.64 8	2.87 8	3.10 8	3.33 8	3.57 8	3.80 8	4.03 8
2.7	.11 4	.24 5	.39 6	.57 6	.74 6	.91 5	1.09 6	1.26 6	1.44 6	1.61 6	1.80 7	2.01 7	2.21 7	2.41 7	2.62 7	2.83 8	3.06 8	3.30 8	3.53 8	3.76 8
2.5	.10 4	.21 5	.36 5	.53 6	.70 6	.87 6	1.05 6	1.22 6	1.40 6	1.57 6	1.74 6	1.92 6	2.09 6	2.27 8	2.50 8	2.73 8	2.96 8	3.20 8	3.43 8	3.66 8
2.4	.10 4	.21 5	.36 5	.53 6	.70 6	.87 6	1.05 6	1.22 6	1.40 6	1.57 6	1.74 6	1.92 6	2.09 6	2.27 6	2.44 6	2.64 8	2.87 8	3.11 8	3.34 8	3.57 8
2.2	.09 4	.20 5	.35 5	.49 5	.64 5	.78 5	.95 6	1.12 6	1.30 6	1.47 5	1.64 6	1.82 6	1.99 6	2.17 6	2.34 7	2.54 7	2.74 7	2.96 8	3.19 8	3.42 8
2.1	.09 3	.20 5	.35 5	.49 5	.64 5	.78 5	.93 5	1.09 6	1.27 6	1.44 6	1.61 6	1.79 6	1.96 5	2.14 5	2.31 6	2.49 8	2.72 8	2.96 8	3.19 8	3.42 8
2.0	.09 3	.19 5	.34 5	.48 5	.63 5	.77 5	.92 6	1.09 5	1.27 6	1.44 5	1.61 6	1.79 6	1.96 6	2.14 6	2.31 6	2.48 6	2.66 6	2.83 6	3.01 8	3.25 9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
ACKERMAN CREEK AT FARMDALE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
55
45
35
25
15



STATION 43

LOCATION

In SW ¼ SE ¼ sec 18, T16N, R8W, Bureau County near a bridge on U. S. 6 and U. S. 34, 1.5 miles west of Princeton

DRAINAGE AREA

186 square miles

ACTUAL FLOW DATA

PERIOD: Mar 1936 thru Sept 1959
CONTINUOUS RECORD: 23 years; water years 1937-59

SYNTHETIC FLOW DATA

PERIOD: 22 years; water years 1915-36
INDEX STATION: Spoon River at Seville
COINCIDENT RECORD: 23 years; water years 1937-59

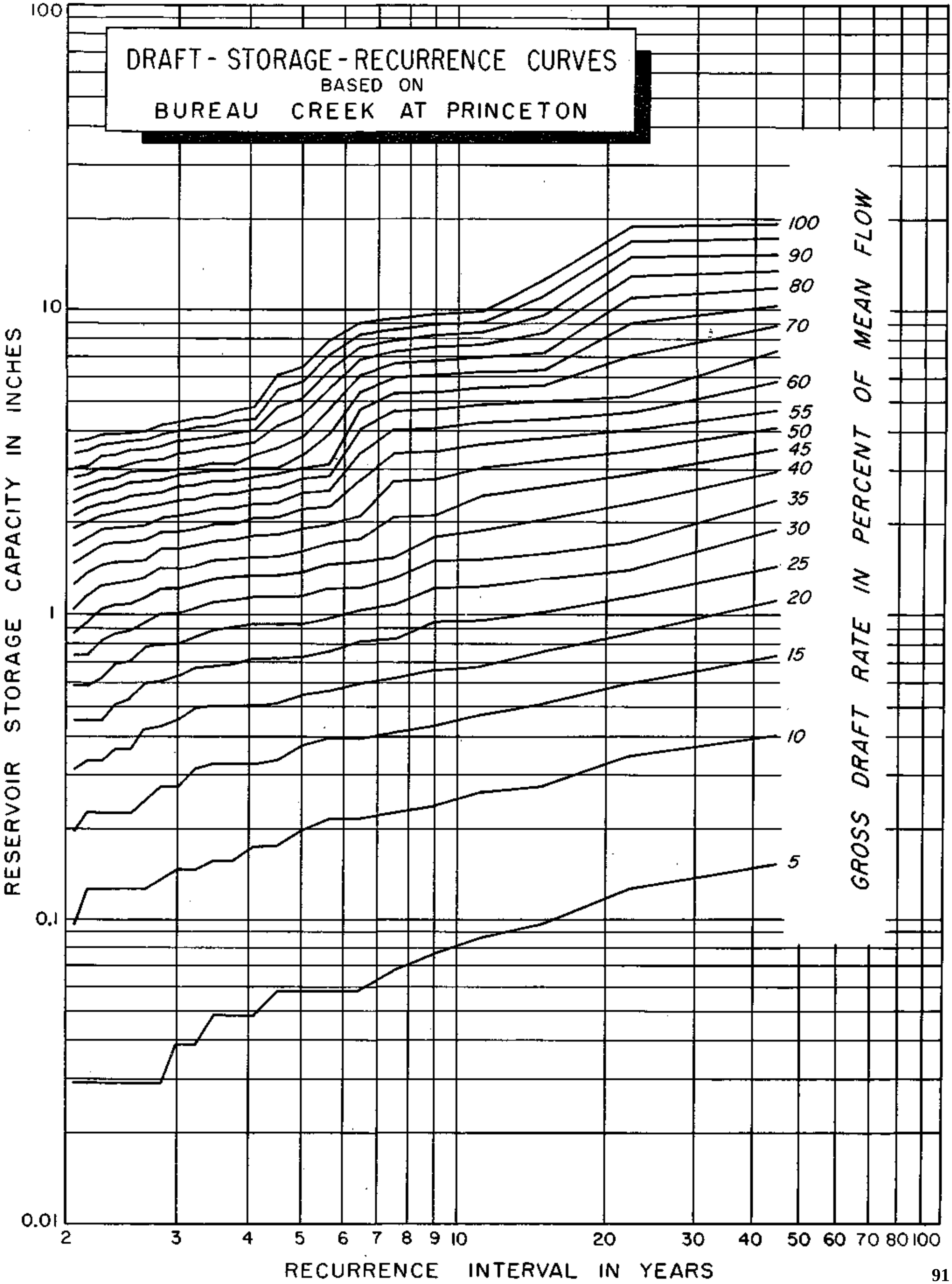
TOTAL DATA ANALYZED

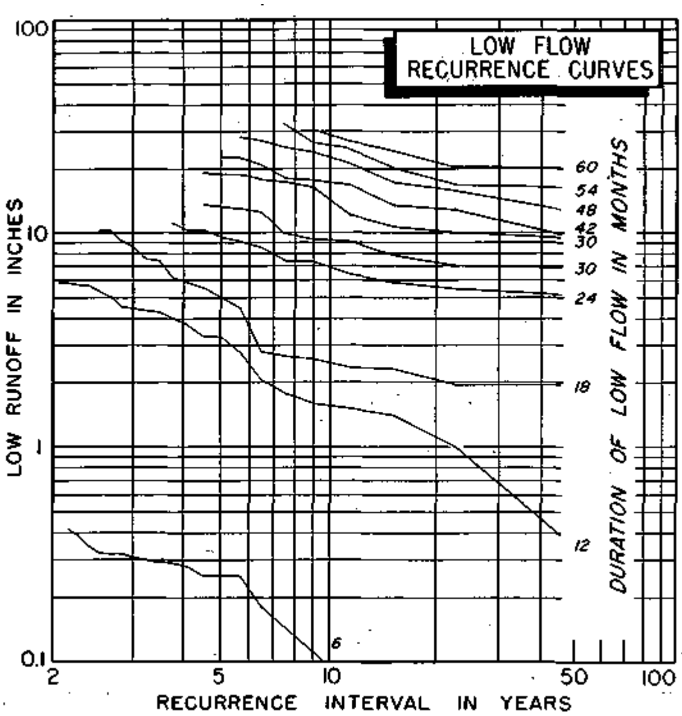
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.72 inch per month

Draft-Storage-Recurrence Data for Bureau Creek at Princeton

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, *years*	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.16 7	.41 7	.75 11	1.14 11	1.54 11	1.94 12	2.41 14	2.98 16	3.55 16	4.13 16	4.71 16	5.87 42	7.39 42	8.90 42	10.41 42	11.92 42	13.45 44	15.22 54	17.17 54	19.16 58
22.5	.13 6	.35 7	.61 7	.88 8	1.17 8	1.46 8	1.76 16	2.34 16	2.91 16	3.49 16	4.07 16	4.64 16	5.25 18	7.11 54	9.05 54	10.99 54	12.94 54	14.88 54	16.83 54	18.81 56
15.0	.10 5	.28 6	.52 7	.77 7	1.04 8	1.33 8	1.62 10	2.08 16	2.65 16	3.23 16	3.81 16	4.39 18	5.03 18	5.68 18	6.37 20	7.27 32	8.42 32	9.67 42	11.18 42	12.69 42
11.3	.09 5	.27 5	.48 6	.69 6	.97 8	1.26 8	1.55 8	1.92 16	2.49 16	3.07 16	3.65 18	4.30 18	4.94 18	5.59 18	6.29 20	7.01 20	7.73 20	8.45 20	9.17 20	9.89 20
9.0	.08 3	.24 5	.44 6	.67 8	.96 8	1.25 8	1.54 8	1.82 8	2.14 18	2.79 18	3.44 18	4.09 18	4.73 18	5.40 20	6.12 20	6.84 20	7.56 20	8.28 20	9.00 20	9.72 20
7.5	.07 3	.23 5	.42 6	.63 6	.85 6	1.09 7	1.34 7	1.60 7	2.11 18	2.76 18	3.41 18	4.06 18	4.70 18	5.35 18	6.00 18	6.65 18	7.30 18	7.94 18	8.65 20	9.37 20
6.4	.06 3	.22 5	.40 6	.61 6	.83 6	1.05 6	1.26 7	1.52 7	1.80 9	2.13 18	2.78 18	3.43 18	4.07 18	4.72 18	5.41 20	6.13 20	6.85 20	7.57 20	8.29 20	9.01 20
5.6	.06 3	.22 5	.40 5	.58 5	.77 6	.99 7	1.24 7	1.50 7	1.75 7	2.00 7	2.28 8	2.57 8	2.85 8	3.17 22	3.96 22	4.75 22	5.54 22	6.34 22	7.13 22	7.92 22
5.0	.06 3	.20 5	.38 5	.56 5	.74 5	.95 6	1.16 6	1.41 7	1.66 7	1.94 8	2.23 8	2.52 8	2.80 8	3.09 8	3.38 8	3.84 18	4.49 18	5.13 18	5.78 18	6.43 18
4.5	.06 3	.18 4	.34 5	.52 5	.73 6	.95 6	1.16 6	1.38 6	1.60 7	1.85 7	2.10 7	2.35 7	2.62 8	2.91 8	3.20 8	3.54 18	4.19 18	4.83 18	5.48 18	6.13 18
4.1	.05 3	.18 4	.33 5	.51 6	.73 6	.95 6	1.16 6	1.38 6	1.59 7	1.84 7	2.09 7	2.34 7	2.60 7	2.85 7	3.10 7	3.37 8	3.68 10	4.04 10	4.40 12	4.83 12
3.8	.05 3	.16 3	.33 5	.51 5	.70 6	.92 6	1.13 6	1.35 6	1.56 6	1.78 6	2.00 7	2.25 7	2.51 7	2.76 7	3.01 8	3.30 8	3.60 10	3.96 10	4.32 10	4.68 10
3.5	.05 3	.16 3	.33 5	.51 5	.69 5	.90 6	1.11 6	1.33 6	1.54 6	1.76 6	2.00 7	2.25 7	2.51 7	2.76 7	3.01 7	3.26 8	3.55 8	3.83 8	4.15 9	4.47 9
3.2	.04 3	.15 3	.32 5	.50 5	.68 5	.86 5	1.06 6	1.28 6	1.49 6	1.71 6	1.93 6	2.17 7	2.43 7	2.68 7	2.93 7	3.18 8	3.47 9	3.79 9	4.12 9	4.44 9
3.0	.04 3	.15 3	.28 5	.46 5	.64 5	.82 5	1.02 6	1.24 6	1.45 6	1.67 6	1.89 7	2.14 7	2.40 7	2.65 7	2.90 7	3.15 7	3.43 8	3.71 8	4.00 8	4.31 9
2.8	.03 3	.14 4	.28 4	.44 5	.62 5	.81 6	1.02 6	1.24 6	1.45 6	1.67 6	1.89 6	2.10 6	2.32 6	2.53 7	2.78 7	3.03 7	3.28 7	3.57 9	3.90 9	4.22 9
2.6	.03 2	.13 3	.25 5	.43 5	.61 5	.79 5	.97 5	1.15 5	1.34 6	1.56 6	1.78 6	1.99 7	2.25 7	2.50 7	2.75 7	3.00 7	3.25 7	3.51 7	3.76 7	4.01 8
2.5	.03 2	.13 3	.23 3	.37 4	.54 5	.72 5	.90 5	1.10 6	1.31 6	1.53 6	1.75 6	1.96 7	2.22 7	2.47 7	2.72 7	2.97 7	3.22 7	3.48 7	3.73 7	3.96 7
2.4	.03 2	.13 3	.23 3	.37 4	.52 5	.70 5	.88 5	1.09 6	1.30 6	1.52 6	1.74 6	1.95 6	2.17 6	2.38 6	2.60 6	2.82 6	3.08 8	3.36 8	3.65 8	3.94 8
2.3	.03 2	.13 3	.23 3	.34 3	.46 4	.63 6	.84 6	1.06 6	1.27 6	1.49 6	1.71 6	1.92 6	2.14 6	2.35 6	2.57 6	2.79 6	3.06 8	3.34 8	3.63 8	3.92 8
2.1	.03 1	.13 3	.23 3	.34 3	.46 4	.60 4	.75 4	.96 6	1.17 6	1.39 6	1.61 6	1.82 6	2.04 6	2.25 6	2.47 6	2.69 6	2.90 8	3.18 8	3.47 8	3.76 8
2.0	.03 1	.10 3	.20 3	.32 4	.46 4	.60 4	.75 4	.89 4	1.06 6	1.28 6	1.50 6	1.71 6	1.93 6	2.14 6	2.36 6	2.58 6	2.84 8	3.12 8	3.41 8	3.70 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BUREAU CREEK AT PRINCETON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 44

LOCATION

In SW ¼ SE ¼ sec 30, T16N, R10E, Bureau County, at county highway bridge 3.5 miles north of Bureau

DRAINAGE AREA

101 square miles

ACTUAL FLOW DATA

PERIOD: Mar 1936 thru Sept 1959

CONTINUOUS RECORD: 23 years; water years 1937-59

SYNTHETIC FLOW DATA

PERIOD: 22 years; water years 1915-36

INDEX STATION : Spoon River at Seville

COINCIDENT RECORD: 23 years; water years 1937-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

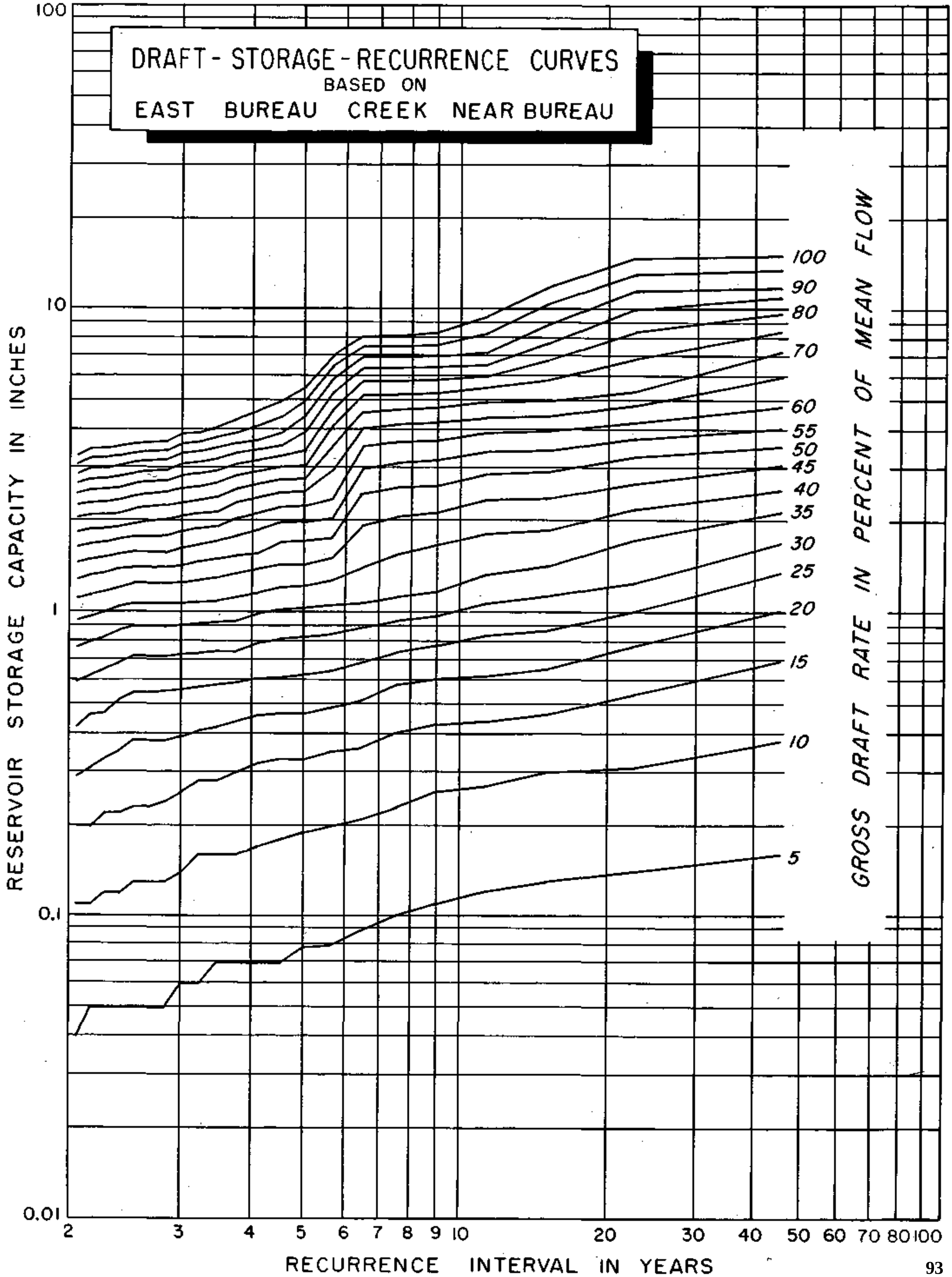
MEAN DISCHARGE : 0.58 inch per month

Draft-Storage-Recurrence Data for East Bureau Creek near Bureau

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.16	.38	.70	1.02	1.35	1.72	2.15	2.61	3.08	3.54	4.07	4.81	6.02	7.24	8.46	9.68	10.90	12.22	13.61	15.17
	7	11	11	11	12	14	16	16	16	16	20	42	42	42	42	42	44	48	48	54
22.5	.14	.31	.55	.78	1.01	1.27	1.74	2.21	2.73	3.25	3.77	4.29	4.82	5.34	6.83	8.40	9.96	11.56	13.19	14.61
	5	8	8	8	8	16	16	18	18	18	18	18	18	18	54	54	54	56	56	56
15.0	.13	.30	.47	.66	.87	1.14	1.43	1.87	2.39	2.91	3.43	3.95	4.48	5.00	5.81	6.74	7.67	8.87	10.34	11.96
	5	6	6	7	9	10	10	16	18	18	18	18	18	18	32	32	32	50	56	56
11.3	.12	.27	.44	.62	.84	1.07	1.34	1.83	2.35	2.87	3.39	3.91	4.44	4.96	5.48	6.00	6.52	7.18	8.28	9.38
	5	6	6	7	8	9	16	18	18	18	18	18	18	18	18	18	18	38	38	38
9.0	.11	.26	.43	.61	.78	.98	1.21	1.67	2.14	2.64	3.16	3.68	4.21	4.73	5.25	5.83	6.41	6.99	7.57	8.29
	5	6	6	6	7	7	16	16	16	16	18	18	18	18	20	20	20	20	20	30
7.5	.10	.23	.40	.58	.75	.94	1.14	1.54	2.06	2.58	3.10	3.62	4.15	4.67	5.19	5.75	6.33	6.91	7.49	8.07
	4	6	6	6	6	7	7	18	18	18	18	18	18	18	18	20	20	20	20	20
6.4	.09	.21	.36	.52	.69	.89	1.09	1.41	1.93	2.45	2.97	3.49	4.02	4.58	5.16	5.74	6.32	6.90	7.48	8.06
	4	5	5	6	7	7	7	18	18	18	18	18	18	20	20	20	20	20	20	20
5.6	.08	.20	.35	.49	.65	.85	1.05	1.28	1.51	1.77	2.03	2.36	2.94	3.52	4.10	4.68	5.26	5.84	6.42	7.00
	4	5	5	5	7	7	7	8	9	9	9	20	20	20	20	20	20	20	20	20
5.0	.08	.19	.33	.47	.63	.83	1.03	1.23	1.46	1.72	1.98	2.24	2.50	2.76	3.03	3.41	3.93	4.46	4.98	5.50
	4	4	5	5	7	7	7	7	9	9	9	9	9	9	10	18	18	18	18	18
4.5	.07	.18	.33	.47	.62	.82	1.02	1.22	1.45	1.71	1.97	2.23	2.49	2.75	3.02	3.28	3.54	3.88	4.40	4.92
	3	5	5	5	7	7	7	7	9	9	9	9	9	9	9	9	9	18	18	18
4.1	.07	.17	.32	.46	.61	.79	.99	1.19	1.40	1.60	1.86	2.12	2.38	2.64	2.91	3.17	3.43	3.69	4.11	4.63
	3	5	5	5	5	7	7	7	7	9	9	9	9	9	9	9	9	9	18	18
3.8	.07	.16	.30	.44	.59	.75	.94	1.14	1.35	1.55	1.78	2.04	2.30	2.56	2.83	3.09	3.35	3.61	3.89	4.30
	3	4	5	5	5	6	7	7	7	7	9	9	9	9	9	9	9	9	10	20
3.5	.07	.16	.28	.42	.58	.75	.93	1.10	1.31	1.51	1.71	1.92	2.14	2.40	2.67	2.93	3.20	3.49	3.78	4.07
	3	4	5	5	6	6	6	7	7	7	7	7	9	9	9	9	10	10	10	10
3.2	.06	.16	.28	.41	.57	.74	.92	1.09	1.26	1.48	1.68	1.89	2.12	2.35	2.60	2.86	3.12	3.38	3.64	3.90
	3	4	4	5	6	6	6	6	7	7	7	7	8	8	9	9	9	9	9	9
3.0	.06	.14	.26	.39	.56	.73	.91	1.08	1.26	1.44	1.64	1.85	2.07	2.30	2.56	2.82	3.08	3.34	3.60	3.86
	3	4	4	6	6	6	6	6	6	7	7	7	8	8	9	9	9	9	9	9
2.8	.05	.13	.24	.38	.55	.72	.90	1.07	1.25	1.42	1.59	1.78	2.02	2.25	2.48	2.71	2.94	3.18	3.41	3.64
	3	3	5	6	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8	8
2.6	.05	.13	.23	.38	.55	.72	.90	1.07	1.25	1.42	1.59	1.77	2.00	2.23	2.46	2.69	2.92	3.16	3.39	3.62
	3	3	4	6	6	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8
2.5	.05	.13	.23	.38	.55	.72	.90	1.07	1.25	1.42	1.59	1.77	1.95	2.18	2.41	2.64	2.87	3.11	3.34	3.57
	3	3	4	6	6	6	5	6	6	6	6	6	8	8	8	8	8	8	8	8
2.4	.05	.12	.22	.35	.52	.69	.87	1.04	1.22	1.39	1.56	1.74	1.91	2.11	2.34	2.57	2.80	3.04	3.27	3.50
	2	3	4	6	6	6	6	6	6	6	6	6	6	8	8	8	8	8	8	8
2.3	.05	.12	.22	.33	.48	.65	.83	1.00	1.15	1.35	1.52	1.70	1.89	2.09	2.30	2.53	2.76	3.00	3.23	3.46
	2	3	4	5	6	6	6	6	6	6	6	6	7	7	8	8	8	8	8	8
2.1	.05	.11	.20	.31	.46	.62	.80	.97	1.15	1.32	1.49	1.68	1.88	2.08	2.29	2.51	2.74	2.98	3.21	3.44
	2	3	3	5	5	6	6	6	6	6	6	7	7	7	7	8	8	8	8	8
2.0	.04	.11	.20	.29	.42	.59	.77	.94	1.12	1.29	1.46	1.64	1.84	2.04	2.25	2.45	2.65	2.85	3.06	3.26
	2	3	3	4	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
EAST BUREAU CREEK NEAR BUREAU
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
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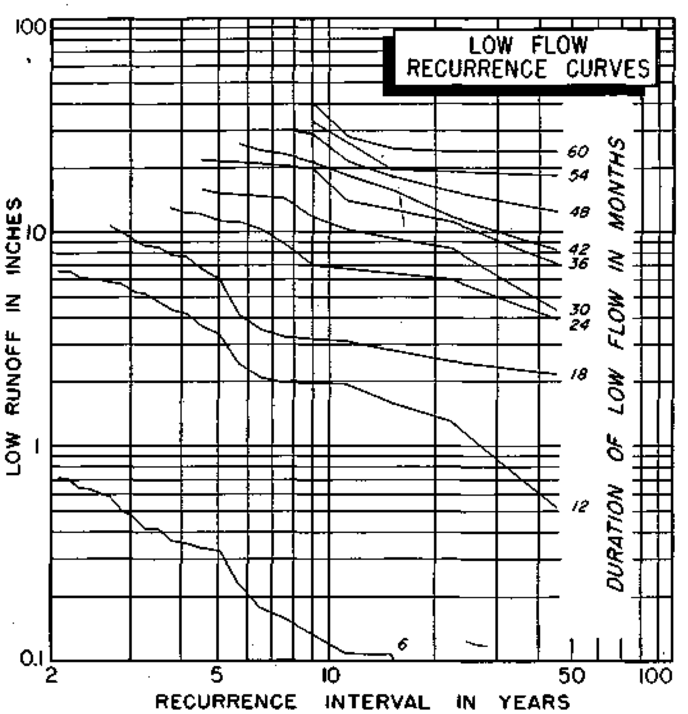
5



STATION 45

LOCATION
At northeast corner of sec 21, T16N, R8E, Bureau County, at bridge on U. S. 6 and U. S. 34, 0.5 mile east of Wyanet

DRAINAGE AREA
83.3 square miles

ACTUAL FLOW DATA
PERIOD: Mar 1936 thru Sept 1959
CONTINUOUS RECORD: 23 years; water years 1937-59

SYNTHETIC FLOW DATA
PERIOD: 23 years; water years 1915-36
INDEX STATION : Spoon River at Seville
COINCIDENT RECORD: 23 years; water years 1937-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.65 inch per month

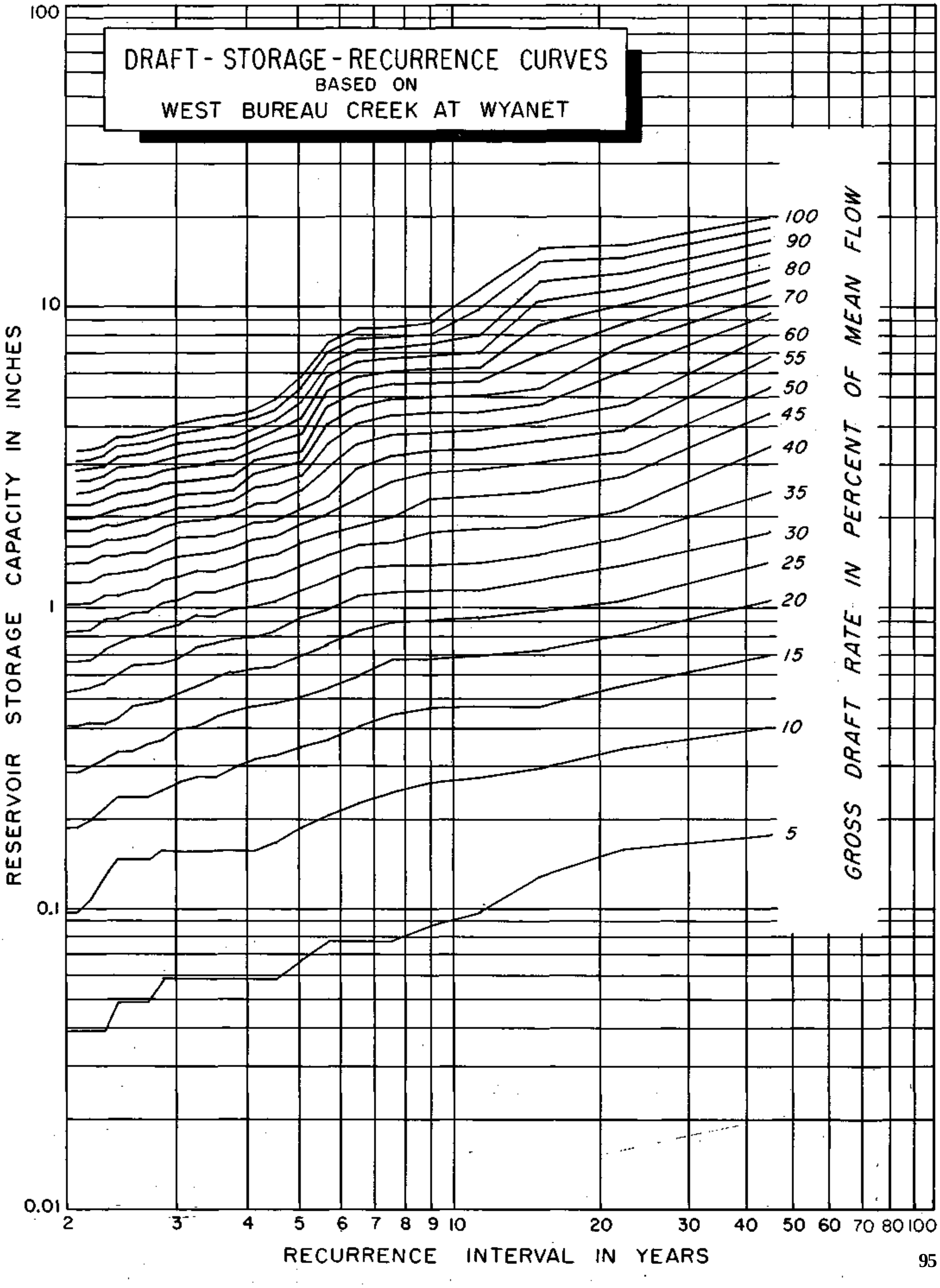
Draft-Storage-Recurrence Data for West Bureau Creek at Wyanet

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

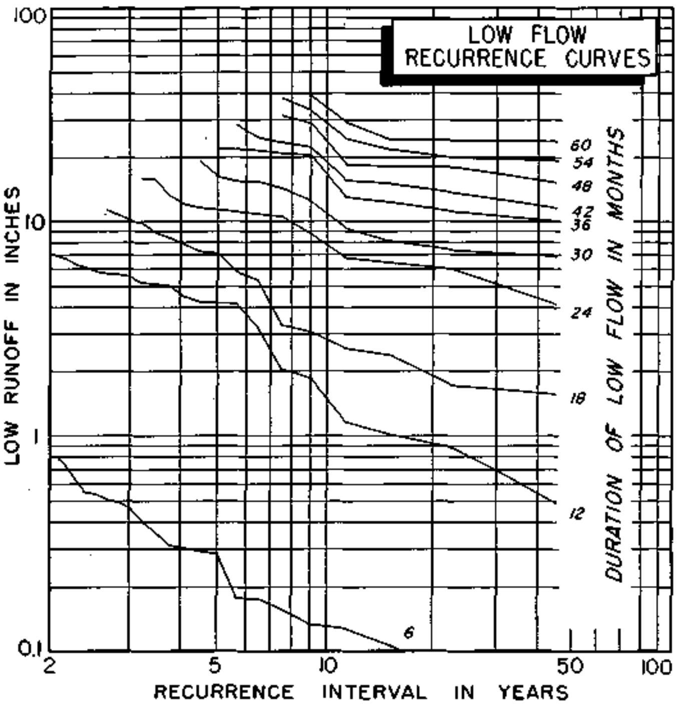
Gross draft rate in percent of mean flow

Recurrence interval, years	5	10	15	20	25	30	35	40	45	50
45.0	.18 7	.41 7	.71 11	1.07 11	1.43 11	1.81 12	2.45 30	3.42 30	4.40 30	5.37 30
22.5	.16 6	.35 6	.56 8	.82 8	1.08 10	1.40 10	1.73 10	2.15 18	2.74 18	3.32 18
15.0	.13 5	.30 5	.48 7	.73 8	.99 8	1.25 8	1.52 10	1.88 16	2.43 18	3.01 18
11.3	.10 5	.28 6	.48 6	.70 7	.93 7	1.16 6	1.42 8	1.84 16	2.36 16	2.88 16
9.0	.09 5	.27 6	.47 6	.69 7	.92 7	1.15 7	1.40 8	1.79 16	2.31 16	2.83 16
7.5	.08 5	.25 5	.43 7	.68 7	.91 7	1.14 8	1.40 8	1.66 8	2.03 18	2.61 18
6.4	.08 3	.23 5	.41 6	.60 6	.65 8	1.11 8	1.37 8	1.63 8	1.89 8	2.33 18
5.6	.08 3	.21 5	.37 5	.55 6	.76 7	.99 8	1.25 8	1.51 8	1.77 9	2.07 9
5.0	.07 3	.19 5	.35 5	.51 5	.71 7	.94 7	1.16 7	1.40 8	1.66 8	1.92 8
4.5	.06 3	.17 5	.33 5	.49 5	.65 5	.84 7	1.06 7	1.29 7	1.52 7	1.75 7
4.1	.06 3	.16 5	.32 5	.48 5	.64 5	.81 6	1.02 7	1.25 7	1.48 7	1.71 7
3.8	.06 3	.16 3	.30 5	.46 5	.62 5	.80 6	1.00 6	1.19 6	1.39 6	1.60 7
3.5	.06 3	.16 3	.28 5	.44 5	.60 5	.77 5	.95 6	1.14 6	1.34 6	1.54 7
3.2	.06 3	.16 3	.28 4	.41 4	.56 6	.75 6	.95 6	1.14 6	1.34 6	1.53 6
3.0	.06 3	.16 3	.27 4	.40 4	.53 4	.69 6	.89 6	1.08 6	1.28 6	1.50 7
2.8	.06 3	.16 3	.25 3	.37 4	.50 5	.67 5	.86 6	1.05 6	1.25 6	1.44 6
2.6	.05 3	.15 3	.24 3	.36 4	.49 5	.65 5	.82 5	.98 5	1.17 6	1.36 6
2.5	.05 3	.15 3	.24 3	.34 3	.48 5	.65 5	.81 5	.97 5	1.15 6	1.34 6
2.4	.05 3	.15 3	.24 3	.34 3	.44 5	.61 5	.77 5	.93 5	1.12 6	1.31 6
2.3	.04 2	.13 3	.22 3	.32 3	.42 4	.57 5	.73 6	.92 6	1.12 6	1.31 5
2.1	.04 2	.11 3	.20 3	.30 3	.42 4	.55 4	.68 4	.85 6	1.05 6	1.24 6
2.0	.04 2	.10 3	.19 3	.29 3	.41 4	.54 4	.67 5	.84 6	1.04 6	1.23 6

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
45.0	6.72 42	8.08 42	9.45 42	10.61 42	12.18 42	13.54 42	14.95 50	16.57 50	18.20 50	19.82 50
22.5	3.91 42	4.70 42	6.07 42	7.43 42	8.60 42	10.16 42	11.53 42	12.89 54	14.42 54	16.17
15.0	3.60 16	4.18 18	4.77 18	5.35 18	6.88 54	8.63 54	10.39 54	12.14 54	13.90 54	15.65 54
11.3	3.40 16	3.92 16	4.49 18	5.07 18	5.66 18	6.30 20	7.00 26	7.99 52	9.68 52	11.37 52
9.0	3.39 16	3.87 18	4.46 18	5.04 18	5.63 18	6.21 18	6.85 20	7.50 20	8.15 20	8.80 20
7.5	3.20 16	3.78 18	4.37 18	4.95 18	5.54 18	6.12 18	6.71 18	7.29 18	7.88 18	8.52 20
6.4	2.92 16	3.50 18	4.09 18	4.67 18	5.26 18	5.88 20	6.53 20	7.18 20	7.83 20	8.48 20
5.6	2.36 9	2.93 18	3.52 18	4.10 18	4.69 18	5.27 18	5.85 18	6.44 18	7.03 18	7.61 18
5.0	2.18 9	2.47 9	2.76 9	3.06 9	3.35 9	3.81 16	4.33 16	4.65 16	5.37 16	5.89 16
4.5	1.97 9	2.26 10	2.59 10	2.91 10	3.24 10	3.56 10	3.89 10	4.21 10	4.54 10	4.95 18
4.1	1.94 9	2.23 9	2.52 9	2.82 9	3.11 9	3.40 9	3.69 9	3.99 9	4.28 9	4.57 9
3.8	1.82 7	2.05 7	2.28 7	2.51 7	2.77 10	3.09 10	3.42 10	3.74 10	4.07 10	4.39 10
3.5	1.76 7	1.99 7	2.22 7	2.45 7	2.72 10	3.04 10	3.37 10	3.69 10	4.02 10	4.34 10
3.2	1.74 7	1.97 7	2.20 7	2.43 7	2.67 9	2.96 9	3.27 10	3.59 10	3.92 10	4.24 10
3.0	1.72 7	1.95 7	2.18 7	2.41 7	2.65 9	2.94 9	3.23 9	3.53 9	3.82 9	4.11 9
2.8	1.64 7	1.87 7	2.10 7	2.35 8	2.61 8	2.67 8	3.13 8	3.39 8	3.65 8	3.91 8
2.6	1.56 6	1.77 7	2.00 7	2.23 8	2.49 8	2.75 8	3.01 8	3.27 8	3.55 9	3.84 9
2.5	1.54 6	1.73 6	1.94 8	2.20 8	2.46 8	2.72 8	2.98 8	3.24 8	3.50 8	3.75 8
2.4	1.51 6	1.70 6	1.90 8	2.16 8	2.42 8	2.68 8	2.94 8	3.20 8	3.46 8	3.72 8
2.3	1.51 6	1.70 6	1.90 6	2.09 6	2.29 7	2.52 7	2.75 7	2.98 7	3.22 8	3.48 8
2.1	1.44 6	1.63 6	1.83 6	2.02 6	2.22 7	2.45 7	2.68 7	2.91 7	3.13 7	3.37 8
2.0	1.43 6	1.62 6	1.82 6	2.01 6	2.21 6	2.42 7	2.65 7	2.86 7	3.10 7	3.34 8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
WEST BUREAU CREEK AT WYANET
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100



STATION 51

LOCATION

In SW ¼ SE ¼ sec 36, T14N, R9E, Putnam County, at bridge No. 7, 2.4 miles west of Ill. 29, and 3.6 miles northwest of Henry

DRAINAGE AREA

55.3 square miles

ACTUAL FLOW DATA

PERIOD: May 1949 thru Sept 1959

CONTINUOUS RECORD : 10 years; water years 1950-59

SYNTHETIC FLOW DATA

PERIOD: 35 years; water years 1915-49

INDEX STATION : Spoon River at Seville

COINCIDENT RECORD: 10 years; water years 1950-59

TOTAL DATA ANALYZED

PERIOD : 45 years; water years 1915-59

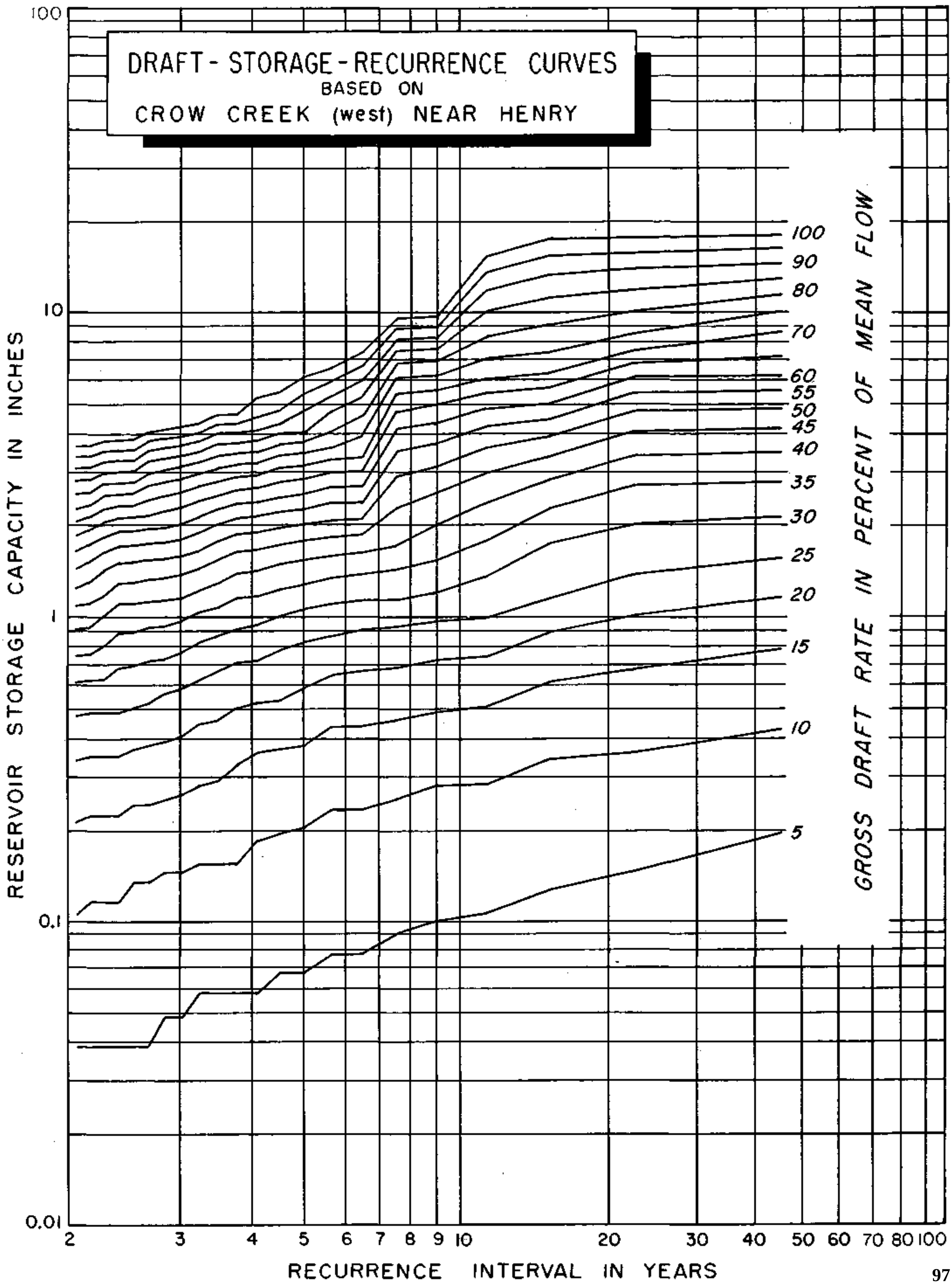
MEAN DISCHARGE : 0.70 inch per month

Draft-Storage-Recurrence Data for Crow Creek (West) near Henry

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

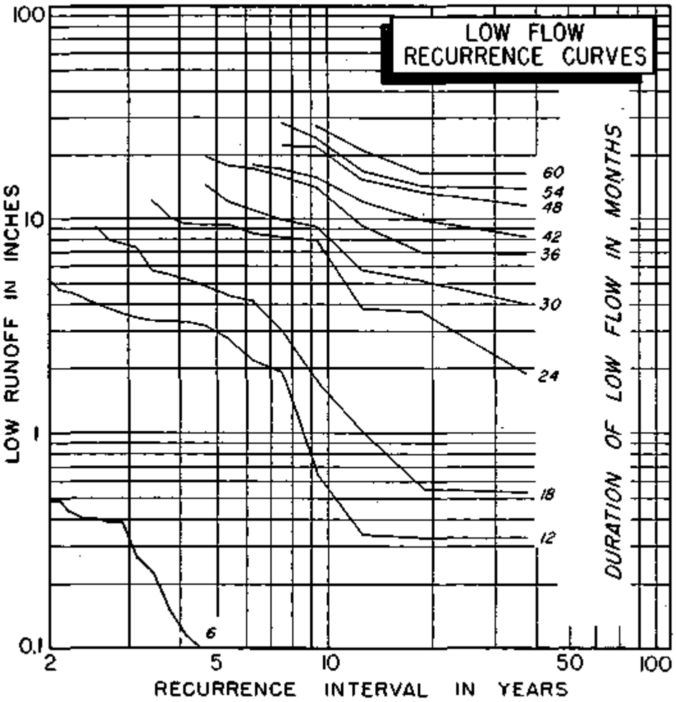
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.20 7	.44 7	.81 11	1.19 11	1.60 12	2.18 18	2.86 20	3.56 20	4.26 20	4.96 20	5.66 20	6.36 20	7.34 42	8.81 42	10.28 42	11.75 42	13.22 44	14.81 48	16.49 48	18.29 54
22.5	.15 5	.37 8	.69 10	1.04 10	1.41 16	2.06 20	2.76 20	3.46 20	4.16 20	4.86 20	5.56 20	6.26 20	6.96 20	7.66 20	8.69 40	10.30 54	12.19 54	14.08 54	15.97 54	17.87 56
15.0	.13 5	.35 8	.63 8	.91 8	1.21 16	1.77 16	2.33 16	2.89 16	3.45 16	4.01 16	4.57 16	5.13 16	5.75 18	6.46 30	7.51 30	9.30 60	11.40 60	13.50 60	15.60 60	17.70 60
11.3	.11 5	.29 6	.52 7	.76 7	1.02 8	1.39 11	1.82 16	2.42 18	3.05 18	3.68 18	4.31 18	4.94 18	5.57 18	6.20 18	7.19 32	8.53 50	10.28 50	12.03 50	13.78 50	15.53 50
9.0	.10 5	.29 6	.50 7	.74 7	.99 7	1.25 9	1.57 9	2.07 16	2.63 16	3.19 16	3.81 18	4.44 18	5.07 18	5.70 18	6.33 20	7.03 20	7.73 20	8.43 20	9.13 20	9.83 20
7.5	.09 5	.26 6	.47 6	.70 7	.95 7	1.19 8	1.47 8	1.75 16	2.33 18	2.96 18	3.59 18	4.22 18	4.85 18	5.51 20	6.21 20	6.91 20	7.61 20	8.31 20	9.01 20	9.71 20
6.4	.08 3	.24 6	.45 6	.68 7	.93 7	1.17 7	1.42 7	1.66 7	1.91 7	2.15 8	2.44 9	2.75 9	3.07 9	3.43 16	4.02 18	4.68 20	5.38 20	6.08 20	6.78 20	7.48 20
5.6	.08 3	.24 6	.45 6	.66 6	.89 7	1.13 7	1.38 7	1.62 7	1.87 7	2.11 9	2.43 9	2.74 9	3.06 9	3.37 9	3.69 9	4.17 18	4.80 18	5.43 18	6.06 18	6.69 18
5.0	.07 3	.21 5	.39 5	.60 7	.85 7	1.09 7	1.34 7	1.58 7	1.83 7	2.07 7	2.32 7	2.60 9	2.92 9	3.23 9	3.55 9	3.86 9	4.18 9	4.87 20	5.57 20	6.27 20
4.5	.07 3	.20 5	.38 5	.55 7	.80 7	1.04 7	1.29 7	1.53 7	1.78 7	2.02 7	2.27 7	2.53 9	2.85 9	3.16 9	3.48 9	3.79 9	4.11 9	4.42 9	4.89 20	5.59 20
4.1	.06 3	.19 5	.37 5	.54 5	.74 6	.97 7	1.22 7	1.46 7	1.71 7	1.95 7	2.20 7	2.44 8	2.72 8	3.00 8	3.28 8	3.57 9	3.89 9	4.20 9	4.64 20	5.34 20
3.8	.06 3	.16 5	.34 5	.52 6	.73 6	.94 7	1.19 7	1.43 7	1.68 7	1.92 7	2.17 7	2.41 7	2.68 8	2.96 8	3.24 8	3.52 8	3.80 9	4.11 9	4.43 9	4.74 9
3.5	.06 3	.16 3	.30 5	.47 6	.68 6	.89 6	1.10 6	1.33 7	1.58 7	1.82 7	2.07 7	2.31 7	2.56 8	2.84 9	3.16 9	3.47 9	3.79 9	4.10 9	4.42 9	4.73 9
3.2	.06 3	.16 3	.29 5	.46 5	.64 6	.85 6	1.06 6	1.27 6	1.48 6	1.69 7	1.94 7	2.19 8	2.47 8	2.75 8	3.03 8	3.31 8	3.59 8	3.87 8	4.15 8	4.43 8
3.0	.05 3	.15 3	.27 4	.42 5	.60 5	.79 6	1.00 6	1.21 6	1.42 6	1.63 6	1.84 6	2.07 8	2.35 8	2.63 8	2.91 8	3.19 8	3.47 8	3.75 8	4.03 8	4.32 9
2.8	.05 3	.15 3	.26 4	.40 5	.58 5	.75 6	.96 6	1.17 6	1.38 6	1.59 6	1.80 6	2.01 8	2.29 8	2.57 8	2.85 8	3.13 8	3.41 8	3.69 8	3.97 8	4.25 8
2.6	.04 3	.14 3	.25 4	.39 4	.54 5	.74 6	.95 6	1.16 6	1.37 6	1.58 6	1.79 6	2.00 6	2.21 8	2.49 8	2.77 8	3.05 8	3.33 8	3.61 8	3.89 8	4.17 8
2.5	.04 3	.14 3	.25 3	.38 4	.52 4	.71 6	.92 6	1.13 6	1.34 6	1.55 6	1.76 6	1.97 6	2.18 6	2.39 6	2.61 7	2.85 7	3.10 7	3.36 8	3.64 8	3.92 8
2.4	.04 2	.12 3	.23 3	.36 4	.50 4	.70 6	.91 6	1.12 6	1.33 6	1.54 6	1.75 6	1.96 6	2.17 6	2.38 6	2.59 6	2.81 7	3.07 8	3.35 8	3.63 8	3.91 8
2.3	.04 2	.12 3	.23 3	.36 4	.50 4	.64 4	.83 6	1.04 6	1.25 6	1.46 6	1.67 6	1.88 6	2.09 6	2.32 7	2.57 7	2.81 7	3.06 7	3.32 8	3.60 8	3.88 8
2.1	.04 2	.12 3	.23 3	.36 4	.50 4	.64 4	.78 5	.95 5	1.14 6	1.35 6	1.56 6	1.77 6	1.98 6	2.19 6	2.40 6	2.63 8	2.91 8	3.19 8	3.47 8	3.75 8
2.0	.04 2	.11 3	.22 3	.35 4	.49 4	.63 4	.77 5	.94 5	1.12 5	1.29 5	1.48 6	1.69 6	1.90 6	2.11 6	2.32 8	2.60 8	2.88 8	3.16 8	3.44 8	3.72 8



DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
CROW CREEK (west) NEAR HENRY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

CROW CREEK NEAR WASHBURN



STATION 52

LOCATION
In SW ¼ sec 23, T29N, R2W, Marshall County, at highway bridge 2.5 miles northwest of Washburn

DRAINAGE AREA
123 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1944 thru Sept 1959
CONTINUOUS RECORD : 15 years; water years 1945-59

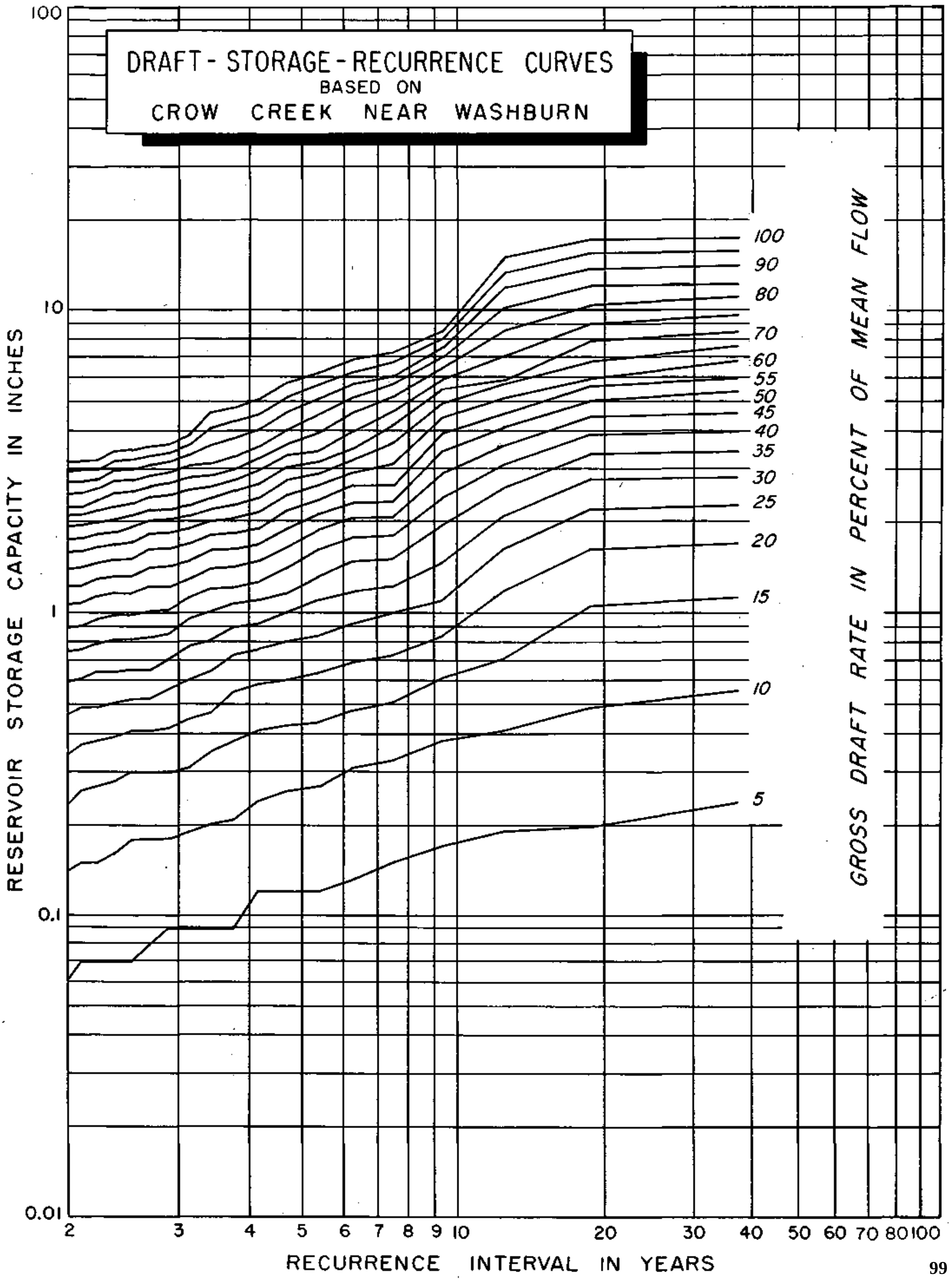
SYNTHETIC FLOW DATA
PERIOD : 23 years; water years 1922-44
INDEX STATION : Mackinaw River near Green Valley
COINCIDENT RECORD : 12 years; water years 1945-56

TOTAL DATA ANALYZED
PERIOD: 38 years; water years 1922-59
MEAN DISCHARGE : 0.58 inch per month

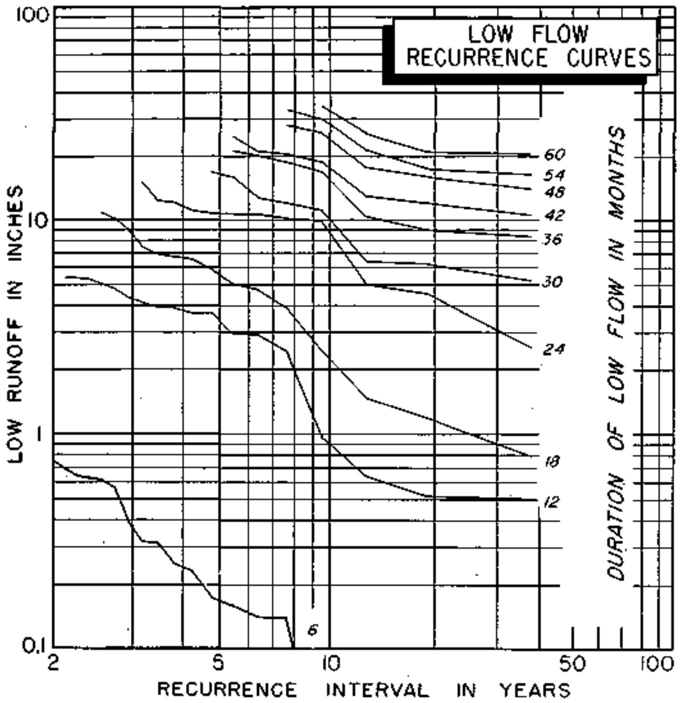
Draft-Storage-Recurrence Data for Crow Creek near Washburn

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.24 9	.56 20	1.14 20	1.72 20	2.30 20	2.88 20	3.46 20	4.04 20	4.74 26	5.49 26	6.24 26	7.00 26	7.75 26	8.62 42	9.84 42	11.26 50	12.77 56	14.39 56	16.02 56	17.64 56
19.0	.20 8	.49 20	1.07 20	1.65 20	2.23 20	2.81 20	3.39 20	3.97 20	4.55 20	5.13 20	5.71 20	6.29 20	6.87 20	7.99 40	9.15 40	10.53 54	12.21 60	13.95 60	15.69 60	17.43 60
12.7	.19 7	.41 8	.72 16	1.19 16	1.65 16	2.11 16	2.61 18	3.14 18	3.66 18	4.18 18	4.70 18	5.22 18	5.75 18	6.28 30	7.15 30	8.68 56	10.31 56	11.93 56	13.56 56	15.18 56
9.5	.17 7	.38 8	.62 8	.85 8	1.11 10	1.49 16	1.96 16	2.42 16	2.93 18	3.45 18	3.97 18	4.49 18	5.02 18	5.54 18	6.06 18	6.58 18	7.10 18	7.63 18	8.15 18	8.67 18
7.6	.15 6	.33 6	.52 7	.74 9	1.01 9	1.27 9	1.53 9	1.80 10	2.09 10	2.38 10	2.67 10	3.17 18	3.70 18	4.22 18	4.74 18	5.26 18	5.78 18	6.31 18	6.83 18	7.35 18
6.3	.13 6	.31 6	.50 7	.70 7	.93 9	1.21 10	1.50 10	1.79 10	2.08 10	2.37 10	2.66 10	2.95 10	3.24 10	3.53 10	4.05 20	4.63 20	5.21 20	5.79 20	6.37 20	6.95 20
5.4	.12 5	.27 6	.44 7	.64 7	.85 9	1.11 9	1.37 9	1.63 9	1.89 9	2.15 9	2.41 9	2.67 9	2.93 9	3.19 9	3.47 10	4.00 20	4.58 20	5.16 20	5.74 20	6.32 20
4.8	.12 4	.26 6	.43 6	.61 6	.81 7	1.01 7	1.21 7	1.43 8	1.66 8	1.91 10	2.20 10	2.49 10	2.78 10	3.07 10	3.36 10	3.65 10	4.08 20	4.66 20	5.24 20	5.82 20
4.2	.12 4	.24 6	.41 6	.59 6	.76 6	.93 6	1.11 6	1.29 7	1.50 7	1.70 7	1.92 9	2.18 9	2.44 9	2.71 10	3.00 10	3.29 10	3.58 10	4.10 18	4.62 18	5.14 18
3.8	.09 4	.21 6	.38 6	.56 6	.73 6	.90 6	1.08 6	1.25 6	1.44 7	1.64 7	1.85 8	2.08 8	2.32 8	2.55 8	2.78 8	3.01 8	3.32 16	3.83 18	4.35 18	4.87 18
3.5	.09 3	.20 5	.35 5	.49 5	.65 6	.82 6	1.01 7	1.21 7	1.42 7	1.62 7	1.82 7	2.03 7	2.23 7	2.43 7	2.64 7	2.89 9	3.15 9	3.61 18	4.13 18	4.65 18
3.2	.09 3	.19 4	.31 5	.45 5	.61 6	.78 6	.96 6	1.13 6	1.31 6	1.50 7	1.70 7	1.91 7	2.11 7	2.32 8	2.58 9	2.84 9	3.10 9	3.36 9	3.62 9	3.92 16
2.9	.09 3	.18 4	.30 4	.42 5	.57 5	.71 5	.86 5	1.03 7	1.24 7	1.44 7	1.64 7	1.85 7	2.05 7	2.26 8	2.49 8	2.72 8	2.95 8	3.19 8	3.42 8	3.65 8
2.7	.08 3	.18 4	.30 4	.41 4	.53 4	.65 6	.83 6	1.02 7	1.23 7	1.43 7	1.63 7	1.84 7	2.04 7	2.24 7	2.45 7	2.65 8	2.88 8	3.12 8	3.35 8	3.58 8
2.5	.07 4	.18 4	.30 4	.41 4	.53 4	.65 5	.82 6	.99 6	1.17 6	1.34 6	1.52 7	1.73 7	1.93 7	2.13 7	2.34 7	2.55 8	2.78 8	3.02 8	3.25 8	3.48 8
2.4	.07 3	.16 4	.28 4	.39 4	.51 4	.64 6	.82 6	.99 6	1.17 6	1.34 6	1.51 6	1.69 6	1.86 6	2.06 8	2.29 8	2.52 8	2.75 8	2.99 8	3.22 8	3.45 8
2.2	.07 3	.15 4	.27 4	.38 4	.50 5	.64 5	.79 6	.96 6	1.14 6	1.31 6	1.48 6	1.66 6	1.83 6	2.01 6	2.20 7	2.40 7	2.60 7	2.80 7	3.01 8	3.25 9
2.1	.07 3	.15 3	.26 4	.37 4	.49 4	.61 5	.76 5	.91 6	1.09 6	1.26 6	1.43 6	1.61 6	1.78 6	1.96 6	2.13 6	2.30 6	2.52 8	2.76 8	2.99 8	3.22 8
2.0	.06 3	.14 3	.23 4	.34 4	.46 5	.60 5	.75 5	.90 6	1.08 6	1.25 6	1.42 6	1.60 6	1.77 6	1.95 6	2.12 6	2.29 6	2.50 8	2.74 8	2.97 8	3.20 8


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
CROW CREEK NEAR WASHBURN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

FARM CREEK AT FARMDALE



STATION 60

LOCATION

In NE ¼ SE ¼ sec 36, T26N, R4W, Tazewell County, near bridge on County Road, 0.3 mile east of Farmdale

DRAINAGE AREA

27.6 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1949 thru Sept 1959

CONTINUOUS RECORD: 11 years; water years 1949-59

SYNTHETIC FLOW DATA

PERIOD: 27 years; water years 1922-48

INDEX STATION: Mackinaw River near Green Valley

COINCIDENT RECORD: 8 years; water years 1949-56

TOTAL DATA ANALYZED

PERIOD: 38 years; water years 1922-59

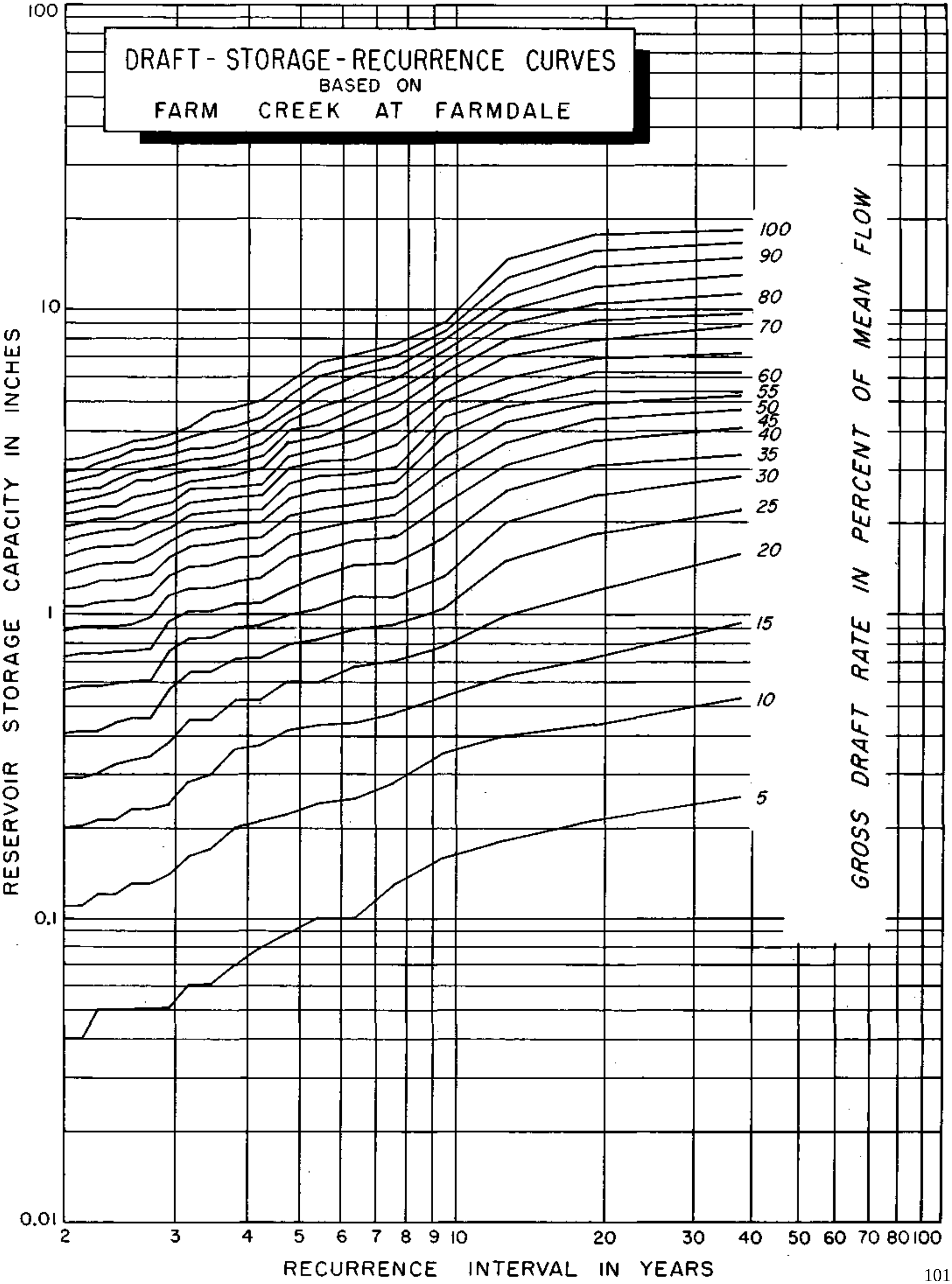
MEAN DISCHARGE: 0.64 inch per month

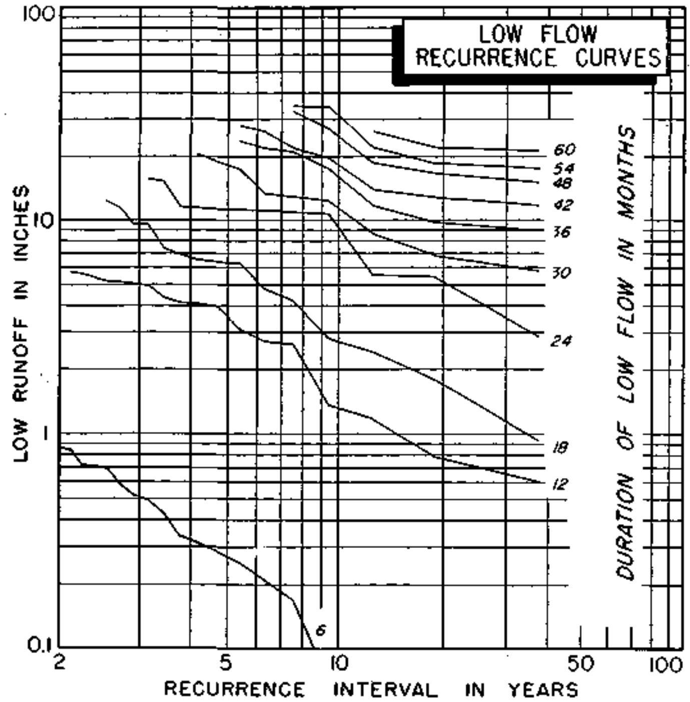
Draft-Storage-Recurrence Data for Farm Creek at Farmdale

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.25	.54	.94	1.58	2.22	2.86	3.50	4.14	4.78	5.58	6.41	7.24	8.08	8.91	9.74	11.35	13.14	14.94	16.73	18.52
	9	10	20	20	20	20	20	20	20	26	26	26	26	26	26	56	56	56	56	56
19.0	.21	.44	.73	1.20	1.64	2.48	3.12	3.76	4.40	5.04	5.68	6.32	6.96	7.99	9.27	10.59	12.26	13.92	15.73	17.65
	7	7	10	20	20	20	20	20	20	20	20	20	20	40	40	52	52	52	60	60
12.7	.18	.40	.64	.99	1.50	2.01	2.56	3.14	3.71	4.29	4.87	5.44	6.08	7.04	8.00	8.96	9.92	11.24	12.75	14.61
	6	7	8	16	16	16	18	18	18	18	18	18	30	30	30	30	30	42	58	58
9.5	.16	.35	.55	.79	1.05	1.34	1.78	2.30	2.81	3.32	3.89	4.46	5.04	5.61	6.19	6.77	7.34	7.92	8.49	9.07
	6	6	6	8	9	12	16	16	16	16	18	18	18	18	18	18	18	18	18	18
7.6	.13	.28	.48	.71	.93	1.19	1.48	1.79	2.11	2.43	2.75	3.07	3.64	4.21	4.79	5.37	5.94	6.52	7.09	7.67
	4	5	7	7	8	9	9	10	10	10	10	10	18	18	18	18	18	18	18	18
6.3	.10	.25	.45	.68	.90	1.17	1.46	1.74	2.03	2.32	2.61	2.93	3.25	3.75	4.26	4.77	5.28	5.90	6.54	7.18
	4	6	7	7	7	9	9	9	9	9	10	10	10	16	16	16	16	20	20	20
5.4	.10	.24	.44	.63	.83	1.05	1.34	1.62	1.91	2.23	2.55	2.87	3.19	3.51	3.83	4.20	4.77	5.41	6.05	6.69
	4	6	6	6	7	9	9	9	10	10	10	10	10	10	10	18	20	20	20	20
4.8	.09	.22	.42	.61	.80	.99	1.23	1.51	1.80	2.09	2.39	2.71	3.03	3.35	3.67	3.99	4.31	4.63	5.21	5.85
	4	6	6	6	6	6	9	9	9	9	10	10	10	10	10	10	10	10	20	20
4.2	.08	.21	.37	.54	.73	.92	1.11	1.32	1.55	1.77	1.99	2.22	2.44	2.71	3.00	3.30	3.64	4.00	4.42	5.00
	3	5	5	6	6	6	6	7	7	7	7	7	8	9	9	10	11	11	18	18
3.8	.07	.20	.36	.53	.72	.91	1.10	1.30	1.53	1.75	1.97	2.20	2.42	2.65	2.87	3.13	3.42	3.70	4.17	4.75
	3	5	5	6	6	6	6	7	7	7	7	7	7	7	7	9	9	9	18	18
3.5	.06	.17	.30	.46	.65	.84	1.03	1.24	1.47	1.69	1.91	2.14	2.36	2.59	2.81	3.03	3.27	3.56	4.00	4.58
	3	4	5	6	6	6	6	7	7	7	7	7	7	7	7	7	8	10	18	18
3.2	.06	.16	.28	.46	.65	.84	1.03	1.23	1.44	1.66	1.88	2.11	2.33	2.56	2.78	3.00	3.23	3.51	3.83	4.15
	3	4	4	6	6	6	6	6	7	7	7	7	7	7	7	7	7	10	10	10
2.9	.05	.14	.24	.38	.57	.76	.95	1.15	1.34	1.53	1.72	1.91	2.11	2.33	2.59	2.85	3.10	3.36	3.61	3.87
	3	3	3	6	6	6	6	6	6	6	6	6	6	8	8	8	8	8	8	8
2.7	.05	.13	.23	.34	.47	.61	.77	.97	1.16	1.35	1.57	1.80	2.02	2.25	2.49	2.75	3.00	3.26	3.51	3.77
	2	3	3	4	4	5	6	6	6	7	7	7	7	7	8	8	8	8	8	8
2.5	.05	.13	.23	.33	.46	.60	.76	.92	1.11	1.30	1.49	1.68	1.90	2.15	2.41	2.67	2.92	3.18	3.43	3.69
	2	3	3	4	4	5	5	6	6	6	6	6	8	8	8	8	8	8	8	8
2.4	.05	.12	.21	.32	.45	.59	.75	.91	1.10	1.29	1.48	1.67	1.87	2.06	2.26	2.52	2.77	3.03	3.28	3.54
	2	2	3	4	4	5	5	6	5	6	6	6	6	6	8	8	8	8	8	8
2.2	.05	.12	.21	.30	.42	.58	.74	.90	1.09	1.28	1.47	1.66	1.86	2.05	2.24	2.43	2.62	2.88	3.13	3.39
	2	2	3	3	5	5	5	6	6	6	6	6	6	6	6	6	8	8	8	8
2.1	.04	.11	.20	.29	.42	.58	.74	.90	1.06	1.23	1.42	1.61	1.81	2.00	2.19	2.38	2.57	2.77	3.00	3.26
	2	2	3	3	5	5	5	5	5	6	6	6	6	6	6	6	6	6	8	8
2.0	.04	.11	.20	.29	.41	.57	.73	.89	1.05	1.21	1.37	1.55	1.75	1.94	2.13	2.32	2.51	2.71	2.96	3.22
	2	2	3	3	5	5	5	5	5	5	5	6	6	6	6	6	6	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
FARM CREEK AT FARMDALE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 100
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 61

LOCATION
In SW ¼ NW ¼ sec 33, T26N, R4W, Tazewell County, about 30 feet upstream from Main Street Bridge in East Peoria

DRAINAGE AREA
60.9 square miles

ACTUAL FLOW DATA
PERIOD: May 1943 thru Sept 1959
CONTINUOUS RECORD: 16 years; water years 1944-59

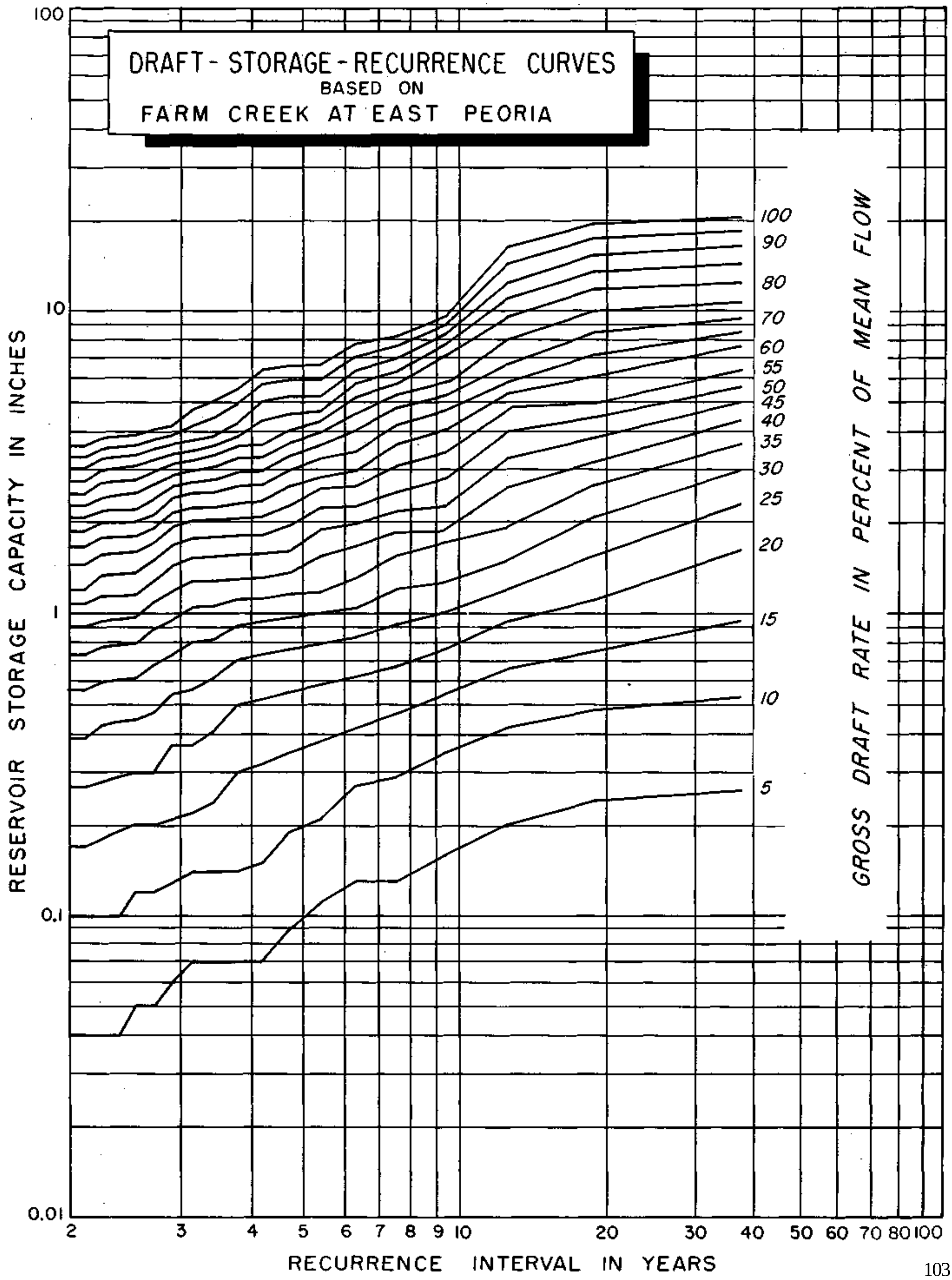
SYNTHETIC FLOW DATA
PERIOD: 22 years; water years 1922-43
INDEX STATION : Mackinaw River near Green Valley
COINCIDENT RECORD: 13 years; water years 1944-56

TOTAL DATA ANALYZED
PERIOD: 38 years; water years 1922-59
MEAN DISCHARGE : 0.70 inch per month

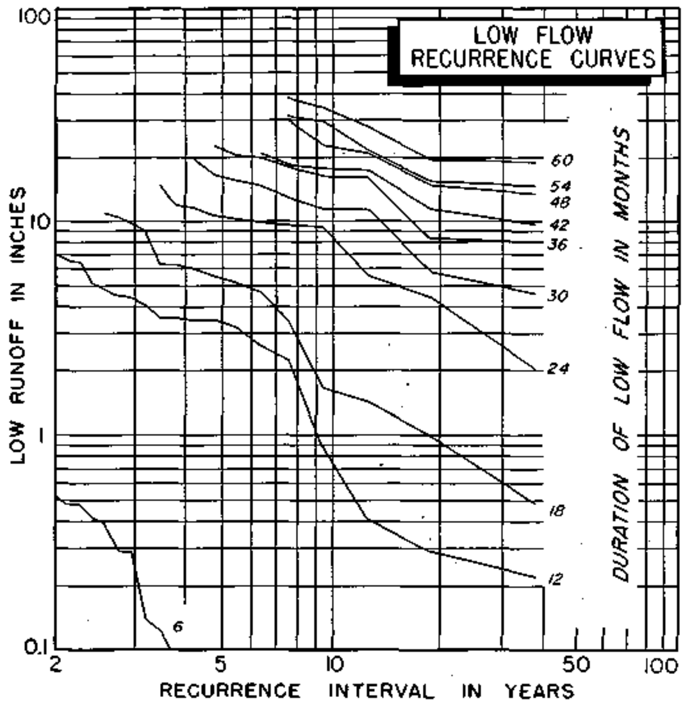
Draft-Storage-Recurrence Data for Farm Creek at East Peoria

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.26 8	.54 8	.95 18	1.63 20	2.33 20	3.03 20	3.73 20	4.43 20	5.13 26	5.99 26	6.90 26	7.81 26	8.72 26	9.63 26	10.79 50	12.70 56	14.66 56	16.62 56	18.58 56	20.54 56
19.0	.24 7	.48 7	.76 10	1.11 10	1.56 16	2.12 16	2.68 16	3.24 18	3.87 18	4.50 18	5.13 18	6.23 34	7.42 34	8.61 34	10.06 52	11.88 52	13.70 52	15.52 52	17.54 60	19.64 60
12.7	.20 6	.42 7	.67 8	.95 8	1.23 8	1.51 8	1.94 18	2.63 20	3.33 20	4.03 20	4.73 20	5.43 20	6.13 20	6.83 20	8.07 44	9.61 44	11.15 44	12.69 44	14.50 56	15.46 56
9.5	.16 5	.35 6	.56 6	.77 6	1.01 7	1.29 9	1.72 16	2.28 16	2.84 16	3.46 18	4.09 18	4.72 18	5.35 18	5.98 18	6.61 18	7.24 18	7.87 18	8.50 18	9.13 18	9.76 18
7.6	.13 4	.29 5	.47 6	.68 6	.93 9	1.24 9	1.56 9	1.87 9	2.19 9	2.55 16	3.11 16	3.67 16	4.23 16	4.79 16	5.35 16	5.91 16	6.47 18	7.10 18	7.73 18	8.36 18
6.3	.13 4	.27 4	.42 6	.63 6	.84 6	1.05 7	1.36 9	1.67 9	1.99 9	2.31 10	2.66 10	3.01 10	3.51 16	4.07 16	4.63 16	5.25 18	5.88 18	6.51 18	7.16 20	7.86 20
5.4	.11 3	.21 3	.38 6	.59 6	.80 6	1.01 6	1.24 7	1.56 10	1.91 10	2.26 10	2.61 10	2.96 10	3.31 10	3.66 10	4.01 10	4.36 10	4.71 10	5.31 20	6.01 20	6.71 20
4.8	.09 3	.19 3	.35 6	.56 6	.77 6	.98 6	1.19 6	1.40 6	1.62 10	1.97 10	2.32 10	2.67 10	3.02 10	3.37 10	3.72 10	4.07 10	4.61 20	5.31 20	6.01 20	6.71 20
4.2	.07 2	.15 3	.32 6	.53 6	.74 6	.95 6	1.16 6	1.37 6	1.59 7	1.83 8	2.11 8	2.39 8	2.69 9	3.00 9	3.32 9	3.70 20	4.40 20	5.10 20	5.80 20	6.50 20
3.8	.07 2	.14 3	.30 5	.50 6	.71 6	.92 6	1.13 6	1.34 7	1.59 7	1.63 7	2.08 7	2.35 9	2.67 9	2.98 9	3.30 9	3.61 9	3.93 9	4.32 18	4.95 18	5.58 18
3.5	.07 2	.14 2	.24 3	.41 6	.62 6	.83 6	1.07 7	1.31 7	1.56 7	1.80 7	2.05 7	2.29 7	2.54 7	2.81 8	3.09 8	3.37 8	3.65 8	3.93 8	4.48 18	5.11 18
3.2	.07 2	.14 2	.22 3	.37 5	.57 7	.81 7	1.06 7	1.30 7	1.55 7	1.79 7	2.04 7	2.28 7	2.53 7	2.77 7	3.02 7	3.26 7	3.51 8	3.79 8	4.23 16	4.79 16
2.9	.06 2	.13 2	.21 3	.37 5	.55 5	.74 6	.96 7	1.20 7	1.45 7	1.69 7	1.94 7	2.18 7	2.43 7	2.67 7	2.92 7	3.16 7	3.41 7	3.67 8	3.95 8	4.23 8
2.7	.05 2	.12 2	.20 3	.30 3	.47 6	.68 6	.89 6	1.10 6	1.31 6	1.52 6	1.73 6	1.94 5	2.15 6	2.42 8	2.70 8	2.98 8	3.26 8	3.54 8	3.82 8	4.10 8
2.5	.05 2	.12 2	.20 3	.30 3	.45 5	.62 5	.80 5	.98 6	1.19 6	1.40 6	1.61 6	1.82 6	2.03 6	2.26 7	2.53 8	2.81 8	3.09 8	3.37 8	3.65 8	3.93 8
2.4	.04 1	.10 2	.19 3	.29 3	.44 5	.61 5	.79 5	.96 6	1.17 6	1.38 6	1.59 6	1.80 6	2.01 6	2.22 6	2.48 8	2.76 8	3.04 8	3.32 8	3.60 8	3.88 8
2.2	.04 1	.10 2	.18 3	.28 3	.43 5	.60 5	.78 5	.95 6	1.16 6	1.37 6	1.58 6	1.79 6	2.00 6	2.21 6	2.44 8	2.72 8	3.00 8	3.28 8	3.56 8	3.84 8
2.1	.04 1	.10 2	.17 3	.27 3	.39 5	.56 5	.74 5	.91 5	1.09 5	1.26 6	1.47 6	1.68 6	1.89 6	2.10 6	2.31 6	2.52 6	2.77 8	3.05 8	3.33 8	3.61 8
2.0	.04 1	.09 2	.16 2	.25 3	.39 5	.56 5	.74 5	.91 5	1.09 5	1.26 5	1.46 6	1.67 6	1.88 6	2.09 6	2.30 6	2.51 6	2.72 6	2.95 8	3.23 8	3.51 8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
FARM CREEK AT EAST PEORIA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 64

LOCATION

On line between SW ¼ and SE ¼ sec 26, T26N, R4W, Tazewell County, at bridge on U. S. 24, 3.0 miles northeast of East Peoria

DRAINAGE AREA

5.47 square miles

ACTUAL FLOW DATA

PERIOD: Jan 1948 thru Sept 1959

CONTINUOUS RECORD: 11 years; water years 1949-59

SYNTHETIC FLOW DATA

PERIOD: 27 years; water years 1922-48

INDEX STATION : Mackinaw River near Green Valley

COINCIDENT RECORD: 8 years; water years 1949-56

TOTAL DATA ANALYZED

PERIOD : 38 years; water years 1922-59

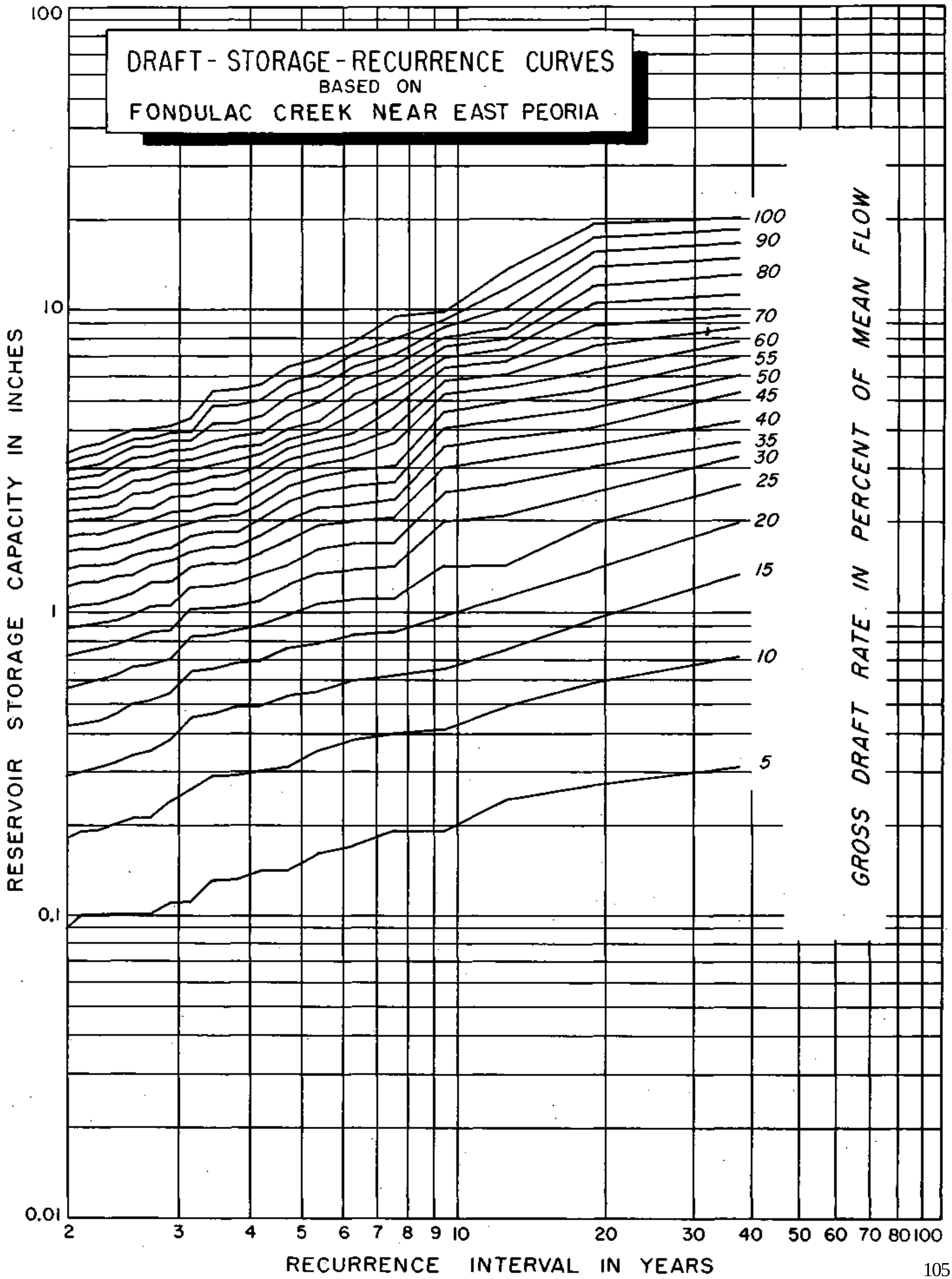
MEAN DISCHARGE : 0.64 inch per month

Draft-Storage-Recurrence Data for Fondulac Creek near East Peoria

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.31	.72	1.36	2.00	2.64	3.28	3.92	4.56	5.37	6.20	7.03	7.86	8.70	9.53	11.28	13.07	14.86	16.65	18.45	20.24
	10	20	20	20	20	20	20	20	26	26	26	26	26	26	56	56	56	56	56	56
19.0	.27	.59	.95	1.46	1.97	2.48	3.03	3.61	4.18	4.75	5.43	6.33	7.60	8.88	10.49	12.15	13.82	15.48	17.34	19.26
	10	10	16	16	16	16	18	18	18	18	28	34	40	40	52	52	52	52	60	60
12.7	.24	.49	.75	1.13	1.51	2.09	2.66	3.24	3.81	4.39	4.97	5.54	6.12	6.72	7.35	8.00	8.64	9.99	11.78	13.64
	8	8	8	12	18	18	18	18	18	18	18	18	18	20	20	20	20	56	58	58
9.5	.19	.41	.65	.97	1.48	1.99	2.50	3.02	3.53	4.11	4.69	5.26	5.84	6.41	6.99	7.57	8.14	8.72	9.29	9.87
	6	7	8	16	16	16	16	16	18	18	18	18	18	18	18	18	18	18	18	18
7.6	.19	.40	.62	.86	1.15	1.44	1.73	2.05	2.37	2.69	3.06	3.53	4.21	4.78	5.36	5.94	6.51	7.09	8.00	9.41
	6	7	7	9	9	9	10	10	10	10	18	18	18	18	18	18	18	18	44	44
6.3	.17	.38	.60	.84	1.13	1.42	1.71	1.99	2.30	2.62	2.94	3.26	3.58	3.93	4.57	5.21	5.85	6.49	7.13	7.77
	6	7	7	9	9	9	9	9	10	10	10	10	10	20	20	20	20	20	20	20
5.4	.16	.35	.55	.79	1.08	1.37	1.66	1.94	2.23	2.52	2.81	3.10	3.38	3.67	3.96	4.31	4.95	5.59	6.23	6.87
	6	6	7	9	9	9	9	9	9	9	9	9	9	9	9	20	20	20	20	20
4.8	.14	.31	.53	.76	.98	1.23	1.48	1.74	2.02	2.31	2.60	2.89	3.17	3.46	3.75	4.04	4.51	5.15	5.79	6.43
	5	7	7	7	7	8	8	8	9	9	9	9	9	9	9	9	20	20	20	20
4.2	.14	.30	.49	.69	.91	1.13	1.36	1.58	1.81	2.04	2.30	2.55	2.81	3.06	3.32	3.58	3.90	4.48	5.05	5.63
	5	5	6	7	7	7	7	7	7	8	8	8	8	8	10	18	18	18	18	
3.8	.13	.29	.49	.68	.87	1.06	1.25	1.45	1.64	1.85	2.07	2.30	2.56	2.85	3.17	3.49	3.81	4.25	4.82	5.40
	5	6	6	6	6	6	6	6	6	7	7	8	8	10	10	10	10	18	18	18
3.5	.13	.29	.46	.65	.84	1.03	1.22	1.42	1.61	1.81	2.05	2.30	2.56	2.81	3.07	3.36	3.68	4.24	4.81	5.39
	5	5	6	6	6	6	6	6	6	7	8	8	8	8	8	10	10	18	18	16
3.2	.11	.26	.45	.64	.83	1.02	1.21	1.41	1.60	1.79	1.98	2.17	2.42	2.67	2.93	3.19	3.44	3.70	3.95	4.43
	4	5	6	6	6	6	6	6	6	6	6	6	8	8	8	8	8	8	8	16
2.9	.11	.24	.38	.54	.70	.87	1.06	1.26	1.45	1.64	1.90	2.15	2.41	2.66	2.92	3.18	3.43	3.69	3.94	4.20
	4	4	5	5	5	6	6	6	6	8	8	8	8	8	8	8	8	8	8	8
2.7	.10	.21	.35	.51	.67	.86	1.05	1.25	1.44	1.63	1.82	2.02	2.24	2.49	2.75	3.01	3.26	3.52	3.77	4.03
	4	5	5	6	6	6	6	6	6		6	7	8	8	8	8	8	8	8	8
2.5	.10	.21	.34	.50	.66	.82	.98	1.16	1.35	1.54	1.73	1.96	2.22	2.47	2.73	2.99	3.24	3.50	3.75	4.01
	4	4	5	5	5	5	5	6	6	6	8	8	8	8	8	8	8	8	8	8
2.4	.10	.20	.32	.46	.62	.78	.94	1.12	1.31	1.50	1.69	1.88	2.08	2.27	2.52	2.78	3.03	3.29	3.54	3.80
	3	4	4	5	5	5	5	6	6	6	6	6	6	7	8	8	8	8	8	8
2.2	.10	.19	.31	.44	.60	.76	.92	1.08	1.26	1.45	1.64	1.83	2.03	2.22	2.41	2.60	2.83	3.09	3.34	3.60
	3	4	4	5	5	5	5	5	6	6	6	6	6	6	6	6	8	8	8	8
2.1	.10	.19	.30	.43	.58	.74	.90	1.07	1.26	1.45	1.64	1.83	2.03	2.22	2.41	2.60	2.79	3.02	3.27	3.53
	3	3	4	4	5	5	5	6	6	6	6	6	6	6	6	6	6	8	8	8
2.0	.09	.18	.29	.42	.56	.72	.88	1.04	1.22	1.41	1.60	1.79	1.99	2.18	2.37	2.56	2.75	2.95	3.14	3.37
	3	3	4	4	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	8


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
FONDULAC CREEK NEAR EAST PEORIA
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
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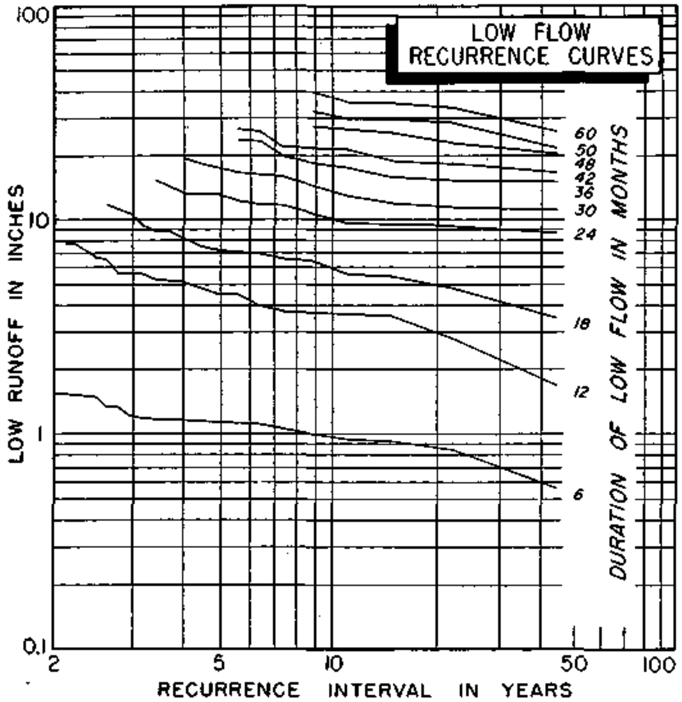
30
40
50
60
70
80
100



STATION 66

LOCATION
In SE ¼ sec 29, T34N, R4E, LaSalle County, at tailwater of North Counties Hydro-Electric Co. plant at Dayton, 4.0 miles northeast of Ottawa

DRAINAGE AREA
2570 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Nov. 1914 thru Sept 1959; prior to Apr 1925 published as "at Wedron"
CONTINUOUS RECORD: 44 years; water years 1916-59

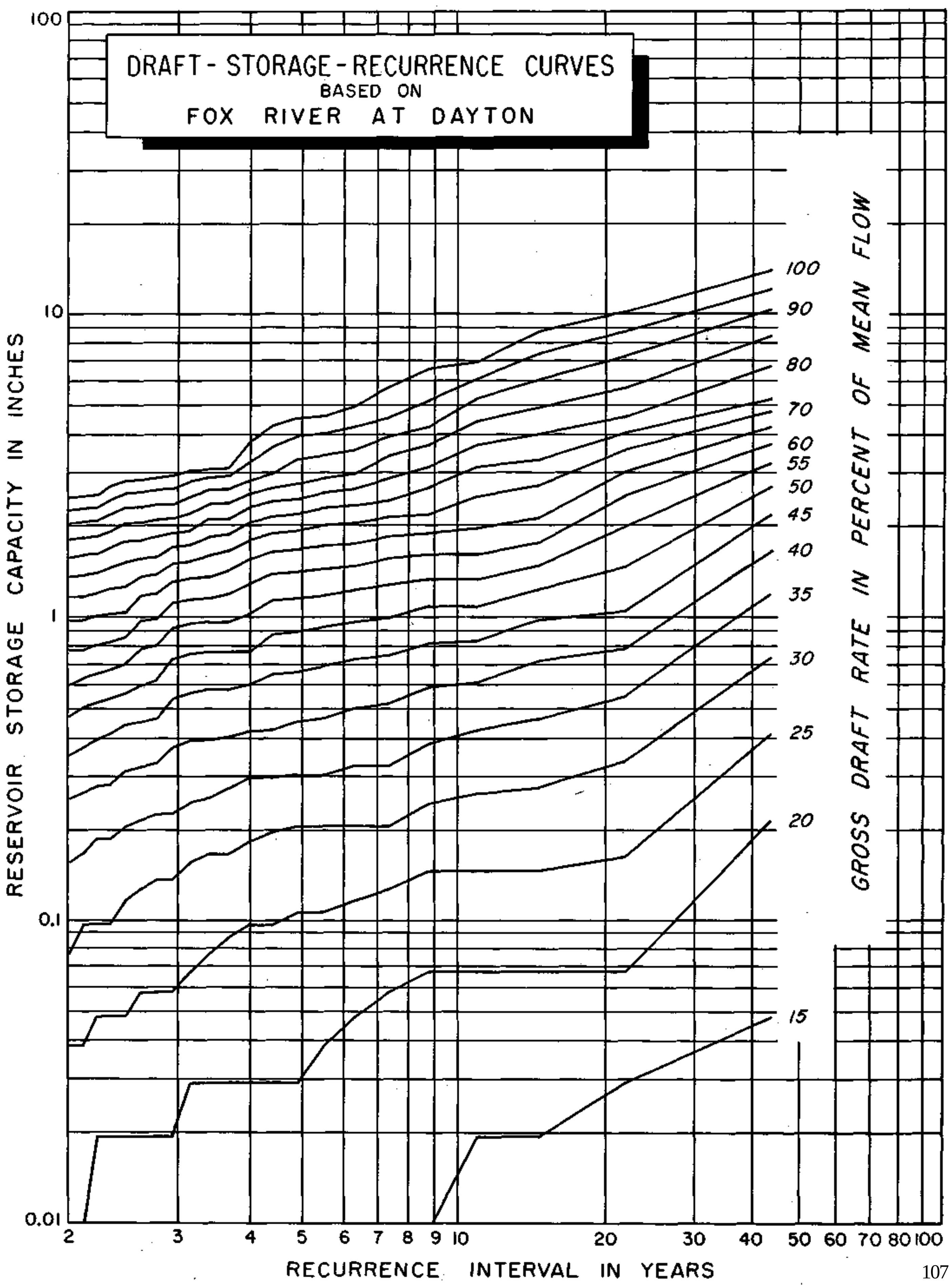
SYNTHETIC FLOW DATA
None; this station utilized as an index station

TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.65 inch per month

Draft-Storage-Recurrence Data for Fox River at Dayton

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.00	.01	.05	.22	.42	.75	1.21	1.68	2.20	2.72	3.24	3.76	4.28	4.80	5.32	6.74	8.53	10.35	12.17	13.99
	1	1	4	6	6	14	14	16	16	16	1	16	16	16	16	54	56	56	56	56
22.0	.00	.00	.03	.07	.17	.34	.56	.80	1.06	1.49	2.01	2.53	3.05	3.57	4.09	4.61	5.73	7.22	8.72	10.21
	1	1	1	3	3	7	7	8	8	16	1	16	16	16	16	16	46	46	46	46
14.7	.00	.00	.02	.07	.15	.28	.47	.73	.99	1.25	1.51	1.78	2.15	2.73	3.32	4.03	4.94	6.09	7.39	8.73
	1	1	1	2	4	4	8	8	8	8	1	10	18	18	18	28	28	40	40	42
11.0	.00	.00	.02	.07	.15	.27	.43	.62	.85	1.10	1.36	1.65	2.04	2.62	3.27	3.92	4.70	5.61	6.52	7.43
	1	1	1	2	3	4	6	7	7	8	1	9	18	20	20	20	28	28	28	28
8.8	.00	.00	.01	.07	.15	.25	.39	.60	.84	1.10	1.36	1.64	1.93	2.23	2.75	3.27	3.79	4.34	5.32	6.75
	1	1	2	2	3	3	5	7	8	8	1	9	9	16	16	16	16	20	44	44
7.3	.00	.00	.01	.06	.13	.21	.33	.53	.76	1.01	1.30	1.59	1.88	2.18	2.47	2.92	3.44	4.00	4.59	5.80
	1	1	1	2	2	3	4	7	7	9	1	9	9	9	9	16	16	18	18	42
6.3	.00	.00	.01	.05	.12	.21	.33	.51	.74	.98	1.24	1.50	1.78	2.08	2.37	2.68	3.01	3.56	4.24	4.95
	1	1	1	2	2	3	4	7	7	8	1	8	9	9	9	10	10	18	22	22
5.5	.00	.00	.00	.04	.11	.21	.31	.47	.70	.94	1.20	1.46	1.75	2.05	2.34	2.63	2.93	3.51	4.10	4.68
	1	1	1	2	3	3	4	7	7	8	1	9	9	9	9	9	18	18	18	18
4.9	.00	.00	.00	.03	.11	.21	.31	.46	.67	.91	1.17	1.43	1.69	1.95	2.21	2.47	2.78	3.36	3.95	4.54
	1	1	1	2	3	3	4	5	7	8	1	8	8	8	8	8	18	18	18	20
4.4	.00	.00	.00	.03	.10	.20	.30	.43	.66	.89	1.15	1.41	1.67	1.93	2.19	2.45	2.71	3.04	3.69	4.34
	1	1	1	2	3	3	4	7	7	8	1	8	8	8	8	8	8	20	20	20
4.0	.00	.00	.00	.03	.10	.19	.30	.43	.60	.79	1.04	1.30	1.56	1.82	2.08	2.34	2.60	2.86	3.31	3.83
	1	1	1	2	2	3	4	4	6	6	1	8	8	8	8	8	8	8	16	16
3.7	.00	.00	.00	.03	.09	.17	.28	.41	.59	.78	.98	1.21	1.44	1.67	1.89	2.14	2.40	2.66	2.93	3.22
	1	1	1	1	2	3	4	5	6	6	1	7	7	7	7	8	8	8	9	10
3.4	.00	.00	.00	.03	.08	.17	.26	.40	.59	.78	.98	1.17	1.37	1.61	1.87	2.13	2.39	2.65	2.91	3.22
	1	1	1	1	2	3	3	5	6	6	1	6	6	8	8	8	8	8	8	10
3.1	.00	.00	.00	.03	.07	.16	.25	.40	.58	.77	.97	1.16	1.36	1.55	1.75	1.95	2.22	2.52	2.83	3.15
	1	1	1	1	2	3	3	5	6	6	1	6	6	6	6	7	9	9	10	10
2.9	.00	.00	.00	.02	.06	.14	.23	.38	.55	.74	.94	1.13	1.33	1.52	1.72	1.92	2.15	2.40	2.66	2.94
	1	1	1	1	2	3	3	5	6	6	1	6	6	6	6	7	7	8	8	10
2.8	.00	.00	.00	.02	.06	.14	.23	.34	.47	.63	.82	1.01	1.21	1.40	1.60	1.86	2.12	2.38	2.64	2.90
	1	1	1	1	2	3	3	4	4	5	1	6	6	6	8	8	8	8	6	8
2.6	.00	.00	.00	.02	.06	.13	.22	.33	.46	.61	.80	.99	1.19	1.38	1.58	1.81	2.07	2.33	2.59	2.85
	1	1	1	1	2	3	3	4	4	5	1	6	6	6	6	8	8	8	8	8
2.4	.00	.00	.00	.02	.05	.12	.21	.32	.45	.58	.71	.87	1.05	1.28	1.54	1.80	2.06	2.32	2.58	2.84
	1	1	1	1	2	3	3	4	4	4	1	5	6	8	8	8	8	8	6	8
2.3	.00	.00	.00	.02	.05	.10	.19	.29	.42	.55	.68	.84	1.04	1.26	1.48	1.71	1.94	2.20	2.46	2.72
	1	1	1	1	1	3	3	4	4	4	1	6	6	7	7	7	8	8	8	8
2.2	.00	.00	.00	.02	.05	.10	.19	.29	.40	.53	.66	.82	1.02	1.21	1.41	1.63	1.86	2.09	2.31	2.54
	1	1	1	1	1	3	3	3	4	4	1	6	6	6	6	7	7	7	7	7
2.1	.00	.00	.00	.01	.04	.10	.17	.27	.38	.51	.64	.79	.99	1.18	1.39	1.62	1.85	2.08	2.30	2.53
	1	1	1	1	2	2	3	3	4	4	1	6	6	6	7	7	7	7	7	7
2.0	.00	.00	.00	.01	.04	.08	.16	.26	.36	.48	.61	.79	.99	1.18	1.38	1.59	1.82	2.05	2.27	2.50
	1	1	1	1	1	2	3	3	3	4	1	6	6	6	6	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
FOX RIVER AT DAYTON
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
90
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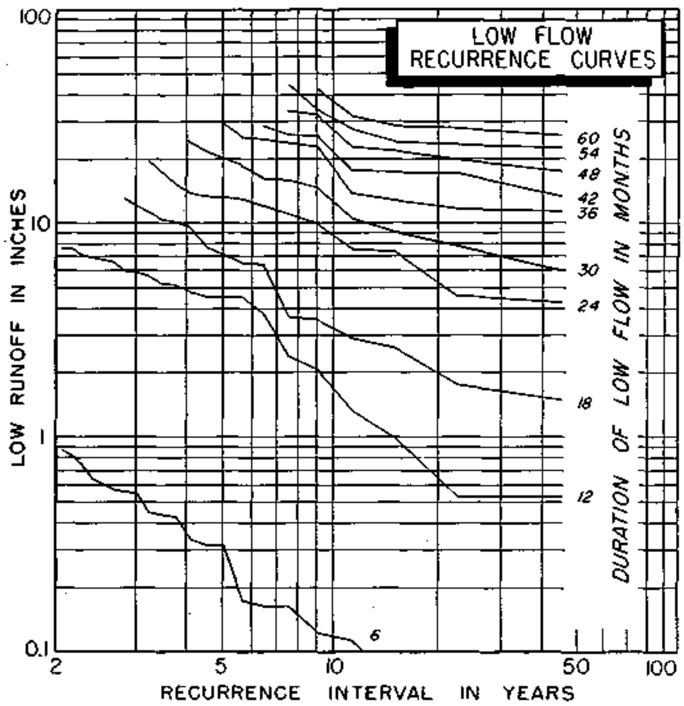
15

GIMLET CREEK AT SPARLAND



STATION 67

LOCATION
In SE ¼ NW ¼ sec 14, T12N, R9E, Marshall County, about 120 feet upstream from bridge on Ill. 29 in Sparland

DRAINAGE AREA
5.42 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1945 thru Sept 1947, Oct 1949 thru Sept 1959
CONTINUOUS RECORD: 12 years; water years 1946-47, 1950-59

SYNTHETIC FLOW DATA
PERIOD: 33 years; water years 1915-45,1948-49
INDEX STATION: Spoon River at Seville
COINCIDENT RECORD: 12 years; water years 1946-47, 1950-59

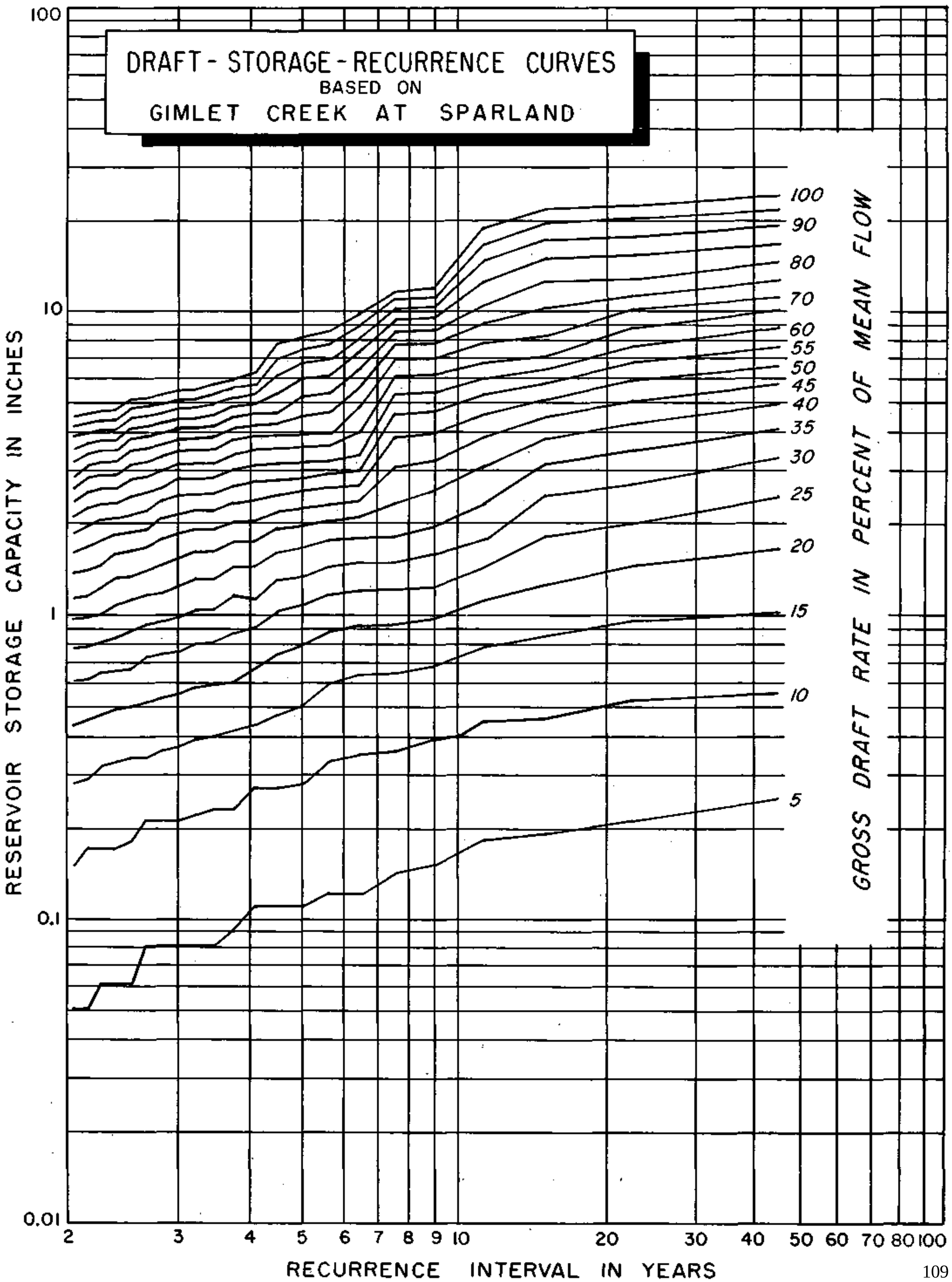
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.83 inch per month

Draft-Storage-Recurrence Data for Gimlet Creek at Sparland

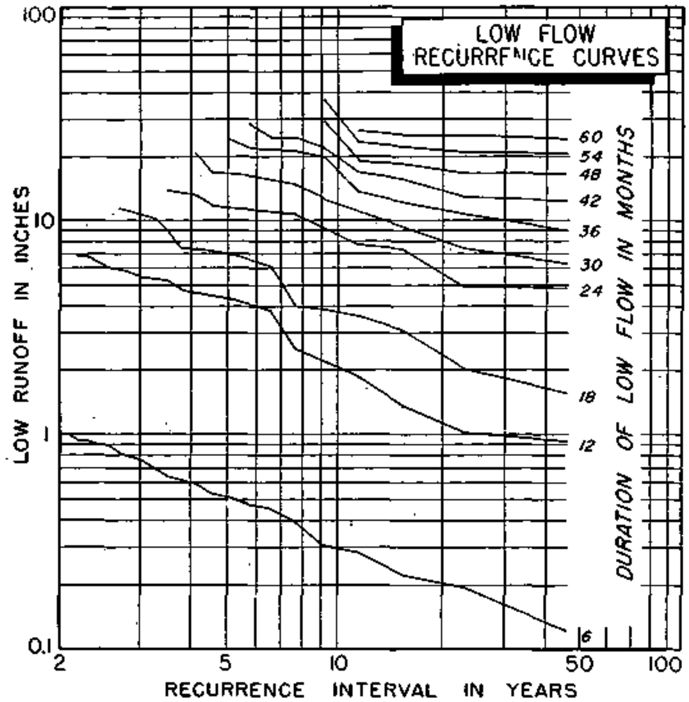
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50
45.0	.25 7	.56 11	1.02 11	1.67 20	2.50 20	3.33 20	4.16 20	4.99 20	5.82 20	6.65 20
22.5	.21 6	.53 10	.97 12	1.47 12	2.00 18	2.74 18	3.49 18	4.31 20	5.14 20	5.97 20
15.0	.19 6	.46 9	.86 10	1.27 10	1.83 16	2.49 16	3.16 16	3.82 16	4.49 16	5.15 16
11.3	.16 5	.45 8	.79 8	1.12 8	1.45 8	1.78 8	2.34 18	3.09 18	3.83 18	4.58 18
9.0	.15 5	.39 7	.66 7	.97 7	1.26 8	1.60 9	1.97 9	2.57 16	3.24 16	3.95 18
7.5	.14 4	.36 7	.65 7	.94 7	1.23 7	1.52 7	1.81 7	2.34 18	3.08 18	3.83 18
6.4	.12 4	.35 7	.64 7	.93 7	1.22 7	1.51 7	1.80 7	2.09 7	2.38 7	2.68 7
5.6	.12 4	.33 6	.60 7	.89 7	1.18 7	1.47 7	1.76 7	2.05 7	2.34 7	2.64 7
5.0	.11 4	.28 5	.51 7	.80 7	1.09 7	1.38 7	1.67 7	1.96 7	2.25 7	2.55 7
4.5	.11 4	.27 5	.47 5	.75 7	1.04 7	1.33 7	1.62 7	1.91 7	2.20 7	2.50 7
4.1	.11 4	.27 4	.44 4	.67 6	.92 6	1.18 7	1.47 7	1.76 7	2.05 7	2.41 9
3.8	.09 3	.23 4	.40 4	.60 5	.88 7	1.17 7	1.46 7	1.75 7	2.04 7	2.34 7
3.5	.08 3	.23 4	.40 4	.59 5	.82 6	1.06 6	1.34 7	1.63 7	1.92 7	2.22 7
3.2	.08 3	.22 4	.39 4	.58 5	.81 6	1.05 7	1.34 7	1.63 7	1.92 7	2.22 7
3.0	.08 3	.21 3	.37 4	.55 5	.76 5	.99 7	1.28 7	1.57 7	1.86 7	2.17 8
2.8	.08 3	.21 3	.36 4	.54 5	.75 5	.96 5	1.20 7	1.49 7	1.78 7	2.08 7
2.6	.08 3	.21 3	.34 4	.52 5	.73 5	.94 5	1.18 6	1.43 6	1.68 6	1.93 7
2.5	.06 2	.18 3	.34 4	.50 4	.67 5	.89 6	1.14 6	1.39 6	1.64 6	1.89 6
2.4	.06 2	.17 3	.33 4	.49 4	.66 4	.85 6	1.10 6	1.35 6	1.60 6	1.85 6
2.3	.06 2	.17 3	.32 4	.48 4	.65 4	.82 4	1.00 6	1.25 6	1.50 6	1.76 7
2.1	.05 2	.17 3	.29 4	.45 4	.62 4	.79 4	.98 5	1.19 5	1.42 6	1.68 7
2.0	.05 2	.15 3	.28 4	.44 4	.61 4	.78 4	.97 5	1.18 5	1.39 5	1.62 6

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
45.0	7.71 30	8.95 30	10.20 30	11.44 30	12.96 42	14.76 44	16.93 60	19.42 60	21.91 60	24.40 60
22.5	6.83 22	7.75 22	8.86 32	10.19 32	11.52 32	13.01 58	15.42 58	17.83 58	20.23 58	22.64 58
15.0	5.81 16	6.48 16	7.16 30	8.40 30	10.33 56	12.65 56	14.98 56	17.30 56	19.63 56	21.95 56
11.3	5.33 18	6.07 18	6.82 18	7.88 32	9.21 32	10.54 32	12.47 50	14.54 50	16.62 50	18.69 50
9.0	4.70 18	5.44 18	6.22 20	7.05 20	7.88 20	8.71 20	9.54 20	10.37 20	11.20 20	12.03 20
7.5	4.58 18	5.32 20	6.15 20	6.98 20	7.81 20	8.64 20	9.47 20	10.30 20	11.13 20	11.96 20
6.4	3.00 9	3.37 9	4.00 20	4.83 20	5.66 20	6.49 20	7.32 20	8.15 20	8.98 20	9.81 20
5.6	2.93 7	3.25 9	3.63 9	4.06 9	4.71 18	5.45 18	6.20 18	7.00 20	7.83 20	8.66 20
5.0	2.84 7	3.19 9	3.57 9	3.94 9	4.56 18	5.30 18	6.05 18	6.80 18	7.54 18	8.29 18
4.5	2.80 9	3.17 9	3.55 9	3.92 9	4.29 9	4.67 9	5.38 20	6.21 20	7.04 20	7.87 20
4.1	2.78 9	3.15 9	3.53 9	3.90 9	4.27 9	4.65 9	5.02 9	5.39 9	5.77 9	6.36 20
3.8	2.67 9	3.04 9	3.42 9	3.79 9	4.16 9	4.54 9	4.91 9	5.28 9	5.66 9	6.03 9
3.5	2.52 8	2.85 8	3.19 8	3.52 8	3.86 9	4.24 9	4.61 9	4.98 9	5.36 9	5.76 10
3.2	2.51 7	2.83 8	3.17 8	3.50 8	3.83 8	4.16 8	4.49 8	4.83 8	5.17 9	5.54 9
3.0	2.50 8	2.83 8	3.17 8	3.50 8	3.83 8	4.16 8	4.49 8	4.83 8	5.16 8	5.51 9
2.8	2.37 7	2.66 8	3.00 8	3.33 8	3.66 8	3.99 8	4.32 8	4.66 8	4.99 8	5.32 8
2.6	2.22 7	2.54 8	2.88 8	3.21 8	3.54 8	3.87 8	4.20 8	4.54 8	4.87 8	5.20 8
2.5	2.15 8	2.48 8	2.82 8	3.15 8	3.48 8	3.81 8	4.14 8	4.48 8	4.81 8	5.14 8
2.4	2.10 6	2.35 6	2.63 7	2.92 7	3.21 7	3.50 7	3.79 7	4.11 8	4.44 8	4.77 8
2.3	2.05 7	2.34 7	2.63 7	2.92 7	3.21 7	3.50 7	3.79 7	4.08 7	4.40 8	4.73 8
2.1	1.97 7	2.26 7	2.55 7	2.84 7	3.13 7	3.42 7	3.71 7	4.00 7	4.31 8	4.64 8
2.0	1.87 6	2.12 6	2.37 6	2.62 6	2.88 8	3.21 8	3.54 8	3.88 8	4.21 8	4.54 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
GIMLET CREEK AT SPARLAND
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

KICKAPOO CREEK NEAR KICKAPOO



STATION 92

LOCATION
In SW ¼ SE ¼ sec 34, T10N, R6E, Peoria County, at bridge on U. S. 150, 2.5 miles northwest of Kickapoo

DRAINAGE AREA
120 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1944 thru Sept 1959
CONTINUOUS RECORD : 15 years; water years 1945-59

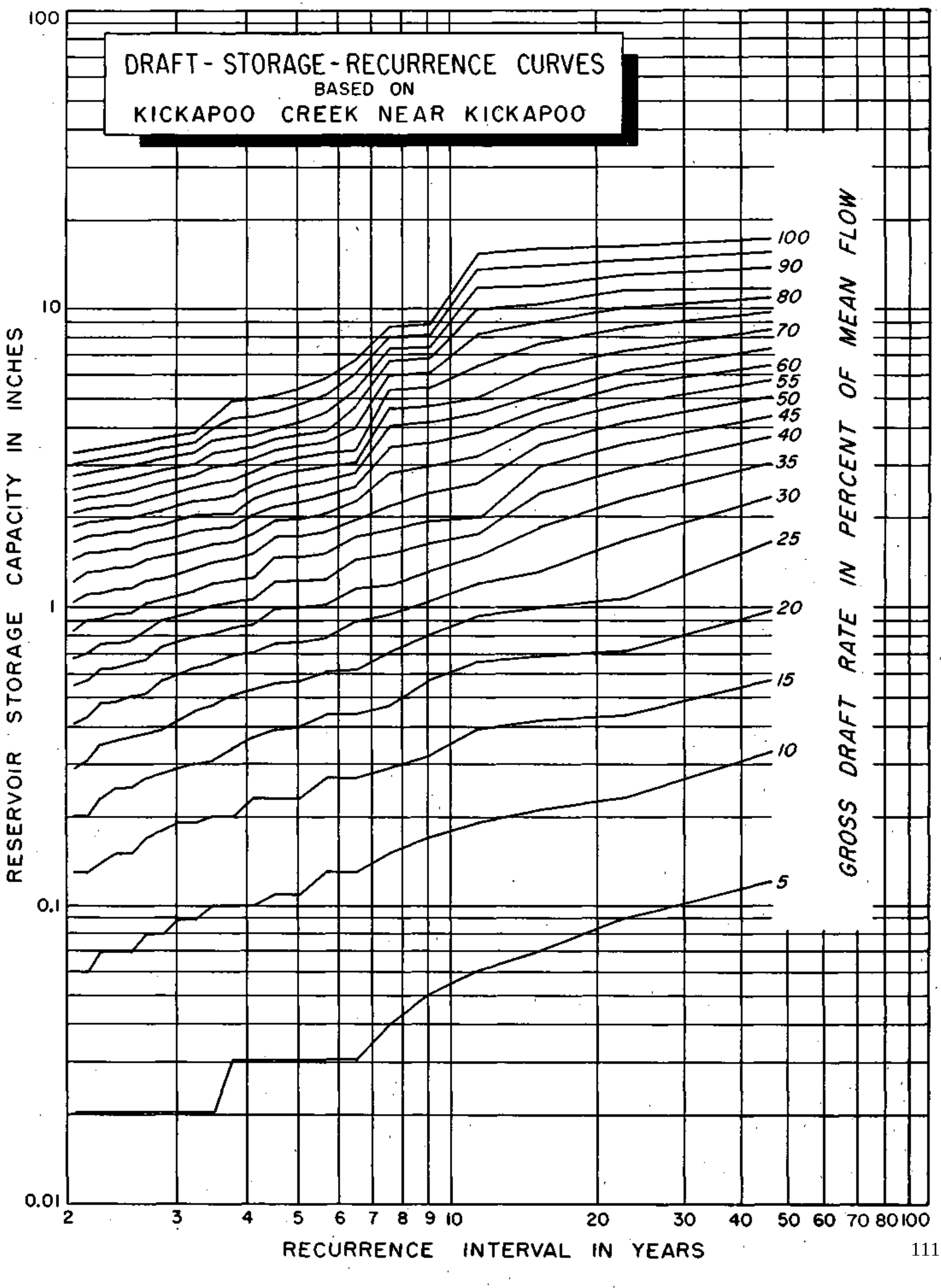
SYNTHETIC FLOW DATA
PERIOD: 30 years; water years 1915-44
INDEX STATION : Spoon River at Seville
COINCIDENT RECORD: 15 years; water years 1945-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.69 inch per month

Draft-Storage-Recurrence Data for Kickapoo Creek near Kickapoo

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.12	.33	.57	.98	1.67	2.36	3.05	3.74	4.43	5.12	5.81	6.50	7.46	8.53	9.61	10.98	12.20	13.92	15.65	17.37
	5	7	7	20	20	20	20	20	20	20	20	20	34	34	34	34	50	50	50	50
22.5	.09	.23	.44	.71	1.07	1.69	2.31	2.93	3.55	4.19	4.86	5.57	6.25	7.29	8.74	10.18	11.63	13.11	14.68	16.35
	3	5	8	9	16	18	18	18	18	20	20	20	22	42	42	42	42	44	48	58
15.0	.07	.21	.42	.69	1.00	1.34	1.87	2.43	2.98	3.53	4.08	4.63	5.19	6.33	7.71	9.09	10.47	12.09	14.09	16.11
	3	5	8	8	10	10	16	16	16	16	16	16	16	40	40	40	40	58	58	60
11.3	.06	.19	.39	.66	.94	1.22	1.49	1.77	2.06	2.61	3.23	3.65	4.47	5.09	6.46	8.27	10.07	11.86	13.66	15.45
	3	5	8	8	6	8	8	8	10	16	18	18	16	16	52	52	52	52	52	52
9.0	.05	.17	.32	.57	.81	1.05	1.33	1.64	1.95	2.44	2.99	3.57	4.19	4.81	5.44	6.13	6.82	7.51	8.20	8.89
	3	4	7	7	7	7	9	9	9	16	16	18	16	18	20	20	20	20	20	20
7.5	.04	.15	.29	.47	.71	.95	1.20	1.51	1.82	2.23	2.82	3.44	4.05	4.66	5.34	6.03	6.72	7.41	8.10	8.79
	3	3	5	7	7	7	9	9	9	16	18	18	18	16	20	20	20	20	20	20
6.4	.03	.13	.27	.44	.62	.90	1.17	1.45	1.72	2.00	2.28	2.55	2.83	3.10	3.38	4.01	4.70	5.39	6.08	6.77
	2	3	5	5	6	8	8	8	8	8	8	8	8	8	8	20	20	20	20	20
5.6	.03	.13	.27	.44	.61	.79	1.02	1.26	1.52	1.80	2.08	2.37	2.68	2.99	3.30	3.61	3.92	4.53	5.17	5.86
	2	3	5	5	5	5	7	7	8	8	8	9	9	9	9	9	9	18	20	20
5.0	.03	.11	.23	.40	.57	.77	1.01	1.25	1.49	1.74	2.00	2.27	2.58	2.89	3.20	3.51	3.82	4.21	4.83	5.45
	1	3	5	5	5	7	7	7	7	7	8	9	9	9	9	9	9	18	18	18
4.5	.03	.11	.23	.39	.56	.76	1.00	1.24	1.48	1.73	1.97	2.21	2.47	2.77	3.08	3.39	3.70	4.01	4.55	5.17
	1	3	4	5	5	7	7	7	7	7	7	7	8	9	9	9	9	9	16	16
4.1	.03	.10	.23	.37	.53	.71	.88	1.07	1.27	1.52	1.76	2.03	2.31	2.58	2.86	3.16	3.47	3.80	4.39	5.01
	1	4	4	4	5	5	5	6	7	7	8	8	8	8	8	9	9	10	18	18
3.8	.03	.10	.20	.34	.51	.69	.86	1.05	1.25	1.46	1.67	1.87	2.06	2.37	2.70	3.04	3.39	3.73	4.34	4.96
	1	3	3	5	5	5	5	6	6	5	6	6	7	9	10	10	10	10	18	18
3.5	.02	.10	.20	.31	.47	.65	.82	1.02	1.22	1.43	1.64	1.84	2.07	2.31	2.63	2.97	3.32	3.66	4.01	4.35
	1	3	3	4	5	5	5	5	6	6	6	6	7	7	10	10	10	10	10	10
3.2	.02	.09	.19	.30	.45	.63	.80	.97	1.16	1.37	1.58	1.81	2.05	2.29	2.53	2.78	3.05	3.33	3.60	3.88
	1	3	3	4	5	5	5	5	6	6	6	7	7	7	7	8	8	8	8	8
3.0	.02	.09	.19	.29	.42	.60	.77	.94	1.11	1.31	1.52	1.74	1.96	2.22	2.45	2.71	2.98	3.26	3.53	3.81
	1	3	3	3	5	5	5	5	5	6	6	7	7	7	7	8	8	8	8	8
2.8	.02	.08	.18	.28	.39	.57	.74	.91	1.08	1.28	1.49	1.69	1.90	2.11	2.36	2.64	2.91	3.19	3.46	3.74
	1	3	3	3	5	5	5	5	5	6	6	6	6	6	8	8	8	8	8	8
2.6	.02	.08	.17	.27	.38	.52	.67	.84	1.04	1.25	1.46	1.66	1.87	2.08	2.29	2.56	2.83	3.11	3.38	3.66
	1	2	3	3	4	4	5	6	6	6	6	6	6	6	6	8	8	8	8	8
2.5	.02	.07	.15	.25	.37	.51	.65	.78	.96	1.17	1.38	1.58	1.79	2.00	2.21	2.47	2.74	3.02	3.29	3.57
	1	2	3	3	4	4	4	4	6	6	6	6	6	6	6	8	8	8	8	8
2.4	.02	.07	.15	.25	.36	.49	.63	.76	.96	1.17	1.38	1.58	1.79	2.00	2.21	2.42	2.69	2.97	3.24	3.52
	1	2	3	3	3	4	4	6	6	6	6	6	6	6	6	8	8	8	8	8
2.3	.02	.07	.14	.23	.35	.49	.63	.76	.92	1.13	1.34	1.54	1.75	1.96	2.17	2.37	2.63	2.91	3.18	3.46
	1	2	2	3	4	4	4	4	6	6	6	6	6	6	6	6	8	8	8	8
2.1	.02	.06	.13	.20	.31	.43	.57	.71	.91	1.12	1.33	1.53	1.74	1.95	2.16	2.36	2.57	2.84	3.11	3.39
	1	2	2	3	3	4	4	6	6	6	6	6	6	6	6	6	6	8	8	8
2.0	.02	.06	.13	.20	.29	.41	.55	.68	.84	1.05	1.26	1.46	1.67	1.88	2.09	2.29	2.50	2.78	3.05	3.33
	1	2	2	2	3	4	4	4	6	6	6	6	6	6	6	6	8	8	8	8


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
KICKAPOO CREEK NEAR KICKAPOO
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
100
2
3
4
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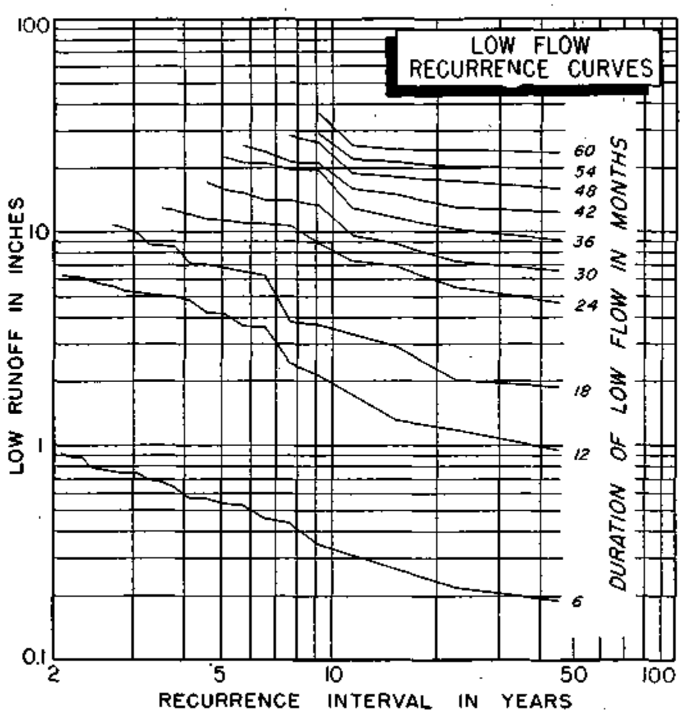
30
40
50
60
70
80
100

KICKAPOO CREEK AT PEORIA



STATION 94

LOCATION
In NW ¼ sec 13, T8N, R7E, Peoria County, at bridge on Ill. 116, 1.0 mile west of Peoria

DRAINAGE AREA
296 square miles

ACTUAL FLOW DATA
PERIOD: Apr 1942 thru Sept 1959
CONTINUOUS RECORD: 17 years; water years 1943-59

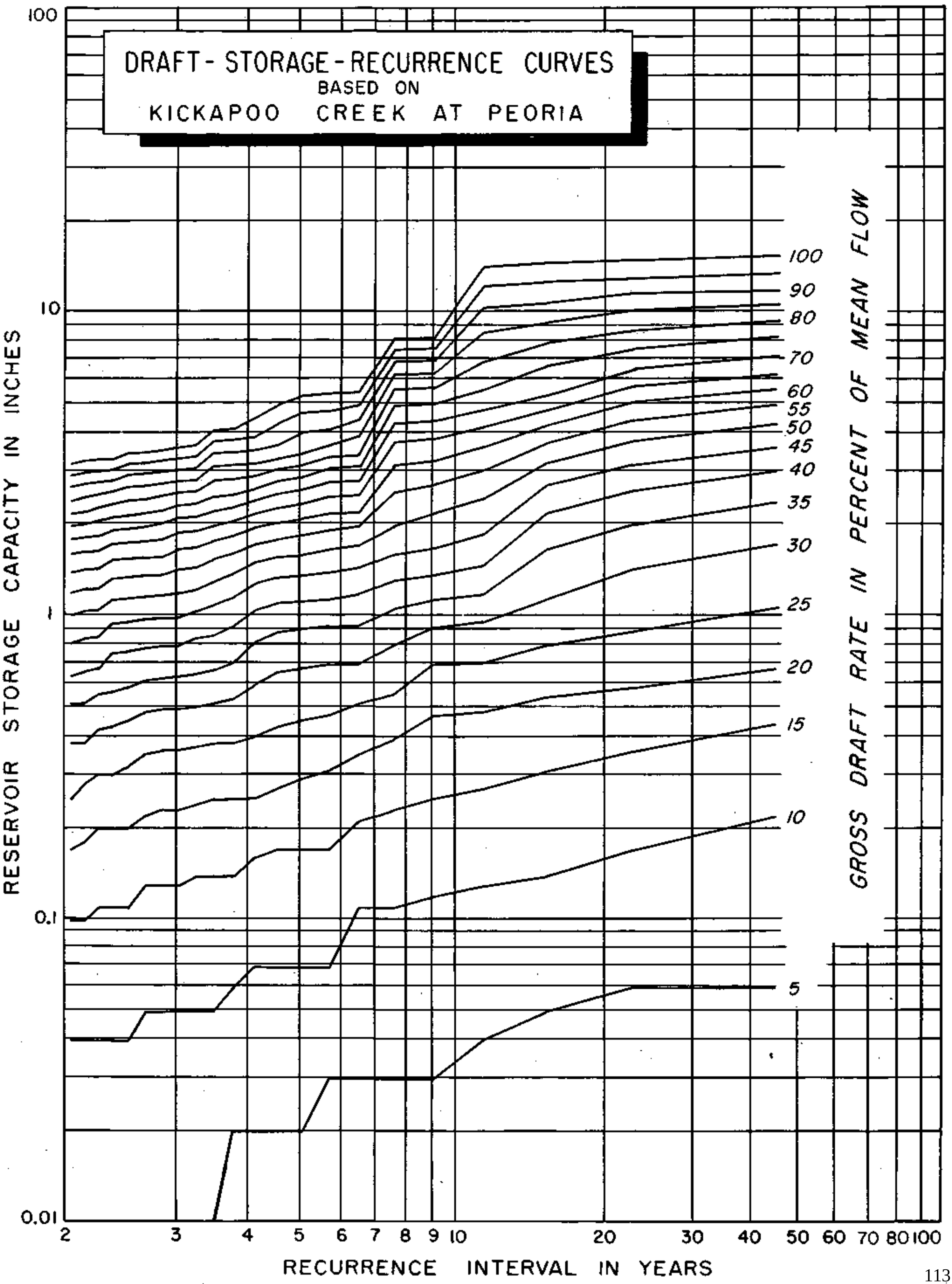
SYNTHETIC FLOW DATA
PERIOD: 28 years; water years 1915-42
INDEX STATION: Spoon River near Seville
COINCIDENT RECORD: 17 years; water years 1943-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 0.64 inch per month

Draft-Storage-Recurrence Data for Kickapoo Creek at Peoria

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.06 4	.22 7	.44 7	.67 7	1.07 20	1.71 20	2.35 20	2.99 20	3.63 20	4.27 20	4.91 20	5.55 20	6.19 20	7.15 34	8.24 34	9.33 34	10.51 42	11.87 44	13.37 48	15.11 60
22.5	.06 3	.17 5	.36 6	.58 9	.89 10	1.42 18	1.99 18	2.57 18	3.14 18	3.75 20	4.39 20	5.03 20	5.67 22	6.47 32	7.49 32	8.61 42	10.00 44	11.40 44	12.81 44	14.59 56
15.0	.05 3	.14 4	.31 6	.54 8	.80 8	1.13 16	1.64 16	2.16 16	2.67 16	3.18 16	3.69 16	4.20 16	4.72 16	5.28 40	6.56 40	7.84 40	9.12 40	10.65 58	12.50 58	14.36 60
11.3	.04 3	.13 3	.27 6	.48 7	.70 7	.95 8	1.20 8	1.46 9	1.85 16	2.42 18	3.00 18	3.57 18	4.15 18	4.72 18	5.49 32	6.81 52	8.48 52	10.22 58	12.07 58	13.93 58
9.0	.03 3	.12 4	.25 5	.47 7	.69 7	.91 7	1.14 7	1.36 9	1.66 16	2.17 16	2.68 16	3.21 18	3.79 18	4.36 18	4.94 20	5.58 20	6.22 20	6.86 20	7.50 20	8.14 20
7.5	.03 1	.11 3	.23 5	.39 5	.55 5	.80 8	1.05 8	1.31 8	1.58 10	1.97 16	2.54 18	3.11 18	3.69 18	4.26 18	4.88 20	5.52 20	6.16 20	6.80 20	7.44 20	8.08 20
6.4	.03 1	.11 3	.21 3	.35 5	.51 5	.69 7	.92 8	1.18 8	1.43 8	1.69 8	1.95 8	2.20 9	2.48 9	2.77 9	3.06 9	3.35 16	3.86 16	4.38 16	4.89 16	5.40 16
5.6	.03 1	.07 3	.17 4	.31 5	.47 7	.69 7	.92 7	1.14 7	1.38 8	1.64 8	1.90 8	2.17 9	2.45 9	2.74 9	3.03 9	3.32 9	3.61 9	4.06 20	4.70 20	5.34 20
5.0	.02 1	.07 3	.17 3	.29 4	.45 7	.67 7	.90 7	1.12 7	1.35 7	1.57 7	1.82 8	2.07 8	2.33 8	2.58 8	2.84 8	3.11 9	3.40 9	3.98 20	4.62 20	5.26 20
4.5	.02 1	.07 3	.17 3	.27 4	.43 7	.65 7	.88 7	1.10 7	1.33 7	1.55 7	1.77 7	2.00 7	2.25 8	2.50 8	2.76 8	3.02 8	3.27 8	3.61 20	4.25 20	4.89 20
4.1	.02 1	.07 2	.16 3	.25 4	.40 5	.59 7	.82 7	1.04 7	1.27 7	1.49 7	1.71 7	1.94 7	2.16 7	2.39 7	2.61 8	2.87 8	3.16 10	3.48 10	3.86 18	4.44 18
3.8	.02 1	.06 2	.14 3	.25 4	.38 4	.53 5	.70 7	.92 7	1.15 7	1.37 7	1.59 7	1.82 7	2.04 7	2.27 7	2.50 8	2.80 10	3.12 10	3.44 10	3.76 10	4.08 10
3.5	.01 1	.05 2	.14 3	.25 4	.38 4	.51 4	.66 6	.86 6	1.08 7	1.30 7	1.52 7	1.75 7	1.97 7	2.20 7	2.45 10	2.77 10	3.09 10	3.41 10	3.73 10	4.05 10
3.2	.01 1	.05 2	.14 3	.24 4	.37 4	.50 4	.64 6	.84 6	1.03 6	1.22 6	1.43 7	1.66 7	1.88 7	2.11 7	2.33 7	2.55 7	2.78 7	3.03 9	3.32 9	3.61 9
3.0	.01 1	.05 2	.13 3	.23 4	.36 4	.49 4	.63 5	.79 6	.98 6	1.19 7	1.41 7	1.64 7	1.86 7	2.09 7	2.31 7	2.53 7	2.76 7	2.99 8	3.27 9	3.56 9
2.8	.01 1	.05 2	.13 3	.23 4	.36 4	.49 4	.62 4	.79 6	.98 6	1.17 6	1.36 6	1.55 7	1.77 7	2.00 7	2.22 7	2.46 8	2.71 8	2.97 8	3.22 8	3.48 8
2.6	.01 1	.05 2	.13 3	.22 4	.35 4	.48 4	.61 4	.78 6	.97 6	1.16 6	1.35 6	1.54 6	1.74 6	1.94 7	2.16 7	2.40 8	2.65 8	2.91 8	3.16 8	3.42 8
2.5	.01 1	.04 2	.11 3	.20 3	.32 4	.45 4	.58 5	.76 6	.95 6	1.14 6	1.33 6	1.52 6	1.72 6	1.91 6	2.12 8	2.38 8	2.63 8	2.89 8	3.14 8	3.40 8
2.4	.00 1	.04 2	.11 3	.20 3	.30 4	.43 4	.56 4	.75 6	.94 6	1.13 6	1.32 6	1.51 6	1.71 6	1.90 6	2.10 7	2.32 7	2.55 7	2.77 7	3.00 7	3.25 8
2.3	.00 1	.04 2	.11 3	.20 3	.30 3	.42 4	.55 4	.67 4	.85 6	1.04 6	1.23 6	1.42 6	1.62 6	1.82 7	2.04 7	2.26 7	2.49 7	2.73 8	2.98 8	3.24 8
2.1	.00 1	.04 2	.10 2	.18 3	.28 3	.38 4	.51 4	.65 6	.84 6	1.03 6	1.22 6	1.41 6	1.61 6	1.80 6	1.99 6	2.19 8	2.44 8	2.70 8	2.95 8	3.21 8
2.0	.00 1	.04 2	.10 2	.17 2	.25 4	.38 4	.51 4	.63 4	.81 6	1.00 6	1.19 6	1.38 6	1.58 6	1.77 6	1.96 6	2.15 6	2.37 8	2.63 8	2.88 8	3.14 8


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
KICKAPOO CREEK AT PEORIA
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
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20
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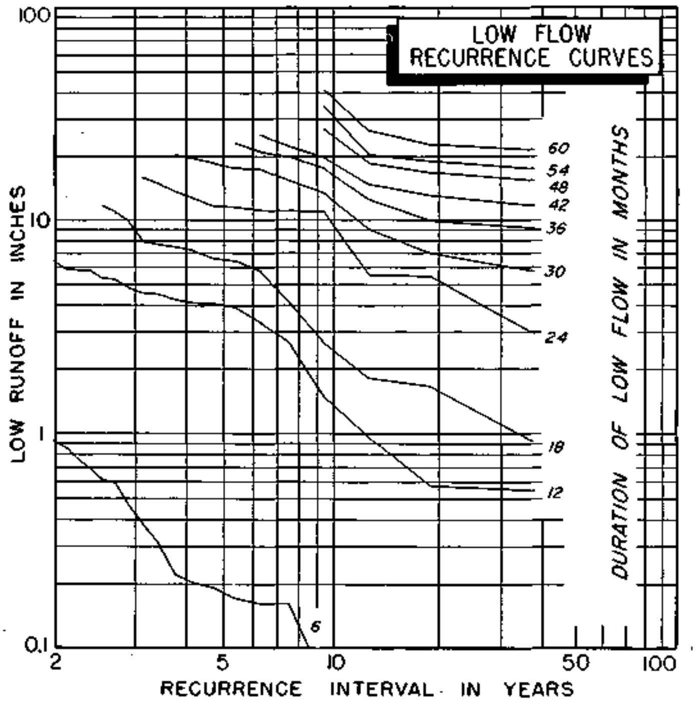
MACKINAW RIVER NEAR CONGERVILLE



STATION 106

LOCATION
In NE ¼ SW ¼ sec 17, T25N, R1W, Woodford County, at bridge on U. S. 150, 2.0 miles northwest of Congerville

DRAINAGE AREA
764 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1944 thru Sept 1959
CONTINUOUS RECORD : 15 years; water years 1945-59

SYNTHETIC FLOW DATA
PERIOD : 23 years; water years 1922-44
INDEX STATION : Mackinaw River near Green Valley
COINCIDENT RECORD: 12 years; water years 1945-56

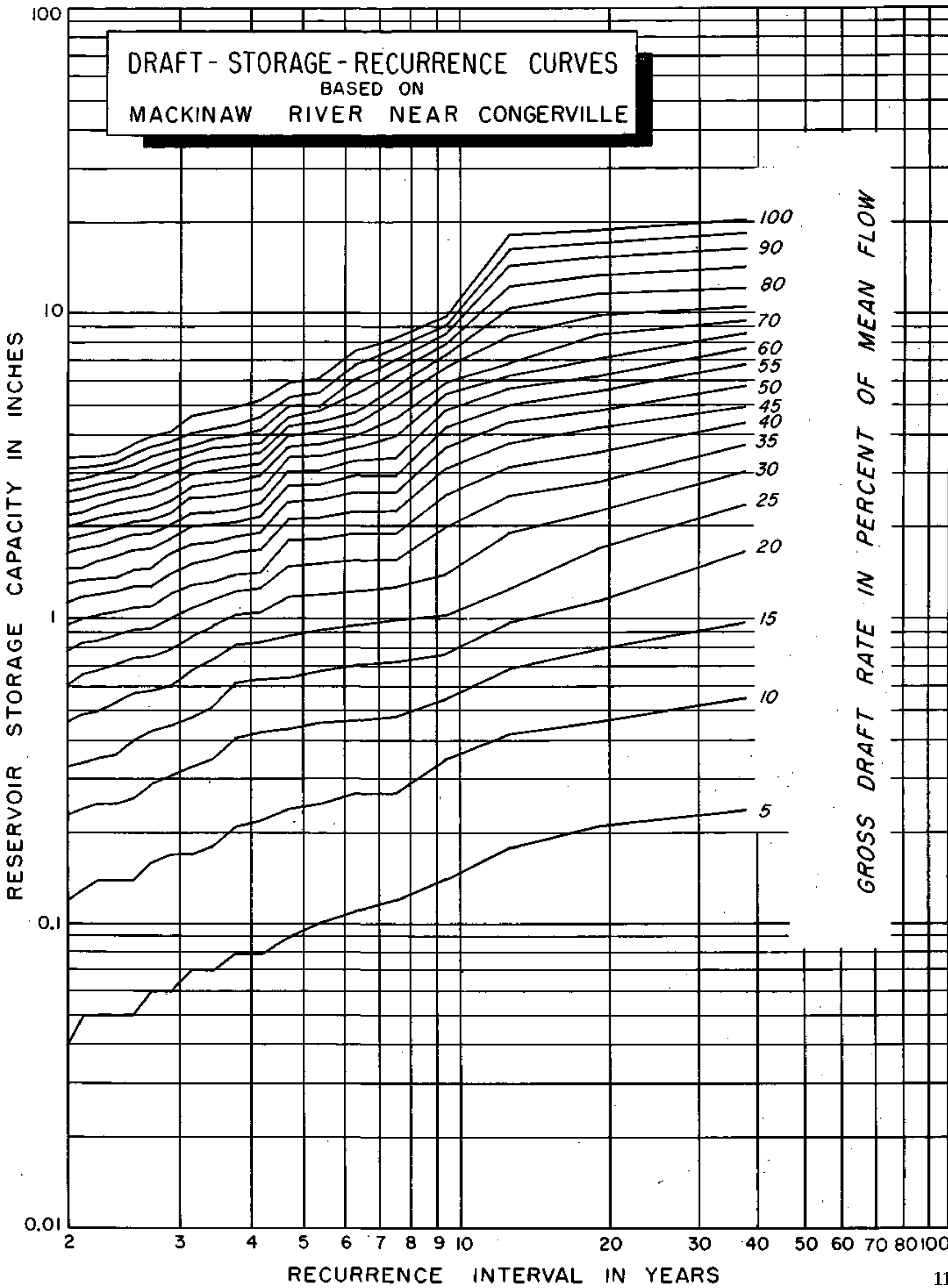
TOTAL DATA ANALYZED
PERIOD: 38 years; water years 1922-59
MEAN DISCHARGE : 0.70 inch per month

Draft-Storage-Recurrence Data for Mackinaw River near Congerville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50
38.0	.24	.56	.98	1.68	2.38	3.08	3.78	4.48	5.18	5.94
	9	10	20	20	20	20	20	20	20	26
19.0	.21	.46	.81	1.16	1.70	2.26	2.84	3.54	4.24	4.94
	7	10	10	10	16	16	20	20	20	20
12.7	.18	.42	.70	.98	1.30	1.93	2.56	3.19	3.82	4.45
	7	8	8	8	18	18	18	18	18	18
9.5	.14	.35	.56	.78	1.03	1.45	2.01	2.57	3.13	3.69
	6	6	6	7	7	16	16	16	16	16
7.6	.12	.27	.49	.73	1.00	1.28	1.57	1.92	2.27	2.62
	4	5	7	7	8	8	10	10	10	10
6.3	.11	.27	.47	.71	.96	1.24	1.57	1.92	2.27	2.62
	4	5	7	7	7	9	10	10	10	10
5.4	.10	.25	.46	.68	.93	1.21	1.53	1.84	2.16	2.47
	4	6	6	7	7	9	9	9	9	9
4.8	.09	.24	.44	.65	.89	1.19	1.51	1.82	2.14	2.45
	4	5	6	6	7	9	9	9	9	9
4.2	.08	.22	.43	.64	.85	1.06	1.27	1.48	1.70	1.94
	3	6	6	6	6	6	6	6	7	7
3.8	.08	.21	.41	.62	.83	1.04	1.25	1.46	1.67	1.88
	3	5	6	6	6	6	6	6	6	6
3.5	.07	.18	.35	.53	.74	.95	1.16	1.37	1.58	1.79
	3	4	5	6	6	6	6	6	6	7
3.2	.07	.17	.33	.50	.68	.88	1.09	1.30	1.53	1.77
	3	4	5	5	5	6	6	6	7	7
2.9	.06	.17	.31	.45	.61	.80	1.01	1.22	1.43	1.64
	3	4	4	4	5	6	6	6	6	6
2.7	.06	.16	.29	.43	.59	.76	.94	1.11	1.29	1.50
	3	3	4	4	5	5	5	5	6	6
2.5	.05	.14	.26	.40	.58	.75	.93	1.10	1.28	1.48
	2	3	4	5	5	5	5	5	5	6
2.4	.05	.14	.25	.36	.54	.71	.89	1.06	1.24	1.41
	2	3	3	5	5	5	5	5	5	5
2.2	.05	.14	.25	.35	.51	.68	.86	1.03	1.21	1.38
	2	3	3	3	5	5	5	5	5	5
2.1	.05	.13	.24	.34	.49	.66	.84	1.01	1.19	1.36
	2	3	3	3	5	5	5	5	5	5
2.0	.04	.12	.23	.33	.46	.61	.79	.96	1.14	1.31
	2	3	3	3	4	5	5	5	5	5

Recurrence interval, years	Gross draft rate in percent of mean flow: 55	60	65	70	75	80	85	90	95	100
38.0	6.85	7.76	8.67	9.58	10.65	12.61	14.57	16.53	18.49	20.45
	26	26	26	26	56	56	56	56	56	56
19.0	5.64	6.34	7.25	8.58	9.98	11.76	13.58	15.40	17.22	19.04
	20	20	34	40	40	52	52	52	52	52
12.7	5.08	5.71	6.34	6.97	8.55	10.51	12.47	14.43	16.39	18.35
	18	18	18	18	56	56	56	56	56	56
9.5	4.25	4.87	5.50	6.13	6.76	7.39	8.02	8.65	9.28	9.91
	16	18	18	18	18	18	18	18	18	18
7.6	2.97	3.38	4.01	4.64	5.27	5.90	6.53	7.16	7.79	8.42
	10	18	16	18	18	18	18	18	18	18
6.3	2.97	3.32	3.67	4.02	4.37	4.81	5.51	6.21	6.91	7.61
	10	10	10	10	10	20	20	20	20	20
5.4	2.79	3.10	3.45	3.80	4.15	4.50	4.85	5.20	5.57	6.27
	9	10	10	10	10	10	10	10	20	20
4.8	2.77	3.08	3.40	3.71	4.03	4.34	4.68	5.03	5.40	6.10
	9	9	9	9	9	9	10	10	20	20
4.2	2.19	2.44	2.72	3.00	3.28	3.56	3.85	4.23	4.66	5.29
	7	8	8	8	8	8	11	11	18	18
3.8	2.09	2.32	2.60	2.88	3.16	3.44	3.72	4.00	4.37	5.00
	6	8	8	8	8	8	8	8	18	18
3.5	2.04	2.28	2.53	2.81	3.09	3.37	3.65	3.93	4.25	4.81
	7	7	8	8	8	8	8	8	16	16
3.2	2.02	2.26	2.51	2.75	3.00	3.24	3.49	3.73	4.11	4.67
	7	7	7	7	7	7	7	7	16	16
2.9	1.85	2.06	2.27	2.48	2.75	3.03	3.31	3.59	3.87	4.15
	6	6	6	7	8	8	8	8	8	8
2.7	1.71	1.92	2.13	2.34	2.59	2.87	3.15	3.43	3.71	3.99
	6	6	6	6	8	8	8	8	8	8
2.5	1.69	1.90	2.11	2.32	2.53	2.74	2.95	3.22	3.50	3.78
	6	6	6	6	6	6	6	8	8	8
2.4	1.61	1.82	2.03	2.24	2.45	2.66	2.87	3.08	3.29	3.52
	6	6	6	6	6	6	6	6	6	8
2.2	1.56	1.74	1.95	2.16	2.37	2.58	2.79	3.00	3.21	3.45
	5	6	6	6	6	6	6	6	6	8
2.1	1.54	1.71	1.89	2.08	2.29	2.50	2.71	2.92	3.16	3.44
	5	5	5	6	6	6	6	6	8	8
2.0	1.49	1.66	1.84	2.02	2.23	2.44	2.65	2.86	3.14	3.42
	5	5	5	6	6	6	6	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
MACKINAW RIVER NEAR CONGERVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
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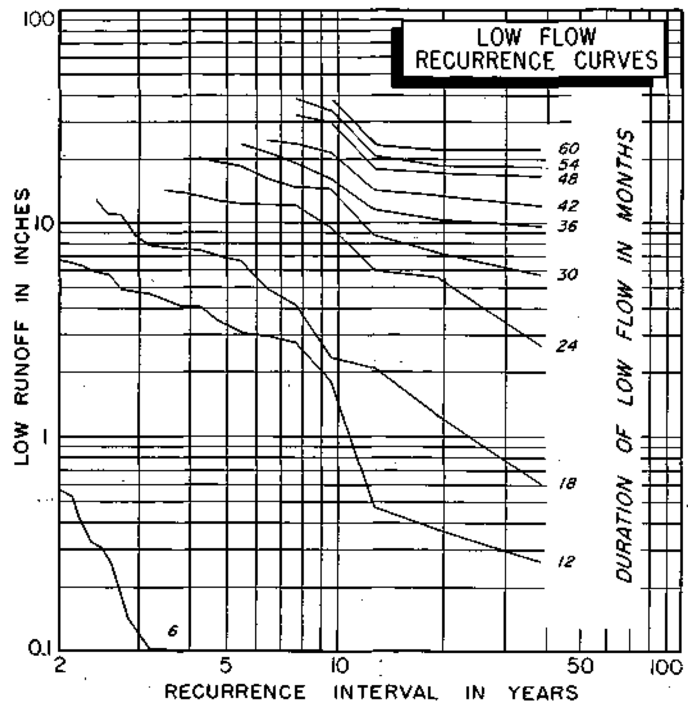
EAST BRANCH, PANTHER CREEK NEAR GRIDLEY



STATION 117

LOCATION
Between secs 29 and 30, T27N, R3E, Livingston County, at highway bridge 2.0 miles northwest of Gridley

DRAINAGE AREA
6.3 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1942 thru Sept 1959
CONTINUOUS RECORD : 10 years; water years 1950-59

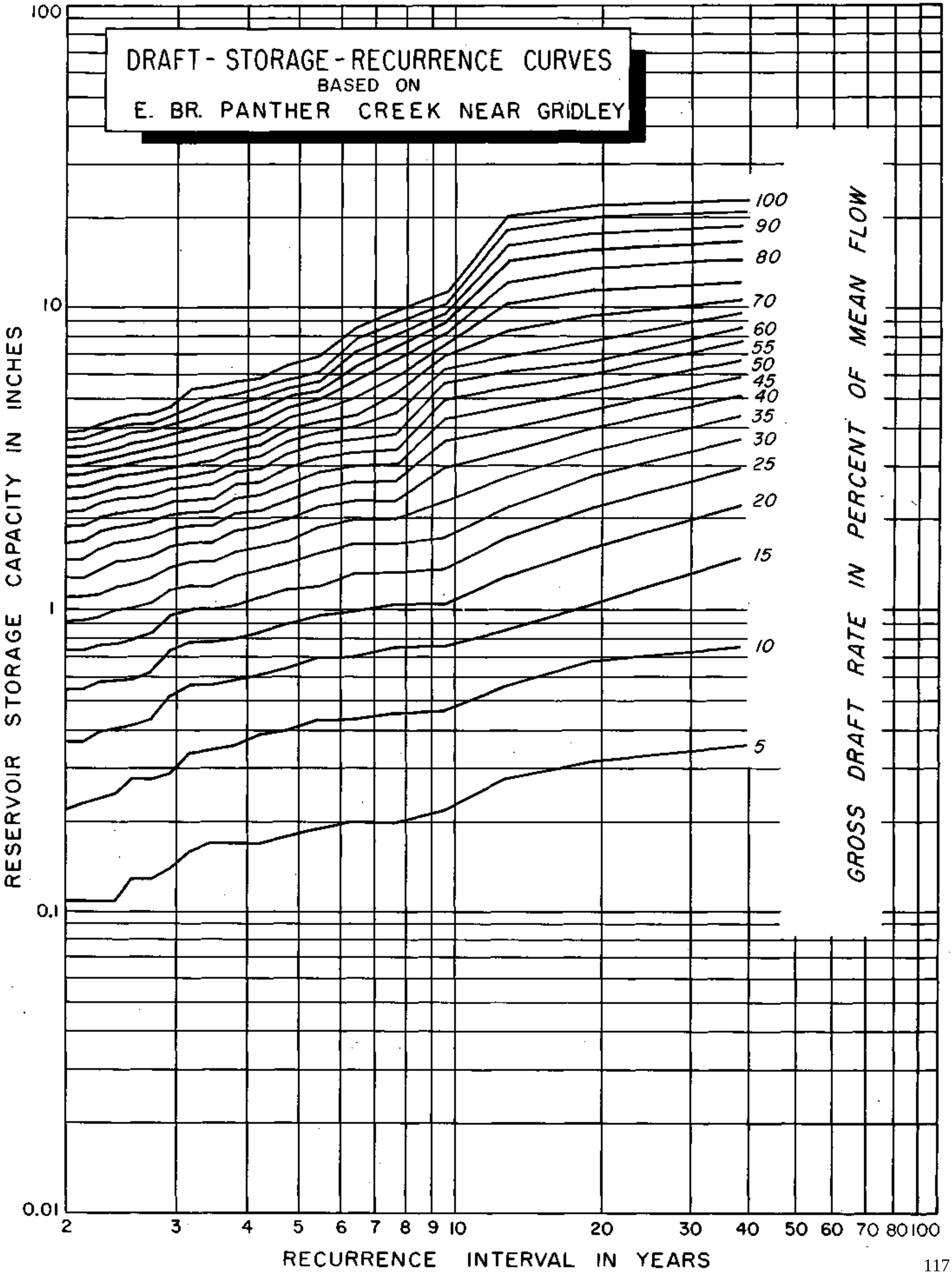
SYNTHETIC FLOW DATA
PERIOD : 28 years; water years 1922-49
INDEX STATION : Mackinaw River near Green Valley
COINCIDENT RECORD: 7 years; water years 1950-56

TOTAL DATA ANALYZED
PERIOD : 38 years; water years 1922-59
MEAN DISCHARGE : 0.74 inch per month

Draft-Storage-Recurrence Data for East Branch, Panther Creek near Gridley

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.36	.77	1.51	2.25	2.99	3.73	4.47	5.21	5.95	6.83	7.79	8.75	9.72	10.68	12.52	14.59	16.66	18.74	20.81	22.88
	10	20	20	20	20	20	20	20	20	26	26	26	26	26	56	56	56	56	56	56
19.0	.32	.69	1.06	1.63	2.22	2.81	3.40	4.05	4.71	5.38	6.05	6.71	7.82	9.46	11.48	13.55	15.62	17.70	19.77	21.84
	10	10	10	16	16	16	16	18	18	18	18	18	34	54	56	56	56	56	56	56
12.7	.28	.57	.87	1.30	1.74	2.20	2.79	3.39	4.02	4.76	5.50	6.24	6.98	8.43	10.35	12.27	14.20	16.12	18.05	19.97
	8	8	8	12	12	16	16	16	20	20	20	20	20	52	52	52	52	52	52	52
9.5	.22	.47	.77	1.06	1.38	1.75	2.29	2.96	3.62	4.29	4.96	5.62	6.29	6.95	7.62	8.29	8.95	9.62	10.28	11.27
	6	8	8	8	10	10	18	18	18	18	18	18	18	18	18	18	18	18	18	34
7.6	.20	.46	.76	1.05	1.35	1.67	2.00	2.33	2.67	3.04	3.41	3.84	4.51	5.22	5.96	6.70	7.44	8.18	8.92	9.66
	6	8	8	8	8	9	9	9	10	10	10	18	18	20	20	20	20	20	20	20
6.3	.20	.44	.70	.99	1.33	1.66	1.99	2.32	2.66	2.99	3.32	3.69	4.06	4.43	5.04	5.71	6.37	7.06	7.80	8.54
	6	7	7	9	9	9	9	9	9	9	10	10	10	10	18	18	18	20	20	20
5.4	.19	.44	.70	.96	1.22	1.54	1.87	2.20	2.54	2.87	3.20	3.54	3.87	4.24	4.61	4.98	5.35	5.72	6.16	6.90
	6	7	7	7	7	9	9	9	9	9	9	9	10	10	10	10	10	10	20	20
4.8	.18	.40	.65	.91	1.17	1.42	1.69	1.99	2.29	2.62	2.95	3.29	3.62	3.95	4.32	4.69	5.06	5.43	5.80	6.45
	6	6	7	7	7	7	8	8	9	9	9	9	9	10	10	10	10	10	10	20
4.2	.17	.39	.62	.85	1.11	1.36	1.62	1.88	2.14	2.40	2.66	2.93	3.23	3.52	3.83	4.23	4.64	5.05	5.45	5.86
	6	6	6	7	7	7	7	7	7	7	7	8	8	8	11	11	11	11	11	11
3.8	.17	.36	.59	.81	1.05	1.30	1.56	1.82	2.08	2.34	2.60	2.86	3.12	3.38	3.64	3.95	4.36	4.77	5.17	5.70
	5	6	6	6	7	7	7	7	7	7	7	7	7	7	7	11	11	11	11	18
3.5	.17	.35	.57	.79	1.01	1.23	1.45	1.68	1.90	2.12	2.34	2.60	2.86	3.14	3.48	3.81	4.17	4.58	4.98	5.47
	5	5	6	6	6	6	6	6	6	6	7	7	7	9	9	9	11	11	11	18
3.2	.16	.34	.57	.79	1.01	1.23	1.45	1.68	1.90	2.12	2.34	2.56	2.80	3.06	3.34	3.67	4.00	4.35	4.72	5.37
	5	6	6	6	6	6	6	6	6	6	6	6	7	7	9	9	9	10	10	18
2.9	.14	.29	.52	.74	.96	1.18	1.40	1.63	1.85	2.07	2.29	2.51	2.74	2.97	3.23	3.53	3.82	4.12	4.41	4.72
	4	6	6	6	6	6	6	6	6	6	6	6	6	7	8	8	8	8	8	16
2.7	.13	.28	.44	.63	.85	1.07	1.29	1.52	1.74	1.96	2.18	2.40	2.64	2.90	3.16	3.41	3.67	3.93	4.19	4.49
	4	4	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8
2.5	.13	.28	.42	.59	.80	1.02	1.24	1.47	1.69	1.91	2.13	2.35	2.58	2.82	3.08	3.33	3.59	3.87	4.16	4.46
	4	4	4	5	6	6	6	6	6	6	6	6	6	7	7	7	7	8	8	8
2.4	.11	.25	.41	.59	.78	1.00	1.22	1.45	1.67	1.89	2.11	2.33	2.56	2.78	3.00	3.22	3.44	3.74	4.03	4.33
	3	4	5	5	6	6	6	6	6	6	6	6	6	6	6	6	8	8	8	8
2.2	.11	.24	.40	.58	.77	.95	1.14	1.37	1.59	1.81	2.03	2.25	2.48	2.70	2.92	3.14	3.36	3.59	3.83	4.13
	3	4	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	8	8
2.1	.11	.23	.37	.55	.74	.92	1.11	1.29	1.48	1.70	1.92	2.14	2.37	2.59	2.81	3.03	3.25	3.48	3.70	3.93
	3	4	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	8
2.0	.11	.22	.37	.55	.74	.92	1.11	1.29	1.48	1.67	1.89	2.11	2.34	2.56	2.78	3.00	3.22	3.45	3.67	3.89
	3	4	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
E. BR. PANTHER CREEK NEAR GRIDLEY
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
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4
5
6
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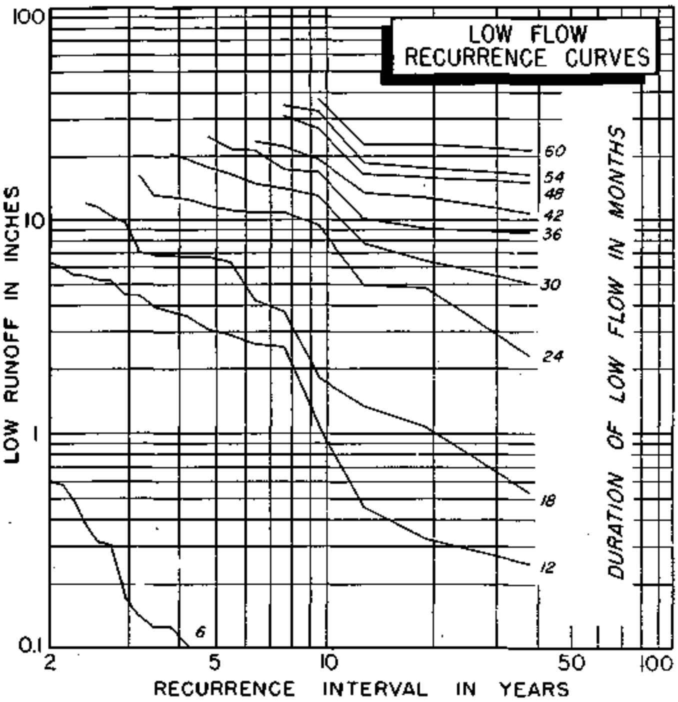


STATION 118

LOCATION
At line between secs 32 and 33, T27N, R2E, Woodford County, at highway bridge 0.9 mile north of El Paso

DRAINAGE AREA
28.8 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1949 thru Sept 1959
CONTINUOUS RECORD : 10 years; water years 1950-59

SYNTHETIC FLOW DATA
PERIOD: 28 years; water years 1922-49
INDEX STATION : Mackinaw River near Green Valley
COINCIDENT RECORD : 7 years; water years 1950-56

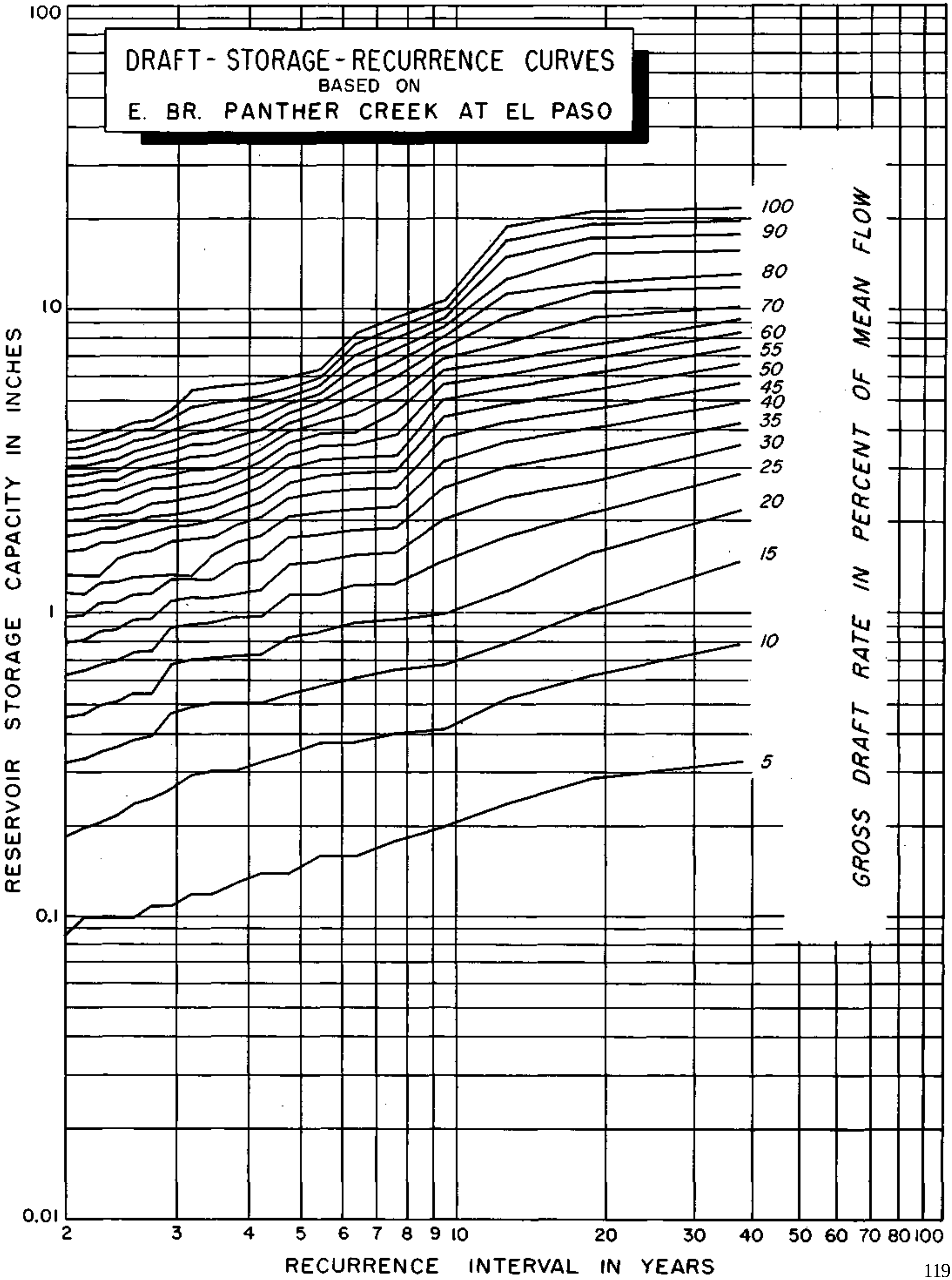
TOTAL DATA ANALYZED
PERIOD: 38 years; water years 1922-59
MEAN DISCHARGE : 0.71 inch per month

Draft-Storage-Recurrence Data for East Branch, Panther Creek at El Paso

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50
38.0	.33 10	.80 20	1.51 20	2.22 20	2.93 20	3.64 20	4.35 20	5.06 20	5.86 26	6.78 26
19.0	.29 10	.64 10	1.06 16	1.63 16	2.20 16	2.77 16	3.46 20	4.17 20	4.88 20	5.59 20
12.7	.24 8	.53 8	.81 12	1.23 12	1.82 18	2.45 18	3.09 18	3.73 18	4.37 18	5.01 18
9.5	.20 6	.42 7	.59 9	1.01 9	1.51 16	2.08 16	2.65 16	3.23 18	3.87 18	4.51 18
7.6	.18 6	.41 7	.67 8	.97 9	1.29 9	1.61 9	1.94 10	2.29 10	2.65 10	3.00 10
6.3	.16 6	.38 7	.63 9	.95 9	1.27 9	1.59 9	1.91 9	2.24 10	2.60 10	2.95 10
5.4	.16 6	.38 6	.59 6	.88 9	1.20 9	1.52 9	1.84 10	2.19 10	2.55 10	2.90 10
4.8	.14 5	.35 5	.56 6	.85 9	1.17 9	1.49 9	1.81 9	2.13 9	2.45 9	2.77 9
4.2	.14 5	.33 6	.54 5	.75 6	.99 7	1.26 8	1.55 8	1.83 8	2.12 8	2.40 8
3.8	.13 5	.31 6	.52 6	.74 7	.99 7	1.24 7	1.49 7	1.74 7	1.99 7	2.24 7
3.5	.12 5	.31 6	.52 6	.73 6	.95 6	1.16 6	1.37 6	1.58 6	1.81 7	2.05 7
3.2	.12 5	.30 6	.51 6	.72 6	.94 6	1.15 6	1.36 6	1.57 6	1.79 6	2.00 6
2.9	.11 4	.27 6	.48 5	.69 6	.91 6	1.12 6	1.33 6	1.54 5	1.76 5	1.97 5
2.7	.11 4	.25 4	.40 4	.56 5	.77 6	.98 5	1.19 6	1.40 6	1.64 7	1.89 7
2.5	.10 4	.24 4	.39 4	.56 5	.76 6	.97 6	1.18 5	1.39 6	1.61 6	1.82 5
2.4	.10 3	.22 4	.37 4	.53 5	.71 5	.90 5	1.11 5	1.32 5	1.54 5	1.75 6
2.2	.10 3	.21 4	.35 4	.51 5	.69 5	.89 5	1.10 6	1.31 5	1.53 5	1.74 5
2.1	.10 3	.20 3	.34 4	.48 5	.66 5	.84 5	1.01 5	1.22 5	1.44 5	1.55 5
2.0	.09 3	.19 3	.33 4	.47 4	.64 5	.82 5	.99 6	1.20 5	1.42 5	1.63 6

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
38.0	7.70 26	8.63 26	9.55 26	10.47 26	12.08 56	14.07 55	16.05 56	18.04 56	20.03 56	22.02 56
19.0	6.30 20	7.01 20	7.80 40	9.65 56	11.64 55	13.63 55	15.62 56	17.60 56	19.59 55	21.58 56
12.7	5.65 18	6.29 18	6.96 20	7.88 44	9.70 52	11.55 52	13.41 54	15.33 54	17.24 54	19.29 60
9.5	5.15 18	5.79 18	6.43 18	7.07 18	7.71 18	8.34 18	8.98 18	9.62 18	10.26 18	10.90 18
7.6	3.36 10	3.95 20	4.66 20	5.37 20	6.08 20	6.79 20	7.50 20	8.21 20	8.92 20	9.63 20
6.3	3.31 10	3.66 10	4.02 10	4.63 18	5.27 18	5.90 18	6.54 18	7.18 18	7.82 18	8.46 18
5.4	3.26 10	3.61 10	3.97 10	4.32 10	4.68 10	5.03 10	5.39 10	5.74 10	6.10 10	6.48 20
4.8	3.08 9	3.40 9	3.72 9	4.04 9	4.36 9	4.68 9	5.00 9	5.32 9	5.64 9	6.14 20
4.2	2.68 8	2.97 8	3.25 8	3.54 8	3.82 8	4.15 11	4.54 11	4.93 11	5.32 11	5.88 18
3.8	2.46 7	2.73 7	2.98 7	3.25 10	3.59 10	3.94 10	4.32 11	4.71 11	5.15 18	5.79 18
3.5	2.30 7	2.55 7	2.80 7	3.05 9	3.37 9	3.70 10	4.06 11	4.45 11	5.04 18	5.58 18
3.2	2.23 7	2.48 7	2.73 7	3.04 9	3.35 9	3.68 9	4.00 9	4.32 9	4.90 18	5.54 18
2.9	2.18 6	2.40 6	2.64 8	2.93 8	3.21 8	3.49 8	3.78 8	4.09 10	4.45 10	4.80 10
2.7	2.13 7	2.38 7	2.63 7	2.88 7	3.13 7	3.38 7	3.62 7	3.88 8	4.17 8	4.45 8
2.5	2.03 6	2.25 7	2.50 7	2.75 7	3.00 7	3.25 7	3.51 8	3.79 8	4.08 8	4.36 8
2.4	1.96 6	2.18 5	2.39 6	2.60 5	2.82 6	3.03 6	3.29 8	3.57 8	3.86 8	4.14 8
2.2	1.95 6	2.17 5	2.38 5	2.59 6	2.81 6	3.02 6	3.23 6	3.44 6	3.72 8	4.00 8
2.1	1.86 6	2.08 6	2.29 6	2.50 5	2.72 6	2.93 5	3.14 6	3.35 6	3.57 5	3.81 8
2.0	1.84 6	2.06 6	2.27 6	2.48 6	2.70 6	2.91 6	3.12 6	3.33 6	3.55 5	3.76 6


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
E. BR. PANTHER CREEK AT EL PASO
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
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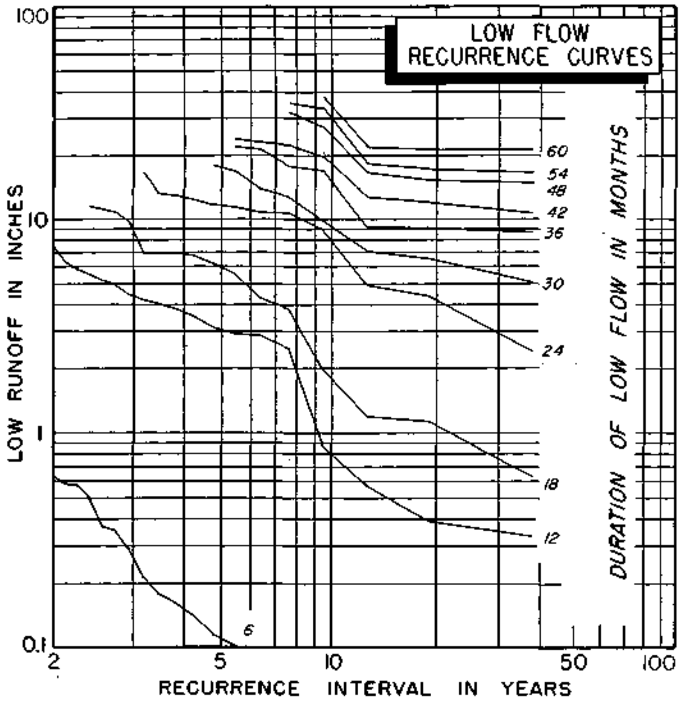


STATION 119

LOCATION

Near center of sec 26, T27N, R1E, Woodford County, at highway bridge just downstream from East Branch, Panther Creek, and 3.75 miles northwest of El Paso

DRAINAGE AREA

95 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1949 thru Sept 1959

CONTINUOUS RECORD: 10 years; water years 1950-59

SYNTHETIC FLOW DATA

PERIOD: 28 years; water years 1922-49

INDEX STATION: Mackinaw River near Green Valley

COINCIDENT RECORD: 7 years; water years 1950-57

TOTAL DATA ANALYZED

PERIOD: 38 years; water years 1922-59

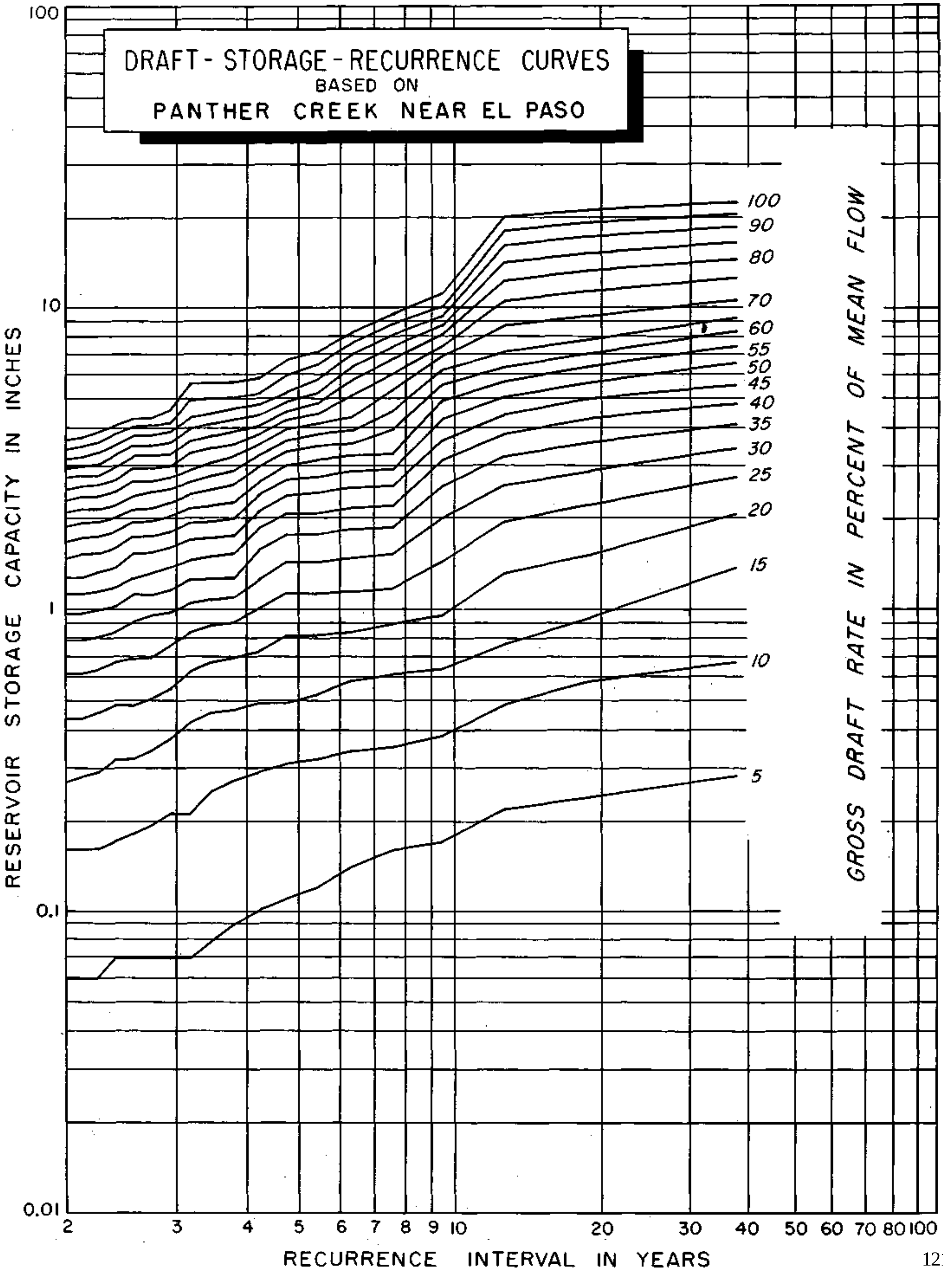
MEAN DISCHARGE: 0.70 inch per month

Draft-Storage-Recurrence Data for Panther Creek near El Paso

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.28	.67	1.37	2.07	2.77	3.47	4.17	4.87	5.68	6.59	7.50	8.41	9.32	10.65	12.61	14.57	16.53	18.49	20.45	22.41
	10	20	20	20	20	20	20	20	26	26	26	26	26	56	56	56	56	56	56	56
19.0	.24	.58	.94	1.52	2.22	2.92	3.62	4.32	5.02	5.72	6.42	7.12	7.88	9.43	11.39	13.35	15.31	17.27	19.23	21.19
	9	10	16	20	20	20	20	20	20	20	20	20	40	56	56	56	56	56	56	56
12.7	.22	.49	.77	1.33	1.96	2.59	3.22	3.85	4.48	5.11	5.74	6.37	7.17	8.71	10.53	12.35	14.17	15.99	18.00	20.10
	7	8	8	18	18	18	18	18	18	18	18	18	36	52	52	52	52	52	60	60
9.5	.17	.38	.64	.95	1.45	2.01	2.57	3.13	3.71	4.34	4.97	5.60	6.23	6.86	7.49	8.12	8.75	9.38	10.12	11.17
	6	7	9	9	16	16	16	16	18	18	18	18	18	18	18	18	18	18	30	30
7.6	.16	.35	.62	.90	1.19	1.53	1.88	2.23	2.58	2.93	3.28	3.96	4.66	5.36	6.06	6.76	7.46	8.16	8.86	9.56
	5	6	8	8	9	10	10	10	10	10	10	20	20	20	20	20	20	20	20	20
6.3	.14	.34	.59	.84	1.16	1.49	1.84	2.19	2.54	2.89	3.24	3.59	3.94	4.52	5.15	5.78	6.41	7.04	7.67	8.30
	5	7	7	9	9	10	10	10	10	10	10	10	10	18	18	18	18	18	18	18
5.4	.12	.32	.53	.82	1.14	1.45	1.77	2.08	2.43	2.75	3.13	3.48	3.83	4.18	4.53	4.88	5.23	5.78	6.44	7.14
	5	6	7	9	9	9	9	10	10	10	10	10	10	10	10	10	10	18	20	20
4.8	.11	.31	.52	.82	1.14	1.45	1.77	2.03	2.40	2.71	3.03	3.34	3.66	3.97	4.29	4.60	4.92	5.30	5.00	5.70
	4	6	6	9	9	9	9	9	9	9	9	9	9	9	9	9	9	20	20	20
4.2	.10	.29	.50	.73	1.01	1.29	1.57	1.65	2.13	2.41	2.69	2.97	3.25	3.53	3.81	4.09	4.45	4.83	5.24	5.87
	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8	11	11	18	18
3.8	.09	.27	.48	.69	.90	1.11	1.32	1.53	1.76	2.01	2.29	2.60	2.92	3.23	3.55	3.90	4.29	4.57	5.06	5.67
	5	6	6	6	6	6	6	5	7	8	9	9	9	9	9	11	11	11	11	18
3.5	.08	.25	.46	.67	.88	1.09	1.30	1.51	1.72	1.95	2.22	2.50	2.78	3.08	3.43	3.78	4.13	4.48	5.02	5.65
	5	6	6	6	6	5	6	6	5	7	8	8	8	10	10	10	10	10	18	18
3.2	.07	.21	.42	.63	.84	1.05	1.26	1.47	1.69	1.93	2.18	2.42	2.67	2.92	3.27	3.62	3.97	4.35	4.98	5.61
	4	5	6	6	6	6	6	6	7	7	7	7	7	10	10	10	10	18	18	18
2.9	.07	.21	.37	.55	.76	.97	1.18	1.39	1.60	1.81	2.03	2.27	2.52	2.76	3.01	3.27	3.57	3.88	4.20	4.60
	4	4	5	6	6	6	6	6	6	6	7	7	7	7	7	8	9	9	9	16
2.7	.07	.19	.34	.51	.70	.91	1.12	1.33	1.54	1.75	1.96	2.18	2.43	2.67	2.94	3.22	3.50	3.78	4.05	4.34
	3	4	5	5	6	6	6	6	6	6	6	7	7	7	8	8	8	8	8	8
2.5	.07	.18	.32	.49	.69	.90	1.11	1.32	1.53	1.74	1.95	2.16	2.37	2.65	2.93	3.21	3.49	3.77	4.05	4.33
	3	4	5	5	6	6	6	5	6	6	6	6	8	8	8	8	8	8	8	8
2.4	.07	.17	.32	.49	.67	.84	1.02	1.19	1.39	1.60	1.81	2.02	2.23	2.44	2.70	2.98	3.26	3.54	3.82	4.10
	3	3	5	5	5	5	5	5	6	6	6	6	6	6	6	8	8	8	8	8
2.2	.06	.16	.29	.46	.64	.81	.99	1.16	1.34	1.53	1.74	1.95	2.16	2.37	2.58	2.79	3.04	3.32	3.60	3.88
	3	3	5	5	5	5	5	5	5	6	6	6	6	6	6	6	8	8	8	8
2.1	.06	.16	.28	.44	.62	.79	.97	1.14	1.32	1.52	1.73	1.94	2.15	2.36	2.57	2.78	2.99	3.20	3.47	3.75
	3	3	4	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	8	8
2.0	.06	.16	.27	.44	.62	.79	.97	1.14	1.32	1.49	1.68	1.89	2.10	2.31	2.52	2.73	2.94	3.15	3.40	3.68
	3	3	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
PANTHER CREEK NEAR EL PASO
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
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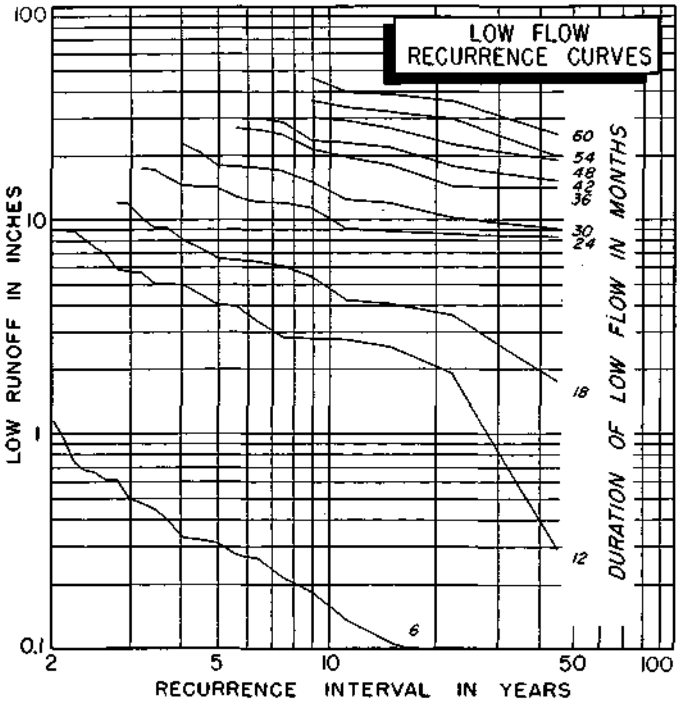
SOUTH BRANCH, KISHWAUKEE RIVER AT DE KALB



STATION 174

LOCATION
In SW ¼ NE ¼ sec 22, T40N, R4E, DeKalb County, at bridge on U. S. Alt. 30 in DeKalb

DRAINAGE AREA
70 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Aug 1925 thru Oct 1934; gaging discontinued Oct 1,1934
CONTINUOUS RECORD: 8 years; water years 1926-33

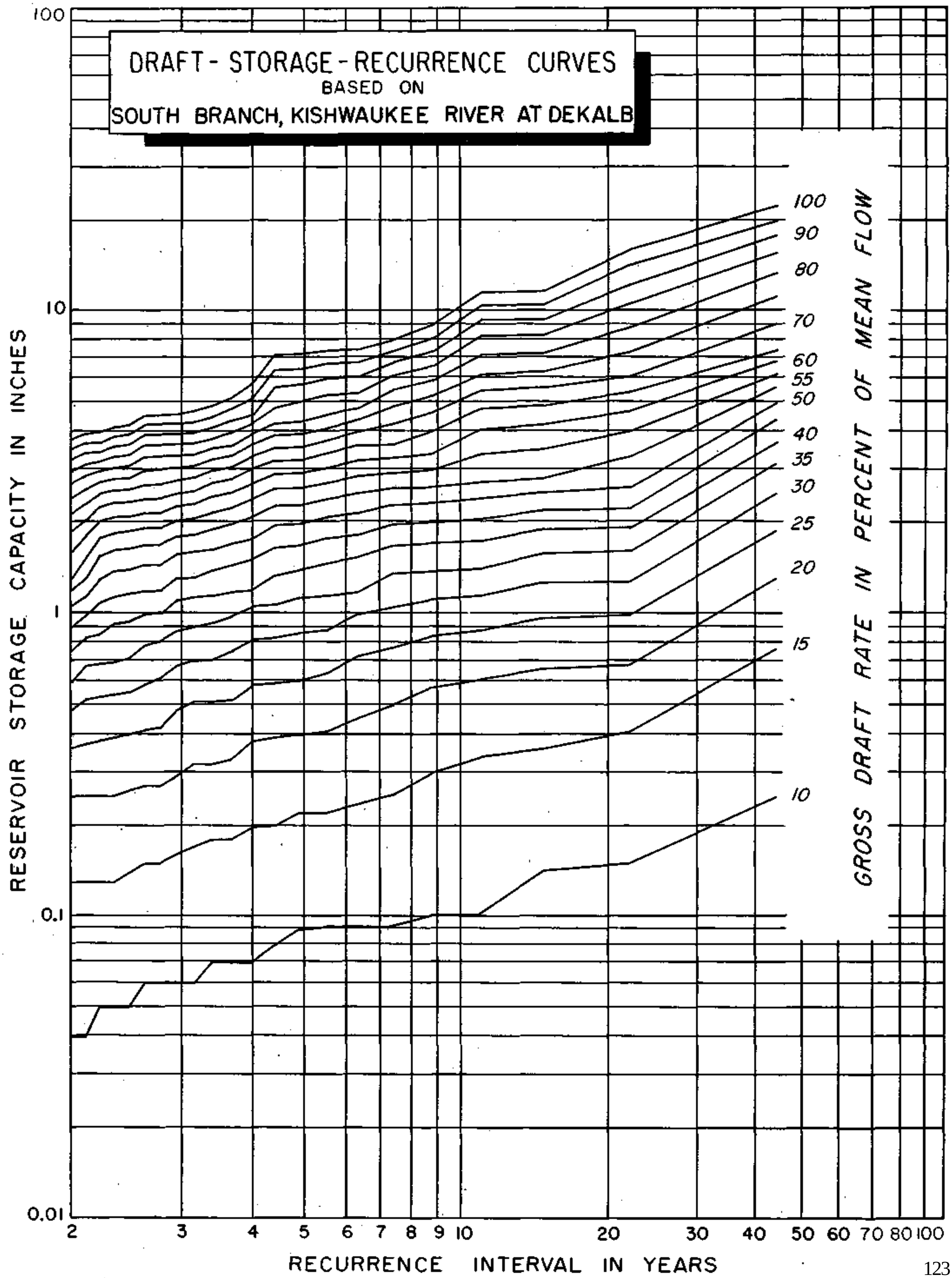
SYNTHETIC FLOW DATA
PERIOD: 36 years; water years 1916-25, 1934-59
INDEX STATION : Fox River at Dayton
COINCIDENT RECORD: 8 years; water years 1926-33

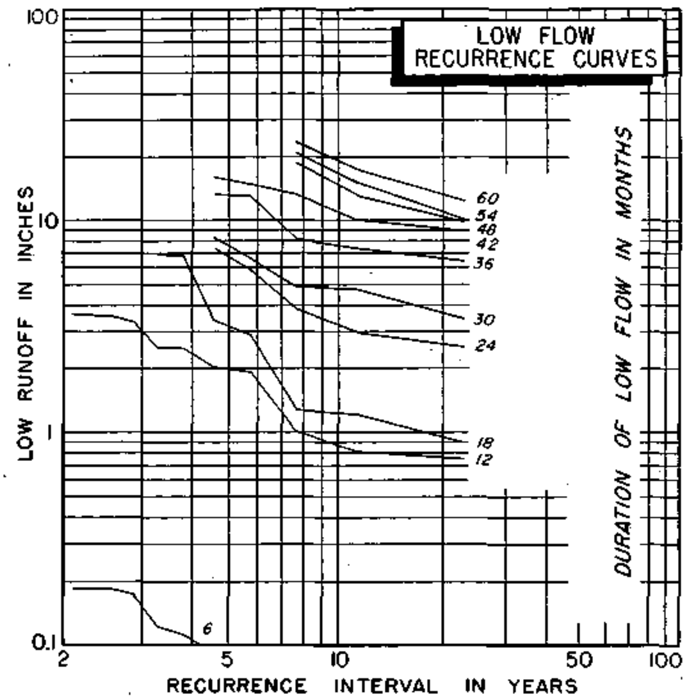
TOTAL DATA ANALYZED
PERIOD : 44 years; water years 1916-59
MEAN DISCHARGE : 0.77 inch per month

Draft-Storage-Recurrence Data for South Branch, Kishwaukee River at DeKalb

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.25	.77	1.31	1.88	2.50	3.12	3.73	4.35	4.96	5.58	6.20	6.81	7.43	9.04	11.18	13.34	15.49	17.66	19.90	22.13
	9	14	14	16	16	16	16	16	16	16	16	16	16	54	56	56	56	58	58	58
22.0	.15	.41	.68	.99	1.30	1.61	1.92	2.22	2.61	3.30	3.99	4.69	5.38	6.08	7.31	8.79	10.56	12.33	14.10	15.87
	5	7	8	8	8	8	8	8	18	18	18	18	18	32	32	46	46	46	46	46
14.7	.14	.36	.66	.97	1.28	1.59	1.90	2.20	2.51	2.82	3.49	4.19	4.88	5.57	6.28	7.19	8.27	9.34	10.42	11.60
	5	8	8	8	8	6	8	8	8	8	18	18	18	18	20	28	28	28	28	38
11.0	.10	.34	.61	.88	1.15	1.42	1.73	2.04	2.39	2.74	3.35	4.05	4.74	5.43	6.13	7.13	8.21	9.28	10.36	11.44
	5	7	7	7	7	8	8	9	9	9	18	18	18	18	18	28	28	28	28	28
8.8	.10	.30	.57	.84	1.11	1.39	1.70	2.00	2.31	2.63	2.97	3.36	3.98	4.59	5.21	5.83	6.52	7.29	8.06	8.87
	3	7	7	7	7	8	8	8	8	9	9	16	16	16	16	16	20	20	20	42
7.3	.09	.26	.50	.77	1.05	1.36	1.67	1.97	2.28	2.59	2.90	3.25	3.59	4.20	4.82	5.44	6.05	6.67	7.28	7.90
	4	5	7	7	8	8	8	8	8	8	9	9	16	16	16	16	16	16	16	16
6.3	.09	.24	.45	.72	.99	1.26	1.53	1.80	2.14	2.49	2.83	3.19	3.58	3.96	4.35	4.73	5.31	6.00	6.70	7.39
	3	4	7	7	7	7	7	7	9	9	9	10	10	10	10	10	18	18	18	18
5.5	.09	.22	.41	.64	.88	1.16	1.47	1.77	2.08	2.39	2.70	3.03	3.37	3.72	4.07	4.55	5.24	5.93	6.63	7.32
	3	5	6	6	6	8	8	8	8	8	8	9	9	9	9	18	18	18	18	18
4.9	.09	.22	.40	.60	.86	1.13	1.40	1.67	1.97	2.28	2.59	2.90	3.20	3.53	3.88	4.29	4.98	5.67	6.37	7.11
	3	4	5	6	7	7	7	7	8	8	8	8	8	9	9	18	18	18	18	20
4.4	.08	.20	.39	.59	.83	1.06	1.34	1.64	1.95	2.26	2.57	2.88	3.18	3.51	3.66	4.20	4.77	5.54	6.31	7.08
	3	5	5	6	6	6	8	8	8	8	8	8	8	9	9	9	20	20	20	20
4.0	.07	.20	.38	.58	.82	1.05	1.28	1.51	1.77	2.08	2.39	2.70	3.00	3.31	3.62	3.93	4.24	4.54	5.13	5.75
	3	4	5	6	6	6	6	6	8	8	8	8	8	8	8	8	8	8	16	16
3.7	.07	.18	.33	.52	.75	.98	1.21	1.44	1.70	1.97	2.23	2.50	2.77	3.04	3.31	3.58	3.95	4.33	4.72	5.10
	3	4	5	5	6	6	6	6	7	7	7	7	7	7	7	9	10	10	10	10
3.4	.07	.18	.32	.51	.70	.93	1.16	1.39	1.62	1.89	2.15	2.42	2.69	2.96	3.23	3.50	3.77	4.08	4.44	4.82
	3	3	5	5	6	6	6	6	7	7	7	7	7	7	7	7	7	9	10	10
3.1	.06	.17	.32	.51	.70	.90	1.13	1.36	1.59	1.82	2.05	2.28	2.52	2.79	3.06	3.33	3.64	3.94	4.26	4.64
	3	4	5	5	5	6	6	6	6	6	6	6	7	7	7	8	8	8	10	10
2.9	.06	.16	.29	.48	.67	.87	1.10	1.33	1.56	1.79	2.02	2.25	2.48	2.73	3.00	3.29	3.60	3.90	4.21	4.52
	2	3	5	5	5	6	6	6	6	6	6	6	6	7	7	8	8	8	8	8
2.8	.06	.15	.27	.42	.61	.81	1.00	1.22	1.45	1.68	1.91	2.14	2.39	2.66	2.97	3.28	3.59	3.89	4.20	4.51
	2	3	3	5	5	5	5	6	6	6	6	6	7	8	8	8	8	8	8	8
2.6	.06	.15	.27	.41	.58	.78	.99	1.22	1.45	1.68	1.91	2.14	2.37	2.64	2.95	3.26	3.57	3.87	4.18	4.49
	2	3	3	4	5	5	6	6	6	6	6	6	6	8	8	8	8	8	8	8
2.4	.05	.14	.26	.40	.55	.71	.94	1.17	1.40	1.63	1.86	2.09	2.32	2.55	2.79	3.06	3.33	3.60	3.88	4.19
	2	3	3	4	4	6	6	6	6	6	6	6	6	6	7	7	7	7	8	8
2.3	.05	.13	.25	.39	.54	.69	.92	1.15	1.38	1.61	1.84	2.07	2.30	2.53	2.77	3.01	3.28	3.55	3.82	4.09
	2	3	3	4	4	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7
2.2	.05	.13	.25	.38	.53	.68	.85	1.08	1.31	1.54	1.77	2.00	2.23	2.46	2.70	2.93	3.16	3.39	3.64	3.95
	2	3	3	4	4	4	6	6	6	6	6	6	6	6	6	6	6	6	8	8
2.1	.04	.13	.25	.37	.52	.67	.83	.98	1.14	1.33	1.56	1.79	2.02	2.29	2.56	2.83	3.10	3.37	3.64	3.91
	2	3	3	4	4	4	4	4	4	6	6	6	7	7	7	7	7	7	7	7
2.0	.04	.13	.25	.36	.48	.59	.75	.90	1.06	1.21	1.37	1.59	1.86	2.13	2.40	2.67	2.94	3.21	3.48	3.75
	2	3	3	3	3	4	4	4	4	4	5	7	7	7	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SOUTH BRANCH, KISHWAUKEE RIVER AT DEKALB
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
40
35
30
25
20
15
10



STATION 213

LOCATION

In NE ¼ NW ¼ sec 7, T33N, R2E, LaSalle County, at culvert on U. S. 6, about 2 miles northwest of Utica and 3.5 miles northeast of LaSalle

DRAINAGE AREA

32.3 square miles

ACTUAL FLOW DATA

PERIOD : Intermittent from May 1951 thru Sept 1959
INTERMITTENT RECORD: 9 years; water years 1951-59

SYNTHETIC FLOW DATA

PERIOD :. 14 + years; water years 1937-50, parts 1951-59
INDEX STATION : East Bureau Creek near Bureau
COINCIDENT RECORD: 9 years; water years intermittent, 1951-59

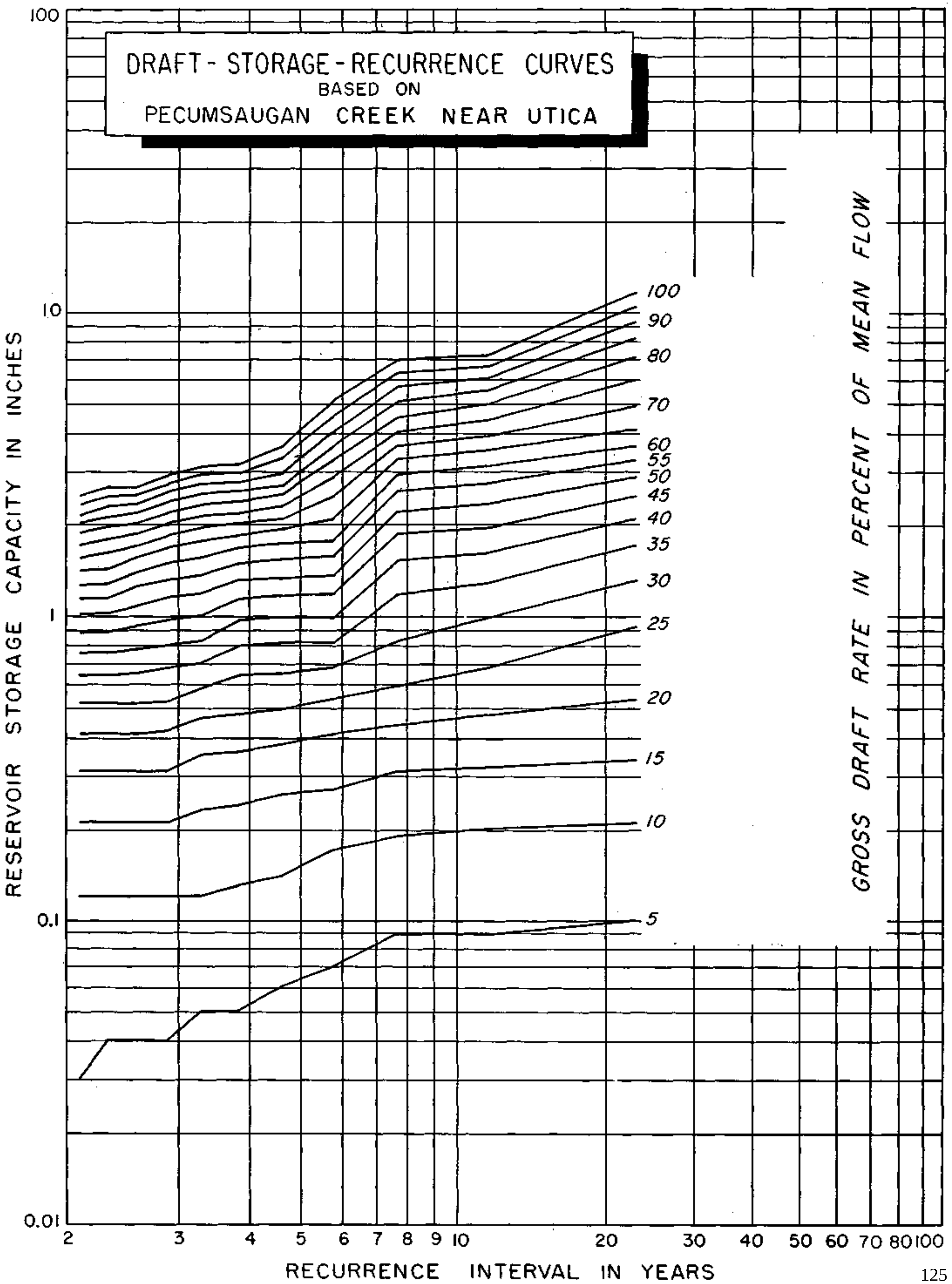
TOTAL DATA ANALYZED

PERIOD : 23 years; water years 1937-59
MEAN DISCHARGE : 0.39 inch per month

Draft-Storage-Recurrence Data for Pecumsaugan Creek near Utica

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
23.0	.10	.21	.34	.54	.93	1.32	1.71	2.10	2.49	2.88	3.27	3.66	4.18	4.95	6.04	7.13	8.22	9.35	10.48	11.61
	6	6	7	20	20	20	20	20	20	20	20	20	30	56	56	56	58	58	58	58
11.5	.09	.20	.32	.48	.68	.99	1.30	1.62	1.97	2.36	2.75	3.14	3.53	3.92	4.45	5.00	5.54	6.09	6.63	7.18
	6	6	7	9	16	16	16	16	20	20	20	20	20	20	28	28	28	28	28	28
7.7	.09	.19	.31	.44	.60	.83	1.18	1.53	1.88	2.23	2.56	2.93	3.28	3.66	4.05	4.52	5.11	5.69	6.31	6.97
	5	6	6	8	8	18	18	18	18	18	18	18	18	20	20	30	30	30	34	34
5.8	.07	.17	.27	.41	.54	.68	.82	.99	1.19	1.38	1.58	1.77	2.10	2.49	2.88	3.27	3.66	4.05	4.55	5.13
	5	5	7	7	7	7	9	10	10	10	10	10	20	20	20	20	20	20	30	30
4.6	.06	.14	.26	.38	.50	.65	.82	.99	1.17	1.35	1.54	1.73	1.93	2.12	2.32	2.51	2.71	2.97	3.32	3.67
	4	6	6	6	6	8	9	9	9	9	10	10	10	10	10	10	10	18	18	18
3.8	.05	.13	.24	.36	.48	.64	.80	.97	1.15	1.33	1.50	1.68	1.85	2.03	2.20	2.39	2.59	2.78	2.98	3.17
	4	5	6	6	8	8	9	9	9	9	9	9	9	9	10	10	10	10	10	10
3.3	.05	.12	.23	.35	.47	.58	.70	.83	1.01	1.19	1.37	1.56	1.76	1.95	2.15	2.34	2.54	2.73	2.93	3.12
	3	5	6	6	6	6	6	9	9	9	10	10	10	10	10	10	10	10	10	10
2.9	.04	.12	.21	.31	.42	.53	.67	.80	.97	1.15	1.32	1.50	1.67	1.85	2.02	2.20	2.37	2.55	2.72	2.90
	3	5	5	5	6	7	7	8	9	9	9	9	9	9	9	9	9	9	9	9
2.6	.04	.12	.21	.31	.41	.52	.65	.78	.93	1.09	1.25	1.40	1.56	1.71	1.87	2.03	2.18	2.34	2.49	2.67
	3	5	5	5	6	6	7	8	8	8	8	8	8	8	8	8	8	8	9	9
2.3	.04	.12	.21	.31	.41	.52	.64	.76	.88	1.02	1.15	1.29	1.45	1.62	1.79	1.97	2.14	2.32	2.49	2.67
	3	5	5	5	6	6	6	6	7	7	7	8	8	9	9	9	9	9	9	9
2.1	.03	.12	.21	.31	.41	.52	.64	.76	.88	1.02	1.15	1.29	1.42	1.56	1.72	1.88	2.03	2.19	2.34	2.50
	3	5	5	5	6	6	6	6	7	7	7	7	7	8	8	8	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
PECUMSAUGAN CREEK NEAR UTICA
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
80
70
60
55
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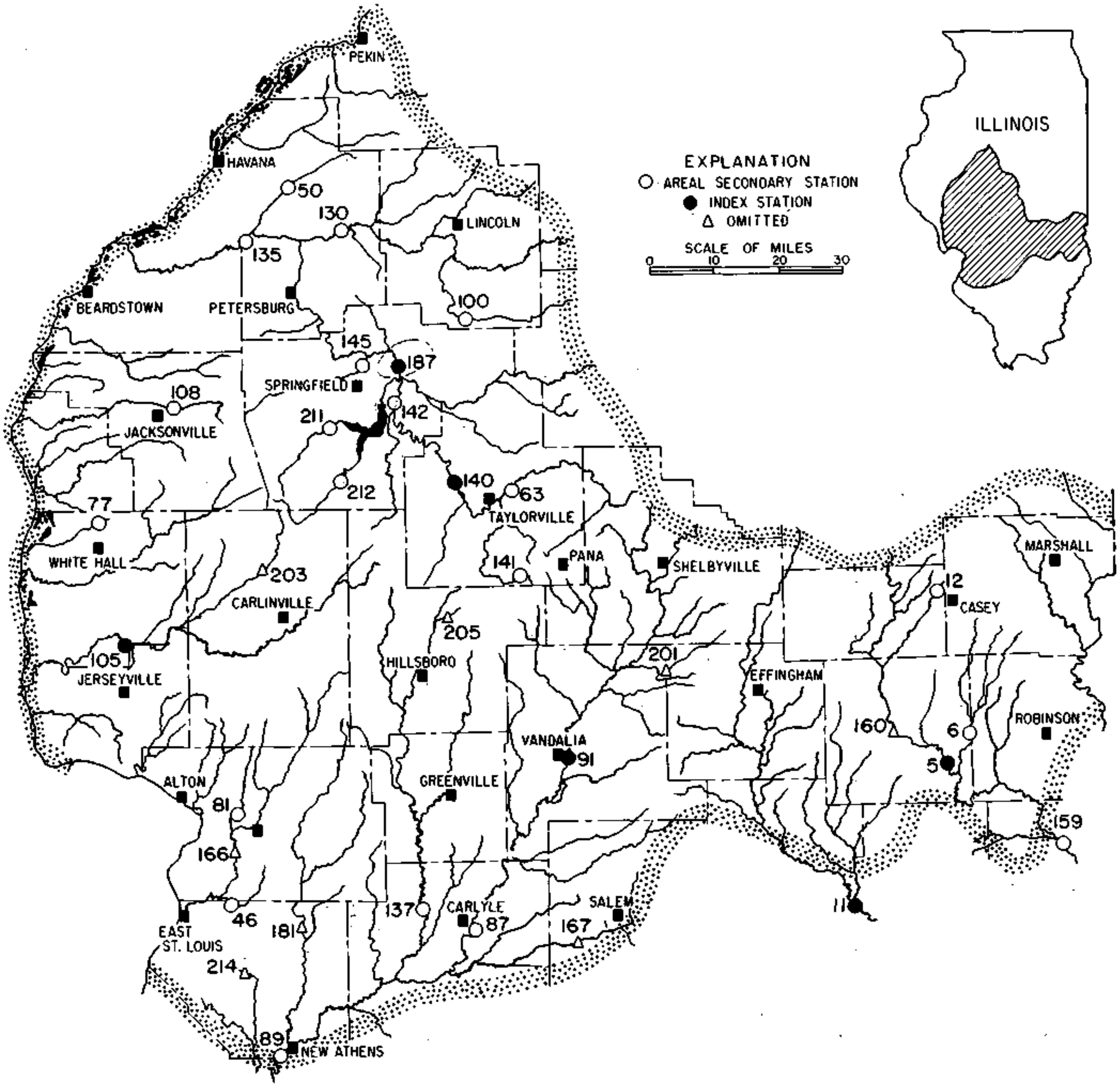
45
40
35
30
25
20
15
10
5

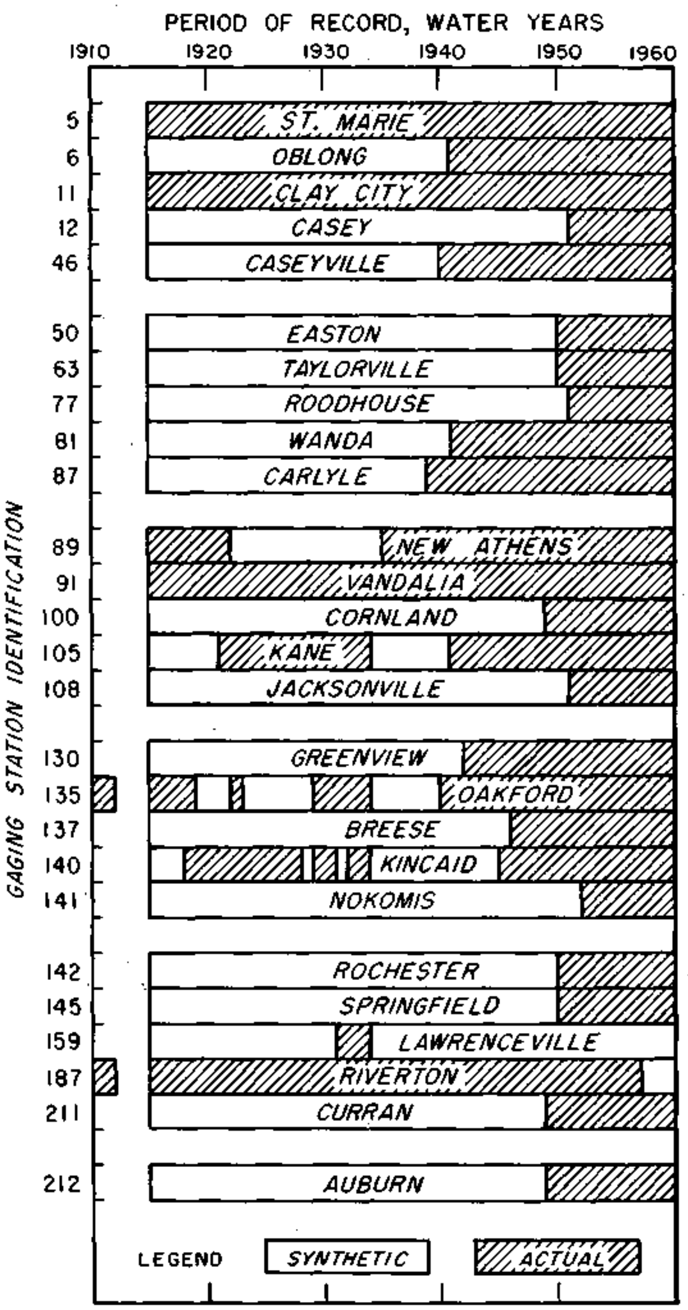


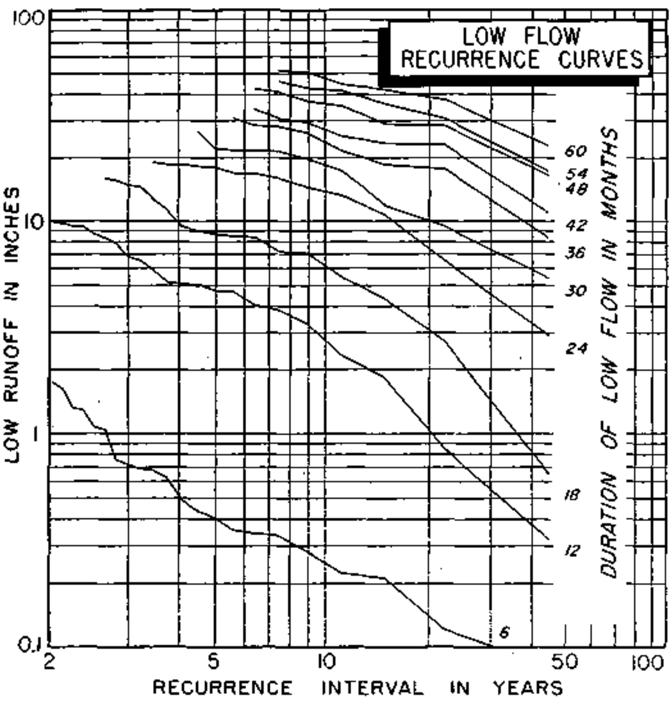
Springfield Plain

Gaging Stations in Springfield Plain

STATIONS OMITTED

		REASON
160	Embarrass River at Newton	*Used Station 5 instead*
166	Cahokia Creek near Poag	*Record too short*
167	Centralia Reservoir near Centralia	*Regulation*
181	Silver Creek near Lebanon	*Record too short*
201	Wolf Creek near Beecher City	*Record too short*
203	Otter Creek near Palmyra	*Record too short*
205	Blue Grass Creek near Raymond	*Record too short*
214	Richland Creek at Belleville	*Record too short*





STATION 5

LOCATION
In NW ¼ NW ¼ sec 30, T6N, R14W, Jasper County, at highway bridge at St. Marie

DRAINAGE AREA
1540 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Oct 1909 to Dec 1912, Aug 1914 thru Sept 1959
CONTINUOUS RECORD: 45 years; water years 1915-59

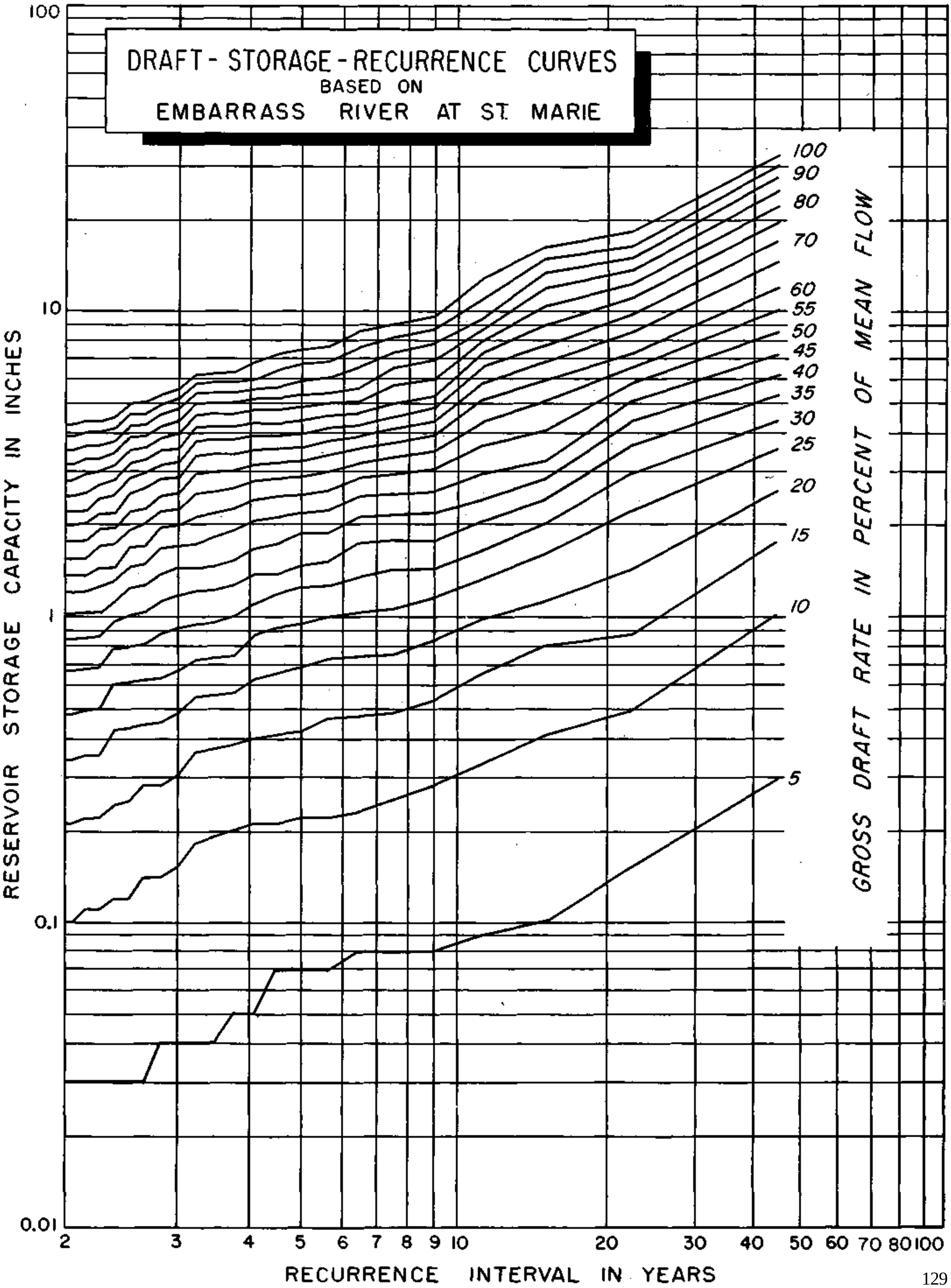
SYNTHETIC FLOW DATA
None; this station utilized as an index station
Note: Some regulation by Lake Charleston, 1947-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.90 inch per month

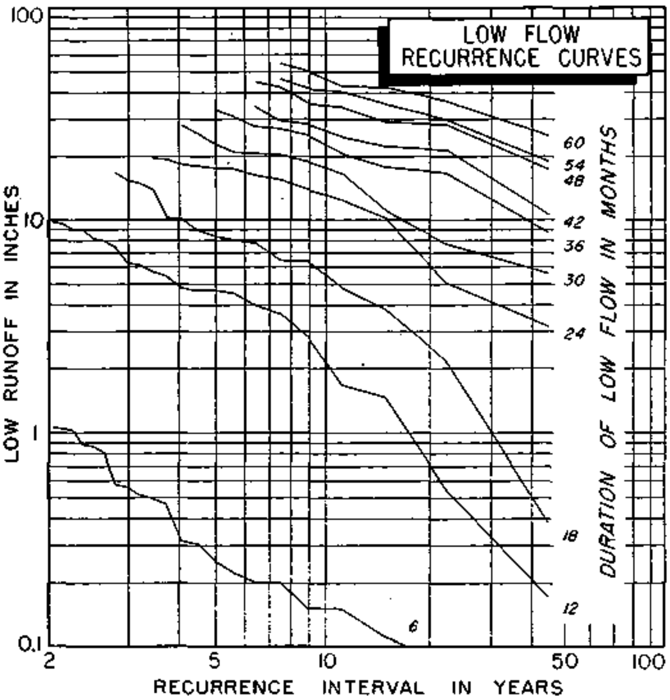
Daft-Storage-Recurrence Data for Embarrass River at St. Marie

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.29	1.01	1.78	2.60	3.50	4.40	5.30	6.20	7.17	8.50	9.98	11.93	14.37	16.89	19.41	21.99	24.60	27.21	29.82	32.43
	16	16	18	20	20	20	20	20	22	32	40	54	56	56	56	58	58	58	58	58
22.5	.15	.49	.87	1.50	2.22	2.94	3.66	4.38	5.10	5.82	6.54	7.26	8.52	9.78	11.04	12.30	13.56	14.86	16.21	18.22
	7	8	14	16	16	16	16	16	16	16	16	28	28	28	28	28	28	30	30	56
15.0	.10	.41	.80	1.20	1.61	2.01	2.42	2.82	3.23	4.10	5.00	5.90	6.80	7.70	8.95	10.39	11.83	13.27	14.71	16.15
	5	8	9	9	9	9	9	9	9	20	20	20	20	20	32	32	32	32	32	32
11.3	.09	.33	.65	.98	1.34	1.70	2.06	2.42	2.93	3.65	4.37	5.09	5.81	6.53	7.25	7.97	8.69	9.41	10.97	12.77
	3	7	7	8	8	8	8	8	16	16	16	16	16	16	16	16	16	16	40	40
9.0	.08	.28	.53	.84	1.16	1.47	1.80	2.18	2.59	3.04	3.49	3.94	4.39	4.84	5.29	6.00	6.90	7.80	8.70	9.60
	4	5	7	7	7	7	8	9	10	10	10	10	10	10	10	20	20	20	20	20
7.5	.08	.25	.48	.75	1.07	1.43	1.79	2.15	2.51	2.91	3.32	3.72	4.13	4.53	4.94	5.73	6.54	7.35	8.16	8.97
	3	4	6	6	8	8	8	8	9	9	9	9	9	9	9	18	18	18	18	18
6.4	.08	.23	.47	.74	1.03	1.39	1.75	2.11	2.47	2.83	3.19	3.55	3.91	4.27	4.64	5.05	5.58	6.57	7.56	8.55
	3	4	6	6	8	8	8	8	8	8	8	8	8	8	9	10	22	22	22	22
5.6	.07	.22	.46	.73	1.00	1.27	1.57	1.88	2.23	2.59	2.97	3.37	3.78	4.18	4.59	4.99	5.40	6.02	6.83	7.64
	3	4	6	6	6	6	7	7	8	8	9	9	9	9	9	9	9	18	18	18
5.0	.07	.22	.42	.68	.95	1.25	1.57	1.88	2.20	2.51	2.86	3.22	3.58	3.97	4.42	4.87	5.32	5.87	6.68	7.49
	3	4	5	6	6	7	7	7	7	7	8	8	8	10	10	10	10	18	18	18
4.5	.07	.21	.41	.65	.92	1.19	1.46	1.76	2.12	2.48	2.84	3.20	3.56	3.92	4.33	4.73	5.18	5.63	6.38	7.19
	3	4	5	6	6	6	6	8	8	8	8	8	8	9	9	10	10	10	18	18
4.1	.05	.21	.40	.62	.86	1.13	1.40	1.70	2.06	2.42	2.78	3.14	3.51	3.91	4.32	4.72	5.13	5.53	5.95	6.74
	3	4	5	5	6	6	6	8	8	8	8	8	9	9	9	9	9	9	10	18
3.8	.05	.20	.38	.56	.74	1.00	1.27	1.55	1.91	2.27	2.63	2.99	3.39	3.79	4.20	4.60	5.01	5.41	5.85	6.30
	3	4	4	4	5	6	6	8	8	8	8	8	9	9	9	9	9	9	10	10
3.5	.04	.19	.37	.55	.73	.95	1.22	1.51	1.83	2.17	2.58	2.98	3.39	3.79	4.20	4.60	5.01	5.41	5.82	6.22
	3	4	4	4	4	6	6	7	7	9	9	9	9	9	9	9	9	9	9	9
3.2	.04	.18	.36	.54	.72	.94	1.21	1.48	1.75	2.11	2.52	2.92	3.33	3.73	4.14	4.54	4.95	5.35	5.76	6.16
	2	4	4	4	4	6	6	6	8	9	9	9	9	9	9	9	9	9	9	9
3.0	.04	.15	.30	.48	.66	.91	1.18	1.45	1.72	1.99	2.26	2.53	2.84	3.20	3.56	3.95	4.36	4.76	5.17	5.57
	2	3	4	4	4	6	6	6	6	6	6	6	8	8	8	9	9	9	9	9
2.8	.04	.14	.28	.45	.63	.87	1.14	1.41	1.68	1.95	2.22	2.49	2.81	3.12	3.48	3.84	4.20	4.56	4.92	5.28
	2	3	3	4	4	6	6	6	6	6	6	7	7	8	8	8	8	8	8	8
2.6	.03	.14	.28	.44	.62	.81	1.04	1.26	1.49	1.71	2.00	2.31	2.63	2.94	3.26	3.57	3.89	4.24	4.62	5.02
	2	3	3	4	4	5	5	5	5	5	7	7	7	7	7	7	7	8	9	9
2.5	.03	.12	.25	.43	.61	.79	1.01	1.23	1.46	1.68	1.91	2.20	2.52	2.83	3.15	3.50	3.86	4.22	4.58	4.94
	2	2	4	4	4	4	5	5	5	5	5	7	7	7	7	8	8	8	8	8
2.4	.03	.12	.24	.42	.60	.78	.96	1.14	1.32	1.50	1.73	1.95	2.18	2.49	2.81	3.12	3.44	3.76	4.12	4.48
	2	2	4	4	4	4	4	4	4	5	5	5	7	7	7	7	7	8	8	8
2.3	.03	.11	.22	.35	.50	.68	.86	1.04	1.26	1.48	1.71	1.93	2.17	2.44	2.71	2.98	3.29	3.65	4.01	4.37
	1	2	3	3	4	4	4	4	5	5	5	5	6	6	6	6	8	8	8	8
2.1	.03	.11	.22	.35	.49	.67	.85	1.03	1.21	1.39	1.57	1.78	2.01	2.23	2.55	2.91	3.27	3.63	3.99	4.35
	1	2	3	3	4	4	4	4	4	4	4	5	5	5	8	8	8	8	8	8
2.0	.03	.10	.21	.34	.48	.66	.84	1.02	1.20	1.38	1.56	1.77	2.00	2.22	2.49	2.80	3.15	3.51	3.87	4.23
	1	2	3	3	4	4	4	4	4	4	4	5	5	5	7	7	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
EMBARRASS RIVER AT ST. MARIE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

NORTH FORK, EMBARRASS RIVER NEAR OBLONG



STATION 6

LOCATION
At NW corner of sec 35, T7N, R14W, on the Jasper-Crawford County line at bridge on Ill. 33, 2.0 miles west of Oblong

DRAINAGE AREA
304 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1940 thru Sept 1959
CONTINUOUS RECORD : 19 years; water years 1941-59

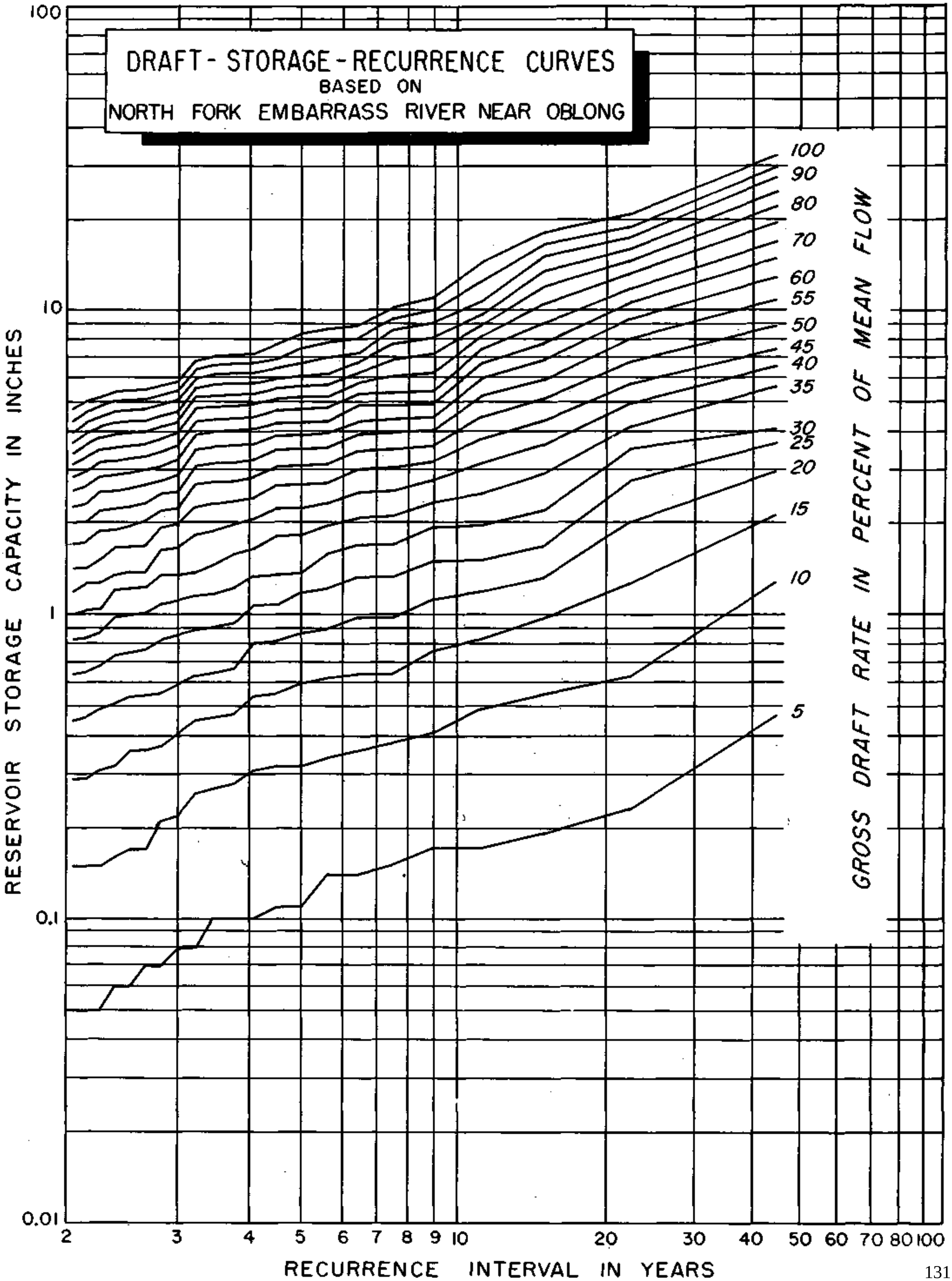
SYNTHETIC FLOW DATA
PERIOD: 26 years; water years 1915-40
INDEX STATION : Embarrass River at St. Marie
COINCIDENT RECORD: 19 years; water years 1941-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.93 inch per month

Draft-Storage-Recurrence Data for North Fork, Embarrass River near Oblong

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.47	1.29	2.13	2.97	3.81	4.72	5.65	6.58	7.51	8.93	10.88	12.84	14.79	16.89	19.49	22.09	24.70	27.30	29.91	32.61
	14	18	18	18	18	20	20	20	20	42	42	42	42	56	56	56	56	56	58	58
22.5	.23	.63	1.28	2.03	2.77	3.51	4.26	5.00	5.75	6.79	8.09	9.39	10.70	12.00	13.30	14.60	16.00	17.39	18.79	20.83
	8	14	16	16	16	16	16	16	16	28	28	28	28	28	28	30	30	30	30	56
15.0	.19	.55	.97	1.38	1.80	2.22	2.93	3.67	4.42	5.16	5.96	6.89	7.82	9.07	10.56	12.05	13.54	15.02	16.51	18.08
	7	9	9	9	9	9	16	16	16	16	20	20	20	32	32	32	32	32	32	34
11.3	.17	.49	.83	1.20	1.57	1.97	2.51	3.16	3.81	4.52	5.26	6.01	6.75	7.50	8.24	8.98	9.72	10.68	12.54	14.45
	7	7	8	8	8	9	14	14	14	16	16	16	16	16	16	16	16	40	40	42
9.0	.17	.41	.76	1.13	1.52	1.94	2.36	2.78	3.20	3.62	4.05	4.51	4.98	5.44	6.26	7.19	8.12	9.05	9.98	10.99
	4	7	8	8	9	9	9	9	9	9	10	10	10	10	20	20	20	20	20	42
7.5	.15	.38	.64	.98	1.35	1.72	2.11	2.57	3.04	3.50	3.97	4.43	4.90	5.36	6.11	6.94	7.78	8.62	9.45	10.29
	4	5	7	8	8	8	10	10	10	10	10	10	10	10	18	18	18	18	18	18
6.4	.14	.36	.64	.98	1.35	1.72	2.09	2.54	3.01	3.47	3.94	4.40	4.87	5.33	5.80	6.26	6.73	7.27	8.10	8.94
	4	6	6	8	8	8	8	10	10	10	10	10	10	10	10	10	10	18	18	18
5.6	.14	.34	.62	.90	1.23	1.60	1.97	2.35	2.72	3.13	3.54	3.96	4.38	4.80	5.22	5.67	6.20	7.04	7.87	8.71
	4	6	6	6	8	8	8	8	8	9	9	9	9	9	9	10	18	18	18	18
5.0	.11	.32	.59	.87	1.19	1.51	1.84	2.24	2.66	3.08	3.49	3.91	4.33	4.75	5.20	5.66	6.13	6.70	7.53	8.37
	4	5	6	6	7	7	7	9	9	9	9	9	9	9	10	10	10	18	18	18
4.5	.11	.32	.55	.82	1.10	1.41	1.82	2.24	2.66	3.08	3.49	3.91	4.33	4.75	5.17	5.59	6.03	6.49	6.96	7.77
	4	5	5	6	6	7	9	9	9	9	9	9	9	9	9	9	10	10	10	18
4.1	.10	.31	.54	.81	1.09	1.36	1.68	2.06	2.43	2.84	3.25	3.67	4.09	4.51	4.93	5.35	5.80	6.26	6.73	7.19
	4	5	5	6	6	6	8	8	8	9	9	9	9	9	9	9	10	10	10	10
3.8	.10	.28	.47	.66	.94	1.23	1.60	1.98	2.35	2.76	3.17	3.59	4.01	4.43	4.85	5.29	5.76	6.22	6.69	7.15
	4	4	4	6	6	8	8	8	8	9	9	9	9	9	9	10	10	10	10	10
3.5	.10	.27	.46	.64	.91	1.18	1.50	1.89	2.31	2.73	3.14	3.56	3.98	4.40	4.82	5.24	5.68	6.14	6.61	7.07
	3	4	4	4	6	6	7	9	9	9	9	9	9	9	9	9	10	10	10	10
3.2	.08	.26	.45	.63	.89	1.16	1.46	1.84	2.25	2.67	3.08	3.50	3.92	4.34	4.76	5.18	5.59	6.01	6.43	6.85
	4	4	4	4	6	6	8	8	9	9	9	9	9	9	9	9	9	9	9	9
3.0	.08	.22	.41	.59	.85	1.12	1.40	1.68	1.96	2.24	2.55	2.88	3.24	3.61	3.98	4.35	4.72	5.10	5.47	5.84
	3	4	4	4	6	6	6	6	6	6	7	7	8	8	8	8	8	8	8	8
2.8	.07	.21	.37	.55	.83	1.10	1.38	1.66	1.94	2.22	2.50	2.78	3.09	3.44	3.81	4.18	4.55	4.93	5.30	5.67
	3	3	4	6	6	6	6	6	6	6	6	6	7	8	8	8	8	8	8	8
2.6	.07	.17	.36	.54	.77	1.01	1.24	1.47	1.71	2.03	2.35	2.68	3.00	3.33	3.65	4.00	4.37	4.75	5.12	5.49
	2	4	4	5	5	5	5	5	6	7	7	7	7	7	7	8	8	8	8	8
2.5	.06	.17	.36	.54	.75	.99	1.22	1.45	1.68	1.97	2.29	2.62	2.94	3.27	3.61	3.98	4.35	4.73	5.10	5.47
	2	4	4	4	5	5	5	5	5	7	7	7	7	7	8	8	8	8	8	8
2.4	.06	.16	.32	.51	.74	.98	1.21	1.44	1.67	1.91	2.23	2.56	2.88	3.21	3.56	3.93	4.30	4.68	5.05	5.42
	2	3	4	5	5	5	5	5	5	7	7	7	7	7	8	8	8	8	8	8
2.3	.05	.15	.31	.49	.68	.87	1.07	1.30	1.56	1.89	2.21	2.54	2.86	3.19	3.51	3.84	4.16	4.49	4.85	5.22
	2	3	4	4	4	4	5	5	7	7	7	7	7	7	7	7	7	7	8	8
2.1	.05	.15	.29	.46	.65	.84	1.04	1.27	1.50	1.74	2.02	2.33	2.65	2.98	3.30	3.63	3.95	4.29	4.66	5.03
	2	3	3	4	4	4	5	5	5	6	6	7	7	7	7	7	7	8	8	8
2.0	.05	.15	.29	.45	.64	.83	1.01	1.20	1.45	1.73	2.01	2.29	2.57	2.85	3.13	3.40	3.68	3.99	4.36	4.73
	2	3	3	4	4	4	4	4	6	6	6	6	6	6	6	6	6	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
NORTH FORK EMBARRASS RIVER NEAR OBLONG
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
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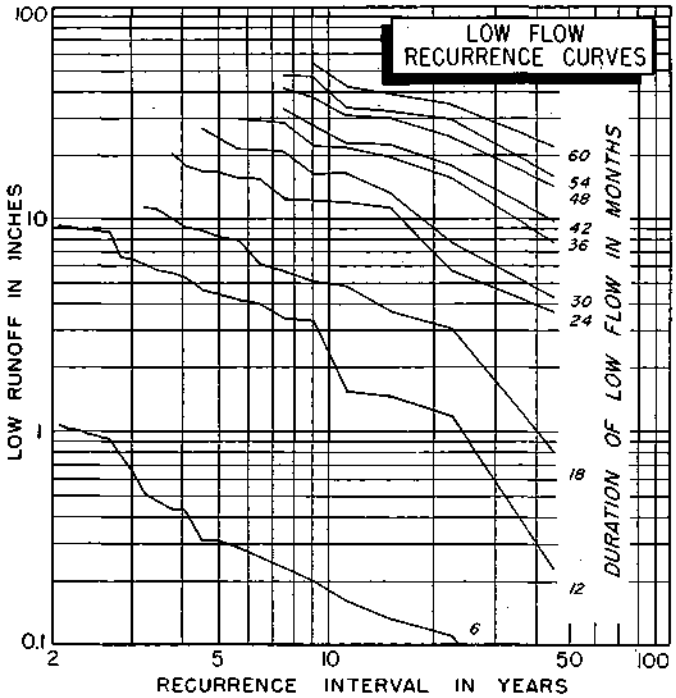
25
20
15
10
5



STATION 11

LOCATION
In SE ¼ sec 3, T2N, R8E, on the Clay-Richland County line, 300 feet downstream from township road bridge at Wilcox, about 5.0 miles southeast of Clay City

DRAINAGE AREA
1130 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Aug 1914 thru Sept 1959
CONTINUOUS RECORD: 45 years; water years 1915-59

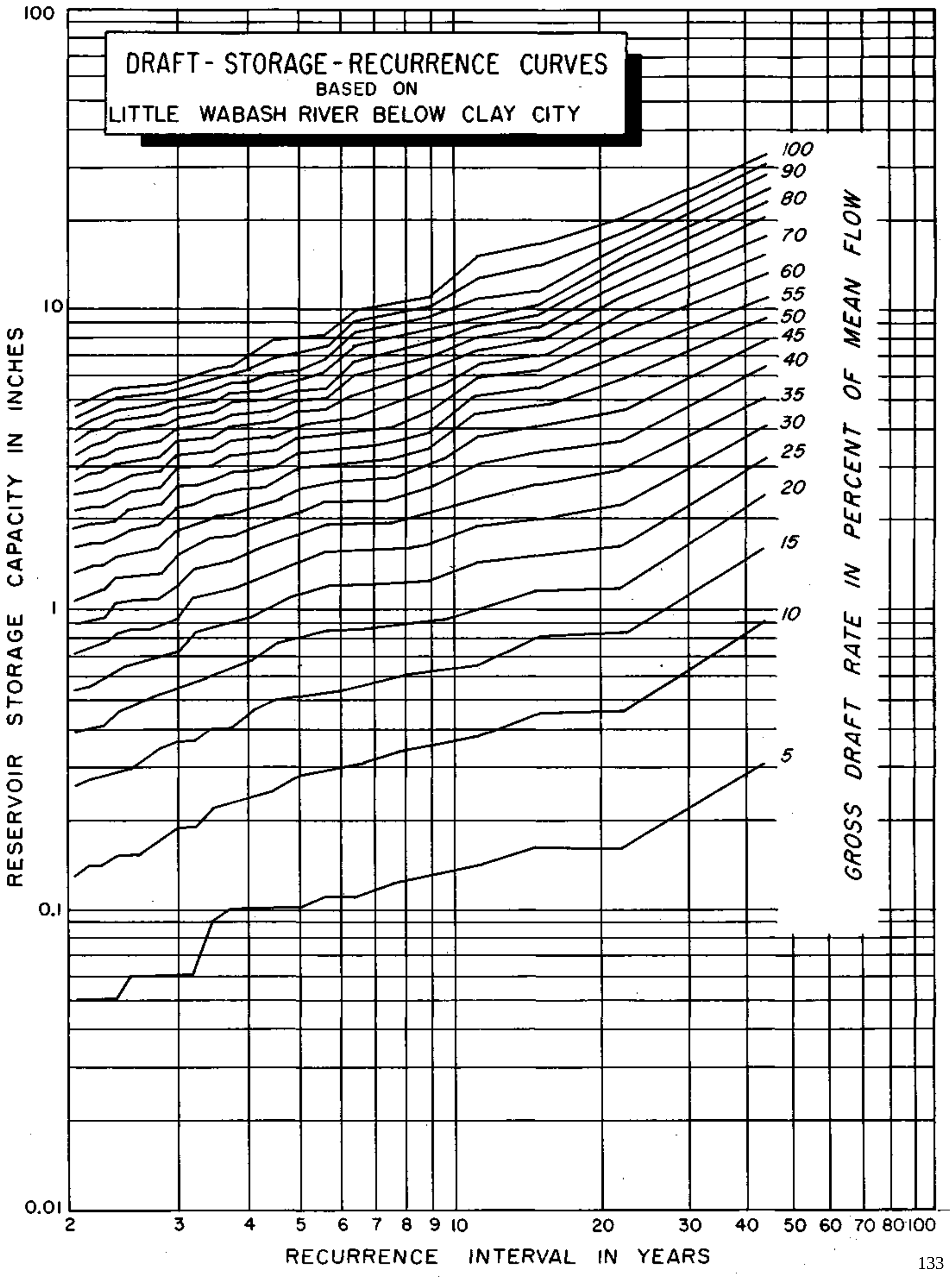
SYNTHETIC FLOW DATA
None; this station utilized as an index station

TOTAL DATA ANALYZED
PERIOD : 45 years; water years 1915-59
MEAN DISCHARGE : 0.90 inch per month

Draft-Storage-Recurrence Data for Little Wabash River below Clay City

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.31	.93	1.61	2.42	3.23	4.09	5.13	6.48	7.88	9.41	11.16	13.14	15.52	18.04	20.56	23.08	25.67	28.28	30.89	33.50
	12	14	18	18	18	20	30	30	34	34	44	44	56	56	56	56	58	58	58	58
22.5	.16	.46	.83	1.23	1.64	2.25	2.97	3.69	4.60	5.86	7.13	8.48	9.83	11.18	12.53	13.88	15.23	16.58	18.34	20.36
	6	8	9	9	9	16	16	16	28	28	30	30	30	30	30	30	30	30	44	56
15.0	.16	.45	.81	1.17	1.53	2.01	2.65	3.37	4.09	4.81	5.53	6.25	6.98	7.88	8.78	9.68	10.58	11.70	14.16	16.68
	5	8	8	8	8	14	16	16	16	16	16	16	20	20	20	20	20	32	56	56
11.3	.14	.38	.65	1.00	1.45	1.90	2.35	3.06	3.78	4.50	5.22	5.94	6.66	7.38	8.10	8.82	9.54	10.98	12.87	15.13
	5	6	6	10	10	10	10	16	16	16	16	16	16	16	16	16	16	42	42	56
9.0	.13	.35	.63	.94	1.26	1.66	2.11	2.56	3.01	3.46	3.91	4.60	5.41	6.22	7.03	7.84	8.65	9.46	10.27	11.13
	5	5	7	7	8	10	10	10	10	10	10	18	18	18	18	18	18	18	18	32
7.5	.12	.33	.59	.90	1.23	1.59	1.95	2.33	2.74	3.17	3.62	4.07	4.85	5.66	6.47	7.28	8.09	8.90	9.71	10.52
	4	5	7	7	8	8	8	9	9	10	10	10	18	18	18	18	18	18	18	18
6.4	.11	.30	.55	.86	1.22	1.58	1.94	2.30	2.70	3.10	3.51	3.91	4.37	5.18	5.99	6.80	7.61	8.42	9.23	10.04
	4	5	6	8	8	8	8	8	9	9	9	9	18	18	18	18	18	18	18	18
5.6	.11	.29	.52	.85	1.21	1.57	1.93	2.29	2.65	3.04	3.45	3.85	4.26	4.66	5.07	5.47	6.16	6.88	7.60	8.32
	3	5	6	8	8	8	8	8	8	9	9	9	9	9	9	9	16	16	16	16
5.0	.10	.28	.51	.81	1.13	1.44	1.78	2.14	2.55	2.95	3.36	3.76	4.17	4.57	4.98	5.38	5.79	6.33	7.14	8.04
	5	5	5	7	7	7	8	9	9	9	9	9	9	9	9	9	9	18	20	20
4.5	.10	.25	.50	.77	1.04	1.34	1.66	1.97	2.29	2.63	2.99	3.39	3.80	4.21	4.66	5.11	5.56	6.14	7.04	7.94
	3	4	6	6	6	7	7	7	7	8	9	9	9	10	10	10	10	20	20	20
4.1	.10	.24	.46	.68	.95	1.26	1.58	1.89	2.21	2.52	2.91	3.31	3.72	4.12	4.53	4.93	5.34	5.81	6.44	7.26
	3	4	5	5	7	7	7	7	7	7	9	9	9	9	9	9	9	14	14	22
3.8	.10	.23	.40	.64	.91	1.18	1.45	1.76	2.08	2.48	2.89	3.29	3.70	4.10	4.51	4.91	5.32	5.72	6.13	6.53
	3	3	4	6	6	6	7	7	9	9	9	9	9	9	9	9	9	9	9	10
3.5	.09	.22	.40	.61	.86	1.15	1.44	1.75	2.07	2.38	2.70	3.01	3.37	3.77	4.18	4.58	4.99	5.44	5.89	6.34
	3	4	4	6	6	6	7	7	7	7	7	7	9	9	9	9	10	10	10	10
3.2	.06	.19	.37	.57	.84	1.11	1.38	1.65	1.92	2.24	2.60	2.96	3.32	3.68	4.04	4.44	4.85	5.25	5.66	6.06
	3	4	4	6	6	6	6	6	6	8	8	8	8	8	9	9	9	9	9	9
3.0	.06	.19	.37	.55	.73	.95	1.22	1.51	1.87	2.23	2.59	2.95	3.31	3.67	4.03	4.39	4.75	5.11	5.47	5.83
	3	4	4	4	4	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8
2.8	.06	.17	.35	.53	.71	.89	1.11	1.33	1.64	1.95	2.27	2.58	2.90	3.27	3.68	4.08	4.49	4.89	5.30	5.70
	2	4	4	4	4	4	5	5	7	7	7	7	7	9	9	9	9	9	9	9
2.6	.06	.16	.32	.50	.68	.86	1.09	1.31	1.58	1.89	2.21	2.52	2.84	3.19	3.60	4.00	4.41	4.81	5.22	5.62
	2	3	4	4	4	5	5	5	7	7	7	7	7	9	9	9	9	9	9	9
2.5	.06	.15	.30	.48	.66	.86	1.09	1.31	1.54	1.85	2.17	2.48	2.80	3.12	3.53	3.93	4.34	4.74	5.15	5.55
	2	3	4	4	4	5	5	5	7	7	7	7	7	9	9	9	9	9	9	9
2.4	.05	.15	.29	.45	.63	.83	1.06	1.28	1.51	1.73	2.00	2.30	2.66	3.06	3.47	3.87	4.28	4.68	5.09	5.49
	2	3	3	4	4	5	5	5	5	6	6	8	9	9	9	9	9	9	9	9
2.3	.05	.14	.28	.41	.59	.77	.95	1.17	1.41	1.68	1.95	2.22	2.51	2.87	3.24	3.64	4.05	4.45	4.86	5.26
	2	3	3	4	4	4	5	5	6	6	6	6	8	8	9	9	9	9	9	9
2.1	.05	.14	.27	.40	.56	.74	.92	1.13	1.40	1.67	1.94	2.21	2.48	2.81	3.17	3.53	3.89	4.25	4.63	5.03
	2	2	3	3	4	4	4	6	6	6	6	6	6	8	8	8	8	8	9	9
2.0	.04	.13	.26	.39	.54	.72	.90	1.08	1.34	1.61	1.88	2.15	2.42	2.69	2.96	3.30	3.66	4.02	4.40	4.80
	2	2	3	3	4	4	4	4	6	6	6	6	6	6	6	8	8	8	9	9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LITTLE WABASH RIVER BELOW CLAY CITY
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
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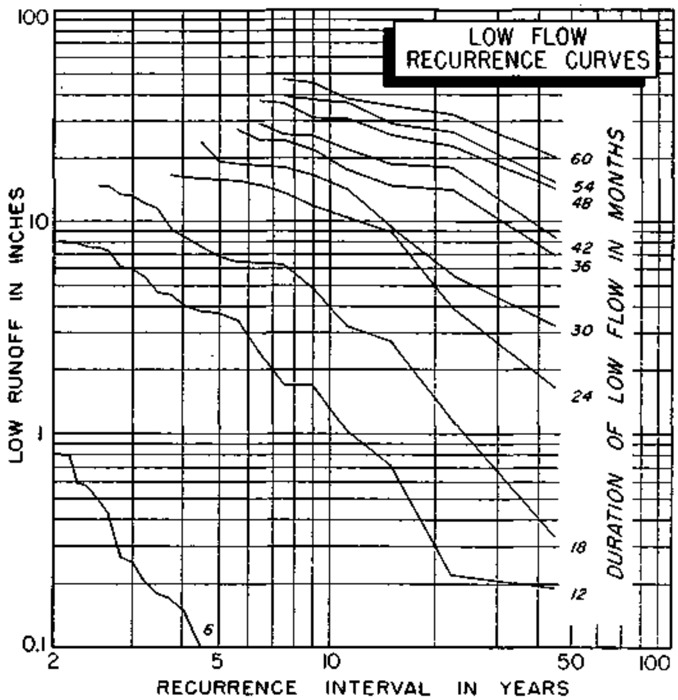
RANGE CREEK NEAR CASEY



STATION 12

LOCATION

In NE ¼ SE ¼ sec 12, T10N, R10E, Cumberland County, at highway bridge 0.5 mile west of Yanaway School and 3.0 miles northwest of Casey

DRAINAGE AREA

7.60 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1950 thru Sept 1959

CONTINUOUS RECORD: 9 years; water years 1951-59

SYNTHETIC FLOW DATA

PERIOD: 36 years; water years 1915-50

INDEX STATION : Embarrass River at St. Marie

COINCIDENT RECORD: 9 years; water years 1951-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

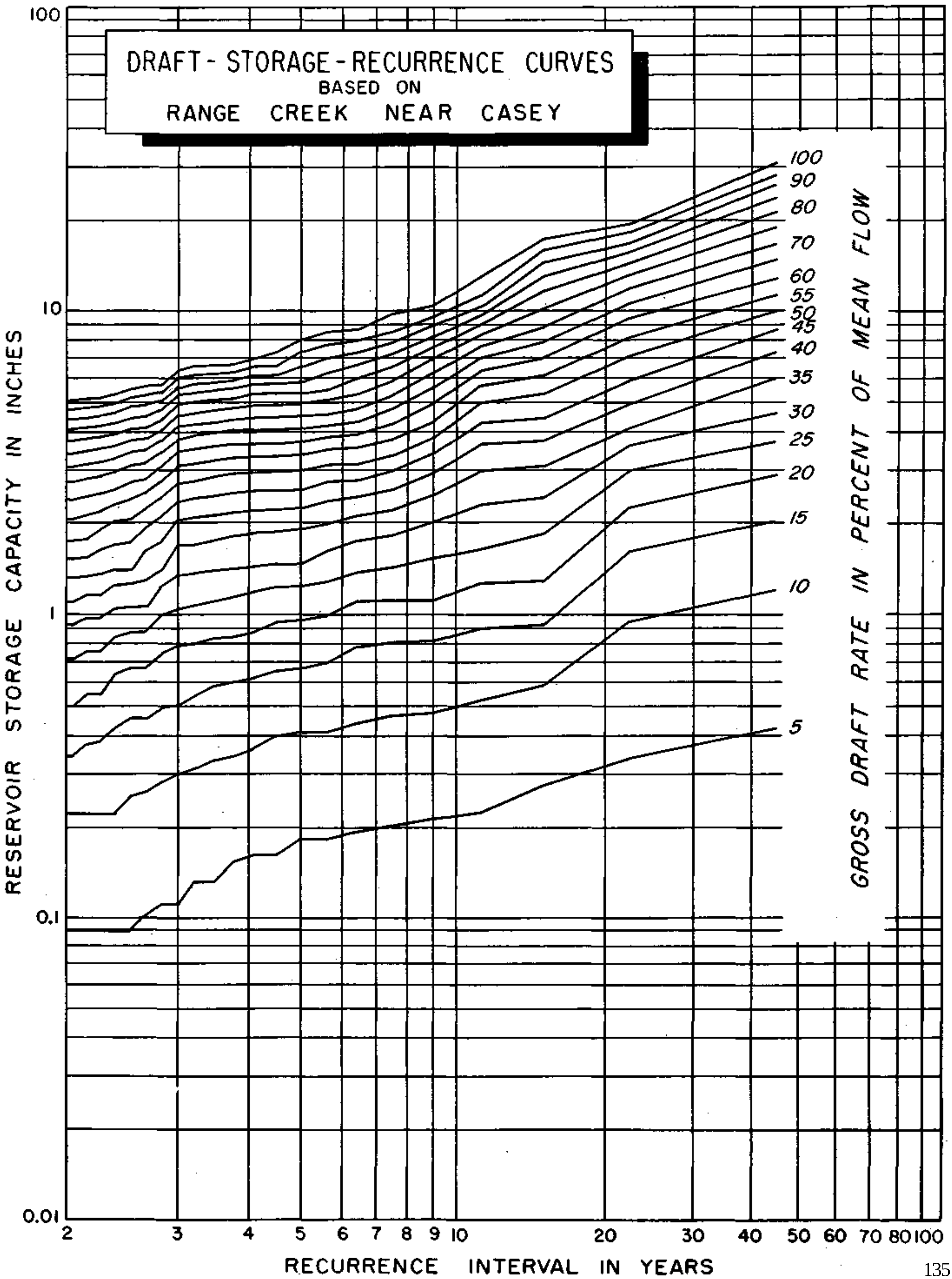
MEAN DISCHARGE : 0.83 inch per month

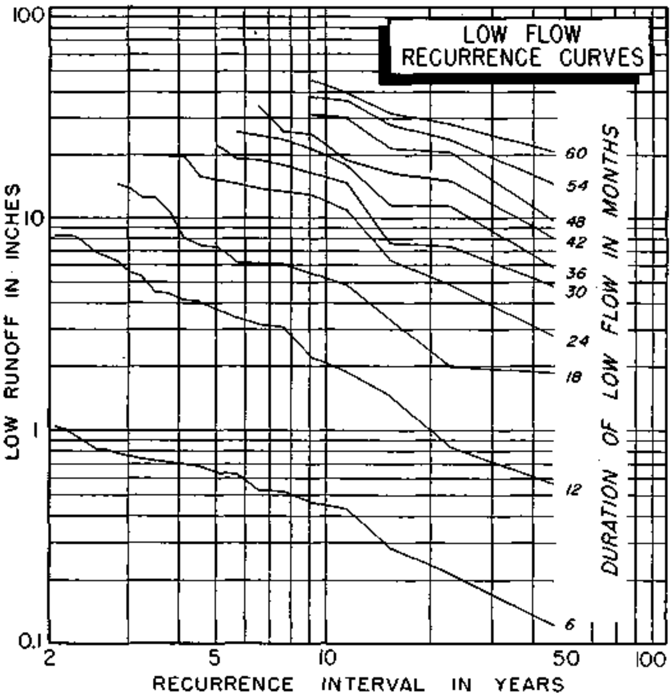
Draft-Storage-Recurrence Data for Range Creek near Casey

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.42	1.19	2.02	2.85	3.74	4.69	5.92	7.24	8.57	9.90	11.23	12.72	14.55	16.37	18.62	21.02	23.43	2[illegible].84	28.24	30.65
	13	20	20	20	22	28	32	32	32	32	32	44	44	44	56	58	58	58	58	58
22.5	.33	.94	1.60	2.27	2.93	3.59	4.26	4.92	5.25	7.01	8.17	9.33	10.51	11.75	13.00	14.24	15.49	16.73	17.98	19.22
	14	16	16	16	16	16	16	16	28	28	28	28	30	30	30	30	30	30	30	30
15.0	.27	.58	.92	1.33	1.64	2.42	3.06	3.72	4.47	5.30	6.13	6.96	7.79	8.74	10.12	11.53	12.94	14.35	15.76	17.17
	7	8	10	10	14	14	16	16	20	20	20	20	20	32	34	34	34	34	34	34
11.3	.22	.52	.89	1.26	1.64	2.29	2.96	3.62	4.29	4.95	5.61	6.28	6.94	7.61	8.27	8.93	9.60	10.26	11.14	12.88
	7	9	9	9	9	16	16	16	16	16	16	16	16	16	16	16	16	16	42	42
9.0	.21	.47	.61	1.14	1.54	2.00	2.46	2.91	3.37	3.83	4.34	4.92	5.54	6.21	6.87	7.53	8.20	8.86	9.53	10.31
	6	8	8	8	11	11	11	11	11	11	14	14	16	16	16	16	16	16	16	44
7.5	.20	.46	.80	1.13	1.46	1.63	2.20	2.58	2.95	3.33	3.78	4.27	4.76	5.26	5.84	6.50	7.17	7.83	8.50	9.75
	6	8	8	8	9	9	9	9	9	11	11	12	12	12	16	16	16	16	16	44
6.4	.19	.44	.78	1.11	1.44	1.77	2.10	2.44	2.77	3.12	3.52	3.93	4.35	4.76	5.30	5.96	6.63	7.29	7.96	8.62
	5	8	8	8	8	8	8	8	8	9	10	10	10	10	16	16	16	16	16	16
5.6	.18	.41	.69	.98	1.30	1.63	1.98	2.35	2.73	3.11	3.48	3.85	4.25	4.66	5.08	5.49	6.21	6.96	7.70	8.45
	5	6	7	7	8	8	9	9	9	9	9	9	10	10	10	10	18	18	18	18
5.0	.18	.41	.66	.95	1.24	1.57	1.90	2.24	2.61	2.99	3.36	3.73	4.11	4.51	4.93	5.34	5.89	6.55	7.29	8.04
	5	6	7	7	8	8	8	9	9	9	9	9	9	10	10	10	14	18	18	18
4.5	.16	.40	.65	.94	1.23	1.55	1.88	2.22	2.55	2.93	3.30	3.67	4.06	4.47	4.89	5.30	5.72	6.13	6.55	7.27
	5	6	7	7	7	8	8	8	9	9	9	9	10	10	10	10	10	10	10	18
4.1	.16	.36	.61	.87	1.19	1.52	1.85	2.19	2.54	2.92	3.29	3.66	4.04	4.45	4.87	5.28	5.70	6.11	6.53	6.94
	4	6	6	7	8	8	8	8	9	9	9	9	10	10	10	10	10	10	10	10
3.8	.15	.34	.59	.84	1.16	1.49	1.82	2.16	2.52	2.90	3.27	3.64	4.02	4.39	4.76	5.14	5.51	5.88	6.26	6.64
	4	6	6	6	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	10
3.5	.13	.33	.56	.83	1.12	1.45	1.76	2.12	2.45	2.83	3.20	3.57	3.95	4.32	4.69	5.07	5.44	5.81	6.19	6.59
	4	6	6	6	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	10
3.2	.13	.31	.54	.79	1.08	1.41	1.74	2.08	2.41	2.75	3.12	3.49	3.87	4.24	4.61	4.99	5.36	5.73	6.13	6.54
	4	5	6	6	8	6	8	8	8	9	9	9	9	9	9	9	9	9	10	10
3.0	.11	.29	.50	.75	1.03	1.36	1.69	2.03	2.36	2.69	3.02	3.37	3.75	4.12	4.49	4.87	5.24	5.61	5.99	6.36
	4	5	6	6	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9
2.8	.11	.28	.49	.74	.99	1.23	1.48	1.77	2.08	2.41	2.74	3.07	3.41	3.74	4.07	4.40	4.73	5.07	5.40	5.73
	4	5	6	6	6	6	7	7	8	8	8	8	8	8	8	8	8	8	8	8
2.6	.10	.26	.45	.66	.87	1.08	1.34	1.63	1.92	2.22	2.51	2.80	3.13	3.46	3.79	4.14	4.51	4.88	5.26	5.63
	4	4	5	5	5	5	7	7	7	7	7	7	8	8	8	9	9	9	9	9
2.5	.09	.25	.45	.66	.87	1.08	1.28	1.49	1.74	2.06	2.39	2.72	3.06	3.39	3.72	4.07	4.44	4.81	5.19	5.56
	4	5	5	5	5	5	5	6	7	8	8	8	8	8	8	9	9	9	9	9
2.4	.09	.22	.42	.63	.84	1.05	1.25	1.46	1.72	2.02	2.31	2.60	2.93	3.26	3.59	3.92	4.25	4.59	4.92	5.29
	3	5	5	5	5	5	5	5	7	7	7	7	8	8	8	8	8	8	9	9
2.3	.09	.22	.38	.54	.75	.96	1.16	1.40	1.65	1.90	2.18	2.51	2.85	3.18	3.51	3.84	4.17	4.51	4.84	5.17
	3	3	4	5	5	5	5	6	6	6	8	8	8	8	8	8	8	8	8	8
2.1	.09	.22	.37	.54	.75	.96	1.16	1.37	1.58	1.79	2.12	2.45	2.79	3.12	3.45	3.78	4.11	4.45	4.78	5.11
	3	3	4	5	5	5	5	5	5	8	8	8	8	8	8	8	8	8	8	8
2.0	.09	.22	.34	.50	.71	.92	1.12	1.33	1.54	1.75	2.06	2.39	2.73	3.06	3.39	3.72	4.05	4.39	4.72	5.05
	3	3	4	5	5	5	5	5	5	5	8	8	8	8	8	8	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
RANGE CREEK NEAR CASEY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW



STATION 46

LOCATION

In N ½ NW ¼ sec 8, T2N, R8W, St. Clair County, at highway bridge at Caseyville, 100 feet upstream from Pennsylvania Railroad bridge and 400 feet upstream from Ill. 157 bridge

DRAINAGE AREA

22.5 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1939 thru Sept 1959

CONTINUOUS RECORD : 20 years; water years 1940-59

SYNTHETIC FLOW DATA

PERIOD: 25 years; water years 1915-39

INDEX STATION : Kaskaskia River at New Athens

COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

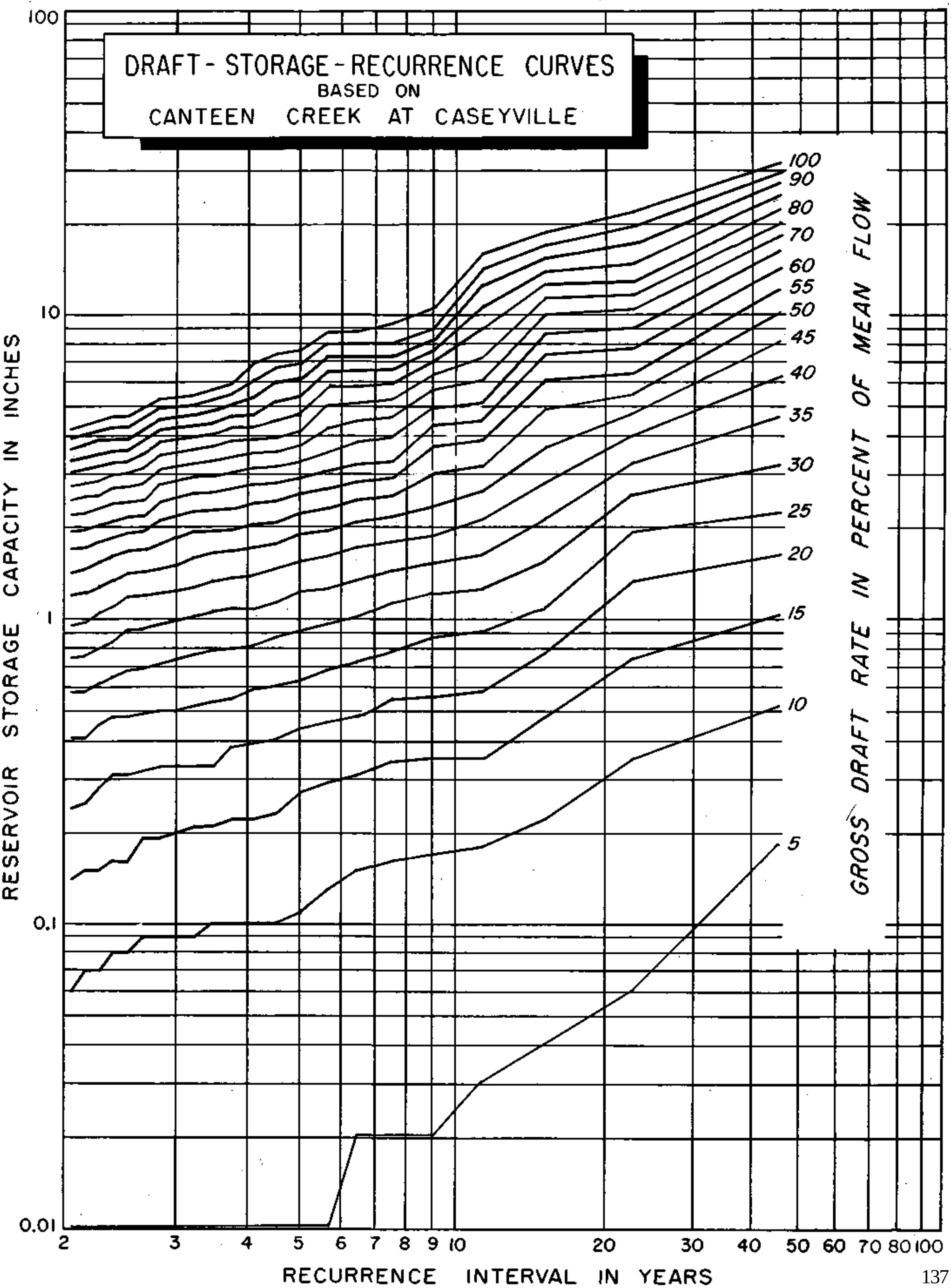
MEAN DISCHARGE : 0.84 inch per month

Draft-Storage-Recurrence Data for Canteen Creek at Caseyville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.18	.52	1.04	1.63	2.24	3.25	4.65	6.32	8.26	10.28	12.30	14.31	16.33	18.34	20.36	22.48	24.91	27.35	29.78	32.22
	8	9	14	14	24	24	36	46	48	48	48	48	48	48	48	58	58	58	58	58
22.5	.06	.35	.75	1.34	1.93	2.59	3.27	4.03	4.78	5.54	6.46	7.81	9.15	10.50	11.84	13.18	14.81	17.17	19.69	22.21
	4	8	14	14	14	16	18	18	18	18	32	32	32	32	32	32	40	60	60	60
15.0	.04	.22	.48	.78	1.10	1.56	2.13	2.81	3.71	4.94	6.20	7.46	8.72	10.05	11.39	12.73	14.08	15.49	17.17	19.02
	3	6	7	7	8	12	16	16	22	30	30	30	30	32	32	32	32	34	44	44
11.3	.03	.18	.35	.58	.92	1.26	1.63	2.13	2.64	3.20	3.87	4.54	5.22	6.19	7.37	9.06	10.83	12.59	14.36	16.12
	3	4	5	8	8	8	12	12	12	16	16	16	16	28	28	42	42	42	42	42
9.0	.02	.17	.35	.56	.88	1.22	1.55	1.89	2.35	3.02	3.69	4.36	5.04	5.71	6.38	7.05	7.72	8.40	9.07	10.63
	3	4	5	5	8	8	8	8	16	16	16	16	16	16	16	16	16	16	16	44
7.5	.02	.16	.34	.55	.79	1.13	1.46	1.80	2.18	2.56	2.94	3.32	3.99	4.66	5.33	6.00	6.67	7.38	8.13	9.48
	3	4	5	5	8	8	8	9	9	9	9	9	16	16	16	16	16	18	18	44
6.4	.02	.15	.31	.48	.73	1.02	1.35	1.72	2.10	2.48	2.86	3.24	3.83	4.50	5.17	5.84	6.57	7.33	8.08	8.84
	3	4	4	6	7	7	9	9	9	9	9	9	16	16	16	16	18	18	18	18
5.6	.01	.13	.29	.46	.68	.97	1.28	1.62	1.95	2.32	2.70	3.08	3.53	4.28	5.04	5.80	6.55	7.31	8.06	8.82
	3	4	4	4	7	7	8	8	8	9	9	9	18	18	16	18	18	18	18	18
5.0	.01	.11	.27	.44	.63	.92	1.24	1.58	1.91	2.25	2.59	2.92	3.32	3.74	4.16	4.68	5.43	6.19	6.94	7.76
	2	4	4	4	7	7	8	8	8	8	8	8	10	10	10	18	18	18	18	20
4.5	.01	.10	.23	.40	.60	.88	1.18	1.47	1.77	2.09	2.44	2.82	3.19	3.57	3.95	4.50	5.25	6.01	6.76	7.52
	2	3	4	4	5	7	7	7	7	8	9	9	9	9	9	18	18	18	18	18
4.1	.01	.10	.22	.39	.59	.81	1.09	1.40	1.73	2.07	2.41	2.78	3.15	3.53	3.91	4.30	4.72	5.43	6.18	6.94
	2	2	4	4	5	6	7	8	8	8	8	9	9	9	9	10	10	18	18	18
3.8	.01	.10	.22	.38	.55	.80	1.09	1.38	1.68	1.97	2.31	2.69	3.06	3.44	3.86	4.28	4.70	5.12	5.54	5.96
	2	2	3	4	6	6	7	7	7	7	9	9	9	10	10	10	10	10	10	10
3.5	.01	.10	.21	.33	.54	.79	1.07	1.36	1.66	1.95	2.29	2.62	2.96	3.33	3.71	4.09	4.47	4.87	5.29	5.71
	2	2	3	4	6	6	7	7	7	8	8	8	8	9	9	9	9	10	10	10
3.2	.01	.09	.21	.33	.52	.77	1.02	1.30	1.60	1.94	2.28	2.61	2.95	3.28	3.62	3.97	4.35	4.72	5.10	5.48
	1	2	3	4	6	6	6	7	8	8	8	8	8	8	8	9	9	9	9	9
3.0	.01	.09	.20	.33	.50	.74	.99	1.25	1.52	1.86	2.20	2.53	2.87	3.20	3.54	3.90	4.28	4.65	5.03	5.41
	1	2	3	4	4	6	6	6	8	8	8	8	8	8	8	9	9	9	9	9
2.8	.01	.09	.19	.33	.50	.72	.97	1.23	1.48	1.78	2.12	2.45	2.79	3.12	3.47	3.85	4.23	4.60	4.98	5.36
	1	2	3	4	4	6	6	6	6	8	8	8	8	8	9	9	9	9	9	9
2.6	.01	.09	.19	.32	.49	.69	.94	1.20	1.45	1.70	1.95	2.20	2.49	2.82	3.16	3.50	3.88	4.25	4.63	5.01
	1	2	3	4	4	6	6	6	6	6	6	6	8	8	8	9	9	9	9	9
2.5	.01	.08	.16	.31	.48	.68	.93	1.19	1.44	1.69	1.94	2.19	2.45	2.74	3.03	3.32	3.62	3.94	4.32	4.70
	1	2	2	4	4	6	6	6	6	6	6	6	6	7	7	7	7	9	9	9
2.4	.01	.08	.16	.31	.48	.65	.85	1.11	1.36	1.61	1.86	2.13	2.42	2.72	3.01	3.30	3.60	3.93	4.31	4.69
	1	2	2	4	4	4	6	6	6	6	6	7	7	7	7	7	7	9	9	9
2.3	.01	.07	.15	.28	.45	.62	.80	1.06	1.31	1.56	1.81	2.06	2.32	2.57	2.87	3.21	3.54	3.88	4.21	4.55
	1	2	2	4	4	4	6	6	6	6	6	6	6	7	8	8	8	8	8	8
2.1	.01	.07	.15	.25	.41	.58	.76	.98	1.23	1.48	1.73	1.98	2.25	2.55	2.84	3.13	3.43	3.74	4.07	4.41
	1	2	2	3	4	4	5	6	6	6	6	6	7	7	7	7	7	8	8	8
2.0	.01	.06	.14	.24	.41	.58	.75	.96	1.21	1.46	1.71	1.96	2.22	2.48	2.77	3.06	3.36	3.65	3.95	4.24
	1	2	2	4	4	4	5	6	5	6	6	6	6	7	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
CANTEEN CREEK AT CASEYVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
90
80
70
60
55
50
45
40
35
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25
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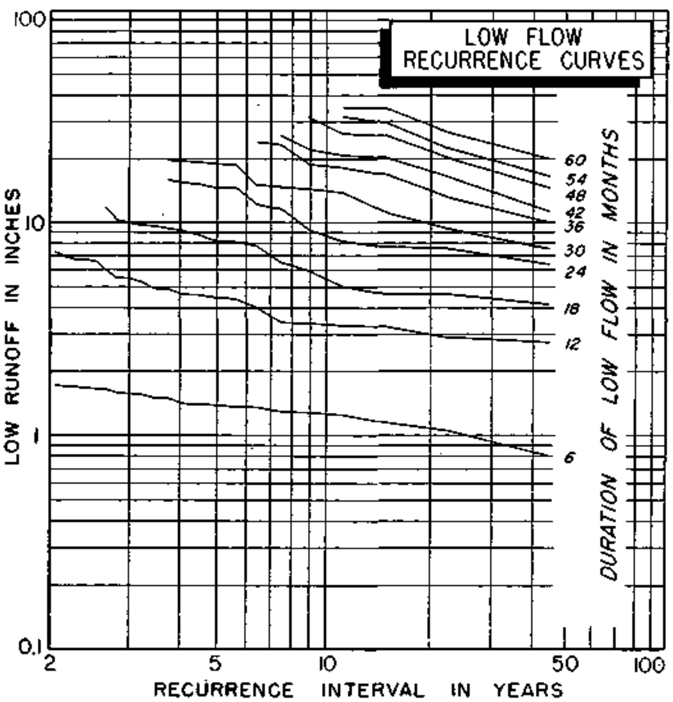
15
10
5

CRANE CREEK NEAR EASTON



STATION 50

LOCATION
In NE ¼ NW ¼ sec 26, T21N, R7W, Mason County, at highway bridge 1.25 miles northwest of Easton

DRAINAGE AREA
28.7 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1949 thru Sept 1959
CONTINUOUS RECORD : 10 years; water years 1950-59

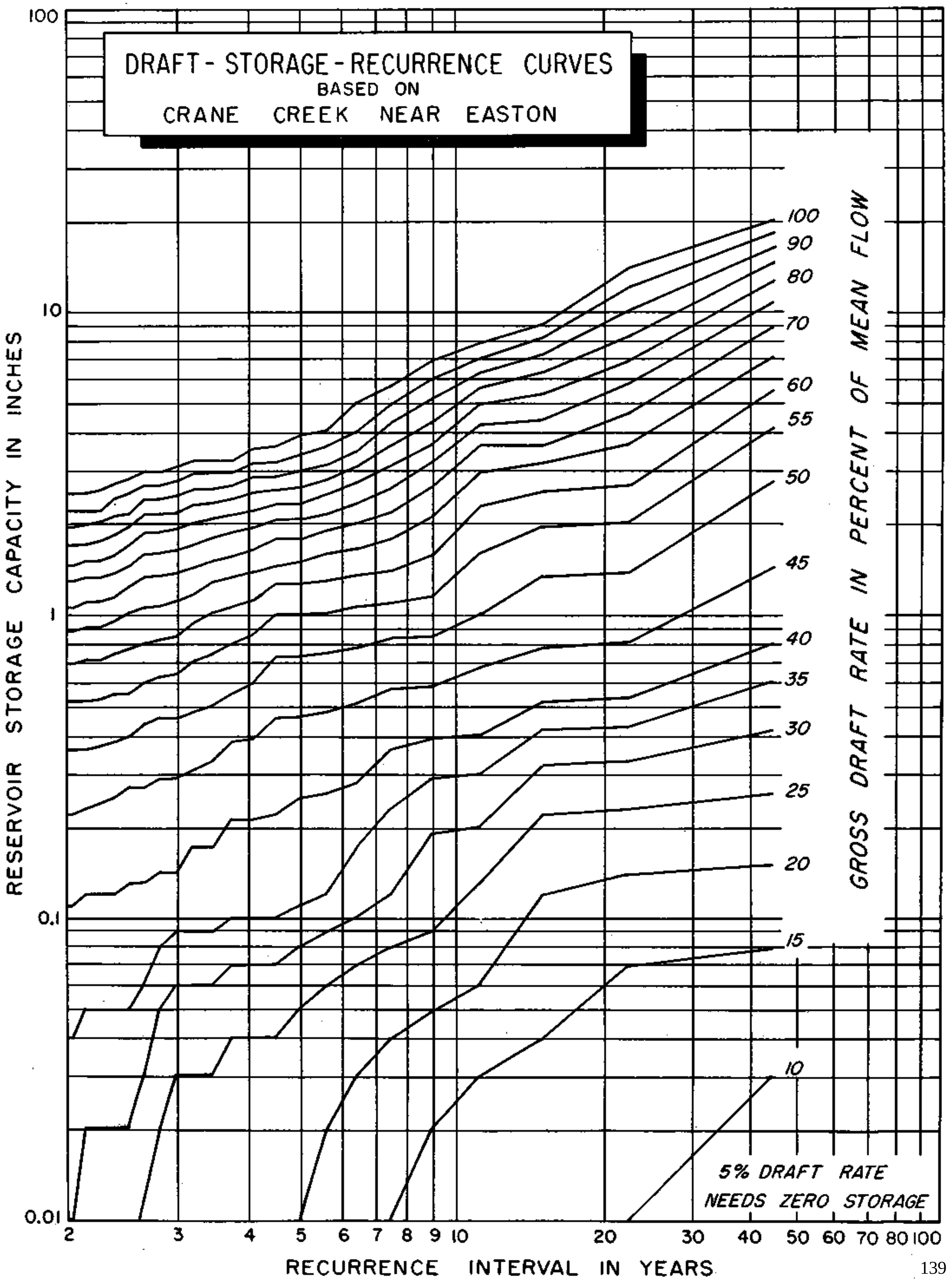
SYNTHETIC FLOW DATA
PERIOD: 35 years; water years 1915-49
INDEX STATION : Sangamon River at Riverton
COINCIDENT RECORD: 7 years; water years 1950-56

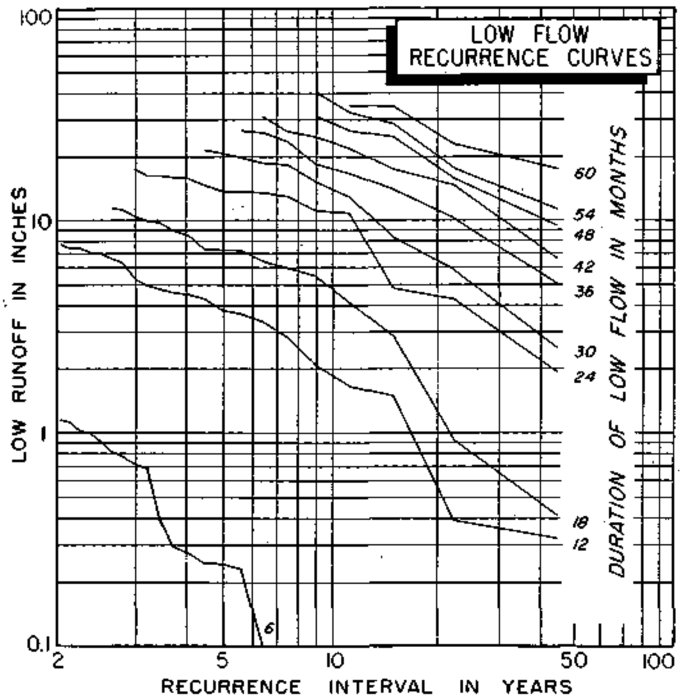
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.67 inch per month

Draft-Storage-Recurrence Data for Crane Creek near Easton

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.03	.08	.15	.26	.42	.61	.81	1.49	2.75	4.16	5.57	7.04	8.85	10.73	12.61	14.48	16.36	18.25	20.26
	1	1	2	2	4	5	6	6	30	42	42	44	44	56	55	56	56	56	60	60
22.5	.00	.01	.07	.14	.23	.33	.43	.54	.82	1.42	2.02	2.67	3.66	4.75	5.82	6.89	8.29	10.17	12.04	13.92
	0	1	2	2	3	3	3	6	18	18	18	30	32	32	32	32	56	56	56	56
15.0	.00	.00	.04	.12	.22	.32	.42	.52	.78	1.36	1.96	2.57	3.17	3.77	4.47	5.39	6.33	7.26	8.20	9.14
	0	1	2	3	3	3	3	3	16	18	18	18	18	18	26	28	28	28	28	28
11.3	.00	.00	.03	.06	.13	.20	.30	.40	.67	1.01	1.61	2.27	2.94	3.61	4.28	4.95	5.62	6.29	7.07	7.87
	0	1	1	2	2	3	3	7	9	18	18	20	20	20	20	20	20	22	24	24
9.0	.00	.00	.02	.05	.09	.19	.29	.39	.58	.85	1.17	1.58	2.12	2.65	3.19	3.73	4.33	5.13	5.98	6.65
	0	1	1	1	3	3	3	3	8	8	10	16	16	16	16	16	24	24	26	26
7.5	.00	.00	.01	.04	.08	.12	.23	.36	.57	.84	1.11	1.44	1.80	2.20	2.62	3.12	3.72	4.32	4.95	5.69
	0	1	1	1	1	3	4	4	8	8	10	10	12	12	14	18	18	18	22	22
6.4	.00	.00	.00	.03	.07	.10	.17	.28	.51	.78	1.08	1.38	1.68	2.00	2.37	2.74	3.10	3.47	4.04	5.04
	0	1	1	1	1	2	2	5	8	9	9	9	9	11	11	11	11	11	30	30
5.6	.00	.00	.00	.02	.06	.09	.12	.26	.48	.75	1.02	1.31	1.61	1.91	2.21	2.51	2.82	3.12	3.59	4.06
	0	1	1	1	1	1	2	5	8	8	8	9	9	9	9	9	9	14	14	14
5.0	.00	.00	.00	.01	.05	.08	.11	.25	.46	.73	1.00	1.27	1.53	1.80	2.07	2.34	2.66	2.99	3.37	3.91
	0	1	1	1	1	1	1	5	8	8	8	8	8	8	8	9	10	10	16	16
4.5	.00	.00	.00	.00	.04	.07	.10	.22	.45	.72	.99	1.26	1.52	1.79	2.06	2.33	2.60	2.86	3.16	3.59
	0	1	1	1	1	1	1	5	8	8	6	8	8	8	8	8	8	9	9	16
4.1	.00	.00	.00	.00	.04	.07	.10	.21	.39	.59	.86	1.13	1.39	1.66	1.94	2.24	2.55	2.85	3.15	3.53
	0	1	1	1	1	1	1	5	6	8	6	8	8	8	9	9	9	9	9	14
3.8	.00	.00	.00	.00	.04	.07	.10	.21	.38	.55	.80	1.07	1.33	1.60	1.87	2.14	2.41	2.67	2.94	3.23
	0	1	1	1	1	1	1	5	5	5	6	8	8	8	8	8	8	9	8	9
3.5	.00	.00	.00	.00	.03	.06	.09	.17	.33	.50	.74	1.01	1.27	1.54	1.81	2.08	2.35	2.63	2.93	3.23
	0	1	1	1	1	1	1	4	5	6	8	8	8	8	8	8	8	9	9	9
3.2	.00	.00	.00	.00	.03	.06	.09	.17	.31	.48	.71	.94	1.18	1.44	1.71	2.01	2.32	2.62	2.92	3.22
	0	1	1	1	1	1	1	4	4	7	7	7	7	8	9	9	9	9	9	9
3.0	.00	.00	.00	.00	.03	.06	.09	.14	.29	.46	.64	.85	1.11	1.38	1.65	1.92	2.19	2.48	2.78	3.08
	0	1	1	1	1	1	1	4	5	5	6	8	8	8	8	8	8	9	9	9
2.8	.00	.00	.00	.00	.02	.05	.08	.14	.29	.46	.63	.83	1.07	1.34	1.61	1.88	2.15	2.41	2.68	2.96
	-1	1	1	1	1	1	1	4	5	5	6	6	8	8	8	8	8	8	8	9
2.6	.00	.00	.00	.00	.00	.03	.06	.13	.27	.44	.60	.80	1.06	1.33	1.60	1.87	2.14	2.40	2.67	2.94
	-1	1	1	1	1	1	1	4	5	5	5	8	8	8	6	8	8	8	8	8
2.5	.00	.00	.00	.00	.00	.02	.05	.13	.27	.40	.55	.77	1.01	1.24	1.48	1.71	1.95	2.22	2.52	2.82
	-1	1	1	1	1	1	1	4	4	4	6	7	7	7	7	7	7	9	9	9
2.4	.00	.00	.00	.00	.00	.02	.05	.12	.25	.36	.55	.75	.95	1.15	1.37	1.60	1.84	2.12	2.42	2.72
	-1	1	1	1	1	1	1	3	4	4	6	6	6	6	7	7	7	9	9	9
2.3	.00	.00	.00	.00	.00	.02	.05	.12	.24	.37	.53	.71	.91	1.11	1.32	1.52	1.77	2.03	2.30	2.57
	-1	1	1	1	1	1	1	3	4	5	5	6	6	6	6	6	8	8	8	8
2.1	.00	.00	.00	.00	.00	.02	.05	.12	.23	.36	.52	.71	.91	1.11	1.32	1.52	1.73	1.97	2.24	2.53
	-1	1	1	1	1	1	1	3	4	5	5	6	6	6	6	6	7	8	8	9
2.0	.00	.00	.00	.00	.00	.01	.04	.11	.22	.36	.52	.69	.88	1.08	1.29	1.49	1.71	1.94	2.23	2.53
	-1	1	1	1	1	1	1	3	4	5	5	5	6	6	6	6	7	7	9	9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
CRANE CREEK NEAR EASTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5% DRAFT RATE
NEEDS ZERO STORAGE



STATION 63

LOCATION
In SE ¼ SE ¼ sec 24, T13N, R2W, Christian County, at bridge on Ill. 29, 1.4 miles east of Taylorville

DRAINAGE AREA
276 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1949 thru Sept 1959
CONTINUOUS RECORD: 10 years; water years 1950-59

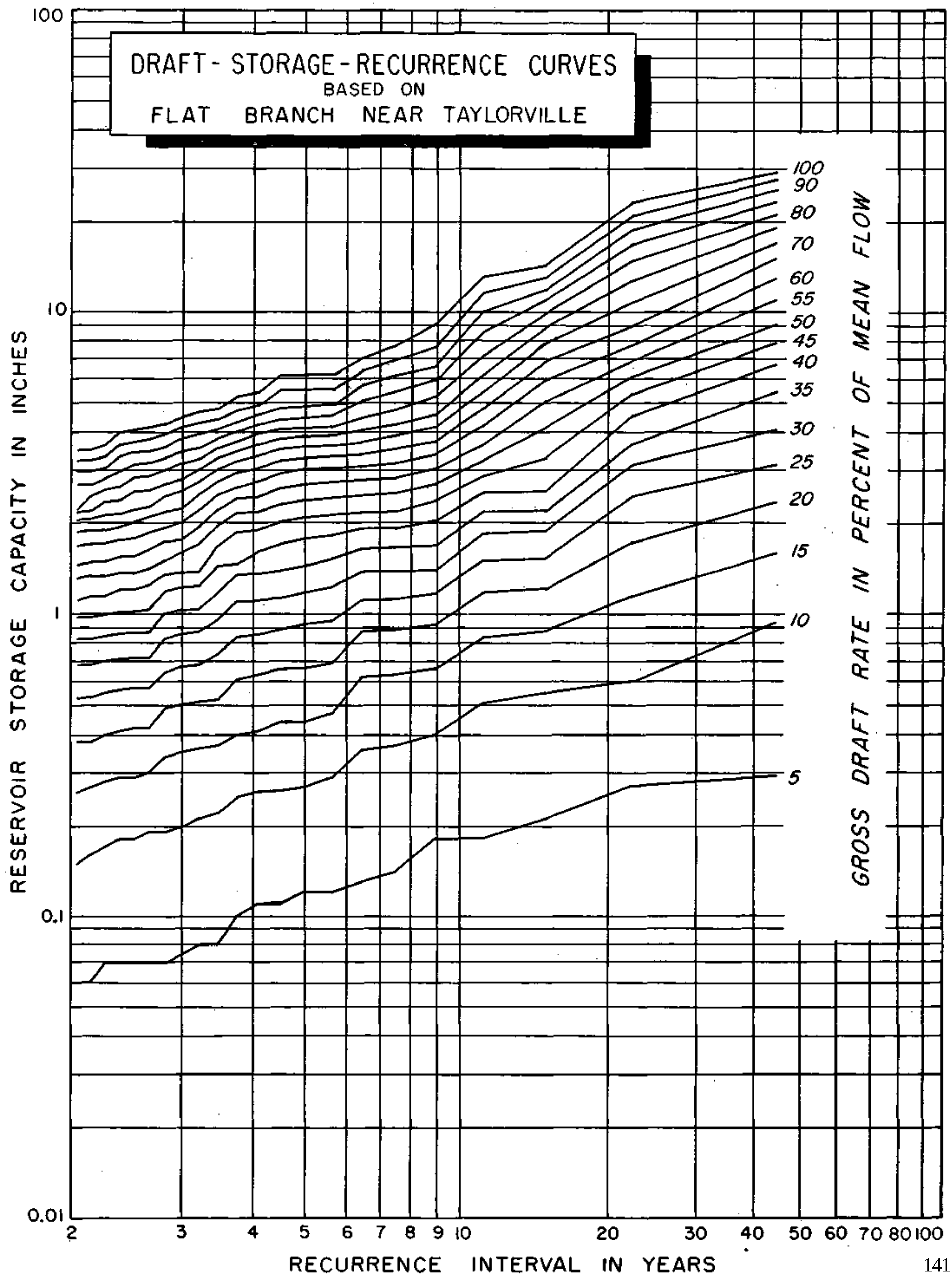
SYNTHETIC FLOW DATA
PERIOD: 35 years; water years 1915-49
INDEX STATION : South Fork of Sangamon River near Kincaid
COINCIDENT RECORD: 10 years; water years 1950-59

TOTAL DATA ANALYZED
PERIOD : 45 years; water years 1915-59
MEAN DISCHARGE : 0.75 inch per month

Draft-Storage-Recurrence Data for Flat Branch near Taylorville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.29	.94	1.62	2.36	3.12	4.27	5.47	6.67	7.87	9.09	10.98	13.00	15.03	17.05	19.08	21.17	23.27	25.37	27.47	29.57
	8	18	16	20	30	32	32	32	32	42	54	54	54	54	54	56	56	56	56	56
22.5	.27	.60	1.15	1.77	2.45	3.12	3.87	4.62	5.37	6.12	6.87	7.76	8.96	10.73	12.76	14.78	16.81	18.83	20.86	22.96
	8	14	16	18	18	20	20	20	20	20	20	32	32	54	54	5	54	54	56	56
15.0	.21	.55	.88	1.22	1.56	1.90	2.23	2.57	3.26	4.18	5.08	5.98	6.88	7.86	8.91	9.9	11.01	12.06	13.11	14.29
	9	9	9	9	9	9	9	9	24	24	24	24	24	28	28	28	28	28	28	40
11.3	.18	.51	.84	1.18	1.52	1.86	2.19	2.53	2.87	3.21	3.73	4.25	4.83	5.43	6.19	7.16	8.58	10.08	11.58	13.08
	6	9	9	9	9	9	9	9	9	9	14	14	16	16	26	26	40	40	40	40
9.0	.18	.40	.66	.92	1.18	1.45	1.71	2.04	2.38	2.72	3.05	3.39	3.75	4.20	4.65	5.26	5.94	6.61	7.64	9.14
	6	7	7	7	7	7	7	9	9	9	9	9	12	12	12	18	18	18	40	40
7.5	.14	.37	.63	.89	1.15	1.42	1.68	1.94	2.21	2.51	2.83	3.17	3.54	3.91	4.29	4.77	5.45	6.18	6.93	7.68
	6	7	7	7	7	7	7	7	8	8	9	9	10	10	10	18	18	20	20	20
6.4	.13	.36	.62	.88	1.14	1.41	1.67	1.93	2.19	2.48	2.78	3.08	3.40	3.74	4.10	4.51	5.03	5.70	6.38	7.05
	6	7	7	7	7	7	7	7	7	8	8	8	9	9	11	11	18	18	18	18
5.6	.12	.29	.47	.69	.95	1.24	1.54	1.84	2.14	2.44	2.74	3.04	3.34	3.64	3.94	4.24	4.56	4.95	5.55	6.22
	4	5	5	7	7	8	8	8	8	8	8	8	8	8	8	8	10	14	18	18
5.0	.12	.27	.44	.66	.92	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.30	3.60	3.90	4.20	4.50	4.86	5.54	6.21
	4	4	6	7	7	8	8	8	8	8	8	8	8	8	8	8	8	18	18	18
4.5	.11	.26	.44	.66	.89	1.14	1.42	1.72	2.02	2.32	2.62	2.92	3.22	3.52	3.82	4.12	4.43	4.81	5.49	6.16
	4	5	6	6	6	7	8	8	8	8	8	8	8	8	8	8	9	18	18	18
4.1	.11	.26	.41	.63	.86	1.13	1.39	1.65	1.91	2.18	2.45	2.75	3.05	3.35	3.65	3.95	4.25	4.59	4.92	5.41
	4	4	6	6	7	7	7	7	7	7	8	8	8	8	8	8	9	9	9	14
3.8	.10	.25	.40	.61	.84	1.11	1.37	1.63	1.89	2.16	2.42	2.68	2.94	3.21	3.47	3.73	4.00	4.34	4.73	5.25
	4	4	4	6	7	7	7	7	7	7	7	7	7	7	7	7	9	9	14	14
3.5	.08	.22	.37	.52	.74	.96	1.19	1.44	1.70	1.97	2.23	2.49	2.75	3.02	3.28	3.54	3.80	4.07	4.42	4.79
	3	4	4	4	6	6	6	7	7	7	7	7	7	7	7	7	7	7	10	10
3.2	.08	.21	.36	.51	.68	.87	1.05	1.24	1.43	1.70	1.96	2.22	2.48	2.75	3.01	3.27	3.55	3.91	4.29	4.66
	3	4	4	4	5	5	5	5	7	7	7	7	7	7	7	7	9	10	10	10
3.0	.07	.20	.35	.50	.67	.86	1.04	1.23	1.42	1.61	1.79	2.01	2.27	2.54	2.80	3.14	3.48	3.82	4.15	4.49
	3	4	4	4	5	5	5	5	5	5	5	7	7	7	9	9	9	9	9	9
2.8	.07	.19	.34	.49	.64	.83	1.01	1.20	1.39	1.58	1.76	1.95	2.19	2.46	2.72	2.99	3.29	3.60	3.93	4.27
	3	4	4	4	5	5	5	5	5	5	5	5	7	7	7	8	8	9	9	9
2.6	.07	.19	.30	.42	.57	.72	.87	1.06	1.25	1.44	1.66	1.88	2.11	2.33	2.59	2.87	3.17	3.47	3.80	4.14
	3	3	3	4	4	4	5	5	5	5	6	6	6	7	7	8	8	9	9	9
2.5	.07	.18	.29	.42	.57	.72	.87	1.02	1.21	1.40	1.58	1.80	2.03	2.25	2.54	2.84	3.14	3.44	3.74	4.06
	2	3	3	4	4	4	4	5	5	5	6	6	6	6	8	8	8	8	9	9
2.4	.07	.18	.29	.41	.56	.71	.86	1.02	1.21	1.40	1.56	1.77	1.96	2.16	2.39	2.65	2.98	3.32	3.65	3.99
	2	3	3	4	4	4	4	5	5	5	5	5	5	6	6	8	9	9	9	9
2.3	.07	.17	.28	.40	.55	.70	.85	1.00	1.16	1.35	1.53	1.72	1.92	2.14	2.37	2.59	2.82	3.06	3.33	3.67
	2	3	3	4	4	4	4	4	5	5	5	5	6	6	6	6	6	7	9	9
2.1	.06	.16	.27	.38	.53	.68	.83	.98	1.16	1.35	1.53	1.72	1.91	2.10	2.28	2.47	2.70	2.97	3.23	3.49
	2	3	3	4	4	4	4	4	5	5	5	5	5	5	5	5	7	7	7	7
2.0	.06	.15	.26	.38	.53	.68	.83	.98	1.13	1.32	1.50	1.69	1.88	2.07	2.25	2.44	2.70	2.97	3.23	3.49
	2	3	3	4	4	4	4	4	5	5	5	5	5	5	5	7	7	7	7	7



DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
FLAT BRANCH NEAR TAYLORVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
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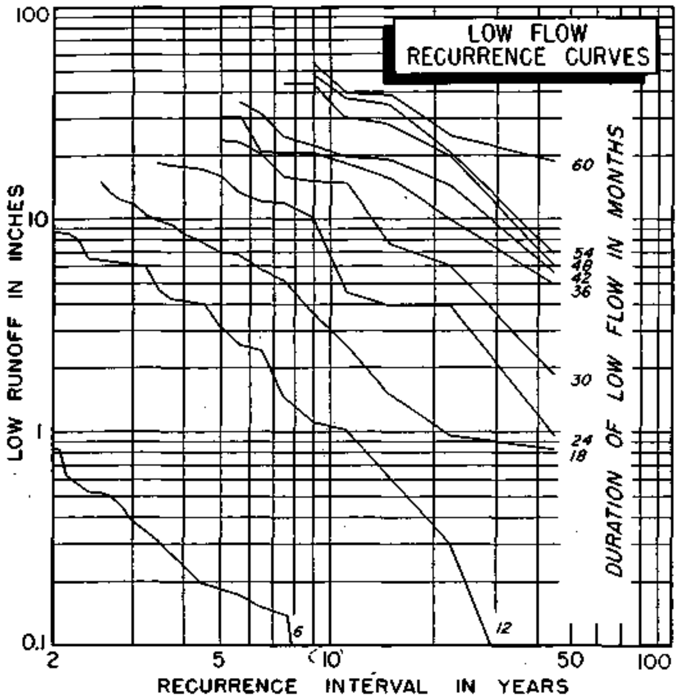
5

HURRICANE CREEK NEAR ROODHOUSE



STATION 77

LOCATION
In NE ¼ sec 15, T12N, R12W, Greene County, 150 feet downstream from bridge on Ill. 106, 2.0 miles west of Roodhouse

DRAINAGE AREA
2.33 square miles

ACTUAL FLOW DATA
PERIOD: Aug 1950 thru Sept 1959
CONTINUOUS RECORD: 9 years; water years 1951-59

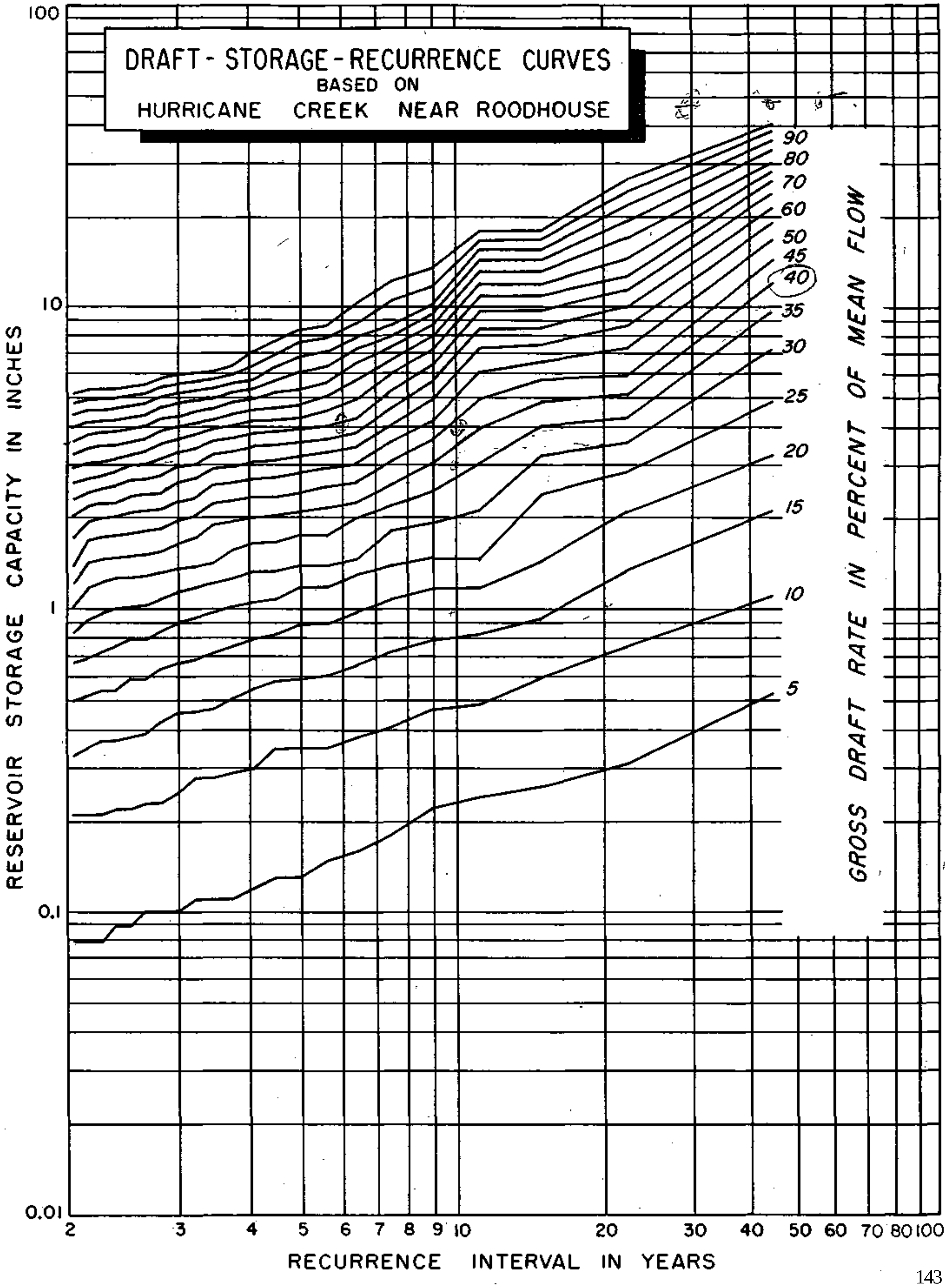
SYNTHETIC FLOW DATA
PERIOD: 36 years; water years 1915-50
INDEX STATION: Macoupin Creek near Kane
COINCIDENT RECORD: 9 years; water years 1951-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.85 inch per month

Draft-Storage-Recurrence Data for Hurricane Creek near Roodhouse

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.53 14	1.12 14	2.14 26	3.27 30	4.94 56	7.32 56	9.70 56	12.08 56	14.46 56	16.84 56	19.22 56	21.60 56	23.98 56	26.36 56	28.74 56	31.12 56	33.56 58	36.02 58	38.49 58	40.95 58
22.5	.31 10	.76 11	1.35 18	2.11 18	2.88 18	3.64 18	4.41 18	5.17 18	5.98 32	7.34 32	8.70 32	10.06 32	11.42 34	12.86 34	14.68 56	17.06 56	19.44 56	21.87 58	24.34 58	26.81 60
15.0	.26 8	.60 8	.94 9	1.60 18	2.41 20	3.26 20	4.11 20	4.96 20	5.81 20	6.66 22	7.60 22	8.62 28	9.81 28	11.00 28	12.19 28	13.38 28	14.57 28	15.76 28	16.95 28	18.14 28
11.3	.24 6	.49 8	.83 8	1.19 10	1.62 10	2.14 22	3.08 22	4.01 22	4.99 26	6.16 28	7.35 28	8.54 28	9.73 28	10.92 28	12.11 26	13.30 28	14.49 28	15.68 28	16.87 28	18.06 28
9.0	.22 6	.47 6	.79 9	1.17 9	1.55 9	1.94 9	2.47 14	3.06 14	3.66 14	4.28 16	4.96 16	5.69 18	6.46 18	7.22 18	7.99 18	8.75 18	9.52 18	10.28 18	11.74 40	13.51 44
7.5	.18 5	.41 7	.73 8	1.08 9	1.46 9	1.85 9	2.23 9	2.62 12	3.13 12	3.64 12	4.15 12	4.67 16	5.35 16	6.03 16	6.71 16	7.39 16	8.07 16	8.78 18	10.46 44	12.33 44
6.4	.16 5	.38 5	.66 7	.98 8	1.32 8	1.66 8	2.00 8	2.34 8	2.68 8	3.04 10	3.47 10	3.89 10	4.34 11	5.04 18	5.81 18	6.57 18	7.34 18	8.10 18	8.87 18	10.42 38
5.6	.15 4	.35 6	.61 6	.90 7	1.20 7	1.50 7	1.80 9	2.18 9	2.56 9	2.95 9	3.33 9	3.71 9	4.09 10	4.58 12	5.09 12	5.65 18	6.42 18	7.18 18	7.95 18	8.71 18
5.0	.13 5	.35 5	.59 7	.89 7	1.19 7	1.49 7	1.78 7	2.10 8	2.44 9	2.83 9	3.21 9	3.59 9	3.97 9	4.36 9	4.74 9	5.35 18	6.12 18	6.88 18	7.65 18	8.41 18
4.5	.13 5	.35 5	.58 6	.83 6	1.09 6	1.35 8	1.69 8	2.03 8	2.37 8	2.74 9	3.12 9	3.50 9	3.88 9	4.27 9	4.65 9	5.18 14	5.78 14	6.37 14	6.97 18	7.73 18
4.1	.12 3	.30 5	.55 6	.80 6	1.06 6	1.34 8	1.68 8	2.02 8	2.36 8	2.71 9	3.09 9	3.47 9	3.85 9	4.24 9	4.62 9	5.00 9	5.38 9	5.77 9	6.43 18	7.19 18
3.8	.11 [illegible]	.29 5	.51 6	.76 6	1.02 6	1.27 8	1.61 8	1.95 8	2.29 8	2.63 8	2.97 8	3.33 9	3.71 9	4.10 9	4.48 9	4.86 9	5.24 9	5.63 9	6.01 9	6.39 9
3.5	.11 4	.28 4	.47 6	.72 6	.98 6	1.23 8	1.57 8	1.91 8	2.25 8	2.59 8	2.93 8	3.27 8	3.61 8	3.95 8	4.29 8	4.64 9	5.02 9	5.41 9	5.79 9	6.17 9
3.2	.11 4	.28 4	.46 5	.68 6	.94 6	1.19 6	1.45 6	1.70 7	2.03 8	2.37 8	2.71 8	3.05 8	3.41 9	3.80 9	4.18 9	4.56 9	4.94 9	5.33 9	5.71 9	6.09 10
3.0	.10 3	.25 5	.46 5	.67 5	.91 6	1.16 6	1.42 6	1.67 6	1.98 8	2.32 8	2.66 8	3.00 8	3.34 8	3.69 9	4.07 9	4.45 9	4.83 9	5.22 9	5.60 9	5.98 9
2.8	.10 3	.23 4	.43 5	.64 5	.85 5	1.09 6	1.35 6	1.60 6	1.86 6	2.15 7	2.44 8	2.79 9	3.17 9	3.56 9	3.94 9	4.32 9	4.70 9	5.09 9	5.47 9	5.85 9
2.6	.10 3	.23 3	.39 4	.59 5	.80 5	1.03 6	1.29 6	1.54 6	1.83 7	2.13 7	2.42 7	2.72 7	3.03 8	3.37 8	3.71 8	4.07 9	4.45 9	4.84 9	5.22 9	5.60 9
2.5	.09 3	.22 3	.38 5	.59 5	.80 5	1.02 5	1.27 6	1.52 6	1.80 7	2.10 7	2.39 7	2.69 7	2.99 7	3.29 7	3.60 9	3.98 9	4.36 9	4.75 9	5.13 9	5.51 9
2.4	.09 3	.22 3	.37 4	.54 5	.76 6	1.01 6	1.27 6	1.52 6	1.78 6	2.03 6	2.29 6	2.57 7	2.87 7	3.17 8	3.51 8	3.87 9	4.25 9	4.64 9	5.02 9	5.40 9
2.3	.08 3	.21 3	.37 4	.54 4	.73 6	.98 6	1.24 6	1.49 6	1.75 6	2.00 6	2.26 6	2.51 6	2.77 6	3.10 9	3.48 9	3.86 9	4.24 9	4.63 9	5.01 9	5.39 9
2.1	.08 3	.21 3	.35 4	.52 4	.69 4	.92 6	1.18 6	1.43 6	1.69 6	1.94 6	2.20 6	2.45 6	2.71 6	3.05 9	3.43 9	3.81 9	4.19 9	4.58 9	4.96 9	5.34 9
2.0	.08 3	.21 3	.33 4	.50 4	.67 4	.84 4	1.02 5	1.23 6	1.49 6	1.76 7	2.05 7	2.35 7	2.65 7	2.95 7	3.29 9	3.67 9	4.05 9	4.44 9	4.82 9	5.20 9



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
HURRICANE CREEK NEAR ROODHOUSE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
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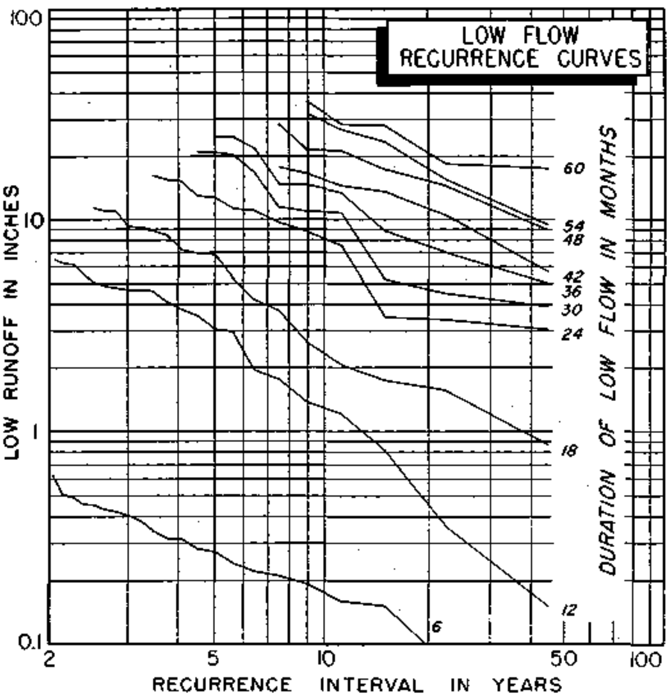
INDIAN CREEK AT WANDA



STATION 81

LOCATION
In SE ¼ NW ¼ sec 31, T5N, R8W, Madison County, at bridge on Ill. 159, .75 mile northeast of Wanda, and 5.0 miles west of Edwardsville

DRAINAGE AREA
37.0 square miles

ACTUAL FLOW DATA
PERIOD : Apr 1940 thru Sept 1959
CONTINUOUS RECORD: 19 years; water years 1941-59

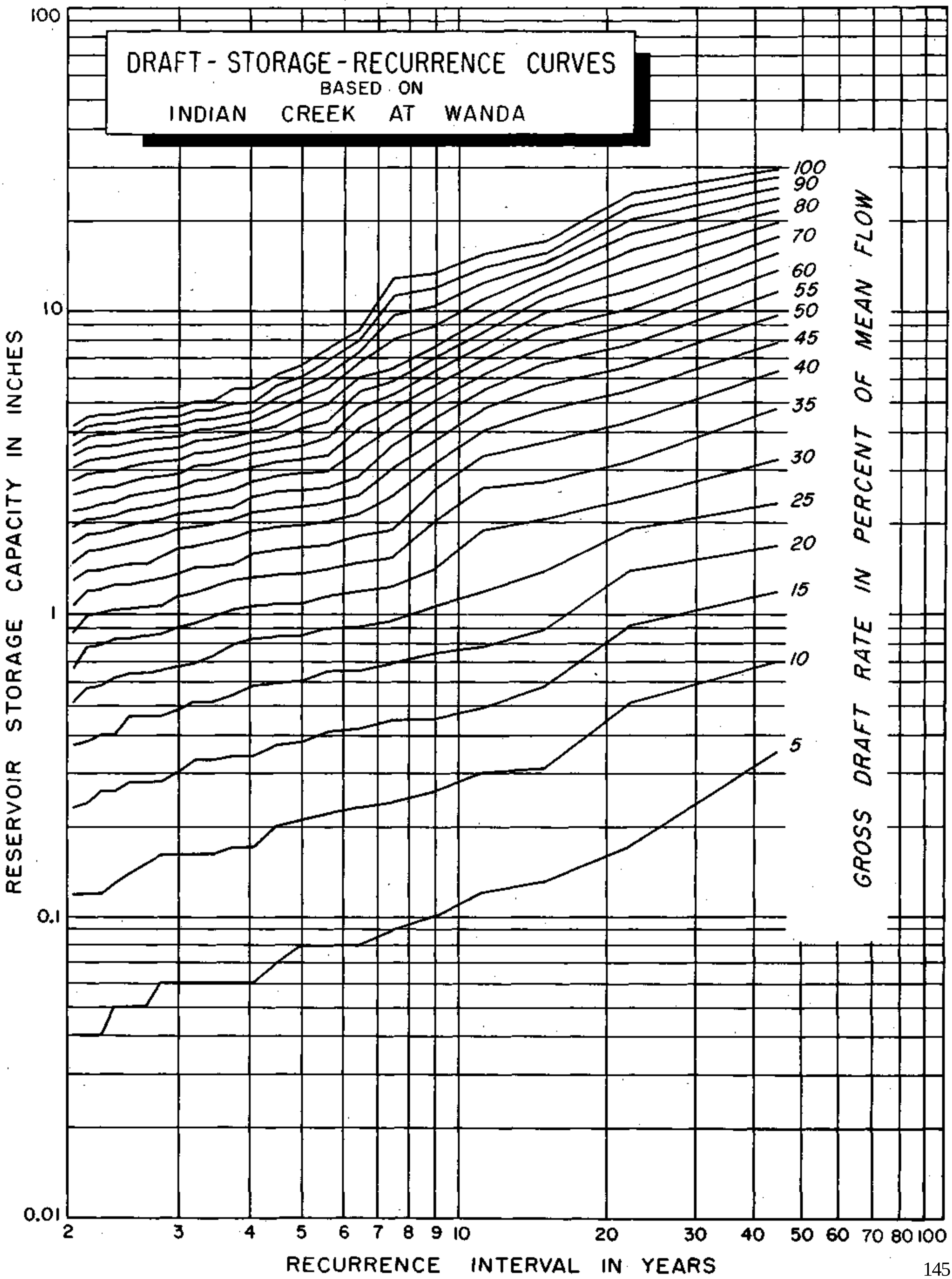
SYNTHETIC FLOW DATA
PERIOD : 26 years; water years 1915-40
INDEX STATION : Macoupin Creek near Kane
COINCIDENT RECORD: 19 years; water years 1941-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.71 inch per month

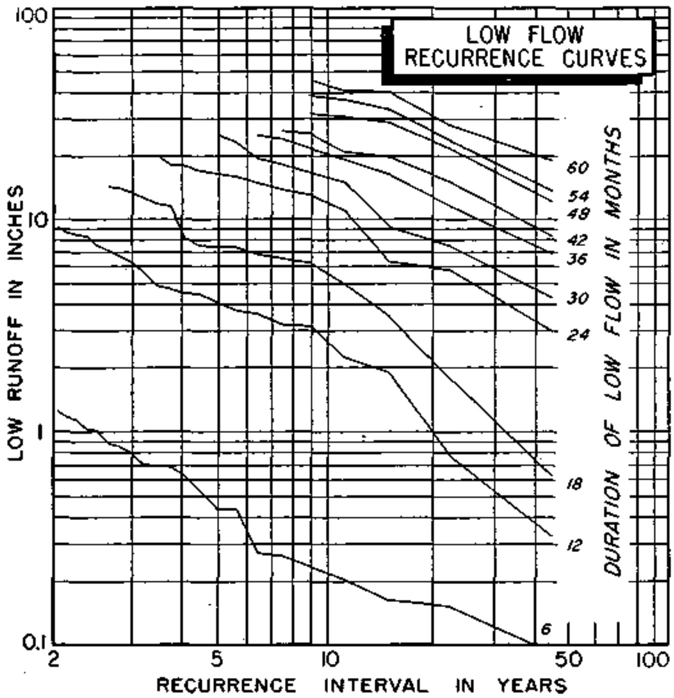
Draft-Storage-Recurrence Data for Indian Creek at Wanda

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
	Gross draft rate in percent of mean flow																			
45.0	.35	.70	1.18	1.69	2.33	3.26	4.78	6.35	7.91	9.70	11.62	13.57	15.55	17.54	19.53	21.52	23.51	25.49	27.48	29.47
	10	12	14	18	18	42	44	44	44	54	54	56	56	56	56	56	56	56	56	56
22.5	.17	.51	.92	1.42	1.92	2.41	3.22	4.36	5.49	6.63	7.80	9.00	10.21	11.73	13.79	15.84	17.94	20.07	22.20	24.33
	5	11	14	14	14	14	32	32	32	32	34	34	34	58	58	58	60	60	60	60
15.0	.13	.31	.58	.89	1.43	2.06	2.74	3.70	4.70	5.69	6.68	7.68	8.70	9.83	10.97	12.11	13.24	14.38	15.51	16.92
	5	7	8	9	18	18	26	28	28	28	28	28	32	32	32	32	32	32	32	46
11.3	.12	.30	.49	.78	1.18	1.89	2.60	3.31	4.02	4.73	5.44	6.15	6.87	7.65	8.44	9.39	10.88	12.37	13.86	15.35
	5	5	6	9	20	20	20	20	20	20	20	20	22	22	22	42	42	42	42	42
9.0	.10	.26	.45	.74	1.06	1.44	2.01	2.57	3.14	3.76	4.40	5.04	5.68	6.32	6.96	7.59	8.88	10.36	11.85	13.34
	4	5	7	9	9	16	16	16	16	18	18	18	18	18	18	18	40	42	42	42
7.5	.09	.24	.45	.69	.95	1.23	1.55	1.90	2.47	3.04	3.61	4.18	4.74	5.31	5.88	6.49	8.05	9.62	11.18	12.74
	3	5	7	7	8	9	9	16	16	16	16	16	16	16	16	44	44	44	44	44
6.4	.08	.23	.42	.65	.90	1.19	1.51	1.83	2.15	2.47	2.65	3.49	4.13	4.77	5.41	6.04	6.68	7.32	7.96	8.60
	3	5	6	7	8	9	9	9	9	9	18	18	18	18	18	18	18	18	18	18
5.6	.08	.22	.41	.65	.90	1.15	1.42	1.70	2.02	2.34	2.65	2.97	3.34	3.84	4.34	4.93	5.57	6.21	6.85	7.49
	3	5	7	7	7	7	8	9	9	9	9	9	14	14	14	18	18	18	18	18
5.0	.08	.21	.38	.60	.85	1.10	1.39	1.67	1.96	2.28	2.59	2.91	3.23	3.59	4.09	4.58	5.08	5.58	6.07	6.57
	3	5	5	7	7	8	8	8	9	9	9	9	9	14	14	14	14	14	14	14
4.5	.07	.20	.37	.59	.84	1.09	1.36	1.64	1.93	2.23	2.54	2.86	3.18	3.50	3.82	4.17	4.67	5.17	5.66	6.16
	3	5	5	7	7	7	8	8	8	9	9	9	9	9	9	14	14	14	14	14
4.1	.06	.17	.34	.58	.83	1.08	1.33	1.60	1.89	2.17	2.45	2.75	3.07	3.39	3.71	4.03	4.35	4.67	4.99	5.56
	3	5	7	7	7	7	7	8	8	8	8	9	9	9	9	9	9	9	16	18
3.8	.06	.17	.34	.54	.79	1.04	1.29	1.54	1.79	2.04	2.29	2.59	2.91	3.23	3.55	3.87	4.19	4.51	4.95	5.52
	3	5	5	7	7	7	7	7	7	7	8	9	9	9	9	9	9	9	16	16
3.5	.06	.16	.33	.51	.73	.98	1.23	1.48	1.73	1.98	2.22	2.47	2.79	3.11	3.43	3.75	4.07	4.39	4.71	5.03
	3	5	5	6	7	7	7	7	7	7	7	9	9	9	9	9	9	9	9	9
3.2	.06	.16	.33	.51	.69	.93	1.18	1.43	1.68	1.93	2.17	2.45	2.77	3.09	3.41	3.73	4.05	4.37	4.69	5.01
	3	5	5	5	6	7	7	7	7	7	7	9	9	9	9	9	9	9	9	9
3.0	.06	.16	.30	.48	.67	.90	1.15	1.40	1.65	1.90	2.14	2.39	2.64	2.89	3.21	3.53	3.85	4.17	4.49	4.81
	3	3	5	5	6	7	7	7	7	7	7	7	7	9	9	9	9	9	9	9
2.8	.06	.16	.28	.46	.65	.86	1.07	1.31	1.56	1.81	2.05	2.30	2.55	2.84	3.16	3.48	3.80	4.12	4.44	4.76
	3	3	5	5	6	6	6	7	7	7	7	7	7	9	9	9	9	9	9	9
2.6	.05	.15	.28	.46	.64	.85	1.06	1.28	1.53	1.78	2.02	2.27	2.52	2.83	3.15	3.47	3.79	4.11	4.43	4.75
	3	3	5	5	6	6	6	7	7	7	7	7	7	9	9	9	9	9	9	9
2.5	.05	.14	.28	.46	.64	.83	1.04	1.25	1.47	1.72	1.96	2.21	2.46	2.75	3.07	3.39	3.71	4.03	4.35	4.67
	2	3	5	5	5	6	6	6	7	7	7	7	7	9	9	9	9	9	9	9
2.4	.05	.13	.26	.40	.62	.83	1.04	1.25	1.47	1.68	1.89	2.11	2.35	2.64	2.96	3.28	3.60	3.92	4.24	4.56
	2	3	4	6	6	6	6	6	6	6	6	6	8	9	9	9	9	9	9	9
2.3	.04	.12	.26	.40	.58	.79	1.00	1.21	1.43	1.64	1.85	2.07	2.32	2.62	2.94	3.26	3.58	3.90	4.22	4.54
	2	3	4	4	6	6	6	6	6	6	6	7	7	9	9	9	9	9	9	9
2.1	.04	.12	.24	.38	.57	.78	.99	1.20	1.42	1.63	1.84	2.06	2.27	2.57	2.89	3.21	3.53	3.85	4.17	4.49
	2	3	4	4	6	6	6	6	6	6	6	6	6	9	9	9	9	9	9	9
2.0	.04	.12	.23	.37	.51	.66	.87	1.08	1.30	1.51	1.72	1.94	2.20	2.49	2.77	3.05	3.34	3.62	3.91	4.19
	2	3	4	4	4	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
INDIAN CREEK AT WANDA
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100



STATION 87

LOCATION
In SE ¼ sec 18, T2N, R2W, Clinton County, at bridge on U. S. 50 at Carlyle

DRAINAGE AREA
2680 square miles

ACTUAL FLOW DATA
PERIOD: Apr 1908 thru Sept 1912, Nov 1913 thru Dec 1913, Sept 1914 thru Sept 1915, Mar 1938 thru Sept 1959
CONTINUOUS RECORD: 21 years; water years 1939-59

SYNTHETIC FLOW DATA
PERIOD: 23 years; water years 1916-38
INDEX STATION : Kaskaskia River at Vandalia
COINCIDENT RECORD: 16 years; water years 1915, 1939-53

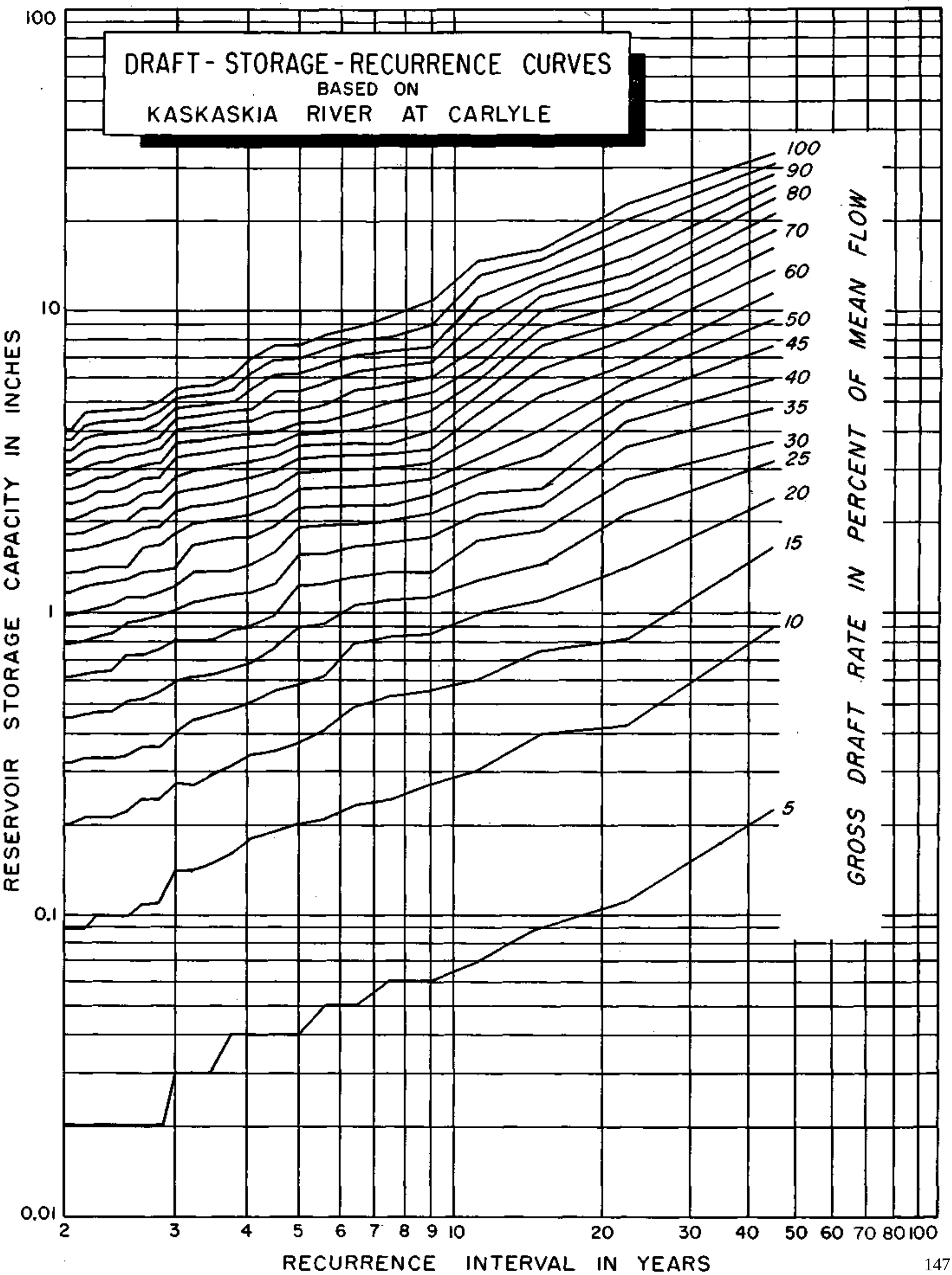
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.84 inch per month

Draft-Storage-Recurrence Data for Kaskaskia River at Carlyle

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.22	.89	1.65	2.40	3.16	3.92	4.75	5.93	7.60	9.36	11.41	13.68	16.03	18.46	20.90	23.34	25.77	28.21	30.64	33.08
	16	18	18	18	18	18	20	32	42	42	54	54	58	58	56	58	58	56	58	58
22.5	.11	.42	.82	1.43	2.10	2.77	3.51	4.27	5.02	5.78	6.63	7.98	9.32	10.67	12.01	13.35	15.01	17.38	19.90	22.42
	7	8	14	16	16	16	18	18	18	18	32	32	32	32	32	32	42	60	60	60
15.0	.09	.40	.74	1.11	1.49	1.87	2.25	2.62	3.30	4.06	5.21	6.38	7.56	8.73	9.91	11.09	12.26	13.44	14.67	15.93
	6	8	8	9	9	9	9	9	18	18	28	28	28	28	28	28	28	28	30	30
11.3	.07	.30	.60	.98	1.36	1.74	2.12	2.49	2.87	3.25	3.89	4.56	5.24	5.91	6.56	7.55	9.32	11.08	12.85	14.61
	5	6	9	9	9	9	9	9	9	9	16	16	16	16	16	42	42	42	42	42
9.0	.06	.27	.55	.85	1.14	1.46	1.79	2.13	2.46	2.80	3.14	3.47	4.03	4.70	5.37	6.04	6.73	7.57	8.94	10.79
	3	6	7	7	7	8	8	8	8	8	8	8	16	16	16	16	20	20	44	44
7.5	.06	.24	.53	.83	1.12	1.41	1.71	2.01	2.34	2.68	3.02	3.35	3.69	4.29	4.96	5.65	6.49	7.33	8.17	9.55
	3	7	7	7	7	7	7	8	8	8	8	8	10	16	16	20	20	20	20	44
6.4	.05	.23	.49	.79	1.08	1.37	1.67	1.96	2.29	2.63	2.97	3.30	3.65	4.03	4.60	5.44	6.28	7.12	7.96	8.80
	3	6	7	7	7	7	7	8	8	8	8	8	9	9	20	20	20	20	20	20
5.6	.05	.21	.41	.62	.92	1.26	1.59	1.93	2.26	2.60	2.94	3.27	3.61	3.94	4.32	4.90	5.74	6.58	7.42	8.26
	3	4	5	5	8	8	8	8	8	8	8	8	8	9	9	20	20	20	20	20
5.0	.04	.20	.37	.58	.89	1.23	1.56	1.90	2.23	2.57	2.91	3.24	3.58	3.91	4.25	4.66	5.41	6.17	6.92	7.68
	3	4	5	6	8	8	8	8	8	8	8	8	8	8	8	18	18	18	18	18
4.5	.04	.19	.35	.55	.76	.98	1.25	1.59	1.92	2.26	2.60	2.93	3.27	3.60	3.96	4.60	5.35	6.11	6.86	7.62
	3	4	4	5	5	6	8	8	8	8	8	8	8	8	9	18	18	18	18	18
4.1	.04	.18	.34	.51	.68	.89	1.19	1.48	1.78	2.11	2.45	2.79	3.16	3.54	3.92	4.30	4.72	5.46	6.23	6.99
	3	4	4	4	4	7	7	7	7	8	8	9	9	9	9	9	18	18	18	18
3.8	.04	.16	.31	.48	.65	.87	1.17	1.46	1.76	2.05	2.35	2.73	3.10	3.48	3.86	4.24	4.62	4.99	5.47	6.14
	3	3	4	4	4	7	7	7	7	7	9	9	9	9	9	9	9	9	16	16
3.5	.03	.15	.29	.46	.63	.82	1.12	1.41	1.71	2.00	2.30	2.63	3.00	3.38	3.76	4.14	4.52	4.89	5.27	5.65
	3	3	4	4	4	7	7	7	7	7	8	9	9	9	9	9	9	9	9	9
3.2	.03	.14	.27	.44	.61	.81	1.09	1.38	1.68	1.97	2.26	2.58	2.95	3.33	3.71	4.09	4.47	4.84	5.22	5.60
	2	3	4	4	4	5	7	7	7	7	7	9	9	9	9	9	9	9	9	9
3.0	.03	.14	.27	.40	.60	.81	1.02	1.23	1.48	1.82	2.16	2.49	2.85	3.23	3.61	3.95	4.37	4.74	5.12	5.50
	2	3	3	4	5	5	5	6	8	8	8	8	9	9	9	9	9	9	9	9
2.8	.02	.11	.24	.36	.55	.76	.97	1.18	1.42	1.67	1.92	2.22	2.51	2.81	3.14	3.48	3.81	4.21	4.63	5.05
	2	3	3	3	5	5	5	5	6	6	7	7	7	7	8	8	8	10	10	10
2.6	.02	.11	.24	.36	.52	.73	.94	1.15	1.39	1.64	1.91	2.21	2.50	2.80	3.09	3.38	3.68	4.02	4.40	4.78
	2	3	3	3	5	5	5	5	6	6	7	7	7	7	7	7	7	9	9	9
2.5	.02	.10	.22	.34	.51	.72	.93	1.14	1.35	1.56	1.77	2.01	2.29	2.62	2.95	3.30	3.63	3.97	4.33	4.71
	1	2	3	3	5	5	5	5	5	5	5	6	8	8	8	8	8	8	9	9
2.4	.02	.10	.21	.33	.47	.65	.86	1.07	1.28	1.49	1.74	1.99	2.25	2.53	2.82	3.17	3.55	3.92	4.30	4.68
	1	2	3	3	4	5	5	5	5	6	6	6	6	7	7	9	9	9	9	9
2.3	.02	.10	.21	.33	.47	.64	.83	1.04	1.25	1.46	1.67	1.92	2.21	2.51	2.80	3.14	3.52	3.89	4.27	4.65
	1	2	3	3	4	4	5	5	5	5	5	7	7	7	7	9	9	9	9	9
2.1	.02	.09	.21	.33	.46	.63	.80	1.01	1.22	1.43	1.64	1.85	2.10	2.39	2.68	3.02	3.40	3.77	4.15	4.53
	1	2	3	3	4	4	5	5	5	5	5	5	6	7	7	9	9	9	9	9
2.0	.02	.09	.20	.32	.45	.62	.79	.98	1.19	1.40	1.61	1.82	2.03	2.29	2.58	2.87	3.17	3.46	3.76	4.05
	1	2	3	3	4	4	4	5	5	5	5	5	5	7	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KASKASKIA RIVER AT CARLYLE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
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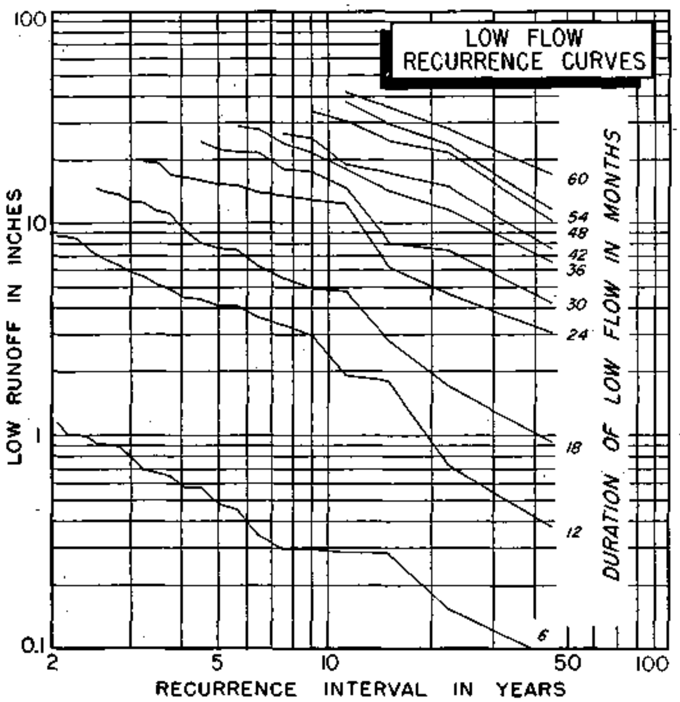
5

KASKASKIA RIVER AT NEW ATHENS



STATION 89

LOCATION
In SW ¼ sec 28, T2S, R7W, St. Clair County, 0.5 mile downstream from the Ill. 13 bridge at New Athens

DRAINAGE AREA
5220 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Oct 1909 to Dec 1912, June 1914 to Sept 1921, Oct 1934 thru Sept 1959
CONTINUOUS RECORD : 32 years; water years 1915-21, 1935-59

SYNTHETIC FLOW DATA
PERIOD: 13 years; water years 1922-34
INDEX STATION: Kaskaskia River at Vandalia
COINCIDENT RECORD: 19 years; water years 1935-53

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.82 inch per month

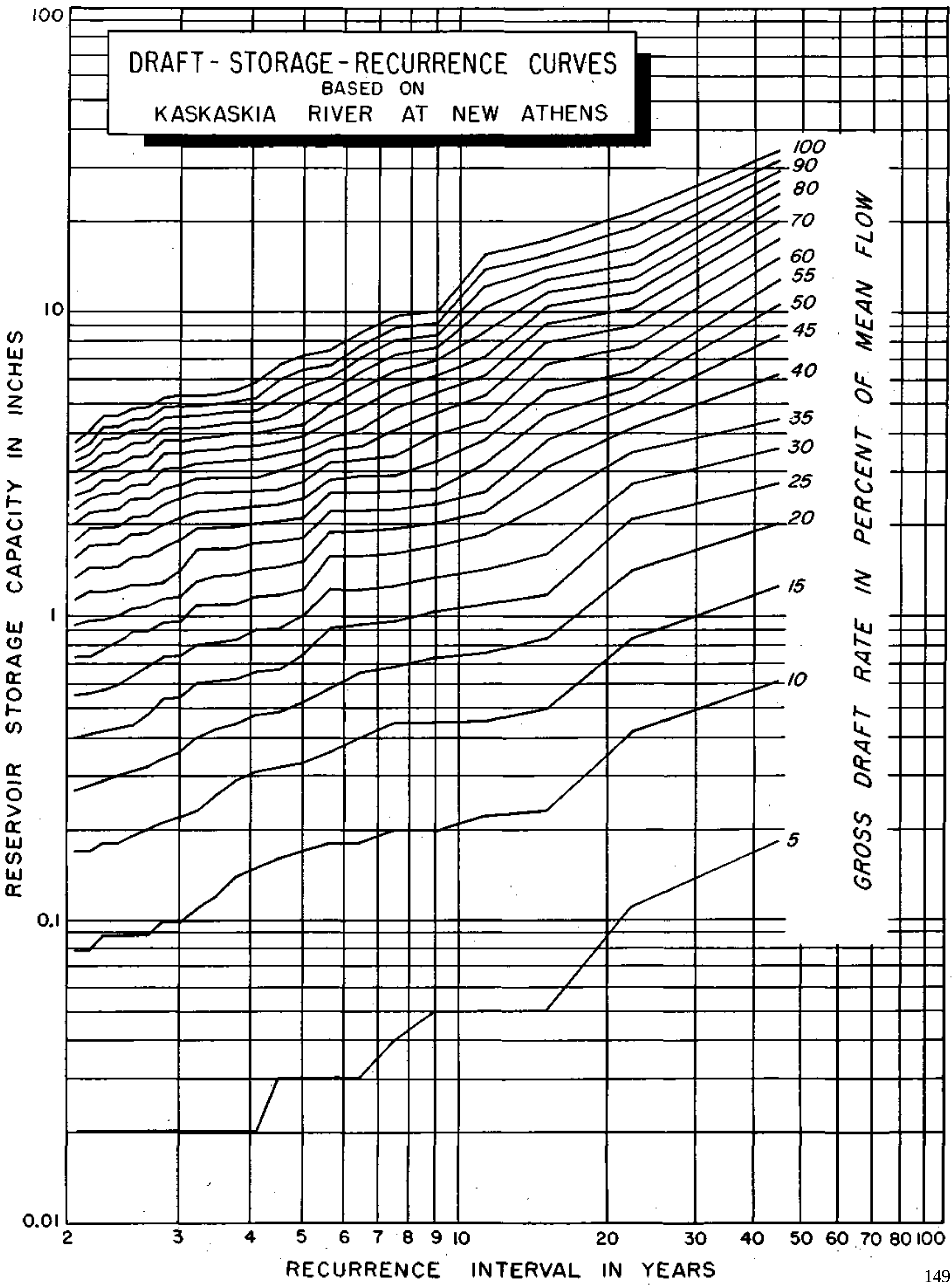
Draft-Storage-Recurrence Data for Kaskaskia River at New Athens

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

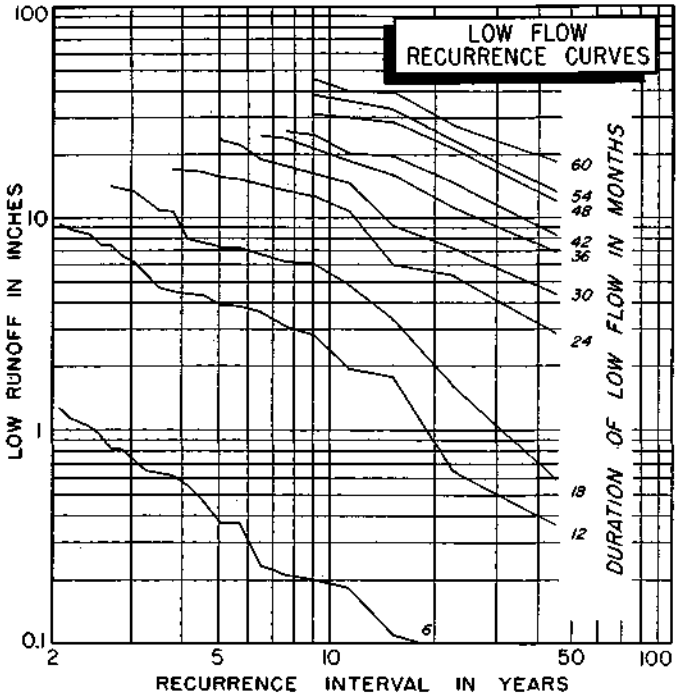
Gross draft rate in percent of mean flow

Recurrence interval, years	5	10	15	20	25	30	35	40	45	50
45.0	.18 8	.61 16	1.28 18	2.02 18	2.76 18	3.57 20	4.54 42	6.27 42	8.42 54	10.63 54
22.5	.11 7	.42 8	.85 14	1.44 16	2.10 16	2.76 16	3.47 18	4.20 18	4.94 18	5.68 18
15.0	.05 3	.23 5	.50 7	.85 9	1.22 9	1.63 18	2.37 18	3.10 18	3.84 18	4.63 22
11.3	.05 3	.22 5	.46 7	.76 9	1.13 9	1.49 9	1.86 9	2.23 9	2.60 14	3.17 16
9.0	.04 3	.20 6	.45 7	.74 7	1.05 8	1.38 8	1.71 8	2.03 8	2.36 8	2.69 8
7.5	.04 3	.20 6	.45 6	.69 6	.97 7	1.29 8	1.62 8	1.94 8	2.27 8	2.60 8
6.4	.03 3	.18 5	.40 6	.66 7	.95 7	1.26 8	1.59 8	1.91 8	2.24 8	2.57 8
5.6	.03 2	.18 4	.36 5	.59 8	.92 8	1.25 8	1.58 8	1.90 8	2.23 8	2.56 8
5.0	.03 2	.17 4	.33 5	.53 5	.76 6	1.01 6	1.25 6	1.53 7	1.81 7	2.10 7
4.5	.03 2	.16 4	.32 4	.49 4	.67 5	.91 6	1.19 7	1.48 7	1.76 7	2.05 7
4.1	.02 2	.15 4	.31 4	.48 4	.66 6	.91 6	1.17 7	1.46 7	1.74 7	2.03 7
3.8	.02 2	.14 3	.29 4	.46 4	.63 5	.84 6	1.11 7	1.40 7	1.68 7	1.97 7
3.5	.02 2	.12 3	.26 4	.43 4	.62 5	.82 6	1.10 7	1.39 7	1.67 7	1.96 7
3.2	.02 2	.11 3	.23 3	.40 5	.61 5	.81 5	1.09 7	1.38 7	1.66 7	1.95 7
3.0	.02 2	.10 3	.22 3	.36 4	.55 5	.75 5	.96 5	1.19 6	1.44 8	1.77 8
2.8	.02 2	.10 2	.21 3	.34 4	.54 5	.74 5	.95 5	1.15 5	1.36 5	1.68 8
2.6	.02 1	.09 2	.20 3	.32 3	.48 5	.68 5	.89 5	1.09 5	1.31 6	1.58 7
2.5	.01 2	.09 2	.19 3	.31 3	.44 4	.60 5	.81 6	1.06 6	1.30 6	1.57 7
2.4	.01 2	.09 2	.18 3	.30 3	.43 4	.60 5	.81 5	1.01 5	1.23 6	1.48 6
2.3	.01 2	.09 2	.18 2	.29 3	.42 4	.58 4	.78 5	.98 5	1.21 6	1.46 6
2.1	.01 1	.08 2	.17 2	.28 3	.41 4	.57 4	.75 5	.97 6	1.21 6	1.46 6
2.0	.01 1	.08 2	.17 2	.27 3	.40 4	.56 4	.74 5	.94 5	1.15 5	1.35 5

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
45.0	12.84 54	15.14 58	17.51 58	19.89 58	22.27 58	24.65 58	27.03 58	29.40 58	31.78 58	34.16 58
22.5	6.42 18	7.70 32	9.02 32	10.33 32	11.64 32	12.95 32	14.44 40	16.52 60	18.98 60	21.44 60
15.0	5.54 30	6.77 30	8.00 30	9.23 30	10.46 30	11.69 30	12.92 30	14.15 30	15.55 42	17.27 42
11.3	3.83 16	4.48 16	5.33 22	6.23 22	7.13 22	8.65 42	10.37 42	12.10 42	13.82 42	15.54 42
9.0	3.24 18	3.98 18	4.71 18	5.45 18	6.19 18	6.93 18	7.67 18	8.42 20	9.24 20	10.06 44
7.5	2.93 8	3.39 18	4.12 18	4.86 18	5.62 20	6.44 20	7.26 20	8.08 20	8.90 20	9.72 20
6.4	2.92 9	3.29 9	3.66 9	4.14 18	4.88 18	5.62 18	6.36 18	7.09 18	7.83 18	8.57 18
5.6	2.89 8	3.22 8	3.54 8	3.89 9	4.40 14	4.97 14	5.55 14	6.12 14	6.70 14	7.48 20
5.0	2.45 9	2.82 9	3.19 9	3.56 9	3.93 9	4.31 18	5.05 18	5.78 18	6.52 18	7.26 18
4.5	2.34 7	2.67 9	3.04 9	3.41 9	3.78 9	4.16 10	4.57 10	5.24 18	5.98 18	6.72 18
4.1	2.32 7	2.60 8	2.92 9	3.29 9	3.66 9	4.02 9	4.39 9	4.76 9	5.24 16	5.90 16
3.8	2.27 8	2.60 8	2.92 8	3.27 9	3.64 9	4.00 9	4.37 9	4.74 9	5.11 9	5.53 14
3.5	2.25 7	2.57 8	2.89 8	3.22 8	3.55 8	3.90 9	4.27 9	4.64 9	5.01 9	5.38 9
3.2	2.24 7	2.55 8	2.87 8	3.20 8	3.53 8	3.86 8	4.19 9	4.56 9	4.93 9	5.30 9
3.0	2.10 8	2.43 8	2.75 8	3.08 8	3.44 9	3.80 9	4.17 9	4.54 9	4.91 9	5.28 9
2.8	2.01 8	2.34 8	2.69 9	3.06 9	3.43 9	3.79 9	4.16 9	4.53 9	4.90 9	5.27 9
2.6	1.87 7	2.15 7	2.44 7	2.73 7	3.02 7	3.37 9	3.74 9	4.11 9	4.48 9	4.85 9
2.5	1.86 7	2.14 7	2.43 7	2.72 7	3.01 7	3.36 9	3.73 9	4.10 9	4.47 9	4.84 9
2.4	1.73 6	1.97 6	2.25 7	2.54 7	2.83 7	3.14 8	3.48 9	3.85 9	4.22 9	4.59 9
2.3	1.71 6	1.95 7	2.24 7	2.53 7	2.82 7	3.10 7	3.46 9	3.83 9	4.20 9	4.57 9
2.1	1.71 6	1.95 6	2.20 6	2.44 6	2.69 6	2.94 6	3.18 6	3.43 6	3.74 9	4.11 9
2.0	1.56 5	1.78 6	2.03 6	2.27 6	2.52 6	2.77 6	3.01 6	3.26 6	3.50 6	3.77 7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KASKASKIA RIVER AT NEW ATHENS
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

KASKASKIA RIVER AT VANDALIA



STATION 91

LOCATION

In SE ¼ sec 16, T6N, R1E, Fayette County, at Gallatin Street bridge in Vandalia

DRAINAGE AREA

1980 square miles, approximately

ACTUAL FLOW DATA

PERIOD: Feb 1908 thru Dec 1912, Aug 1914 thru Sept 1959

CONTINUOUS RECORD: 45 years; water years 1915-59

SYNTHETIC FLOW DATA

None; this station utilized as an index station

REGULATION: For the water years 1954-59 some regulation is present due to ground-water pumpage and side channel storage at Ficklin

TOTAL DATA ANALYZED

PERIOD : 45 years; water years 1915-59

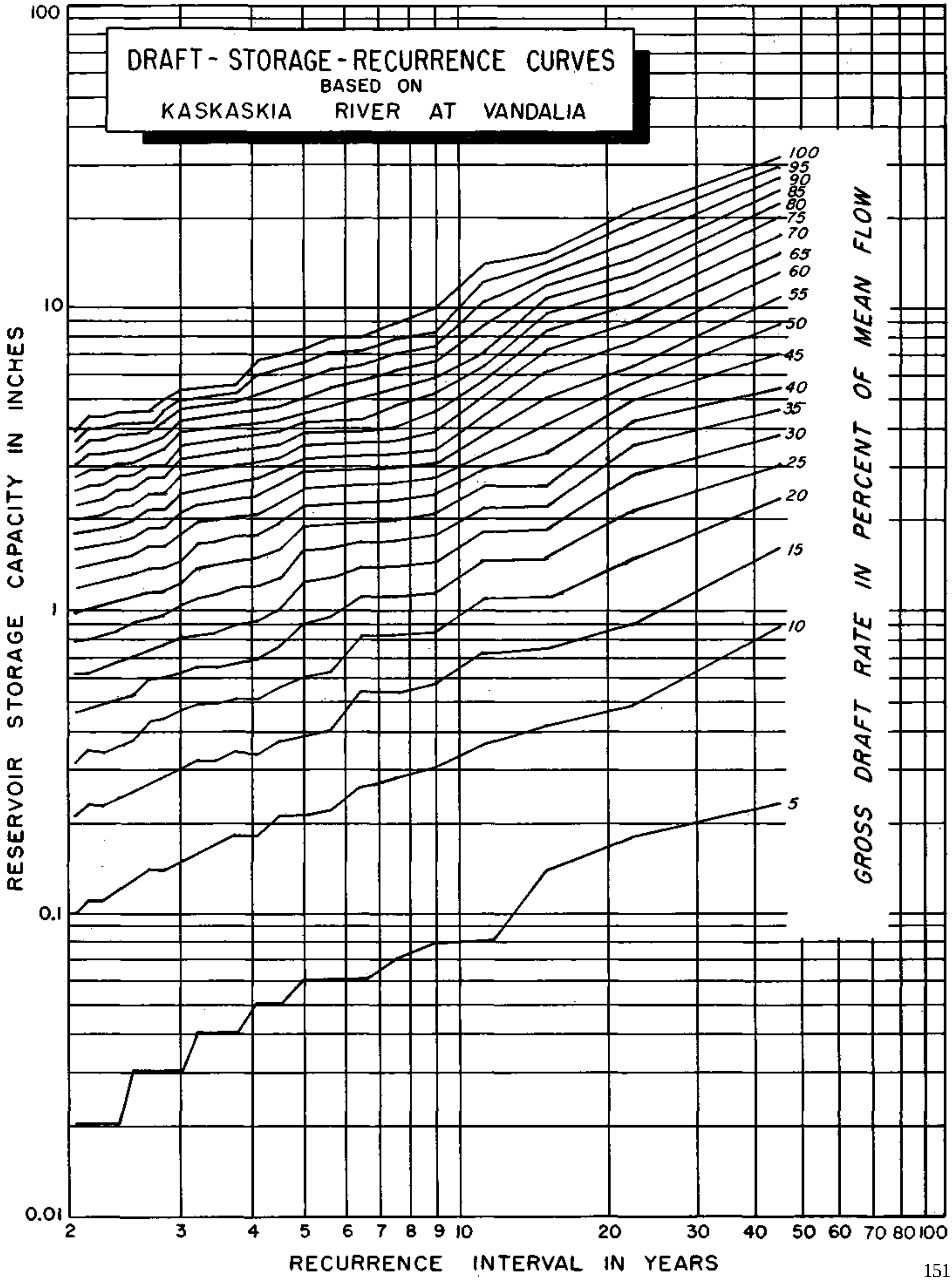
MEAN DISCHARGE : 0.82 inch per month

Draft-Storage-Recurrence Data for Kaskaskia River at Vandalia

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.23	.89	1.62	2.36	3.10	3.84	4.64	5.48	7.13	8.85	10.95	13.17	15.38	17.66	19.96	22.33	24.71	27.08	29.46	31.84
	16	18	18	18	18	18	20	32	42	42	54	54	54	56	56	58	58	58	58	58
22.5	.18	.49	.92	1.51	2.17	2.83	3.54	4.27	5.01	5.75	6.49	7.80	9.12	10.43	11.74	13.05	14.54	16.62	19.06	21.54
	7	8	14	16	16	16	18	18	18	18	32	32	32	32	32	32	40	60	60	60
15.0	.14	.42	.75	1.12	1.49	1.85	2.22	2.59	3.33	4.15	5.04	6.19	7.33	8.48	9.63	10.78	11.93	13.07	14.22	15.37
	6	8	9	9	9	9	9	9	20	20	28	28	28	28	28	28	28	28	28	28
11.3	.08	.36	.73	1.10	1.47	1.83	2.20	2.57	2.94	3.31	3.83	4.48	5.14	5.79	6.45	7.11	8.80	10.53	12.25	13.97
	5	9	9	9	9	9	9	9	9	9	16	16	16	16	16	16	42	42	42	42
9.0	.08	.29	.57	.86	1.15	1.44	1.77	2.09	2.42	2.75	3.08	3.41	3.92	4.57	5.23	5.89	6.69	7.51	8.33	10.09
	5	6	7	7	7	8	8	8	8	8	8	8	16	16	16	16	20	20	20	44
7.5	.07	.28	.54	.83	1.12	1.40	1.69	1.98	2.31	2.64	2.97	3.30	3.64	4.02	4.76	5.50	6.25	7.07	7.89	8.83
	3	6	7	7	7	7	7	8	8	8	8	8	9	18	18	18	20	20	20	44
6.4	.06	.26	.54	.83	1.12	1.40	1.69	1.98	2.27	2.60	2.93	3.26	3.58	3.91	4.30	5.04	5.78	6.51	7.25	8.03
	3	6	7	7	7	7	7	7	8	8	8	6	8	8	16	18	18	18	18	20
5.6	.06	.22	.41	.63	.96	1.29	1.62	1.94	2.27	2.60	2.93	3.26	3.58	3.91	4.24	4.72	5.52	6.34	7.16	7.98
	3	4	5	8	8	8	8	8	8	8	8	8	8	8	8	16	20	20	20	20
5.0	.06	.21	.38	.61	.92	1.25	1.58	1.90	2.23	2.56	2.89	3.22	3.54	3.67	4.20	4.53	5.13	5.86	6.60	7.34
	3	4	5	6	8	8	8	8	8	8	8	8	8	8	8	8	18	18	18	18
4.5	.05	.21	.37	.56	.77	1.01	1.27	1.59	1.92	2.25	2.56	2.91	3.23	3.56	3.90	4.26	4.75	5.48	6.22	6.96
	3	4	4	5	5	6	8	8	8	8	8	8	8	8	9	9	18	18	18	18
4.1	.05	.18	.34	.51	.69	.92	1.20	1.49	1.77	2.09	2.42	2.75	3.12	3.49	3.86	4.22	4.59	5.25	5.99	6.73
	3	4	4	4	5	6	7	7	7	8	8	9	9	9	9	9	9	18	18	18
3.8	.04	.18	.34	.51	.67	.90	1.19	1.48	1.76	2.05	2.34	2.68	3.05	3.42	3.79	4.15	4.52	4.89	5.26	5.63
	3	4	4	4	4	7	7	7	7	7	7	9	9	9	9	9	9	9	9	9
3.5	.04	.17	.32	.49	.65	.85	1.13	1.42	1.70	1.99	2.28	2.60	2.95	3.32	3.69	4.05	4.42	4.79	5.16	5.55
	3	3	4	4	4	6	7	7	7	7	7	8	9	9	9	9	9	9	9	10
3.2	.04	.16	.32	.49	.65	.83	1.10	1.39	1.67	1.96	2.25	2.53	2.85	3.22	3.59	3.95	4.32	4.69	5.06	5.43
	2	4	4	4	4	5	7	7	7	7	7	7	9	9	9	9	9	9	9	9
3.0	.03	.15	.30	.47	.63	.83	1.04	1.24	1.47	1.78	2.11	2.44	2.80	3.17	3.54	3.90	4.27	4.64	5.01	5.38
	2	3	4	4	5	5	5	5	6	8	8	8	9	9	9	9	9	9	9	9
2.8	.03	.14	.27	.44	.60	.76	.96	1.16	1.39	1.64	1.89	2.17	2.46	2.75	3.05	3.39	3.78	4.19	4.60	5.01
	2	3	4	4	4	4	5	5	6	6	7	7	7	7	8	9	10	10	10	10
2.6	.03	.14	.26	.43	.59	.75	.95	1.15	1.38	1.63	1.88	2.16	2.45	2.74	3.03	3.31	3.60	3.89	4.21	4.56
	2	3	4	4	4	4	5	5	6	6	7	7	7	7	7	7	7	7	8	9
2.5	.03	.13	.25	.37	.53	.71	.92	1.12	1.33	1.53	1.74	1.98	2.24	2.53	2.82	3.10	3.45	3.82	4.19	4.56
	2	3	3	4	4	5	5	5	5	5	6	6	7	7	7	7	9	9	9	9
2.4	.02	.12	.24	.36	.52	.68	.86	1.06	1.27	1.47	1.68	1.91	2.20	2.49	2.78	3.06	3.43	3.80	4.17	4.54
	2	3	3	4	4	4	5	5	5	5	5	7	7	7	7	9	9	9	9	9
2.3	.02	.11	.23	.35	.49	.65	.84	1.04	1.25	1.45	1.66	1.86	2.09	2.33	2.61	2.92	3.29	3.66	4.03	4.40
	2	3	3	3	4	4	5	5	5	5	5	5	6	6	7	9	9	9	9	9
2.1	.02	.11	.23	.35	.48	.62	.80	1.00	1.21	1.41	1.62	1.82	2.04	2.29	2.58	2.92	3.29	3.66	4.03	4.40
	2	3	3	3	3	4	5	5	5	5	5	5	6	7	7	9	9	9	9	9
2.0	.02	.10	.21	.33	.46	.62	.79	.98	1.19	1.39	1.60	1.80	2.01	2.21	2.49	2.77	3.06	3.35	3.63	3.92
	2	2	3	3	4	4	4	5	5	5	5	5	5	5	7	7	7	7	7	7



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KASKASKIA RIVER AT VANDALIA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
95
90
85
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75
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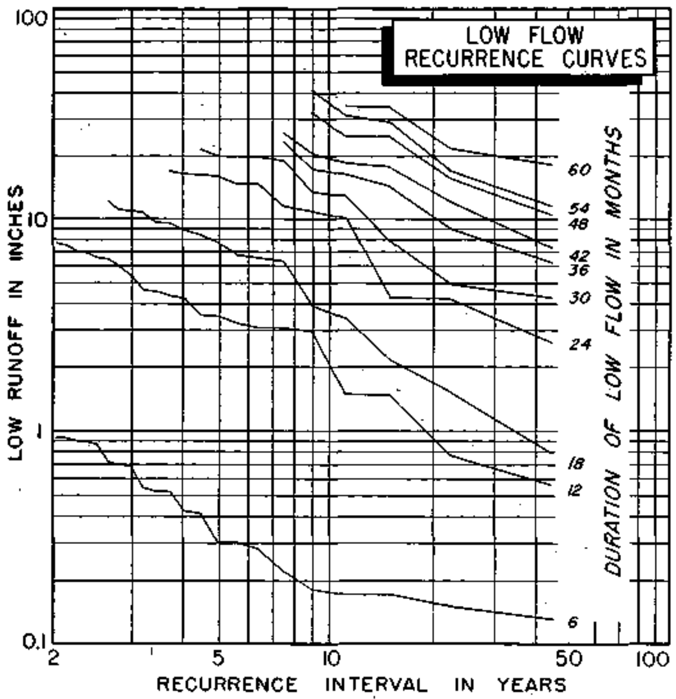


STATION 100

LOCATION
In SW ¼ sec 1, T17N, R3W, Logan County, at bridge on U. S. 54, 2.0 miles northeast of Cornland

DRAINAGE AREA
207 square miles

ACTUAL FLOW DATA
PERIOD: Jan 1948 thru Sept 1959
CONTINUOUS RECORD: 11 years; water years 1949-59

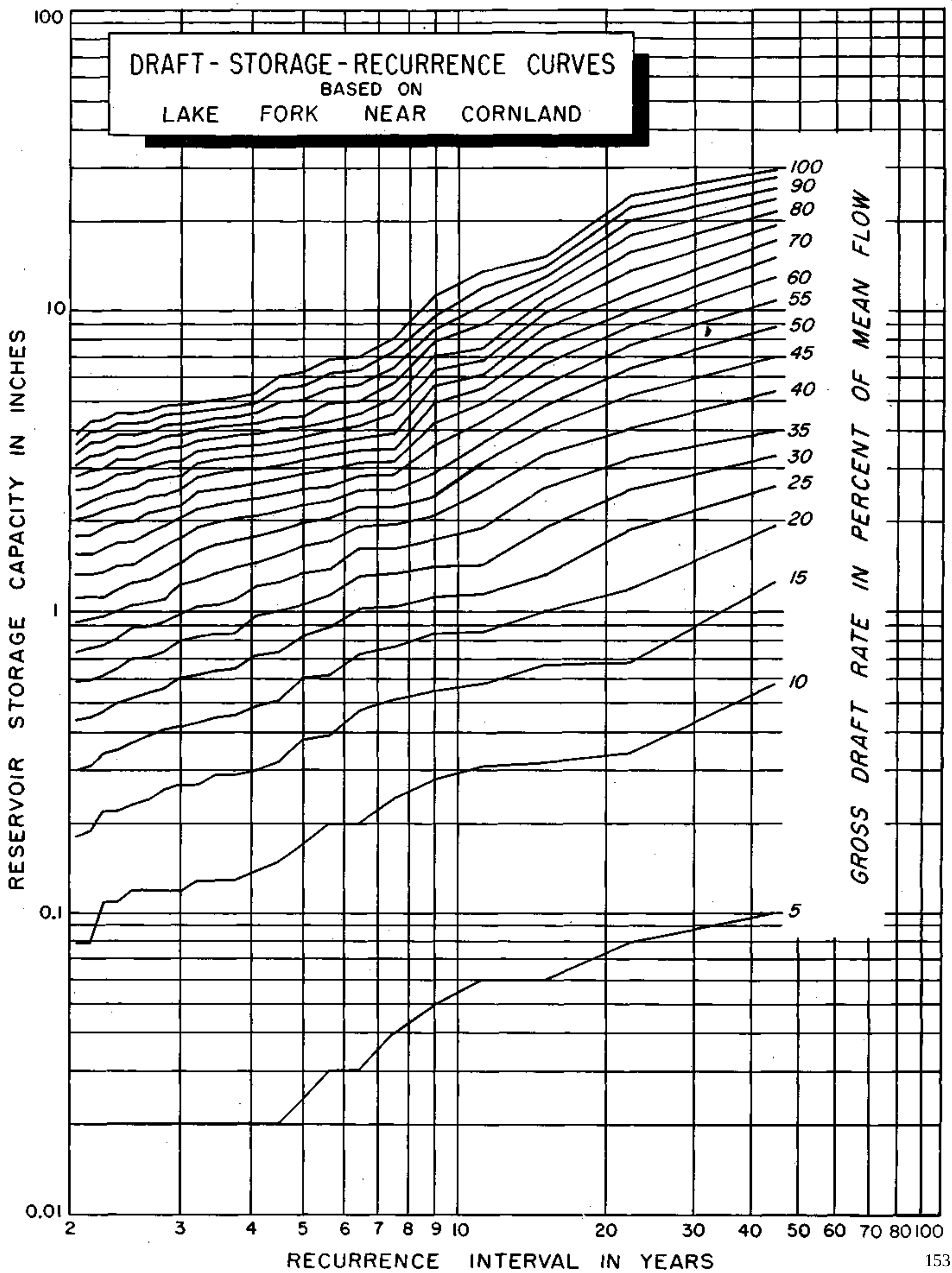
SYNTHETIC FLOW DATA
PERIOD: 34 years; water years 1915-48
INDEX STATION : Sangamon River at Riverton
COINCIDENT RECORD: 8 years; water years 1949-56

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.76 inch per month

Draft-Storage-Recurrence Data for Lake Fork near Cornland

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.10	.58	1.26	1.95	2.63	3.31	4.03	5.43	7.09	8.87	10.92	12.97	15.09	17.22	19.35	21.48	23.51	25.73	27.56	29.99
	6	18	18	18	18	18	20	42	44	54	54	56	56	56	56	56	56	55	56	56
22.5	.08	.34	.68	1.20	1.86	2.56	3.25	4.14	5.28	6.49	7.71	8.92	10.14	11.53	13.64	15.77	17.90	20.02	22.15	24.28
	7	7	10	18	18	18	18	30	30	32	32	32	32	54	56	56	56	56	56	56
15.0	.06	.32	.67	1.01	1.35	1.91	2.60	3.36	4.12	4.88	5.74	6.72	7.75	8.82	9.88	10.94	12.01	13.07	14.14	15.20
	7	9	9	9	9	18	20	20	20	20	24	26	28	28	26	26	26	28	28	28
11.3	.06	.31	.58	.86	1.16	1.49	1.92	2.52	3.13	3.74	4.35	4.96	5.56	6.17	6.84	7.53	9.03	10.55	12.07	13.59
	6	7	7	8	8	9	16	16	16	16	16	16	16	16	18	20	40	40	40	40
9.0	.05	.28	.55	.85	1.15	1.45	1.76	2.09	2.43	2.90	3.56	4.27	4.95	5.64	6.36	7.12	7.88	8.64	9.60	11.23
	6	7	7	8	8	8	8	9	9	18	18	18	18	18	20	20	20	20	42	44
7.5	.04	.24	.51	.77	1.05	1.35	1.66	1.96	2.27	2.57	2.87	3.18	3.49	3.95	4.56	5.17	5.78	6.50	7.33	8.17
	2	7	7	7	8	8	8	8	8	8	8	8	9	16	16	16	16	22	22	22
6.4	.03	.20	.47	.73	1.03	1.33	1.64	1.94	2.25	2.55	2.65	3.16	3.46	3.81	4.19	4.57	5.05	5.72	6.41	7.09
	2	7	7	8	6	8	8	8	8	8	8	8	8	10	10	10	14	18	18	18
5.6	.03	.20	.39	.62	.89	1.16	1.44	1.74	2.05	2.35	2.65	2.97	3.32	3.66	4.00	4.34	4.95	5.55	6.23	6.91
	2	5	5	7	7	7	8	8	8	8	8	9	9	9	9	16	16	16	18	18
5.0	.03	.17	.38	.61	.84	1.07	1.37	1.67	1.98	2.28	2.58	2.89	3.19	3.50	3.86	4.13	4.51	5.07	5.68	6.29
	2	5	6	6	6	6	8	8	8	8	8	8	8	8	8	10	14	16	16	16
4.5	.02	.15	.32	.51	.74	1.01	1.27	1.56	1.87	2.17	2.47	2.78	3.08	3.39	3.71	4.05	4.45	4.99	5.52	6.05
	3	4	5	5	7	7	7	8	8	8	8	8	8	8	9	9	14	14	14	14
4.1	.02	.14	.30	.49	.72	.97	1.23	1.50	1.79	2.09	2.39	2.70	3.00	3.31	3.61	3.92	4.26	4.61	4.95	5.36
	2	4	4	6	6	7	7	7	8	8	8	8	8	8	8	9	9	9	9	14
3.8	.02	.13	.29	.46	.65	.85	1.13	1.43	1.74	2.04	2.34	2.65	2.95	3.26	3.56	3.86	4.17	4.47	4.81	5.18
	2	4	4	5	5	7	8	8	8	8	8	8	8	8	8	8	8	9	9	10
3.5	.02	.13	.29	.45	.64	.85	1.08	1.38	1.69	1.99	2.29	2.60	2.90	3.21	3.51	3.81	4.12	4.42	4.73	5.08
	2	4	4	5	5	6	8	8	8	8	8	8	8	8	8	8	8	8	8	10
3.2	.02	.13	.27	.43	.62	.83	1.06	1.30	1.61	1.91	2.21	2.52	2.62	3.13	3.43	3.73	4.04	4.34	4.65	4.98
	2	3	4	5	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8	9
3.0	.02	.12	.27	.42	.61	.80	.99	1.24	1.50	1.77	2.04	2.30	2.57	2.85	3.19	3.53	3.87	4.22	4.56	4.90
	2	3	4	5	5	5	5	7	7	7	7	7	7	9	9	9	9	9	9	9
2.8	.02	.12	.26	.41	.56	.74	.93	1.14	1.40	1.67	1.94	2.20	2.48	2.81	3.15	3.49	3.83	4.18	4.52	4.86
	2	3	4	4	4	5	5	7	7	7	7	7	8	9	9	9	9	9	9	9
2.6	.02	.12	.24	.39	.54	.71	.90	1.10	1.33	1.57	1.84	2.14	2.44	2.75	3.05	3.35	3.66	3.96	4.30	4.64
	2	3	4	4	4	5	5	6	6	7	7	8	8	8	8	8	8	9	9	9
2.5	.02	.12	.23	.37	.52	.70	.89	1.08	1.27	1.47	1.74	2.00	2.30	2.61	2.91	3.21	3.55	3.90	4.24	4.58
	2	3	3	4	4	5	5	5	5	7	7	8	8	8	8	9	9	9	9	9
2.4	.02	.11	.22	.35	.50	.65	.82	1.01	1.20	1.45	1.72	1.98	2.25	2.53	2.87	3.21	3.55	3.90	4.24	4.58
	2	3	3	4	4	4	5	5	5	7	7	7	7	9	9	9	9	9	9	9
2.3	.01	.11	.22	.34	.47	.62	.78	.97	1.16	1.38	1.65	1.91	2.18	2.44	2.71	3.01	3.35	3.70	4.04	4.38
	2	3	3	3	4	4	5	5	5	7	7	7	7	7	7	9	9	9	9	9
2.1	.01	.08	.19	.31	.45	.60	.76	.95	1.14	1.35	1.56	1.82	2.09	2.35	2.62	2.96	3.30	3.65	3.99	4.33
	2	3	3	3	4	4	5	5	5	6	6	7	7	7	9	9	9	9	9	9
2.0	.01	.08	.18	.30	.44	.59	.74	.93	1.12	1.35	1.58	1.81	2.04	2.30	2.57	2.84	3.10	3.37	3.63	3.92
	2	2	3	3	4	4	5	5	6	6	6	6	7	7	7	7	7	7	7	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LAKE FORK NEAR CORNLAND
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
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50
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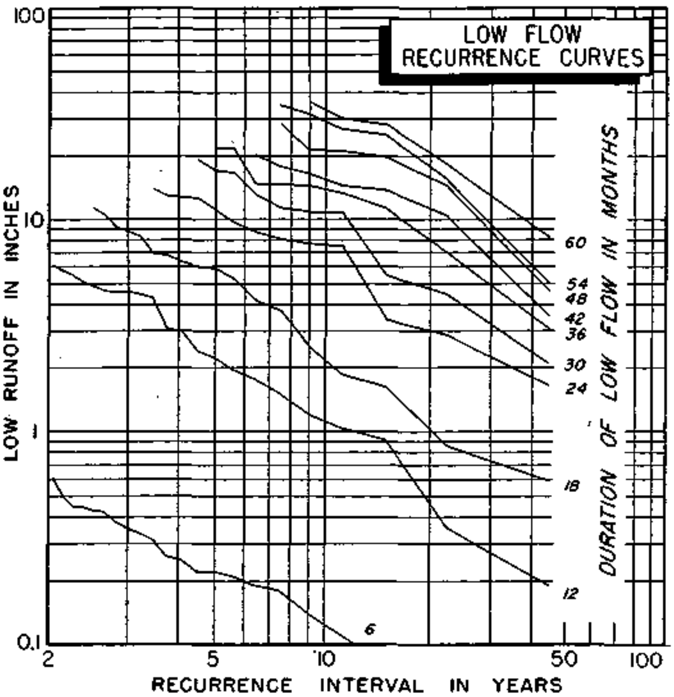
70
80
100
RECURRENCE INTERVAL IN YEARS

MACOUPIN CREEK NEAR KANE



STATION 105

LOCATION

In SE ¼ sec 11, T9N, R12W, Greene County, at bridge on U. S. Alt. 67, about 3.5 miles northwest of Kane

DRAINAGE AREA

875 square miles

ACTUAL FLOW DATA

PERIOD: Mar 1921 thru Nov 1933, May 1940 thru Sept 1959

CONTINUOUS RECORD: 19 years; water years 1941-59

SYNTHETIC FLOW DATA

PERIOD: 14 years; water years 1915-21, 1934-40

INDEX STATION : Kaskaskia River at Vandalia

COINCIDENT RECORD: 26 years; water years 1921-33, 1941-53

This station utilized as an index station

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

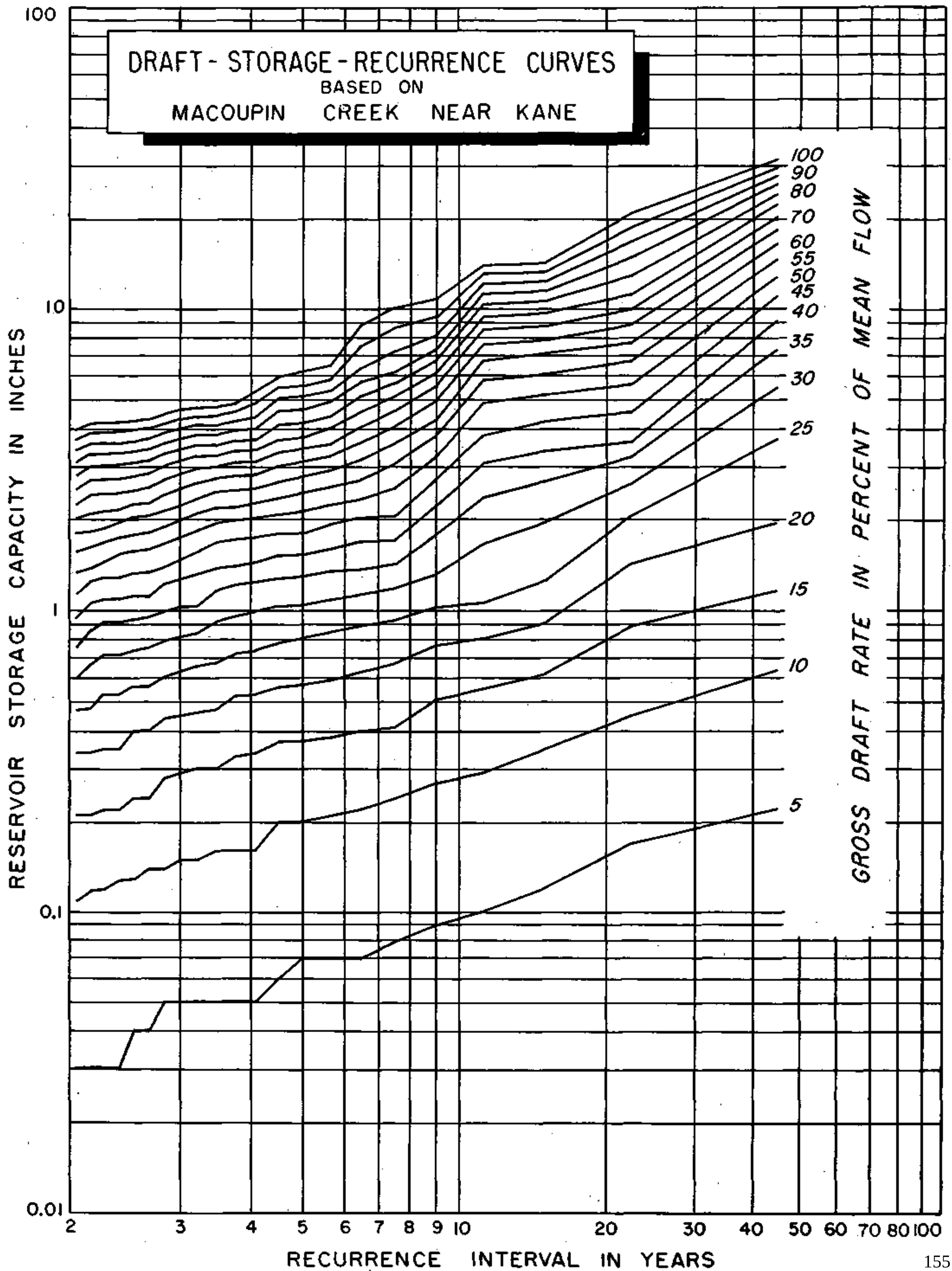
MEAN DISCHARGE: 0.65 inch per month

Draft-Storage-Recurrence Data for Macoupin Creek near Kane

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.22	.64	1.17	1.97	3.73	5.52	7.34	9.16	10.98	12.80	14.64	16.52	18.41	20.29	22.18	24.06	25.95	27.83	29.72	31.60
	10	14	18	54	54	56	56	56	56	56	58	58	58	58	58	58	58	58	58	58
22.5	.17	.45	.89	1.47	2.06	2.64	3.23	3.81	4.63	5.67	6.71	7.78	8.89	9.99	11.19	13.06	14.95	16.83	18.78	20.73
	7	11	18	18	18	18	18	20	32	32	32	34	34	34	56	58	58	60	60	60
15.0	.12	.35	.62	.91	1.28	1.97	2.69	3.40	4.29	5.20	6.11	7.02	7.93	8.84	9.75	10.66	11.57	12.48	13.39	14.30
	7	8	9	9	18	22	22	22	28	28	28	28	28	28	26	28	28	28	28	28
11.3	.10	.29	.55	.81	1.07	1.67	2.39	3.10	3.82	4.92	5.83	6.74	7.65	8.56	9.47	10.38	11.29	12.20	13.11	14.02
	6	8	8	8	9	22	22	22	22	28	28	28	26	28	28	28	26	28	28	28
9.0	.09	.27	.51	.77	1.03	1.33	1.79	2.24	2.71	3.23	3.81	4.39	4.98	5.56	6.15	6.73	7.32	8.14	9.46	10.82
	5	7	8	8	8	14	14	14	16	16	18	18	18	18	18	18	18	40	42	42
7.5	.08	.24	.41	.67	.93	1.19	1.45	1.74	2.07	2.56	3.08	3.60	4.12	4.64	5.16	5.68	6.21	7.24	8.67	10.10
	4	5	8	8	8	8	8	10	10	16	16	16	16	16	16	16	18	44	44	44
6.4	.07	.22	.40	.63	.89	1.15	1.41	1.71	2.04	2.36	2.72	3.17	3.63	4.08	4.60	5.18	5.77	6.38	7.59	8.69
	4	5	6	8	8	8	8	10	10	10	14	14	14	14	18	18	18	36	40	40
5.6	.07	.21	.38	.59	.85	1.11	1.37	1.63	1.95	2.27	2.60	2.92	3.25	3.57	4.02	4.47	4.93	5.38	5.85	6.50
	4	5	6	8	8	8	8	8	10	10	10	10	10	11	14	14	14	14	20	20
5.0	.07	.20	.37	.57	.80	1.04	1.30	1.56	1.82	2.14	2.47	2.79	3.12	3.44	3.77	4.20	4.66	5.11	5.57	6.25
	3	5	6	7	7	8	8	8	10	10	10	10	10	10	10	14	14	14	14	22
4.5	.06	.20	.37	.56	.78	1.04	1.30	1.56	1.82	2.08	2.38	2.70	3.03	3.35	3.71	4.16	4.62	5.07	5.53	5.98
	3	5	6	6	8	8	8	8	8	8	10	10	10	10	14	14	14	14	14	14
4.1	.05	.16	.34	.53	.74	.99	1.25	1.51	1.77	2.03	2.29	2.55	2.83	3.13	3.42	3.71	4.03	4.41	4.87	5.34
	3	4	6	6	7	8	8	8	8	8	8	8	9	9	9	9	10	14	14	18
3.8	.05	.16	.33	.52	.72	.96	1.22	1.48	1.74	2.00	2.26	2.52	2.81	3.11	3.40	3.69	3.98	4.28	4.57	4.86
	3	4	6	6	6	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9
3.5	.05	.16	.30	.47	.67	.92	1.18	1.44	1.70	1.96	2.22	2.48	2.74	3.00	3.27	3.56	3.85	4.15	4.44	4.75
	3	4	5	6	7	8	8	8	8	8	8	8	8	8	9	9	9	9	9	18
3.2	.05	.15	.30	.46	.65	.84	1.07	1.33	1.59	1.85	2.11	2.37	2.66	2.96	3.25	3.54	3.83	4.13	4.42	4.71
	3	3	5	5	6	7	8	8	8	8	8	9	9	9	9	9	9	9	9	9
3.0	.05	.15	.29	.45	.63	.82	1.03	1.26	1.51	1.77	2.03	2.29	2.56	2.86	3.15	3.44	3.73	4.03	4.32	4.61
	3	3	5	5	6	6	7	7	8	8	8	8	9	9	9	9	9	9	9	9
2.8	.05	.14	.28	.44	.60	.79	1.00	1.23	1.46	1.69	1.91	2.15	2.44	2.74	3.03	3.32	3.61	3.91	4.20	4.49
	2	3	5	5	6	6	7	7	7	7	7	9	9	9	9	9	9	9	9	9
2.6	.04	.14	.24	.40	.56	.75	.95	1.15	1.38	1.61	1.83	2.06	2.29	2.57	2.86	3.15	3.44	3.74	4.03	4.32
	3	3	5	5	6	6	6	7	7	7	7	7	7	9	9	9	9	9	9	9
2.5	.04	.13	.24	.40	.56	.74	.94	1.14	1.37	1.60	1.82	2.05	2.28	2.52	2.81	3.10	3.39	3.69	3.98	4.27
	2	3	5	5	5	6	6	7	7	7	7	7	7	9	9	9	9	9	9	9
2.4	.03	.13	.22	.35	.53	.72	.92	1.11	1.31	1.51	1.73	1.96	2.19	2.47	2.76	3.05	3.34	3.64	3.93	4.22
	3	3	4	4	6	6	6	6	6	7	7	7	7	9	9	9	9	9	9	9
2.3	.03	.12	.22	.35	.53	.72	.92	1.11	1.31	1.50	1.70	1.89	2.16	2.46	2.75	3.04	3.33	3.63	3.92	4.21
	2	3	4	4	6	6	6	6	6	6	6	6	9	9	9	9	9	9	9	9
2.1	.03	.12	.21	.34	.48	.67	.87	1.06	1.26	1.45	1.65	1.85	2.14	2.44	2.73	3.02	3.31	3.61	3.90	4.19
	2	3	4	4	6	6	6	6	6	6	6	9	9	9	9	9	9	9	9	9
2.0	.03	.11	.21	.34	.47	.60	.76	.95	1.15	1.37	1.59	1.82	2.05	2.28	2.54	2.83	3.12	3.42	3.71	4.00
	2	3	4	4	4	4	6	6	6	7	7	7	7	7	9	9	9	9	9	9



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
MACOUPIN CREEK NEAR KANE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
90
80
70
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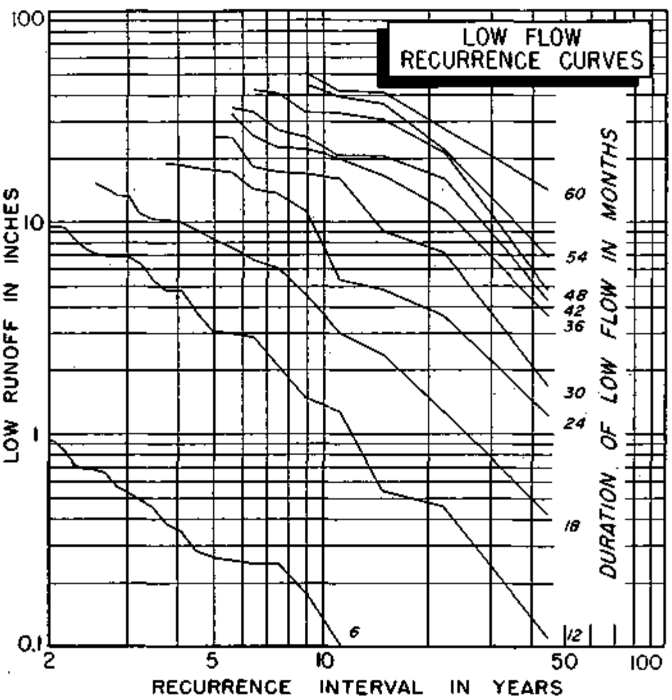
5

NORTH FORK, MAUVAISE TERRE CREEK NEAR JACKSONVILLE



STATION 108

LOCATION
In SE ¼ NW ¼ sec 8, T15N, R9W, Morgan County, at bridge 2.5 miles north of Arnold and 6.0 miles east of Jacksonville

DRAINAGE AREA
30.0 square miles

ACTUAL FLOW DATA
PERIOD: Dec 1949 thru Sept 1959
CONTINUOUS RECORD: 9 years; water years 1951-59

SYNTHETIC FLOW DATA
PERIOD: 36 years; water years 1915-50
INDEX STATION : Macoupin Creek near Kane
COINCIDENT RECORD: 9 years; water years 1951-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.87 inch per month

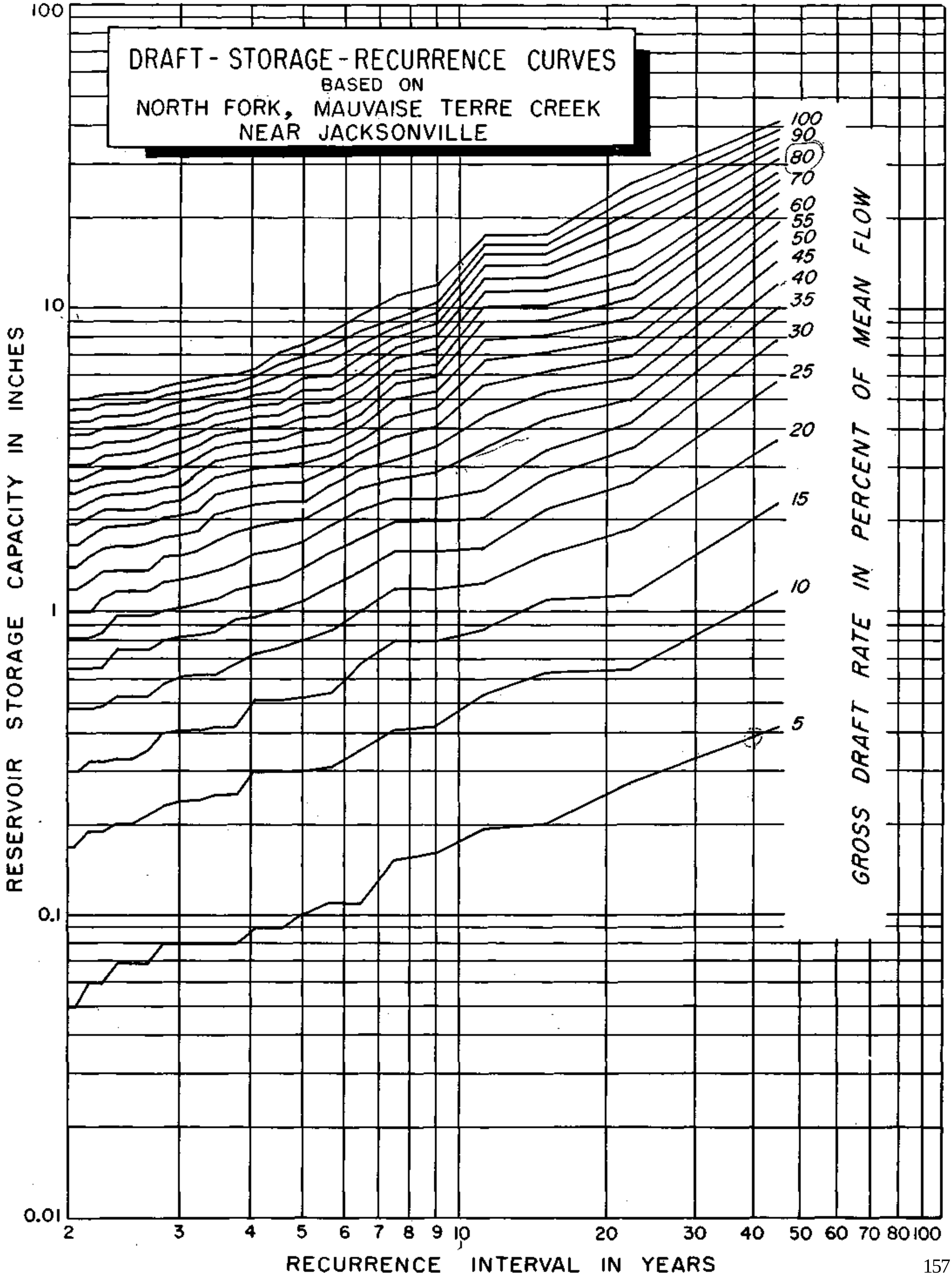
Draft-Storage-Recurrence Data for North Fork, Mauvaise Terre Creek near Jacksonville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Gross draft rate in percent of mean flow

Recurrence interval, years	5	10	15	20	25	30	35	40	45	50
45.0	.41	1.15	2.25	3.63	5.72	7.81	9.90	11.98	14.27	16.62
	12	18	30	48	48	48	48	50	54	54
22.5	.27	.65	1.13	1.88	2.67	3.45	4.23	5.01	5.90	6.94
	7	11	11	18	18	18	18	18	24	24
15.0	.20	.63	1.09	1.56	2.17	2.77	3.38	4.30	5.25	6.21
	10	10	11	14	14	14	14	22	22	22
11.3	.19	.53	.87	1.25	1.64	2.03	2.53	3.44	4.43	5.56
	7	8	8	9	9	9	18	22	26	26
9.0	.16	.42	.80	1.20	1.59	1.98	2.37	2.69	3.50	4.11
	6	6	9	9	9	9	9	14	14	14
7.5	.15	.41	.80	1.20	1.59	1.98	2.37	2.76	3.19	3.60
	5	9	9	9	9	9	9	9	14	14
6.4	.11	.35	.67	1.02	1.39	1.78	2.17	2.56	2.95	3.35
	4	7	8	8	9	9	9	9	9	9
5.6	.11	.31	.54	.87	1.22	1.57	1.92	2.26	2.61	2.96
	4	5	6	8	8	8	8	8	8	6
5.0	.10	.30	.52	.80	1.10	1.41	1.71	2.02	2.33	2.68
	4	5	6	7	7	7	7	7	8	8
4.5	.09	.30	.51	.76	1.03	1.29	1.64	1.98	2.33	2.68
	4	5	5	6	6	8	8	8	8	8
4.1	.09	.30	.51	.73	.96	1.23	1.58	1.92	2.27	2.62
	3	5	5	5	6	8	8	8	8	8
3.8	.08	.25	.42	.67	.94	1.20	1.49	1.83	2.18	2.53
	3	4	4	6	6	6	8	8	8	8
3.5	.08	.25	.42	.62	.86	1.12	1.39	1.73	2.08	2.43
	3	4	4	5	6	6	8	8	8	8
3.2	.08	.24	.41	.62	.84	1.08	1.34	1.60	1.86	2.15
	3	4	4	5	5	6	6	6	6	8
3.0	.08	.24	.41	.61	.83	1.05	1.30	1.56	1.82	2.08
	3	4	4	5	5	5	6	6	6	6
2.8	.06	.23	.40	.58	.80	1.02	1.27	1.53	1.79	2.05
	3	4	4	5	5	5	6	6	6	6
2.6	.07	.20	.35	.53	.75	.97	1.18	1.44	1.70	1.96
	3	3	4	5	5	5	6	6	6	6
2.5	.07	.20	.33	.53	.75	.97	1.18	1.41	1.67	1.93
	3	3	3	5	5	5	5	6	6	6
2.4	.07	.20	.33	.53	.75	.97	1.18	1.40	1.66	1.92
	3	3	3	5	5	5	5	6	6	6
2.3	.06	.19	.32	.49	.66	.86	1.12	1.38	1.64	1.90
	3	3	3	4	4	6	6	6	6	6
2.1	.06	.19	.32	.48	.65	.82	1.01	1.27	1.53	1.79
	3	3	3	4	4	4	6	6	6	6
2.0	.05	.17	.30	.48	.65	.82	1.00	1.19	1.42	1.68
	2	3	4	4	4	4	4	5	6	6

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
45.0	18.97	21.36	23.80	26.23	28.67	31.16	33.68	36.20	38.73	41.25
	54	56	56	56	56	58	58	58	58	58
22.5	7.98	9.37	10.77	12.16	13.58	15.98	18.41	20.85	23.32	25.84
	32	32	32	32	34	56	56	56	56	56
15.0	7.17	8.12	9.08	10.24	11.46	12.68	13.90	15.11	16.33	17.55
	22	22	22	28	28	28	28	28	28	28
11.3	6.69	7.82	8.95	10.08	11.22	12.44	13.66	14.87	16.09	17.31
	26	26	26	26	28	28	28	28	28	28
9.0	4.72	5.33	5.94	6.55	7.32	8.10	8.88	9.66	10.45	12.08
	14	14	14	14	18	18	18	18	18	40
7.5	4.41	5.02	5.63	6.24	6.85	7.45	8.06	8.67	9.28	10.96
	14	14	14	14	14	14	14	14	14	44
6.4	3.74	4.13	4.52	4.95	5.56	6.16	6.85	7.63	8.42	9.49
	9	9	9	14	14	14	18	18	18	34
5.6	3.31	3.66	4.04	4.47	4.91	5.42	5.98	6.76	7.55	8.33
	8	8	10	10	10	12	18	18	18	18
5.0	3.09	3.52	3.96	4.39	4.85	5.37	5.89	6.42	6.94	7.58
	10	10	10	10	12	12	12	12	12	18
4.5	3.03	3.38	3.72	4.09	4.48	4.87	5.33	5.94	6.55	7.16
	8	6	8	9	9	9	14	14	14	14
4.1	2.97	3.32	3.66	4.01	4.40	4.79	5.19	5.58	5.97	6.36
	8	8	8	9	9	9	9	9	9	9
3.8	2.88	3.23	3.57	3.92	4.27	4.62	4.97	5.31	5.67	6.06
	8	8	8	8	8	8	8	8	9	9
3.5	2.78	3.13	3.47	3.82	4.17	4.52	4.87	5.21	5.57	5.96
	8	8	8	8	6	8	8	8	9	9
3.2	2.50	2.85	3.19	3.54	3.89	4.24	4.63	5.02	5.41	5.80
	8	8	8	8	8	8	9	9	9	9
3.0	2.34	2.61	2.96	3.35	3.74	4.13	4.53	4.92	5.31	5.70
	6	7	9	9	9	9	9	9	9	9
2.8	2.31	2.57	2.83	3.20	3.59	3.98	4.38	4.77	5.16	5.55
	6	6	7	9	9	9	9	9	9	9
2.6	2.22	2.49	2.60	3.10	3.41	3.78	4.18	4.57	4.96	5.35
	6	7	7	7	7	9	9	9	9	9
2.5	2.19	2.45	2.71	3.01	3.34	3.69	4.08	4.47	4.86	5.25
	6	6	7	7	8	8	9	9	9	9
2.4	2.18	2.44	2.70	2.96	3.30	3.65	4.04	4.43	4.82	5.21
	6	6	6	6	8	8	9	9	9	9
2.3	2.16	2.42	2.68	2.94	3.25	3.64	4.04	4.43	4.82	5.21
	6	6	6	6	9	9	9	9	9	9
2.1	2.05	2.31	2.57	2.83	3.10	3.47	3.87	4.26	4.65	5.04
	6	6	6	6	6	9	9	9	9	9
2.0	1.94	2.20	2.46	2.72	3.06	3.45	3.85	4.24	4.63	5.02
	6	6	6	6	9	9	9	9	9	9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
NORTH FORK, MAUVAISE TERRE CREEK
NEAR JACKSONVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
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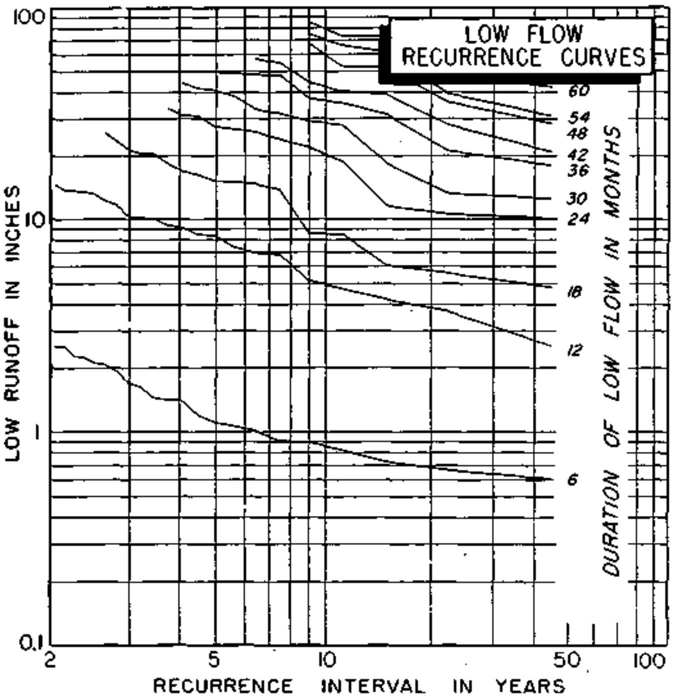
SALT CREEK NEAR GREENVIEW



STATION 130

LOCATION
In NE ¼ NE ¼ sec 2, T19N, R6W, on the Mason-Menard County line at bridge on Ill. 29, about 3.5 miles north of Greenview

DRAINAGE AREA
1800 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Oct 1941 thru Sept 1959
CONTINUOUS RECORD : 18 years; water years 1942-59

SYNTHETIC FLOW DATA
PERIOD: 27 years; water years 1915-41
INDEX STATION : Sangamon River at Riverton
COINCIDENT RECORD: 15 years; water years 1942-56

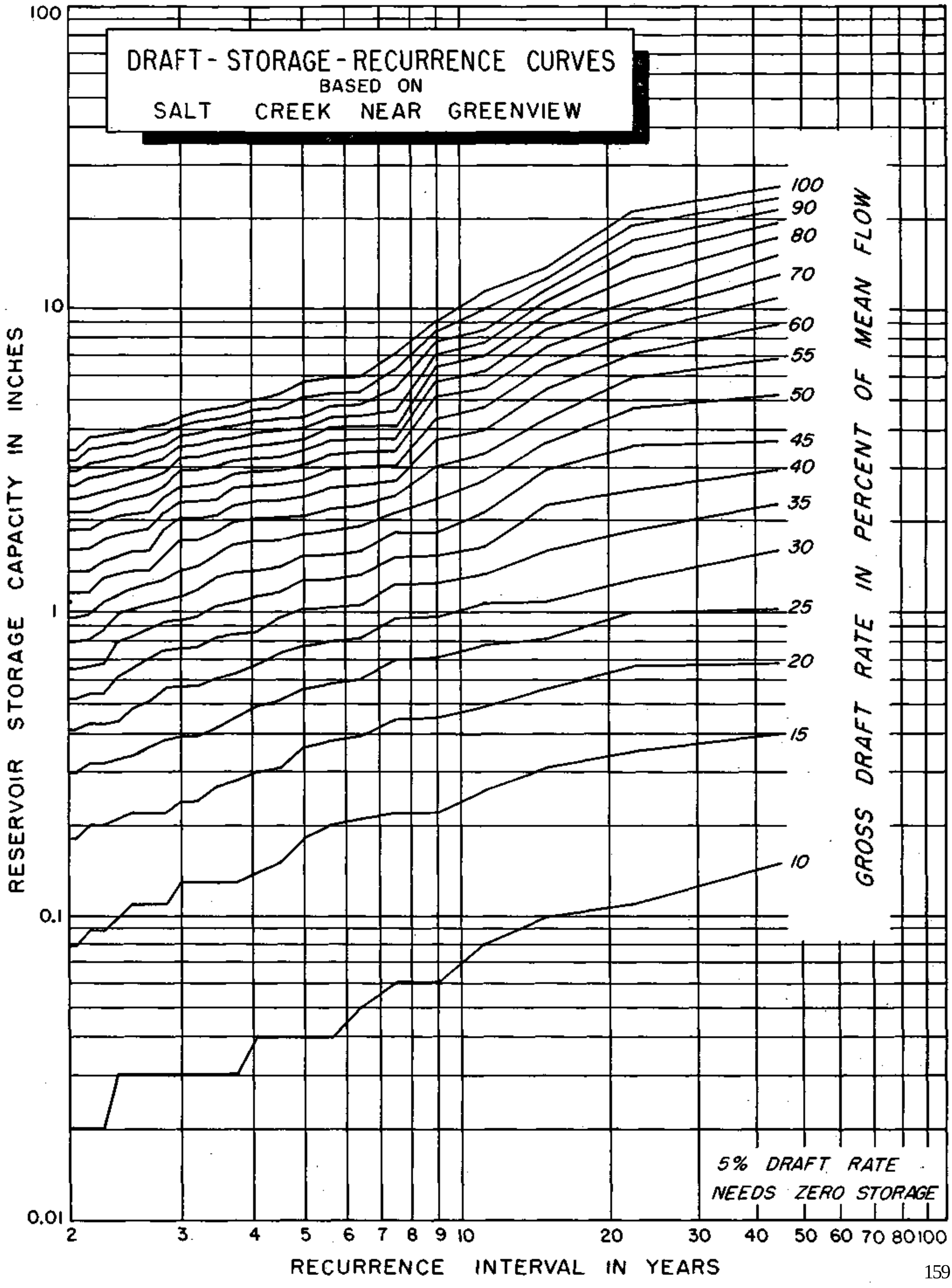
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.74 inch per month

Draft-Storage-Recirrrence Data for Salt Creek near Greenview

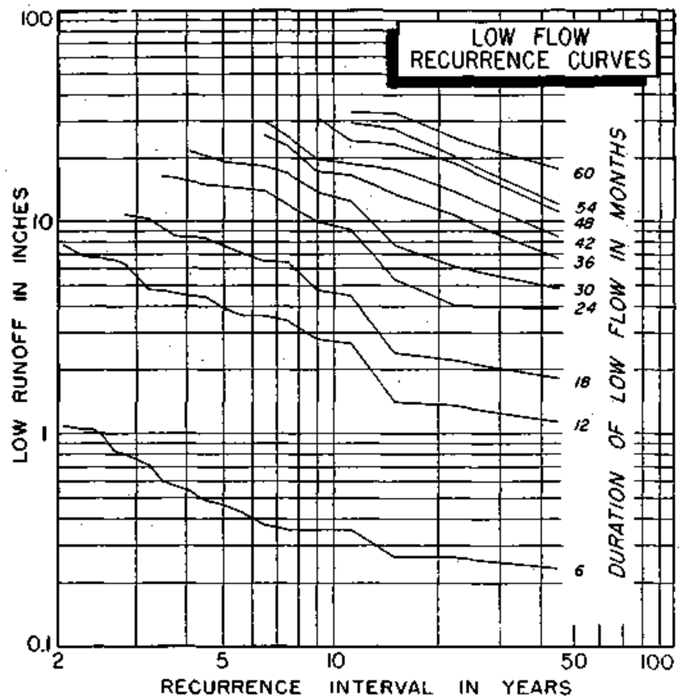
Reservoir storage capacity in inches reqnired to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.01	.15	.40	.68	1.03	1.61	2.27	2.94	3.71	5.23	6.86	8.87	10.95	13.02	15.09	17.16	19.23	21.31	23.38	25.45
	1	5	7	8	10	18	18	18	30	44	44	56	56	56	56	56	56	56	56	56
22.5	.01	.11	.35	.66	1.00	1.33	1.86	2.54	3.54	4.72	5.90	7.09	8.27	9.46	10.64	12.64	14.71	16.79	18.86	20.93
	1	6	7	9	9	9	18	20	32	32	32	32	32	32	32	56	56	56	56	56
15.0	.00	.10	.31	.56	.82	1.11	1.61	2.28	2.94	3.61	4.37	5.40	6.44	7.47	8.51	9.55	10.58	11.62	12.65	13.69
	1	5	6	7	7	8	18	18	18	18	28	28	28	28	28	26	28	28	28	28
11.3	.00	.08	.06	.49	.78	1.08	1.37	1.67	2.14	2.73	3.32	3.99	4.73	5.47	6.21	6.95	7.69	8.45	9.93	11.41
	1	4	6	7	8	8	8	8	16	16	16	20	20	20	20	20	20	40	40	40
9.0	.00	.06	.22	.45	.71	.96	1.25	1.55	1.84	2.36	3.03	3.69	4.36	5.02	5.69	6.36	7.02	7.69	8.35	9.10
	1	4	6	7	7	8	8	8	8	18	18	18	18	18	18	18	18	18	18	42
7.5	.00	.06	.22	.44	.69	.95	1.24	1.54	1.83	2.13	2.43	2.72	3.02	3.38	3.75	4.12	4.62	5.43	6.25	7.06
	1	4	6	6	7	8	8	8	8	8	8	8	8	10	10	10	22	22	22	22
6.4	.00	.05	.21	.39	.60	.82	1.07	1.34	1.63	1.93	2.26	2.63	3.00	3.37	3.74	4.11	4.48	4.85	5.35	5.95
	1	3	5	5	6	6	7	8	8	8	10	10	10	10	10	10	10	10	16	26
5.6	.00	.04	.20	.38	.58	.80	1.05	1.31	1.57	1.86	2.21	2.58	2.95	3.32	3.69	4.06	4.43	4.80	5.30	5.89
	1	4	5	5	6	6	7	7	7	9	10	10	10	10	10	10	10	10	16	16
5.0	.00	.04	.18	.36	.56	.78	1.04	1.30	1.56	1.82	2.08	2.42	2.75	3.08	3.42	3.75	4.08	4.44	5.10	5.77
	1	3	5	5	6	7	7	7	7	7	9	9	9	9	9	9	9	18	18	18
4.5	.00	.04	.15	.31	.51	.73	.95	1.18	1.45	1.75	2.05	2.34	2.64	2.93	3.23	3.60	3.97	4.34	4.71	5.22
	1	3	3	5	6	6	6	6	8	8	8	8	8	8	10	10	10	10	10	14
4.1	.00	.04	.14	.30	.49	.67	.86	1.15	1.44	1.74	2.04	2.33	2.63	2.92	3.22	3.54	3.91	4.28	4.65	5.02
	1	2	4	5	5	5	5	8	8	8	8	8	8	8	8	10	10	10	10	10
3.8	.00	.03	.13	.28	.45	.63	.85	1.10	1.39	1.69	1.99	2.28	2.53	2.87	3.17	3.47	3.76	4.09	4.43	4.76
	1	2	4	4	5	6	6	8	8	8	8	8	8	8	8	8	9	9	9	9
3.5	.00	.03	.13	.27	.42	.61	.83	1.06	1.32	1.58	1.84	2.10	2.36	2.68	3.02	3.35	3.68	4.01	4.35	4.68
	0	2	3	4	4	6	6	7	7	7	7	7	8	9	9	9	9	9	9	9
3.2	.00	.03	.13	.24	.39	.57	.76	.97	1.19	1.44	1.74	2.03	2.33	2.62	2.92	3.22	3.55	3.88	4.22	4.55
	0	2	3	3	5	5	5	6	6	8	8	8	8	8	8	9	9	9	9	9
3.0	.00	.03	.13	.24	.39	.57	.76	.94	1.16	1.43	1.73	2.02	2.32	2.61	2.91	3.21	3.50	3.80	4.09	4.39
	0	2	3	3	5	5	5	6	6	8	8	8	8	8	8	8	8	8	8	9
2.8	.00	.03	.11	.22	.38	.56	.75	.93	1.12	1.34	1.60	1.86	2.12	2.38	2.64	2.89	3.19	3.52	3.86	4.19
	-1	2	3	4	5	5	5	5	5	7	7	7	7	7	7	7	9	9	9	9
2.6	.00	.03	.11	.22	.36	.51	.70	.88	1.07	1.25	1.44	1.63	1.88	2.15	2.45	2.76	3.09	3.42	3.76	4.09
	-1	2	3	3	4	5	5	5	5	5	5	6	7	8	8	9	9	9	9	9
2.5	.00	.03	.11	.22	.34	.48	.65	.83	1.02	1.20	1.39	1.60	1.84	2.10	2.37	2.67	2.96	3.26	3.59	3.92
	-1	2	3	3	3	4	5	5	5	5	5	6	7	7	8	8	8	8	9	9
2.4	.00	.03	.10	.21	.33	.44	.61	.79	.98	1.16	1.35	1.55	1.81	2.07	2.33	2.58	2.90	3.23	3.57	3.90
	-1	2	3	3	3	4	5	5	5	5	5	7	7	7	7	7	9	9	9	9
2.3	.00	.02	.09	.20	.32	.43	.54	.68	.87	1.08	1.30	1.52	1.75	2.00	2.26	2.51	2.82	3.15	3.49	3.82
	-1	2	3	3	3	3	4	5	5	6	6	6	6	7	7	7	9	9	9	9
2.1	.00	.01	.09	.20	.32	.43	.54	.66	.81	.98	1.17	1.39	1.63	1.89	2.15	2.44	2.77	3.10	3.44	3.77
	-1	2	3	3	3	3	3	4	4	5	6	6	7	7	7	9	9	9	9	9
2.0	.00	.01	.08	.18	.30	.41	.52	.65	.80	.96	1.17	1.39	1.62	1.88	2.14	2.39	2.65	2.91	3.17	3.43
	-1	2	2	3	3	3	3	4	4	5	6	6	7	7	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SALT CREEK NEAR GREENVIEW
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5% DRAFT RATE
NEEDS ZERO STORAGE
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100

SANGAMON RIVER NEAR OAKFORD



STATION 135

LOCATION
In NW ¼ SE ¼ sec 3, T19N, R8W, on the Menard-Mason County line, at the bridge on Ill. 97, about 2 miles northwest of Petersburg and 1.75 miles northwest of Oakford

DRAINAGE AREA
5120 square miles

ACTUAL FLOW DATA
PERIOD: 1910-11, 1915-18, 1922, 1929-33, 1940-59
CONTINUOUS RECORD: 20 years; water years 1940-59

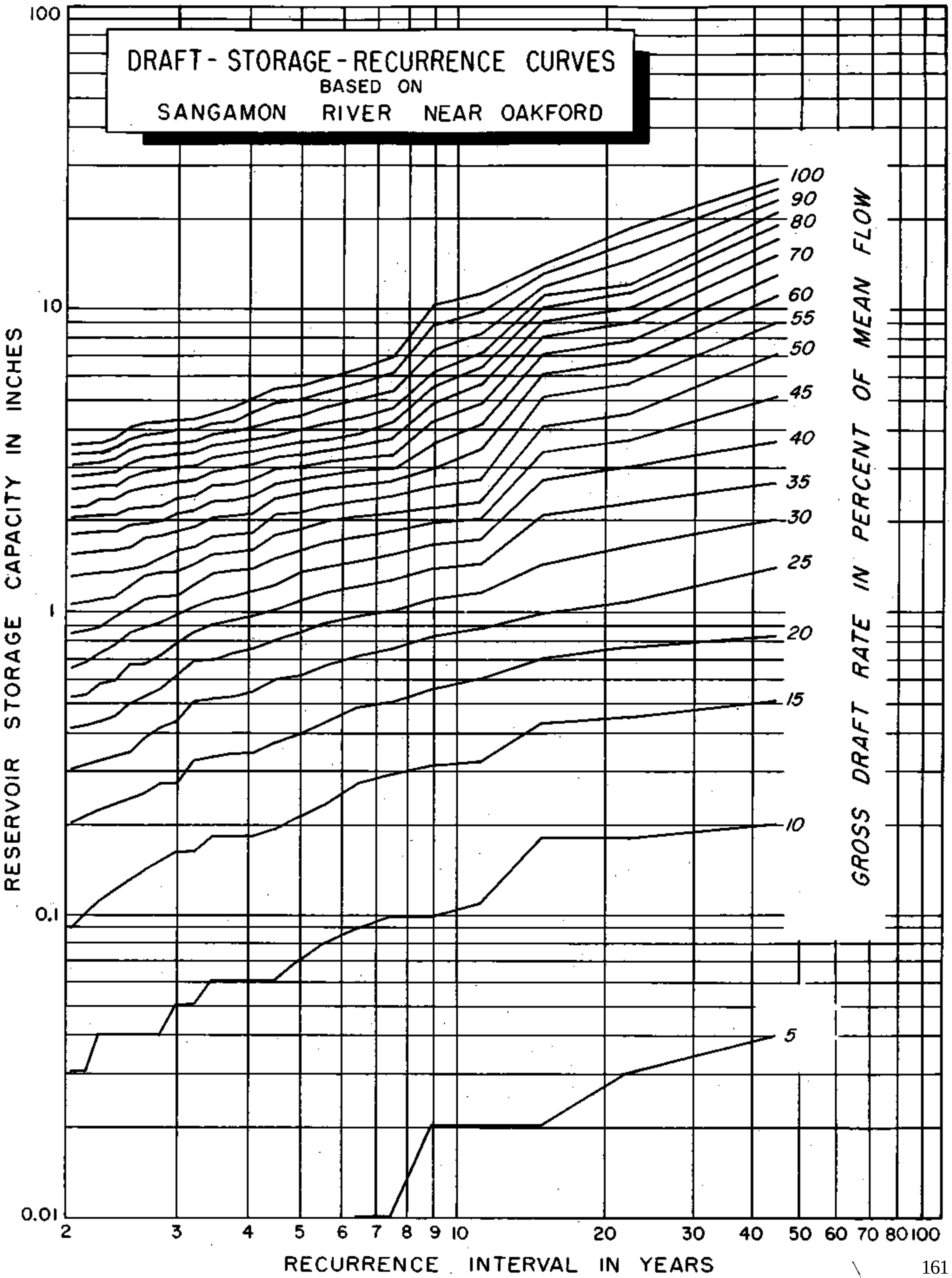
SYNTHETIC FLOW DATA
PERIOD: 15 years; water years 1919-21, 1923-28, 1934-39
INDEX STATION : Sangamon River at Riverton
COINCIDENT RECORD: 28 years; water years 1910-11, 1915-18, 1922, 1929-33, 1940-56

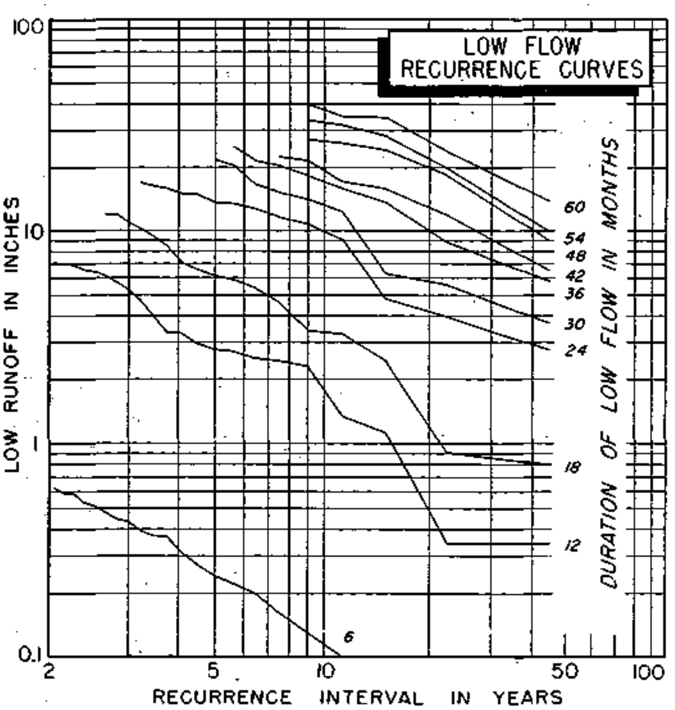
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-1959
MEAN DISCHARGE : 0.71 inch per month

Draft-Storage-Recurrence Data for Sangamon River near Oakford

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.04	.20	.51	.83	1.39	2.02	2.66	3.71	5.18	7.10	9.02	11.01	12.99	14.98	16.97	18.96	20.95	22.93	24.92	26.91
	3	6	9	9	18	18	18	32	54	54	56	56	56	56	56	56	56	56	56	56
22.5	.03	.18	.45	.76	1.08	1.63	2.30	3.01	3.72	4.56	5.63	6.71	7.85	8.98	10.12	11.26	12.49	14.47	16.46	18.45
	3	7	8	9	9	18	20	20	20	30	30	32	32	32	32	32	56	56	56	56
15.0	.02	.18	.43	.70	.98	1.44	2.08	2.72	3.36	4.10	5.09	6.09	7.08	8.08	9.07	10.06	11.06	12.05	13.05	14.04
	1	7	7	8	8	18	18	18	18	28	28	28	28	28	28	28	28	28	28	28
11.3	.02	.11	.32	.60	.88	1.16	1.45	1.73	2.02	2.32	2.73	3.44	4.15	4.86	5.60	6.38	7.16	8.26	9.75	11.24
	1	5	7	8	8	6	8	8	8	9	20	20	20	20	22	22	22	42	42	42
9.0	.02	.10	.31	.55	.82	1.10	1.39	1.67	1.96	2.27	2.58	2.98	3.60	4.24	4.88	5.51	6.15	7.29	8.78	10.27
	1	4	7	7	8	8	6	8	8	9	9	16	18	18	18	18	18	42	42	42
7.5	.01	.10	.29	.50	.75	1.00	1.27	1.55	1.84	2.12	2.40	2.69	2.97	3.26	3.73	4.22	4.72	5.32	6.10	6.88
	1	4	6	7	7	7	8	8	8	8	8	8	6	9	14	14	14	22	22	22
6.4	.01	.09	.27	.48	.71	.96	1.21	1.48	1.77	2.05	2.33	2.62	2.90	3.19	3.51	3.86	4.38	5.02	5.66	6.30
	1	4	6	6	7	7	7	8	8	8	8	8	8	8	10	14	18	18	18	18
5.6	.00	.08	.23	.43	.66	.91	1.16	1.41	1.69	1.97	2.25	2.54	2.82	3.11	3.39	3.70	4.17	4.73	5.30	5.87
	1	4	4	6	7	7	7	7	8	8	8	8	8	8	8	11	16	16	16	16
5.0	.00	.07	.21	.39	.61	.84	1.09	1.34	1.59	1.86	2.14	2.43	2.71	3.00	3.28	3.60	3.96	4.41	4.98	5.55
	1	3	4	6	6	7	7	7	7	8	8	8	8	8	8	10	10	16	16	16
4.5	.00	.06	.19	.37	.59	.80	1.01	1.22	1.51	1.79	2.07	2.36	2.64	2.93	3.21	3.49	3.80	4.27	4.84	5.41
	1	3	4	6	6	6	6	8	8	8	8	8	8	8	8	8	10	16	16	16
4.1	.00	.06	.18	.34	.54	.75	.96	1.17	1.39	1.60	1.81	2.09	2.40	2.72	3.04	3.36	3.68	4.06	4.55	5.05
	1	3	4	5	6	6	6	6	6	6	6	8	9	9	9	9	9	14	14	14
3.8	.00	.06	.18	.34	.52	.72	.93	1.14	1.36	1.57	1.78	2.04	2.32	2.63	2.95	3.27	3.59	3.91	4.23	4.68
	1	3	4	5	5	6	6	6	6	6	6	8	8	9	9	9	9	9	9	14
3.5	.00	.06	.18	.33	.51	.69	.90	1.11	1.33	1.54	1.75	2.03	2.31	2.60	2.88	3.20	3.52	3.84	4.16	4.48
	1	3	4	5	5	6	6	6	6	6	6	8	8	8	9	9	9	9	9	9
3.2	.00	.05	.16	.32	.50	.68	.85	1.03	1.22	1.43	1.64	1.89	2.14	2.39	2.69	3.01	3.33	3.65	3.97	4.32
	1	3	3	5	5	5	5	5	6	6	7	7	7	7	9	9	9	9	10	10
3.0	.00	.05	.16	.27	.43	.61	.78	.96	1.14	1.35	1.58	1.83	2.08	2.35	2.67	2.99	3.31	3.63	3.95	4.27
	1	3	3	4	5	5	5	5	6	6	7	7	7	9	9	9	9	9	9	10
2.8	.00	.04	.15	.27	.41	.55	.71	.91	1.13	1.34	1.55	1.77	1.99	2.28	2.59	2.91	3.23	3.55	3.87	4.19
	1	3	3	4	4	4	5	6	6	6	6	6	8	8	9	9	9	9	9	9
2.6	.00	.04	.14	.25	.38	.52	.67	.88	1.10	1.31	1.52	1.74	1.95	2.24	2.56	2.88	3.20	3.52	3.84	4.16
	1	2	3	3	4	4	6	6	6	6	6	6	8	9	9	9	9	9	9	9
2.5	.00	.04	.13	.24	.34	.49	.66	.84	1.02	1.20	1.38	1.63	1.91	2.20	2.48	2.76	3.07	3.39	3.71	4.03
	1	2	3	3	3	5	5	5	5	5	6	8	8	8	8	8	9	9	9	9
2.4	.00	.04	.12	.23	.33	.45	.59	.77	.95	1.13	1.34	1.59	1.84	2.09	2.34	2.59	2.88	3.16	3.45	3.73
	1	2	3	3	3	4	5	5	5	5	7	7	7	7	7	8	8	8	8	8
2.3	.00	.04	.11	.22	.32	.43	.57	.72	.88	1.10	1.34	1.59	1.84	2.09	2.34	2.59	2.83	3.08	3.33	3.58
	1	2	3	3	3	4	4	4	6	7	7	7	7	7	7	7	7	7	7	7
2.1	.00	.03	.10	.21	.31	.42	.53	.68	.86	1.06	1.32	1.57	1.82	2.07	2.32	2.57	2.81	3.06	3.31	3.56
	1	2	3	3	3	3	4	4	6	7	7	7	7	7	7	7	7	7	7	7
2.0	.00	.03	.09	.20	.30	.41	.52	.65	.84	1.05	1.29	1.54	1.79	2.04	2.29	2.54	2.78	3.03	3.28	3.53
	1	1	3	3	3	3	3	4	6	7	7	7	7	7	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SANGAMON RIVER NEAR OAKFORD
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 137

LOCATION
In SW ¼ SW ¼ sec 13, T2N, R4W, Clinton County, at bridge on U. S. 50, about 1.7 miles east of Breese

DRAINAGE AREA
760 square miles, approximately

ACTUAL FLOW DATA
PERIOD: NOV 1909 thru Dec 1912, Aug thru Dec 1914, Oct 1945 thru Sept 1959
CONTINUOUS RECORD: 14 years; water years 1946-59

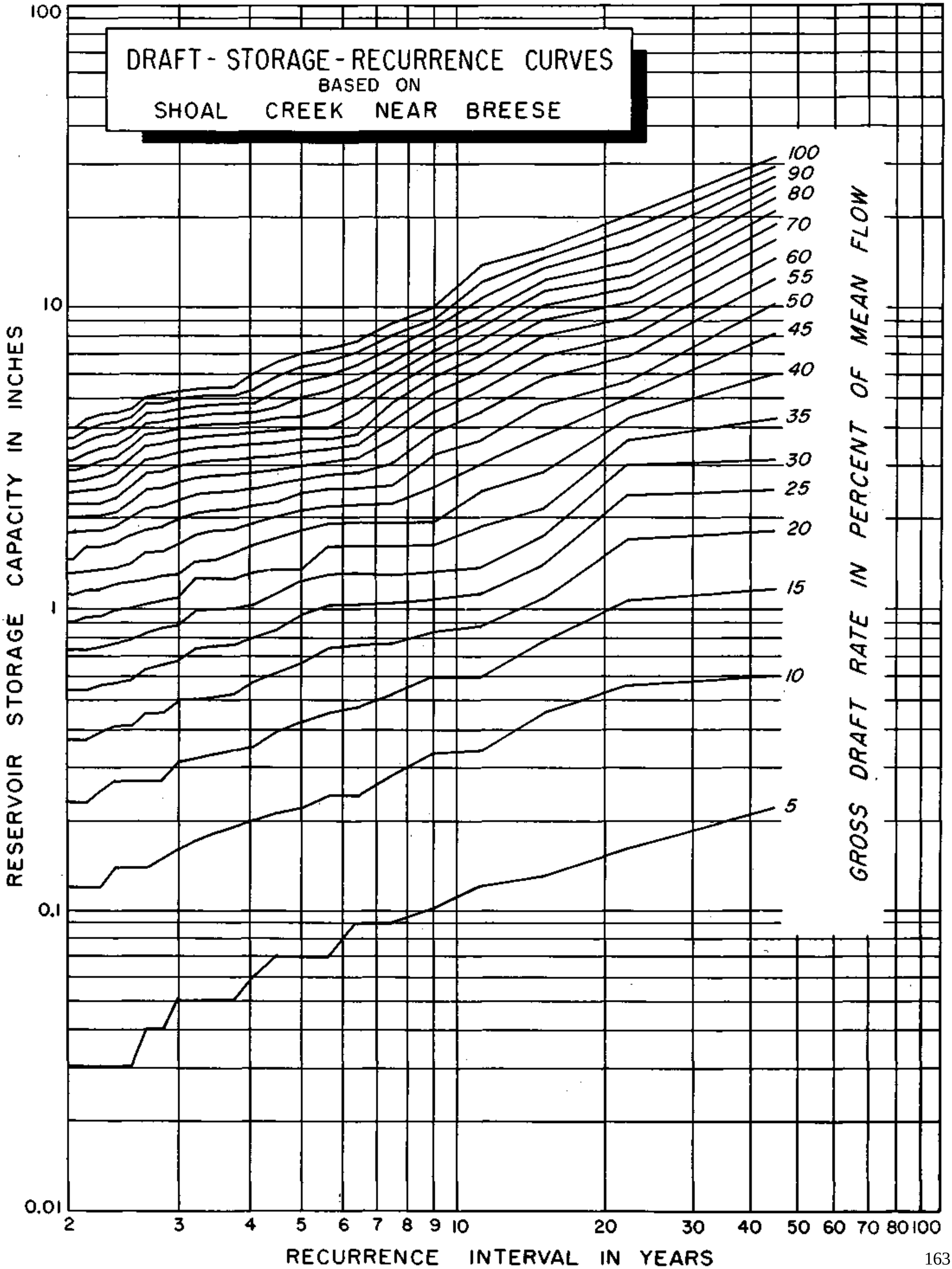
SYNTHETIC FLOW DATA
PERIOD: 31 years; water years 1915-45
INDEX STATION : Kaskaskia River at Vandalia
COINCIDENT RECORD: 8 years; water years 1946-53

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.73 inch per month

Draft-Storage-Recurrence Data for Shoal Creek near Breese

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.22	.60	1.17	1.83	2.49	3.14	4.32	6.04	8.15	10.27	12.39	14.50	16.62	18.74	20.86	22.97	25.09	27.21	29.32	31.44
	8	14	18	18	18	18	44	58	58	58	58	58	58	58	58	58	58	58	58	58
22.5	.16	.56	1.07	1.72	2.38	3.03	3.69	4.35	5.00	5.72	6.89	8.06	9.22	10.39	11.56	12.73	14.19	16.06	18.17	20.29
	8	14	14	18	18	18	18	18	18	32	32	32	32	32	32	32	42	58	58	58
15.0	.13	.45	.78	1.10	1.43	1.76	2.15	2.85	3.77	4.79	5.81	6.85	7.95	9.04	10.14	11.23	12.33	13.42	14.52	15.61
	8	9	9	9	9	9	18	20	28	28	28	30	30	30	30	30	30	30	30	30
11.3	.12	.34	.59	.87	1.16	1.45	1.88	2.43	3.02	3.71	4.51	5.32	6.12	6.92	7.73	8.53	9.33	10.54	12.08	13.61
	6	6	7	8	8	8	14	16	16	22	22	22	22	22	22	22	22	42	42	42
9.0	.10	.33	.59	.84	1.10	1.36	1.65	1.95	2.53	3.19	3.85	4.50	5.16	5.82	6.48	7.13	7.79	8.45	9.10	9.94
	4	7	7	7	7	8	8	9	18	18	18	18	18	18	18	18	18	18	18	44
7.5	.09	.28	.52	.77	1.05	1.34	1.63	1.93	2.26	2.59	3.07	3.66	4.24	4.83	5.41	5.99	6.58	7.28	8.01	8.81
	4	6	7	7	8	8	8	9	9	9	16	16	16	16	16	16	18	20	20	44
6.4	.09	.24	.47	.76	1.05	1.34	1.63	1.93	2.22	2.51	2.63	3.16	3.49	3.82	4.45	5.10	5.76	6.42	7.07	7.73
	4	6	8	8	8	8	8	8	8	9	9	9	9	9	18	18	18	18	18	18
5.6	.07	.24	.45	.74	1.03	1.32	1.61	1.91	2.20	2.49	2.78	3.07	3.37	3.66	3.98	4.60	5.26	5.92	6.57	7.23
	4	5	8	8	8	8	8	8	8	8	8	8	8	8	9	18	18	18	18	18
5.0	.07	.22	.42	.66	.95	1.24	1.53	1.83	2.12	2.41	2.70	2.99	3.30	3.63	3.96	4.34	5.00	5.66	6.31	6.97
	4	5	6	8	8	8	8	8	8	8	8	8	9	9	9	18	18	18	18	18
4.5	.07	.21	.39	.61	.85	1.14	1.43	1.73	2.02	2.31	2.60	2.89	3.20	3.54	3.91	4.27	4.64	5.23	5.88	6.54
	4	4	6	6	8	8	8	8	8	8	8	8	9	10	10	10	10	18	18	18
4.1	.06	.20	.35	.57	.80	1.05	1.33	1.63	1.92	2.21	2.51	2.84	3.17	3.50	3.83	4.16	4.48	4.81	5.36	6.02
	4	4	6	6	7	7	8	8	8	8	9	9	9	9	9	9	9	9	18	18
3.8	.05	.19	.34	.52	.76	1.01	1.27	1.54	1.83	2.13	2.45	2.78	3.11	3.44	3.77	4.10	4.42	4.75	5.08	5.42
	4	4	5	5	7	7	7	8	8	9	9	9	9	9	9	9	9	9	9	12
3.5	.05	.18	.33	.51	.75	1.00	1.26	1.53	1.82	2.12	2.44	2.77	3.10	3.43	3.76	4.09	4.41	4.74	5.07	5.40
	3	4	4	6	7	7	7	8	8	9	9	9	9	9	9	9	9	9	9	9
3.2	.05	.17	.32	.50	.74	.99	1.25	1.50	1.76	2.06	2.38	2.71	3.04	3.37	3.70	4.03	4.35	4.68	5.01	5.34
	3	4	5	5	7	7	7	7	7	9	9	9	9	9	9	9	9	9	9	9
3.0	.05	.16	.31	.49	.67	.88	1.10	1.35	1.65	1.98	2.30	2.63	2.96	3.29	3.62	3.95	4.27	4.60	4.93	5.26
	3	3	5	5	6	6	7	7	9	9	9	9	9	9	9	9	9	9	9	9
2.8	.04	.15	.27	.45	.65	.86	1.08	1.30	1.56	1.86	2.18	2.51	2.84	3.17	3.50	3.83	4.15	4.48	4.81	5.14
	3	3	5	5	6	6	6	6	8	9	9	9	9	9	9	9	9	9	9	9
2.6	.04	.14	.27	.45	.63	.83	1.05	1.27	1.54	1.83	2.15	2.48	2.81	3.14	3.47	3.80	4.12	4.45	4.78	5.11
	2	3	5	5	5	6	6	6	8	9	9	9	9	9	9	9	9	9	9	9
2.5	.03	.14	.27	.41	.58	.79	1.01	1.23	1.49	1.75	2.00	2.27	2.57	2.86	3.15	3.44	3.73	4.03	4.32	4.61
	3	3	4	4	6	6	6	7	7	7	7	8	8	8	8	8	8	8	8	8
2.4	.03	.14	.27	.41	.57	.77	.99	1.21	1.43	1.65	1.87	2.09	2.34	2.60	2.88	3.17	3.48	3.81	4.14	4.47
	3	3	4	4	5	6	6	6	6	6	6	7	7	7	8	8	9	9	9	9
2.3	.03	.12	.25	.39	.56	.75	.94	1.16	1.38	1.60	1.82	2.04	2.26	2.49	2.75	3.11	3.43	3.76	4.09	4.42
	2	3	4	4	5	5	6	6	6	6	6	6	6	7	9	9	9	9	9	9
2.1	.03	.12	.23	.37	.54	.73	.94	1.16	1.38	1.60	1.82	2.04	2.26	2.48	2.70	2.95	3.27	3.60	3.93	4.26
	2	3	4	4	5	5	6	6	6	6	6	6	6	6	6	9	9	9	9	9
2.0	.03	.12	.23	.37	.54	.73	.91	1.13	1.35	1.57	1.79	2.01	2.23	2.45	2.67	2.88	3.11	3.41	3.70	3.99
	2	3	4	4	5	5	6	6	6	6	6	6	6	6	6	6	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SHOAL CREEK NEAR BREESE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
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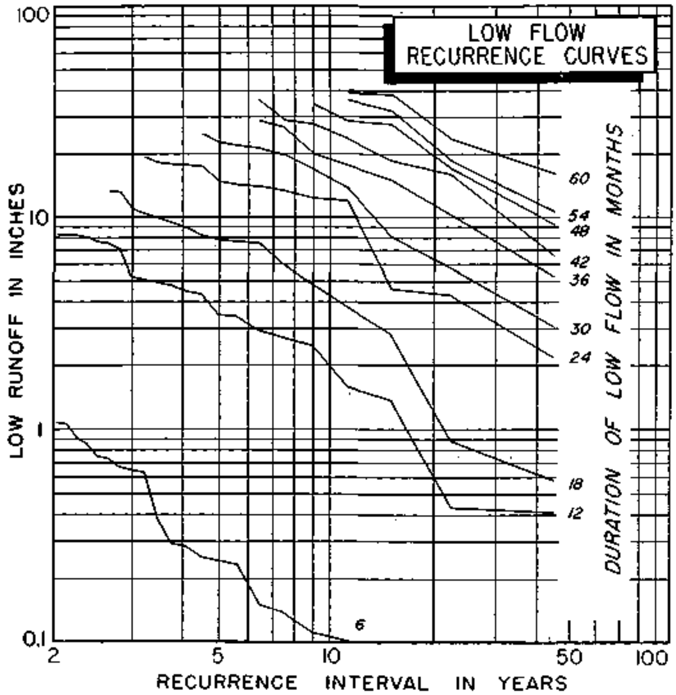
SOUTH FORK, SANGAMON RIVER AT KINCAID



STATION 140

LOCATION

In SW ¼ NE ¼ sec 14, T13N, R3W, Christian County, about 300 feet upstream from bridge on Ill. 104, 1.0 mile southeast of Kincaid

DRAINAGE AREA

510 square miles

ACTUAL FLOW DATA

PERIOD: May 1917 thru Oct 1927, Sept 1928 thru Sept 1930, Oct 1931 thru Sept 1933, Oct 1944 thru Sept 1959; prior to Oct 1929 published as "At power plant near Taylorville"

CONTINUOUS RECORD: 15 years; water years 1945-59

SYNTHETIC FLOW DATA

PERIOD: 16 years; water years 1915-17, 1928,1931, 1934-44

INDEX STATION: Kaskaskia River at Vandalia

COINCIDENT RECORD: 23 years; water years 1918-27, 1929-30, 1932-33, 1945-53

This station utilized as an index station

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

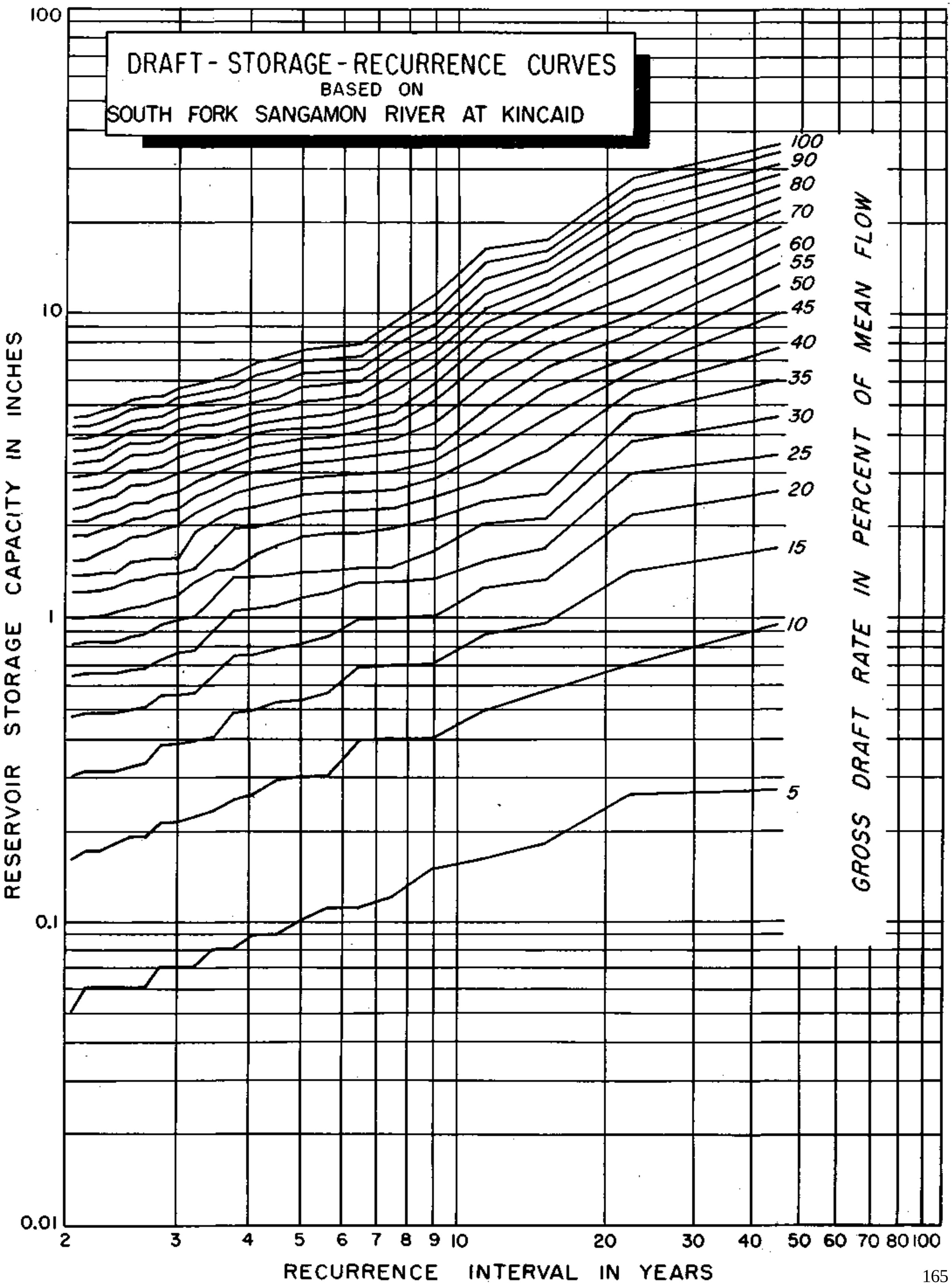
MEAN DISCHARGE: 0.85 inch per month

Draft-Storage-Recurrence Data for South Fork, Sangamon River at Kincaid

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.27	.95	1.73	2.58	3.43	4.69	6.05	7.70	10.00	12.29	14.59	16.88	19.22	21.60	23.98	26.36	28.74	31.20	33.67	36.13
	8	18	20	20	20	32	32	54	54	54	54	54	56	56	56	56	58	58	58	58
22.5	.26	.70	1.41	2.17	2.98	3.83	4.68	5.53	6.38	7.23	8.52	9.88	11.37	13.66	15.96	18.25	20.62	23.00	25.38	27.76
	8	16	18	18	20	20	20	20	20	20	32	32	54	54	54	54	56	56	56	56
15.0	.18	.57	.95	1.33	1.71	2.10	2.54	3.53	4.55	5.57	6.59	7.72	8.91	10.10	11.29	12.48	13.67	14.86	16.05	17.38
	9	9	9	9	9	9	16	24	24	24	24	28	28	28	28	28	28	28	28	40
11.3	.16	.49	.87	1.25	1.63	2.02	2.40	2.80	3.43	4.11	4.79	5.85	6.96	8.06	9.17	10.27	11.38	12.83	14.53	16.23
	6	9	9	9	9	9	9	14	16	16	16	26	26	26	26	26	26	40	40	40
9.0	.15	.40	.69	.99	1.33	1.72	2.10	2.48	2.86	3.25	3.63	4.38	5.15	5.91	6.68	7.45	8.30	9.15	10.00	11.51
	6	7	7	7	9	9	9	9	9	9	9	18	18	18	18	20	20	20	20	40
7.5	.12	.40	.69	.99	1.29	1.60	1.94	2.28	2.62	3.02	3.45	3.87	4.30	4.72	5.49	6.25	7.02	7.78	8.55	9.31
	6	7	7	7	7	8	8	8	9	10	10	10	10	18	18	18	18	18	18	18
6.4	.11	.39	.68	.98	1.28	1.58	1.88	2.22	2.56	2.94	3.32	3.70	4.08	4.47	4.85	5.34	5.94	6.53	7.13	7.82
	6	7	7	7	7	7	8	8	8	9	9	9	9	9	9	14	14	14	14	22
5.6	.11	.30	.56	.86	1.19	1.53	1.87	2.21	2.55	2.89	3.23	3.57	3.91	4.25	4.62	5.17	5.77	6.36	6.96	7.71
	4	5	7	7	8	8	8	8	8	8	8	8	8	8	9	14	14	14	14	20
5.0	.10	.30	.53	.81	1.15	1.49	1.83	2.17	2.51	2.85	3.19	3.53	3.87	4.21	4.55	5.12	5.72	6.31	6.91	7.51
	4	5	6	8	8	8	8	8	8	8	8	8	8	8	8	14	14	14	14	18
4.5	.09	.29	.52	.78	1.08	1.38	1.70	2.04	2.38	2.72	3.06	3.40	3.74	4.08	4.42	4.76	5.24	5.83	6.43	7.07
	4	5	6	7	7	7	8	8	6	8	8	8	8	8	8	8	14	14	14	18
4.1	.09	.26	.49	.75	1.05	1.35	1.64	1.95	2.29	2.63	2.97	3.31	3.65	3.99	4.33	4.67	5.05	5.59	6.19	6.78
	4	4	6	7	7	7	7	8	8	8	8	8	8	8	8	9	9	14	14	14
3.8	.08	.25	.48	.74	1.04	1.34	1.63	1.93	2.23	2.53	2.82	3.12	3.42	3.72	4.07	4.45	4.83	5.22	5.67	6.26
	4	4	6	7	7	7	7	7	7	7	7	7	7	7	9	9	9	9	14	14
3.5	.08	.23	.40	.64	.90	1.16	1.45	1.75	2.05	2.35	2.64	2.94	3.24	3.54	3.87	4.26	4.69	5.11	5.54	5.96
	3	4	5	6	6	7	7	7	7	7	7	7	7	7	9	10	10	10	10	10
3.2	.07	.22	.39	.56	.77	1.00	1.29	1.59	1.89	2.19	2.48	2.78	3.09	3.48	3.86	4.24	4.62	5.01	5.39	5.77
	3	4	4	5	5	7	7	7	7	7	7	7	9	9	9	9	9	9	9	9
3.0	.07	.21	.38	.55	.76	.98	1.19	1.40	1.68	1.98	2.27	2.58	2.96	3.35	3.73	4.11	4.49	4.88	5.26	5.64
	3	4	4	5	5	5	5	6	7	7	7	9	9	9	9	9	9	9	9	9
2.8	.07	.21	.38	.55	.72	.94	1.15	1.38	1.64	1.91	2.20	2.50	2.80	3.12	3.46	3.80	4.14	4.52	4.90	5.28
	3	4	4	4	5	5	5	6	6	7	7	7	7	8	8	8	8	9	9	9
2.6	.06	.19	.33	.50	.67	.87	1.08	1.32	1.58	1.83	2.09	2.35	2.69	3.03	3.37	3.71	4.08	4.47	4.85	5.23
	3	3	4	4	4	5	5	6	6	6	6	8	8	8	8	8	9	9	9	9
2.5	.06	.19	.32	.49	.66	.85	1.06	1.30	1.56	1.81	2.07	2.35	2.69	3.03	3.37	3.71	4.05	4.39	4.76	5.14
	3	3	4	4	4	5	5	6	6	6	6	8	8	8	8	8	8	8	9	9
2.4	.06	.18	.31	.48	.65	.82	1.03	1.24	1.45	1.70	1.96	2.21	2.47	2.81	3.15	3.49	3.83	4.17	4.51	4.85
	2	3	4	4	4	5	5	5	6	6	6	6	8	8	8	8	8	8	8	8
2.3	.06	.17	.31	.48	.65	.82	1.00	1.21	1.42	1.65	1.91	2.16	2.42	2.67	2.96	3.26	3.59	3.96	4.34	4.72
	2	3	4	4	4	4	5	5	5	6	6	6	6	7	7	7	8	9	9	9
2.1	.06	.17	.31	.48	.65	.82	.99	1.20	1.41	1.63	1.84	2.05	2.31	2.61	2.90	3.20	3.52	3.86	4.20	4.54
	2	3	4	4	4	4	5	5	5	5	5	5	7	7	7	7	8	8	8	8
2.0	.05	.16	.30	.47	.64	.81	.99	1.20	1.41	1.63	1.84	2.05	2.28	2.58	2.87	3.17	3.49	3.83	4.17	4.51
	2	3	4	4	4	4	5	5	5	5	5	5	7	7	7	7	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SOUTH FORK SANGAMON RIVER AT KINCAID
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
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20
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5
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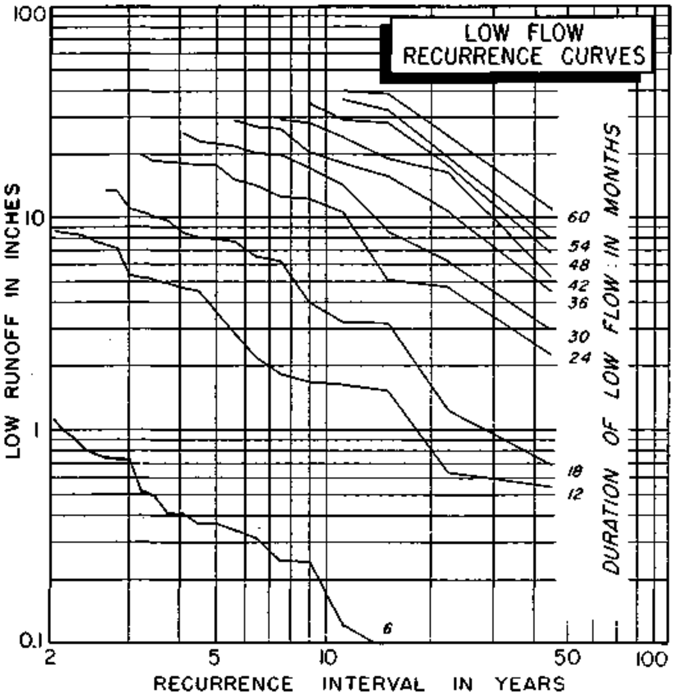
SOUTH FORK, SANGAMON RIVER NEAR NOKOMIS



STATION 141

LOCATION
In NE ¼ SE ¼ sec 36, T11N, R2W, Montgomery County, at the highway bridge on Ill. 16, 4.0 miles northeast of Nokomis

DRAINAGE AREA
10.8 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1951 thru Sept 1959
CONTINUOUS RECORD: 8 years; water years 1952-59

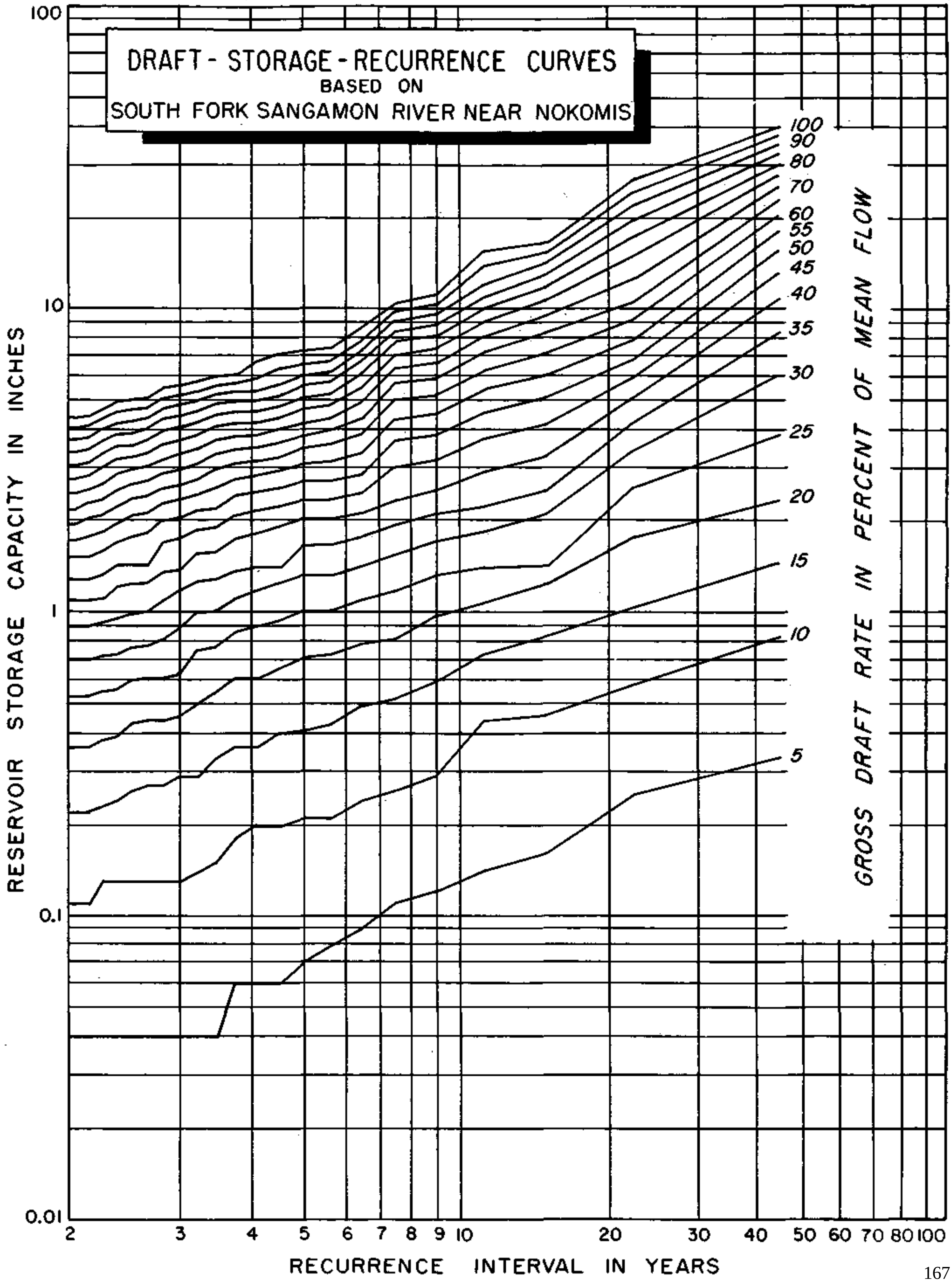
SYNTHETIC FLOW DATA
PERIOD: 37 years; water years 1915-51
INDEX STATION : South Fork, Sangamon River near Kincaid
COINCIDENT RECORD: 8 years; water years 1952-59

TOTAL DATA ANALYZED
PERIOD : 45 years; water years 1915-59
MEAN DISCHARGE : 0.84 inch per month

Draft-Storage-Recurrence Data for South Fork, Sangamon River near Nokomis

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.33	.83	1.59	2.34	3.87	6.05	8.40	10.76	13.11	15.51	17.95	20.38	22.82	25.25	27.69	30.13	32.56	35.00	37.43	39.87
	8	18	18	18	44	56	56	56	56	58	58	58	58	58	58	58	58	58	58	58
22.5	.25	.58	1.04	1.78	2.57	3.41	4.25	5.09	5.93	6.77	7.89	9.24	10.58	12.66	14.93	17.20	19.52	21.88	24.23	26.58
	7	9	16	18	20	20	20	20	20	20	32	32	32	54	54	54	56	56	56	56
15.0	.15	.46	.84	1.26	1.68	2.10	2.52	3.27	4.20	5.12	6.05	7.13	8.31	9.48	10.66	11.84	13.01	14.19	15.36	16.59
	7	7	10	10	10	10	10	22	22	22	24	28	28	28	28	28	28	28	28	30
11.3	.14	.44	.73	1.09	1.47	1.85	2.23	2.91	3.75	4.59	5.43	6.27	7.18	8.11	9.03	9.95	10.88	12.09	13.77	15.45
	7	7	7	9	9	9	9	20	20	20	20	20	22	22	22	22	22	40	40	40
9.0	.12	.29	.59	.97	1.35	1.73	2.11	2.52	3.19	3.86	4.53	5.20	5.88	6.63	7.39	8.15	8.90	9.66	10.41	11.17
	3	7	9	9	9	9	9	16	16	16	16	16	18	18	18	18	18	18	18	18
7.5	.11	.26	.52	.82	1.18	1.56	1.94	2.35	3.02	3.69	4.36	5.03	5.71	6.38	7.09	7.72	8.39	9.07	9.74	10.41
	3	6	7	7	9	9	9	16	16	16	16	16	16	15	16	16	16	16	16	16
6.4	.09	.24	.49	.79	1.11	1.45	1.78	2.12	2.47	2.56	3.36	3.87	4.37	4.92	5.51	6.10	6.69	7.27	7.86	8.61
	3	5	7	7	8	8	8	8	9	12	12	12	12	14	14	14	14	14	14	16
5.6	.08	.21	.43	.73	1.03	1.37	1.70	2.04	2.37	2.73	3.15	3.57	3.99	4.41	4.83	5.28	5.74	6.24	6.75	7.43
	3	5	7	7	8	8	8	8	8	10	10	10	10	10	10	11	12	12	12	20
5.0	.07	.21	.41	.71	1.02	1.36	1.69	2.03	2.36	2.72	3.10	3.48	3.85	4.23	4.66	5.14	5.60	6.07	6.57	7.29
	2	4	7	7	8	8	8	8	8	9	9	9	9	9	11	11	11	11	14	20
4.5	.06	.20	.40	.65	.94	1.25	1.58	1.92	2.25	2.59	2.93	3.26	3.63	4.01	4.39	4.77	5.15	5.62	6.37	7.13
	3	4	6	7	7	8	8	8	8	8	8	9	9	9	9	9	10	18	18	18
4.1	.06	.20	.36	.61	.90	1.19	1.49	1.83	2.16	2.50	2.84	3.17	3.51	3.86	4.24	4.62	5.00	5.37	5.93	6.69
	3	4	6	7	7	7	8	8	8	8	8	8	8	9	9	9	9	9	18	18
3.8	.06	.18	.36	.61	.86	1.14	1.44	1.76	2.09	2.43	2.77	3.10	3.45	3.83	4.21	4.59	4.97	5.34	5.72	6.10
	3	3	6	6	6	7	7	8	8	8	8	8	9	9	9	9	9	9	9	9
3.5	.04	.15	.33	.54	.77	1.02	1.31	1.60	1.90	2.19	2.57	2.95	3.32	3.70	4.08	4.46	4.84	5.21	5.59	5.97
	2	3	5	5	6	6	7	7	7	9	9	9	9	9	9	9	9	9	9	9
3.2	.04	.14	.29	.50	.75	1.00	1.28	1.57	1.67	2.16	2.45	2.75	3.09	3.47	3.85	4.23	4.61	4.98	5.36	5.77
	2	3	5	6	6	6	7	7	7	7	7	7	9	9	9	9	9	9	9	10
3.0	.04	.13	.29	.46	.63	.89	1.19	1.48	1.78	2.07	2.36	2.66	2.95	3.33	3.71	4.09	4.47	4.84	5.22	5.60
	2	4	4	4	4	7	7	7	7	7	7	7	9	9	9	9	9	9	9	9
2.8	.04	.13	.27	.44	.61	.82	1.12	1.41	1.71	2.00	2.29	2.59	2.88	3.19	3.57	3.95	4.33	4.70	5.08	5.46
	2	2	4	4	4	7	7	7	7	7	7	7	7	9	9	9	9	9	9	9
2.6	.04	.13	.27	.44	.61	.78	1.01	1.27	1.55	1.84	2.13	2.43	2.72	3.03	3.37	3.71	4.04	4.38	4.71	5.08
	2	2	4	4	4	4	6	6	7	7	7	7	7	8	8	8	8	8	8	9
2.5	.04	.13	.26	.43	.60	.77	.99	1.25	1.50	1.79	2.08	2.38	2.67	2.97	3.26	3.56	3.91	4.28	4.66	5.04
	2	2	4	4	4	4	6	6	7	7	7	7	7	7	7	8	9	9	9	9
2.4	.04	.13	.24	.39	.56	.73	.96	1.22	1.47	1.72	1.97	2.22	2.53	2.86	3.20	3.54	3.87	4.21	4.59	4.97
	2	2	3	4	4	4	6	6	6	6	6	6	8	8	8	8	8	9	9	9
2.3	.04	.13	.23	.38	.55	.72	.93	1.14	1.35	1.60	1.85	2.10	2.36	2.67	3.01	3.35	3.68	4.02	4.35	4.69
	2	2	3	4	4	5	5	5	6	6	6	6	6	8	8	8	8	8	8	8
2.1	.04	.11	.22	.36	.53	.70	.90	1.11	1.32	1.54	1.79	2.04	2.30	2.55	2.83	3.12	3.44	3.78	4.11	4.45
	1	2	3	4	4	4	5	5	5	6	6	6	6	6	7	7	8	8	8	8
2.0	.04	.11	.22	.36	.53	.70	.90	1.11	1.32	1.53	1.74	1.95	2.18	2.48	2.77	3.06	3.39	3.73	4.06	4.40
	1	2	3	4	4	4	5	5	5	5	5	5	7	7	7	8	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SOUTH FORK SANGAMON RIVER NEAR NOKOMIS
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
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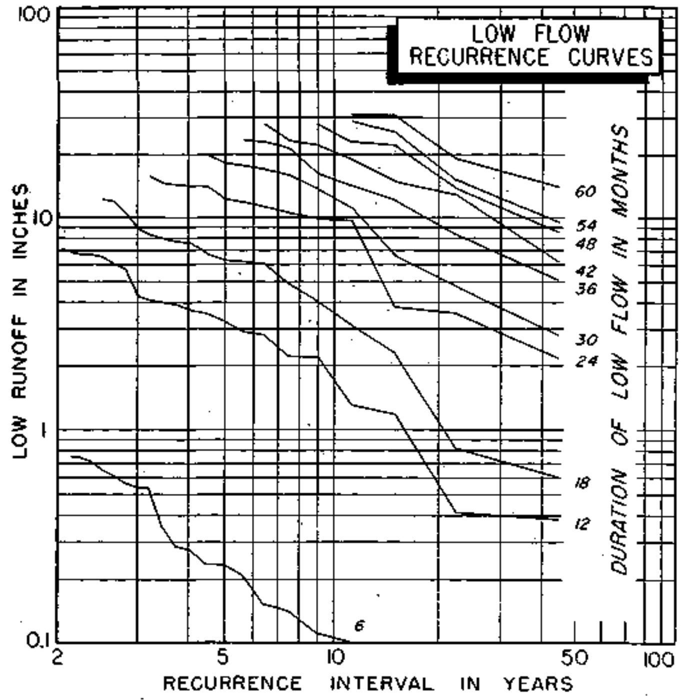
SOUTH FORK, SANGAMON RIVER NEAR ROCHESTER



STATION 142

LOCATION

In N ½ SE ¼ sec 8, T15N, R4W, Sangamon County, at bridge on Ill. 29, about 1.1 miles northwest of Rochester

DRAINAGE AREA

809 square miles

ACTUAL FLOW DATA

PERIOD: July 1949 thru Sept 1959

CONTINUOUS RECORD: 10 years; water years 1950-59

SYNTHETIC FLOW DATA

PERIOD: 35 years; water years 1915-49

INDEX STATION: South Fork, Sangamon River at Kincaid

COINCIDENT RECORD: 10 years; water years 1950-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

MEAN DISCHARGE: 0.68 inch per month

Draft-Storage-Recurrence Data for South Fork, Sangamon River near Rochester

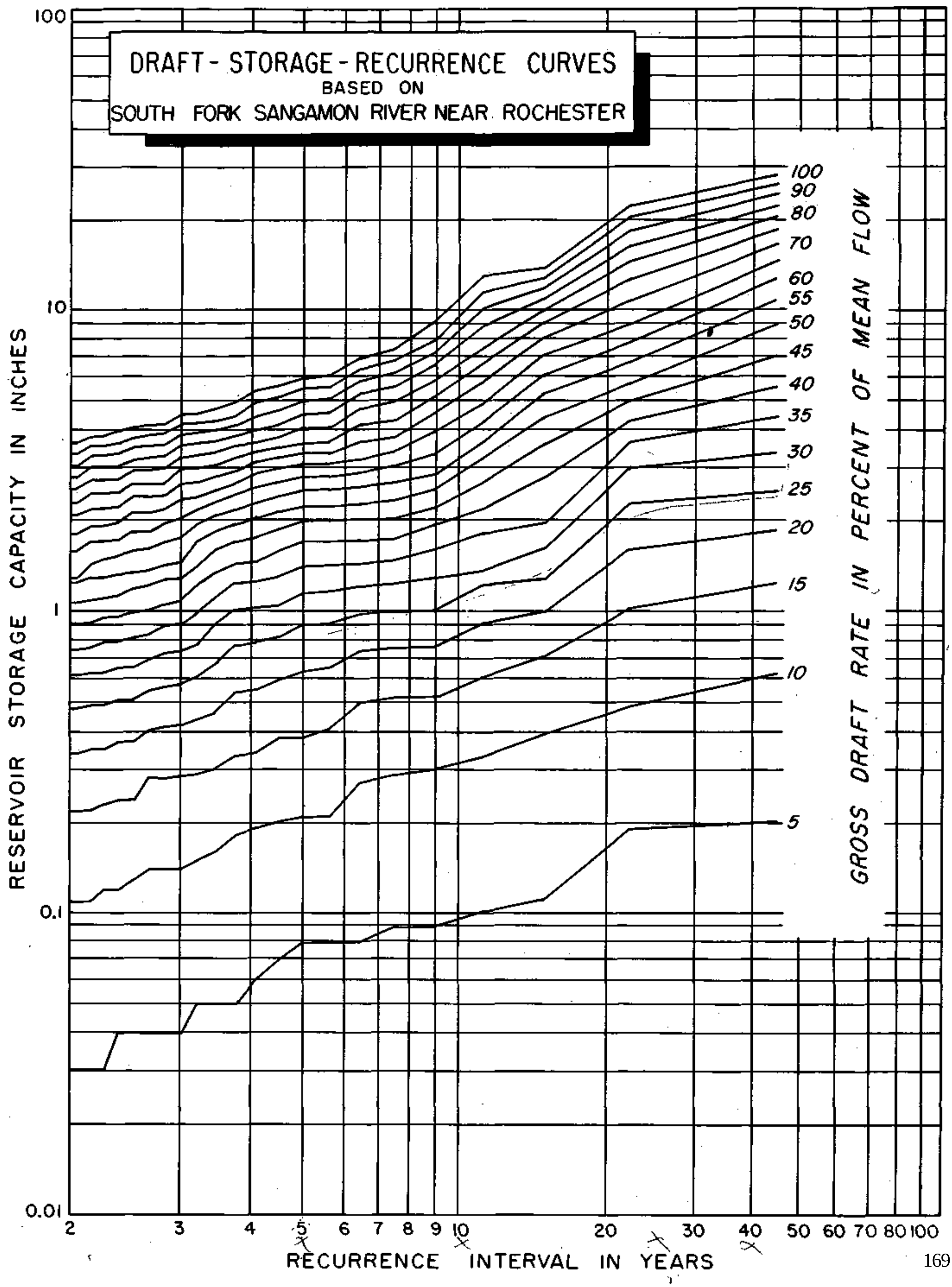
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

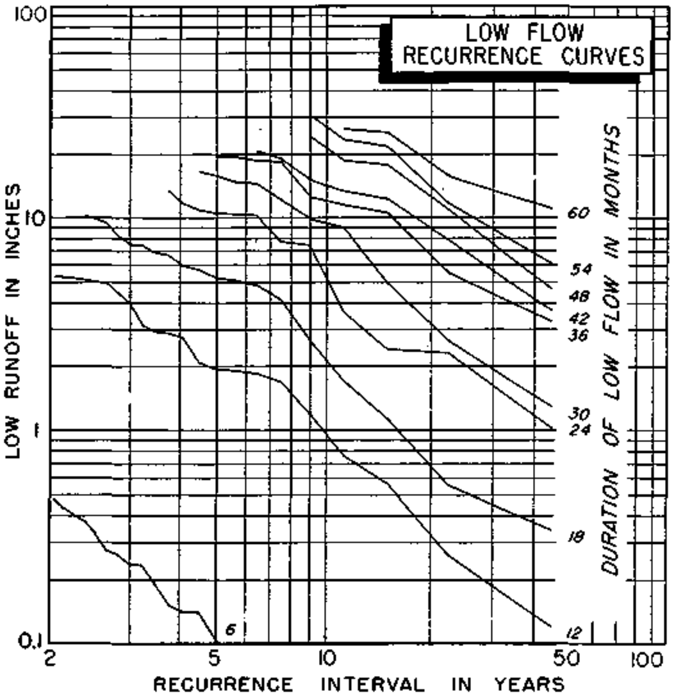
Gross draft rate in percent of mean flow

Recurrence interval, years	5	10	15	20	25	30	35	40	45	50
45.0	.20 7	.62 18	1.24 18	1.85 18	2.51 20	3.34 32	4.43 32	5.51 32	7.00 54	8.84 54
22.5	.19 6	.48 14	1.02 18	1.63 18	2.27 20	2.95 20	3.63 20	4.31 20	4.99 20	5.67 20
15.0	.11 8	.39 9	.70 9	1.00 9	1.31 9	1.62 9	1.98 18	2.77 24	3.58 24	4.40 24
11.3	.10 6	.33 7	.61 9	.91 9	1.22 9	1.53 9	1.83 9	2.20 14	2.67 14	3.20 16
9.0	.09 6	.30 6	.52 7	.76 7	1.01 9	1.32 9	1.62 9	1.93 9	2.23 9	2.54 9
7.5	.09 4	.29 7	.52 7	.76 7	1.00 7	1.24 7	1.49 8	1.77 8	2.04 8	2.36 10
6.4	.08 4	.27 7	.50 7	.74 7	.98 7	1.22 7	1.47 8	1.75 8	2.02 8	2.29 8
5.6	.08 4	.21 5	.41 7	.65 7	.91 8	1.18 8	1.45 8	1.73 8	2.00 8	2.27 8
5.0	.08 4	.21 4	.38 6	.63 8	.90 8	1.17 8	1.44 8	1.72 8	1.99 8	2.26 8
4.5	.07 4	.20 5	.38 6	.59 6	.82 7	1.06 7	1.32 8	1.60 8	1.87 8	2.14 9
4.1	.06 4	.19 4	.34 6	.55 7	.79 7	1.03 7	1.27 7	1.50 8	1.77 8	2.04 8
3.8	.05 4	.18 4	.33 6	.54 6	.77 7	1.01 7	1.25 7	1.48 7	1.72 7	1.96 7
3.5	.05 2	.16 4	.30 4	.47 6	.67 6	.90 7	1.14 7	1.37 7	1.61 7	1.85 7
3.2	.05 2	.15 4	.29 4	.44 5	.61 5	.78 5	1.00 7	1.23 7	1.47 7	1.71 7
3.0	.04 3	.14 4	.26 4	.41 4	.57 5	.74 5	.91 5	1.10 6	1.31 7	1.55 7
2.6	.04 3	.14 4	.28 4	.41 4	.56 5	.73 5	.90 5	1.07 6	1.28 6	1.49 7
2.6	.04 2	.14 4	.28 4	.41 4	.55 4	.69 4	.84 5	1.02 6	1.23 6	1.43 6
2.5	.04 2	.13 3	.24 4	.37 4	.51 4	.65 5	.82 5	.99 6	1.20 6	1.40 6
2.4	.04 2	.12 3	.24 4	.37 4	.51 4	.65 4	.79 5	.96 5	1.14 6	1.34 6
2.3	.03 2	.12 3	.23 3	.35 4	.49 4	.63 4	.79 5	.96 5	1.13 5	1.51 6
2.1	.03 2	.11 3	.22 4	.35 4	.49 4	.63 4	.76 4	.92 5	1.10 6	1.30 6
2.0	.03 2	.11 3	.22 3	.34 4	.48 4	.62 4	.75 4	.91 5	1.06 5	1.25 5

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
45.0	10.72 56	12.63 56	14.53 56	16.44 56	18.34 56	20.24 56	22.15 56	24.05 56	25.96 56	27.89 58
22.5	6.69 32	7.78 32	8.90 54	10.73 54	12.57 54	14.41 54	16.31 56	18.21 56	20.12 56	22.02 56
15.0	5.22 24	6.10 28	7.06 28	8.01 28	8.96 28	9.91 28	10.86 28	11.82 28	12.77 28	13.82 40
11.3	3.74 16	4.29 16	4.86 18	5.72 26	6.60 26	7.48 26	8.77 40	10.13 40	11.49 40	12.85 40
9.0	2.85 9	3.33 18	3.95 18	4.56 18	5.17 18	5.84 20	6.52 20	7.20 20	7.88 20	9.13 40
7.5	2.70 10	3.04 10	3.38 10	3.79 16	4.34 18	4.95 18	5.56 18	6.18 18	6.79 18	7.40 18
6.4	2.59 9	2.89 9	3.20 9	3.65 16	4.19 16	4.73 16	5.28 16	5.82 16	6.37 16	6.91 16
5.6	2.54 8	2.81 8	3.09 8	3.36 9	3.67 9	4.10 14	4.57 14	5.05 14	5.52 14	6.08 20
5.0	2.53 8	2.80 8	3.08 8	3.35 8	3.62 8	4.05 14	4.52 14	5.00 14	5.47 14	5.96 18
4.5	2.41 8	2.68 8	2.96 8	3.23 8	3.50 8	3.79 9	4.17 14	4.65 14	5.12 14	5.60 14
4.1	2.31 8	2.56 8	2.86 8	3.13 8	3.40 8	3.69 9	3.99 9	4.44 14	4.91 14	5.39 14
3.8	2.20 7	2.44 7	2.67 7	2.91 9	3.22 9	3.53 9	3.83 9	4.14 9	4.47 14	4.95 14
3.5	2.09 7	2.33 7	2.56 7	2.80 7	3.06 9	3.37 9	3.67 9	3.98 9	4.28 9	4.71 16
3.2	1.95 7	2.19 7	2.42 7	2.69 9	3.00 9	3.31 9	3.61 9	3.92 9	4.22 9	4.54 14
3.0	1.79 7	2.04 9	2.35 9	2.65 9	2.96 9	3.27 9	3.57 9	3.88 9	4.18 9	4.49 9
2.6	1.73 7	1.97 7	2.20 7	2.44 7	2.68 9	2.99 9	3.29 9	3.60 9	3.90 9	4.21 9
2.6	1.63 6	1.85 8	2.13 8	2.40 8	2.67 8	2.94 9	3.24 9	3.55 9	3.85 9	4.16 9
2.5	1.60 6	1.85 8	2.13 8	2.40 8	2.67 8	2.94 8	3.21 8	3.49 8	3.78 9	4.09 9
2.4	1.54 6	1.75 7	1.98 7	2.23 8	2.50 8	2.77 8	3.04 9	3.35 9	3.65 9	3.96 9
2.3	1.51 6	1.72 6	1.93 8	2.20 8	2.47 8	2.74 8	3.01 8	3.29 8	3.56 8	3.83 8
2.1	1.50 6	1.71 6	1.92 8	2.19 8	2.46 8	2.73 8	3.00 8	3.28 8	3.55 8	3.82 8
2.0	1.42 5	1.61 7	1.84 7	2.08 7	2.32 7	2.56 7	2.80 7	3.07 8	3.34 8	3.61 8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SOUTH FORK SANGAMON RIVER NEAR ROCHESTER
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100



STATION 145

LOCATION

In NW ¼ NE ¼ sec 30, T16N, R5W, Sangamon County, at bridge on Ill. 125, about 1.9 miles west of the intersection of Jefferson Street and MacArthur Boulevard in Springfield

DRAINAGE AREA

107 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1949 thru Sept 1959; Jan 1948 thru Sept 1949; partial record

CONTINUOUS RECORD: 10 years; water years 1950-59

SYNTHETIC FLOW DATA

PERIOD : 35 years; water years 1915-49

INDEX STATION : Sangamon River at Riverton

COINCIDENT RECORD: 7 years; water years 1950-56

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

MEAN DISCHARGE: 0.58 inch per month

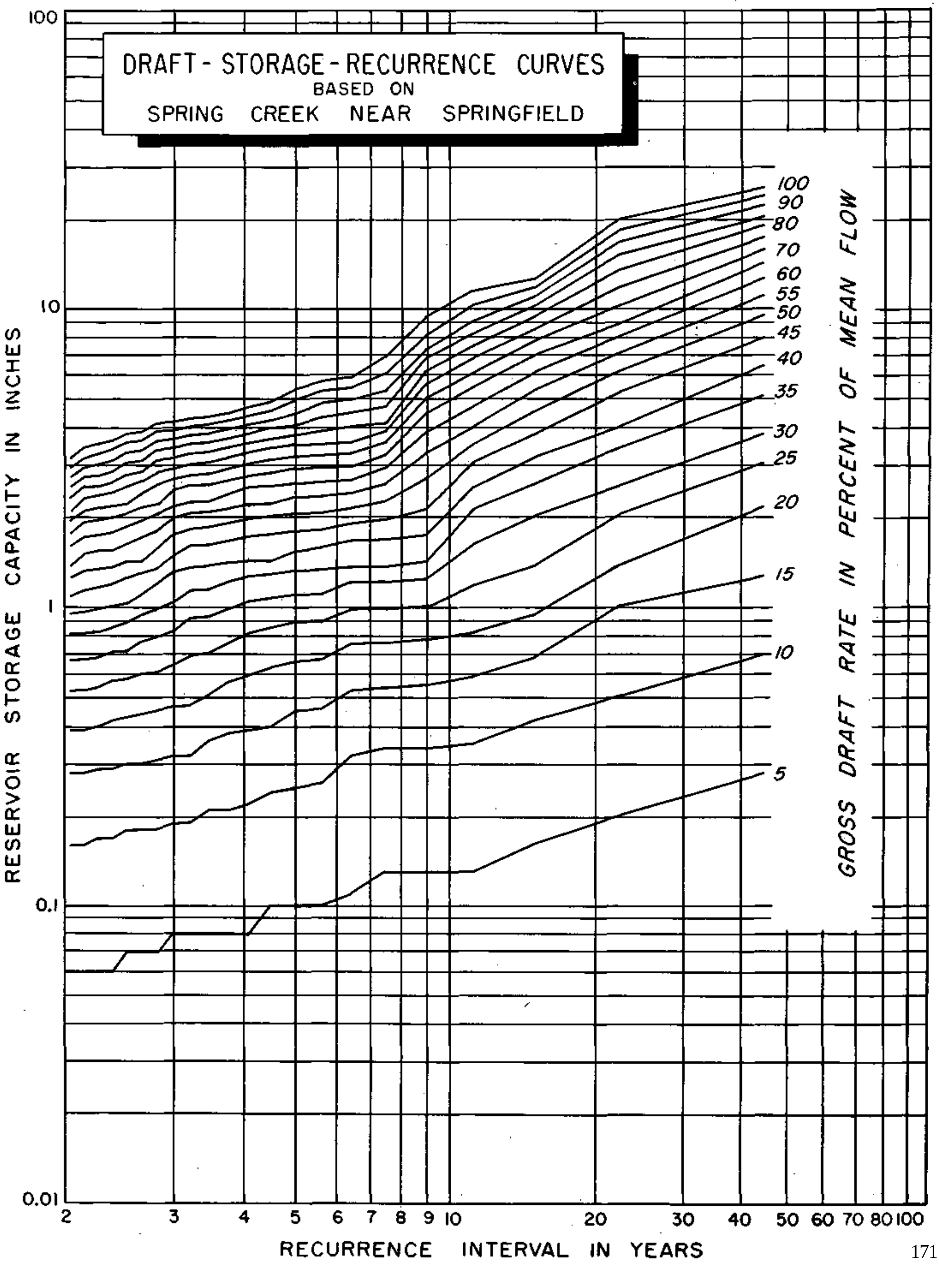
Draft-Storage-Recurrence Data for Spring Creek near Springfield

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

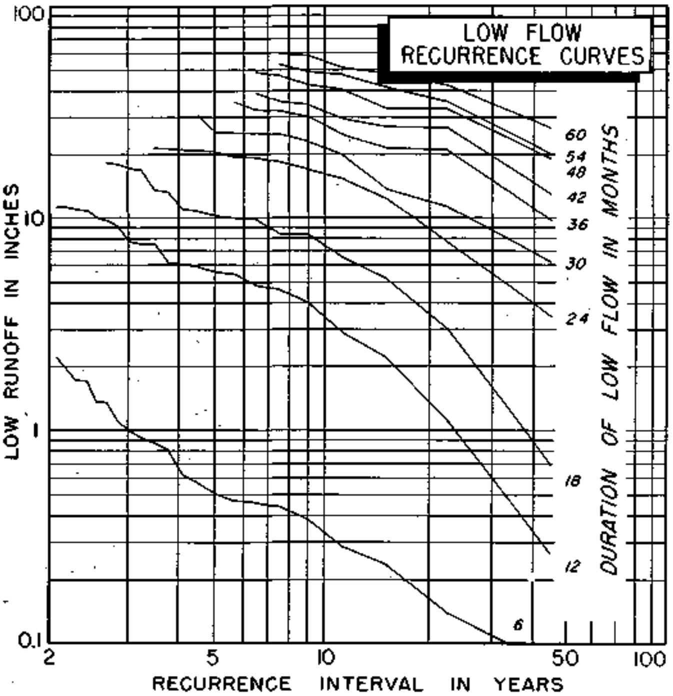
Recurrence interval, years	Gross draft rate in percent of mean flow									
	5	10	15	20	25	30	35	40	45	50
45.0	.28 11	.70 18	1.32 30	2.19 30	3.06 30	3.93 30	5.15 44	6.50 48	8.00 54	9.57 54
22.5	.20 7	.51 16	1.02 18	1.54 18	2.06 18	2.58 18	3.44 30	4.35 32	5.28 32	6.21 32
15.0	.16 9	.42 9	.68 9	.95 18	1.47 16	2.03 20	2.61 20	3.19 20	3.85 24	4.56 26
11.3	.13 7	.35 8	.59 8	.82 8	1.20 16	1.66 16	2.13 16	2.59 16	3.06 16	3.52 18
9.0	.13 7	.34 7	.55 8	.78 8	1.01 8	1.25 9	1.51 9	1.77 9	2.13 20	2.71 20
7.5	.13 7	.54 7	.54 7	.76 8	.99 8	1.22 8	1.45 9	1.71 9	1.98 11	2.30 11
6.4	.11 7	.32 7	.53 8	.76 8	.99 8	1.22 8	1.45 8	1.69 8	1.92 8	2.16 9
5.6	.10 5	.26 7	.46 7	.67 8	.90 8	1.13 8	1.36 8	1.60 8	1.83 8	2.07 10
5.0	.10 5	.25 7	.45 7	.66 8	.89 8	1.12 8	1.35 8	1.59 8	1.82 8	2.07 10
4.5	.10 5	.24 5	.40 8	.63 8	.86 8	1.09 8	1.32 8	1.56 8	1.79 8	2.02 8
4.1	.08 5	.22 6	.39 6	.59 8	.82 8	1.05 8	1.28 8	1.52 8	1.75 8	1.99 9
3.8	.08 4	.21 6	.38 6	.56 6	.76 8	.99 8	1.22 8	1.46 8	1.69 8	1.92 8
3.5	.08 4	.21 5	.36 5	.51 6	.70 8	.93 8	1.16 8	1.40 8	1.63 8	1.86 8
3.2	.08 4	.19 4	.32 5	.47 6	.69 8	.92 8	1.15 8	1.39 8	1.62 8	1.85 8
3.0	.08 4	.19 4	.32 5	.47 6	.64 6	.83 8	1.06 8	1.30 8	1.53 8	1.76 8
2.8	.07 4	.18 4	.31 5	.45 5	.61 6	.79 7	.99 7	1.19 7	1.40 7	1.60 7
2.6	.07 4	.18 4	.30 5	.44 5	.60 6	.77 6	.95 6	1.12 6	1.30 6	1.49 8
2.5	.07 4	.18 4	.30 4	.43 5	.58 5	.72 5	.89 6	1.06 6	1.26 7	1.46 7
2.4	.06 4	.17 4	.29 4	.42 5	.57 5	.71 5	.86 5	1.02 6	1.20 7	1.40 7
2.3	.06 4	.17 4	.29 4	.40 4	.54 5	.68 5	.83 5	.99 6	1.17 6	1.36 7
2.1	.06 3	.16 4	.28 4	.39 4	.53 5	.67 5	.82 5	.97 6	1.15 6	1.33 7
2.0	.06 3	.16 4	.28 4	.39 4	.53 5	.67 5	.82 5	.96 5	1.11 5	1.27 6

Recurrence interval, years	Gross draft rate in percent of mean flow									
	55	60	65	70	75	80	85	90	95	100
45.0	11.14 54	12.70 54	14.27 54	15.83 54	17.40 54	19.00 56	20.63 56	22.26 58	23.94 58	25.62 58
22.5	7.14 32	8.07 32	8.99 32	10.35 56	11.97 56	13.59 56	15.22 56	16.84 56	18.47 56	20.09 56
15.0	5.35 28	6.16 28	6.98 28	7.79 28	8.60 28	9.41 28	10.22 28	11.04 28	11.85 28	12.66 28
11.3	4.05 24	4.74 24	5.44 24	6.13 24	6.83 24	7.53 24	8.22 24	9.15 40	10.31 40	11.47 40
9.0	3.29 20	3.87 20	4.45 20	5.03 20	5.61 20	6.19 20	6.77 20	7.35 20	8.15 44	9.43 44
7.5	2.62 11	2.94 11	3.26 11	3.58 11	3.90 11	4.30 14	4.72 18	5.30 28	6.11 28	6.92 28
6.4	2.42 9	2.69 10	2.98 10	3.27 10	3.59 16	4.05 16	4.52 16	4.98 16	5.45 16	5.91 16
5.6	2.36 10	2.65 10	2.94 10	3.23 10	3.52 10	3.91 16	4.38 16	4.84 16	5.31 16	5.77 16
5.0	2.36 10	2.65 10	2.94 10	3.23 10	3.52 10	3.81 10	4.10 10	4.43 16	4.95 16	5.41 16
4.5	2.27 9	2.55 10	2.84 10	3.13 10	3.42 10	3.71 10	4.00 10	4.29 10	4.58 10	4.87 12
4.1	2.25 9	2.51 9	2.77 9	3.03 9	3.30 9	3.56 9	3.82 9	4.10 10	4.39 10	4.68 10
3.8	2.15 8	2.40 9	2.66 9	2.92 9	3.19 9	3.45 9	3.71 9	3.97 9	4.23 9	4.49 9
3.5	2.09 8	2.32 8	2.56 8	2.79 8	3.05 9	3.31 9	3.57 9	3.83 9	4.09 9	4.35 9
3.2	2.08 8	2.31 8	2.55 8	2.78 8	3.01 9	3.27 9	3.53 9	3.79 9	4.05 9	4.31 9
3.0	1.99 8	2.22 8	2.46 8	2.69 8	2.92 8	3.16 9	3.42 9	3.68 9	3.94 9	4.20 9
2.8	1.82 8	2.07 9	2.33 9	2.59 9	2.86 9	3.12 9	3.38 9	3.64 9	3.90 9	4.16 9
2.6	1.72 8	1.95 8	2.19 8	2.42 8	2.65 8	2.88 8	3.11 8	3.36 9	3.62 9	3.88 9
2.5	1.66 7	1.87 7	2.07 7	2.27 9	2.54 9	2.80 9	3.06 9	3.32 9	3.58 9	3.84 9
2.4	1.60 7	1.81 7	2.01 7	2.21 7	2.42 7	2.62 7	2.86 9	3.12 9	3.38 9	3.64 9
2.3	1.56 7	1.77 7	1.97 7	2.17 7	2.38 7	2.58 7	2.78 7	3.02 9	3.28 9	3.54 9
2.1	1.53 7	1.74 7	1.94 7	2.14 7	2.35 7	2.55 7	2.75 7	2.95 7	3.17 9	3.43 9
2.0	1.44 6	1.62 6	1.79 6	1.97 6	2.15 7	2.35 7	2.55 7	2.75 7	2.96 7	3.16 7



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SPRING CREEK NEAR SPRINGFIELD
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

EMBARRASS RIVER AT LAWRENCEVILLE



STATION 159

LOCATION
In NE ¼ SW ¼ sec 5, T3N, R11W, Lawrence County, at bridge on U. S. 50, 1.0 mile east of Lawrenceville

DRAINAGE AREA
2260 square miles, approximately

ACTUAL FLOW DATA
PERIOD : Apr 1930 thru Oct 1933; gaging discontinued Nov 1, 1933
CONTINUOUS RECORD: 3 years; water years 1931-33

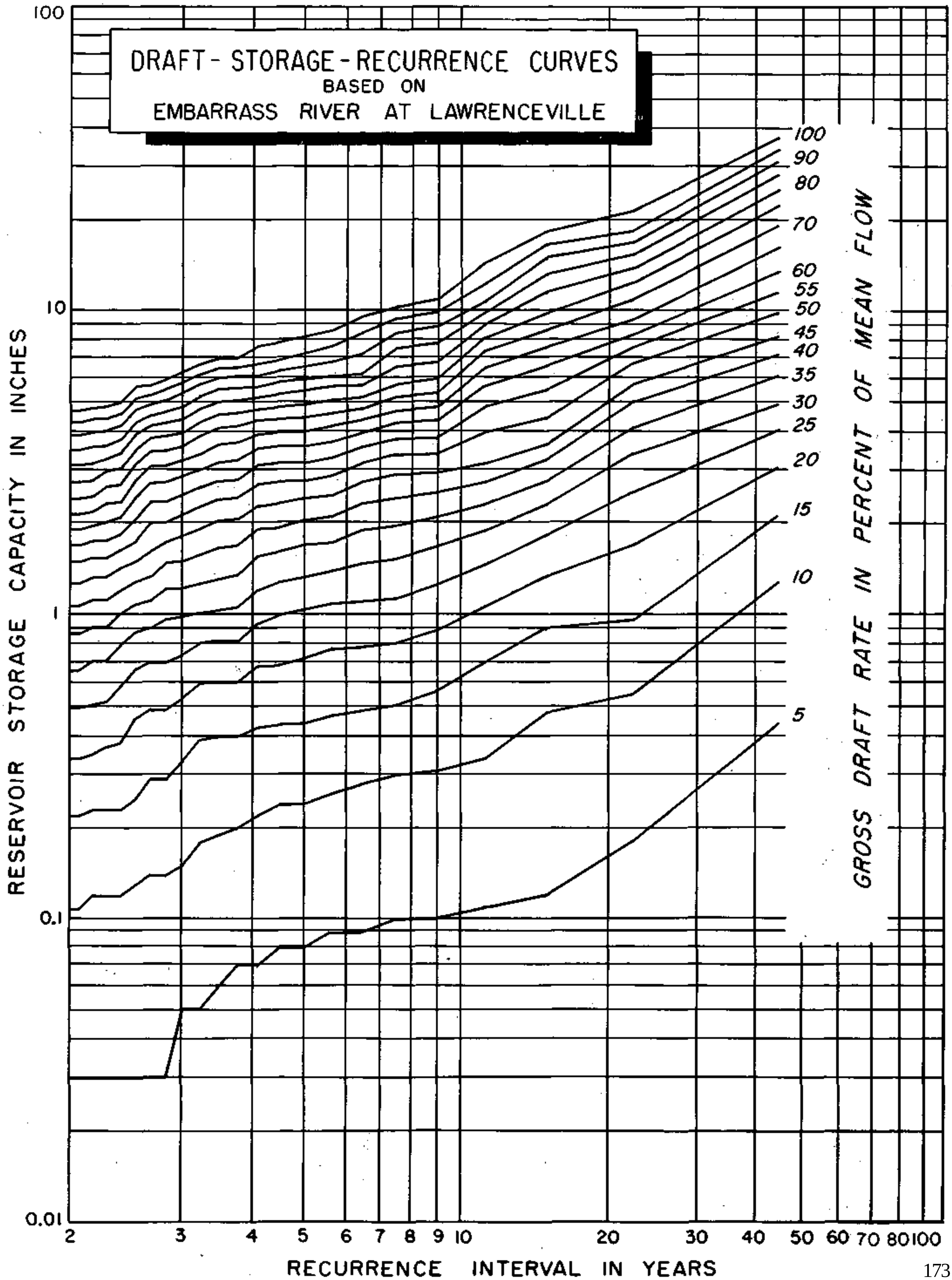
SYNTHETIC FLOW DATA
PERIOD: 42 years; water years 1915-30, 1934-59
INDEX STATION : Embarrass River at St. Marie
COINCIDENT RECORD: 3 years; water years 1931-33

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 1.05 inches per month

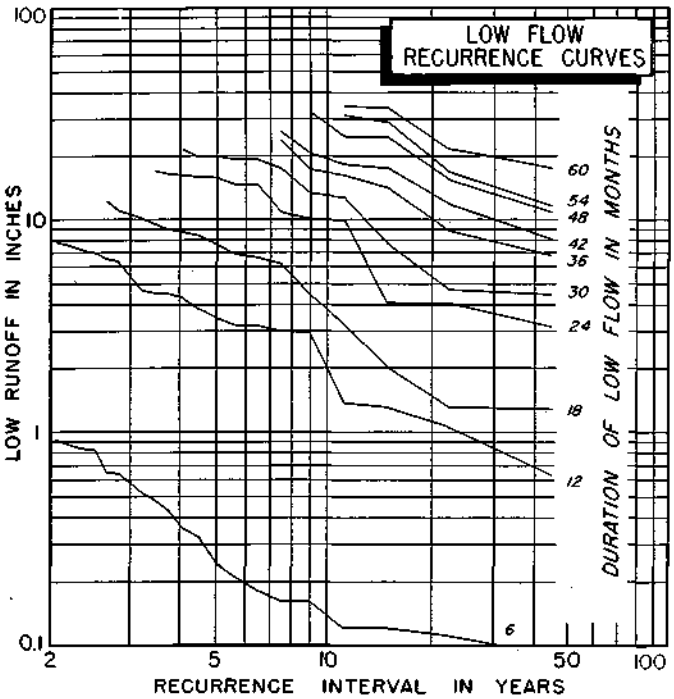
Draft-Storage-Recurrence Data for Embarrass River at Lawrenceville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.44	1.28	2.14	3.08	4.08	5.13	6.18	7.23	8.29	9.83	11.51	13.45	16.29	19.19	22.13	25.10	28.15	31.19	34.24	37.28
	16	15	18	18	20	20	20	20	22	32	32	54	54	56	56	58	58	58	58	58
22.5	.18	.55	.97	1.70	2.54	3.38	4.22	5.05	5.90	6.74	7.58	8.42	9.44	10.91	12.38	13.85	15.32	16.81	18.39	21.27
	6	8	9	16	16	16	16	16	16	16	16	16	28	28	28	28	28	30	30	56
15.0	.12	.48	.90	1.36	1.83	2.31	2.78	3.25	3.72	4.49	5.54	6.59	7.64	8.69	9.86	11.54	13.22	14.90	16.58	18.26
	4	6	8	9	9	9	9	9	9	20	20	20	20	20	32	32	32	32	32	32
11.3	.11	.34	.70	1.07	1.48	1.90	2.32	2.74	3.17	4.01	4.85	5.69	6.53	7.37	8.21	9.05	9.89	10.73	12.37	14.47
	4	7	7	7	8	8	8	8	16	16	16	16	16	16	16	16	16	16	40	40
9.0	.10	.31	.57	.69	1.26	1.68	2.10	2.52	2.94	3.38	3.88	4.40	4.93	5.45	5.98	6.77	7.82	8.87	9.92	10.97
	3	5	5	7	8	8	8	8	8	9	10	10	10	10	10	20	20	20	20	20
7.5	.10	.30	.51	.81	1.13	1.54	1.96	2.42	2.89	3.37	3.84	4.31	4.78	5.26	5.73	6.58	7.53	8.47	9.42	10.36
	3	4	4	6	6	8	8	9	9	9	9	9	9	9	9	18	18	18	18	18
6.4	.09	.28	.49	.79	1.11	1.48	1.90	2.32	2.74	3.16	3.58	4.00	4.42	4.84	5.26	5.72	6.25	7.29	8.45	9.60
	3	4	4	6	5	8	8	8	8	8	8	8	8	8	8	10	10	22	22	22
5.6	.09	.26	.47	.78	1.10	1.41	1.73	2.10	2.47	2.88	3.30	3.74	4.21	4.69	5.16	5.63	6.11	6.80	7.69	8.63
	3	4	6	6	6	6	7	7	7	8	8	9	9	9	9	9	10	16	18	18
5.0	.08	.24	.44	.73	1.05	1.36	1.71	2.08	2.45	2.82	3.18	3.60	4.02	4.50	4.98	5.50	6.03	6.60	7.52	8.46
	3	3	4	6	6	6	7	7	7	7	8	8	9	9	10	10	10	14	18	18
4.5	.06	.24	.44	.69	1.00	1.31	1.63	1.94	2.34	2.76	3.18	3.60	4.02	4.44	4.88	5.35	5.87	6.39	6.94	7.88
	3	3	4	5	6	6	6	6	8	8	8	8	8	8	9	9	10	10	18	18
4.1	.07	.22	.43	.58	.94	1.25	1.57	1.91	2.29	2.71	3.13	3.55	3.97	4.39	4.81	5.23	5.65	6.10	6.73	7.67
	2	4	4	5	6	6	6	7	8	8	8	8	8	8	8	8	8	9	18	18
3.8	.07	.20	.40	.61	.82	1.07	1.37	1.70	2.07	2.44	2.80	3.25	3.72	4.20	4.67	5.14	5.61	6.09	6.56	7.03
	2	3	4	4	4	5	6	7	7	7	7	9	9	9	9	9	9	9	9	9
3.5	.06	.19	.40	.61	.82	1.04	1.32	1.67	2.04	2.41	2.77	3.19	3.66	4.14	4.61	5.08	5.55	6.03	6.50	6.97
	2	4	4	4	4	5	6	7	7	7	7	9	9	9	9	9	9	9	9	9
3.2	.05	.18	.39	.60	.81	1.02	1.28	1.58	1.91	2.28	2.64	3.01	3.39	3.87	4.34	4.81	5.28	5.76	6.23	6.70
	2	4	4	4	4	5	5	6	7	7	7	7	9	9	9	9	9	9	9	9
3.0	.05	.15	.33	.54	.75	.99	1.25	1.51	1.83	2.14	2.50	2.87	3.24	3.61	4.01	4.44	4.91	5.39	5.86	6.33
	2	3	4	4	4	5	5	6	6	7	7	7	7	7	8	9	9	9	9	9
2.8	.03	.14	.29	.49	.70	.97	1.23	1.49	1.75	2.02	2.37	2.74	3.11	3.48	3.87	4.29	4.71	5.13	5.55	5.97
	2	3	3	4	5	5	5	5	5	5	7	7	7	7	8	8	8	8	8	8
2.6	.03	.14	.29	.49	.70	.91	1.12	1.37	1.63	2.00	2.36	2.73	3.10	3.47	3.83	4.20	4.57	4.94	5.30	5.71
	2	3	3	4	4	4	4	5	7	7	7	7	7	7	7	7	7	7	7	8
2.5	.03	.13	.25	.46	.67	.88	1.09	1.30	1.51	1.75	2.07	2.42	2.79	3.16	3.52	3.94	4.36	4.78	5.20	5.62
	2	2	4	4	4	4	4	4	4	6	6	7	7	7	8	8	8	8	8	8
2.4	.03	.12	.23	.38	.59	.80	1.01	1.22	1.43	1.64	1.85	2.10	2.36	2.69	3.05	3.42	3.79	4.21	4.63	5.05
	1	2	2	4	4	4	4	4	4	4	4	5	6	7	7	7	8	8	8	8
2.3	.03	.12	.23	.37	.53	.71	.92	1.13	1.34	1.55	1.76	2.03	2.35	2.66	2.98	3.29	3.61	4.03	4.45	4.87
	1	2	2	3	3	4	4	4	4	4	4	6	6	6	6	6	8	8	8	8
2.1	.03	.12	.23	.35	.51	.71	.92	1.13	1.34	1.55	1.76	1.97	2.20	2.47	2.79	3.17	3.59	4.01	4.43	4.85
	1	2	2	3	3	4	4	4	4	4	4	4	5	5	7	8	8	8	8	8
2.0	.03	.11	.22	.34	.50	.66	.87	1.08	1.29	1.50	1.71	1.92	2.16	2.43	2.76	3.13	3.50	3.91	4.33	4.75
	1	2	2	3	3	4	4	4	4	4	4	4	5	5						


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
EMBARRASS RIVER AT LAWRENCEVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

SANGAMON RIVER AT RIVERTON



STATION 187

LOCATION
In NE ¼ sec 16, T16N, R3W, Sangamon County, at bridge on U. S. 36 at Riverton

DRAINAGE AREA
2560 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Mar 1908 thru Dec 1913, Sept 1914 thru Sept 1956; gaging discontinued Sept 30, 1956
CONTINUOUS RECORD : 42 years; water years 1915-56

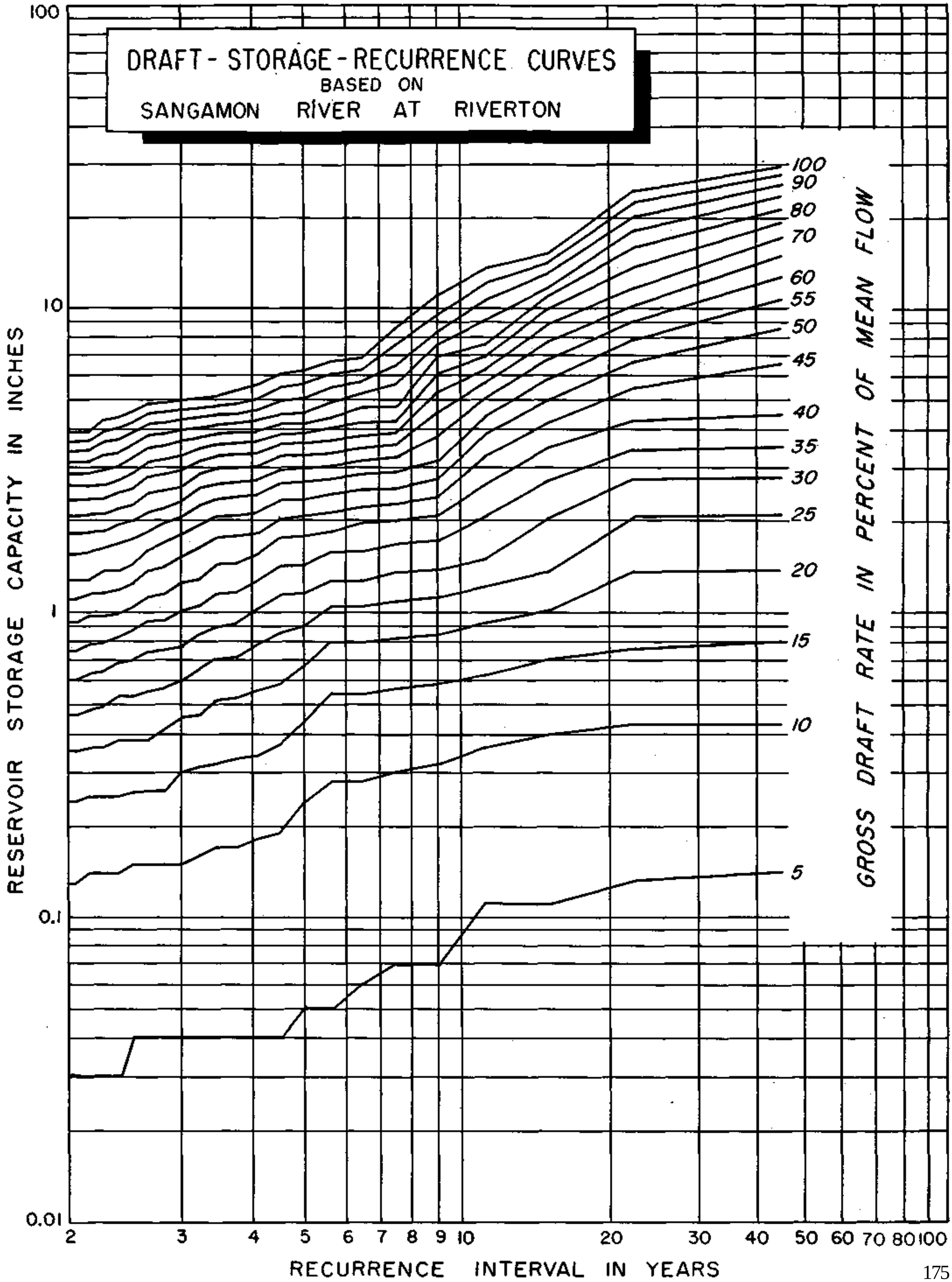
SYNTHETIC FLOW DATA
PERIOD: 3 years; water years 1957-59
INDEX STATION : Sangamon River near Oakford
COINCIDENT RECORD: 28 years; water years 1910-11, 1915-18, 1922, 1929-33, 1940-56
This station utilized as an index station

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.75 inch per month

Draft-Storage-Recurrence Data for Sangamon River at Riverton

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.14	.43	.80	1.42	2.10	2.77	3.51	4.57	6.53	8.60	10.70	12.80	14.90	17.00	19.10	21.20	23.30	25.40	27.50	29.60
	7	9	10	18	18	18	20	32	54	56	56	56	56	56	56	56	56	56	56	56
22.5	.13	.43	.76	1.38	2.06	2.73	3.41	4.30	5.43	6.61	7.81	9.01	10.21	11.62	13.69	15.79	17.89	19.99	22.09	24.19
	8	9	9	18	18	18	18	30	30	32	32	32	32	54	56	56	56	56	56	56
15.0	.11	.40	.70	1.02	1.36	2.03	2.71	3.46	4.21	4.96	5.84	6.76	7.77	8.82	9.87	10.92	11.97	13.02	14.07	15.12
	7	8	8	9	18	18	20	20	20	20	24	26	28	28	28	28	28	28	28	28
11.3	.11	.36	.62	.92	1.22	1.52	2.05	2.65	3.25	3.85	4.45	5.05	5.65	6.25	6.90	7.57	8.99	10.49	11.99	13.49
	6	7	8	8	8	8	16	16	16	16	16	16	16	16	18	18	40	40	40	40
9.0	.07	.32	.58	.84	1.12	1.42	1.72	2.06	2.40	2.75	3.16	3.79	4.54	5.29	6.04	6.79	7.54	8.29	9.40	10.98
	6	7	7	7	8	8	9	9	9	11	11	20	20	20	20	20	20	20	42	44
7.5	.07	.30	.56	.82	1.09	1.39	1.69	1.99	2.29	2.59	2.89	3.22	3.56	3.90	4.26	4.78	5.61	6.48	7.53	8.58
	6	7	7	7	8	8	8	8	8	8	8	9	9	9	10	22	22	28	28	28
6.4	.06	.28	.54	.80	1.06	1.36	1.66	1.96	2.26	2.56	2.86	3.16	3.46	3.83	4.21	4.68	5.21	5.73	6.26	6.85
	5	7	7	7	8	8	8	8	8	8	8	8	10	10	10	14	14	14	14	16
5.6	.05	.28	.54	.80	1.06	1.33	1.59	1.85	2.14	2.44	2.74	3.04	3.34	3.68	4.01	4.35	4.88	5.48	6.08	6.68
	5	7	7	7	7	7	7	7	8	8	8	8	9	9	9	9	16	16	16	16
5.0	.05	.24	.44	.66	.89	1.17	1.47	1.77	2.07	2.37	2.67	2.97	3.27	3.57	3.87	4.17	4.50	5.04	5.64	6.24
	5	5	6	6	6	8	8	8	8	8	8	8	8	8	8	8	14	16	16	16
4.5	.04	.19	.37	.58	.85	1.15	1.45	1.75	2.05	2.35	2.65	2.95	3.25	3.55	3.85	4.15	4.45	4.95	5.48	6.06
	4	5	5	6	8	8	8	8	8	8	8	8	8	8	8	8	8	14	14	16
4.1	.04	.18	.34	.55	.78	1.02	1.28	1.54	1.82	2.12	2.42	2.72	3.02	3.32	3.62	3.92	4.26	4.60	5.00	5.60
	3	4	5	6	6	7	7	7	8	8	8	8	8	8	8	9	9	9	16	16
3.8	.04	.17	.33	.52	.71	.92	1.17	1.47	1.77	2.07	2.37	2.67	2.97	3.27	3.57	3.87	4.17	4.50	4.83	5.33
	3	4	5	5	5	6	8	8	8	8	8	8	8	8	8	8	8	9	9	14
3.5	.04	.17	.32	.51	.70	.89	1.15	1.45	1.75	2.05	2.35	2.65	2.95	3.25	3.55	3.85	4.15	4.45	4.77	5.11
	3	4	5	5	5	5	8	8	8	8	8	8	8	8	8	8	8	8	9	9
3.2	.04	.16	.31	.46	.65	.84	1.06	1.33	1.63	1.93	2.23	2.53	2.83	3.13	3.43	3.73	4.03	4.34	4.67	5.01
	2	4	4	5	5	5	6	8	8	8	8	8	8	8	8	8	8	9	9	9
3.0	.04	.15	.30	.45	.60	.77	1.01	1.27	1.53	1.80	2.06	2.32	2.60	2.94	3.27	3.61	3.95	4.29	4.62	4.96
	2	4	4	4	4	5	7	7	7	7	7	7	9	9	9	9	9	9	9	9
2.8	.04	.15	.26	.41	.56	.75	.94	1.16	1.42	1.69	1.95	2.21	2.50	2.84	3.17	3.51	3.85	4.19	4.52	4.66
	2	3	4	4	5	5	6	7	7	7	7	7	9	9	9	9	9	9	9	9
2.6	.04	.15	.26	.38	.55	.74	.94	1.16	1.39	1.61	1.84	2.12	2.46	2.80	3.13	3.47	3.81	4.15	4.48	4.82
	2	3	3	4	5	5	6	6	6	6	6	9	9	9	9	9	9	9	9	9
2.5	.04	.15	.26	.38	.53	.70	.86	1.07	1.26	1.49	1.75	2.01	2.27	2.55	2.88	3.22	3.56	3.90	4.23	4.57
	2	3	3	4	4	5	5	5	5	7	7	7	7	9	9	9	9	9	9	9
2.4	.03	.14	.25	.38	.53	.68	.83	.99	1.20	1.42	1.68	1.94	2.20	2.47	2.73	3.00	3.34	3.68	4.01	4.35
	2	3	3	4	4	4	4	5	6	7	7	7	7	7	7	9	9	9	9	9
2.3	.03	.14	.25	.36	.49	.64	.79	.97	1.18	1.40	1.63	1.85	2.10	2.37	2.63	2.93	3.27	3.61	3.94	4.28
	2	3	3	3	4	4	4	5	6	6	6	6	7	7	7	9	9	9	9	9
2.1	.03	.14	.25	.36	.48	.63	.78	.97	1.16	1.35	1.58	1.83	2.09	2.36	2.62	2.88	3.14	3.41	3.67	3.93
	2	3	3	3	4	4	5	5	5	6	6	7	7	7	7	7	7	7	7	8
2.0	.03	.13	.24	.35	.46	.60	.75	.93	1.12	1.33	1.56	1.82	2.08	2.35	2.61	2.87	3.13	3.40	3.66	3.92
	2	3	3	3	3	4	4	5	5	6	7	7	7	7	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SANGAMON RIVER AT RIVERTON
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
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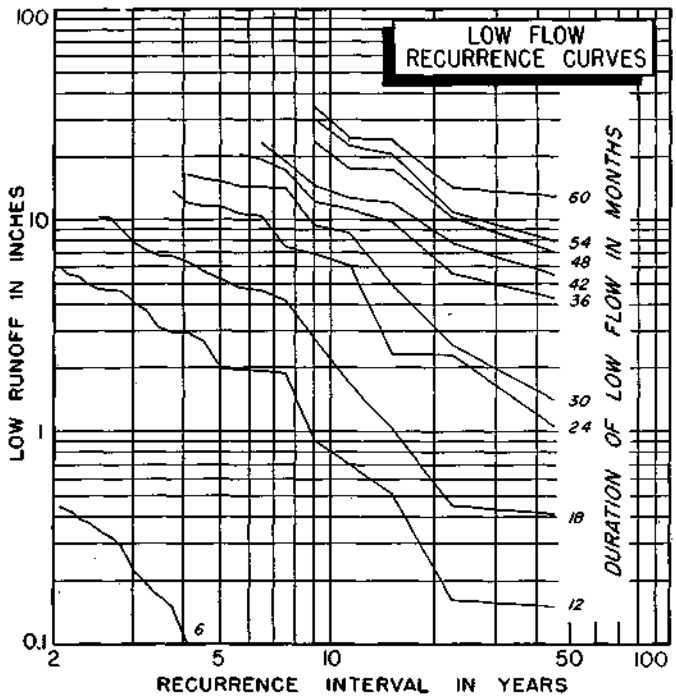


STATION 211

LOCATION

In N ½ sec 4, T14N, R6W, Sangamon County, about 3 miles upstream from Lake Springfield and 3.25 miles south of Curran

DRAINAGE AREA

97.0 square miles

ACTUAL FLOW DATA

PERIOD: May 1948 thru Sept 1959

CONTINUOUS RECORD: 11 years; water years 1949-59

SYNTHETIC FLOW DATA

PERIOD: 34 years; water years 1915-48

INDEX STATION: Sangamon River at Riverton

COINCIDENT RECORD: 8 years; water years 1949-56

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

MEAN DISCHARGE: 0.57 inch per month

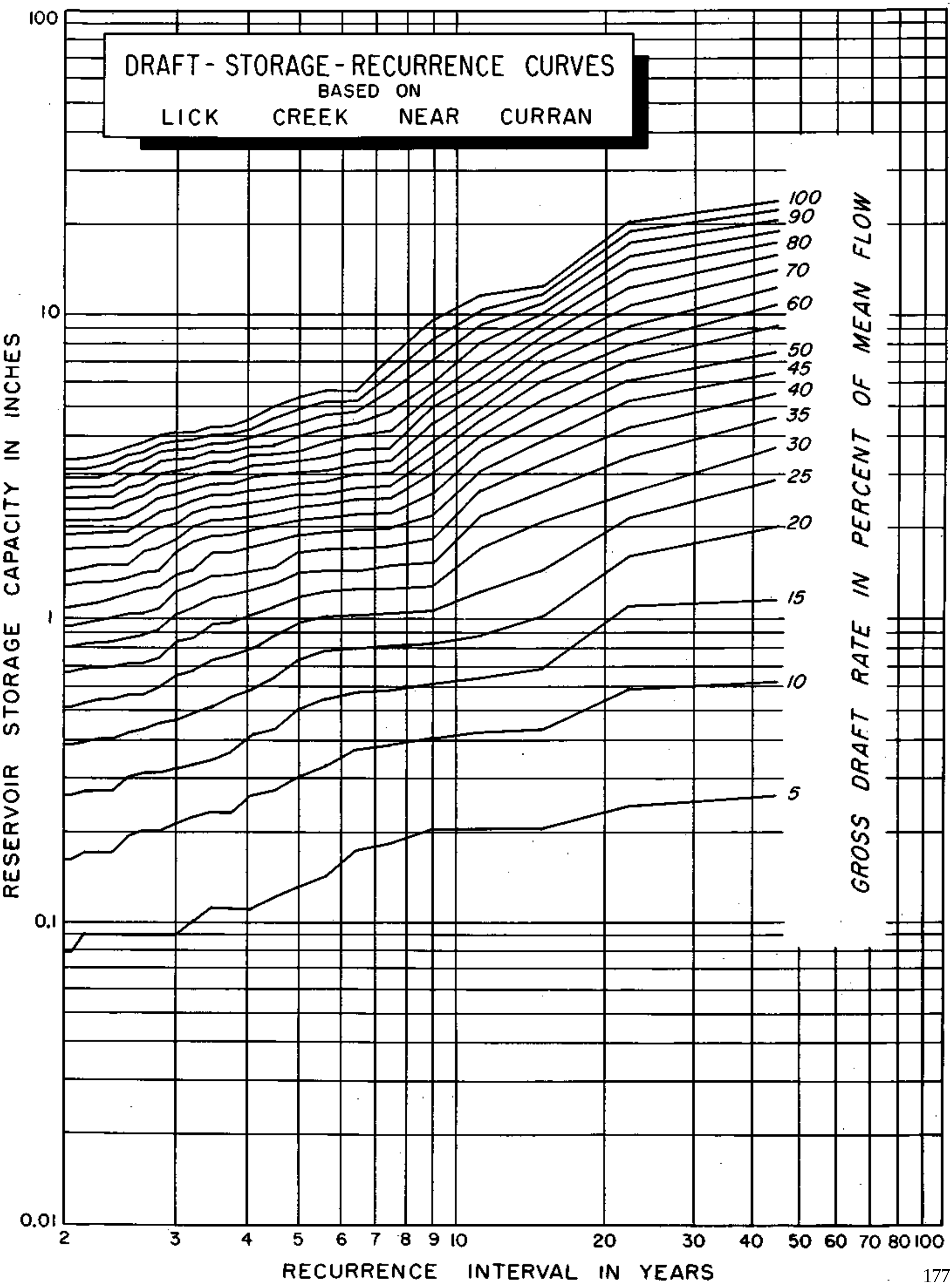
Draft-Storage-Recurrence Data for Lick Creek near Curran

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

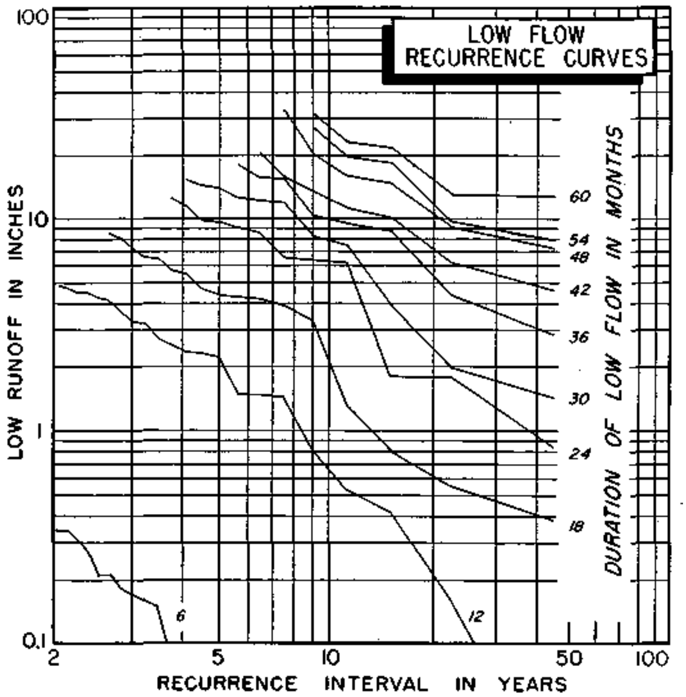
Recurrence interval, years	Gross draft rate in percent of mean flow									
	5	10	15	20	25	30	35	40	45	50
45.0	.26 9	.62 18	1.15 30	2.00 30	2.86 30	3.71 30	4.57 30	5.48 32	6.39 32	7.53 56
22.5	.24 9	.58 18	1.09 18	1.60 18	2.12 18	2.63 18	3.39 30	4.27 32	5.18 32	6.09 32
15.0	.20 8	.43 8	.68 9	1.01 18	1.53 15	2.06 20	2.63 20	3.20 20	3.82 24	4.50 24
11.3	.20 7	.42 8	.64 8	.87 8	1.24 16	1.70 16	2.15 16	2.61 16	3.06 16	3.52 16
9.0	.20 7	.40 7	.61 8	.84 8	1.07 8	1.30 8	1.53 9	1.83 12	2.18 14	2.58 14
7.5	.18 7	.38 7	.58 8	.81 8	1.04 8	1.27 8	1.50 8	1.72 9	1.98 9	2.24 9
6.4	.17 7	.37 7	.57 7	.79 8	1.02 8	1.25 8	1.48 8	1.70 8	1.95 9	2.21 9
5.6	.14 6	.33 8	.55 8	.78 8	1.01 8	1.24 8	1.47 8	1.69 8	1.92 8	2.15 8
5.0	.13 6	.30 7	.50 8	.73 8	.96 8	1.19 8	1.42 8	1.64 8	1.87 8	2.10 8
4.5	.12 5	.27 5	.43 6	.64 8	.87 8	1.10 8	1.33 8	1.55 8	1.78 8	2.01 8
4.1	.11 5	.26 5	.41 6	.58 6	.79 8	1.02 8	1.25 8	1.47 8	1.70 8	1.93 8
3.8	.11 4	.23 4	.36 6	.55 7	.75 7	.96 8	1.19 8	1.41 8	1.64 8	1.87 8
3.5	.11 4	.23 4	.34 6	.51 6	.72 8	.95 8	1.18 8	1.40 8	1.63 8	1.86 8
3.2	.10 4	.22 4	.33 5	.49 6	.67 6	.86 8	1.09 8	1.31 8	1.54 8	1.77 8
3.0	.09 4	.21 4	.32 4	.46 6	.64 6	.82 7	1.02 7	1.22 7	1.42 7	1.62 7
2.8	.09 3	.20 4	.31 5	.45 5	.59 5	.74 6	.91 6	1.09 7	1.29 7	1.49 7
2.6	.09 3	.20 4	.31 4	.43 4	.56 5	.71 6	.88 6	1.05 7	1.25 7	1.45 7
2.5	.09 3	.19 4	.30 4	.42 5	.56 5	.71 5	.86 6	1.03 6	1.20 6	1.37 6
2.4	.09 3	.17 3	.27 4	.40 5	.54 5	.69 5	.83 6	1.00 6	1.17 6	1.34 6
2.3	.09 3	.17 3	.27 4	.40 5	.54 5	.69 5	.83 5	.98 6	1.15 6	1.32 7
2.1	.09 3	17 3	.27 4	.39 5	.53 5	.68 5	.82 5	.96 5	1.12 6	1.31 7
2.0	.08 3	.16 3	.26 4	.38 4	.51 5	.66 5	.80 5	.94 5	1.10 7	1.30 7

Recurrence interval, years	Gross draft rate in percent of mean flow									
	55	60	65	70	75	80	85	90	95	100
45.0	9.13 56	10.72 56	12.32 56	13.91 56	15.51 56	17.11 56	18.70 56	20.30 56	21.89 56	23.49 56
22.5	7.00 32	7.91 32	9.04 54	10.62 56	12.22 56	13.82 56	15.41 56	17.01 56	18.60 56	20.20 56
15.0	5.23 28	6.03 28	6.82 28	7.62 28	8.42 28	9.22 28	10.02 28	10.81 28	11.61 28	12.41 28
11.3	3.98 16	4.47 18	4.98 18	5.49 18	6.01 18	6.89 40	8.03 40	9.17 40	10.31 40	11.45 40
9.0	2.98 14	3.38 14	3.85 18	4.36 18	4.88 18	5.39 18	5.92 20	7.03 42	8.23 44	9.48 44
7.5	2.49 9	2.75 9	3.00 9	3.30 14	3.70 14	4.21 22	4.84 22	5.60 28	6.40 28	7.20 28
6.4	2.46 9	2.72 9	2.97 9	3.23 9	3.60 14	3.99 14	4.39 14	4.79 14	5.19 14	5.63 18
5.6	2.38 8	2.61 8	2.83 8	3.10 10	3.39 10	3.79 16	4.24 16	4.70 16	5.15 16	5.61 16
5.0	2.33 8	2.56 8	2.78 8	3.03 9	3.29 9	3.54 9	3.95 16	4.41 16	4.86 16	5.32 16
4.5	2.24 8	2.47 8	2.69 9	2.95 9	3.21 9	3.46 9	3.74 14	4.14 14	4.54 14	4.94 14
4.1	2.16 8	2.40 9	2.65 9	2.91 9	3.17 9	3.42 9	3.68 9	3.94 9	4.19 9	4.53 14
3.8	2.10 8	2.33 8	2.55 8	2.78 8	3.01 9	3.26 9	3.52 9	3.78 9	4.03 9	4.29 9
3.5	2.09 8	2.32 8	2.54 8	2.77 8	3.00 9	3.25 9	3.51 9	3.77 9	4.02 9	4.28 9
3.2	2.00 8	2.23 8	2.45 8	2.68 8	2.91 8	3.14 8	3.37 8	3.61 9	3.86 9	4.12 9
3.0	1.81 8	2.04 9	2.29 9	2.55 9	2.81 9	3.06 9	3.32 9	3.58 9	3.83 9	4.09 9
2.8	1.70 9	1.96 9	2.21 9	2.47 9	2.73 9	2.98 9	3.24 9	3.50 9	3.75 9	4.01 9
2.6	1.64 7	1.85 8	2.07 8	2.30 8	2.53 8	2.76 9	3.02 9	3.28 9	3.53 9	3.79 9
2.5	1.54 6	1.73 7	1.93 7	2.17 9	2.43 9	2.68 9	2.94 9	3.20 9	3.45 9	3.71 9
2.4	1.51 7	1.71 7	1.91 7	2.11 7	2.31 7	2.51 7	2.75 9	3.01 9	3.26 9	3.52 9
2.3	1.51 7	1.71 7	1.91 7	2.11 7	2.31 7	2.51 7	2.71 7	2.92 9	3.17 9	3.43 9
2.1	1.50 7	1.70 7	1.90 7	2.10 7	2.30 7	2.50 7	2.70 7	2.90 7	3.10 7	3.34 9
2.0	1.49 7	1.69 7	1.89 7	2.09 7	2.29 7	2.49 7	2.69 7	2.89 7	3.09 7	3.31 9



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LICK CREEK NEAR CURRAN
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 100
100 90 80 70 60 50 45 40 35 30 25 20 15 10 5

SUGAR CREEK AT AUBURN



STATION 212

LOCATION
In NW ¼ sec 12, T13N, R6W, Sangamon County, at Ill. 104 bridge, 1.25 miles east of Auburn

DRAINAGE AREA
51.5 square miles

ACTUAL FLOW DATA
PERIOD: Apr 1948 thru Sept 1959
CONTINUOUS RECORD: 11 years; water years 1949-59

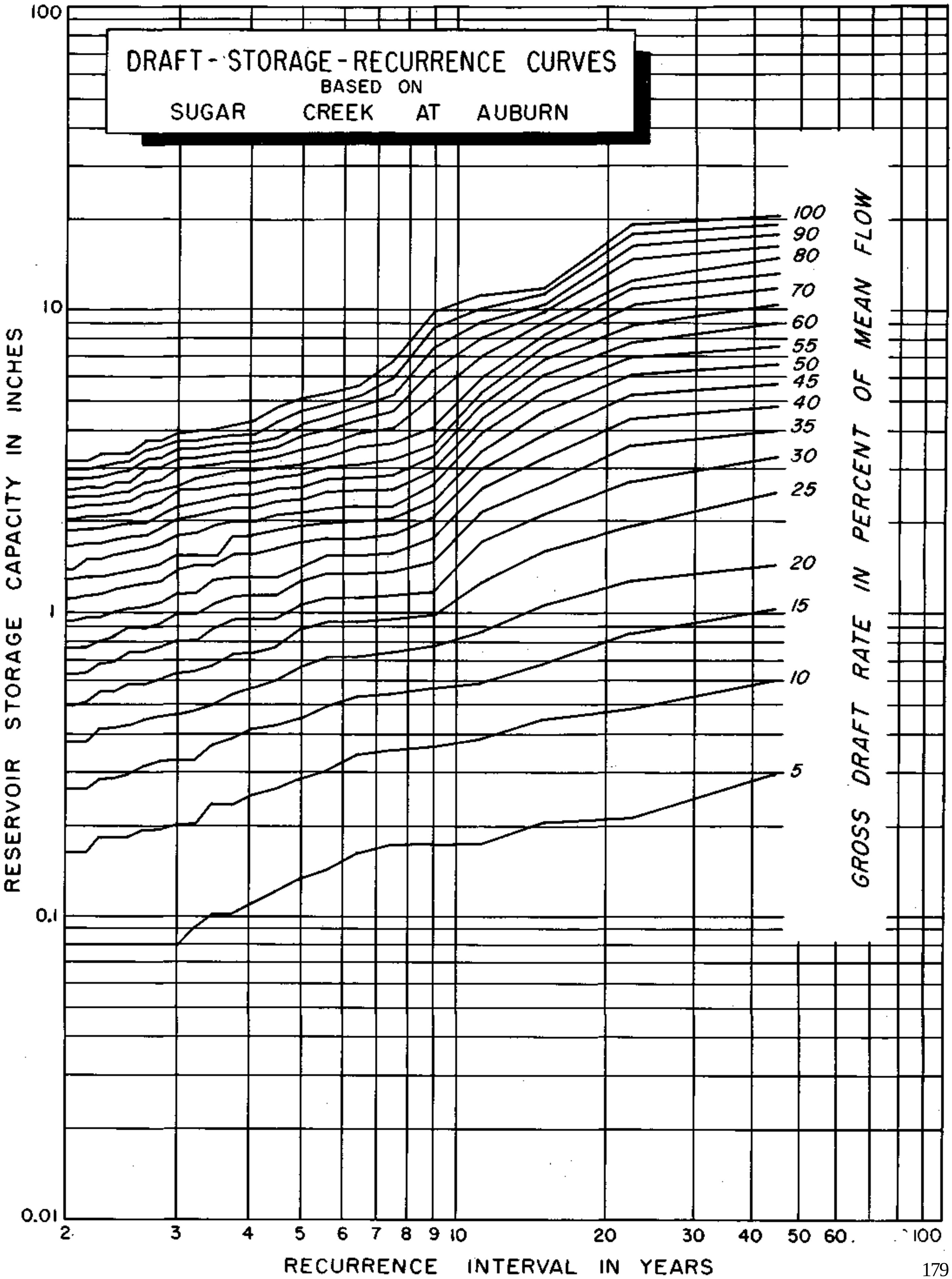
SYNTHETIC FLOW DATA
PERIOD: 34 years; water years 1915-48
INDEX STATION : Sangamon River at Riverton
COINCIDENT RECORD: 8 years; water years 1949-56

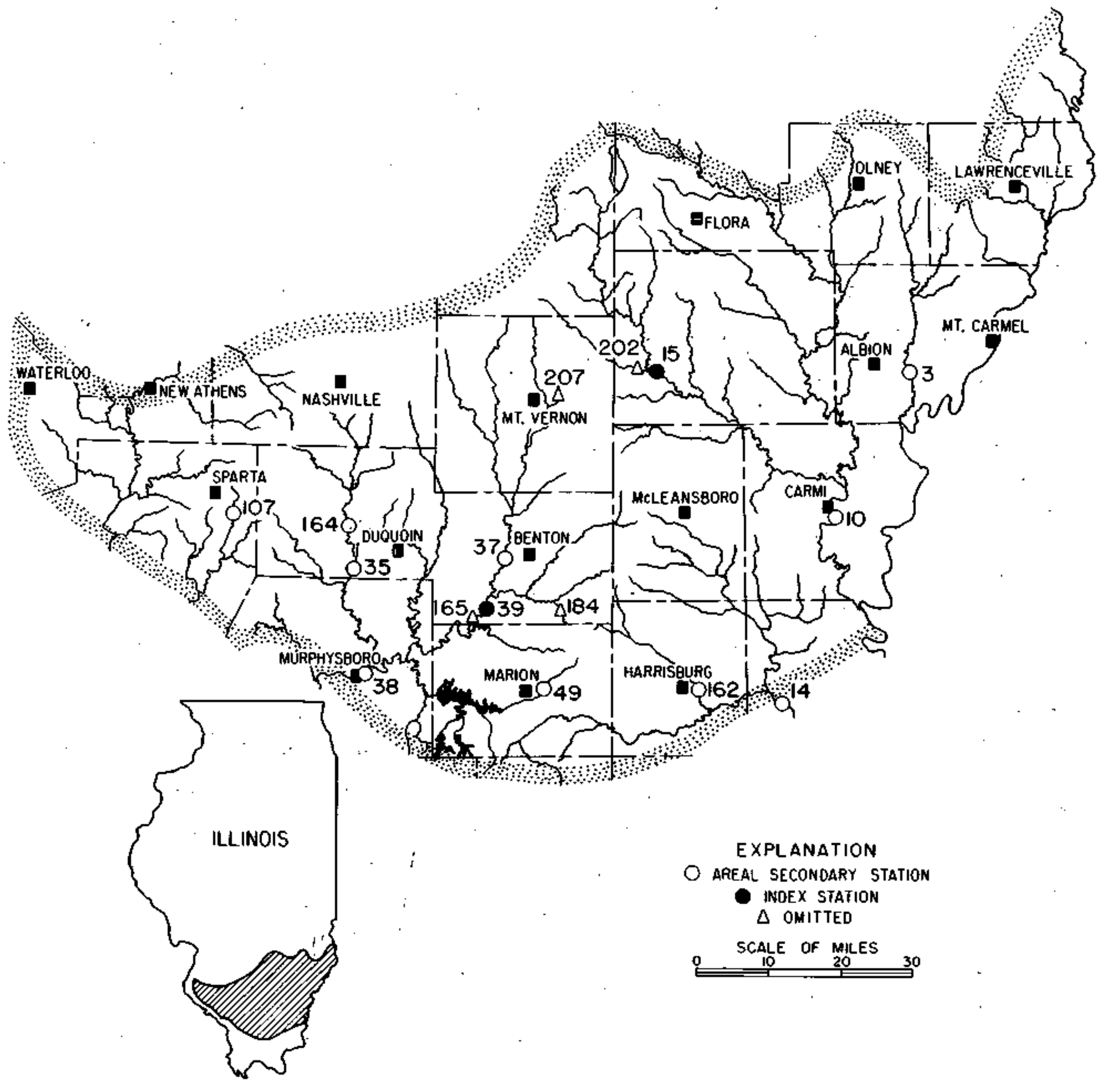
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.52 inch per month

Draft-Storage-Recirrrence Data for Sugar Creek at Auburn

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.29	.60	1.03	1.68	2.46	3.24	4.02	4.80	5.65	6.53	7.50	8.91	10.31	11.72	13.18	14.64	16.09	17.55	19.00	20.46
	12	12	24	30	30	30	30	30	34	34	54	54	54	56	56	56	56	56	56	56
22.5	.21	.48	.85	1.32	1.91	2.69	3.52	4.36	5.19	6.02	6.85	7.68	8.69	10.14	11.60	13.06	14.51	15.97	17.42	18.88
	10	11	18	18	30	32	32	32	32	32	32	32	56	56	56	56	56	56	56	56
15.0	.20	.44	.67	1.07	1.57	2.09	2.61	3.20	3.83	4.55	5.28	6.01	6.73	7.46	8.19	8.92	9.65	10.37	11.10	11.83
	9	9	9	18	20	20	20	24	26	28	28	28	28	28	28	28	28	28	28	28
11.3	.17	.38	.58	.86	1.28	1.70	2.11	2.53	2.94	3.38	3.85	4.32	4.78	5.25	5.85	6.89	7.93	8.97	10.01	11.05
	8	8	8	16	16	16	16	16	16	18	18	18	18	18	40	40	40	40	40	40
9.0	.17	.36	.56	.77	.98	1.19	1.47	1.76	2.04	2.33	2.62	2.92	3.24	3.55	4.07	5.16	6.26	7.40	8.55	9.69
	7	8	8	8	8	11	11	11	11	11	11	12	12	12	42	42	44	44	44	44
7.5	.17	.35	.54	.74	.95	1.16	1.37	1.57	1.80	2.03	2.27	2.53	2.82	3.17	3.59	4.02	4.59	5.17	5.88	6.68
	7	7	7	8	8	8	8	8	9	9	10	11	11	16	16	22	22	22	28	44
6.4	.16	.34	.53	.71	.92	1.13	1.34	1.54	1.75	1.99	2.25	2.51	2.77	3.06	3.48	3.90	4.31	4.73	5.14	5.56
	7	7	7	8	8	8	8	8	8	10	10	10	10	16	16	16	16	16	16	16
5.6	.14	.30	.50	.71	.92	1.13	1.34	1.54	1.75	1.96	2.21	2.47	2.73	2.99	3.25	3.56	3.97	4.39	4.80	5.22
	6	8	8	8	8	8	8	8	8	8	10	10	10	10	10	16	16	16	16	16
5.0	.13	.28	.45	.66	.87	1.08	1.29	1.49	1.70	1.91	2.12	2.35	2.58	2.82	3.06	3.41	3.78	4.14	4.58	5.05
	6	6	8	8	8	8	8	8	8	8	8	9	9	9	10	14	14	14	18	18
4.5	.12	.26	.42	.59	.77	.95	1.15	1.37	1.61	1.84	2.07	2.31	2.54	2.78	3.01	3.24	3.48	3.76	4.23	4.70
	5	6	6	7	7	7	8	9	9	9	9	9	9	9	9	9	9	18	18	18
4.1	.11	.25	.41	.56	.73	.94	1.15	1.35	1.56	1.77	1.98	2.19	2.42	2.66	2.89	3.12	3.36	3.59	3.63	4.25
	5	6	6	6	8	8	8	8	8	8	8	9	9	9	9	9	9	9	16	16
3.8	.10	.23	.38	.53	.72	.93	1.14	1.34	1.55	1.76	1.97	2.18	2.41	2.65	2.88	3.11	3.35	3.58	3.82	4.13
	5	5	6	6	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	16
3.5	.10	.23	.36	.49	.66	.87	1.08	1.28	1.49	1.70	1.91	2.12	2.33	2.57	2.80	3.03	3.27	3.50	3.74	3.97
	5	5	5	5	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9
3.2	.09	.20	.32	.47	.63	.80	.98	1.17	1.36	1.57	1.80	2.04	2.27	2.51	2.74	2.97	3.21	3.44	3.68	3.91
	4	4	6	6	6	7	7	7	8	9	9	9	9	9	9	9	9	9	9	9
3.0	.09	.20	.32	.46	.62	.80	.98	1.17	1.35	1.54	1.77	2.01	2.24	2.48	2.71	2.94	3.18	3.41	3.65	3.88
	4	4	5	6	7	7	7	7	7	9	9	9	9	9	9	9	9	9	9	9
2.8	.08	.19	.32	.45	.60	.76	.91	1.09	1.27	1.45	1.66	1.87	2.07	2.28	2.49	2.72	2.96	3.19	3.43	3.66
	4	5	5	5	6	6	6	7	7	8	8	8	8	8	9	9	9	9	9	9
2.6	.08	.19	.31	.44	.57	.73	.88	1.06	1.24	1.42	1.60	1.78	1.97	2.21	2.44	2.67	2.91	3.14	3.38	3.61
	4	4	5	5	6	6	6	7	7	7	7	7	9	9	9	9	9	9	9	9
2.5	.08	.18	.29	.42	.57	.73	.88	1.04	1.21	1.39	1.57	1.75	1.94	2.12	2.30	2.49	2.70	2.90	3.11	3.33
	3	4	5	5	6	6	6	6	7	7	7	7	7	7	7	8	8	8	8	9
2.4	.08	.18	.28	.41	.54	.68	.83	1.00	1.18	1.36	1.54	1.72	1.91	2.09	2.27	2.45	2.63	2.84	3.08	3.31
	3	4	5	5	5	6	6	7	7	7	7	7	7	7	7	7	8	9	9	9
2.3	.08	.18	.28	.41	.54	.67	.80	.95	1.13	1.31	1.49	1.67	1.86	2.04	2.22	2.40	2.58	2.78	3.02	3.25
	3	4	5	5	5	5	5	7	7	7	7	7	7	7	7	7	7	9	9	9
2.1	.08	.16	.26	.37	.50	.63	.76	.95	1.13	1.31	1.49	1.67	1.86	2.04	2.22	2.40	2.58	2.77	2.95	3.13
	3	4	4	5	5	5	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2.0	.08	.16	.26	.37	.49	.62	.76	.93	1.11	1.29	1.47	1.65	1.84	2.02	2.20	2.38	2.56	2.75	2.93	3.11
	3	4	4	4	5	5	6	7	7	7	7	7	7	7	7	7	7	7	7	7


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
SUGAR CREEK AT AUBURN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

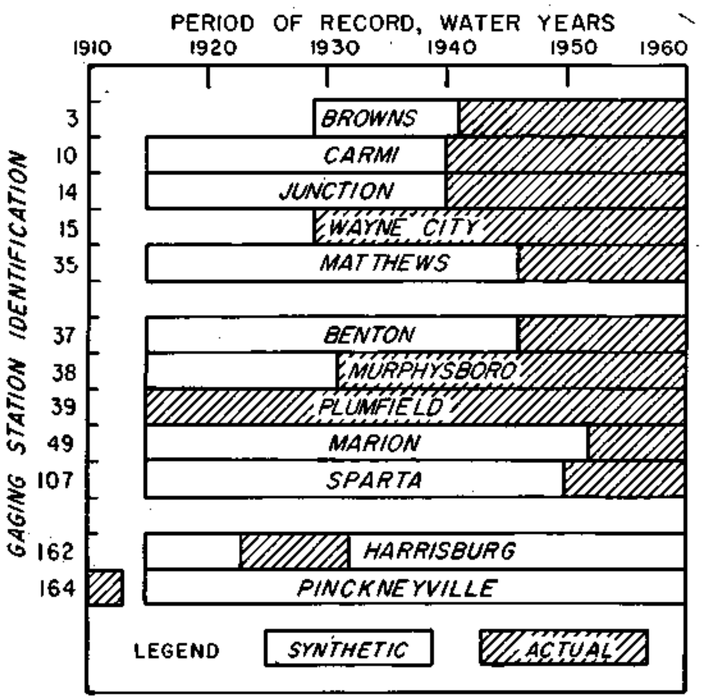


Mt. Vernon Hills

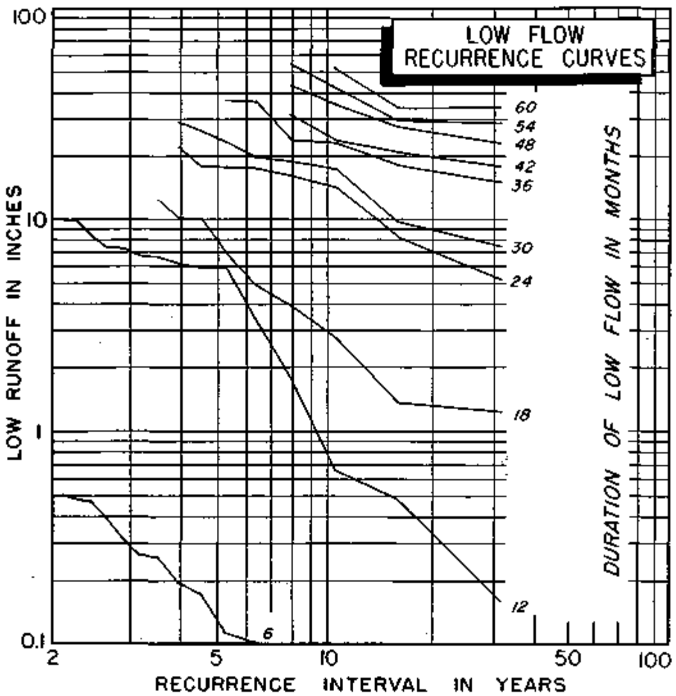
Gaging Stations in Mt. Vernon Hills

STATIONS OMITTED

		REASON
165	Big Muddy River near Cambon	*Combined with record for Station 39*
184	Tilley Creek at West Frankfort	*Regulation*
202	Horse Creek near Keenes	*Record too short*
207	Sevenmile Creek near Mt. Vernon	*Record too short*



BONPAS CREEK AT BROWNS



STATION 3

LOCATION
In SW ¼ SE ¼ sec 33, T1S, R14W, the creek being the Edwards-Wabash County line, 300 feet upstream from Ill. 15 bridge at Browns

DRAINAGE AREA
235 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1940 thru Sept 1959
CONTINUOUS RECORD: 19 years; water years 1941-59

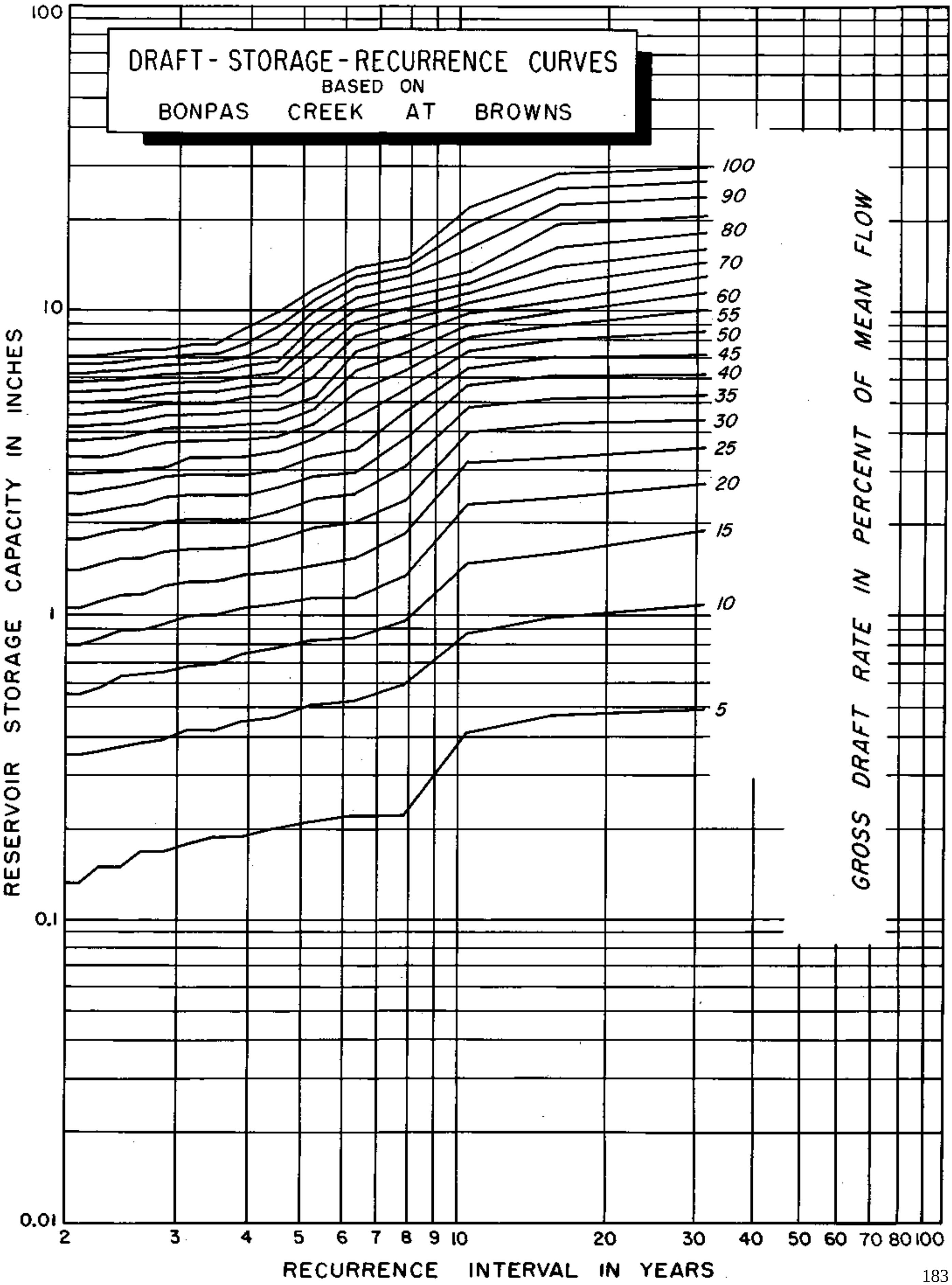
SYNTHETIC FLOW DATA
PERIOD: 12 years; water years 1929-40
INDEX STATION : Skillet Fork at Wayne City
COINCIDENT RECORD: 19 years; water years 1941-59

TOTAL DATA ANALYZED
PERIOD: 31 years; water years 1929-59
MEAN DISCHARGE: .1.04 inches per month

Draft-Storage-Recurrence Data for Bonpas Creek at Browns

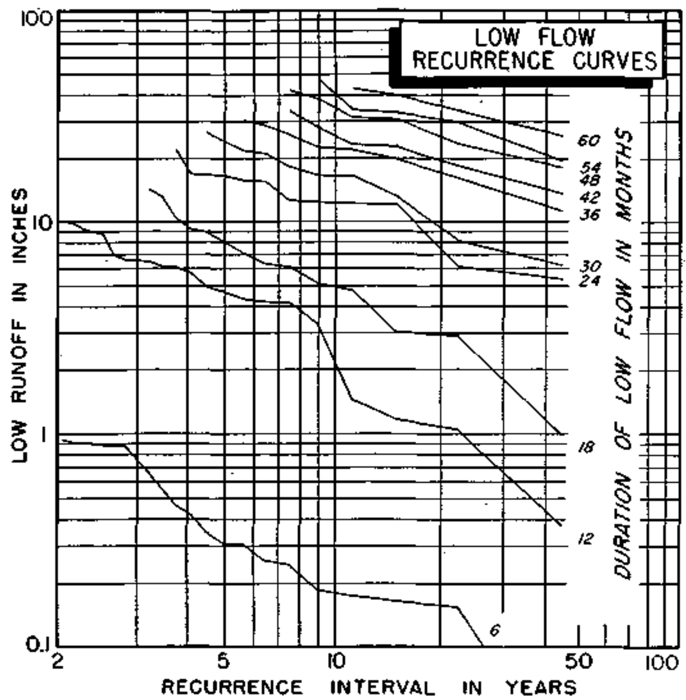
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
31.0	.49	1.09	1.90	2.73	3.56	4.39	5.30	6.24	7.17	8.58	10.04	11.49	12.95	14.40	15.92	18.12	20.58	23.60	26.61	29.63
	10	12	16	16	15	16	18	18	18	28	28	28	28	28	30	46	58	58	58	58
15.5	.47	.99	1.61	2.44	3.31	4.25	5.18	6.12	7.05	7.99	8.93	9.86	10.80	12.29	13.95	16.04	19.05	22.07	25.08	28.10
	10	10	16	16	18	18	18	18	18	18	18	18	18	32	32	58	58	58	58	58
10.3	.41	.88	1.50	2.33	3.16	3.99	4.82	5.66	6.49	7.32	8.15	8.98	9.82	10.65	11.48	12.31	13.34	15.99	18.90	21.81
	9	9	16	16	16	16	16	16	15	16	16	16	16	16	16	16	42	56	56	56
7.6	.22	.59	.95	1.34	1.85	2.37	3.08	3.82	4.65	5.48	6.34	7.27	8.21	9.14	10.08	11.02	11.95	12.89	13.82	14.77
	7	7	7	8	10	10	14	16	16	16	18	18	18	18	18	18	18	18	16	20
6.2	.22	.52	.84	1.15	1.55	2.02	2.49	2.95	3.51	4.45	5.39	6.32	7.26	8.19	9.13	10.07	11.00	11.94	12.87	13.81
	5	6	6	6	9	9	9	9	18	18	16	18	18	18	18	18	18	18	18	18
5.2	.21	.51	.83	1.14	1.46	1.93	2.40	2.86	3.33	3.80	4.27	4.74	5.20	6.13	7.07	8.01	8.94	9.88	10.81	11.75
	5	6	6	6	9	9	9	9	9	9	9	9	18	18	16	18	18	18	18	18
4.4	.20	.46	.78	1.09	1.40	1.78	2.19	2.61	3.02	3.44	3.86	4.27	4.71	5.21	5.73	6.25	6.77	7.75	8.79	9.83
	4	6	6	6	6	8	8	8	8	8	6	8	9	10	10	10	10	20	20	20
3.9	.19	.45	.75	1.06	1.37	1.68	2.06	2.48	2.89	3.31	3.76	4.23	4.69	5.16	5.63	6.10	6.57	7.03	7.78	8.72
	5	5	6	6	6	7	8	8	8	8	9	9	9	9	9	9	9	9	18	18
3.4	.19	.42	.69	1.00	1.31	1.65	2.06	2.48	2.89	3.31	3.73	4.14	4.56	4.97	5.39	5.83	6.30	6.76	7.23	7.72
	4	5	5	6	6	8	8	8	8	8	6	8	6	8	8	9	9	9	9	10
3.1	.18	.42	.66	.99	1.30	1.65	2.06	2.48	2.89	3.31	3.73	4.14	4.56	4.97	5.39	5.81	6.22	6.67	7.18	7.70
	4	5	6	6	6	8	8	8	8	6	8	8	8	8	8	8	8	9	10	10
2.8	.17	.39	.65	.94	1.25	1.61	2.02	2.44	2.85	3.27	3.69	4.10	4.52	4.93	5.35	5.77	6.18	6.60	7.01	7.43
	4	5	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	10
2.6	.17	.38	.64	.90	1.18	1.54	1.91	2.31	2.72	3.14	3.56	3.97	4.39	4.80	5.22	5.64	6.05	6.47	6.94	7.42
	4	5	5	5	7	7	7	8	8	8	6	8	8	8	8	8	8	9	9	10
2.4	.15	.37	.63	.89	1.17	1.53	1.90	2.26	2.63	2.99	3.40	3.81	4.23	4.64	5.06	5.48	5.89	6.31	6.77	7.29
	4	5	5	5	7	7	7	7	7	7	8	8	8	8	8	8	8	8	10	10
2.2	.15	.36	.58	.84	1.11	1.47	1.84	2.20	2.57	2.96	3.38	3.79	4.21	4.62	5.04	5.46	5.87	6.29	6.70	7.12
	4	4	5	5	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	8
2.1	.14	.35	.55	.80	1.06	1.41	1.78	2.14	2.51	2.91	3.33	3.74	4.16	4.57	4.99	5.41	5.82	6.24	6.65	7.07
	4	4	4	5	6	7	7	7	7	8	8	8	8	8	8	8	8	8	8	8



DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
BONPAS CREEK AT BROWNS
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100

LITTLE WABASH RIVER AT CARMI



STATION 10

LOCATION

Near center of E ½ sec 25, T5S, R9E, White County, at Possum Bridge, 2.5 miles downstream from Carmi

DRAINAGE AREA

3090 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1939 thru Sept 1959

CONTINUOUS RECORD: 20 years; water years 1940-59

SYNTHETIC FLOW DATA

PERIOD: 25 years; water years 1915-39

INDEX STATION : Little Wabash at Wilcox

COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

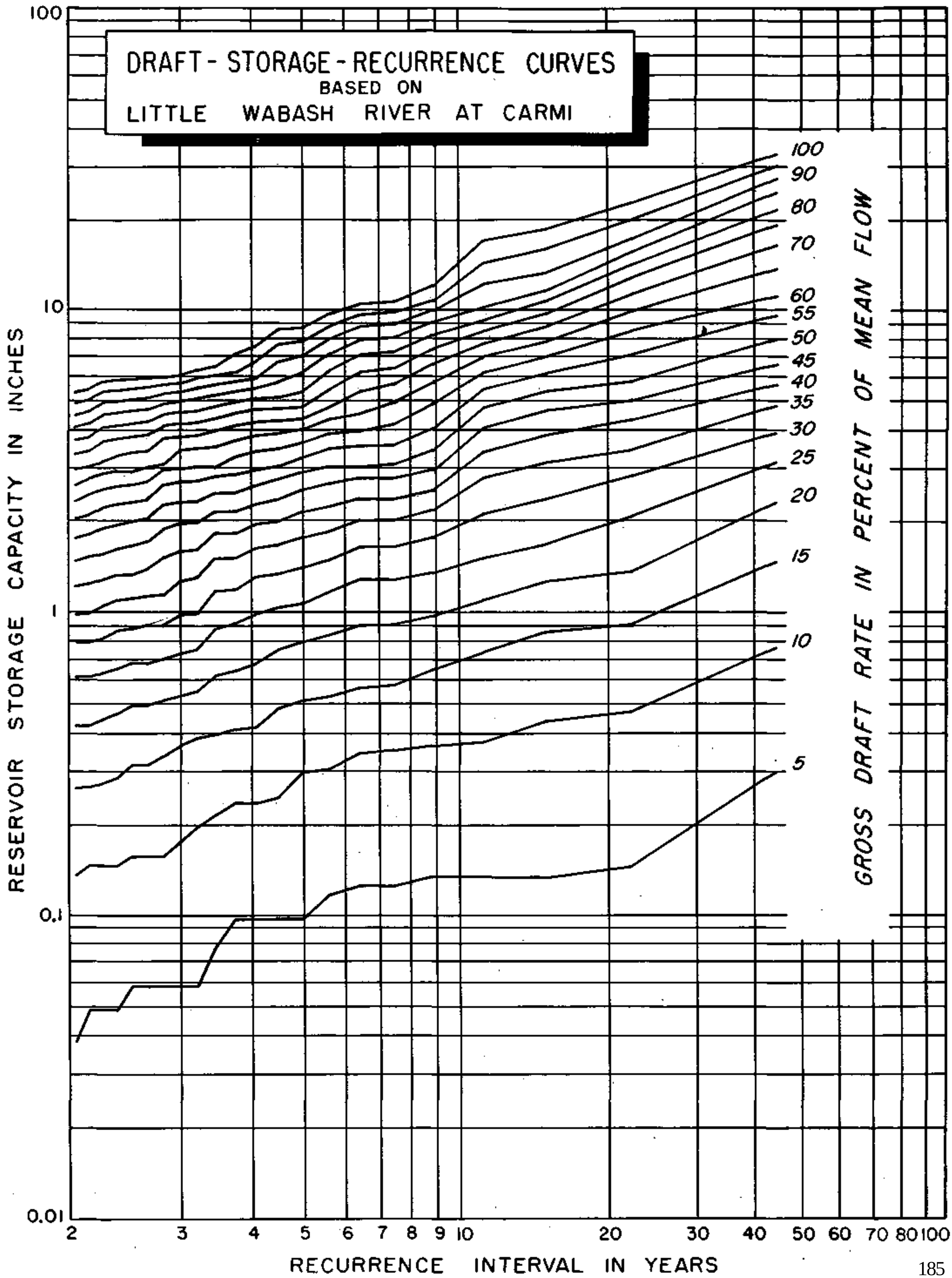
MEAN DISCHARGE : 0.93 inch per month

Draft-Storage-Recurrence Data for Little Wabash River at Carmi

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.31	.78	1.50	2.34	3.18	4.01	4.85	5.69	6.60	8.03	9.59	11.18	13.78	16.39	18.99	21.62	24.32	27.02	29.71	32.41
	8	14	18	18	18	18	18	18	20	32	34	56	56	56	56	58	58	58	58	58
22.5	.15	.48	.93	1.39	2.11	2.85	3.60	4.34	5.09	5.83	7.15	8.54	9.94	11.33	12.73	14.12	15.52	17.15	19.75	22.54
	5	8	10	10	16	16	16	16	16	16	30	30	30	30	30	30	30	44	60	60
15.0	.14	.45	.87	1.28	1.70	2.39	3.14	3.88	4.63	5.37	6.15	6.98	7.85	8.78	9.71	10.64	11.57	13.15	15.76	18.36
	5	9	9	9	9	16	16	16	16	16	18	18	20	20	20	20	20	56	56	56
11.3	.14	.38	.75	1.12	1.53	2.14	2.79	3.44	4.09	4.74	5.48	6.23	6.97	7.72	8.46	9.20	10.16	12.11	14.21	16.81
	4	6	8	8	10	14	14	14	14	16	16	16	16	16	16	16	42	42	56	56
9.0	.14	.37	.66	.99	1.37	1.79	2.21	2.63	3.07	3.53	4.09	4.92	5.76	6.60	7.44	8.27	9.11	9.95	10.78	12.09
	4	6	7	8	9	9	9	9	10	10	18	18	18	18	18	18	18	18	18	32
7.5	.13	.36	.59	.92	1.29	1.66	2.03	2.41	2.78	3.20	3.61	4.18	4.92	5.67	6.41	7.23	8.07	8.91	9.74	10.58
	4	5	6	8	8	8	8	8	9	9	9	16	16	16	16	18	18	18	18	18
6.4	.13	.35	.58	.92	1.29	1.66	2.03	2.41	2.78	3.15	3.56	3.98	4.53	5.37	6.21	7.04	7.88	8.72	9.55	10.39
	4	5	6	8	8	8	8	8	8	9	9	9	18	18	18	18	18	18	18	18
5.6	.12	.31	.54	.85	1.18	1.50	1.86	2.25	2.67	3.09	3.50	3.92	4.34	4.76	5.44	6.27	7.11	7.95	8.78	9.62
	4	5	5	7	7	7	8	9	9	9	9	9	9	9	18	18	18	18	18	18
5.0	.10	.30	.53	.81	1.09	1.42	1.79	2.17	2.54	2.91	3.28	3.65	4.03	4.40	4.77	5.35	6.19	7.03	7.86	8.70
	4	5	6	6	6	8	8	8	8	8	8	8	8	8	8	18	18	18	18	18
4.5	.10	.25	.49	.77	1.05	1.35	1.68	2.01	2.38	2.75	3.12	3.49	3.87	4.29	4.71	5.13	5.75	6.68	7.61	8.54
	3	5	6	6	6	7	7	8	8	8	8	8	9	9	9	9	20	20	20	20
4.1	.10	.24	.43	.69	1.00	1.32	1.65	1.97	2.30	2.63	3.00	3.42	3.84	4.26	4.68	5.10	5.51	5.93	6.69	7.53
	3	4	4	6	7	7	7	7	7	7	9	9	9	9	9	9	9	9	18	18
3.8	.10	.24	.42	.65	.93	1.20	1.52	1.84	2.17	2.50	2.86	3.28	3.70	4.12	4.54	4.96	5.37	5.79	6.21	7.11
	3	3	4	6	6	6	7	7	7	7	9	9	9	9	9	9	9	9	9	20
3.5	.08	.22	.40	.63	.89	1.19	1.52	1.84	2.17	2.50	2.82	3.15	3.54	3.96	4.38	4.80	5.21	5.63	6.05	6.47
	3	3	5	5	6	7	7	7	7	7	7	7	9	9	9	9	9	9	9	9
3.2	.06	.20	.39	.57	.76	1.00	1.31	1.63	1.99	2.36	2.73	3.10	3.48	3.85	4.24	4.66	5.07	5.49	5.91	6.33
	2	4	4	4	4	6	7	7	8	8	8	8	8	8	9	9	9	9	9	9
3.0	.06	.18	.37	.55	.74	1.00	1.28	1.61	1.98	2.35	2.72	3.09	3.47	3.84	4.21	4.58	4.95	5.33	5.70	6.07
	2	4	4	4	4	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8
2.8	.06	.16	.34	.52	.71	.91	1.15	1.53	1.90	2.27	2.64	3.01	3.39	3.76	4.13	4.50	4.87	5.25	5.62	5.99
	2	3	4	4	4	5	8	8	8	8	8	8	8	8	8	8	8	8	8	8
2.6	.06	.16	.32	.50	.69	.91	1.14	1.40	1.73	2.06	2.38	2.71	3.06	3.44	3.86	4.28	4.69	5.11	5.53	5.95
	2	3	4	4	4	5	5	7	7	7	7	7	8	9	9	9	9	9	9	9
2.5	.06	.16	.32	.50	.69	.89	1.12	1.35	1.67	2.00	2.32	2.65	2.97	3.38	3.80	4.22	4.63	5.05	5.47	5.89
	2	2	4	4	4	5	5	5	7	7	7	7	7	9	9	9	9	9	9	9
2.4	.05	.15	.29	.47	.66	.88	1.11	1.34	1.63	1.96	2.28	2.61	2.93	3.31	3.73	4.15	4.56	4.98	5.40	5.82
	2	2	4	4	4	5	5	5	7	7	7	7	7	9	9	9	9	9	9	9
2.3	.05	.15	.28	.45	.64	.83	1.06	1.29	1.57	1.90	2.22	2.55	2.87	3.25	3.67	4.09	4.50	4.92	5.34	5.76
	2	2	3	4	4	5	5	5	7	7	7	7	7	9	9	9	9	9	9	9
2.1	.05	.15	.27	.43	.62	.81	1.01	1.26	1.54	1.82	2.13	2.46	2.78	3.11	3.43	3.79	4.20	4.62	5.04	5.46
	2	2	3	4	4	4	5	6	6	6	7	7	7	7	7	9	9	9	9	9
2.0	.04	.14	.27	.43	.62	.81	1.00	1.23	1.49	1.77	2.05	2.33	2.64	2.98	3.35	3.72	4.09	4.49	4.91	5.33
	2	2	3	4	4	4	5	5	6	6	6	6	7	8	8	8	8	9	9	9



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LITTLE WABASH RIVER AT CARMI
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
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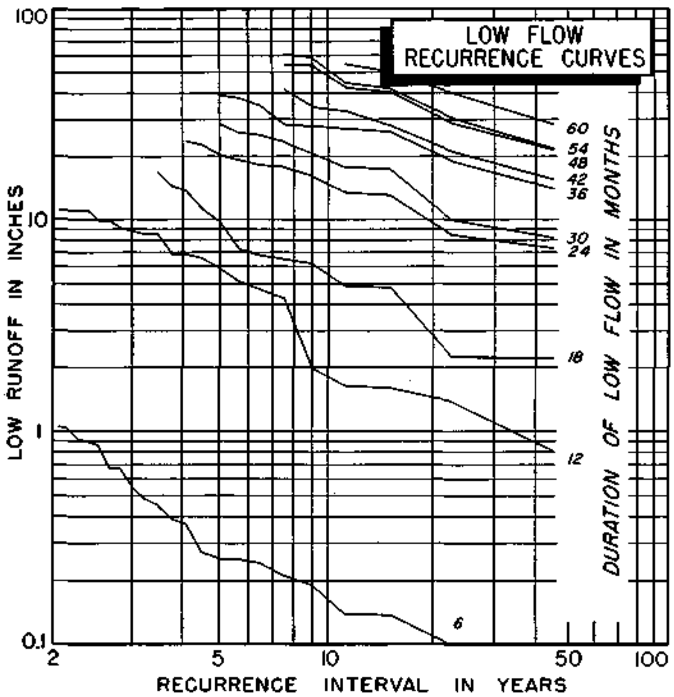
5

SALINE RIVER NEAR JUNCTION



STATION 14

LOCATION

In NE ¼ sec 36, T9S, R8E, Gallatin County, at old Island Ripple Bridge site, 2.5 miles southwest of Junction

DRAINAGE AREA

1040 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1939 thru Sept 1959

CONTINUOUS RECORD: 20 years; water years 1940-59

SYNTHETIC FLOW DATA

PERIOD: 25 years; water years 1915-39

INDEX STATION : Big Muddy River at Plumfield

COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

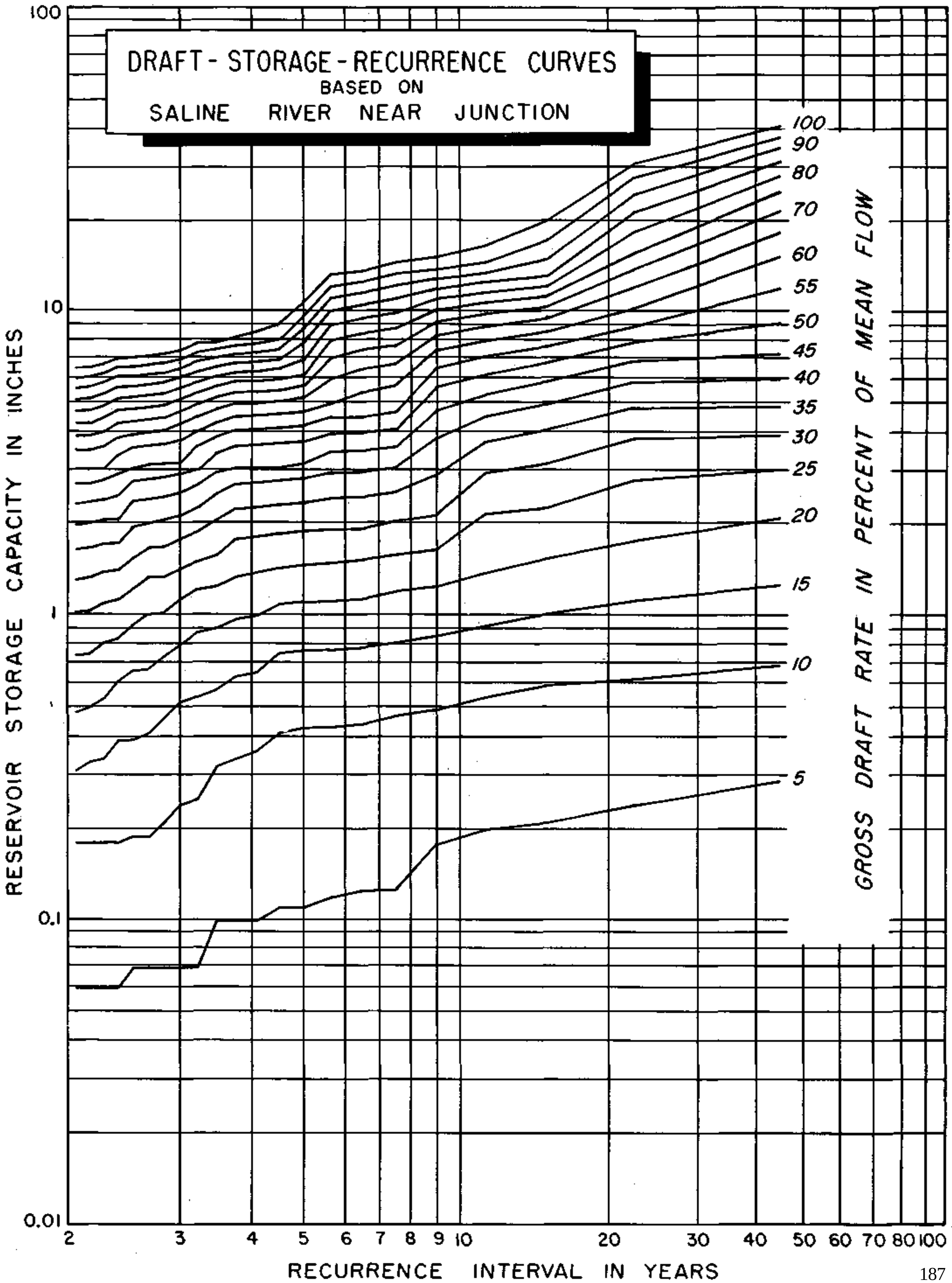
MEAN DISCHARGE : 1.13 inches per month

Draft-Storage-Recurrence Data for Saline River near Junction

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.29	.70	1.27	2.11	3.01	3.91	4.88	5.99	7.24	9.16	12.03	15.20	18.36	21.53	24.69	27.85	31.13	34.41	37.68	40.96
	7	10	10	16	16	16	18	20	34	34	56	56	56	56	56	58	58	58	58	58
22.5	.24	.62	1.12	1.78	2.80	3.81	4.83	5.85	6.86	7.88	8.90	10.31	12.01	13.70	15.40	18.15	21.20	24.25	27.42	30.58
	6	7	9	18	18	18	18	18	18	18	18	30	30	30	30	54	54	56	56	56
15.0	.21	.59	1.02	1.54	2.26	3.16	4.07	4.97	5.88	6.78	7.68	8.59	9.49	10.40	11.30	12.20	13.12	14.81	17.19	19.89
	5	7	8	10	16	16	16	16	16	16	16	16	16	16	16	16	20	42	42	56
11.3	.20	.54	.93	1.38	2.15	2.94	3.73	4.52	5.31	6.20	7.10	8.01	8.91	9.82	10.72	11.62	12.53	13.43	14.49	16.49
	6	6	8	8	14	14	14	14	14	16	16	16	16	16	16	16	16	16	30	54
9.0	.18	.49	.86	1.25	1.66	2.14	2.91	3.81	4.72	5.62	6.52	7.43	8.33	9.24	10.14	11.04	11.95	12.85	13.76	15.13
	4	6	7	7	8	11	16	16	16	16	16	16	16	16	16	16	16	16	16	34
7.5	.13	.47	.81	1.20	1.60	2.04	2.55	3.06	3.57	4.08	4.66	5.67	6.69	7.71	8.76	9.89	11.02	12.15	13.28	14.41
	4	6	7	7	7	9	9	9	9	9	18	18	18	18	20	20	20	20	20	20
6.4	.13	.44	.78	1.13	1.53	1.93	2.44	2.95	3.46	3.97	4.47	5.41	6.43	7.45	8.47	9.48	10.50	11.52	12.53	13.55
	4	6	6	7	7	9	9	9	9	9	9	18	18	18	18	18	18	18	18	18
5.6	.12	.43	.77	1.11	1.51	1.92	2.43	2.94	3.45	3.96	4.46	4.97	5.97	6.99	8.01	9.02	10.04	11.06	12.07	13.09
	4	6	6	7	7	9	9	9	9	9	9	9	18	18	18	18	18	18	18	18
5.0	.11	.43	.77	1.11	1.50	1.90	2.35	2.81	3.26	3.71	4.17	4.68	5.19	5.70	6.21	6.93	7.84	8.74	9.65	10.66
	9	6	6	6	7	8	8	8	8	8	9	9	9	9	9	16	16	16	16	20
4.5	.11	.41	.75	1.09	1.45	1.86	2.31	2.77	3.22	3.67	4.12	4.57	5.03	5.48	5.96	6.47	6.97	7.52	8.09	9.10
	4	6	6	6	7	8	8	8	8	8	8	8	8	8	9	9	9	10	10	18
4.1	.10	.36	.65	1.00	1.40	1.81	2.26	2.72	3.17	3.62	4.07	4.52	4.98	5.43	5.88	6.33	6.81	7.32	7.83	8.60
	4	5	6	7	7	8	8	8	8	8	8	8	8	8	8	8	9	9	9	16
3.8	.10	.34	.63	.97	1.34	1.79	2.24	2.70	3.15	3.60	4.05	4.50	4.96	5.41	5.86	6.31	6.76	7.22	7.69	8.20
	4	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	9	9
3.5	.10	.32	.57	.91	1.25	1.60	2.05	2.51	2.96	3.41	3.86	4.31	4.77	5.22	5.67	6.12	6.57	7.03	7.48	7.93
	4	4	6	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
3.2	.07	.25	.54	.88	1.22	1.55	1.89	2.26	2.69	3.14	3.59	4.04	4.50	4.95	5.40	5.85	6.32	6.83	7.34	7.85
	3	5	6	6	6	6	6	7	8	8	8	8	8	8	8	8	9	9	9	9
3.0	.07	.24	.52	.80	1.13	1.46	1.80	2.14	2.54	2.94	3.34	3.79	4.25	4.70	5.15	5.60	6.05	6.51	6.96	7.41
	2	5	5	5	6	6	6	7	7	7	8	8	8	8	8	8	8	8	8	8
2.8	.07	.21	.46	.74	1.02	1.35	1.69	2.06	2.46	2.86	3.25	3.65	4.04	4.47	4.92	5.37	5.82	6.28	6.73	7.24
	2	3	5	5	6	6	6	7	7	7	7	7	7	8	8	8	8	8	8	10
2.6	.07	.19	.41	.67	1.01	1.34	1.68	2.02	2.42	2.82	3.21	3.61	4.00	4.40	4.83	5.28	5.73	6.19	6.64	7.09
	2	3	4	6	6	6	6	7	7	7	7	7	7	7	8	8	8	8	8	8
2.5	.07	.19	.39	.66	.94	1.23	1.57	1.96	2.36	2.76	3.15	3.55	3.94	4.34	4.75	5.20	5.65	6.11	6.56	7.01
	2	2	4	5	5	5	7	7	7	7	7	7	7	7	8	8	8	8	8	8
2.4	.06	.18	.39	.61	.84	1.13	1.41	1.73	2.08	2.48	2.92	3.37	3.83	4.28	4.73	5.18	5.63	6.09	6.54	6.99
	2	3	4	4	5	5	5	6	7	7	8	8	8	8	8	8	8	8	8	8
2.3	.06	.18	.34	.53	.81	1.10	1.39	1.73	2.07	2.41	2.80	3.20	3.59	4.01	4.46	4.91	5.36	5.82	6.27	6.72
	2	2	3	5	5	5	6	6	6	7	7	7	7	8	8	8	8	8	8	8
2.1	.06	.18	.33	.50	.75	1.04	1.34	1.68	2.02	2.36	2.72	3.12	3.51	3.91	4.30	4.73	5.18	5.64	6.09	6.54
	2	2	3	3	5	5	6	6	6	6	7	7	7	7	7	8	8	8	8	8
2.0	.06	.18	.31	.48	.74	1.03	1.31	1.65	1.99	2.33	2.71	3.11	3.50	3.90	4.29	4.69	5.12	5.58	6.03	6.48
	2	2	3	3	5	5	6	6	6	6	7	7	7	7	7	7	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SALINE RIVER NEAR JUNCTION
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
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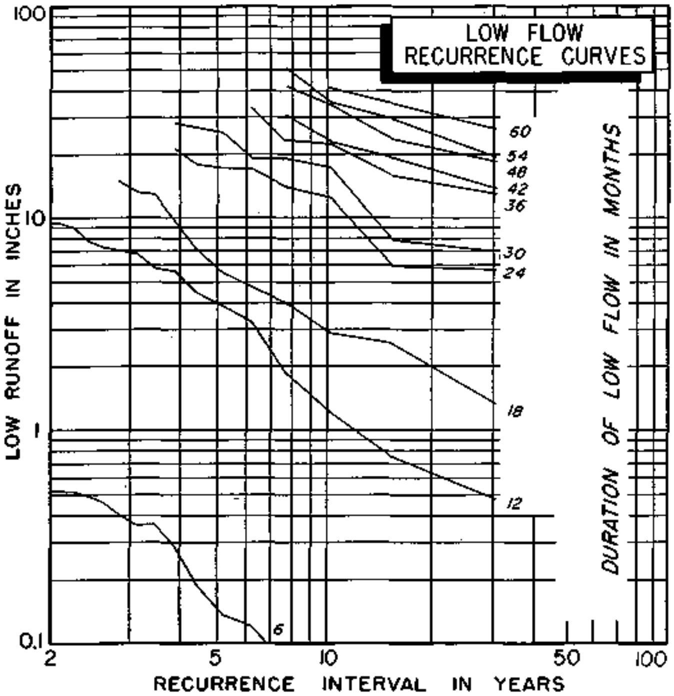
SKILLET FORK AT WAYNE CITY



STATION 15

LOCATION

In SW ¼ sec 7, T2S, R6E, Wayne County, 0.5 mile downstream from Ill. 15 bridge, 1.0 mile north of Wayne City

DRAINAGE AREA

475 square miles

ACTUAL FLOW DATA

PERIOD: Aug 1908 thru Dec 1912, June 1914 thru Sept 1921, June 1928 thru Sept 1959

CONTINUOUS RECORD: 31 years; water years 1929-59

SYNTHETIC FLOW DATA

None; this station utilized as an index station

TOTAL DATA ANALYZED

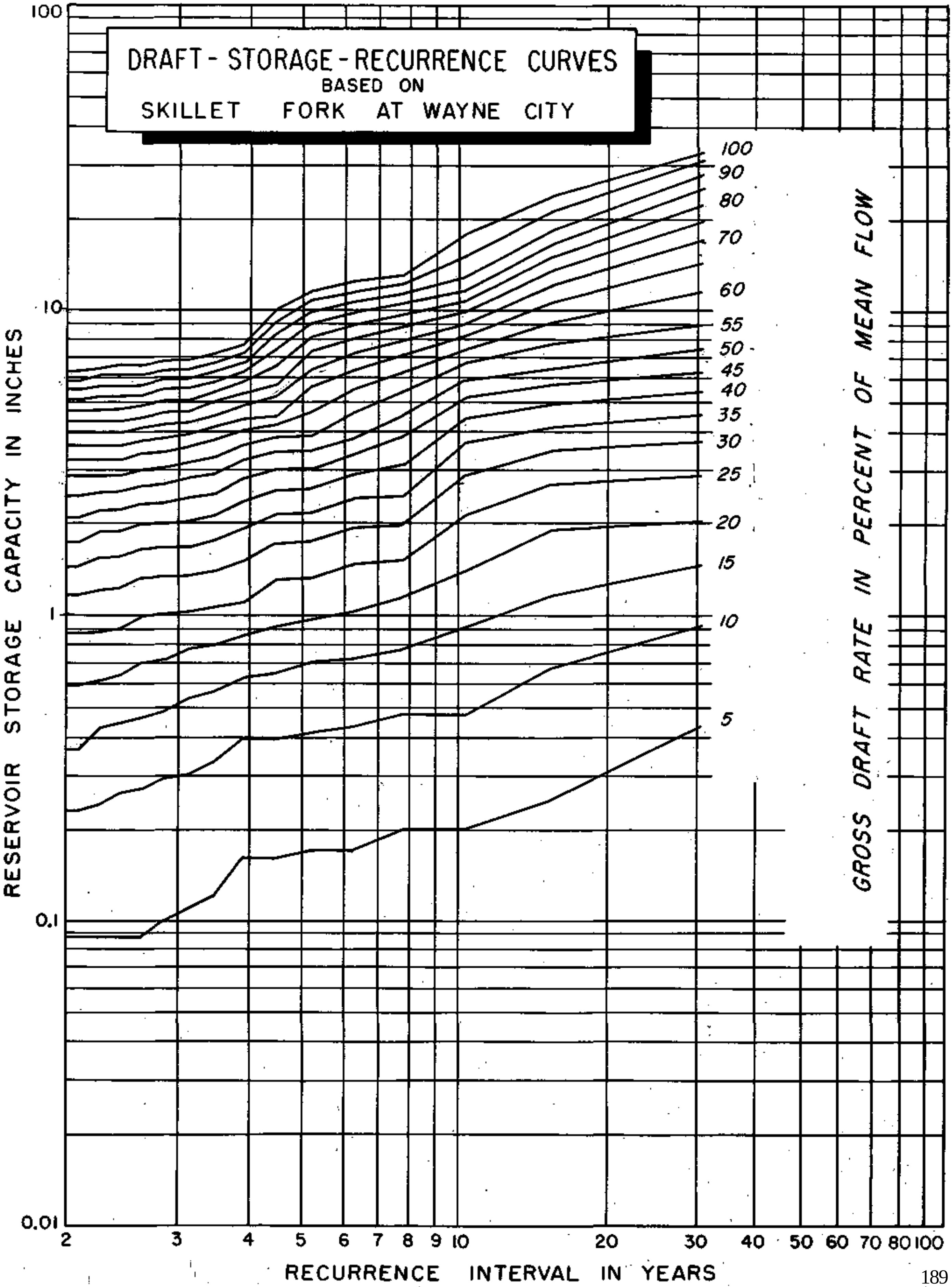
PERIOD: 31 years; water years 1929-59

MEAN DISCHARGE: 0.92 inch per month

Draft-Storage-Recurrence Data for Skillet Fork at Wayne City

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
31.0	.43	.93	1.44	2.01	2.82	3.65	4.48	5.30	6.13	7.24	8.71	11.17	13.75	16.32	18.90	21.48	24.05	26.63	29.20	31.78
	11	11	11	14	18	18	18	18	18	32	32	56	56	56	56	56	56	56	56	56
15.5	.25	.67	1.15	1.88	2.62	3.36	4.09	4.83	5.56	6.30	7.53	8.88	10.26	11.64	13.02	14.46	15.93	17.77	20.34	22.92
	9	9	16	16	16	16	16	16	16	16	28	30	30	30	30	32	32	56	56	56
10.3	.20	.47	.91	1.37	2.08	2.82	3.55	4.29	5.02	5.76	6.50	7.23	7.97	8.76	9.59	10.42	11.25	12.46	14.47	17.05
	6	7	10	10	16	16	16	16	16	16	16	16	16	18	18	18	18	42	56	56
7.8	.20	.47	.76	1.13	1.50	1.95	2.42	3.06	3.75	4.49	5.23	6.06	6.88	7.71	8.54	9.37	10.20	11.02	11.85	12.68
	6	6	8	8	8	10	14	14	16	16	18	18	18	18	18	18	18	18	18	18
6.2	.17	.43	.71	1.02	1.44	1.90	2.36	2.82	3.28	3.74	4.51	5.34	6.16	6.99	7.82	8.65	9.48	10.30	11.13	11.96
	5	6	6	8	10	10	10	10	10	10	18	18	18	18	18	18	18	18	18	18
5.2	.17	.41	.69	.96	1.30	1.71	2.13	2.54	2.96	3.37	3.81	4.56	5.38	6.21	7.04	7.87	8.70	9.52	10.35	11.18
	5	6	6	7	9	9	9	9	9	9	16	18	18	18	18	18	18	18	18	18
4.4	.16	.39	.64	.91	1.27	1.68	2.10	2.51	2.93	3.34	3.75	4.17	4.63	5.09	5.55	6.36	7.19	8.01	8.84	9.67
	5	5	6	6	9	9	9	9	9	9	9	10	10	10	10	18	18	18	18	18
3.9	.16	.39	.62	.85	1.09	1.47	1.89	2.30	2.72	3.13	3.54	3.96	4.37	4.79	5.20	5.66	6.12	6.58	7.04	7.50
	5	5	5	5	6	9	9	9	9	9	9	9	9	9	10	10	10	10	10	10
3.4	.12	.33	.56	.79	1.05	1.37	1.73	2.09	2.46	2.83	3.23	3.65	4.06	4.48	4.89	5.30	5.72	6.13	6.55	7.01
	4	5	5	5	7	7	8	8	8	8	9	9	9	9	9	9	9	9	10	10
3.1	.11	.30	.53	.76	1.02	1.33	1.65	2.00	2.37	2.74	3.11	3.48	3.84	4.21	4.58	4.99	5.41	5.82	6.24	6.67
	4	5	5	5	6	7	7	8	8	8	8	8	8	8	9	9	9	9	9	10
2.8	.10	.29	.48	.71	1.00	1.32	1.64	1.97	2.29	2.61	2.98	3.35	3.72	4.14	4.55	4.96	5.38	5.79	6.21	6.62
	4	4	5	5	7	7	7	7	7	8	8	8	9	9	9	9	9	9	9	9
2.6	.09	.27	.46	.69	.98	1.30	1.62	1.95	2.27	2.59	2.93	3.30	3.66	4.03	4.40	4.77	5.14	5.55	5.97	6.38
	3	4	5	5	7	7	7	7	7	7	8	8	8	8	8	8	9	9	9	9
2.4	.09	.26	.44	.63	.89	1.21	1.53	1.86	2.18	2.50	2.82	3.16	3.52	3.89	4.26	4.67	5.09	5.50	5.92	6.33
	3	4	4	4	7	7	7	7	7	7	7	8	8	8	9	9	9	9	9	9
2.2	.09	.24	.42	.61	.87	1.19	1.51	1.84	2.16	2.48	2.80	3.16	3.52	3.89	4.26	4.64	5.06	5.47	5.89	6.30
	3	4	4	4	7	7	7	7	7	7	7	8	8	8	8	9	9	9	9	9
2.1	.09	.23	.36	.59	.87	1.15	1.42	1.70	2.04	2.41	2.78	3.15	3.51	3.88	4.25	4.62	4.99	5.35	5.73	6.14
	3	3	3	6	6	6	6	6	8	8	8	8	8	8	8	8	8	8	9	9



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SKILLET FORK AT WAYNE CITY
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 100
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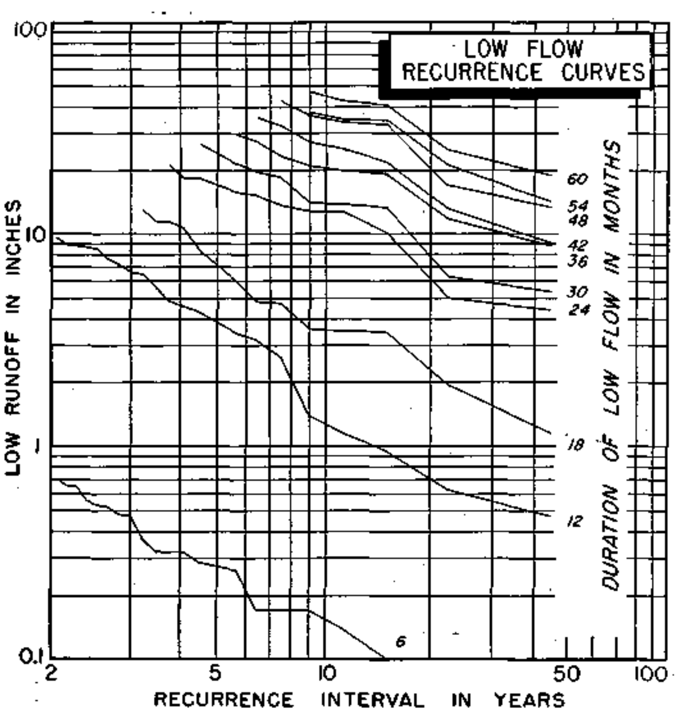
BEAUCOUP CREEK NEAR MATTHEWS



STATION 35

LOCATION
In SW ¼ sec 29, T6S, R2W, Perry County, at bridge on Ill. 13, 1.25 miles east of Matthews and 7 miles southwest of DuQuoin

DRAINAGE AREA
291 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1945 thru Sept 1959
CONTINUOUS RECORD: 14 years; water years 1946-59

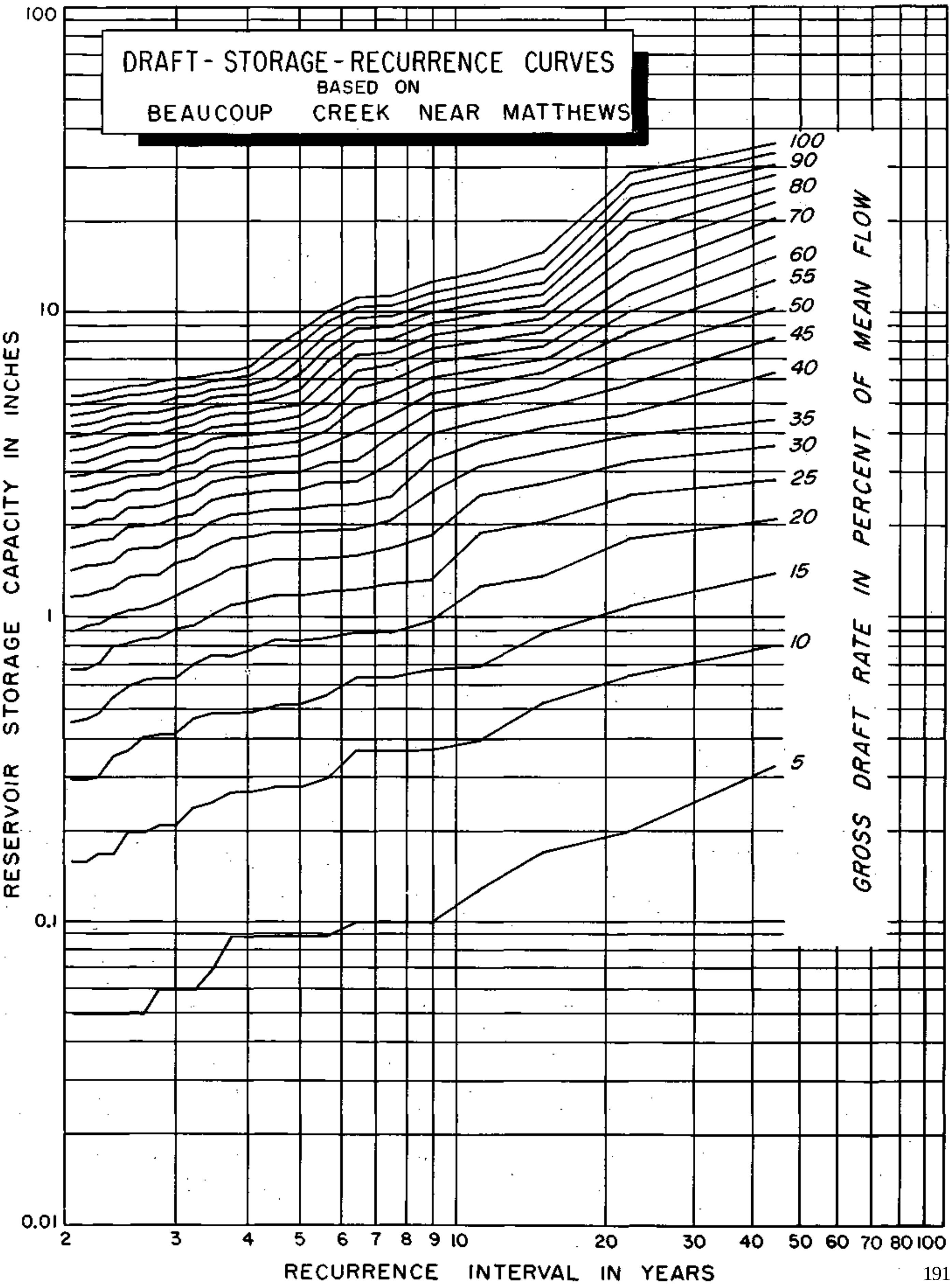
SYNTHETIC FLOW DATA
PERIOD: 31 years; water years 1915-45
INDEX STATION: Big Muddy River at Plumfield
COINCIDENT RECORD: 14 years; water years 1946-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.90 inch per month

Draft-Storage-Recurrence Data for Beaucoup Creek near Matthews

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.33 11	.82 11	1.42 16	2.14 16	2.88 18	3.69 18	4.50 18	6.42 44	8.40 44	10.46 56	12.98 56	15.50 56	18.05 58	20.66 58	23.27 58	25.88 58	28.49 58	31.10 58	33.71 58	36.32 58
22.5	.20 10	.65 10	1.11 16	1.83 16	2.55 16	3.27 16	3.99 16	4.71 16	5.88 32	7.32 32	8.76 32	10.20 32	11.64 32	13.70 46	16.06 58	18.67 56	21.28 58	23.89 58	26.50 58	29.11 58
15.0	.17 6	.53 9	.94 9	1.40 14	2.07 16	2.79 16	3.51 16	4.23 16	4.95 16	5.67 16	6.39 16	7.11 16	7.83 16	8.71 22	9.70 22	10.69 22	11.68 22	12.67 22	14.08 42	15.97 42
11.3	.13 6	.40 6	.70 7	1.29 14	1.92 14	2.55 14	3.18 14	3.81 14	4.44 16	5.16 16	5.88 16	6.60 16	7.32 16	8.18 20	9.08 20	9.98 20	10.88 20	11.78 20	12.68 20	13.79 54
9.0	.10 6	.37 6	.68 7	.99 7	1.35 11	1.89 16	2.61 16	3.33 16	4.05 16	4.77 16	5.49 16	6.21 16	6.93 16	7.73 18	8.54 18	9.35 18	10.16 18	10.97 18	11.78 18	12.81 30
7.5	.10 6	.37 6	.64 6	.94 7	1.31 9	1.71 9	2.12 9	2.53 10	3.22 16	3.94 16	4.66 16	5.38 16	6.10 16	6.82 16	7.54 16	8.26 16	9.05 18	9.86 18	10.67 18	11.48 18
6.4	.10 6	.37 6	.64 6	.91 6	1.25 8	1.61 8	1.97 8	2.37 10	2.83 11	3.32 11	4.09 18	4.90 18	5.71 18	6.52 18	7.33 18	8.14 18	8.95 18	9.76 18	10.57 18	11.38 18
5.6	.09 4	.30 5	.56 7	.87 8	1.23 8	1.59 8	1.95 8	2.35 10	2.80 10	3.25 10	3.70 10	4.15 10	4.60 10	5.30 18	6.11 18	6.92 18	7.73 18	8.54 18	9.35 18	10.16 18
5.0	.09 4	.28 5	.53 6	.85 8	1.21 8	1.57 8	1.93 8	2.29 8	2.65 8	3.02 9	3.43 9	3.83 9	4.24 9	4.64 9	5.05 9	5.64 16	6.36 16	7.08 16	7.92 20	8.82 20
4.5	.09 4	.28 5	.52 6	.85 8	1.21 8	1.57 8	1.93 8	2.29 8	2.65 8	3.01 8	3.37 8	3.73 8	4.09 9	4.49 9	4.90 9	5.30 9	5.71 9	6.18 18	6.99 18	7.80 18
4.1	.09 4	.27 4	.49 6	.79 8	1.15 8	1.51 8	1.87 8	2.23 8	2.59 8	2.95 8	3.31 8	3.67 8	4.03 8	4.39 8	4.75 8	5.11 8	5.48 10	5.93 10	6.38 10	6.83 10
3.8	.09 4	.27 4	.49 6	.76 8	1.12 8	1.48 8	1.84 8	2.20 8	2.56 8	2.92 8	3.28 8	3.64 8	4.00 8	4.36 8	4.72 8	5.08 8	5.44 8	5.80 8	6.16 8	6.52 8
3.5	.07 3	.25 5	.49 6	.76 6	1.03 6	1.37 8	1.73 8	2.09 8	2.45 8	2.81 8	3.17 8	3.53 8	3.89 8	4.25 8	4.61 8	4.97 8	5.33 8	5.69 8	6.05 8	6.41 10
3.2	.06 3	.24 5	.47 5	.71 6	.98 6	1.27 7	1.59 7	1.90 7	2.22 7	2.55 8	2.91 8	3.27 8	3.63 8	3.99 8	4.35 8	4.71 8	5.07 8	5.44 9	5.85 9	6.25 9
3.0	.06 3	.21 4	.42 5	.64 5	.90 7	1.21 7	1.53 7	1.84 7	2.16 7	2.47 7	2.80 8	3.16 8	3.52 8	3.88 8	4.24 8	4.60 8	4.96 9	5.36 9	5.77 9	6.17 10
2.8	.06 3	.21 4	.42 5	.64 5	.87 6	1.14 6	1.41 7	1.72 7	2.04 7	2.35 7	2.67 7	2.98 7	3.33 8	3.69 8	4.05 8	4.41 8	4.77 8	5.13 10	5.58 10	6.03 10
2.6	.05 3	.20 4	.41 5	.63 5	.86 5	1.08 7	1.40 7	1.71 7	2.03 7	2.34 7	2.66 7	2.97 7	3.31 8	3.67 8	4.03 8	4.39 8	4.75 8	5.11 8	5.47 9	5.87 9
2.5	.05 3	.20 4	.38 5	.60 5	.83 5	1.07 6	1.37 7	1.68 7	2.00 7	2.31 7	2.63 7	2.94 8	3.30 8	3.66 8	4.02 8	4.38 8	4.74 8	5.10 8	5.46 8	5.82 8
2.4	.05 2	.17 4	.36 5	.58 5	.81 5	1.03 5	1.27 6	1.54 6	1.84 7	2.15 7	2.47 8	2.83 8	3.19 8	3.55 8	3.91 8	4.27 8	4.63 8	4.99 8	5.35 8	5.71 8
2.3	.05 2	.17 3	.31 4	.49 5	.72 5	.97 6	1.24 6	1.51 6	1.82 7	2.13 7	2.45 7	2.76 7	3.08 7	3.39 7	3.74 8	4.10 8	4.46 8	4.82 8	5.18 8	5.54 8
2.1	.05 2	.16 3	.30 3	.47 4	.69 6	.96 6	1.23 6	1.50 6	1.77 6	2.04 6	2.35 7	2.66 7	2.98 7	3.29 8	3.65 8	4.01 8	4.37 8	4.73 8	5.09 8	5.45 8
2.0	.05 2	.16 3	.30 3	.46 4	.68 5	.91 6	1.18 6	1.45 6	1.72 6	2.00 7	2.32 7	2.63 7	2.95 7	3.26 7	3.59 8	3.95 8	4.31 8	4.67 8	5.03 8	5.39 8


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
BEAUCOUP CREEK NEAR MATTHEWS
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
2
3
4
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7
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9
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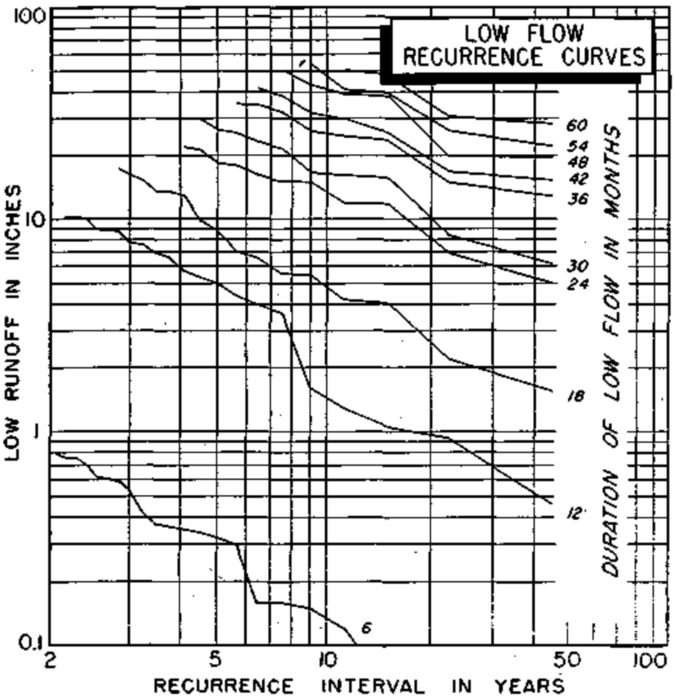
30
40
50
60
70
80
100



STATION 37

LOCATION
In NE ¼ NW ¼ sec 22, T6S, R2E, Franklin County, at bridge on Ill. 14, 3.0 miles west of Benton

DRAINAGE AREA
498 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1945 thru Sept 1959
CONTINUOUS RECORD: 14 years; water years 1946-59

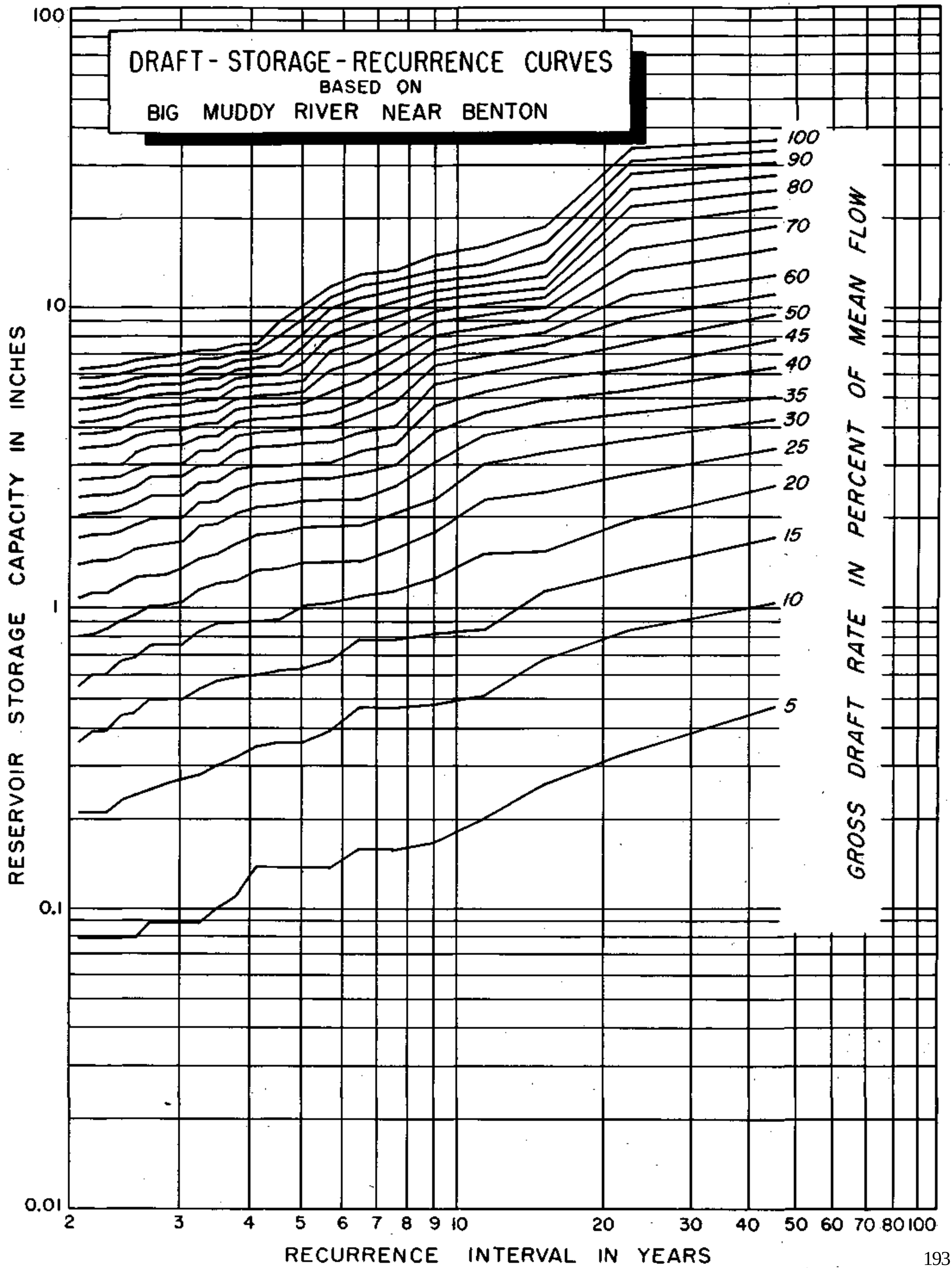
SYNTHETIC FLOW DATA
PERIOD: 31 years; water years 1915-45
INDEX STATION: Big Muddy River at Plumfield
COINCIDENT RECORD: 14 years; water years 1946-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 1.05 inches per month

Draft-Storage-Recurrence Data for Big Muddy River near Benton

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.47 11	1.05 11	1.74 16	2.58 16	3.42 16	4.26 16	5.10 16	6.40 30	7.98 30	9.55 30	11.13 30	12.91 56	15.85 56	18.79 56	21.73 56	24.67 56	27.61 56	30.55 56	33.58 58	36.62 58
22.5	.33 10	.85 10	1.38 10	1.97 16	2.81 16	3.65 16	4.49 16	5.35 18	6.30 18	7.63 32	9.31 32	10.99 32	13.17 46	15.70 58	18.75 58	21.79 58	24.84 58	27.88 58	30.93 58	33.97 58
15.0	.26 6	.68 9	1.15 9	1.68 14	2.46 16	3.30 16	4.14 16	4.98 16	5.82 16	6.66 16	7.50 16	8.34 16	9.18 16	10.02 16	10.86 16	11.70 16	12.72 20	14.20 42	16.41 42	18.61 42
11.3	.20 6	.51 6	.85 7	1.56 14	2.30 14	3.03 14	3.77 14	4.50 14	5.24 16	6.08 16	6.92 16	7.76 16	8.60 16	9.44 16	10.28 16	11.12 16	11.96 16	12.81 18	13.99 34	16.03 54
9.0	.17 6	.48 6	.83 7	1.27 10	1.80 10	2.32 10	3.08 16	3.92 16	4.76 16	5.60 16	6.44 16	7.28 16	8.12 16	8.96 16	9.80 16	10.64 16	11.48 16	12.32 16	13.41 30	14.98 30
7.5	.16 6	.47 6	.79 6	1.14 7	1.60 9	2.08 9	2.55 9	3.02 9	3.52 10	4.04 10	4.84 18	5.78 18	6.73 18	7.67 18	8.62 18	9.56 18	10.51 18	11.45 18	12.40 18	13.34 18
6.4	.16 6	.47 6	.79 6	1.10 6	1.47 8	1.89 8	2.31 8	2.81 10	3.34 10	3.86 10	4.39 10	4.91 10	5.73 18	6.67 18	7.70 20	8.75 20	9.80 20	10.85 20	11.90 20	12.95 20
5.6	.14 4	.39 5	.67 7	1.04 7	1.45 8	1.87 8	2.29 8	2.71 8	3.13 8	3.57 9	4.04 9	4.51 9	5.25 18	6.19 18	7.14 18	8.08 18	9.03 18	9.97 18	10.92 18	11.86 18
5.0	.14 4	.36 5	.63 6	1.02 8	1.44 8	1.86 8	2.28 8	2.70 8	3.12 8	3.54 8	3.96 8	4.38 8	4.81 9	5.29 9	5.76 9	6.59 16	7.43 16	8.27 16	9.24 20	10.29 20
4.5	.14 4	.36 5	.62 5	.95 8	1.37 8	1.79 8	2.21 8	2.63 8	3.05 8	3.47 8	3.89 8	4.31 8	4.73 8	5.15 8	5.57 8	5.99 8	6.41 8	7.12 18	8.07 18	9.01 18
4.1	.14 4	.35 4	.60 6	.92 8	1.34 8	1.76 8	2.18 8	2.60 8	3.02 8	3.44 8	3.86 8	4.28 8	4.70 8	5.12 8	5.54 8	5.96 8	6.38 8	6.80 8	7.22 8	7.64 8
3.8	.11 4	.32 4	.59 6	.90 6	1.24 7	1.65 8	2.07 8	2.49 8	2.91 8	3.33 8	3.75 8	4.17 8	4.59 8	5.01 8	5.43 8	5.85 8	6.27 8	6.69 8	7.11 8	7.53 8
3.5	.10 3	.30 5	.58 6	.89 6	1.21 6	1.55 7	1.91 7	2.28 7	2.65 7	3.02 7	3.38 7	3.75 7	4.13 8	4.55 8	4.97 8	5.39 8	5.85 9	6.33 9	6.80 9	7.27 9
3.2	.09 2	.28 5	.54 5	.84 6	1.16 6	1.52 7	1.88 7	2.25 7	2.62 7	2.99 7	3.35 7	3.72 7	4.09 7	4.46 7	4.91 9	5.38 9	5.85 9	6.33 9	6.80 9	7.27 9
3.0	.09 2	.27 4	.50 5	.76 5	1.05 6	1.36 6	1.68 6	2.01 7	2.38 7	2.75 7	3.11 7	3.51 8	3.93 8	4.35 8	4.77 8	5.19 8	5.61 8	6.03 8	6.53 10	7.05 10
2.8	.09 2	.26 4	.50 5	.76 5	1.02 5	1.30 6	1.64 7	2.01 7	2.38 7	2.75 7	3.11 7	3.48 8	3.90 8	4.32 8	4.74 8	5.16 8	5.58 8	6.00 8	6.42 8	6.90 10
2.6	.09 2	.25 4	.50 5	.76 5	1.02 5	1.29 5	1.62 7	1.99 7	2.36 7	2.73 7	3.09 7	3.46 7	3.85 8	4.27 8	4.69 8	5.11 8	5.53 8	5.95 8	6.37 8	6.79 10
2.5	.08 2	.24 4	.45 4	.70 5	.96 6	1.27 6	1.59 6	1.90 6	2.22 6	2.53 6	2.90 6	3.32 8	3.74 8	4.16 8	4.58 8	5.00 8	5.42 8	5.84 8	6.26 8	6.68 8
2.4	.08 2	.23 4	.44 4	.67 5	.93 5	1.20 5	1.50 6	1.81 6	2.13 6	2.44 6	2.76 6	3.12 8	3.54 8	3.96 8	4.38 8	4.80 8	5.22 8	5.64 8	6.06 8	6.48 8
2.3	.08 2	.21 3	.39 4	.60 5	.86 5	1.13 6	1.45 6	1.76 6	2.08 6	2.39 6	2.73 7	3.10 7	3.47 7	3.87 8	4.29 8	4.71 8	5.13 8	5.55 8	5.97 8	6.39 8
2.1	.08 2	.21 3	.39 4	.60 4	.82 6	1.13 6	1.45 6	1.76 6	2.08 6	2.39 6	2.71 7	3.08 7	3.45 7	3.82 7	4.20 8	4.62 8	5.04 8	5.46 8	5.88 8	6.30 8
2.0	.08 2	.21 3	.36 3	.55 5	.81 5	1.09 6	1.41 6	1.72 6	2.04 6	2.35 6	2.68 7	3.05 7	3.42 7	3.79 7	4.16 8	4.58 8	5.00 8	5.42 8	5.84 8	6.26 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BIG MUDDY RIVER NEAR BENTON
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
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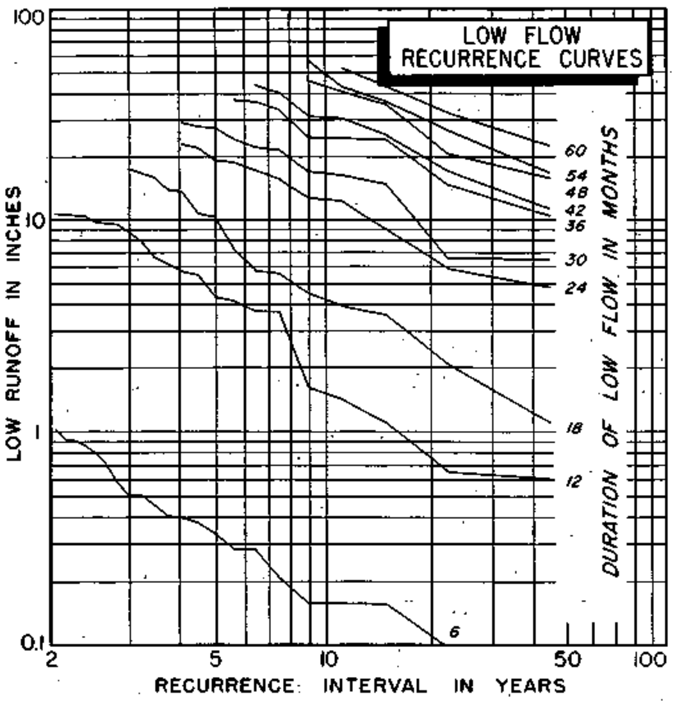
15
10
5



STATION 38

LOCATION
In SE ¼ sec 8, T9S, R2W, in Jackson County, 0.1 miles upstream from Gulf, Mobile and Ohio Railroad bridge at Murphysboro

DRAINAGE AREA
2170 square miles

ACTUAL FLOW DATA
PERIOD: Dec 1916 thru Sept 1959; fragmentary prior to 1931
CONTINUOUS RECORD: 29 years; water years 1931-59

SYNTHETIC FLOW DATA
PERIOD: 16 years; water years 1915-30
INDEX STATION : Big Muddy River at Plumfield
COINCIDENT RECORD: 29 years; water years 1931-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 1.04 inches per month

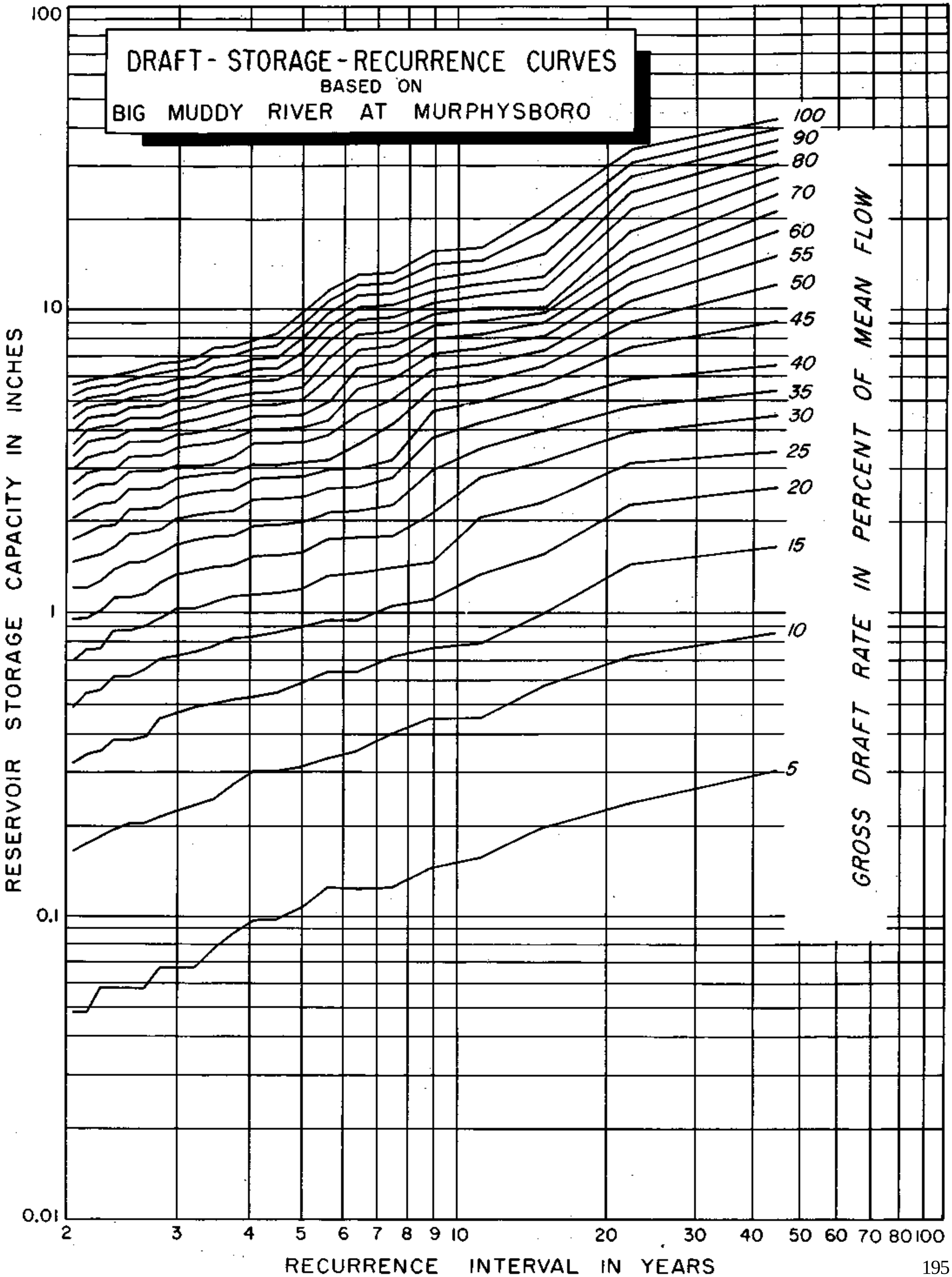
Draft-Storage-Recurrence Data for Big Muddy River at Murphysboro

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Gross draft rate in percent of mean flow

Recurrence interval, years	5	10	15	20	25	30	35	40	45
45.0	.31	.88	1.68	2.61	3.55	4.49	5.42	6.55	9.11
	11	11	18	18	18	18	16	44	56
22.5	.24	.74	1.47	2.30	3.13	3.96	4.79	5.92	7.48
	7	10	16	16	16	16	16	30	30
15.0	.20	.59	1.01	1.58	2.35	3.18	4.01	4.85	5.68
	5	8	8	14	16	16	16	16	16
11.3	.16	.46	.81	1.36	2.09	2.82	3.55	4.27	5.00
	4	6	10	14	14	14	14	14	14
9.0	.15	.40	.78	1.13	1.49	2.15	2.98	3.82	4.65
	6	6	6	7	7	16	16	16	16
7.5	.13	.41	.73	1.07	1.43	1.81	2.29	2.81	3.40
	5	6	6	7	7	8	10	10	16
6.4	.13	.36	.65	.96	1.37	1.79	2.20	2.62	3.05
	4	5	6	6	8	8	8	8	9
5.6	.13	.34	.65	.96	1.34	1.76	2.17	2.59	3.00
	4	5	6	6	8	8	8	8	8
5.0	.11	.32	.60	.91	1.22	1.60	2.01	2.43	2.84
	4	4	6	6	6	8	8	6	8
4.5	.10	.31	.56	.87	1.18	1.56	1.97	2.39	2.80
	4	4	6	6	7	8	8	8	8
4.1	.10	.31	.54	.85	1.17	1.56	1.97	2.39	2.80
	4	4	6	6	7	8	8	8	8
3.8	.09	.28	.53	.84	1.15	1.46	1.83	2.19	2.56
	3	4	6	6	6	7	7	7	7
3.5	.08	.25	.51	.79	1.10	1.44	1.81	2.17	2.54
	3	5	5	6	6	7	7	7	7
3.2	.07	.24	.50	.76	1.05	1.40	1.77	2.13	2.50
	3	5	5	5	6	7	7	7	7
3.0	.07	.23	.48	.74	1.05	1.36	1.71	2.07	2.44
	3	4	5	6	6	6	7	7	7
2.8	.07	.22	.46	.72	.98	1.28	1.59	1.91	2.25
	3	4	5	5	5	6	6	6	7
2.6	.06	.21	.40	.66	.92	1.18	1.50	1.86	2.23
	3	3	5	5	5	5	7	7	7
2.5	.06	.21	.39	.63	.89	1.15	1.49	1.85	2.22
	3	3	4	5	5	5	7	7	7
2.4	.06	.20	.39	.63	.89	1.15	1.41	1.67	1.98
	2	3	4	5	5	5	5	5	7
2.3	.06	.19	.36	.57	.78	1.03	1.29	1.58	1.95
	2	3	4	4	4	5	5	7	7
2.1	.05	.18	.35	.55	.77	.98	1.24	1.54	1.85
	2	3	4	4	4	5	5	6	7
2.0	.05	.17	.33	.50	.71	.97	1.23	1.49	1.77
	2	3	3	4	5	5	5	5	6

Recurrence interval, years	50	55	60	65	70	75	80	85	90	95	100
45.0	12.02	14.93	17.84	20.76	23.71	26.73	29.75	32.76	35.78	38.79	41.81
	56	56	56	56	58	58	58	58	58	58	58
22.5	9.04	10.60	12.16	13.72	15.35	17.93	20.95	23.96	26.98	29.99	33.01
	30	30	30	30	32	58	58	58	58	58	58
15.0	6.51	7.34	8.17	9.01	9.84	10.67	11.70	12.76	15.12	18.03	20.94
	16	16	16	16	16	16	20	22	56	56	56
11.3	5.77	6.60	7.43	8.27	9.16	10.10	11.07	12.11	13.25	14.40	15.85
	16	16	16	16	18	18	20	22	22	22	34
9.0	5.48	6.31	7.14	7.98	8.81	9.64	10.47	11.39	12.55	14.00	15.46
	16	16	16	16	16	16	16	18	28	28	28
7.5	4.23	5.06	5.89	6.73	7.56	8.45	9.39	10.32	11.26	12.19	13.13
	16	16	16	16	16	18	18	18	18	18	18
6.4	3.64	4.54	5.47	6.41	7.34	8.28	9.22	10.15	11.09	12.02	12.96
	16	18	18	18	16	18	18	18	18	18	18
5.6	3.42	3.86	4.33	4.97	5.90	6.84	7.78	8.71	9.65	10.58	11.52
	8	9	9	18	18	18	18	18	18	18	18
5.0	3.26	3.68	4.09	4.51	5.02	5.54	6.35	7.18	8.02	8.85	9.68
	8	8	8	8	10	10	16	16	16	16	16
4.5	3.22	3.64	4.05	4.47	4.88	5.35	5.86	6.38	6.90	7.55	8.28
	8	8	8	8	9	9	10	10	10	14	14
4.1	3.22	3.64	4.05	4.47	4.88	5.33	5.85	6.37	6.89	7.41	7.93
	8	8	8	8	8	10	10	10	10	10	10
3.8	2.92	3.30	3.77	4.23	4.70	5.17	5.64	6.11	6.57	7.04	7.55
	7	9	9	9	9	9	9	9	9	9	10
3.5	2.90	3.26	3.64	4.06	4.50	4.97	5.44	5.91	6.43	6.95	7.47
	7	7	8	8	9	9	9	10	10	10	10
3.2	2.86	3.22	3.59	3.95	4.36	4.78	5.20	5.61	6.03	6.44	6.90
	7	7	7	8	8	8	8	8	8	8	9
3.0	2.80	3.16	3.53	3.89	4.26	4.67	5.09	5.50	5.92	6.33	6.75
	7	7	7	7	7	8	8	8	8	8	8
2.8	2.61	2.97	3.34	3.70	4.07	4.43	4.84	5.25	5.71	6.18	6.65
	7	7	7	7	7	7	8	9	9	9	9
2.6	2.59	2.95	3.32	3.68	4.05	4.41	4.80	5.21	5.63	6.04	6.46
	7	7	7	7	7	7	8	8	8	8	8
2.5	2.58	2.94	3.31	3.67	4.04	4.40	4.76	5.13	5.49	5.86	6.22
	7	7	7	7	7	7	7	7	7	7	7
2.4	2.34	2.70	3.07	3.43	3.80	4.16	4.52	4.89	5.25	5.62	6.04
	7	7	7	7	7	7	7	7	7	8	8
2.3	2.31	2.67	3.04	3.40	3.77	4.13	4.49	4.86	5.22	5.59	5.95
	7	7	7	7	7	7	7	7	7	7	7
2.1	2.21	2.57	2.94	3.30	3.67	4.03	4.39	4.76	5.12	5.49	5.85
	7	7	7	7	7	7	7	7	7	7	7
2.0	2.08	2.39	2.70	3.02	3.33	3.64	4.00	4.41	4.83	5.24	5.56
	6	6	6	6	6	6	8	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BIG MUDDY RIVER AT MURPHYSBORO
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
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100
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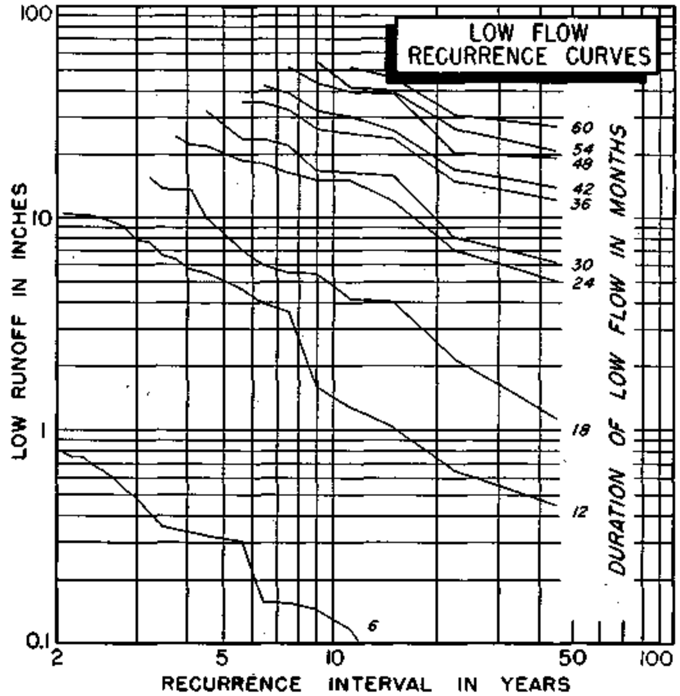
5



STATION 39

LOCATION
In NW ¼ sec 20, T7S, R2E, Franklin County, 0.75 mile upstream from bridge on Ill. 149 at Plumfield

DRAINAGE AREA
753 square miles

ACTUAL FLOW DATA
PERIOD: June 1908 thru Dec 1912, Aug 1914 thru Sept 1959
CONTINUOUS RECORD: 45 years; water years 1915-59

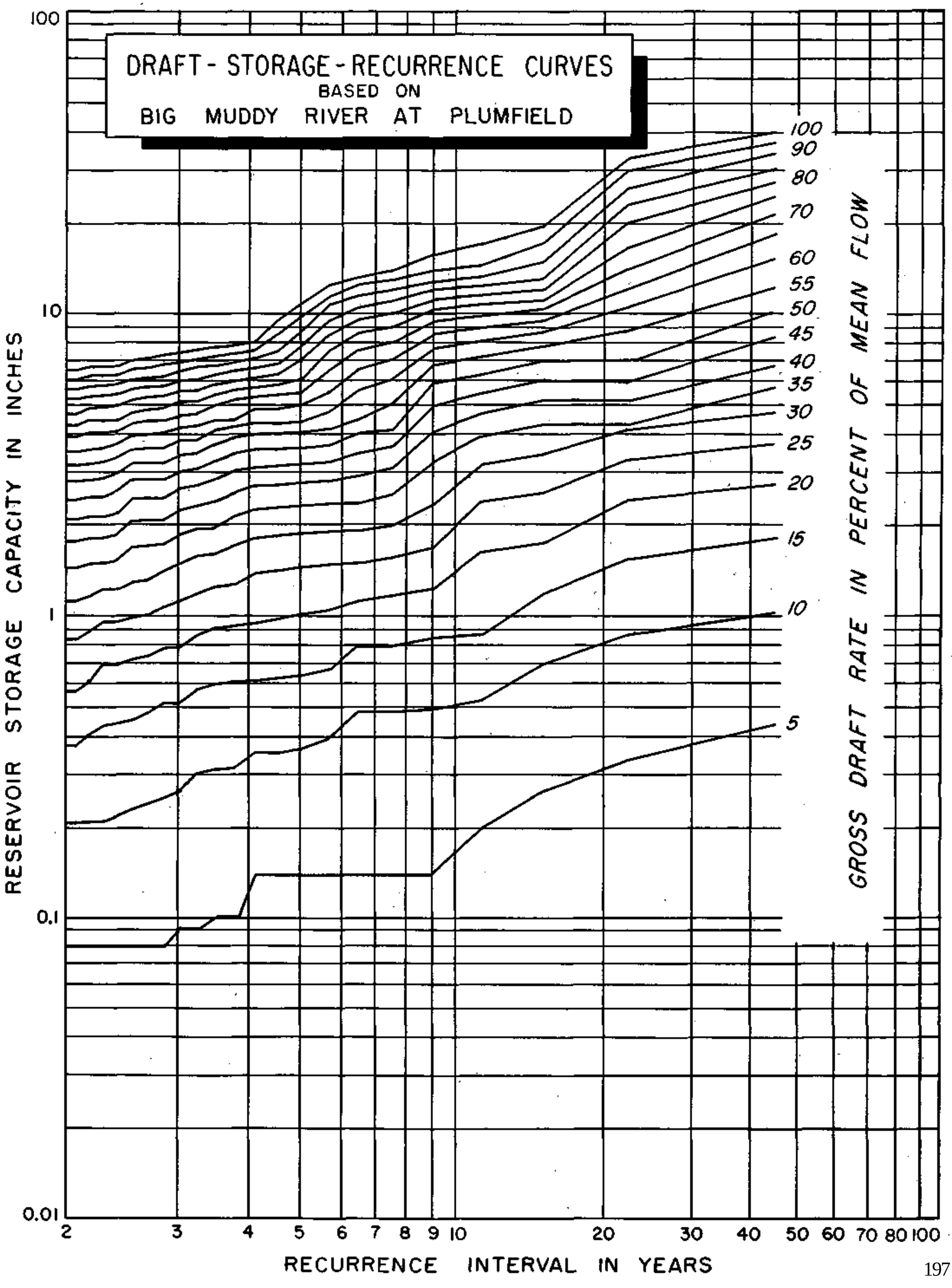
SYNTHETIC FLOW DATA
None; this station utilized as an index station

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 1.06 inches per month

Draft-Storage-Recurrehce Data for Big Muddy River at Plumfield

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.43	1.02	1.76	2.66	3.61	4.56	5.52	6.52	8.11	9.70	11.67	14.64	17.60	20.57	23.54	26.51	29.49	32.56	35.64	38.71
	11	11	16	18	18	18	18	30	30	30	56	56	56	56	56	56	58	58	58	58
22.5	.33	.86	1.50	2.35	3.20	4.05	4.90	5.74	6.80	8.50	10.20	11.89	13.87	16.31	19.18	22.25	25.33	28.40	31.48	34.55
	10	10	16	16	16	16	16	16	32	32	32	32	46	46	58	58	58	58	58	58
15.0	.26	.68	1.16	1.71	2.50	3.35	4.20	5.04	5.89	6.74	7.59	8.44	9.28	10.13	10.98	11.83	12.89	14.58	16.80	19.03
	6	9	9	14	16	16	16	16	16	16	16	16	16	16	16	20	20	42	42	42
11.3	.20	.52	.86	1.59	2.33	3.07	3.81	4.56	5.31	6.16	7.01	7.86	8.70	9.55	10.40	11.25	12.10	12.97	14.31	16.57
	6	6	7	14	14	14	14	14	16	16	16	16	16	16	16	16	16	18	34	54
9.0	.17	.49	.84	1.21	1.64	2.29	3.14	3.98	4.83	5.68	6.53	7.38	8.22	9.07	9.92	10.77	11.62	12.46	13.69	15.28
	6	6	7	7	11	16	16	16	16	16	16	16	16	16	16	16	16	16	30	30
7.5	.15	.48	.79	1.15	1.53	1.95	2.48	3.01	3.54	4.07	4.93	5.89	6.84	7.80	8.75	9.70	10.66	11.61	12.57	13.52
	6	6	6	7	7	10	10	10	10	10	18	18	18	18	18	18	18	18	18	18
6.4	.16	.48	.79	1.11	1.48	1.89	2.32	2.85	3.38	3.91	4.45	5.41	6.36	7.32	8.27	9.22	10.18	11.13	12.09	13.15
	6	6	6	6	7	8	10	10	10	10	18	18	18	18	18	18	18	18	20	20
5.6	.14	.39	.66	1.04	1.46	1.88	2.31	2.73	3.16	3.61	4.09	4.56	5.36	6.32	7.27	8.22	9.18	10.13	11.09	12.04
	4	5	5	8	8	8	8	8	8	9	9	9	18	18	18	18	18	18	18	18
5.0	.14	.36	.63	1.01	1.43	1.85	2.28	2.70	3.13	3.55	3.97	4.40	4.87	5.35	5.87	6.72	7.57	8.41	9.43	10.49
	4	5	6	8	8	8	8	8	8	8	8	8	9	9	16	16	16	16	20	20
4.5	.14	.35	.62	.97	1.39	1.81	2.24	2.66	3.09	3.51	3.93	4.36	4.78	5.23	5.71	6.18	6.66	7.28	8.24	9.19
	4	4	6	8	8	8	8	8	8	8	8	8	8	9	9	9	9	18	18	18
4.1	.14	.35	.61	.94	1.36	1.78	2.21	2.63	3.06	3.48	3.90	4.33	4.75	5.18	5.60	6.02	6.45	6.93	7.40	7.88
	4	4	6	8	8	8	8	8	8	8	8	8	8	8	8	8	9	9	9	9
3.8	.10	.31	.60	.92	1.26	1.67	2.10	2.52	2.95	3.37	3.79	4.22	4.64	5.07	5.49	5.91	6.34	6.76	7.19	7.65
	4	5	6	[illegible]	7	8	8	8	8	8	8	8	8	8	8	8	8	8	8	10
3.5	.10	.31	.59	.91	1.23	1.57	1.94	2.35	2.78	3.20	3.62	4.05	4.47	4.90	5.32	5.74	6.17	6.59	7.06	7.59
	3	5	6	6	6	7	7	8	8	8	8	8	8	8	8	8	8	8	10	10
3.2	.09	.30	.57	.85	1.17	1.54	1.91	2.28	2.65	3.02	3.39	3.76	4.18	4.61	5.03	5.45	5.93	6.41	6.88	7.39
	3	5	5	6	7	7	7	7	7	7	7	8	8	8	8	9	9	9	9	10
3.0	.09	.26	.51	.78	1.10	1.47	1.84	2.21	2.58	2.95	3.32	3.73	4.15	4.58	5.00	5.42	5.85	6.29	6.76	7.26
	2	4	5	6	7	7	7	7	7	7	7	8	8	8	8	8	8	9	9	10
2.8	.08	.25	.51	.77	1.06	1.38	1.70	2.04	2.41	2.78	3.15	3.53	3.95	4.38	4.80	5.22	5.65	6.09	6.62	7.15
	2	4	5	5	6	6	6	7	7	7	7	8	8	8	8	8	8	10	10	10
2.6	.06	.24	.47	.73	1.00	1.30	1.67	2.04	2.41	2.78	3.15	3.52	3.90	4.33	4.75	5.17	5.60	6.02	6.48	6.96
	2	4	5	5	5	7	7	7	7	7	7	7	8	8	8	8	8	8	9	9
2.5	.08	.23	.45	.71	.98	1.28	1.65	2.02	2.39	2.76	3.13	3.50	3.87	4.24	4.64	5.06	5.49	5.92	6.39	6.87
	2	4	5	5	5	7	7	7	7	7	7	7	7	7	8	8	8	9	9	9
2.4	.08	.22	.44	.68	.95	1.21	1.52	1.83	2.17	2.54	2.91	3.28	3.65	4.02	4.44	4.86	5.29	5.71	6.14	6.56
	2	4	4	5	5	5	6	6	7	7	7	7	7	8	8	8	8	8	8	8
2.3	.08	.21	.43	.68	.95	1.21	1.48	1.78	2.10	2.42	2.79	3.16	3.54	3.97	4.39	4.81	5.24	5.66	6.09	6.51
	2	4	4	5	5	5	5	6	6	7	7	7	8	8	8	8	8	8	8	8
2.1	.08	.21	.40	.61	.88	1.15	1.47	1.78	2.10	2.42	2.75	3.12	3.50	3.93	4.35	4.77	5.20	5.62	6.05	6.47
	2	3	4	5	5	6	6	6	6	6	7	7	8	8	8	8	8	8	8	8
2.0	.08	.21	.37	.56	.83	1.11	1.43	1.74	2.06	2.38	2.72	3.09	3.46	3.84	4.26	4.68	5.11	5.53	5.96	6.38
	2	3	3	5	5	6	6	6	6	6	7	7	7	8	8	8	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BIG MUDDY RIVER AT PLUMFIELD
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
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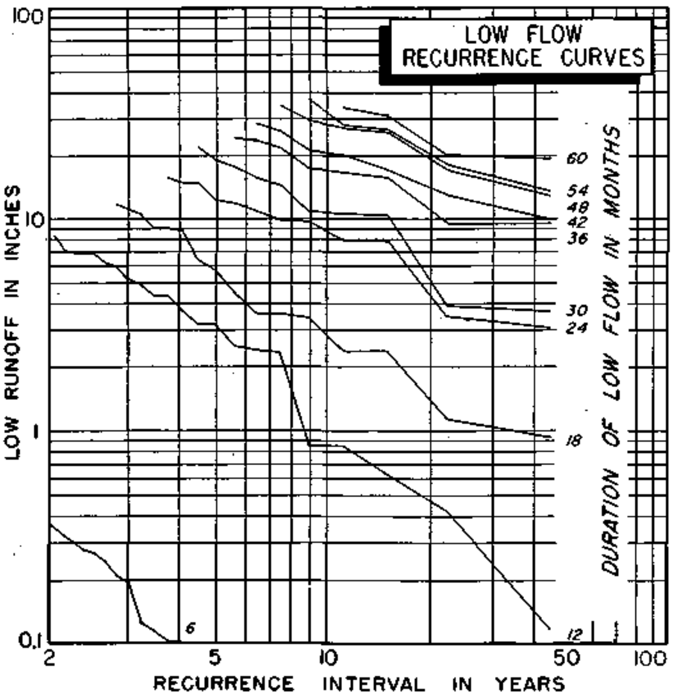


STATION 49

LOCATION
In SW ¼ NW ¼ sec 21, T9S, R3E, Williamson County, at Ill. 13 bridge, 2.0 miles east of Marion

DRAINAGE AREA
31.9 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1951 thru Sept 1959
CONTINUOUS RECORD: 8 years; water years 1952-59

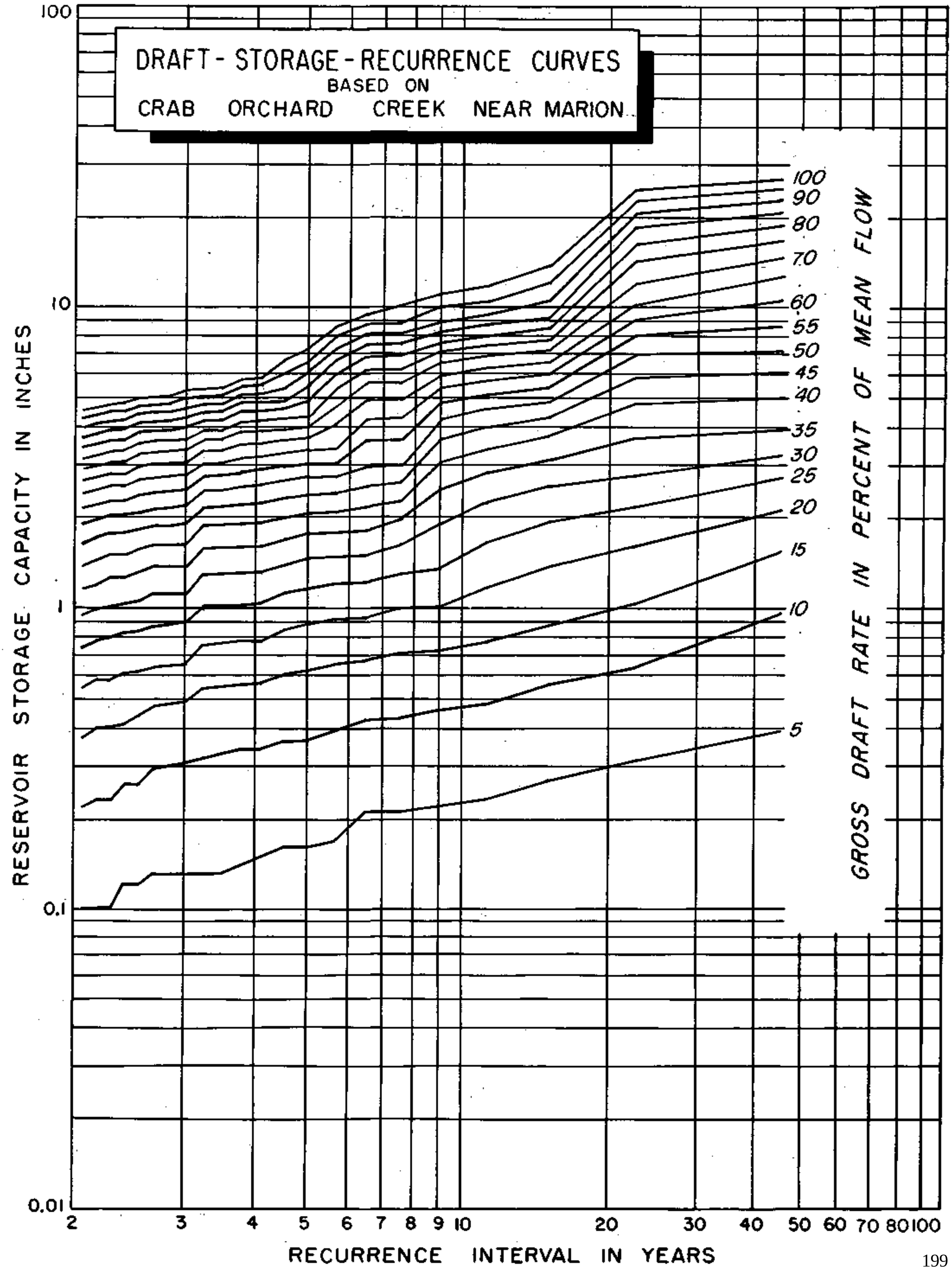
SYNTHETIC FLOW DATA
PERIOD : 37 years; water years 1915-51
INDEX STATION : Big Muddy River at Plumfield
COINCIDENT RECORD: 8 years; water years 1952-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.73 inch per month

Draft-Storage-Recurrence Data for Crab Orchard Creek near Marion

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.39 16	.98 16	1.56 16	2.15 16	2.73 16	3.31 16	3.96 30	5.05 30	6.15 30	7.24 30	8.73 56	10.78 56	12.82 56	14.87 56	16.91 56	18.95 56	21.00 56	23.04 56	25.09 56	27.13 56
22.5	.31 9	.64 9	1.04 14	1.61 16	2.19 16	2.77 18	3.73 30	4.82 30	5.92 30	7.01 30	8.11 30	9.20 30	10.30 30	12.12 58	14.24 58	16.35 58	18.47 58	20.59 58	22.70 58	24.82 58
15.0	.27 8	.56 8	.88 14	1.39 16	1.97 16	2.55 16	3.14 16	3.72 16	4.31 16	4.89 16	5.47 16	6.06 16	6.64 16	7.23 16	7.85 20	8.58 20	9.31 20	10.57 42	12.11 42	13.81 56
11.3	.23 7	.48 7	.77 8	1.17 11	1.67 16	2.25 16	2.84 16	3.42 16	4.01 16	4.59 16	5.17 16	5.76 16	6.34 16	6.93 16	7.51 16	8.10 18	8.76 18	9.46 20	10.46 34	11.82 54
9.0	.21 7	.46 7	.72 8	1.01 8	1.37 11	1.91 16	2.50 16	3.08 16	3.67 16	4.25 16	4.83 16	5.42 16	6.00 16	6.59 16	7.17 16	7.75 16	8.34 16	8.94 30	10.04 30	11.13 30
7.5	.21 6	.43 7	.71 8	1.00 8	1.31 9	1.64 9	1.97 9	2.30 9	2.65 10	3.01 10	3.65 18	4.30 18	4.96 18	5.62 18	6.28 18	6.93 18	7.59 18	8.25 18	8.90 20	10.22 40
6.4	.21 6	.43 6	.67 7	.93 8	1.22 8	1.51 8	1.82 10	2.18 10	2.55 10	2.97 18	3.63 18	4.28 18	4.94 18	5.60 18	6.26 18	6.91 18	7.57 18	8.23 18	8.88 18	9.54 18
5.6	.17 6	.39 7	.65 7	.92 8	1.21 8	1.50 8	1.79 8	2.09 8	2.41 9	2.74 9	3.07 10	3.43 10	4.06 18	4.72 18	5.38 18	6.03 18	6.69 18	7.35 18	8.00 18	8.66 18
5.0	.16 5	.36 7	.62 7	.89 8	1.18 8	1.47 8	1.76 8	2.07 9	2.40 9	2.73 9	3.05 9	3.38 9	3.71 9	4.04 9	4.37 9	4.92 16	5.51 16	6.09 16	6.70 18	7.40 20
4.5	.16 5	.36 6	.60 7	.85 7	1.13 8	1.42 8	1.71 8	2.01 9	2.34 9	2.67 9	2.99 9	3.32 9	3.65 9	3.98 9	4.31 9	4.64 9	4.96 9	5.40 18	6.05 18	6.71 18
4.1	.15 5	.34 6	.56 6	.78 6	1.04 8	1.33 8	1.62 8	1.92 9	2.25 9	2.58 9	2.90 9	3.23 9	3.56 9	3.89 9	4.22 9	4.55 9	4.87 9	5.20 9	5.53 9	5.87 10
3.8	.14 5	.34 6	.56 6	.78 6	1.02 8	1.31 8	1.60 8	1.90 8	2.22 9	2.55 9	2.87 9	3.20 9	3.53 9	3.86 9	4.19 9	4.52 9	4.84 9	5.17 9	5.50 9	5.83 9
3.5	.13 4	.33 6	.55 6	.77 6	1.02 8	1.31 8	1.60 8	1.90 8	2.19 8	2.48 8	2.77 8	3.06 8	3.36 8	3.65 8	3.94 8	4.23 8	4.52 8	4.82 8	5.11 8	5.42 9
3.2	.13 4	.32 6	.54 6	.76 6	1.01 8	1.30 8	1.59 8	1.89 8	2.18 8	2.47 8	2.76 8	3.05 8	3.35 8	3.64 8	3.93 8	4.22 8	4.51 8	4.81 8	5.10 8	5.39 8
3.0	.13 4	.31 5	.49 5	.69 6	.91 6	1.13 7	1.39 7	1.64 7	1.92 8	2.21 8	2.50 8	2.79 8	3.09 8	3.38 8	3.69 9	4.02 9	4.34 9	4.67 9	5.00 9	5.33 9
2.8	.13 4	.30 5	.48 5	.67 6	.89 6	1.12 7	1.38 7	1.63 7	1.89 7	2.17 8	2.46 8	2.75 8	3.05 8	3.34 8	3.63 8	3.92 8	4.21 8	4.51 8	4.80 8	5.09 8
2.6	.13 4	.29 5	.47 5	.65 5	.87 7	1.12 7	1.38 7	1.63 7	1.89 7	2.16 8	2.45 8	2.74 8	3.04 8	3.33 8	3.62 8	3.91 8	4.20 8	4.50 8	4.79 8	5.08 8
2.5	.12 4	.26 5	.44 5	.62 6	.84 6	1.07 7	1.33 7	1.58 7	1.84 7	2.10 8	2.39 8	2.68 8	2.98 8	3.27 8	3.56 8	3.85 8	4.14 8	4.44 8	4.73 8	5.02 8
2.4	.12 4	.26 4	.41 4	.61 6	.83 6	1.04 6	1.27 7	1.52 7	1.78 7	2.04 7	2.29 7	2.55 7	2.80 7	3.08 8	3.37 8	3.66 8	3.95 8	4.25 8	4.54 8	4.83 8
2.3	.10 3	.23 4	.40 5	.58 6	.80 6	1.01 7	1.27 7	1.52 7	1.78 7	2.04 7	2.29 7	2.55 7	2.80 7	3.06 7	3.33 8	3.62 8	3.91 8	4.21 8	4.50 8	4.79 8
2.1	.10 3	.23 4	.40 5	.58 5	.78 6	.99 6	1.21 7	1.46 7	1.72 7	1.98 7	2.23 7	2.49 7	2.74 7	3.00 7	3.25 7	3.53 8	3.82 8	4.12 8	4.41 8	4.70 8
2.0	.10 3	.22 4	.37 5	.55 5	.74 6	.95 6	1.17 6	1.39 7	1.65 7	1.91 7	2.16 7	2.42 7	2.67 7	2.93 7	3.18 7	3.44 7	3.71 8	4.01 8	4.30 8	4.59 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
CRAB ORCHARD CREEK NEAR MARION
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
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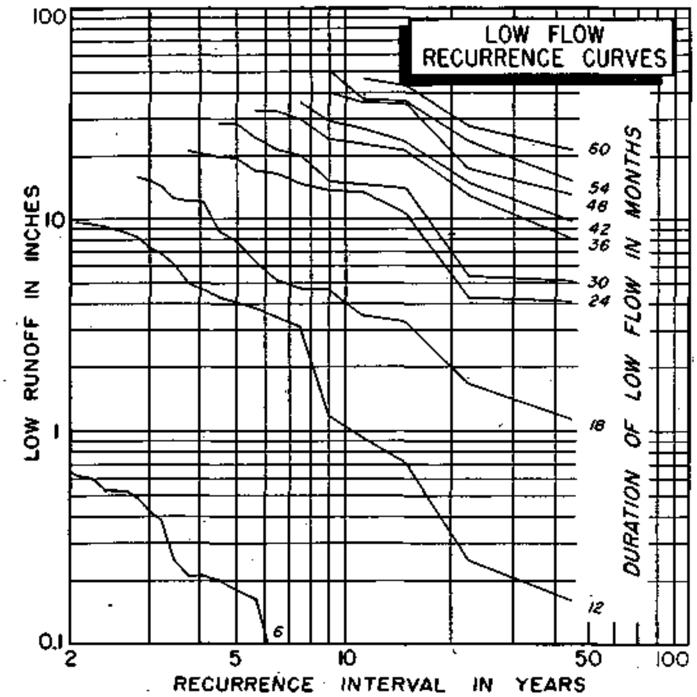
50
60
70
80
100



STATION 107

LOCATION
In NE ¼ SE ¼ sec 9, T5S, R5W, Randolph County, at Ill. 154 bridge, 3.2 miles southeast of Sparta

DRAINAGE AREA
17.8 square miles

ACTUAL FLOW DATA
PERIOD: May 1949 thru Sept 1959
CONTINUOUS RECORD: 10 years; water years 1950-59

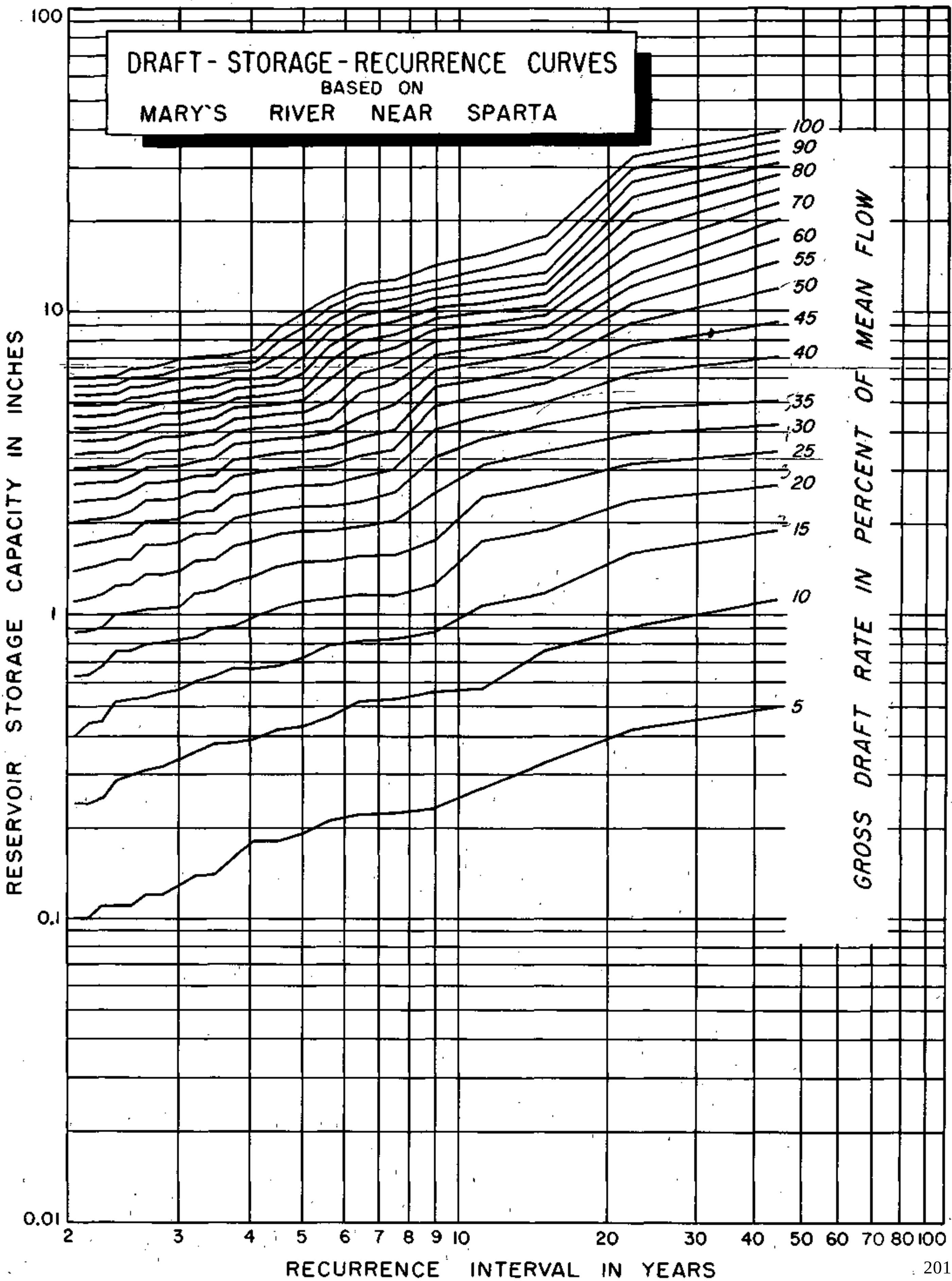
SYNTHETIC FLOW DATA
PERIOD: 35 years; water years 1915-49
INDEX STATION: Big Muddy River at Plumfield
COINCIDENT RECORD: 10 years; water years 1950-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 0.98 inch per month

Draft-Storage-Recurrence Data for Mary's River near Sparta

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.50	1.13	1.91	2.70	3.48	4.26	5.12	7.16	9.31	11.98	14.72	17.47	20.21	22.96	25.70	28.44	31.19	33.97	36.81	39.65
	11	16	16	16	16	16	30	44	44	56	56	56	56	56	56	56	56	58	58	58
22.5	.42	.93	1.61	2.40	3.18	3.96	4.83	6.30	7.77	9.24	10.71	12.18	13.65	15.85	18.37	21.21	24.05	26.90	29.74	32.58
	10	12	16	16	16	16	30	30	30	30	30	30	30	46	58	58	58	58	58	58
15.0	.33	.77	1.21	1.92	2.70	3.48	4.27	5.05	5.84	6.62	7.40	8.19	8.97	9.76	10.54	11.46	12.44	13.61	15.67	17.73
	9	9	14	16	16	16	16	16	16	16	16	16	16	16	16	20	20	42	42	42
11.3	.27	.57	1.09	1.77	2.46	3.15	3.83	4.52	5.29	6.07	6.85	7.64	8.42	9.21	9.99	10.77	11.73	12.80	13.88	15.51
	6	6	14	14	14	14	14	14	16	16	16	16	16	16	16	16	22	22	22	54
9.0	.23	.56	.90	1.27	1.77	2.53	3.32	4.10	4.89	5.67	6.45	7.24	8.02	8.81	9.59	10.37	11.16	11.94	12.74	14.32
	6	7	7	8	11	16	16	16	16	16	16	16	16	16	16	16	16	16	32	34
7.5	.23	.53	.84	1.19	1.58	2.05	2.54	3.03	3.52	4.09	4.97	5.85	6.74	7.62	8.50	9.38	10.26	11.15	12.03	12.91
	6	6	7	8	8	10	10	10	10	18	18	18	18	18	18	18	18	18	18	18
6.4	.22	.52	.82	1.18	1.57	1.96	2.37	2.86	3.35	3.84	4.51	5.39	6.28	7.16	8.04	8.92	9.80	10.69	11.57	12.48
	6	6	7	8	8	8	10	10	10	10	18	18	18	18	18	18	18	18	18	20
5.6	.21	.46	.80	1.14	1.51	1.90	2.29	2.69	3.11	3.55	3.99	4.43	5.11	5.99	6.87	7.75	8.63	9.52	10.40	11.28
	5	7	7	7	8	8	8	8	9	9	9	9	18	18	18	18	18	18	18	18
5.0	.19	.43	.73	1.12	1.51	1.90	2.29	2.69	3.08	3.47	3.86	4.26	4.70	5.14	5.59	6.31	7.10	7.96	8.94	9.92
	5	5	8	8	8	8	8	8	8	8	8	9	9	9	9	16	16	20	20	20
4.5	.18	.42	.68	1.07	1.46	1.85	2.24	2.64	3.03	3.42	3.81	4.20	4.60	4.99	5.38	5.77	6.19	7.08	7.96	8.84
	5	5	8	8	8	8	8	8	8	8	8	8	8	8	8	8	18	18	18	18
4.1	.18	.39	.67	.99	1.38	1.77	2.16	2.56	2.95	3.34	3.73	4.12	4.52	4.91	5.30	5.69	6.08	6.48	6.87	7.53
	4	5	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	14
3.8	.16	.38	.67	.97	1.31	1.70	2.09	2.49	2.88	3.27	3.66	4.05	4.45	4.84	5.23	5.62	6.01	6.41	6.80	7.29
	4	6	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	10	10
3.5	.14	.38	.63	.93	1.22	1.53	1.87	2.21	2.56	2.90	3.29	3.68	4.08	4.47	4.86	5.25	5.70	6.19	6.68	7.17
	5	5	6	6	6	7	7	7	7	8	8	8	8	8	8	8	10	10	10	10
3.2	.14	.36	.61	.85	1.16	1.52	1.86	2.20	2.55	2.69	3.23	3.61	4.01	4.40	4.79	5.18	5.66	6.15	6.64	7.13
	4	5	5	5	7	7	7	7	7	7	7	8	8	8	8	8	10	10	10	10
3.0	.13	.34	.59	.83	1.08	1.41	1.75	2.09	2.44	2.78	3.12	3.51	3.91	4.30	4.69	5.06	5.55	6.04	6.53	7.02
	3	5	5	5	5	7	7	7	7	7	8	8	8	8	8	8	10	10	10	10
2.8	.12	.32	.57	.81	1.06	1.37	1.71	2.05	2.40	2.74	3.10	3.49	3.89	4.28	4.67	5.06	5.45	5.85	6.26	6.75
	4	5	5	5	5	7	7	7	7	7	8	8	8	8	8	8	8	8	10	10
2.6	.12	.31	.56	.80	1.05	1.37	1.71	2.05	2.40	2.74	3.08	3.43	3.77	4.11	4.50	4.89	5.28	5.71	6.15	6.59
	4	5	5	5	5	7	7	7	7	7	7	7	7	8	8	8	8	9	9	9
2.5	.11	.30	.53	.77	1.02	1.26	1.53	1.86	2.21	2.55	2.89	3.24	3.58	3.96	4.35	4.78	5.22	5.66	6.10	6.54
	4	4	5	5	5	5	6	7	7	7	7	7	7	8	8	9	9	9	9	9
2.4	.11	.29	.52	.76	1.01	1.25	1.53	1.82	2.12	2.43	2.77	3.12	3.46	3.84	4.23	4.62	5.01	5.41	5.80	6.19
	3	4	5	5	5	5	6	6	6	7	7	7	7	8	8	8	8	8	8	8
2.3	.11	.25	.45	.68	.93	1.18	1.48	1.77	2.07	2.41	2.75	3.10	3.44	3.80	4.19	4.58	4.97	5.37	5.76	6.15
	3	4	4	5	5	6	6	6	7	7	7	7	7	8	8	8	8	8	8	8
2.1	.10	.24	.44	.64	.89	1.15	1.45	1.74	2.07	2.41	2.75	3.10	3.44	3.78	4.17	4.56	4.95	5.35	5.74	6.13
	3	4	4	5	5	6	6	6	7	7	7	7	7	8	8	8	8	8	8	8
2.0	.10	.24	.40	.63	.88	1.12	1.41	1.70	2.03	2.37	2.71	3.06	3.40	3.77	4.16	4.55	4.94	5.34	5.73	6.12
	3	3	4	5	5	5	6	6	7	7	7	7	7	8	8	8	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
MARY'S RIVER NEAR SPARTA
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
2
3
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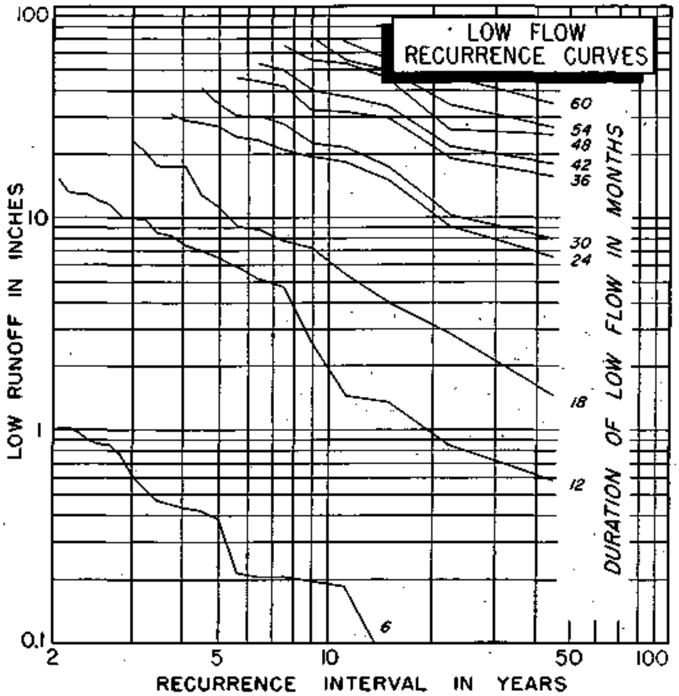
30
40
50
60
70
80
100



STATION 162

LOCATION
In NW ¼ SW ¼ sec 13, T9S, R6E, Saline County, at highway bridge 2 miles east of Harrisburg

DRAINAGE AREA
198 square miles

ACTUAL FLOW DATA
PERIOD: Intermittent Oct 1922 thru Sept 1932; gaging discontinued Sept 30, 1932
INTERMTTENT RECORD: 10 years; water years 1923-59

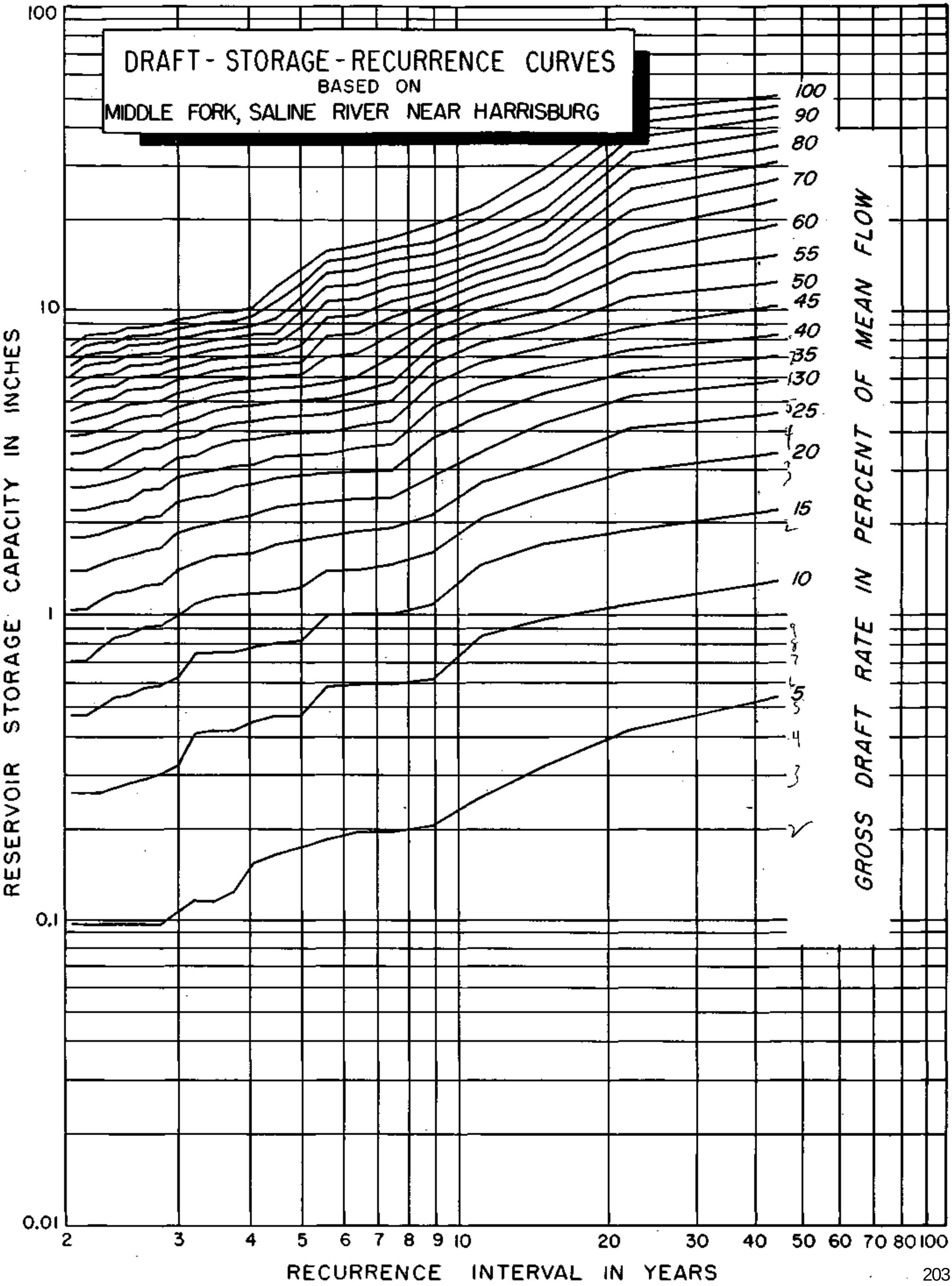
SYNTHETIC FLOW DATA
PERIOD: 35 years; water years 1915-22, 1933-32
INDEX STATION : Big Muddy River at Plumfield
COINCIDENT RECORD; 10 years; water years 1923-32

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 1.37 inches per month

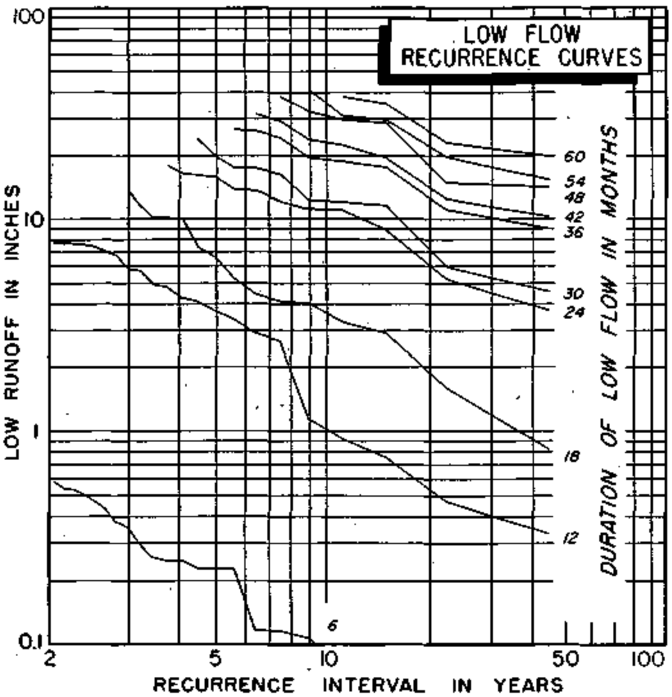
Draft-Storage-Recurrence Data for Middle Fork, Saline River near Harrisburg

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.56	1.32	2.26	3.43	4.67	5.90	7.13	8.36	10.42	12.47	15.22	19.05	22.89	26.72	30.56	34.40	38.27	42.24	46.22	50.19
	11	11	16	18	18	18	18	30	30	30	56	56	56	56	56	56	58	58	58	58
22.5	.43	1.11	1.94	3.03	4.13	5.23	6.32	7.42	8.82	11.01	13.20	15.39	17.91	21.06	24.81	28.78	32.75	36.72	40.70	44.67
	10	10	16	16	16	16	16	16	32	32	32	32	46	46	58	58	58	58	58	58
15.0	.33	.99	1.74	2.49	3.25	4.28	5.37	6.47	7.56	8.66	9.97	11.34	12.71	14.08	15.45	16.95	19.14	21.34	25.06	28.90
	6	11	11	11	11	16	16	16	16	16	20	20	20	20	20	32	32	32	56	56
11.3	.26	.87	1.49	2.11	2.75	3.46	4.55	5.65	6.74	7.84	8.94	10.03	11.13	12.22	13.32	14.42	15.51	17.18	19.51	21.84
	9	9	9	9	10	16	16	16	16	16	16	16	16	16	16	16	16	34	34	34
9.0	.21	.63	1.11	1.63	2.18	2.88	3.84	4.80	5.76	6.72	7.68	8.64	9.60	10.56	11.52	12.59	13.96	15.33	16.78	19.00
	6	7	7	8	8	14	14	14	14	14	14	14	14	14	14	20	20	20	30	40
7.5	.20	.61	1.02	1.49	1.97	2.45	3.00	3.66	4.35	5.06	5.81	7.01	8.24	9.47	10.71	11.94	13.19	14.56	15.93	17.30
	6	6	6	7	7	8	8	10	10	11	11	18	18	18	18	18	20	20	20	20
6.4	.20	.61	1.02	1.43	1.91	2.43	2.98	3.56	4.18	4.80	5.41	6.09	7.19	8.42	9.66	10.89	12.15	13.52	14.89	16.26
	6	6	6	7	7	8	8	9	9	9	10	10	18	18	18	18	20	20	20	20
5.6	.19	.60	1.01	1.42	1.84	2.38	2.93	3.47	4.02	4.57	5.12	5.75	6.98	8.21	9.45	10.68	11.91	13.14	14.38	15.61
	6	6	6	6	7	8	8	8	8	8	8	18	18	18	18	18	18	18	18	18
5.0	.18	.48	.84	1.25	1.79	2.34	2.89	3.43	3.98	4.53	5.08	5.63	6.17	6.74	7.65	8.75	9.84	10.94	12.17	13.54
	4	5	6	6	8	8	8	8	8	8	8	8	8	9	16	16	16	16	20	20
4.5	.17	.48	.82	1.21	1.73	2.28	2.83	3.37	3.92	4.47	5.02	5.57	6.11	6.66	7.21	7.77	8.39	9.39	10.63	11.86
	4	5	5	6	8	8	8	8	8	8	8	8	8	8	8	9	9	18	18	18
4.1	.16	.46	.80	1.20	1.62	2.16	2.71	3.25	3.80	4.35	4.90	5.45	5.99	6.54	7.09	7.70	8.32	8.94	9.55	10.17
	4	5	5	6	6	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9
3.6	.13	.43	.77	1.18	1.60	2.09	2.64	3.18	3.73	4.28	4.83	5.38	5.92	6.47	7.02	7.57	8.12	8.66	9.22	9.84
	4	5	6	6	7	8	8	8	8	8	6	6	8	8	8	8	8	8	9	10
3.5	.12	.43	.77	1.16	1.58	2.02	2.50	3.03	3.58	4.13	4.68	5.23	5.77	6.32	6.87	7.42	7.97	8.51	9.11	9.79
	4	5	5	6	6	7	7	8	8	8	8	8	6	8	8	8	8	8	10	10
3.2	.12	.42	.76	1.10	1.50	1.97	2.45	2.93	3.41	3.89	4.45	4.98	5.52	6.07	6.62	7.17	7.72	8.26	8.87	9.49
	2	5	5	5	6	7	7	7	7	7	8	8	8	8	8	8	8	9	9	9
3.0	.11	.33	.64	1.01	1.43	1.89	2.37	2.85	3.33	3.81	4.26	4.82	5.36	5.91	6.45	7.01	7.56	8.10	8.70	9.32
	2	4	5	6	6	7	7	7	7	7	7	8	8	8	8	8	8	8	9	9
2.6	.10	.31	.60	.94	1.28	1.68	2.14	2.62	3.10	3.58	4.05	4.53	5.05	5.60	6.15	6.70	7.25	7.79	8.34	8.93
	3	4	5	5	5	6	7	7	7	7	7	7	8	8	8	8	8	8	8	10
2.6	.10	.30	.59	.95	1.27	1.64	2.12	2.60	3.08	3.56	4.03	4.51	4.99	5.53	6.08	6.63	7.18	7.72	8.27	8.82
	3	4	5	5	5	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8
2.5	.10	.29	.56	.88	1.22	1.59	2.00	2.41	2.87	3.35	3.84	4.39	4.93	5.48	6.03	6.58	7.13	7.67	8.22	8.77
	2	4	4	5	5	6	6	6	7	7	8	8	8	8	8	8	8	8	8	8
2.4	.10	.28	.55	.86	1.20	1.55	1.95	2.36	2.77	3.25	3.72	4.20	4.68	5.16	5.65	6.20	6.75	7.29	7.84	8.39
	2	4	4	5	5	5	6	6	7	7	7	7	7	7	8	8	6	6	8	8
2.3	.10	.27	.51	.79	1.13	1.48	1.87	2.28	2.69	3.10	3.57	4.05	4.53	5.05	5.60	6.15	6.70	7.24	7.79	8.34
	2	3	4	5	5	5	6	6	6	7	7	7	7	8	8	8	8	8	8	8
2.1	.10	.27	.48	.72	1.06	1.42	1.83	2.24	2.65	3.06	3.47	3.94	4.42	4.92	5.47	6.02	6.57	7.11	7.66	8.21
	2	3	3	5	5	6	6	6	6	6	6	7	7	6	8	8	8	8	8	8
2.0	.10	.27	.48	.72	1.06	1.42	1.83	2.24	2.65	3.06	3.47	3.88	4.29	4.70	5.17	5.65	6.13	6.61	7.10	7.65
	2	3	3	5	5	6	6	6	6	6	6	6	6	6	7	7	7	7	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
MIDDLE FORK, SALINE RIVER NEAR HARRISBURG
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 164

LOCATION
Near center sec 30, T5S, R2W, Perry County, at Illinois Central Railroad bridge, 1.5 miles southeast of Pinckneyville

DRAINAGE AREA
227 square miles

ACTUAL FLOW DATA
PERIOD: Jan 1909 thru Oct 1914; gaging discontinued Oct 1, 1914
CONTINUOUS RECORD: 4 years; water years 1909-12

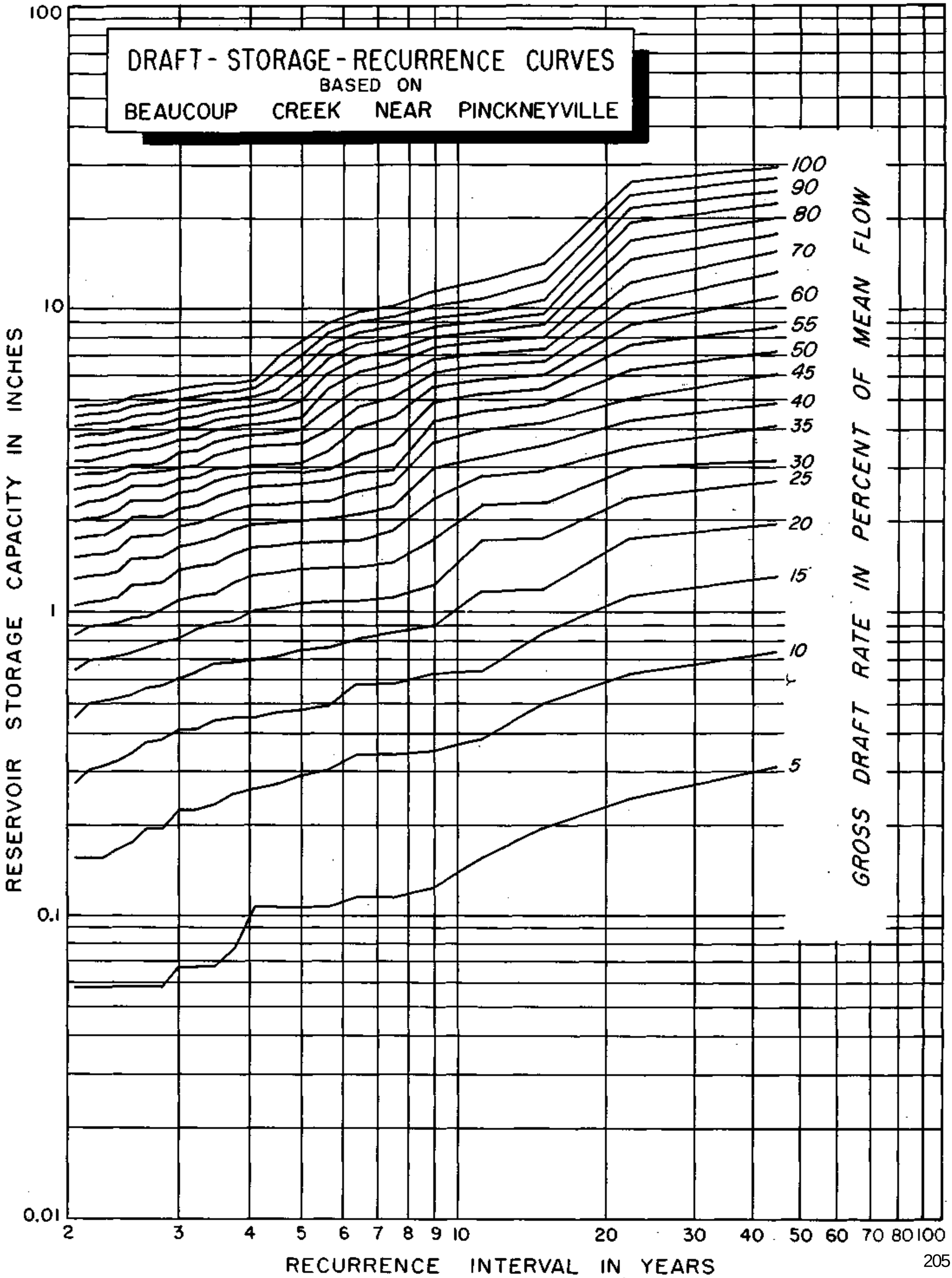
SYNTHETIC FLOW DATA
PERIOD: 45 years; water years 1915-59
INDEX STATION : Big Muddy River at Plumfield
COINCIDENT RECORD: 4 years; water years 1909-12

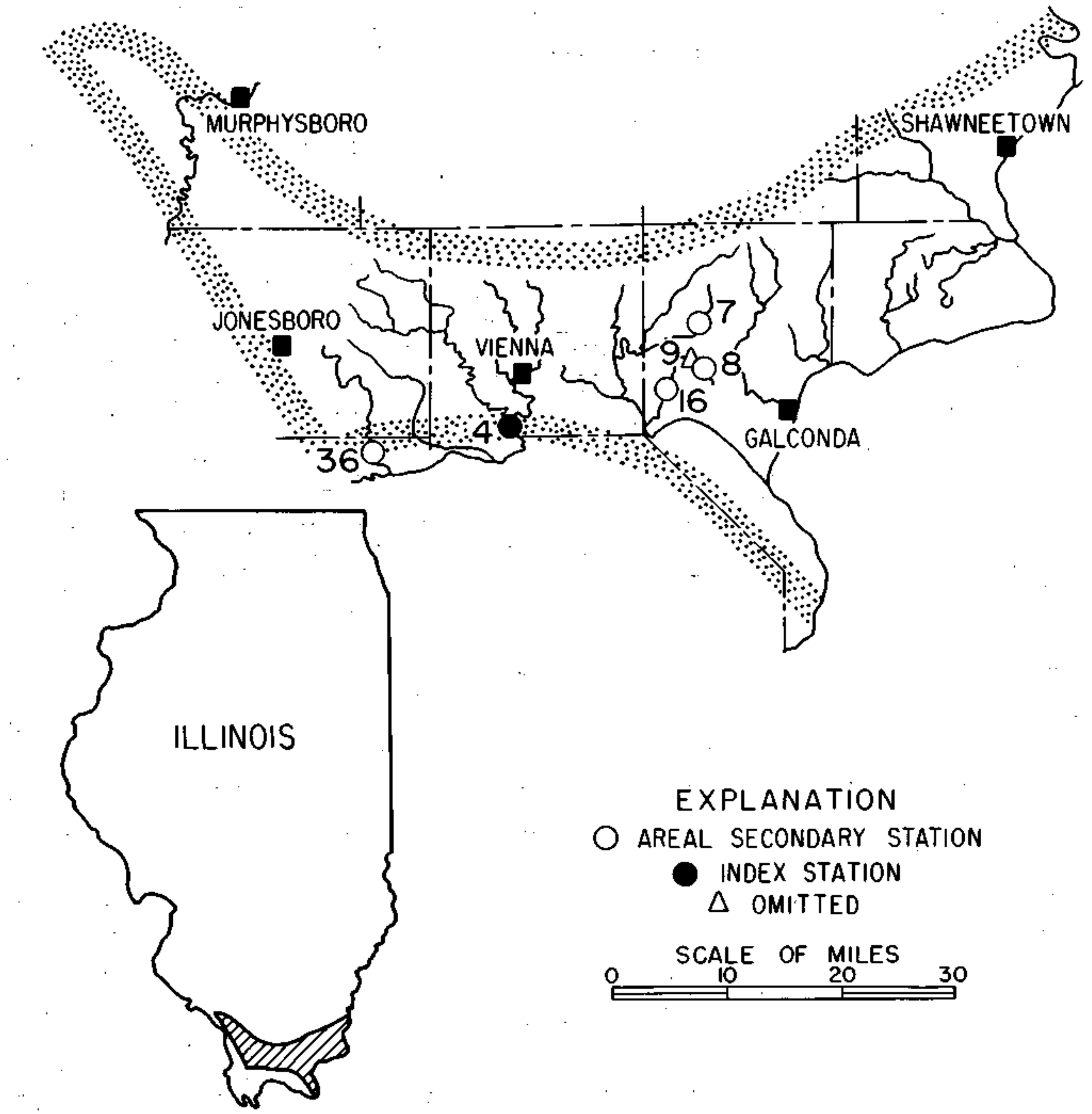
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.79 inch per month

Draft-Storage-Recurrence Data for Beaucoup Creek near Pinckneyville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.32	.76	1.33	2.00	2.72	3.43	4.14	4.89	6.08	7.26	8.77	10.98	13.20	15.41	17.62	19.83	22.08	24.37	26.66	28.95
	11	11	16	18	18	18	18	30	30	30	56	56	56	56	56	56	58	58	58	58
22.5	.25	.64	1.15	1.78	2.41	3.04	3.67	4.31	5.08	6.34	7.60	8.87	10.39	12.21	14.41	16.70	18.99	21.28	23.57	25.86
	10	10	16	16	16	16	16	16	32	32	32	32	46	46	58	58	58	58	58	58
15.0	.20	.51	.87	1.22	1.78	2.33	2.96	3.60	4.23	4.86	5.49	6.12	6.76	7.39	8.10	8.89	9.68	10.74	12.40	14.06
	6	9	9	14	14	16	16	16	16	16	16	16	16	16	20	20	20	42	42	56
11.3	.16	.39	.65	1.19	1.75	2.30	2.85	3.40	4.00	4.63	5.26	5.89	6.53	7.16	7.79	8.42	9.05	9.69	10.81	12.44
	6	6	7	14	14	14	14	14	16	16	16	16	16	16	16	16	16	16	34	54
9.0	.13	.36	.64	.92	1.25	1.77	2.40	3.04	3.67	4.30	4.93	5.56	6.20	6.83	7.46	8.09	8.72	9.36	10.29	11.47
	6	7	7	7	11	16	16	16	16	16	16	16	16	16	16	16	16	16	30	30
7.5	.12	.35	.59	.87	1.14	1.48	1.88	2.27	2.67	3.06	3.72	4.43	5.14	5.85	6.57	7.28	7.99	8.70	9.41	10.19
	6	6	7	7	7	10	10	10	10	10	18	18	18	18	18	18	18	18	18	40
6.4	.12	.35	.59	.83	1.11	1.43	1.75	2.14	2.54	2.93	3.36	4.07	4.78	5.49	6.21	6.92	7.63	8.34	9.06	9.85
	6	6	6	7	8	8	10	10	10	10	18	18	18	18	18	18	18	18	20	20
5.6	.11	.31	.50	.78	1.10	1.42	1.73	2.05	2.37	2.73	3.08	3.44	4.01	4.72	5.44	6.15	6.86	7.57	8.28	8.99
	5	5	5	8	8	8	8	8	9	9	9	9	18	18	18	18	18	18	18	18
5.0	.11	.30	.49	.77	1.09	1.41	1.72	2.04	2.35	2.67	2.99	3.30	3.65	4.01	4.39	5.02	5.65	6.29	7.05	7.84
	4	5	5	8	8	8	8	8	8	8	8	9	9	9	16	16	16	16	20	20
4.5	.11	.28	.48	.73	1.05	1.37	1.68	2.00	2.31	2.63	2.95	3.26	3.58	3.93	4.28	4.64	4.99	5.47	6.18	6.89
	4	5	6	8	8	8	8	8	8	8	8	8	8	9	9	9	9	18	18	18
4.1	.11	.27	.46	.71	1.03	1.35	1.66	1.98	2.29	2.61	2.93	3.24	3.56	3.87	4.19	4.51	4.82	5.16	5.51	5.87
	4	4	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	9	9	9
3.8	.08	.26	.46	.70	.95	1.29	1.58	1.90	2.21	2.53	2.85	3.16	3.48	3.79	4.11	4.43	4.74	5.06	5.37	5.73
	4	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	10
3.5	.07	.24	.45	.69	.93	1.18	1.46	1.78	2.09	2.41	2.73	3.04	3.36	3.67	3.99	4.31	4.62	4.94	5.31	5.70
	3	5	6	6	6	7	8	8	8	8	8	8	8	8	8	8	8	8	10	10
3.2	.07	.23	.42	.65	.89	1.16	1.44	1.71	1.99	2.27	2.54	2.82	3.14	3.45	3.77	4.09	4.44	4.80	5.17	5.56
	3	5	5	6	6	7	7	7	7	7	7	8	8	8	8	9	9	9	10	10
3.0	.07	.23	.42	.62	.84	1.12	1.40	1.67	1.95	2.23	2.50	2.78	3.09	3.40	3.72	4.04	4.35	4.70	5.05	5.43
	3	5	5	5	7	7	7	7	7	7	7	7	8	8	8	8	8	9	9	10
2.8	.06	.20	.39	.59	.81	1.04	1.26	1.54	1.82	2.10	2.37	2.65	2.96	3.27	3.59	3.91	4.22	4.55	4.95	5.34
	3	5	5	5	6	6	6	7	7	7	7	7	8	8	8	8	8	10	10	10
2.6	.06	.20	.38	.58	.78	.98	1.26	1.53	1.81	2.09	2.36	2.64	2.91	3.19	3.48	3.81	4.16	4.52	4.87	5.23
	3	4	5	5	5	7	7	7	7	7	7	7	7	7	8	9	9	9	9	9
2.5	.06	.18	.35	.55	.75	.97	1.25	1.52	1.80	2.08	2.35	2.63	2.90	3.18	3.46	3.74	4.09	4.45	4.80	5.16
	2	4	5	5	5	7	7	7	7	7	7	7	7	7	7	9	9	9	9	9
2.4	.06	.17	.33	.53	.73	.93	1.14	1.38	1.63	1.91	2.18	2.46	2.73	3.02	3.34	3.66	3.97	4.29	4.60	4.92
	2	4	5	5	5	5	6	6	7	7	7	7	7	8	8	8	8	8	8	8
2.3	.06	.16	.32	.52	.72	.92	1.11	1.35	1.58	1.83	2.10	2.38	2.65	2.96	3.28	3.60	3.91	4.23	4.54	4.86
	2	4	5	5	5	5	6	6	6	7	7	7	8	8	8	8	8	8	8	8
2.1	.06	.16	.31	.51	.71	.91	1.10	1.34	1.57	1.81	2.07	2.35	2.63	2.94	3.26	3.58	3.89	4.21	4.52	4.84
	2	3	5	5	5	5	6	6	6	6	7	7	8	8	8	8	8	8	8	8
2.0	.06	.16	.28	.46	.66	.86	1.07	1.31	1.54	1.78	2.02	2.25	2.56	2.87	3.19	3.51	3.82	4.14	4.45	4.77
	2	3	3	5	5	5	6	6	6	6	6	6	8	8	8	8	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BEAUCOUP CREEK NEAR PINCKNEYVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100



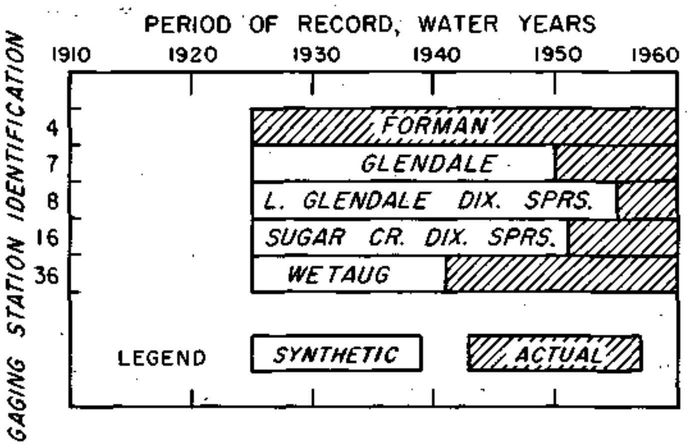
Shawnee Hills

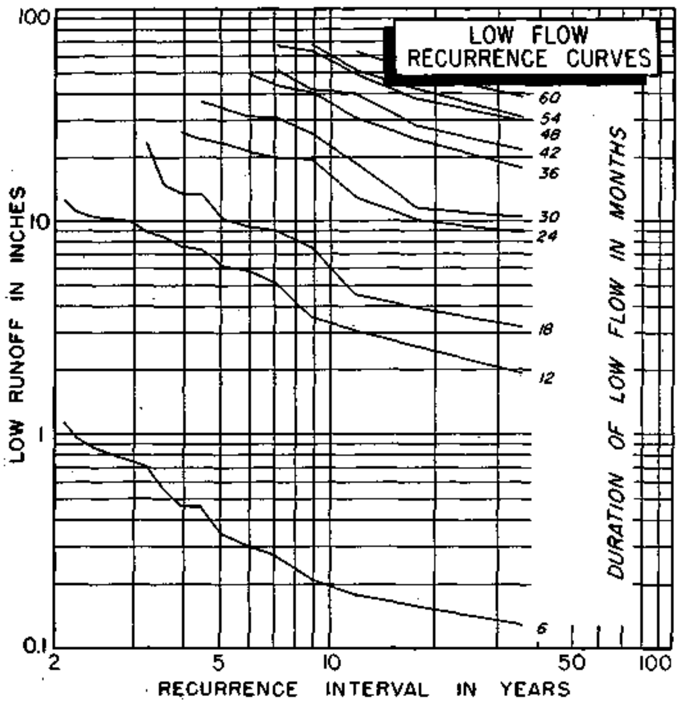
Gaging Stations in Shawnee Hills

NUMBER	NAME OF STATION	PAGE
4	Cache River at Forman	208
7	Hayes Creek at Glendale	210
8	Lake Glendale Inlet near Dixon Springs	212
16	Sugar Creek near Dixon Springs	214
36	Big Creek near Wetaug	216

STATION OMITTED

		REASON
9	Lake Glendale Outlet near Dixon Springs	*Regulation*





STATION 4

LOCATION

In NE ¼ NW ¼ sec 6, T14S, R3E, Johnson County, at highway bridge, 1.25 miles southwest of Forman

DRAINAGE AREA

243 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1922 thru July 1924, Sept 1924 thru Sept 1959

CONTINUOUS RECORD : 35 years; water years 1925-59

SYNTHETIC FLOW DATA

None; this station utilized as an index station

TOTAL DATA ANALYZED

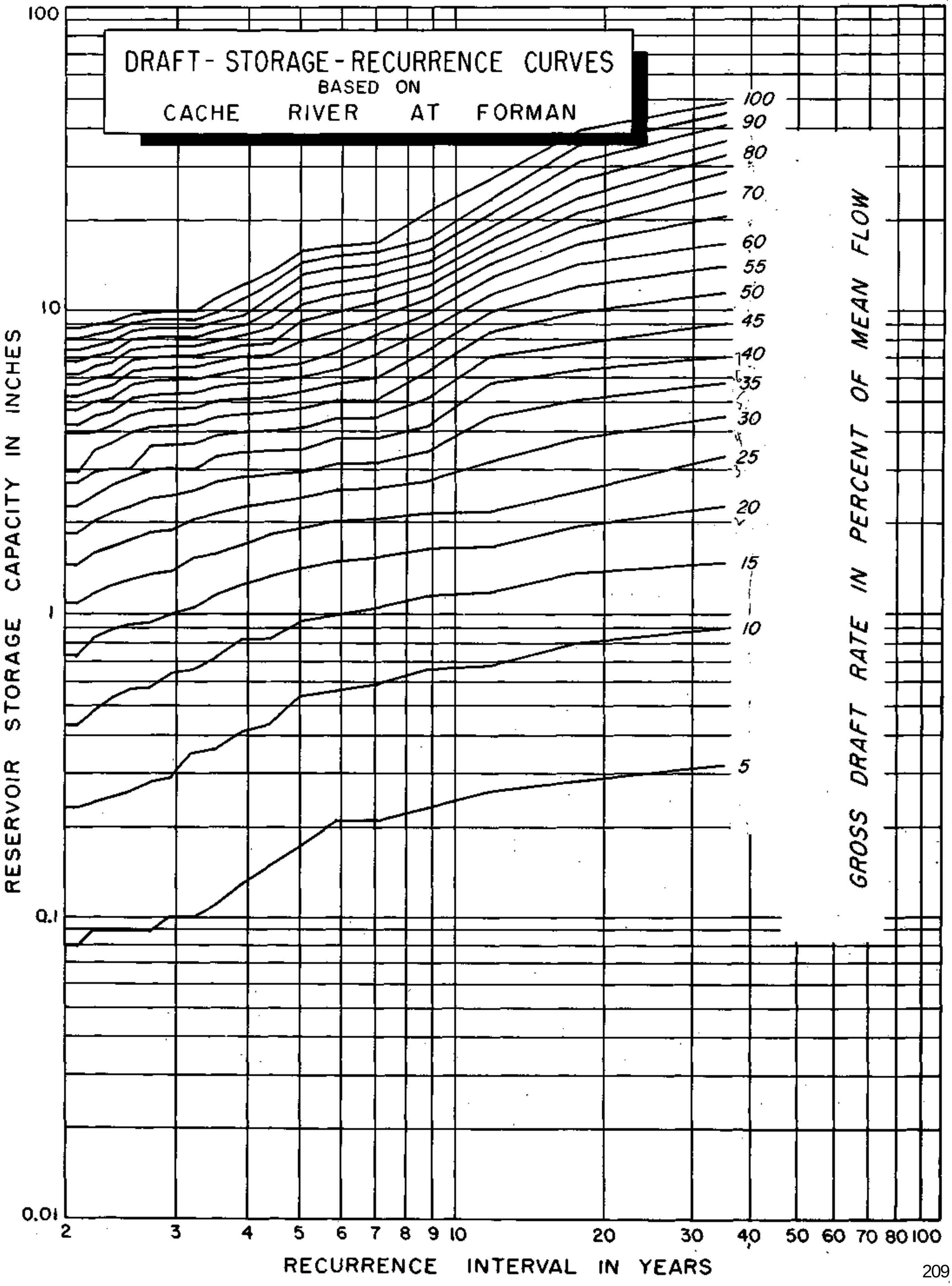
PERIOD: 35 years; water years 1925-59

MEAN DISCHARGE : 1.43 inches per month

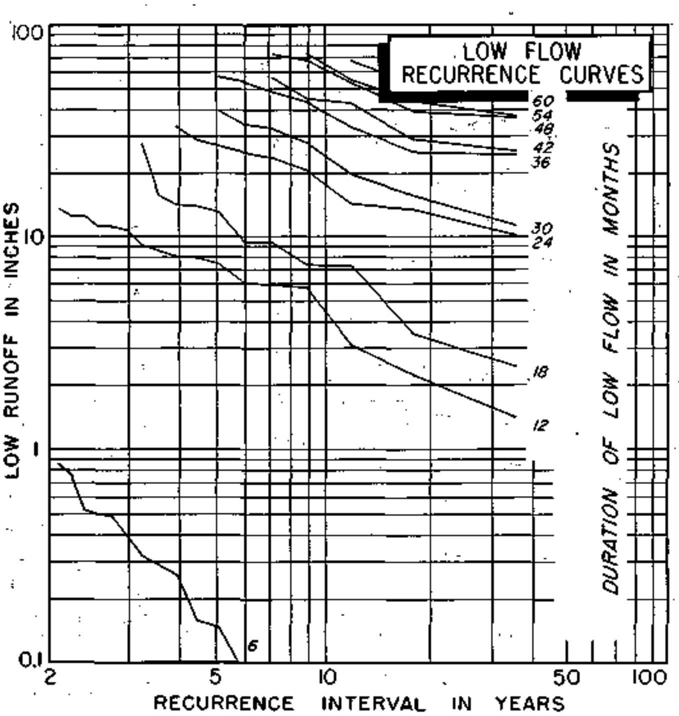
Draft-Storage-Recurrence Data for Cache River at Forman

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
35.0	.32 7	.91 9	1.57 10	2.28 10	3.33 16	4.51 18	5.80 18	7.09 18	9.07 34	11.50 34	13.93 34	16.62 56	20.62 56	24.63 56	28.63 56	32.63 56	36.64 56	40.64 56	44.65 56	48.65 56
17.5	.28 5	.81 8	1.39 8	1.96 8	2.54 18	3.82 18	5.11 18	6.40 18	7.75 30	9.89 30	12.04 30	14.18 30	16.39 32	18.68 32	20.97 32	23.26 32	26.72 58	30.87 58	35.01 58	39.16 58
11.7	.26 5	.68 7	1.18 7	1.68 7	2.18 7	3.18 18	4.47 18	5.76 18	7.04 18	8.44 20	9.87 20	11.30 20	12.73 20	14.16 20	15.59 20	17.02 20	18.72 28	20.73 28	23.10 56	27.10 56
8.8	.23 5	.66 7	1.16 7	1.66 7	2.16 7	2.75 10	3.47 10	4.18 10	5.19 16	6.33 16	7.47 16	8.62 16	9.76 16	10.91 16	12.05 16	13.19 16	14.40 20	15.83 20	17.26 20	21.06 56
7.0	.21 5	.59 6	1.06 7	1.56 7	2.06 7	2.60 8	3.17 8	3.81 9	4.45 9	5.10 9	6.03 16	7.18 16	8.32 16	9.47 16	10.61 16	11.75 16	12.90 16	14.16 18	15.44 18	16.76 26
5.8	.21 4	.56 6	1.01 7	1.51 7	2.02 8	2.59 8	3.16 8	3.79 9	4.43 9	5.08 9	5.72 9	6.36 9	7.26 18	8.55 18	9.84 18	11.12 18	12.41 18	13.70 18	14.98 18	16.27 18
5.0	.18 5	.54 5	.95 6	1.43 7	1.93 7	2.43 7	2.93 7	3.49 9	4.13 9	4.78 9	5.42 9	6.06 9	6.71 9	7.93 18	9.22 18	10.50 18	11.79 18	13.08 18	14.36 18	15.65 18
4.4	.15 4	.44 5	.83 7	1.33 7	1.83 7	2.33 7	2.88 8	3.46 8	4.03 8	4.60 8	5.17 9	5.81 9	6.46 9	7.10 9	7.74 9	8.80 16	9.95 16	11.09 16	12.24 16	13.38 16
3.9	.13 4	.41 4	.83 6	1.26 6	1.69 8	2.26 8	2.83 8	3.41 8	3.98 8	4.55 8	5.12 9	5.76 9	6.41 9	7.05 9	7.69 9	8.34 9	8.98 9	9.67 18	10.95 18	12.24 18
3.5	.11 3	.36 4	.73 6	1.16 6	1.59 8	2.16 8	2.73 8	3.31 8	3.88 8	4.45 8	5.02 8	5.59 8	6.17 8	6.74 8	7.31 8	7.93 9	8.57 9	9.21 9	9.86 9	11.07 22
3.2	.10 2	.35 4	.66 5	1.05 7	1.55 7	2.05 7	2.55 7	3.07 8	3.64 8	4.21 8	4.78 8	5.35 8	5.93 8	6.50 8	7.07 8	7.64 8	8.21 8	8.79 8	9.36 8	9.93 8
2.9	.10 2	.29 5	.64 5	1.00 5	1.40 6	1.89 8	2.46 8	3.04 8	3.61 8	4.18 8	4.75 8	5.32 8	5.90 8	6.47 8	7.04 8	7.61 8	8.18 8	8.76 8	9.33 8	9.90 8
2.7	.09 2	.28 3	.58 5	.94 5	1.36 7	1.86 7	2.40 8	2.98 8	3.55 8	4.12 8	4.69 8	5.26 8	5.84 8	6.41 8	6.98 8	7.55 8	8.12 8	8.70 8	9.27 8	9.84 8
2.5	.09 2	.26 3	.57 5	.93 5	1.31 6	1.76 7	2.26 7	2.82 8	3.39 8	3.96 8	4.53 8	5.10 8	5.68 8	6.25 8	6.82 8	7.39 8	7.96 8	8.54 8	9.11 8	9.68 8
2.3	.09 2	.25 3	.53 5	.89 5	1.25 5	1.66 7	2.16 7	2.66 7	3.16 7	3.67 7	4.17 7	4.67 7	5.17 7	5.67 7	6.17 8	6.74 8	7.31 8	7.93 9	8.58 9	9.22 9
2.2	.09 2	.24 2	.48 5	.84 5	1.20 5	1.60 6	2.03 6	2.46 7	2.96 7	3.47 7	3.97 7	4.47 7	4.97 7	5.47 7	5.97 7	6.51 8	7.08 8	7.67 9	8.32 9	8.96 9
2.1	.06 2	.23 2	.43 3	.73 5	1.09 5	1.45 5	1.85 6	2.28 6	2.71 6	3.20 7	3.70 7	4.20 7	4.70 7	5.20 7	5.70 7	6.20 7	6.79 9	7.43 9	8.08 9	8.72 9



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
CACHE RIVER AT FORMAN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW



STATION 7

LOCATION
In SW ¼ SW ¼ sec 21, T12S, R5E, Pope County, at bridge on Ill. 145 at Glendale

DRAINAGE AREA
18.9 square miles

ACTUAL FLOW DATA
PERIOD: May 1949 thru Sept 1959
CONTINUOUS RECORD: 10 years; water years 1950-59

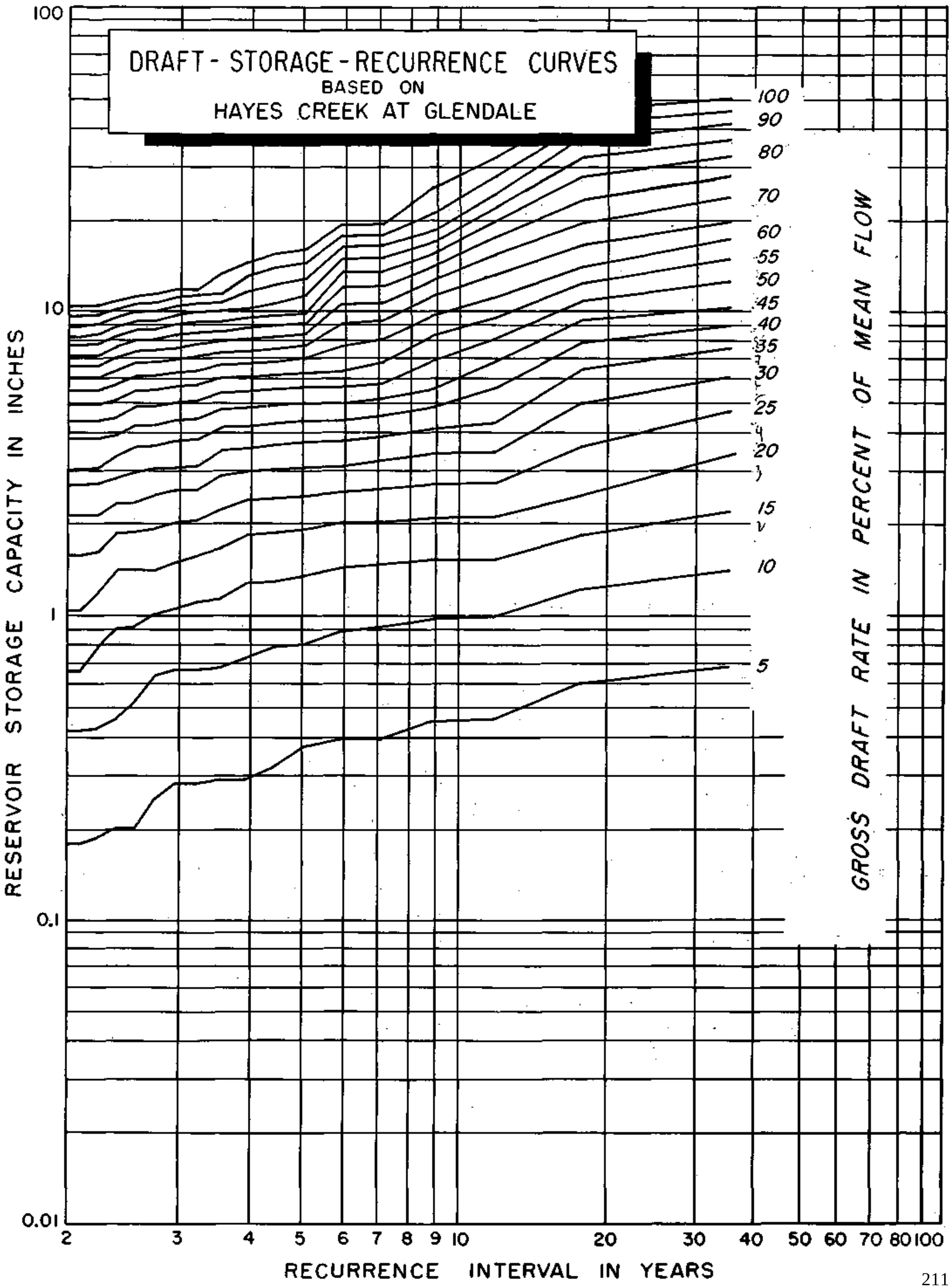
SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1925-49
INDEX STATION : Cache River at Forman
COINCIDENT RECORD: 10 years; water years 1925-59

TOTAL DATA ANALYZED
PERIOD: 35 years; water years 1925-59
MEAN DISCHARGE : 1.59 inches per month

Draft-Storage-Recurrence Data for Hayes Creek at Glendale

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
35.0	.68 9	1.41 10	2.21 10	3.38 16	4.69 18	6.12 18	7.55 16	8.98 18	10.41 18	12.50 30	14.89 30	17.35 32	19.89 32	23.69 56	28.14 56	32.59 56	37.04 56	41.50 56	45.95 56	50.40 56
17.5	.60 8	1.23 8	1.87 8	2.50 8	3.63 18	5.06 18	6.49 18	7.92 18	9.35 18	10.79 20	12.38 20	13.97 20	16.45 32	19.55 46	23.21 46	27.58 58	32.19 58	36.80 58	41.41 58	46.02 58
11.7	.46 6	.99 7	1.55 7	2.11 7	2.75 9	3.46 9	4.35 16	5.63 16	6.90 16	8.17 16	9.55 20	11.14 20	13.12 28	15.34 28	17.57 28	19.80 28	22.02 28	24.25 28	27.59 56	32.04 56
8.8	.45 6	.98 7	1.54 7	2.10 7	2.71 9	3.42 9	4.14 9	4.85 9	5.57 9	6.90 18	8.33 18	9.76 18	11.19 18	12.62 18	14.06 18	15.49 18	16.92 18	18.39 20	21.06 56	25.51 56
7.0	.39 6	.93 7	1.49 7	2.05 7	2.61 8	3.25 8	3.88 8	4.52 8	5.15 8	5.79 8	6.78 16	8.05 16	9.33 16	10.63 18	12.07 18	13.50 18	14.93 18	16.36 18	17.79 18	19.22 18
5.8	.39 6	.89 7	1.45 7	2.01 7	2.56 7	3.12 7	3.73 8	4.37 8	5.00 8	5.64 9	6.35 9	7.69 18	9.12 18	10.55 18	11.99 18	13.42 18	14.85 18	16.28 18	17.71 18	19.14 18
5.0	.37 5	.81 7	1.37 7	1.93 7	2.48 7	3.09 8	3.72 8	4.36 8	4.99 8	5.63 8	6.27 9	6.99 9	7.70 9	8.42 9	9.13 9	9.85 9	11.25 18	12.77 20	14.36 20	15.95 20
4.4	.32 6	.79 6	1.32 7	1.88 7	2.43 7	3.01 8	3.64 8	4.28 8	4.91 8	5.55 8	6.19 8	6.83 9	7.54 9	8.26 9	8.97 9	9.69 9	10.64 20	12.23 20	13.82 20	15.41 20
3.9	.29 5	.74 7	1.30 7	1.86 7	2.41 7	2.97 7	3.55 8	4.19 8	4.82 8	5.46 8	6.10 8	6.73 8	7.40 9	8.12 9	8.83 9	9.55 9	10.26 9	11.61 18	13.04 18	14.47 18
3.5	.29 4	.68 5	1.14 6	1.67 7	2.24 8	2.88 8	3.51 8	4.15 8	4.78 8	5.42 8	6.06 8	6.69 8	7.33 8	7.96 8	8.60 8	9.29 9	10.00 9	10.72 9	11.45 22	13.20 22
3.2	.28 4	.67 5	1.11 6	1.59 6	2.07 6	2.59 7	3.18 8	3.82 8	4.45 8	5.09 8	5.73 8	6.40 9	7.11 9	7.83 9	8.54 9	9.26 9	9.97 9	10.69 9	11.40 9	12.12 9
2.9	.28 4	.67 5	1.06 5	1.51 6	2.03 7	2.59 7	3.15 7	3.77 8	4.40 8	5.04 8	5.68 8	6.31 8	6.95 8	7.58 9	8.29 9	9.01 9	9.72 9	10.44 9	11.15 9	11.87 9
2.7	.25 4	.63 5	1.02 5	1.42 6	1.94 7	2.50 7	3.06 7	3.61 7	4.23 8	4.87 8	5.51 8	6.14 8	6.78 8	7.41 8	8.05 8	8.69 8	9.32 8	9.96 8	10.65 9	11.43 10
2.5	.20 4	.52 4	.93 6	1.41 6	1.89 6	2.36 6	2.94 8	3.58 8	4.21 8	4.85 8	5.49 8	6.12 8	6.76 8	7.39 8	8.03 8	8.67 8	9.30 8	9.94 8	10.57 8	11.21 8
2.3	.20 3	.46 5	.91 6	1.39 6	1.87 6	2.34 6	2.82 6	3.35 7	3.91 7	4.47 7	5.10 8	5.73 8	6.37 8	7.00 8	7.64 8	8.28 8	8.91 8	9.55 8	10.18 8	10.86 9
2.2	.19 3	.43 3	.79 5	1.19 5	1.63 6	2.15 7	2.71 7	3.26 7	3.82 7	4.38 7	4.93 7	5.49 7	6.04 7	6.60 7	7.18 8	7.82 8	8.45 8	9.09 8	9.72 9	10.44 9
2.1	.18 3	.42 3	.66 3	1.04 6	1.58 7	2.14 7	2.70 7	3.25 7	3.81 7	4.37 7	4.92 7	5.48 7	6.03 7	6.59 7	7.15 7	7.70 7	8.26 7	8.91 9	9.62 9	10.34 9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
HAYES CREEK AT GLENDALE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
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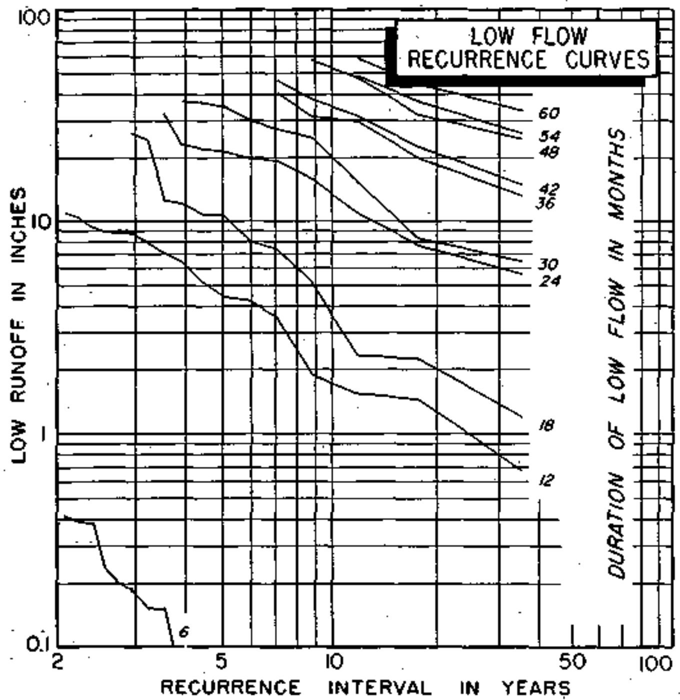
100



STATION 8

LOCATION
In NE ¼ SW ¼ sec 3, T13S, R5E, Pope County, 0.9 mile upstream from Lake Glendale dam and 2.5 miles north of Dixon Springs

DRAINAGE AREA
1.04 square miles

ACTUAL FLOW DATA
PERIOD: Aug 1954 thru Sept 1959
CONTINUOUS RECORD: 5 years; water years 1955-59

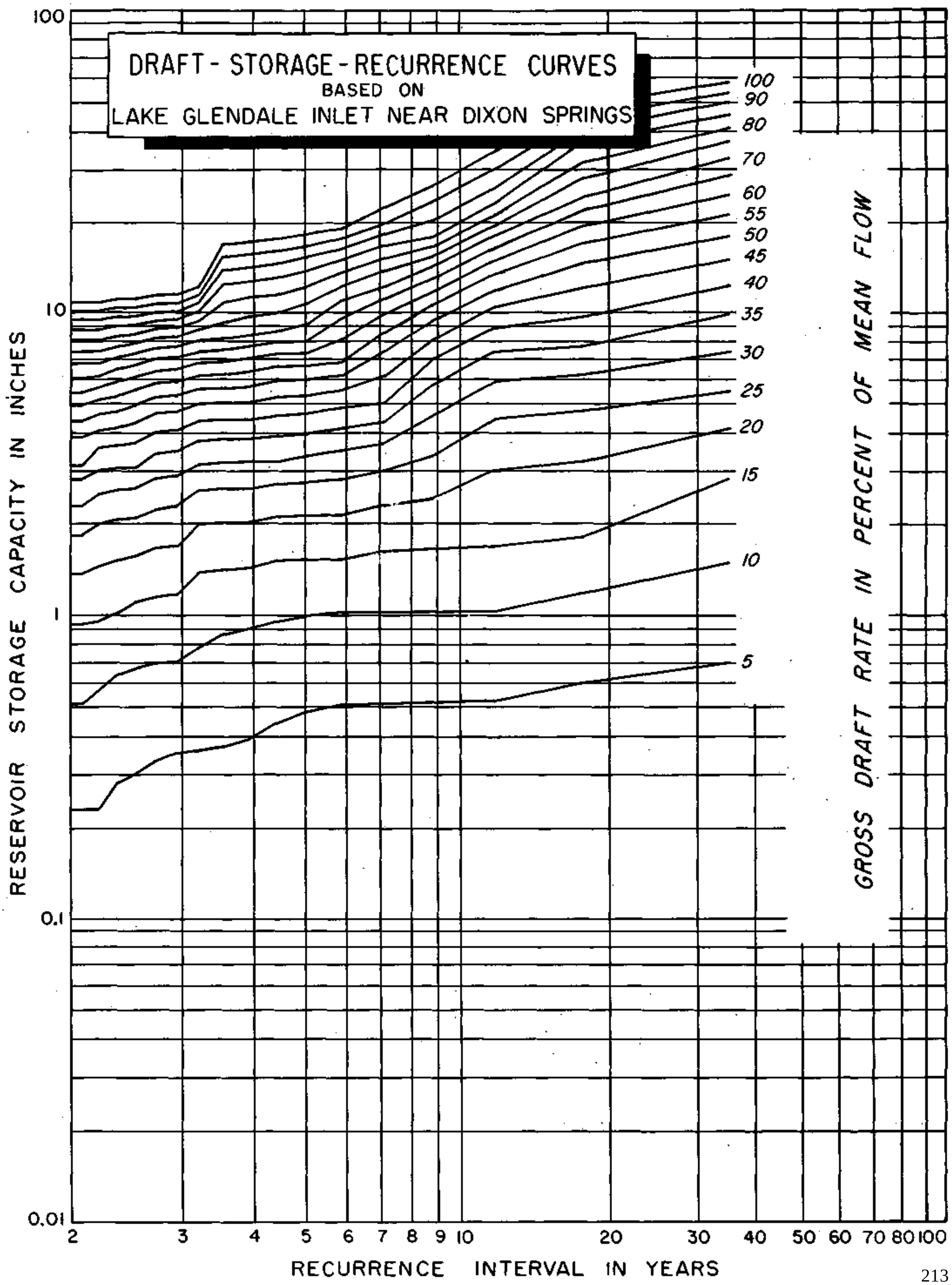
SYNTHETIC FLOW DATA
PERIOD: 30 years; water years 1925-54
INDEX STATION : Cache River at Forman
COINCIDENT RECORD: 5 years; water years 1955-59

TOTAL DATA ANALYZED
PERIOD: 35 years; water years 1925-59
MEAN DISCHARGE : 1.50 inches per month

Draft-Storage-Recurrence Data for Lake Glendale Inlet near Dixon Springs

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
35.0	.70 10	1.62 16	2.85 18	4.20 18	5.55 18	7.52 32	9.93 34	12.48 34	15.03 34	17.94 44	21.24 44	24.54 44	28.38 56	32.58 56	36.78 56	40.98 56	45.18 56	49.38 56	53.58 56	57.78 56
17.5	.60 8	1.20 8	1.87 10	3.26 20	4.76 20	6.26 20	7.76 20	9.76 32	12.16 32	14.56 32	16.96 32	19.36 32	21.76 32	24.21 46	27.66 46	31.50 58	35.85 58	40.20 58	44.55 58	48.90 58
11.7	.52 7	1.04 7	1.72 10	3.05 18	4.46 20	5.96 20	7.46 20	8.96 20	10.46 20	11.96 20	13.46 20	14.96 20	16.46 20	17.96 20	19.46 20	20.97 28	23.07 28	25.75 56	29.95 56	34.15 56
8.8	.52 7	1.04 7	1.69 9	2.42 10	3.35 16	4.55 16	5.75 16	6.95 16	8.15 16	9.35 16	10.55 16	11.75 16	12.95 16	14.15 16	15.35 16	16.55 16	17.78 18	20.14 40	23.14 40	26.14 40
7.0	.51 7	1.03 7	1.65 9	2.32 9	3.00 9	3.67 9	4.35 9	5.02 9	6.18 16	7.38 16	8.58 16	9.78 16	10.98 16	12.18 16	13.61 20	15.11 20	16.61 20	18.11 20	19.62 34	22.17 34
5.8	.51 7	1.03 7	1.56 7	2.15 8	2.82 9	3.49 9	4.17 9	4.84 9	5.52 9	6.19 9	6.87 9	8.21 18	9.56 18	10.91 18	12.26 18	13.61 18	14.96 18	16.31 18	17.66 18	19.01 18
5.0	.48 7	1.00 7	1.55 8	2.15 8	2.75 8	3.35 8	3.96 9	4.63 9	5.31 9	5.98 9	6.66 9	7.33 9	8.01 9	9.20 20	10.70 20	12.20 20	13.70 20	15.20 20	16.70 20	18.20 20
4.4	.44 7	.96 7	1.52 8	2.12 8	2.72 8	3.32 8	3.92 8	4.58 9	5.26 9	5.93 9	6.61 9	7.28 9	7.96 9	8.63 9	9.97 20	11.47 20	12.97 20	14.47 20	15.97 20	17.47 20
3.9	.39 7	.91 7	1.44 7	2.03 8	2.63 8	3.23 8	3.83 8	4.43 8	5.03 9	5.70 9	6.38 9	7.05 9	7.73 9	8.40 9	9.69 20	11.19 20	12.69 20	14.19 20	15.69 20	17.19 20
3.5	.37 5	.87 7	1.42 8	2.02 8	2.62 8	3.22 8	3.82 8	4.42 8	5.02 8	5.62 8	6.22 8	6.84 9	7.52 9	8.19 9	9.25 20	10.75 20	12.25 20	13.75 20	15.25 20	16.75 20
3.2	.36 5	.79 8	1.39 8	1.99 8	2.59 8	3.19 8	3.79 8	4.39 8	4.99 8	5.59 8	6.19 8	6.79 8	7.40 9	8.07 9	8.75 9	9.42 9	10.10 9	10.77 9	11.45 9	12.14 10
2.9	.35 5	.72 6	1.18 7	1.70 7	2.29 8	2.89 8	3.49 8	4.09 8	4.69 8	5.29 8	5.89 8	6.49 8	7.09 8	7.69 8	8.29 8	8.89 8	9.49 8	10.09 8	10.73 10	11.48 10
2.7	.33 5	.70 6	1.15 7	1.67 7	2.23 8	2.83 8	3.43 8	4.03 8	4.63 8	5.23 8	5.83 8	6.43 8	7.03 8	7.63 8	8.23 8	8.83 8	9.43 8	10.03 8	10.64 10	11.39 10
2.5	.30 4	.67 6	1.12 6	1.58 7	2.11 7	2.63 7	3.16 7	3.72 8	4.32 8	4.92 8	5.52 8	6.12 8	6.72 8	7.32 8	7.92 8	8.52 8	9.12 8	9.72 8	10.38 9	11.05 10
2.3	.28 4	.64 5	1.02 7	1.54 7	2.07 7	2.59 7	3.12 7	3.64 7	4.17 7	4.69 7	5.28 8	5.88 8	6.48 8	7.08 8	7.68 8	8.33 9	9.01 9	9.68 9	10.36 9	11.03 9
2.2	.23 3	.58 5	.96 6	1.47 7	2.00 7	2.52 7	3.05 7	3.57 7	4.10 7	4.62 7	5.15 7	5.67 7	6.20 7	6.79 9	7.47 9	8.14 9	8.82 9	9.49 9	10.17 9	10.84 9
2.1	.23 3	.51 4	.94 6	1.39 6	1.84 6	2.30 7	2.83 7	3.35 7	3.88 7	4.40 7	4.93 7	5.45 7	6.10 9	6.77 9	7.45 9	8.12 9	8.80 9	9.47 9	10.15 9	10.82 9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LAKE GLENDALE INLET NEAR DIXON SPRINGS
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
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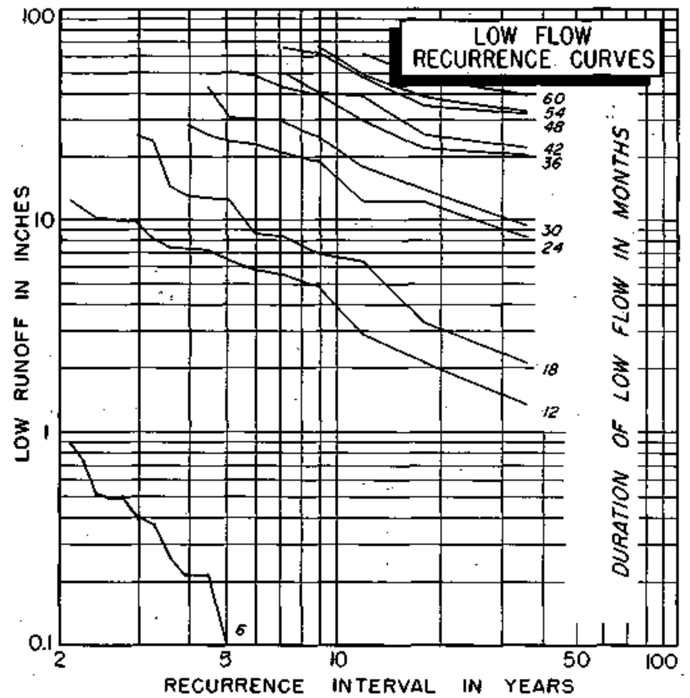
5



STATION 16

LOCATION
In NE ¼ SE ¼ sec 5, T13S, R5E, Pope County, at abandoned highway bridge 2.0 miles north of Dixon Springs

DRAINAGE AREA
9.70 square miles

ACTUAL FLOW DATA
PERIOD: Apr 1950 thru Sept 1959
CONTINUOUS RECORD: 9 years; water years 1951-59

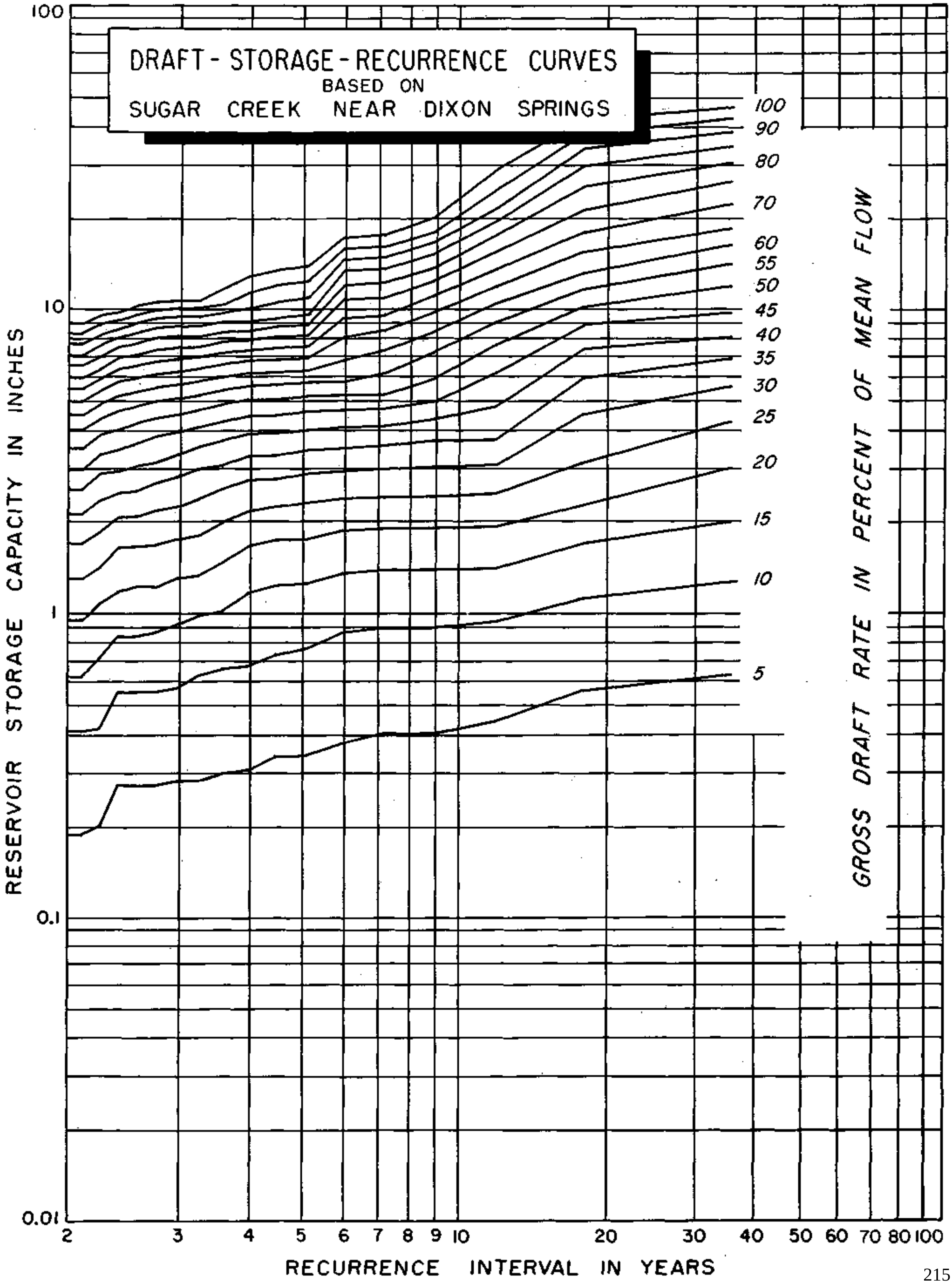
SYNTHETIC FLOW DATA
PERIOD: 26 years; water years 1925-50
INDEX STATION: Cache River at Forman
COINCIDENT RECORD: 9 years; water years 1951-59

TOTAL DATA ANALYZED
PERIOD : 35 years; water years 1925-59
MEAN DISCHARGE: 1.43 inches per month

Draft-Storage-Recurrence Data for Sugar Creek near Dixon Springs

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
35.0	.63 9	1.28 10	2.00 10	3.01 18	4.30 18	5.58 18	6.87 18	8.16 18	9.61 30	11.95 30	14.10 30	16.24 30	18.45 32	22.30 56	26.30 56	30.30 56	34.31 56	38.31 56	42.32 56	46.33 58
17.5	.56 8	1.13 8	1.71 8	2.28 8	3.12 18	4.50 20	5.93 20	7.36 20	8.79 20	10.22 20	11.65 20	13.08 20	15.41 34	17.84 34	21.08 58	25.22 58	29.37 58	33.52 58	37.66 58	41.81 58
11.7	.44 7	.94 7	1.44 7	1.94 7	2.48 8	3.08 9	3.72 9	4.79 16	6.17 20	7.60 20	9.03 20	10.46 20	11.89 20	13.48 28	15.48 28	17.48 28	19.48 28	21.49 28	24.65 56	28.65 56
8.8	.40 7	.90 7	1.40 7	1.90 7	2.43 8	3.05 9	3.69 9	4.34 9	4.98 9	5.87 18	7.16 18	8.44 18	9.73 18	11.02 18	12.31 18	13.66 20	15.09 20	16.52 20	17.95 20	19.89 42
7.0	.40 7	.90 7	1.40 7	1.90 7	2.40 8	2.97 8	3.54 8	4.12 8	4.69 8	5.26 8	6.15 16	7.30 16	8.44 16	9.61 18	10.90 18	12.18 18	13.47 18	14.76 18	16.04 18	17.33 18
5.8	.37 7	.87 7	1.37 7	1.87 7	2.37 7	2.91 8	3.48 8	4.06 8	4.63 8	5.20 8	5.77 8	6.76 18	8.05 18	9.34 18	10.63 18	11.91 18	13.20 18	14.49 18	15.77 18	17.06 18
5.0	.34 6	.77 6	1.26 7	1.76 7	2.30 8	2.87 8	3.44 8	4.02 8	4.59 8	5.16 8	5.73 8	6.30 8	6.89 9	7.53 9	8.17 9	8.82 9	9.54 20	10.97 20	12.40 20	13.83 20
4.4	.34 5	.74 7	1.24 7	1.74 7	2.24 7	2.75 8	3.32 8	3.90 8	4.47 8	5.04 8	5.61 8	6.18 8	6.77 9	7.41 9	8.05 9	8.70 9	9.34 9	10.53 20	11.96 20	13.39 20
3.9	.31 5	.67 7	1.17 7	1.67 7	2.17 8	2.74 8	3.31 8	3.89 8	4.46 8	5.03 8	5.60 8	6.17 8	6.75 8	7.32 8	7.89 8	8.48 9	9.12 9	10.08 18	11.36 18	12.78 20
3.5	.30 5	.66 5	1.01 6	1.49 7	1.99 8	2.56 8	3.13 8	3.71 8	4.28 8	4.85 8	5.42 8	5.99 8	6.57 8	7.14 9	7.78 9	8.43 9	9.07 9	9.71 9	10.36 9	11.69 22
3.2	.28 4	.63 5	.98 5	1.36 6	1.81 8	2.38 8	2.95 8	3.53 8	4.10 8	4.67 8	5.24 8	5.81 8	6.39 8	6.96 8	7.53 8	8.12 9	8.76 9	9.40 9	10.05 9	10.69 9
2.9	.28 4	.57 5	.92 5	1.32 6	1.75 6	2.24 7	2.78 8	3.36 8	3.93 8	4.50 8	5.07 8	5.64 8	6.22 8	6.82 9	7.46 9	8.11 9	8.75 9	9.39 9	10.04 9	10.68 9
2.7	.27 4	.55 4	.87 5	1.23 6	1.68 7	2.18 7	2.68 7	3.25 8	3.82 8	4.39 8	4.96 8	5.53 8	6.11 8	6.69 9	7.33 9	7.98 9	8.62 9	9.26 9	9.91 9	10.55 9
2.5	.27 4	.55 4	.84 4	1.23 6	1.66 6	2.08 6	2.51 6	3.06 8	3.63 8	4.20 8	4.77 8	5.34 8	5.92 8	6.49 8	7.06 9	7.71 9	8.35 9	8.99 9	9.64 9	10.28 9
2.3	.27 4	.55 4	.84 4	1.21 6	1.64 6	2.06 6	2.49 6	2.92 6	3.45 8	4.02 8	4.59 8	5.16 8	5.74 8	6.31 8	6.88 8	7.45 8	8.02 8	8.60 8	9.17 8	9.75 9
2.2	.20 3	.42 3	.72 5	1.08 5	1.44 5	1.85 7	2.35 7	2.85 7	3.35 7	3.86 7	4.36 7	4.86 7	5.36 7	5.86 7	6.36 7	6.96 9	7.60 9	8.24 9	8.89 9	9.53 9
2.1	.19 3	.41 3	.62 3	.95 5	1.34 5	1.69 6	2.12 6	2.55 6	2.98 6	3.48 7	3.98 7	4.48 7	4.98 7	5.48 7	5.98 7	6.51 8	7.08 8	7.70 9	8.35 9	8.99 9



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SUGAR CREEK NEAR DIXON SPRINGS
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
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20
30
40
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60
70
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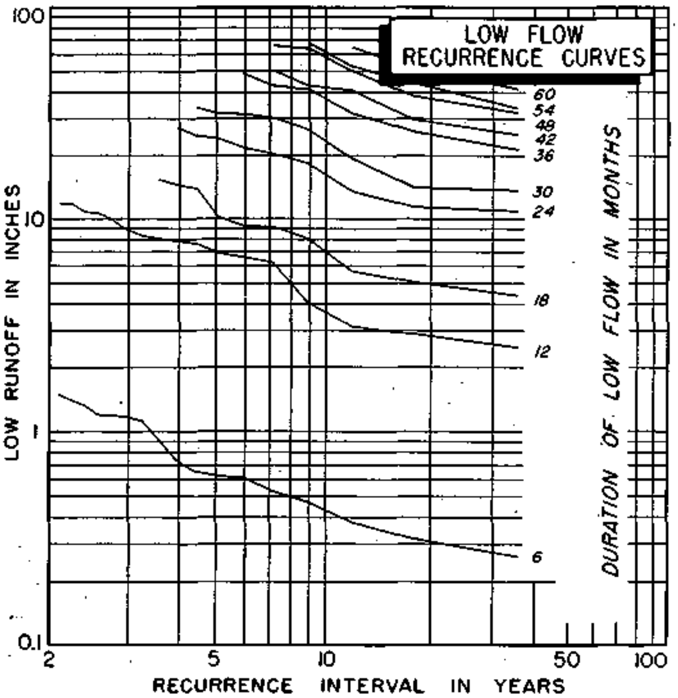
BIG CREEK NEAR WETAUG



STATION 36

LOCATION

In SW ¼ sec 5, T14S, R1E, Pulaski County, 2.0 miles southeast of Wetaug

DRAINAGE AREA

32.2 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1940 thru Sept 1959

CONTINUOUS RECORD: 19 years; water years 1941-59

SYNTHETIC FLOW DATA

PERIOD: 16 years; water years 1925-40

INDEX STATION : Cache River at Forman

COINCIDENT RECORD: 19 years; water years 1941-59

TOTAL DATA ANALYZED

PERIOD: 35 years; water years 1925-59

MEAN DISCHARGE : 1.42 inches per month

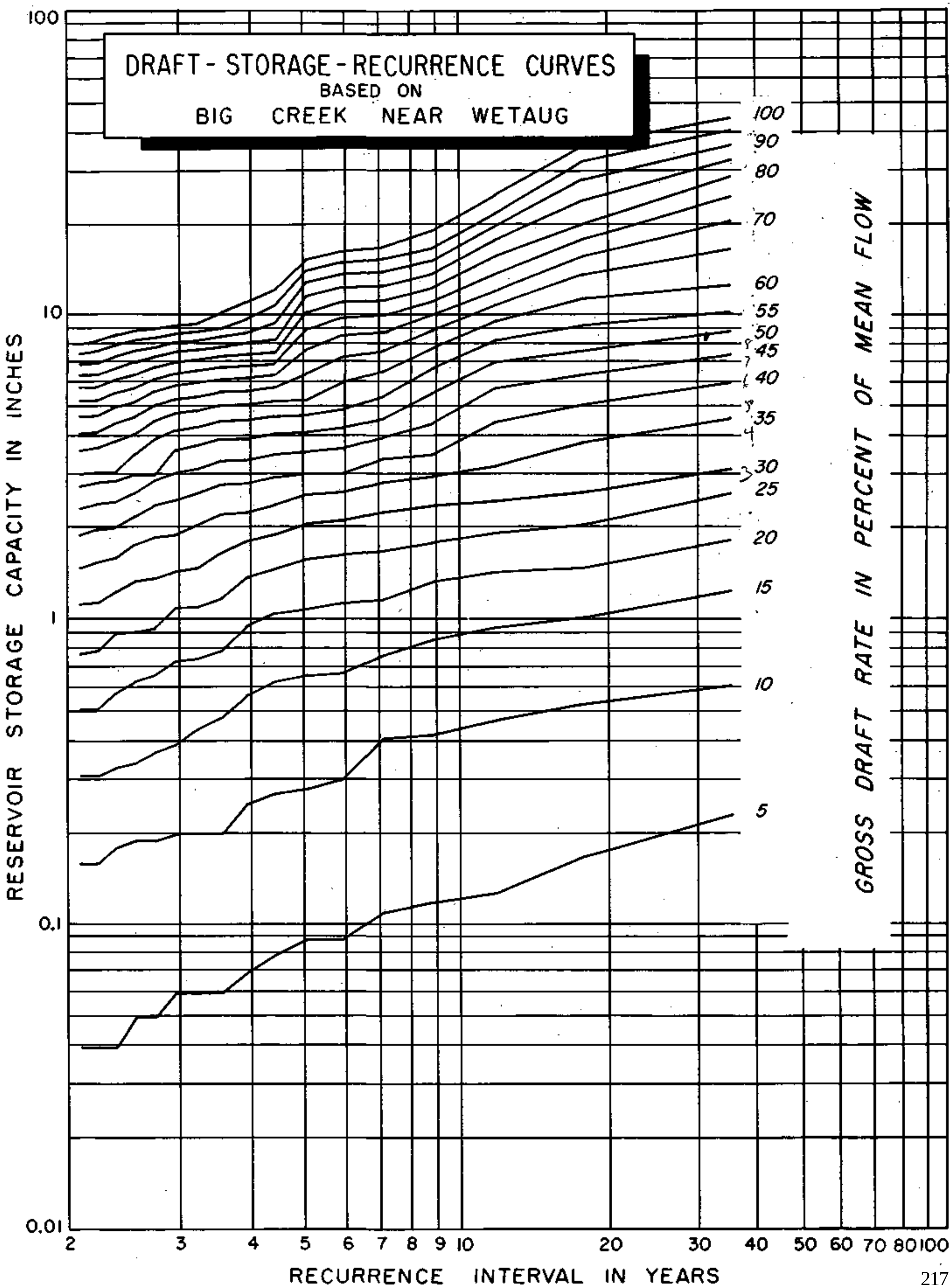
Draft-Storage-Recurrence Data for Big Creek near Wetaug

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Gross draft rate in percent of mean flow

Recurrence interval, years	5	10	15	20	25	30	35	40	45	50
35.0	.23	.61	1.25	1.91	2.62	3.33	4.64	6.06	7.48	8.90
	4	9	9	10	10	10	20	20	20	20
17.5	.17	.53	1.02	1.52	2.06	2.63	3.83	5.10	6.38	7.66
	5	6	7	7	8	8	18	18	16	18
11.7	.13	.47	.95	1.45	1.95	2.47	3.22	4.49	5.77	7.05
	4	6	7	7	7	10	18	18	18	18
8.8	.12	.42	.87	1.37	1.87	2.38	2.95	3.51	4.43	5.57
	4	5	7	7	7	8	8	8	16	16
7.0	.11	.41	.77	1.17	1.70	2.27	2.84	3.40	3.97	4.58
	4	5	5	7	8	8	8	8	8	9
5.8	.09	.30	.67	1.14	1.64	2.13	2.63	3.13	3.65	4.26
	2	4	6	7	7	7	7	7	8	9
5.0	.090	.28	.66	1.09	1.59	2.08	2.58	3.08	3.57	4.12
	2	4	6	7	7	7	7	7	7	8
4.4	.08	.27	.63	1.05	1.48	1.91	2.40	2.96	3.53	4.10
	2	4	6	6	6	6	8	8	8	6
3.9	.07	.25	.57	.96	1.39	1.82	2.26	2.81	3.38	3.95
	2	4	5	6	6	6	7	8	8	8
3.5	.06	.20	.48	.79	1.20	1.67	2.23	2.79	3.36	3.93
	2	4	4	5	6	7	8	8	8	8
3.2	.06	.20	.44	.75	1.11	1.50	2.04	2.60	3.17	3.74
	2	2	4	5	5	7	8	8	8	8
2.9	.06	.20	.39	.74	1.10	1.45	1.92	2.48	3.05	3.62
	2	2	5	5	5	5	8	8	8	8
2.7	.05	.19	.37	.66	.94	1.38	1.88	2.38	2.87	3.37
	2	2	4	4	4	7	7	7	7	7
2.5	.05	.19	.34	.63	.92	1.35	1.77	2.20	2.62	3.05
	2	2	4	4	6	6	6	6	6	6
2.3	.04	.18	.33	.58	.90	1.25	1.61	2.03	2.45	2.88
	2	2	2	4	5	5	5	6	6	6
2.2	.04	.16	.31	.51	.80	1.15	1.56	1.99	2.41	2.84
	1	2	2	3	5	5	6	6	6	6
2.1	.04	.16	.31	.51	.78	1.13	1.49	1.91	2.33	2.76
	1	2	2	3	5	5	5	6	6	6

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
35.0	10.32	12.65	16.63	20.60	24.58	28.56	32.53	36.51	40.48	44.46
	20	56	56	56	56	56	56	56	56	56
17.5	9.31	11.44	13.57	15.70	17.83	19.96	23.95	28.06	32.18	36.30
	30	30	30	30	30	32	58	58	58	58
11.7	8.33	9.61	10.88	12.16	13.72	15.71	17.70	19.68	21.67	25.01
	16	18	18	18	28	28	28	28	28	56
8.8	6.71	7.84	8.98	10.11	11.25	12.39	13.78	15.20	16.62	19.02
	16	15	16	16	16	16	20	20	20	56
7.0	5.41	6.54	7.68	8.81	9.99	11.27	12.58	14.00	15.42	16.84
	16	16	16	16	18	18	20	20	20	20
5.8	4.90	6.02	7.29	8.57	9.85	11.13	12.41	13.68	14.96	16.24
	9	18	18	18	18	18	18	18	18	18
5.0	4.69	5.26	6.43	7.71	8.99	10.27	11.55	12.82	14.16	15.36
	8	8	18	18	18	18	18	18	18	18
4.4	4.67	5.24	5.80	6.37	6.96	7.59	8.34	9.48	10.82	12.24
	6	8	8	8	9	9	16	16	20	20
3.9	4.52	5.09	5.65	6.22	6.85	7.48	8.12	8.76	9.74	11.11
	8	8	8	8	9	9	9	9	18	20
3.5	4.50	5.07	5.63	6.20	6.77	7.34	7.91	8.47	9.04	10.23
	8	8	8	8	8	8	8	8	8	18
3.2	4.31	4.88	5.44	6.01	6.58	7.15	7.72	8.28	8.85	9.42
	8	8	8	8	8	8	8	8	8	8
2.9	4.19	4.76	5.32	5.89	6.46	7.03	7.60	8.16	8.73	9.30
	8	8	8	8	8	8	8	8	8	8
2.7	3.93	4.50	5.06	5.63	6.20	6.77	7.34	7.90	8.47	9.08
	8	8	8	8	8	8	8	8	8	9
2.5	3.51	4.08	4.64	5.21	5.78	6.40	7.04	7.68	8.32	8.96
	8	8	8	8	8	9	9	9	9	9
2.3	3.31	3.87	4.43	5.00	5.57	6.14	6.71	7.35	7.99	8.63
	6	8	8	8	8	8	9	9	9	9
2.2	3.27	3.69	4.13	4.70	5.27	5.84	6.41	7.04	7.68	8.32
	6	6	8	8	8	8	8	9	9	9
2.1	3.19	3.61	4.11	4.68	5.25	5.82	6.39	6.95	7.52	8.09
	6	6	8	8	8	8	8	8	8	8


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
BIG CREEK NEAR WETAUG
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
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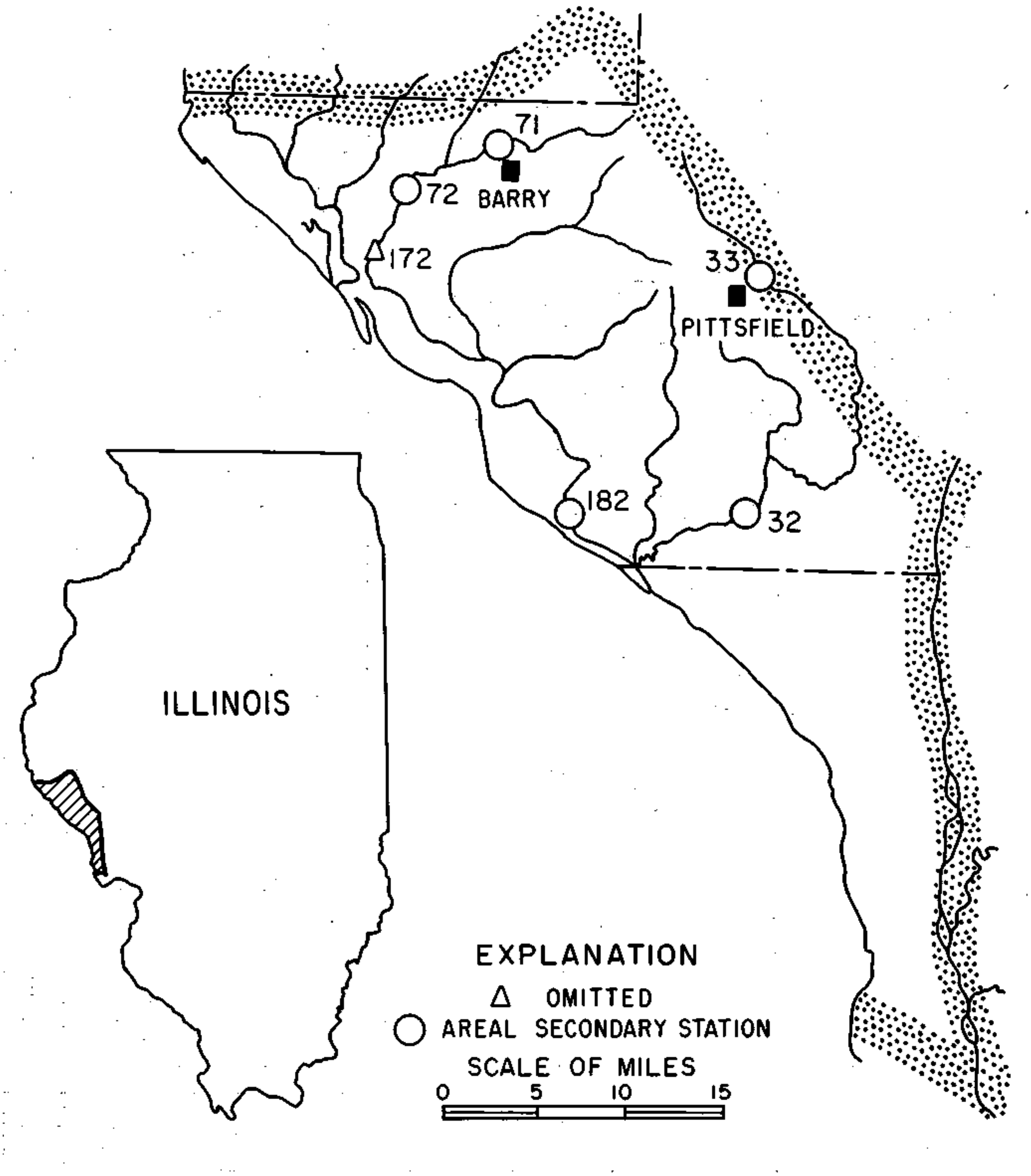
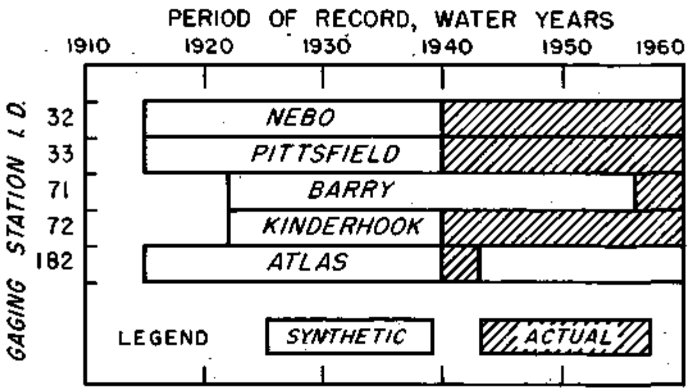


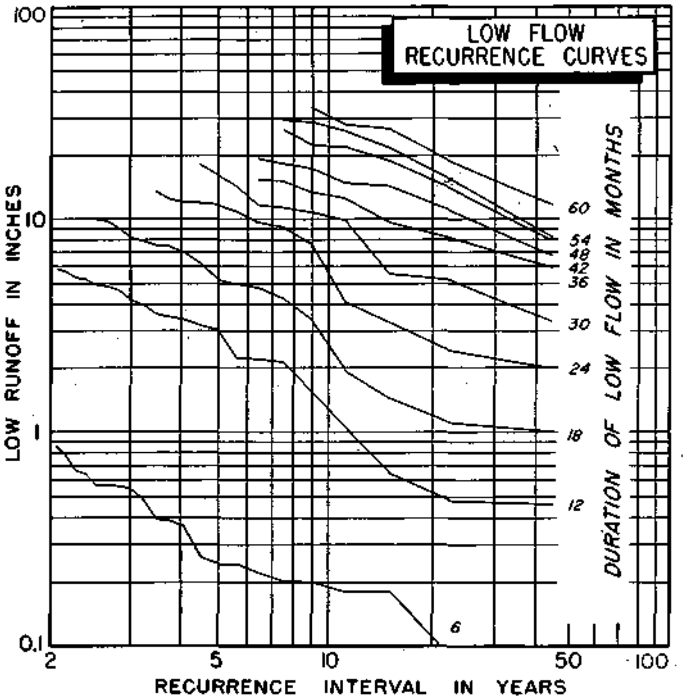
Lincoln Hills

Gaging Stations in Lincoln Hills

STATION OMITTED

		REASON
172	Hadley Creek near Shinn	*Used Station 72 instead*





STATION 32

LOCATION

In NW ¼ sec 19, T7S, R3W, Pike County, 40 feet downstream from highway bridge, 500 feet upstream from Spring Creek, 0.25 mile west of Nebo; records include flow of Spring Creek

DRAINAGE AREA

162 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1939 thru Sept 1959

CONTINUOUS RECORD: 20 years; water years 1940-59

SYNTHETIC FLOW DATA

PERIOD: 25 years; water years 1915-39

INDEX STATION : Macoupin Creek near Kane

COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

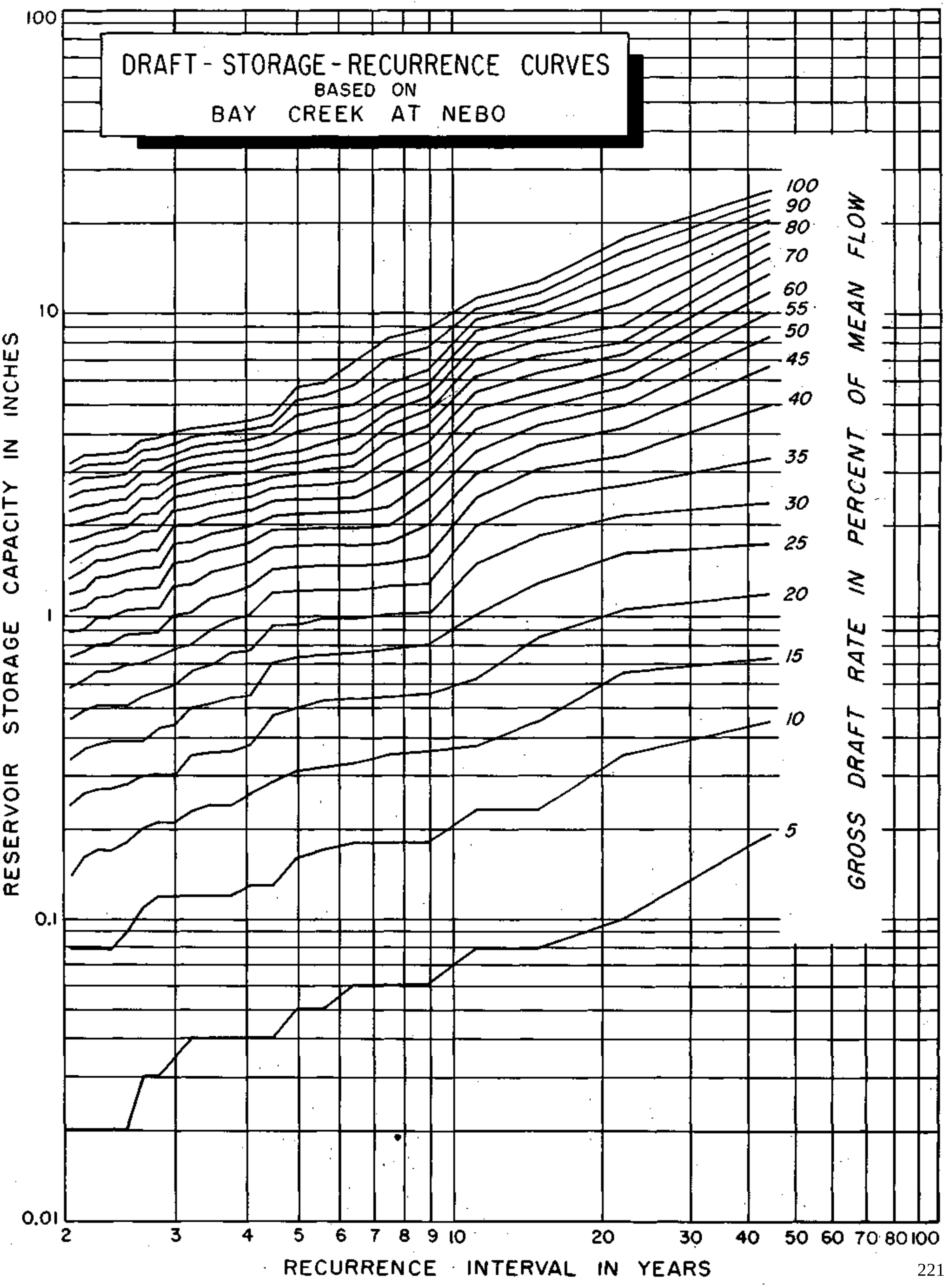
MEAN DISCHARGE : 0.61 inch per month

Draft-Storage-Recurrence Data for Bay Creek at Nebo

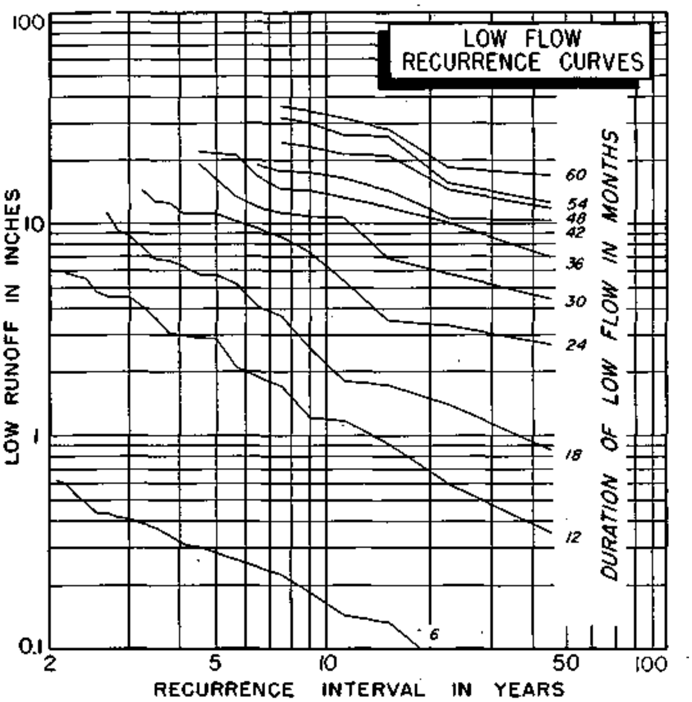
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(*Duration of critical drawdown period in months shown below each capacity value*)

Recurrence interval, *years*	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.19	.45	.73	1.19	1.74	2.38	3.35	5.05	6.76	8.47	10.18	11.89	13.59	15.30	17.01	18.72	20.43	22.13	23.86	25.63
	7	9	10	18	18	24	56	56	56	56	56	56	56	56	56	56	56	56	58	58
22.5	.10	.35	.66	1.08	1.63	2.17	2.72	3.43	4.23	5.02	5.81	6.61	7.40	8.19	9.27	10.98	12.69	14.39	16.10	17.81
	5	10	10	18	18	18	18	26	26	26	26	26	26	26	56	56	56	56	56	56
15.0	.08	.23	.45	.87	1.30	1.86	2.47	3.08	3.69	4.30	4.91	5.57	6.42	7.28	8.13	9.04	9.96	10.87	11.79	12.89
	4	5	12	14	14	20	20	20	20	20	20	28	28	28	30	30	30	30	30	40
11.3	.08	.23	.38	.63	1.02	1.51	2.00	2.48	2.98	3.53	4.19	4.86	5.53	6.23	7.08	7.93	8.79	9.64	10.50	11.35
	3	5	8	8	16	16	16	16	18	18	22	22	22	28	28	28	28	28	28	28
9.0	.06	.18	.36	.57	.81	1.05	1.30	1.60	2.02	2.45	2.88	3.30	3.77	4.26	4.81	5.35	5.90	6.55	7.77	8.99
	4	5	7	8	8	8	8	14	14	14	14	14	16	18	18	18	18	40	40	40
7.5	.06	.18	.35	.55	.78	1.02	1.27	1.51	1.76	2.00	2.32	2.81	3.29	3.78	4.27	4.76	5.25	5.89	7.11	8.33
	4	5	6	7	8	8	8	8	8	10	16	16	16	16	16	16	16	40	40	40
6.4	.06	.16	.33	.54	.76	.99	1.24	1.48	1.73	1.97	2.22	2.49	2.82	3.16	3.49	3.96	4.51	5.06	5.83	6.95
	4	4	7	7	7	8	8	8	8	8	9	11	11	11	11	18	18	18	32	44
5.6	.05	.17	.32	.53	.75	.99	1.24	1.48	1.73	1.97	2.21	2.46	2.72	3.06	3.39	3.74	4.29	4.84	5.39	5.94
	4	4	7	7	8	8	8	8	8	8	8	8	11	11	11	18	18	18	18	18
5.0	.05	.16	.31	.50	.74	.98	1.23	1.47	1.72	1.96	2.20	2.45	2.71	2.98	3.26	3.54	4.09	4.64	5.19	5.74
	3	4	6	8	8	8	8	8	8	8	8	8	9	9	9	18	18	18	18	18
4.5	.04	.13	.29	.47	.71	.95	1.20	1.44	1.69	1.93	2.17	2.42	2.66	2.91	3.16	3.43	3.72	4.02	4.33	4.66
	3	5	6	8	8	8	8	8	8	8	8	8	8	8	9	9	10	10	10	18
4.1	.04	.13	.26	.39	.56	.78	1.03	1.27	1.52	1.76	2.00	2.25	2.49	2.74	3.01	3.28	3.56	3.86	4.17	4.47
	2	4	4	5	7	8	8	8	8	8	8	8	8	8	5	9	10	10	10	10
3.8	.04	.12	.24	.36	.55	.76	.97	1.21	1.46	1.70	1.94	2.19	2.44	2.71	2.99	3.26	3.54	3.81	4.09	4.36
	2	3	4	5	7	7	8	8	8	8	8	8	9	9	9	9	9	9	9	9
3.5	.04	.12	.24	.36	.52	.70	.92	1.16	1.41	1.65	1.89	2.14	2.38	2.64	2.92	3.19	3.47	3.74	4.02	4.29
	2	3	4	4	6	6	8	8	8	8	8	8	8	9	9	9	9	9	9	9
3.2	.04	.12	.23	.35	.50	.66	.81	1.04	1.29	1.53	1.77	2.02	2.29	2.56	2.84	3.11	3.39	3.66	3.94	4.21
	2	3	4	5	5	5	5	8	8	8	8	8	9	9	9	9	9	9	9	9
3.0	.03	.12	.21	.32	.44	.60	.78	1.02	1.27	1.51	1.75	2.00	2.24	2.49	2.73	2.97	3.22	3.46	3.76	4.06
	3	3	3	4	5	5	8	8	8	8	8	8	8	8	8	8	8	8	10	10
2.8	.03	.12	.21	.31	.43	.59	.74	.89	1.08	1.26	1.46	1.67	1.93	2.20	2.48	2.75	3.03	3.31	3.62	3.92
	3	3	3	3	5	5	5	6	6	6	7	7	9	9	9	9	9	10	10	10
2.6	.03	.11	.20	.30	.39	.55	.70	.88	1.07	1.25	1.45	1.66	1.92	2.19	2.47	2.74	3.02	3.29	3.57	3.84
	2	3	3	3	5	5	6	6	6	6	7	7	9	9	9	9	9	9	9	9
2.5	.02	.09	.18	.28	.39	.51	.69	.87	1.06	1.24	1.42	1.61	1.79	1.98	2.22	2.46	2.71	2.97	3.25	3.52
	2	3	3	3	4	6	6	6	6	6	6	6	6	6	8	8	8	9	9	9
2.4	.02	.08	.17	.27	.39	.51	.66	.82	1.01	1.19	1.37	1.56	1.74	1.95	2.19	2.43	2.68	2.92	3.20	3.47
	2	3	3	4	4	5	5	6	6	6	6	6	6	8	8	8	8	9	9	9
2.3	.02	.08	.17	.27	.38	.51	.66	.81	.99	1.17	1.35	1.54	1.72	1.90	2.12	2.36	2.64	2.91	3.19	3.46
	2	3	3	3	4	5	5	5	6	6	6	6	6	6	8	9	9	9	9	9
2.1	.02	.08	.16	.26	.37	.49	.62	.77	.92	1.08	1.24	1.43	1.61	1.82	2.06	2.33	2.61	2.88	3.16	3.43
	2	2	3	3	4	4	5	5	5	5	6	6	7	7	9	9	9	9	9	9
2.0	.02	.08	.14	.24	.34	.46	.59	.74	.89	1.05	1.20	1.35	1.52	1.77	2.01	2.25	2.50	2.74	2.99	3.23
	2	2	3	3	4	4	5	5	5	5	5	5	8	8	8	8	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BAY CREEK AT NEBO
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 33

LOCATION

In NE ¼ SW ¼ sec 18, T5S, R3W, Pike County, at abandoned highway bridge, 0.1 mile downstream from bridge on Ill. 107, 1.4 miles northeast of Pittsfield

DRAINAGE AREA

39.6 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1939 thru Sept 1959
CONTINUOUS RECORD : 20 years; water years 1940-59

SYNTHETIC FLOW DATA

PERIOD: 25 years; water years 1915-39
INDEX STATION : Macoupin Creek near Kane
COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED

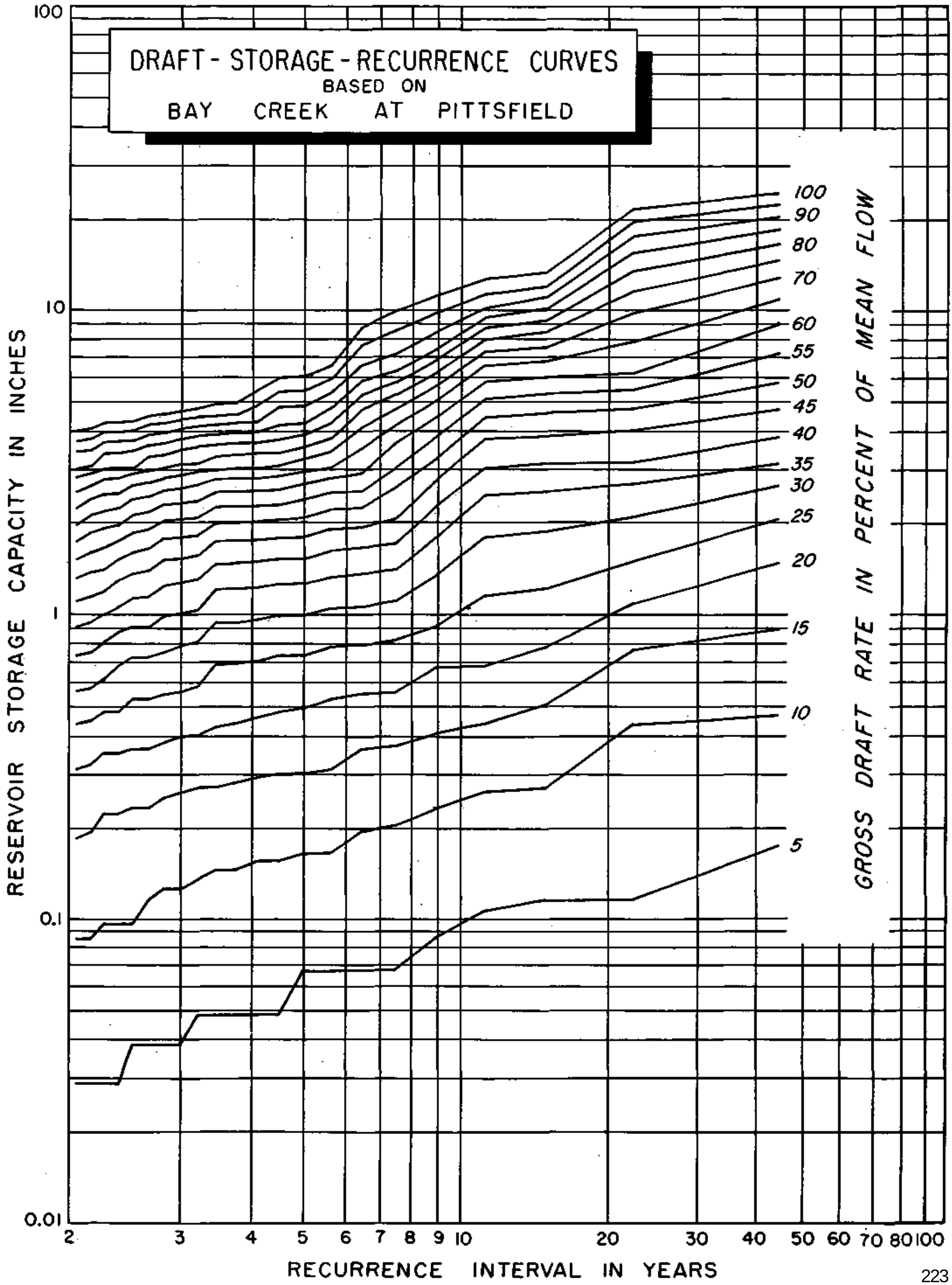
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.66 inch per month

Draft-Storage-Recurrence Data for Bay Creek at Pittsfield

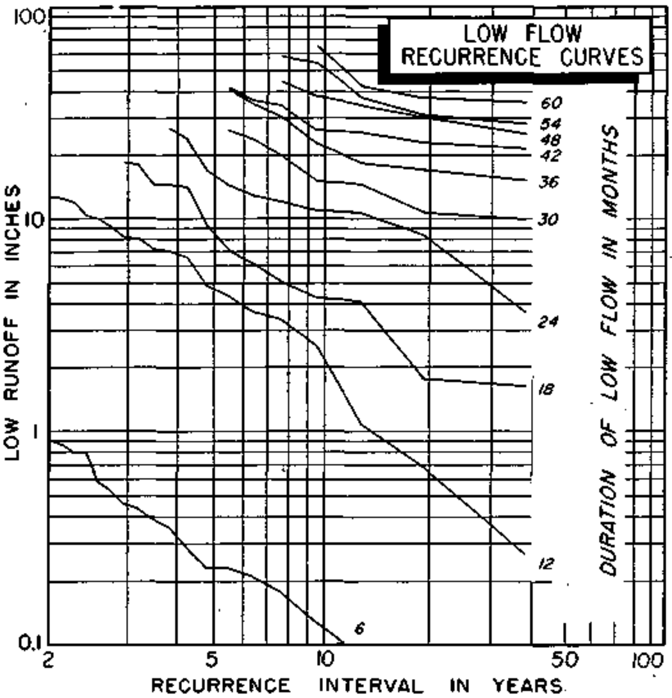
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow									
	5	10	15	20	25	30	35	40	45	50
45.0	.18 9	.48 10	.91 18	1.51 18	2.10 18	2.69 18	3.29 18	3.89 20	4.77 32	5.83 32
22.5	.12 10	.45 10	.78 10	1.11 10	1.53 18	2.12 18	2.72 18	3.34 22	4.06 22	4.79 22
15.0	.12 5	.28 5	.52 8	.80 14	1.26 14	1.91 20	2.57 20	3.23 20	3.89 22	4.62 22
11.3	.11 5	.27 5	.45 7	.69 8	1.18 20	1.84 20	2.50 20	3.16 20	3.82 20	4.48 20
9.0	.09 4	.24 5	.42 8	.69 8	.95 8	1.37 14	1.83 14	2.30 14	2.78 16	3.31 18
7.5	.07 4	.21 5	.38 5	.57 8	.84 9	1.13 9	1.43 9	1.73 9	2.11 16	2.64 16
6.4	.07 3	.20 5	.37 5	.56 7	.81 8	1.08 9	1.38 9	1.68 9	1.97 9	2.27 9
5.6	.07 3	.17 4	.32 6	.54 8	.80 8	1.06 8	1.35 9	1.65 9	1.94 9	2.24 9
5.0	.07 3	.17 4	.31 5	.50 7	.75 8	1.01 8	1.28 8	1.54 8	1.81 9	2.11 9
4.5	.05 3	.16 4	.31 5	.49 8	.75 8	1.01 8	1.28 8	1.54 8	1.81 8	2.07 8
4.1	.05 3	.16 4	.30 4	.47 6	.72 8	.98 8	1.25 8	1.51 8	1.78 8	2.04 8
3.8	.05 3	.15 4	.29 4	.45 8	.71 8	.97 8	1.24 8	1.50 8	1.77 8	2.03 8
3.5	.05 3	.15 3	.28 4	.44 8	.70 8	.96 8	1.23 8	1.49 8	1.76 8	2.02 8
3.2	.05 2	.14 4	.28 4	.41 5	.60 7	.83 7	1.06 8	1.32 8	1.59 8	1.85 8
3.0	.04 2	.13 4	.27 4	.41 5	.58 5	.80 7	1.03 8	1.29 8	1.56 8	1.82 8
2.8	.04 2	.13 3	.26 4	.39 5	.56 6	.77 7	1.01 8	1.27 8	1.54 8	1.80 8
2.6	.04 2	.12 3	.24 4	.37 4	.54 6	.74 6	.94 7	1.17 7	1.42 8	1.68 8
2.5	.04 2	.10 4	.24 4	.37 4	.54 6	.74 6	.94 6	1.16 7	1.39 7	1.63 8
2.4	.03 2	.10 3	.23 4	.36 4	.49 6	.69 6	.89 6	1.08 7	1.31 7	1.54 7
2.3	.03 2	.10 3	.23 4	.36 4	.49 4	.63 6	.83 6	1.02 6	1.22 6	1.43 8
2.1	.03 2	.09 3	.20 4	.33 4	.46 4	.59 4	.77 6	.96 6	1.17 7	1.40 7
2.0	.03 2	.09 3	.19 4	.32 4	.45 4	.58 4	.75 6	.94 6	1.14 6	1.34 6

Recurrence interval, years	Gross draft rate in percent of mean flow									
	55	60	65	70	75	80	85	90	95	100
45.0	7.30 56	9.15 56	10.99 56	12.84 56	14.69 56	16.54 56	18.39 56	20.23 56	22.08 56	23.93 56
22.5	5.52 22	6.24 22	7.91 56	9.76 56	11.61 58	13.52 58	15.44 58	17.37 60	19.35 60	21.33 60
15.0	5.35 22	6.07 22	6.80 22	7.59 26	8.45 26	9.31 26	10.17 26	11.04 28	11.97 28	13.25 42
11.3	5.14 20	5.83 22	6.56 22	7.28 22	8.01 22	8.74 22	9.46 22	10.19 22	11.33 40	12.65 40
9.0	3.90 18	4.50 18	5.09 16	5.69 18	6.28 18	6.87 18	7.47 18	8.50 40	9.82 40	11.14 40
7.5	3.17 16	3.70 16	4.22 16	4.75 16	5.28 16	5.81 16	6.36 18	7.20 42	8.58 42	9.97 42
6.4	2.57 9	2.95 18	3.54 18	4.14 18	4.73 18	5.32 18	5.92 18	6.58 32	7.63 32	8.78 40
5.6	2.54 9	2.83 9	3.14 10	3.47 10	3.81 14	4.27 14	4.81 18	5.40 18	6.00 18	6.59 18
5.0	2.41 9	2.70 9	3.00 9	3.30 9	3.60 9	3.92 11	4.28 11	4.86 18	5.46 18	6.05 18
4.5	2.33 8	2.60 8	2.89 9	3.19 9	3.49 9	3.78 9	4.23 18	4.82 18	5.42 18	6.01 18
4.1	2.30 8	2.57 8	2.83 8	3.11 9	3.41 9	3.70 9	4.00 9	4.30 9	4.88 18	5.47 18
3.8	2.29 8	2.56 8	2.82 8	3.09 8	3.38 9	3.67 9	3.97 9	4.27 9	4.56 9	5.01 18
3.5	2.28 8	2.55 8	2.81 8	3.08 8	3.34 8	3.62 9	3.92 9	4.22 9	4.51 9	4.93 18
3.2	2.11 8	2.39 9	2.69 9	2.99 9	3.29 9	3.58 9	3.88 9	4.18 9	4.47 9	4.77 9
3.0	2.06 8	2.35 8	2.62 9	2.92 9	3.22 9	3.51 9	3.81 9	4.11 9	4.40 9	4.70 9
2.8	2.06 8	2.33 8	2.59 8	2.86 8	3.12 8	3.39 9	3.69 9	3.99 9	4.28 9	4.58 9
2.6	1.94 8	2.21 8	2.47 8	2.75 9	3.05 9	3.34 9	3.64 9	3.94 9	4.23 9	4.53 9
2.5	1.89 8	2.16 8	2.42 8	2.69 8	2.95 8	3.21 8	3.48 8	3.77 9	4.06 9	4.36 9
2.4	1.77 7	2.00 8	2.26 8	2.53 9	2.83 9	3.12 9	3.42 9	3.72 9	4.01 9	4.31 9
2.3	1.69 8	1.96 8	2.22 9	2.52 9	2.82 9	3.11 9	3.41 9	3.71 9	4.00 9	4.30 9
2.1	1.63 7	1.89 8	2.15 8	2.42 8	2.68 8	2.94 8	3.21 8	3.50 9	3.79 9	4.09 9
2.0	1.54 7	1.77 7	2.00 7	2.26 9	2.56 9	2.85 9	3.15 9	3.45 9	3.74 9	4.04 9



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BAY CREEK AT PITTSFIELD
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 71

LOCATION
In SW ¼ SW ¼ sec 14, T4S, R6W, Pike County, at U. S. 36 highway bridge, 1.8 miles northwest of Barry

DRAINAGE AREA
40.6 square miles

ACTUAL FLOW DATA
PERIOD: Sept 1955 thru Sept 1959
Data at this station are provisional
CONTINUOUS RECORD: 4 years; water years 1956-59

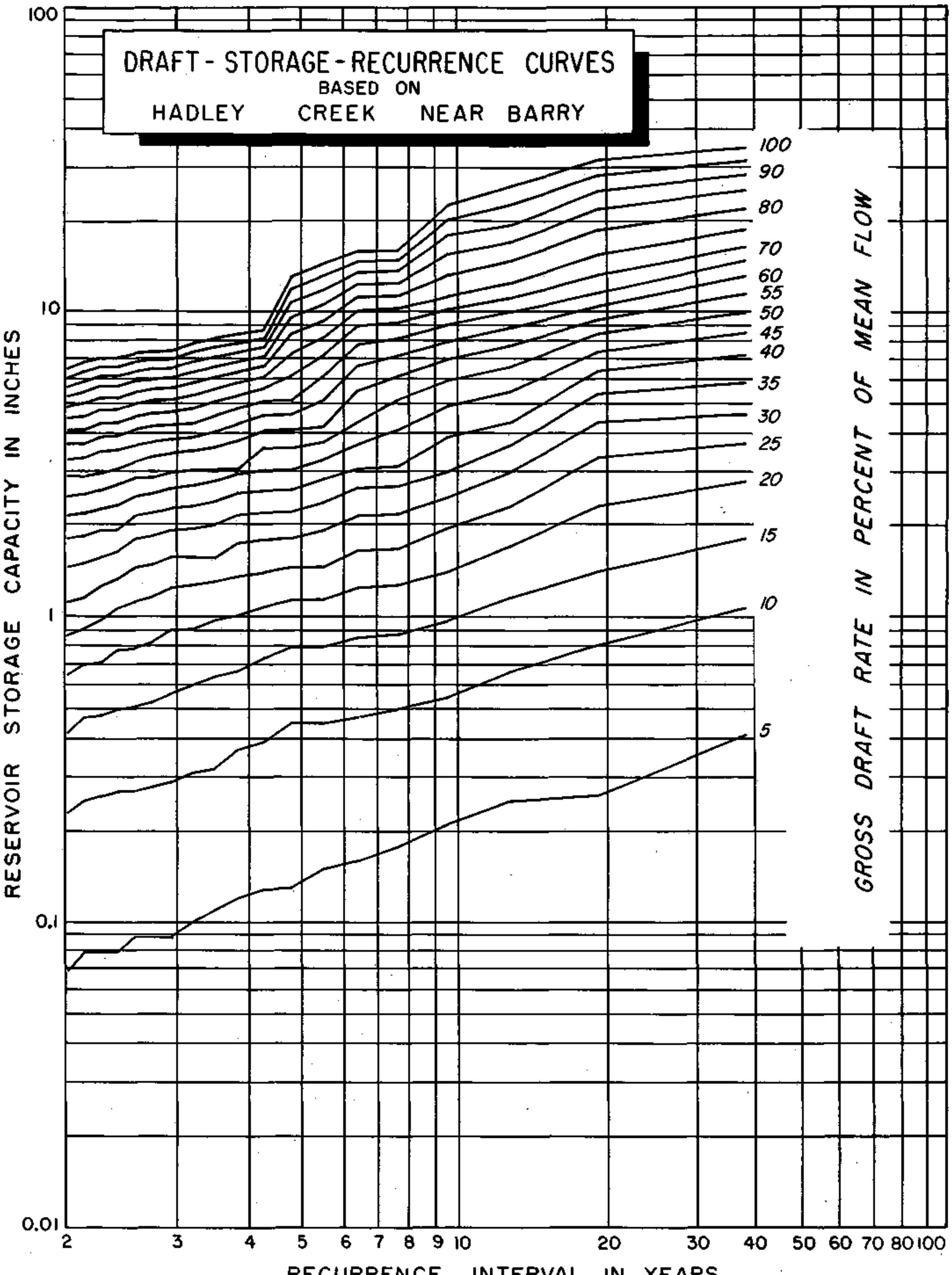
SYNTHETIC FLOW DATA
PERIOD: 34 years; water years 1922-55
INDEX STATION: La Moine River at Ripley
COINCIDENT RECORD: 4 years; water years 1956-59

TOTAL DATA ANALYZED
PERIOD: 38 years; water years 1922-59
MEAN DISCHARGE: 1.14 inches per month

Draft-Storage-Recurrence Data for Hadley Creek near Barry

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.41 12	1.10 12	1.90 15	2.81 16	3.72 16	4.63 16	5.91 24	7.27 24	8.64 24	10.02 28	11.62 28	13.21 28	14.81 28	15.40 28	18.75 56	21.94 56	25.13 56	28.33 56	31.52 56	34.71 56
19.0	.26 8	.82 11	1.45 11	2.31 18	3.34 18	4.37 18	5.39 18	6.42 18	7.44 18	8.47 18	9.50 18	10.52 18	11.59 26	13.28 28	15.53 56	18.72 56	21.91 56	25.11 56	28.30 56	31.59 58
12.7	.25 6	.67 8	1.17 10	1.74 10	2.31 12	2.99 12	3068 12	4.36 12	5.48 20	6.62 20	7.76 20	8.90 20	10.04 20	11.18 20	12.48 40	14.76 40	17.04 40	19.32 40	22.47 60	25.89 60
9.5	.21 6	.55 6	.97 8	1.45 9	1.97 9	2.48 9	2.99 9	3.90 18	4.92 18	5.95 18	6.98 18	8.00 18	9.07 20	10.21 20	11.35 20	13.22 40	15.50 40	17.78 40	20.06 40	22.34 40
7.6	.18 5	.50 6	.89 7	1.29 7	1.70 8	2.18 9	2.69 9	3.20 9	4.12 18	5.15 18	6.18 18	7.20 18	8.23 18	9.25 18	10.28 18	11.34 20	12.48 20	13.62 20	14.76 20	15.90 20
6.3	.16 5	.47 6	.85 7	1.25 7	1.65 7	2.15 9	2.66 9	3.17 9	3.69 9	4.37 20	5.51 20	6.65 20	7.79 20	8.93 20	10.07 20	11.21 20	12.35 20	13.49 20	14.63 20	15.77 20
5.4	.15 5	.45 6	.80 6	1.14 6	1.48 6	1.92 8	2.37 8	2.83 8	3.28 8	3.74 8	4.20 8	5.12 18	6.15 18	7.17 18	8.20 18	9.31 22	10.57 22	11.82 22	13.08 22	14.33 22
4.8	.13 3	.45 6	.80 6	1.14 6	1.48 6	1.82 6	2.21 7	2.61 7	3.07 9	3.58 9	4.09 9	4.61 9	5.12 9	6.14 20	7.28 20	8.42 20	9.56 20	10.70 20	11.84 20	12.98 20
4.2	.13 3	.39 6	.74 6	1.08 6	1.42 6	1.00 7	2.20 7	2.60 7	3.06 9	3.57 9	4.08 9	4.60 9	5.11 9	5.62 9	6.14 9	6.65 9	7.16 9	7.67 9	8.19 9	8.70 9
3.8	.12 3	.37 5	.67 6	1.01 6	1.37 7	1.76 7	2.16 7	2.56 7	2.96 7	3.36 7	3.79 9	4.31 9	4.82 9	5.33 9	5.85 9	6.35 9	6.87 9	7.38 9	7.90 9	8.41 9
3.5	.11 3	.32 5	.64 6	.98 6	1.32 6	1.66 6	2.00 7	2.40 7	2.80 7	3.20 7	3.50 7	4.06 9	4.57 9	5.08 9	5.50 9	6.11 9	6.62 9	7.13 9	7.65 9	8.16 9
3.2	.10 3	.31 5	.60 5	.93 6	1.27 6	1.61 6	1.95 6	2.30 7	2.70 7	3.10 7	3.50 7	3.90 7	4.30 9	4.81 9	5.33 9	5.84 9	6.35 9	6.86 9	7.38 9	7.89 9
2.9	.09 3	.29 4	.57 6	.91 6	1.25 6	1.59 6	1.93 6	2.28 6	2.64 7	3.04 7	3.44 7	3.84 7	4.27 8	4.72 8	5.18 8	5.64 8	6.09 8	6.55 8	7.00 8	7.45 8
2.7	.09 3	.28 4	.53 5	.83 6	1.17 6	1.51 6	1.85 6	2.20 6	2.54 6	2.88 5	3.31 8	3.76 8	4.22 8	4.67 8	5.13 8	5.59 8	6.04 8	6.50 8	6.95 8	7.41 8
2.5	.09 2	.27 4	.51 5	.79 5	1.12 6	1.46 6	1.80 6	2.15 6	2.49 6	2.85 7	3.25 7	3.65 7	4.09 8	4.54 8	5.00 8	5.46 8	5.91 8	6.37 8	6.82 8	7.28 8
2.4	.08 2	.27 4	.50 5	.78 5	1.07 5	1.35 5	1.64 5	1.95 7	2.33 7	2.73 7	3.13 7	3.53 7	3.95 7	4.33 8	4.79 8	5.25 8	5.70 8	6.16 8	6.61 8	7.07 8
2.2	.08 2	.26 4	.48 4	.71 4	.98 5	1.26 5	1.58 6	1.93 6	2.27 5	2.61 6	2.97 8	3.42 8	3.88 8	4.33 8	4.79 8	5.25 8	5.70 8	6.15 8	6.61 8	7.07 8
2.1	.08 2	.25 4	.47 4	.70 4	.93 4	1.16 6	1.50 6	1.85 6	2.19 6	2.53 [illegible]	2.89 7	3.29 7	3.69 7	4.09 8	4.52 8	5.01 8	5.46 8	5.92 8	6.37 8	6.85 8
2.0	.07 2	.23 3	.42 4	.65 4	.88 4	1.12 6	1.46 6	1.81 6	2.15 6	2.49 7	2.89 7	3.29 7	3.69 7	4.09 7	4.49 7	4.88 7	5.28 7	5.68 7	6.08 7	6.48 7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
HADLEY CREEK NEAR BARRY
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
10
1
0.1
0.01
2
3
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8
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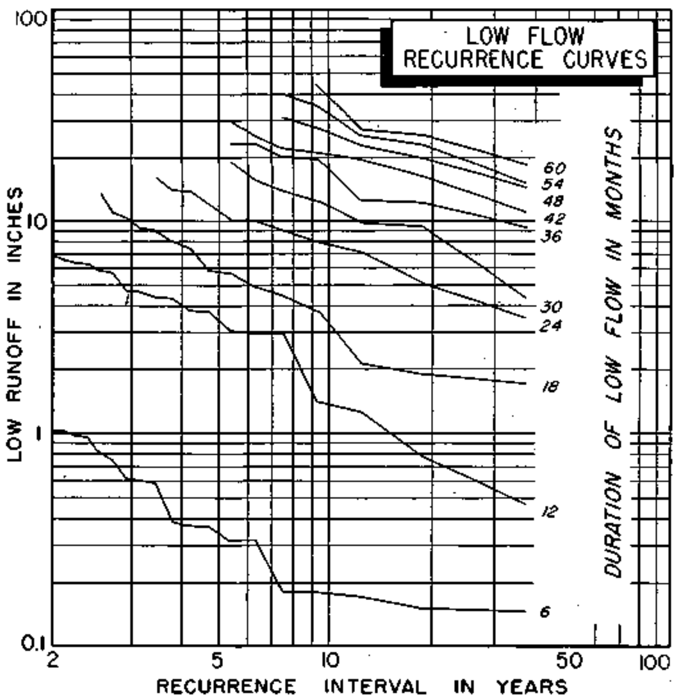
20
30
40
50
60
70
80
100



STATION 72

LOCATION
In SE ¼ NE ¼ sec 25, T4S, R7W, Pike County, at bridge on Ill. 96, 0.8 mile southeast of Kinderhook

DRAINAGE AREA
72.7 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1939 thru Sept 1959
CONTINUOUS RECORD : 20 years; water years 1940-59

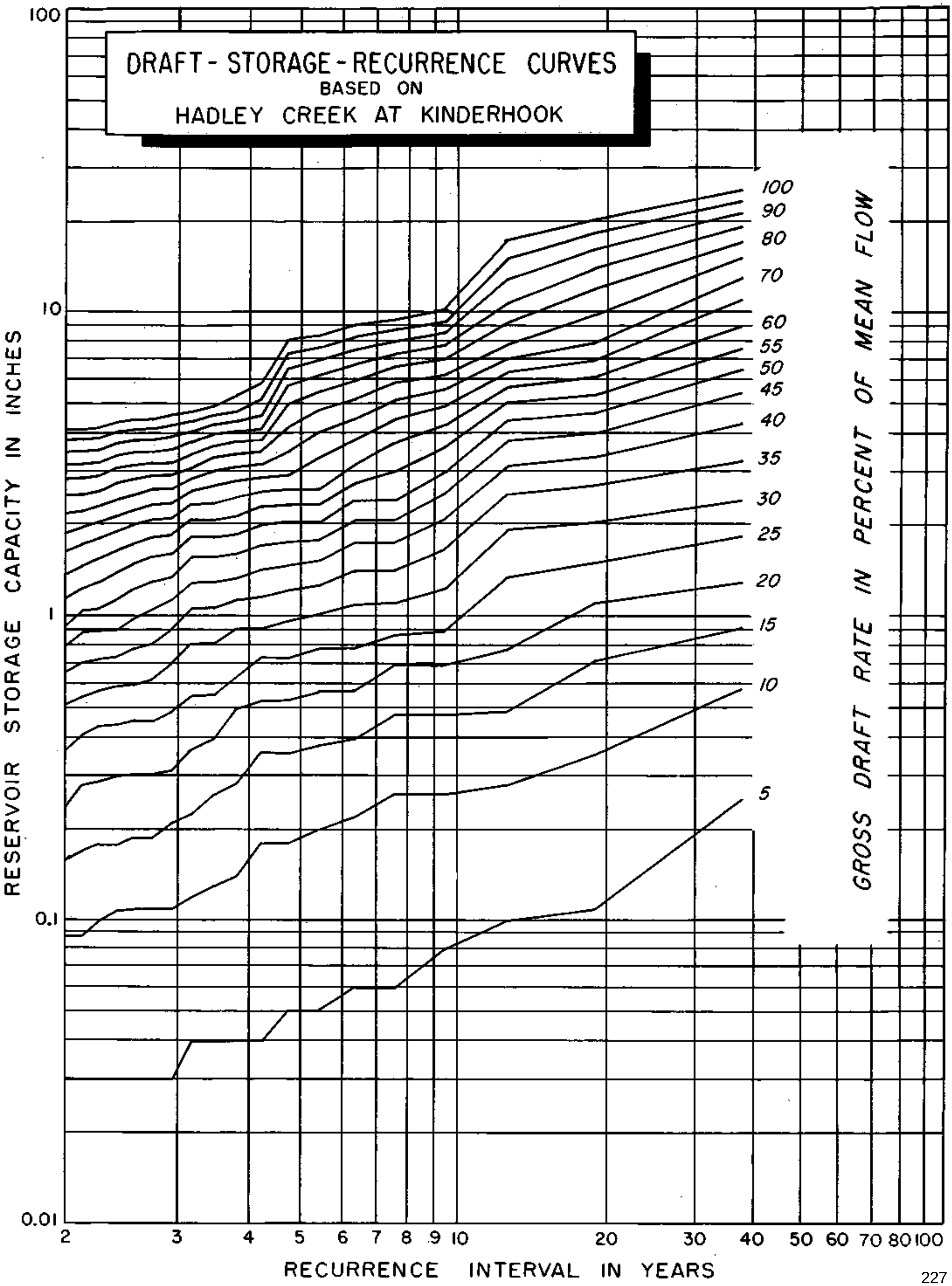
SYNTHETIC FLOW DATA
PERIOD: 18 years; water years 1922-39
INDEX STATION : La Moine River at Ripley
COINCIDENT RECORD : 19 years; water years 1940-58

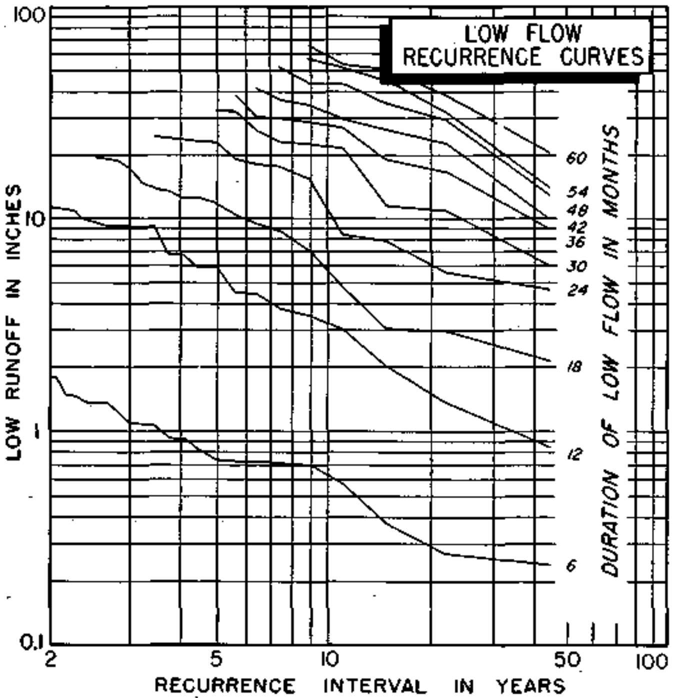
TOTAL DATA ANALYZED
PERIOD: 38 years; water years 1922-59
MEAN DISCHARGE: 0.73 inch per month

Draft-Storage-Recurrence Data for Hadley Creek at Kinderhook

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.25	.58	.95	1.32	1.85	2.43	3.30	4.39	5.49	6.58	7.68	9.13	11.17	13.22	15.26	17.30	19.35	21.39	23.44	25.48
	9	10	10	14	16	16	30	30	30	30	30	56	56	56	56	56	56	56	56	56
19.0	.11	.35	.72	1.12	1.52	2.07	2.73	3.39	4.04	4.70	5.42	6.23	7.03	7.99	10.03	12.07	14.16	16.28	18.39	20.51
	3	10	10	11	11	18	18	18	18	18	22	22	22	56	56	56	58	58	58	58
12.7	.10	.28	.49	.79	1.37	1.95	2.54	3.16	3.81	4.47	5.13	5.78	6.44	7.10	7.93	9.39	10.86	13.05	15.24	17.43
	3	5	6	16	16	16	16	18	18	18	16	18	18	20	40	40	60	60	60	60
9.5	.08	.26	.48	.70	.93	1.25	1.69	2.12	2.56	3.00	3.66	4.31	4.97	5.63	6.32	7.11	7.91	8.71	9.52	10.46
	4	6	6	6	8	12	12	12	12	18	16	18	18	18	20	22	22	22	22	44
7.6	.06	.26	.48	.70	.92	1.13	1.44	1.77	2.10	2.43	3.03	3.76	4.49	5.22	5.95	6.68	7.41	8.14	8.87	9.60
	4	6	6	6	6	6	9	9	9	9	20	20	20	20	20	20	20	20	20	20
6.3	.06	.22	.40	.58	.79	1.10	1.43	1.76	2.09	2.42	2.74	3.18	3.84	4.50	5.22	6.02	6.82	7.62	8.43	9.23
	4	5	5	5	7	9	9	9	9	9	9	18	18	18	22	22	22	22	22	22
5.4	.05	.20	.38	.57	.79	1.03	1.29	1.54	1.80	2.06	2.35	2.65	3.37	4.10	4.83	5.56	6.29	7.02	7.75	8.48
	4	5	5	6	6	7	7	7	7	8	8	9	20	20	20	20	20	20	20	20
4.8	.05	.18	.36	.54	.74	.98	1.24	1.49	1.77	2.06	2.35	2.64	2.95	3.53	4.22	5.02	5.82	6.62	7.43	8.23
	3	5	5	5	6	7	7	7	8	8	8	8	9	18	22	22	22	22	22	22
4.2	.04	.18	.36	.54	.74	.95	1.17	1.44	1.73	2.02	2.31	2.60	2.90	3.21	3.54	3.87	4.20	4.63	5.28	5.94
	3	5	5	5	6	6	6	8	8	8	8	8	8	9	9	9	10	18	18	18
3.8	.04	.14	.29	.50	.72	.93	1.15	1.37	1.62	1.88	2.16	2.49	2.82	3.15	3.48	3.81	4.13	4.46	4.80	5.46
	2	4	4	6	6	6	6	6	7	7	9	9	9	9	9	9	9	9	18	18
3.5	.04	.13	.26	.40	.57	.82	1.06	1.33	1.59	1.85	2.10	2.38	2.71	3.04	3.37	3.70	4.02	4.35	4.68	5.01
	2	3	4	4	7	7	7	7	7	7	7	9	9	9	9	9	9	9	9	9
3.2	.04	.12	.23	.37	.57	.82	1.08	1.33	1.59	1.85	2.10	2.36	2.61	2.87	3.14	3.47	3.79	4.12	4.45	4.78
	2	2	4	4	7	7	7	7	7	7	7	7	7	7	9	9	9	9	9	9
2.9	.03	.11	.21	.32	.49	.70	.92	1.14	1.37	1.63	1.68	2.14	2.39	2.66	2.95	3.24	3.59	3.95	4.32	4.68
	2	2	3	4	6	6	6	6	7	7	7	7	7	8	8	8	10	10	10	10
2.7	.03	.11	.19	.31	.46	.63	.82	1.07	1.33	1.59	1.84	2.10	2.37	2.66	2.95	3.24	3.53	3.86	4.19	4.53
	2	2	3	4	4	5	7	7	7	7	7	7	8	8	8	8	9	9	9	10
2.5	.03	.11	.19	.31	.46	.61	.79	.99	1.25	1.51	1.76	2.02	2.27	2.54	2.87	3.20	3.52	3.85	4.18	4.51
	2	2	3	4	4	5	5	7	7	7	7	7	7	9	9	9	9	9	9	9
2.4	.03	.11	.18	.30	.45	.60	.74	.91	1.15	1.41	1.66	1.92	2.17	2.45	2.78	3.11	3.43	3.76	4.09	4.42
	2	2	3	4	4	4	4	5	7	7	7	7	7	9	9	9	9	9	9	9
2.2	.03	.10	.18	.29	.44	.59	.73	.90	1.08	1.32	1.57	1.83	2.08	2.34	2.61	2.94	3.26	3.59	3.92	4.25
	1	2	3	4	4	4	4	5	5	7	7	7	7	7	9	9	9	9	9	9
2.1	.03	.09	.17	.28	.41	.56	.71	.89	1.07	1.26	1.48	1.74	1.99	2.25	2.56	2.89	3.21	3.54	3.87	4.20
	1	2	3	3	4	4	5	5	5	5	7	7	7	7	9	9	9	9	9	9
2.0	.03	.09	.16	.24	.37	.52	.66	.81	.95	1.17	1.40	1.66	1.91	2.22	2.55	2.88	3.20	3.53	3.86	4.19
	1	2	2	3	4	4	4	4	6	6	7	7	7	9	9	9	9	9	9	9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
HADLEY CREEK AT KINDERHOOK
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
70
60
55
50
45
40
35
30
25
20
15
5



STATION 182

LOCATION

In NE ¼ NW ¼ sec 33, T6S, R5W, Pike County, at bridge on U. S. 54, 1.0 mile west of Atlas

DRAINAGE AREA

451 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1940 thru Sept 1942; gaging discontinued Oct 1, 1942

CONTINUOUS RECORD: 3 years; water years 1940-42

SYNTHETIC FLOW DATA

PERIOD: 42 years; water years 1915-39, 1943-59

INDEX STATION : Macoupin Creek near Kane

COINCIDENT RECORD: 2 years; water years 1941-42

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

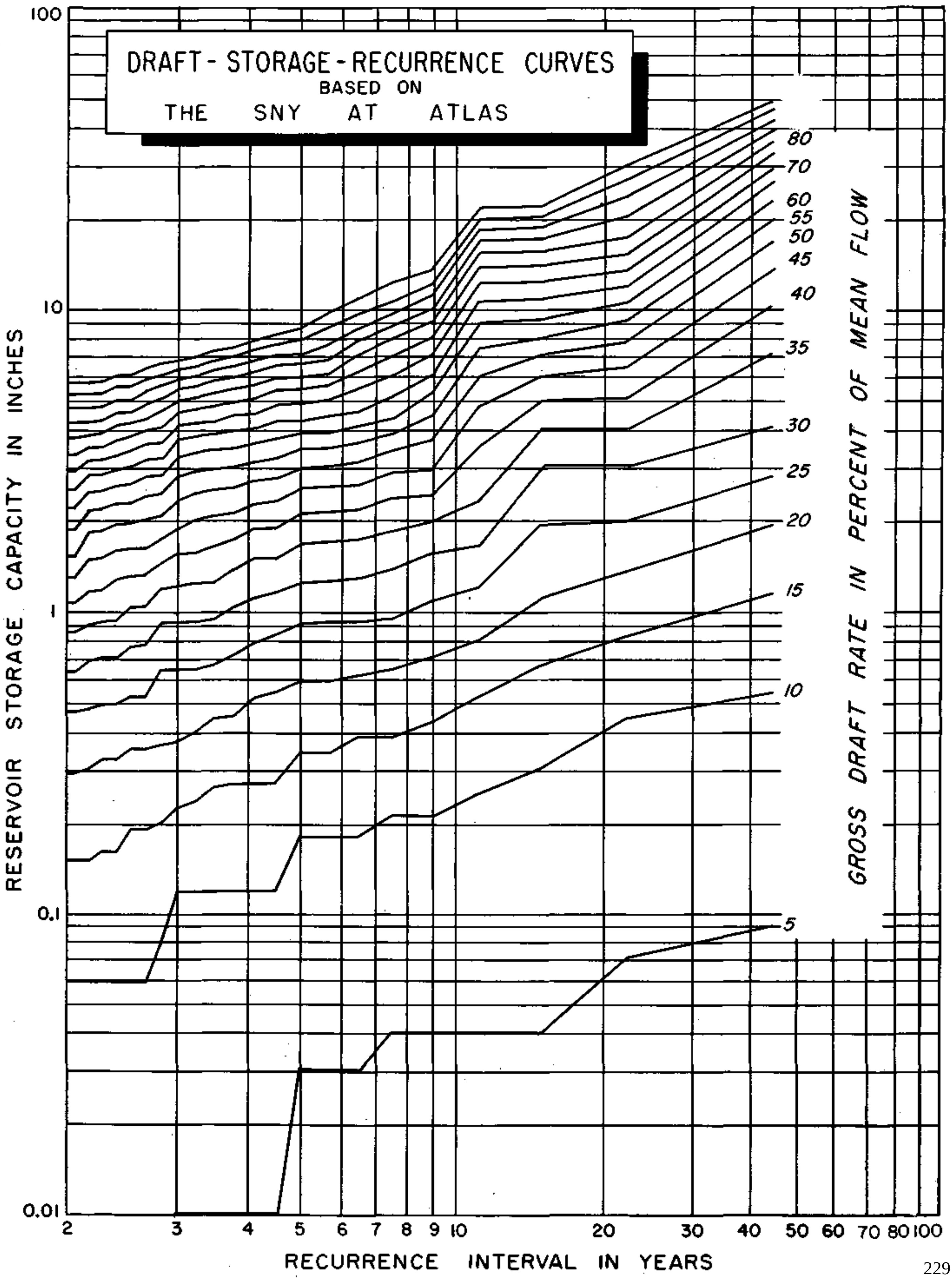
MEAN DISCHARGE : 1.09 inches per month

Draft-Storage-Recurrence Data for the Sny at Atlas

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.09	.54	1.14	1.90	2.77	4.02	6.96	9.50	12.90	15.95	19.00	22.05	25.11	28.16	31.28	34.44	37.60	40.76	43.92	47.08
	7	10	14	14	18	54	54	54	56	56	56	56	56	56	58	58	58	58	58	58
22.5	.07	.44	.82	1.32	1.95	2.93	3.91	4.96	6.27	7.58	8.89	10.20	11.50	12.99	14.73	16.72	19.77	22.83	25.88	28.97
	3	7	7	11	18	18	18	24	24	24	24	24	24	32	32	56	56	56	56	58
15.0	.04	.30	.66	1.09	1.92	2.90	3.88	4.86	5.84	6.82	7.80	8.93	10.45	11.97	13.50	15.03	16.55	18.11	19.75	21.38
	4	5	8	8	18	18	18	18	18	18	18	26	28	28	28	28	28	30	30	30
11.3	.04	.25	.52	.80	1.19	1.63	2.28	3.41	4.61	5.81	7.14	8.66	10.19	11.71	13.24	14.77	16.29	17.82	19.34	20.87
	3	5	5	7	8	8	18	22	22	22	28	28	28	28	28	28	28	28	28	28
9.0	.04	.21	.43	.70	1.07	1.51	1.94	2.39	2.88	3.60	4.36	5.13	5.95	6.82	7.77	8.75	9.73	10.71	11.69	13.02
	3	3	5	5	8	8	8	9	9	14	14	14	16	16	18	18	18	18	18	40
7.5	.04	.21	.38	.64	.94	1.37	1.86	2.35	2.84	3.34	3.83	4.32	5.04	5.91	6.78	7.65	8.52	9.40	10.27	11.77
	3	3	4	5	6	9	9	9	9	9	9	9	16	16	16	16	16	16	16	40
6.4	.03	.18	.38	.61	.92	1.28	1.71	2.15	2.58	3.07	3.56	4.05	4.55	5.31	6.08	6.84	7.60	8.38	9.36	10.57
	1	3	4	5	6	8	8	8	8	9	9	9	14	14	14	14	14	18	18	32
5.6	.03	.18	.34	.59	.92	1.25	1.68	2.12	2.55	2.99	3.43	3.86	4.38	4.92	5.47	6.01	6.66	7.43	8.41	9.39
	1	3	3	6	6	8	8	8	8	8	8	8	10	10	10	10	12	18	18	18
5.0	.03	.18	.34	.58	.91	1.23	1.65	2.09	2.52	2.96	3.40	3.83	4.27	4.81	5.36	5.90	6.45	6.99	7.70	8.46
	1	3	3	6	6	6	8	8	8	8	8	8	10	10	10	10	10	10	14	14
4.5	.01	.12	.27	.54	.83	1.15	1.48	1.86	2.29	2.73	3.17	3.67	4.22	4.76	5.31	5.85	6.40	6.94	7.49	8.07
	2	2	5	5	6	6	7	8	8	8	8	10	10	10	10	10	10	10	10	11
4.1	.01	.12	.27	.51	.78	1.10	1.48	1.86	2.24	2.66	3.10	3.53	3.97	4.44	4.99	5.53	6.08	6.62	7.17	7.71
	2	2	3	5	5	7	7	7	7	8	8	8	8	10	10	10	10	10	10	10
3.8	.01	.12	.27	.45	.71	1.03	1.36	1.70	2.09	2.53	2.97	3.40	3.89	4.38	4.87	5.36	5.85	6.34	6.83	7.32
	2	2	3	4	6	6	6	7	8	8	8	9	9	9	9	9	9	9	9	9
3.5	.01	.12	.26	.44	.66	.94	1.24	1.63	2.06	2.50	2.94	3.37	3.81	4.24	4.70	5.19	5.68	6.17	6.66	7.15
	2	2	3	4	5	5	6	8	8	8	8	8	8	8	9	9	9	9	9	9
3.2	.01	.12	.24	.40	.64	.92	1.23	1.56	1.99	2.43	2.87	3.30	3.74	4.17	4.61	5.05	5.48	5.92	6.35	6.82
	2	2	3	3	5	5	6	8	8	8	8	8	8	8	8	8	8	8	8	9
3.0	.01	.12	.23	.37	.64	.92	1.21	1.54	1.86	2.30	2.74	3.17	3.61	4.04	4.48	4.92	5.35	5.79	6.22	6.66
	2	2	2	5	5	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8
2.8	.00	.08	.20	.36	.63	.91	1.18	1.45	1.72	2.04	2.42	2.80	3.18	3.56	4.02	4.51	5.00	5.49	5.98	6.47
	1	2	3	5	5	5	5	5	5	7	7	7	7	7	9	9	9	9	9	9
2.6	.00	.06	.19	.35	.52	.77	1.04	1.31	1.60	1.99	2.37	2.75	3.13	3.51	3.89	4.29	4.78	5.27	5.76	6.25
	1	1	3	3	3	5	5	5	7	7	7	7	7	7	7	9	9	9	9	9
2.5	.00	.06	.19	.35	.52	.76	1.03	1.30	1.60	1.93	2.26	2.60	2.98	3.36	3.74	4.12	4.51	4.94	5.42	5.91
	1	1	3	3	3	5	5	5	6	6	6	7	7	7	7	7	7	8	9	9
2.4	.00	.06	.16	.32	.49	.70	.93	1.26	1.58	1.91	2.24	2.56	2.89	3.22	3.60	4.04	4.47	4.92	5.41	5.90
	1	1	3	3	3	4	6	6	6	6	6	6	6	6	8	8	8	9	9	9
2.3	.00	.06	.16	.32	.49	.70	.92	1.17	1.49	1.62	2.15	2.47	2.80	3.13	3.46	3.83	4.22	4.70	5.19	5.68
	1	1	3	3	3	4	4	6	6	6	6	6	6	6	6	7	7	9	9	9
2.1	.00	.06	.15	.30	.47	.68	.90	1.15	1.47	1.80	2.13	2.45	2.78	3.11	3.44	3.76	4.16	4.65	5.14	5.63
	1	1	2	3	3	4	4	6	6	6	6	6	6	6	6	6	9	9	9	9
2.0	.00	.06	.15	.29	.46	.63	.85	1.06	1.28	1.51	1.84	2.16	2.49	2.86	3.24	3.67	4.16	4.65	5.14	5.63
	1	1	2	3	3	4	4	4	4	6	6	6	6	7	7	9	9	9	9	9



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
THE SNY AT ATLAS
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
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100
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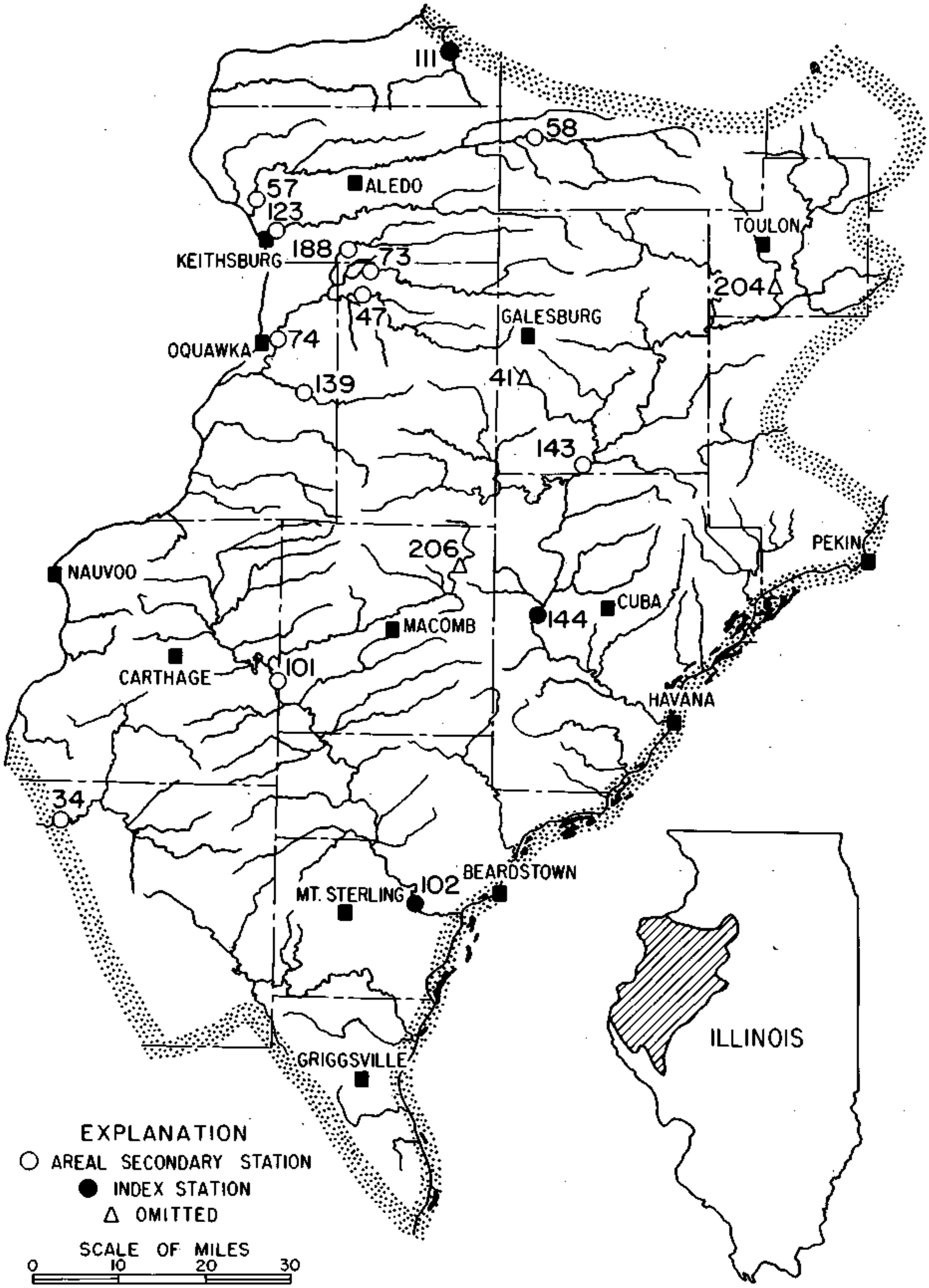
15
10
5

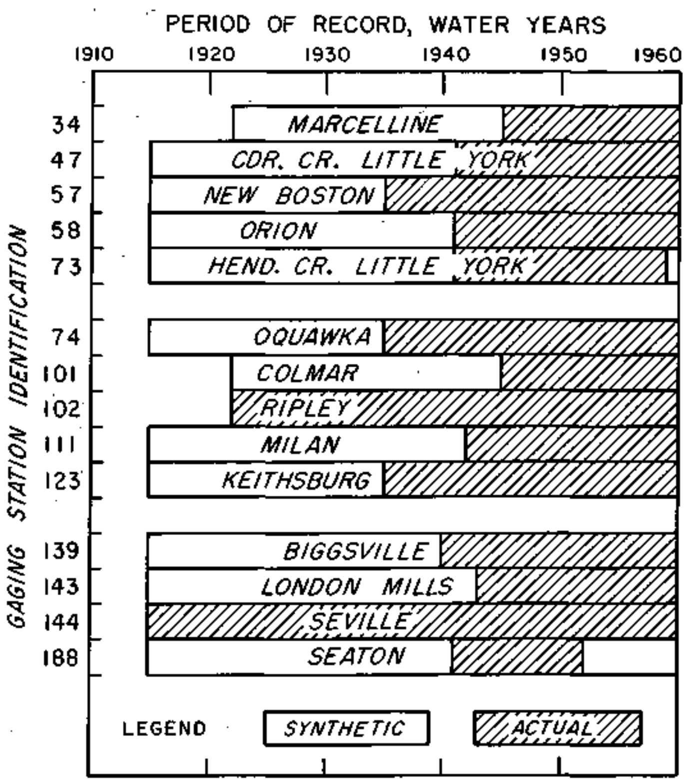


Galesburg Plain

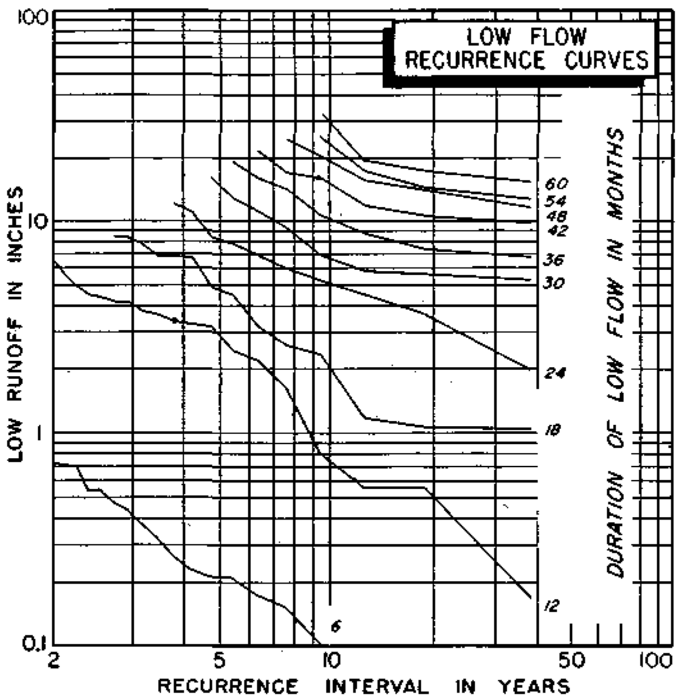
Gaging Stations in Galesburg Plain

STATIONS OMITTED

		REASON
41	Brush Creek at Lake Bracken near Galesburg	*Regulation*
204	Indian Creek near Wyoming	*Record too short*
206	Drowning Fork at Bushnell	*Record too short*



BEAR CREEK NEAR MARCELLINE



STATION 34

LOCATION
Between secs 20 and 21, T2N, R8W, Adams County, at highway bridge 2.25 miles northeast of Marcelline and 4.5 miles northwest of Mendon

DRAINAGE AREA
348 square miles

ACTUAL FLOW DATA
PERIOD: Mar 1944 thru Sept 1959
CONTINUOUS RECORD: 15 years; water years 1945-59

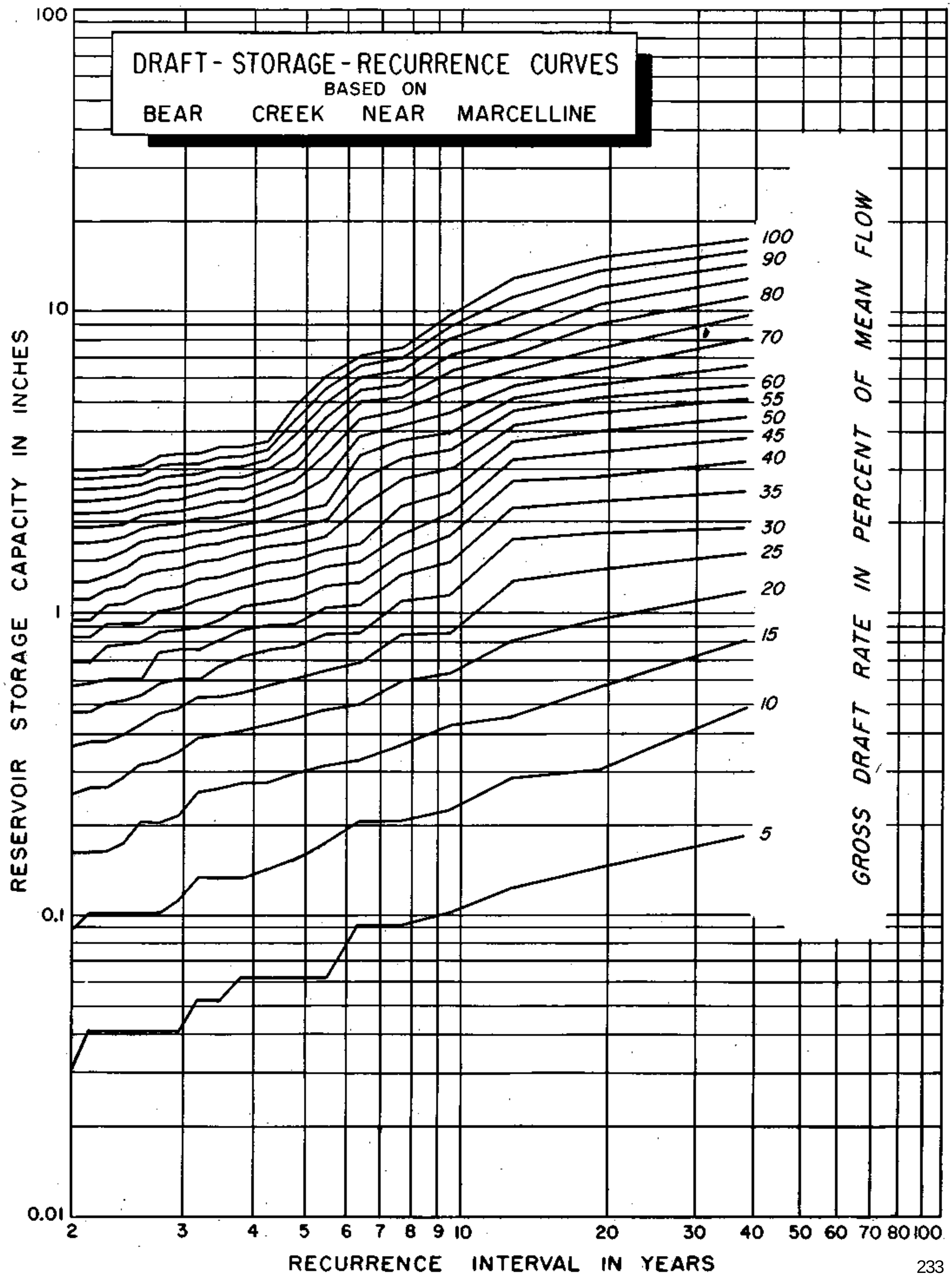
SYNTHETIC FLOW DATA
PERIOD: 23 years; water years 1922-44
INDEX STATION: La Moine River at Ripley
COINCIDENT RECORD: 15 years; water years 1945-59

TOTAL DATA ANALYZED
PERIOD: 38 years; water years 1922-59
MEAN DISCHARGE : 0.54 inch per month

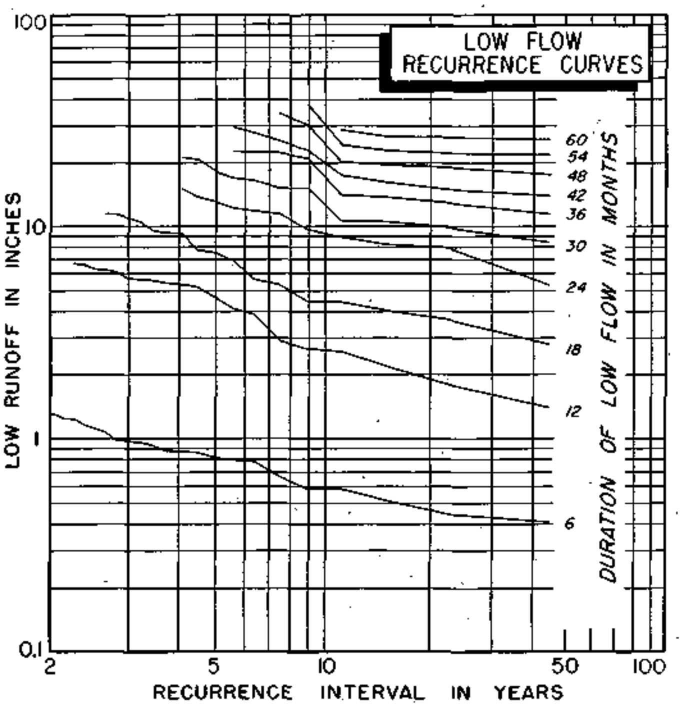
Draft-Storage-Recurrence Data for Bear Creek near Marcelline

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.18	.46	.80	1.17	1.57	2.00	2.53	3.17	3.82	4.47	5.14	5.89	6.65	8.13	9.70	11.27	12.83	14.40	15.96	17.53
	8	12	12	14	16	16	24	24	24	24	28	28	28	58	58	58	58	58	58	58
19.0	.14	.30	.56	.95	1.38	1.85	2.33	2.82	3.40	3.99	4.58	5.18	5.77	6.37	7.54	9.05	10.56	12.08	13.63	15.20
	6	6	14	16	16	18	18	18	22	22	22	22	22	22	56	56	56	56	58	58
12.7	.12	.28	.45	.64	1.27	1.74	2.22	2.71	3.19	3.68	4.17	4.65	5.14	5.62	6.33	7.14	8.17	9.58	11.20	12.82
	6	6	8	16	16	16	18	18	18	18	18	18	18	18	30	30	40	60	60	60
9.5	.10	.22	.42	.63	.88	1.14	1.47	1.79	2.12	2.50	2.99	3.47	3.96	4.60	5.46	6.32	7.19	8.05	8.92	9.78
	4	6	8	9	9	12	12	12	12	18	18	18	18	32	32	32	32	32	32	32
7.6	.09	.20	.36	.59	.84	1.08	1.32	1.56	1.81	2.24	2.73	3.21	3.70	4.18	4.67	5.17	5.77	6.36	6.96	7.55
	4	4	6	9	9	9	9	9	9	18	18	18	18	18	18	22	22	22	22	22
6.3	.09	.20	.32	.49	.68	.86	1.05	1.25	1.46	1.66	2.21	2.75	3.29	3.83	4.37	4.91	5.45	5.99	6.53	7.07
	4	4	6	7	7	7	7	8	8	8	20	20	20	20	20	20	20	20	20	20
5.4	.06	.17	.31	.47	.66	.84	1.03	1.22	1.41	1.60	1.79	2.02	2.26	2.78	3.32	3.86	4.40	4.94	5.48	6.02
	3	5	5	7	7	7	7	7	7	7	7	9	9	20	20	20	20	20	20	20
4.8	.06	.15	.29	.44	.60	.76	.92	1.11	1.30	1.49	1.68	1.90	2.17	2.44	2.71	2.98	3.37	3.86	4.34	4.83
	3	5	5	6	6	6	7	7	7	7	7	10	10	10	10	10	18	18	18	18
4.2	.06	.14	.27	.42	.56	.74	.90	1.07	1.26	1.45	1.64	1.83	2.02	2.25	2.50	2.74	2.98	3.22	3.47	3.71
	3	4	5	6	6	6	6	7	7	7	7	7	7	9	9	9	9	9	9	9
3.8	.05	.14	.27	.40	.55	.71	.87	1.04	1.20	1.38	1.57	1.76	1.95	2.14	2.33	2.56	2.80	3.04	3.29	3.53
	3	3	5	5	6	6	6	6	6	7	7	7	7	7	7	9	9	9	9	9
3.5	.05	.13	.26	.39	.53	.66	.81	.98	1.14	1.30	1.49	1.68	1.87	2.06	2.31	2.55	2.79	3.03	3.28	3.52
	3	4	5	5	5	5	6	6	6	7	7	7	7	9	9	9	9	9	9	9
3.2	.05	.13	.25	.38	.52	.65	.79	.93	1.09	1.28	1.47	1.66	1.85	2.04	2.23	2.45	2.66	2.88	3.11	3.35
	2	4	5	5	5	5	5	6	7	7	7	7	7	7	8	8	8	8	9	9
2.9	.04	.11	.21	.34	.46	.61	.75	.88	1.03	1.21	1.40	1.59	1.73	1.97	2.16	2.37	2.61	2.85	3.10	3.34
	2	4	5	5	5	5	5	5	6	7	7	7	7	7	7	9	9	9	9	9
2.7	.04	.10	.20	.32	.46	.59	.73	.86	1.00	1.18	1.37	1.56	1.75	1.94	2.13	2.33	2.57	2.81	3.06	3.30
	2	4	4	5	5	5	5	5	5	7	7	7	7	7	7	9	9	9	9	9
2.5	.04	.10	.20	.31	.42	.53	.66	.79	.94	1.13	1.32	1.51	1.70	1.89	2.02	2.26	2.45	2.64	2.85	3.07
	2	4	4	4	4	4	5	5	7	7	7	7	7	7	7	7	7	8	8	8
2.4	.04	.10	.17	.28	.39	.51	.65	.78	.92	1.06	1.22	1.39	1.58	1.77	1.96	2.18	2.39	2.61	2.82	3.04
	2	2	4	4	4	5	5	5	5	6	6	7	7	7	8	8	8	8	8	8
2.2	.04	.10	.16	.26	.37	.50	.64	.77	.91	1.04	1.18	1.31	1.50	1.71	1.93	2.15	2.36	2.58	2.79	3.01
	2	2	3	4	5	5	5	5	5	5	5	5	8	8	8	8	8	8	8	8
2.1	.04	.10	.16	.26	.37	.48	.59	.69	.83	.96	1.10	1.26	1.48	1.69	1.91	2.13	2.34	2.56	2.77	2.99
	2	2	3	4	4	4	4	5	5	5	5	8	8	8	8	8	8	8	8	8
2.0	.03	.09	.16	.25	.36	.47	.56	.69	.83	.96	1.10	1.26	1.48	1.69	1.91	2.13	2.34	2.56	2.77	2.99
	2	2	3	4	4	4	4	5	5	5	5	8	8	8	8	8	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BEAR CREEK NEAR MARCELLINE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
100
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100

CEDAR CREEK AT LITTLE YORK



STATION 47

LOCATION

Between secs 20 and 21, T12N, R3W, Warren County, at bridge on Ill. 135 at north edge of Little York

DRAINAGE AREA

128 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1940 thru Sept 1959

CONTINUOUS RECORD: 19 years; water years 1941-59

SYNTHETIC FLOW DATA

PERIOD: 26 years; water years 1915-40

INDEX STATION : Spoon River at Seville

COINCIDENT RECORD: 19 years; water years 1941-59

TOTAL DATA ANALYZED

PERIOD : 45 years; water years 1915-59

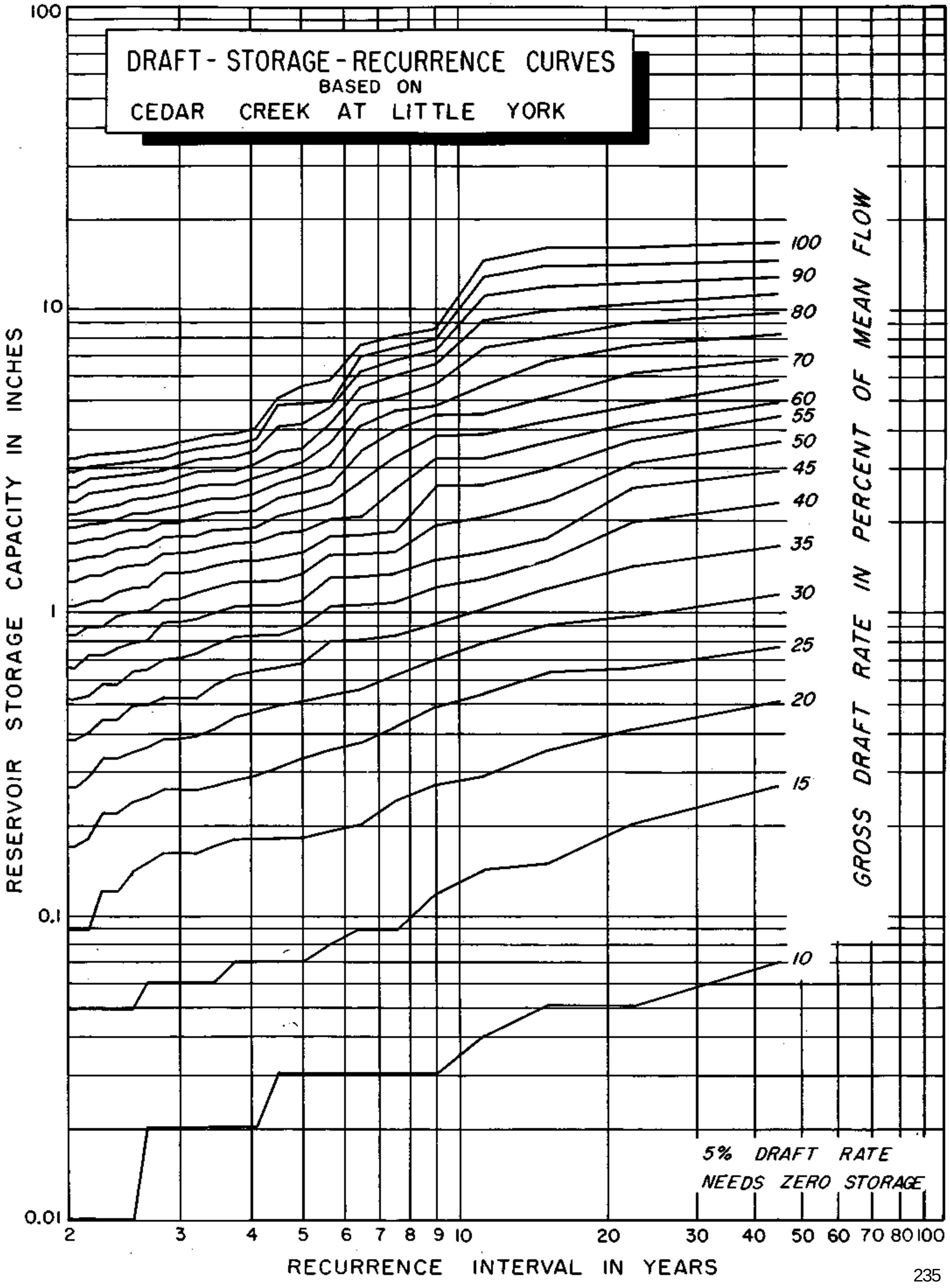
MEAN DISCHARGE : 0.71 inch per month

Draft-Storage-Recurrence Data for Cedar Creek at Little York

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.01	.07	.27	.51	.77	1.16	1.67	2.31	2.95	3.69	4.47	5.25	6.03	6.87	8.37	9.86	11.35	12.95	14.76	16.89
	1	5	7	7	11	11	18	18	18	22	22	22	22	42	42	42	42	48	60	60
22.5	.00	.05	.20	.41	.65	.97	1.42	1.98	2.55	3.12	3.69	4.26	4.85	6.27	7.69	9.11	10.53	12.34	14.25	16.24
	1	3	6	6	9	10	16	16	16	16	16	16	40	40	40	40	40	54	56	56
15.0	.00	.05	.15	.35	.63	.91	1.20	1.48	1.77	2.35	2.99	3.63	4.27	5.29	6.71	8.13	9.93	11.99	14.05	16.14
	1	2	3	8	8	8	8	8	8	18	18	18	18	40	40	40	58	56	58	60
11.3	.00	.04	.14	.29	.54	.79	1.04	1.29	1.58	2.08	2.65	3.24	3.88	4.52	5.71	7.48	9.26	11.03	12.81	14.58
	1	2	3	7	7	7	7	7	9	16	16	18	18	18	50	50	50	50	50	50
9.0	.00	.03	.12	.27	.49	.70	.93	1.21	1.50	1.95	2.57	3.21	3.85	4.49	5.19	5.90	6.61	7.32	8.03	8.74
	1	2	3	6	6	6	8	8	8	16	18	18	18	18	20	20	20	20	20	20
7.5	.00	.03	.09	.24	.42	.62	.84	1.09	1.34	1.59	1.87	2.53	3.24	3.95	4.66	5.37	6.08	6.79	7.50	8.21
	1	1	3	5	5	6	7	7	7	7	9	20	20	20	20	20	20	20	20	20
6.4	.00	.03	.09	.20	.37	.56	.81	1.06	1.31	1.56	1.80	2.07	2.70	3.38	4.09	4.80	5.51	6.22	6.93	7.64
	1	1	3	4	5	7	7	7	7	7	7	9	18	20	20	20	20	20	20	20
5.6	.00	.03	.08	.19	.35	.54	.79	1.04	1.29	1.54	1.78	2.03	2.30	2.62	3.05	3.62	4.19	4.75	5.32	5.89
	1	1	3	4	5	7	7	7	7	7	7	7	9	9	16	16	16	16	16	16
5.0	.00	.03	.08	.18	.33	.51	.68	.89	1.11	1.34	1.58	1.86	2.17	2.49	2.81	3.13	3.50	4.21	4.92	5.63
	1	1	2	3	5	5	6	6	6	7	7	8	9	9	9	5	20	20	20	20
4.5	.00	.03	.07	.18	.31	.49	.66	.84	1.06	1.27	1.52	1.81	2.09	2.38	2.66	2.94	3.38	4.09	4.80	5.51
	1	1	3	3	5	5	5	6	6	6	8	8	8	8	8	10	20	20	20	20
4.1	.00	.02	.07	.18	.29	.47	.64	.84	1.06	1.27	1.48	1.70	1.92	2.17	2.47	2.79	3.11	3.43	3.75	4.07
	0	1	3	3	5	5	5	6	6	6	6	6	7	7	9	9	9	9	9	9
3.8	.00	.02	.07	.18	.28	.45	.62	.83	1.05	1.26	1.47	1.69	1.90	2.14	2.39	2.65	2.95	3.27	3.59	3.91
	0	1	3	3	3	5	6	6	6	6	6	6	6	7	7	8	9	9	9	9
3.5	.00	.02	.06	.17	.27	.41	.58	.78	1.00	1.21	1.42	1.64	1.88	2.13	2.38	2.65	2.94	3.22	3.53	3.85
	0	1	3	3	4	5	5	6	6	6	6	6	7	7	7	8	8	8	9	9
3.2	.00	.02	.06	.16	.26	.39	.53	.73	.95	1.16	1.37	1.59	1.80	2.06	2.34	2.62	2.91	3.19	3.48	3.76
	0	1	2	3	3	4	5	6	6	6	6	6	6	8	8	8	8	8	8	8
3.0	.00	.02	.06	.16	.26	.38	.52	.71	.93	1.14	1.35	1.57	1.78	1.99	2.24	2.52	2.81	3.09	3.38	3.66
	0	1	2	3	3	4	4	6	6	6	6	6	6	6	8	8	8	8	8	8
2.8	.00	.02	.06	.16	.26	.38	.52	.70	.92	1.13	1.34	1.56	1.77	1.98	2.20	2.45	2.69	2.95	3.24	3.52
	-1	1	1	3	3	4	4	6	6	6	6	6	6	6	7	7	7	8	8	8
2.6	.00	.02	.06	.15	.25	.36	.50	.65	.81	1.01	1.22	1.44	1.65	1.88	2.13	2.38	2.64	2.92	3.21	3.49
	-1	1	1	3	3	4	4	4	5	6	6	6	6	7	7	7	8	8	8	8
2.5	.00	.01	.05	.14	.24	.35	.49	.64	.79	1.00	1.21	1.43	1.64	1.87	2.12	2.37	2.61	2.86	3.13	3.41
	-1	1	1	3	3	4	4	4	6	6	6	6	6	7	7	7	7	7	8	8
2.4	.00	.01	.05	.12	.22	.33	.44	.58	.76	.97	1.18	1.40	1.61	1.82	2.04	2.27	2.55	2.83	3.12	3.40
	-1	1	1	3	3	3	3	5	6	6	6	6	6	6	6	7	8	8	8	8
2.3	.00	.01	.05	.12	.22	.33	.44	.58	.72	.90	1.11	1.33	1.54	1.75	1.97	2.22	2.51	2.79	3.08	3.36
	-1	1	1	3	3	3	3	4	5	6	6	6	6	6	6	8	8	8	8	8
2.1	.00	.01	.05	.09	.18	.29	.46	.54	.72	.90	1.10	1.32	1.53	1.74	1.96	2.18	2.47	2.75	3.04	3.32
	-1	1	1	2	3	3	3	5	5	5	6	6	6	6	6	8	8	8	8	8
2.0	.00	.01	.05	.09	.17	.27	.38	.52	.66	.84	1.05	1.27	1.48	1.69	1.91	2.12	2.33	2.59	2.91	3.23
	-1	1	1	2	2	3	3	4	4	6	6	6	6	6	6	6	6	9	9	9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
CEDAR CREEK AT LITTLE YORK
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
5% DRAFT RATE
NEEDS ZERO STORAGE
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
0.01
0.1
1
10
100
2
3
4
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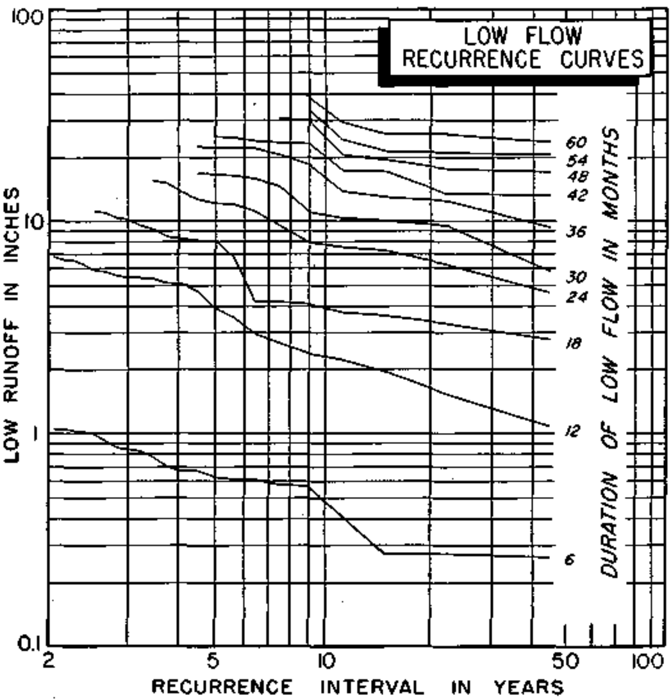
30
40
50
60
70
80
100

EDWARDS RIVER NEAR NEW BOSTON



STATION 57

LOCATION

At quarter corner between secs 21 and 28, T14N, R5W, Mercer County, at bridge on Ill. 17, 1.5 miles northeast of New Boston

DRAINAGE AREA

434 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1934 thru Sept 1959

CONTINUOUS RECORD: 25 years; water years 1935-59

SYNTHETIC FLOW DATA

PERIOD: 20 years; water years 1915-34

INDEX STATION: Spoon River at Seville

COINCIDENT RECORD: 25 years; water years 1935-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

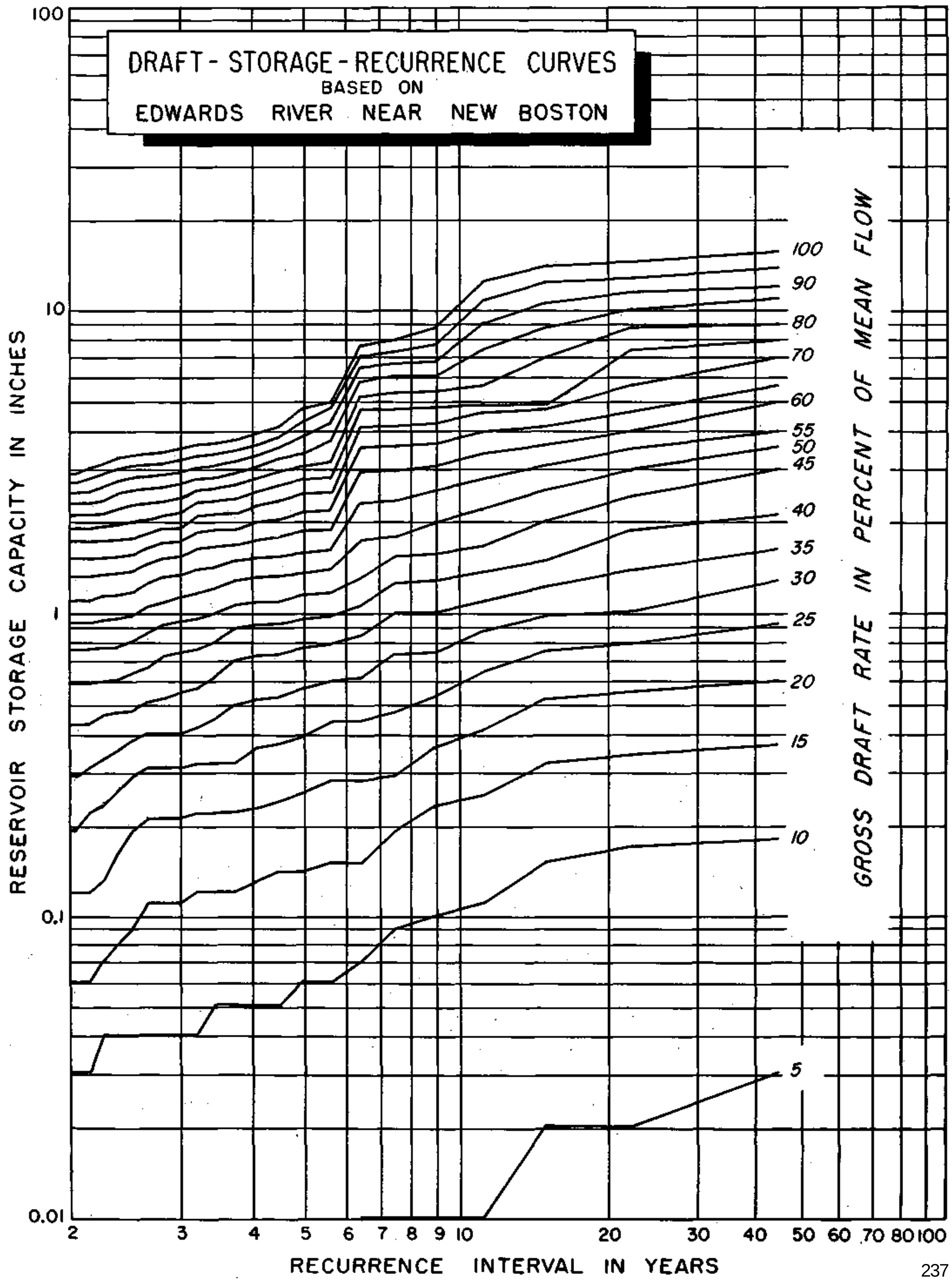
MEAN DISCHARGE : 0.66 inch per month

Draft-Storage-Recurrence Data for Edwards River near New Boston

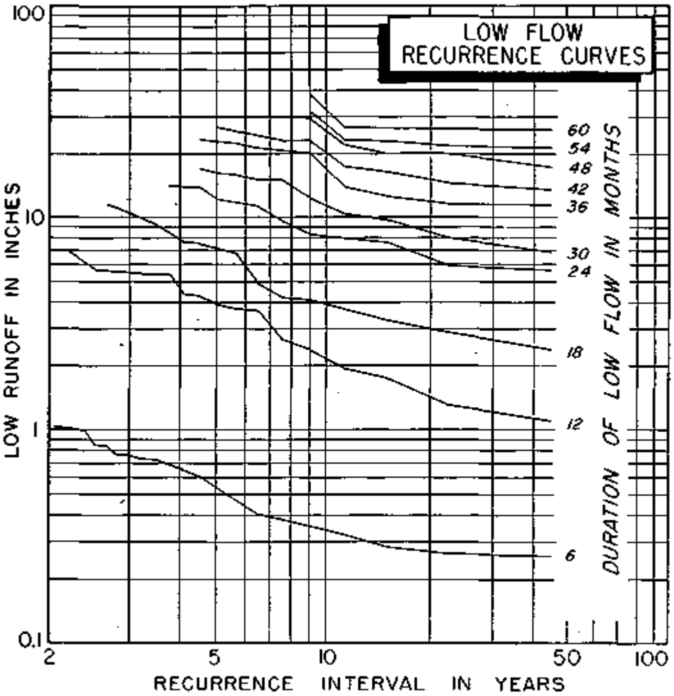
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.03 2	.18 5	.37 7	.60 7	.93 11	1.29 11	1.65 12	2.15 20	3.02 30	4.01 30	5.00 30	5.99 30	6.98 30	7.97 30	9.00 32	10.06 32	11.11 32	12.21 34	13.88 60	15.86 60
22.5	.02 2	.17 5	.34 5	.55 7	.79 7	1.02 7	1.39 16	1.91 16	2.44 16	2.97 16	3.50 16	4.03 16	4.63 42	6.01 42	7.40 42	8.79 42	10.17 42	11.56 42	12.94 42	14.58 54
15.0	.02 2	.15 5	.32 6	.52 6	.75 7	.96 7	1.23 8	1.51 16	2.04 16	2.57 16	3.10 16	3.63 16	4.15 16	4.72 18	5.31 18	7.06 54	8.84 54	10.63 54	12.41 54	14.19 54
11.3	.01 3	.11 3	.25 5	.41 5	.64 7	.87 7	1.11 6	1.37 8	1.67 16	2.21 18	2.60 18	3.40 18	3.99 18	4.59 18	5.18 18	5.77 18	7.42 52	9.14 52	10.85 52	12.57 52
9.0	.01 2	.10 3	.23 4	.36 5	.53 5	.74 8	1.01 8	1.26 9	1.57 9	2.02 16	2.55 16	3.08 16	3.65 18	4.25 18	4.84 18	5.46 20	6.12 20	6.78 30	7.77 30	8.76 30
7.5	.01 2	.09 3	.19 3	.29 4	.47 8	.73 8	1.00 5	1.26 8	1.53 8	1.79 16	2.36 16	2.96 18	3.55 18	4.15 18	4.74 18	5.35 20	6.01 20	6.67 20	7.33 20	7.99 20
6.4	.01 2	.07 2	.15 4	.26 4	.44 5	.61 7	.84 7	1.07 7	1.30 7	1.73 18	2.32 16	2.92 18	3.51 18	4.11 18	4.70 18	5.29 18	5.89 18	6.48 18	7.08 18	7.67 18
5.6	.00 2	.06 2	.15 4	.28 4	.44 5	.60 5	.79 6	.98 6	1.18 6	1.40 7	1.63 7	1.90 9	2.20 9	2.50 9	2.80 9	3.18 16	3.71 16	4.23 16	4.76 16	5.29 16
5.0	.00 2	.06 2	.14 3	.26 4	.39 5	.57 6	.77 6	.96 6	1.16 6	1.36 6	1.59 9	1.88 9	2.18 9	2.48 9	2.78 9	3.07 9	3.38 14	3.85 14	4.31 14	4.77 14
4.5	.00 1	.05 2	.14 3	.24 3	.37 5	.53 6	.73 6	.92 6	1.12 6	1.32 7	1.55 7	1.79 8	2.05 9	2.35 9	2.65 9	2.94 9	3.24 9	3.54 9	3.83 9	4.16 20
4.1	.00 1	.05 2	.13 3	.23 3	.36 5	.53 6	.73 6	.92 6	1.12 6	1.32 6	1.52 6	1.75 8	2.01 8	2.28 8	2.54 8	2.80 8	3.07 8	3.33 8	3.60 8	3.95 20
3.8	.00 1	.05 2	.12 3	.22 3	.32 4	.50 6	.70 6	.89 6	1.09 6	1.29 6	1.49 6	1.69 6	1.90 7	2.14 8	2.40 8	2.66 8	2.93 8	3.19 8	3.46 8	3.74 9
3.5	.00 1	.05 2	.12 3	.22 3	.32 3	.45 5	.62 5	.81 6	1.01 6	1.21 6	1.43 7	1.66 7	1.89 7	2.12 7	2.36 7	2.59 7	2.82 7	3.08 9	3.37 9	3.67 9
3.2	.00 1	.04 1	.12 3	.22 3	.32 3	.42 4	.57 6	.76 6	.96 6	1.17 7	1.40 7	1.63 7	1.86 7	2.09 7	2.33 7	2.56 7	2.79 7	3.04 9	3.33 9	3.63 9
3.0	.00 1	.04 1	.11 3	.21 3	.31 3	.40 4	.55 6	.74 6	.94 6	1.14 6	1.34 6	1.54 6	1.73 6	1.93 6	2.15 8	2.41 8	2.68 8	2.94 8	3.22 9	3.52 9
2.8	.00 1	.04 1	.11 3	.21 3	.31 3	.40 4	.53 6	.72 6	.92 6	1.12 6	1.32 6	1.52 6	1.71 6	1.91 6	2.11 6	2.35 8	2.62 8	2.86 8	3.15 8	3.41 8
2.6	.00 1	.04 1	.11 3	.21 3	.31 3	.40 3	.51 4	.66 6	.86 6	1.06 6	1.26 6	1.46 6	1.65 6	1.85 6	2.05 8	2.31 8	2.56 8	2.84 8	3.11 8	3.37 8
2.5	.00 1	.04 1	.09 3	.19 3	.29 3	.38 3	.46 5	.64 5	.81 5	.98 6	1.18 6	1.38 6	1.57 6	1.77 8	2.03 8	2.29 8	2.56 8	2.82 8	3.09 8	3.35 8
2.4	.00 1	.04 1	.08 2	.16 3	.26 3	.35 3	.47 4	.61 4	.77 5	.96 6	1.16 6	1.36 6	1.55 6	1.75 6	1.96 8	2.22 8	2.49 8	2.75 8	3.02 8	3.28 8
2.3	.00 1	.04 1	.07 1	.13 3	.23 3	.33 4	.46 4	.60 5	.77 5	.95 6	1.15 6	1.35 6	1.54 6	1.74 6	1.94 6	2.14 6	2.36 8	2.62 8	2.89 8	3.15 8
2.1	.00 -1	.03 1	.06 2	.12 3	.22 3	.31 3	.43 5	.59 5	.76 5	.93 6	1.13 6	1.33 6	1.52 6	1.72 6	1.92 6	2.12 6	2.32 6	2.52 8	2.79 8	3.05 8
2.0	.00 -1	.03 1	.06 2	.12 2	.20 3	.29 3	.43 5	.59 5	.76 5	.93 6	1.13 6	1.33 6	1.52 6	1.72 6	1.92 6	2.12 6	2.32 6	2.51 6	2.71 6	2.91 6


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
EDWARDS RIVER NEAR NEW BOSTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

EDWARDS RIVER NEAR ORION



STATION 58

LOCATION
In NE ¼ SE ¼ sec 21, T15N, R1E, Henry County, at bridge on U. S. 150, 1.5 miles north of Opheim and 5.5 miles south of Orion

DRAINAGE AREA
163 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1940 thru Sept 1959
CONTINUOUS RECORD : 19 years; water years 1941-59

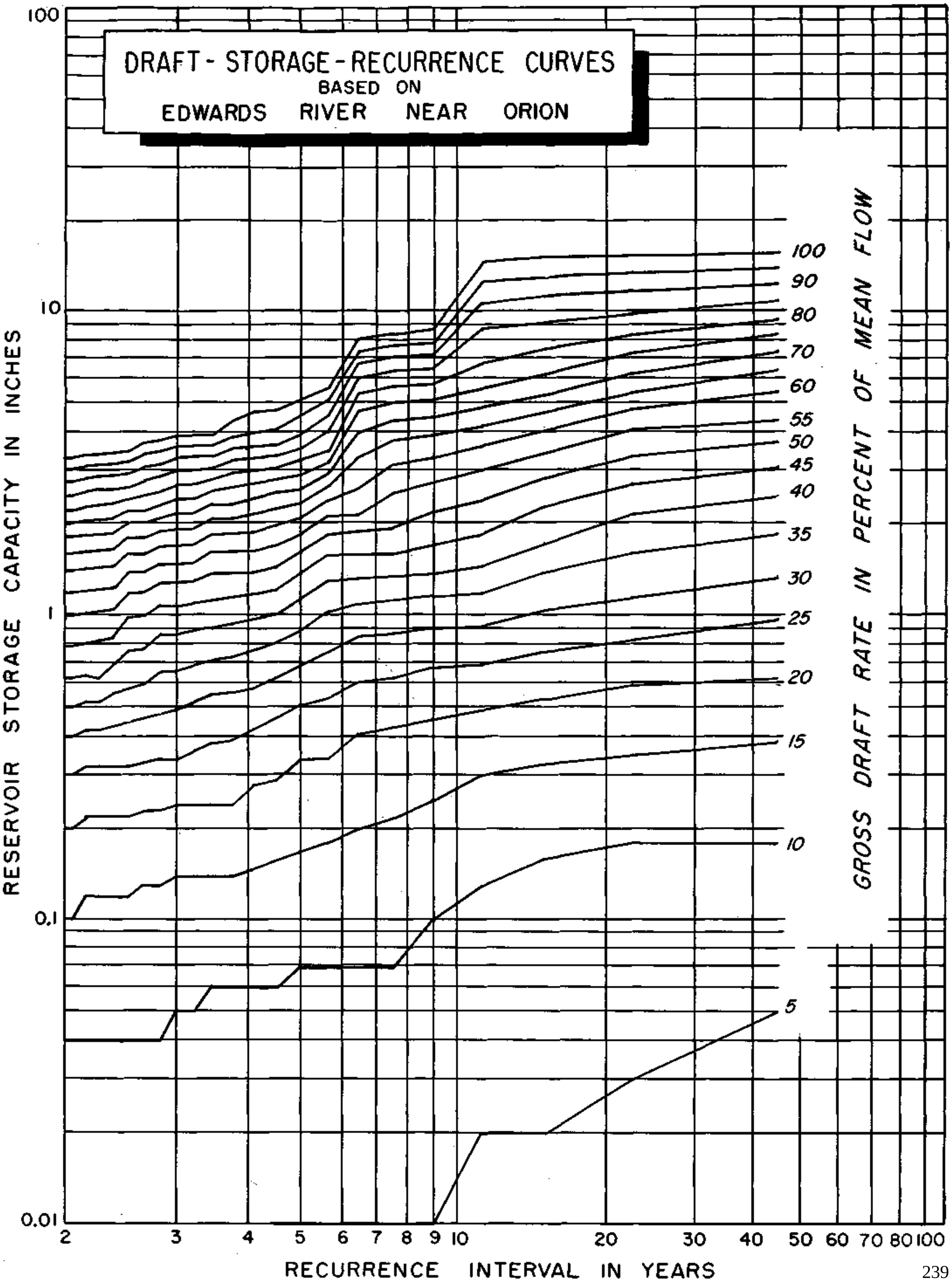
SYNTHETIC FLOW DATA
PERIOD: 26 years; water years 1915-40
INDEX STATION : Spoon River at Seville
COINCIDENT RECORD: 19 years; water years 1941-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.65 inch per month

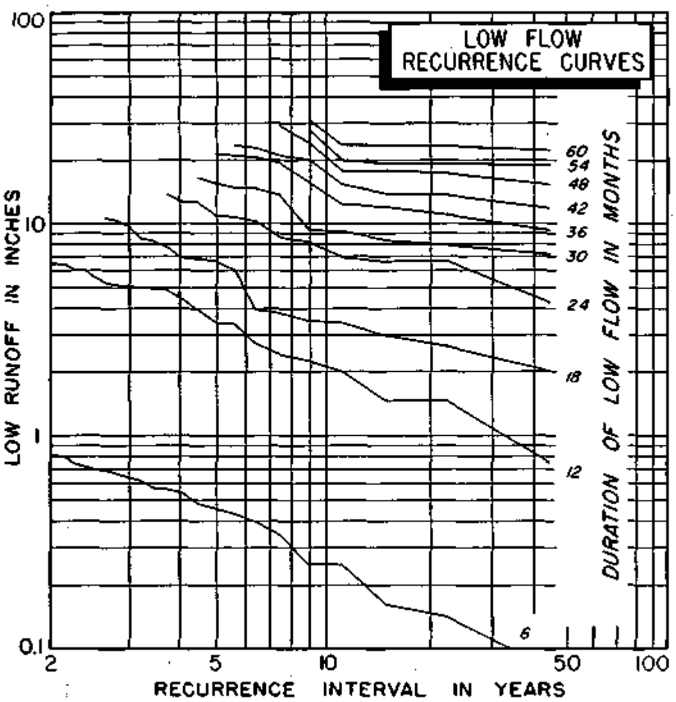
Draft-Storage-Recurrence Data for Edwards River near Orion

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.05	.16	.39	.63	.98	1.35	1.87	2.49	3.10	3.71	4.40	5.42	6.44	7.46	8.48	9.50	10.89	12.33	13.92	15.66
	4	5	7	7	11	11	18	18	18	18	30	30	30	30	30	30	42	44	48	54
22.5	.03	.16	.35	.59	.83	1.15	1.61	2.15	2.71	3.39	4.07	4.75	5.43	6.29	7.31	8.40	9.83	11.65	13.48	15.32
	2	5	7	7	7	11	16	16	20	20	20	20	20	30	30	42	42	54	54	54
15.0	.02	.16	.33	.53	.76	1.05	1.39	1.73	2.28	2.62	3.43	4.04	4.66	5.27	6.18	7.54	9.20	11.18	13.15	15.12
	2	5	5	6	8	10	10	16	16	18	18	18	18	18	40	40	58	58	58	58
11.3	.02	.13	.30	.49	.69	.92	1.18	1.46	1.82	2.39	3.00	3.61	4.23	4.84	5.59	6.75	8.66	10.56	12.55	14.60
	2	5	5	6	6	7	8	9	16	18	18	18	16	18	32	56	56	56	60	60
9.0	.01	.10	.25	.46	.67	.91	1.15	1.36	1.68	2.18	2.72	3.27	3.69	4.50	5.11	5.78	6.45	7.14	7.83	8.78
	2	3	6	6	7	7	7	9	9	16	16	18	16	18	18	20	20	20	28	28
7.5	.01	.07	.22	.43	.63	.87	1.11	1.34	1.60	1.95	2.52	3.13	3.75	4.36	4.95	5.67	6.35	7.03	7.71	8.39
	1	3	6	6	7	7	7	7	8	16	18	18	18	18	20	20	20	20	20	20
6.4	.01	.07	.20	.41	.61	.85	1.09	1.33	1.60	1.87	2.14	2.62	3.30	3.96	4.66	5.34	6.02	6.70	7.38	8.05
	1	3	6	6	7	7	7	8	8	8	8	20	20	20	20	20	20	20	20	20
5.6	.01	.07	.18	.34	.54	.76	1.03	1.31	1.58	1.85	2.12	2.39	2.67	2.94	3.21	3.46	3.98	4.52	5.07	5.61
	1	3	3	6	6	8	8	8	8	8	6	8	6	8	8	8	16	16	16	16
5.0	.01	.07	.17	.34	.51	.68	.89	1.12	1.36	1.60	1.84	2.08	2.33	2.60	2.91	3.22	3.52	3.93	4.54	5.15
	1	2	5	5	5	6	7	7	7	7	7	7	8	9	9	9	9	18	18	18
4.5	.01	.06	.16	.29	.46	.63	.81	1.01	1.22	1.43	1.70	1.97	2.25	2.52	2.79	3.06	3.33	3.62	4.07	4.72
	1	2	4	5	5	5	6	6	6	8	8	6	8	8	8	8	8	9	18	20
4.1	.00	.06	.15	.28	.43	.60	.77	.97	1.18	1.38	1.62	1.88	2.15	2.43	2.70	2.99	3.29	3.60	4.00	4.68
	1	2	4	4	5	5	6	6	6	7	7	8	8	8	8	9	9	9	20	20
3.8	.00	.06	.14	.24	.39	.56	.73	.93	1.14	1.38	1.62	1.86	2.09	2.35	2.62	2.93	3.23	3.54	3.84	4.36
	1	2	3	3	5	5	6	6	7	7	7	7	7	7	9	9	9	9	9	20
3.5	.00	.06	.14	.24	.38	.55	.72	.90	1.13	1.37	1.61	1.85	2.06	2.32	2.56	2.80	3.04	3.31	3.61	3.92
	1	2	3	3	5	5	5	6	7	7	7	7	7	7	7	7	7	9	9	9
3.2	.00	.05	.14	.24	.36	.52	.69	.89	1.10	1.30	1.50	1.71	1.95	2.17	2.41	2.69	2.99	3.30	3.60	3.91
	1	2	3	3	4	5	6	6	6	5	6	6	7	7	7	9	9	9	9	9
3.0	.00	.05	.14	.24	.34	.49	.66	.86	1.07	1.27	1.47	1.70	1.93	2.17	2.41	2.69	2.99	3.30	3.60	3.91
	1	2	3	3	4	5	6	6	6	6	6	7	7	7	7	9	9	9	9	9
2.8	.00	.04	.13	.23	.34	.48	.66	.86	1.07	1.27	1.47	1.68	1.88	2.09	2.29	2.55	2.85	3.16	3.46	3.77
	1	2	3	3	4	5	6	6	5	6	6	6	6	6	6	9	9	9	9	9
2.6	.00	.04	.13	.23	.33	.46	.60	.78	.99	1.19	1.39	1.60	1.80	2.01	2.21	2.46	2.76	3.09	3.39	3.70
	1	2	3	3	3	4	5	6	5	5	6	6	5	6	6	9	9	9	9	9
2.5	.00	.04	.12	.22	.32	.45	.59	.77	.98	1.16	1.38	1.59	1.79	2.00	2.20	2.40	2.63	2.91	3.18	3.45
	1	2	3	3	3	4	5	5	5	6	6	6	6	6	6	6	8	8	8	6
2.4	.00	.04	.12	.22	.32	.43	.56	.70	.85	1.04	1.24	1.45	1.65	1.86	2.09	2.33	2.50	2.88	3.15	3.42
	1	2	3	3	3	4	4	4	5	6	5	6	6	6	7	8	8	8	8	8
2.3	.00	.04	.12	.22	.32	.42	.52	.64	.83	1.03	1.23	1.44	1.64	1.85	2.05	2.31	2.58	2.86	3.13	3.40
	1	2	3	3	3	3	3	4	6	6	6	6	6	6	6	6	8	8	8	8
2.1	.00	.04	.12	.22	.32	.42	.52	.64	.82	1.02	1.22	1.43	1.63	1.84	2.04	2.28	2.55	2.83	3.10	3.37
	1	1	3	3	3	3	3	4	5	6	6	6	6	6	6	8	8	8	8	8
2.0	.00	.04	.10	.20	.30	.40	.50	.63	.79	.99	1.19	1.40	1.60	1.61	2.01	2.21	2.47	2.75	3.02	3.29
	1	1	3	3	3	3	3	4	6	6	6	6	6	6	6	7	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
EDWARDS RIVER NEAR ORION
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100



STATION 73

LOCATION

Between sec 8 and 9, T12N, R3W, Warren County, at bridge on Ill. 94 and 111. 135, 2.2 miles north of Little York

DRAINAGE AREA

151 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1940 thru Sept 1958; gaging discontinued Oct 1, 1958

CONTINUOUS RECORD: 18 years; water years 1941-58

SYNTHETIC FLOW DATA

PERIOD : 27 years; water years 1915-40, 1959

INDEX STATION : Spoon River at Seville

COINCIDENT RECORD: 18 years; water years 1941-58

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

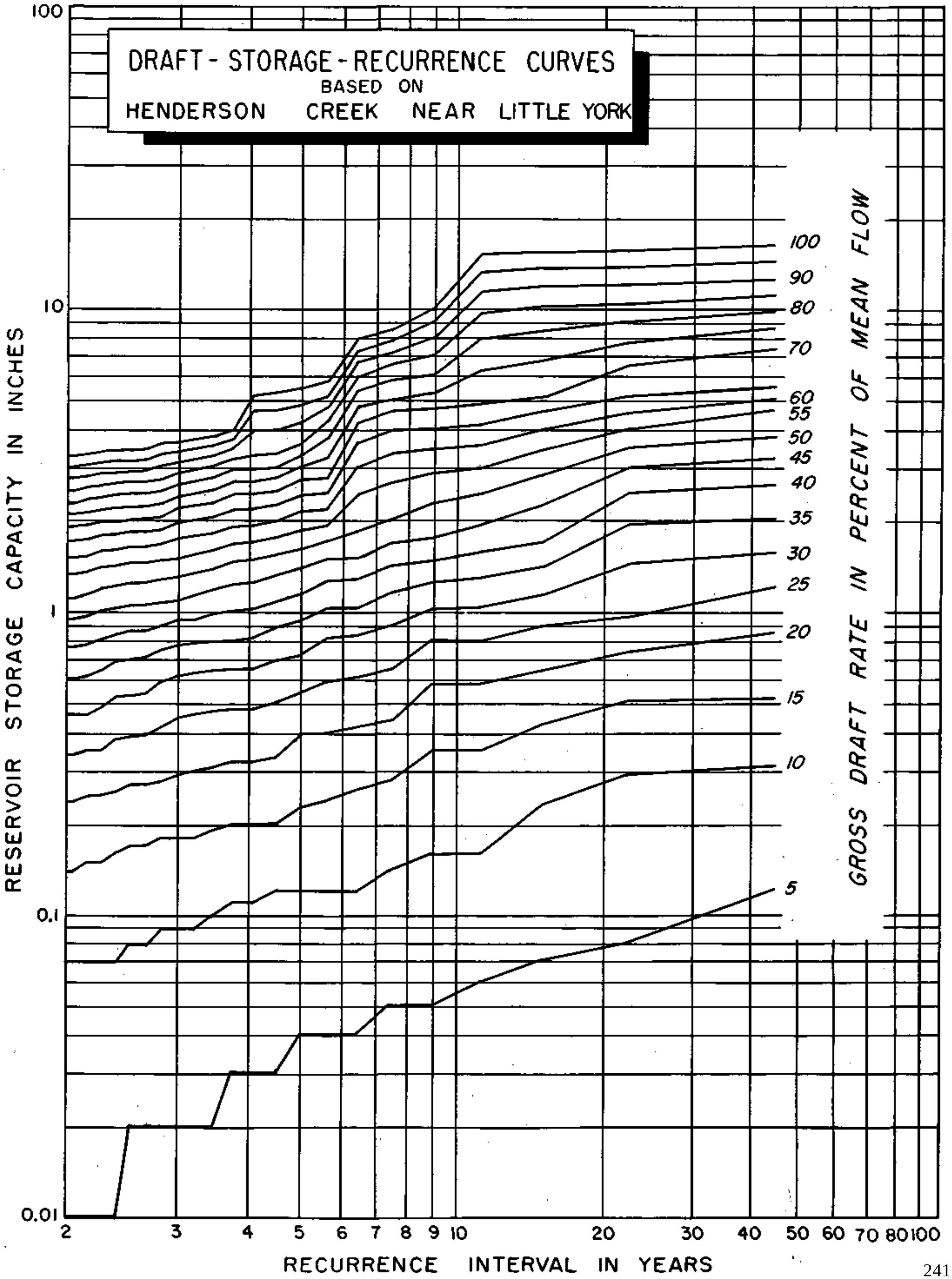
MEAN DISCHARGE : 0.65 inch per month

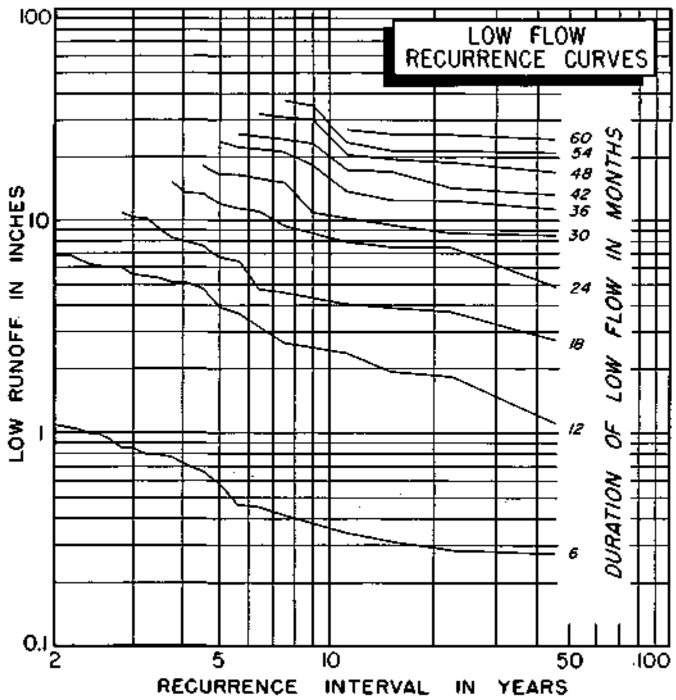
Draft-Storage-Recurrence Data for Henderson Creek near Little York

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.12	.31	.52	.86	1.22	1.59	2.06	2.64	3.23	3.82	4.67	5.51	6.38	7.44	8.68	9.91	11.27	12.66	14.51	16.46
	6	6	7	11	11	12	18	16	18	26	26	26	28	38	36	38	42	44	60	60
22.5	.08	.29	.51	.74	.97	1.44	1.96	2.48	3.00	3.52	4.04	4.56	5.26	6.56	7.86	9.16	10.46	12.12	13.88	15.74
	5	7	7	7	7	16	16	16	16	16	16	16	40	40	40	40	40	54	56	58
15.0	.07	.23	.43	.64	.90	1.16	1.42	1.72	2.28	2.66	3.45	4.03	4.62	5.20	6.79	8.54	10.30	12.05	13.81	15.56
	4	6	6	8	8	8	8	16	18	18	18	18	18	30	54	54	54	54	54	54
11.3	.06	.16	.35	.58	.81	1.04	1.30	1.59	1.96	2.46	3.00	3.56	4.17	4.95	6.36	8.05	9.74	11.43	13.33	15.28
	3	5	7	7	7	7	9	9	16	16	18	18	18	32	52	52	52	52	60	60
9.0	.05	.16	.35	.58	.81	1.04	1.26	1.49	1.77	2.31	2.90	3.46	4.07	4.72	5.37	6.14	7.12	8.09	9.07	10.04
	3	5	7	7	7	7	7	7	16	18	18	18	20	20	20	30	30	30	30	30
7.5	.05	.14	.28	.44	.65	.91	1.17	1.43	1.69	2.04	2.69	3.34	3.99	4.64	5.29	5.94	6.59	7.24	7.89	8.54
	2	3	5	6	8	8	8	8	8	20	20	20	20	20	20	20	20	20	20	20
6.4	.04	.12	.26	.42	.61	.84	1.06	1.29	1.52	1.86	2.45	3.03	3.62	4.20	4.79	5.41	6.06	6.71	7.36	8.01
	2	3	5	5	7	7	7	7	7	18	18	18	18	18	18	20	20	20	20	20
5.6	.04	.12	.24	.40	.59	.82	1.04	1.27	1.50	1.73	1.95	2.20	2.49	2.79	3.24	3.76	4.28	4.80	5.32	5.84
	2	3	5	5	7	7	7	7	7	7	7	9	9	9	16	16	16	16	16	16
5.0	.04	.12	.23	.39	.55	.72	.94	1.17	1.40	1.63	1.87	2.16	2.45	2.75	3.04	3.33	3.62	4.25	4.90	5.55
	2	3	5	5	5	7	7	7	7	7	9	9	9	9	9	9	9	20	20	20
4.5	.03	.12	.21	.33	.50	.69	.89	1.10	1.33	1.56	1.78	2.01	2.27	2.53	2.79	3.05	3.37	4.02	4.67	5.32
	2	3	3	5	6	6	6	7	7	7	7	6	8	6	8	8	20	20	20	20
4.1	.03	.11	.20	.32	.48	.65	.83	1.03	1.26	1.49	1.71	1.94	2.20	2.46	2.72	2.98	3.33	3.98	4.63	5.28
	2	3	3	5	5	5	6	7	7	7	7	8	8	8	8	8	20	20	20	20
3.8	.03	.11	.20	.32	.48	.65	.81	1.01	1.24	1.47	1.69	1.93	2.19	2.45	2.71	2.97	3.23	3.49	3.75	4.01
	2	3	3	5	5	5	6	7	7	7	7	8	8	8	8	8	8	8	8	8
3.5	.02	.10	.19	.31	.47	.64	.80	.99	1.19	1.39	1.61	1.84	2.07	2.30	2.53	2.79	3.05	3.31	3.57	3.83
	2	3	3	5	5	5	6	6	6	7	7	7	7	7	8	8	8	8	8	8
3.2	.02	.09	.18	.30	.46	.63	.79	.95	1.15	1.35	1.57	1.80	2.03	2.26	2.48	2.71	2.97	3.23	3.49	3.75
	2	3	3	5	5	5	5	6	6	7	7	7	7	7	7	8	8	8	8	8
3.0	.02	.09	.18	.29	.45	.62	.78	.94	1.12	1.31	1.52	1.75	1.98	2.21	2.43	2.66	2.90	3.16	3.42	3.68
	2	3	3	5	5	5	5	5	6	6	7	7	7	7	7	7	8	8	8	8
2.8	.02	.09	.18	.28	.42	.59	.75	.91	1.10	1.29	1.49	1.68	1.88	2.08	2.30	2.53	2.76	3.06	3.35	3.64
	2	3	3	3	5	5	5	5	6	6	6	6	6	7	7	7	9	9	9	9
2.6	.02	.08	.17	.27	.39	.55	.71	.87	1.07	1.26	1.46	1.65	1.85	2.04	2.25	2.48	2.71	2.96	3.22	3.48
	2	3	3	3	4	5	5	6	6	6	6	6	6	6	7	7	7	8	8	8
2.5	.02	.08	.17	.27	.39	.54	.70	.87	1.07	1.26	1.46	1.65	1.85	2.04	2.25	2.46	2.71	2.94	3.18	3.44
	1	3	3	3	4	5	5	6	6	6	6	6	6	6	7	7	7	7	8	8
2.4	.01	.07	.16	.26	.38	.53	.69	.85	1.04	1.23	1.43	1.62	1.82	2.01	2.22	2.45	2.68	2.92	3.18	3.44
	2	3	3	3	4	5	5	5	6	6	6	6	6	6	7	7	7	8	8	8
2.3	.01	.07	.15	.25	.35	.49	.55	.82	1.02	1.21	1.41	1.60	1.80	1.99	2.19	2.40	2.63	2.89	3.15	3.41
	2	2	3	3	3	5	5	6	6	6	6	6	6	6	6	7	8	8	8	8
2.1	.01	.07	.15	.25	.35	.46	.62	.78	.97	1.16	1.36	1.55	1.75	1.94	2.14	2.37	2.60	2.83	3.08	3.34
	2	2	3	3	3	5	5	5	6	6	6	6	6	6	7	7	7	7	8	6
2.0	.01	.07	.14	.24	.34	.45	.61	.77	.95	1.14	1.34	1.53	1.73	1.92	2.12	2.31	2.53	2.79	3.05	3.31
	2	2	[illegible]	3	3	4	5	5	6	6	6	6	6	6	6	6	6	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
HENDERSON CREEK NEAR LITTLE YORK
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 74

LOCATION
In NE ¼ SW ¼ sec 28, T12N, R4W, Henderson County, at bridge on Ill. 94, 1.0 mile south of Bald Bluff and 6.5 miles northeast of Oquawka

DRAINAGE AREA
428 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1934 thru Sept 1959
CONTINUOUS RECORD: 25 years; water years 1935-59

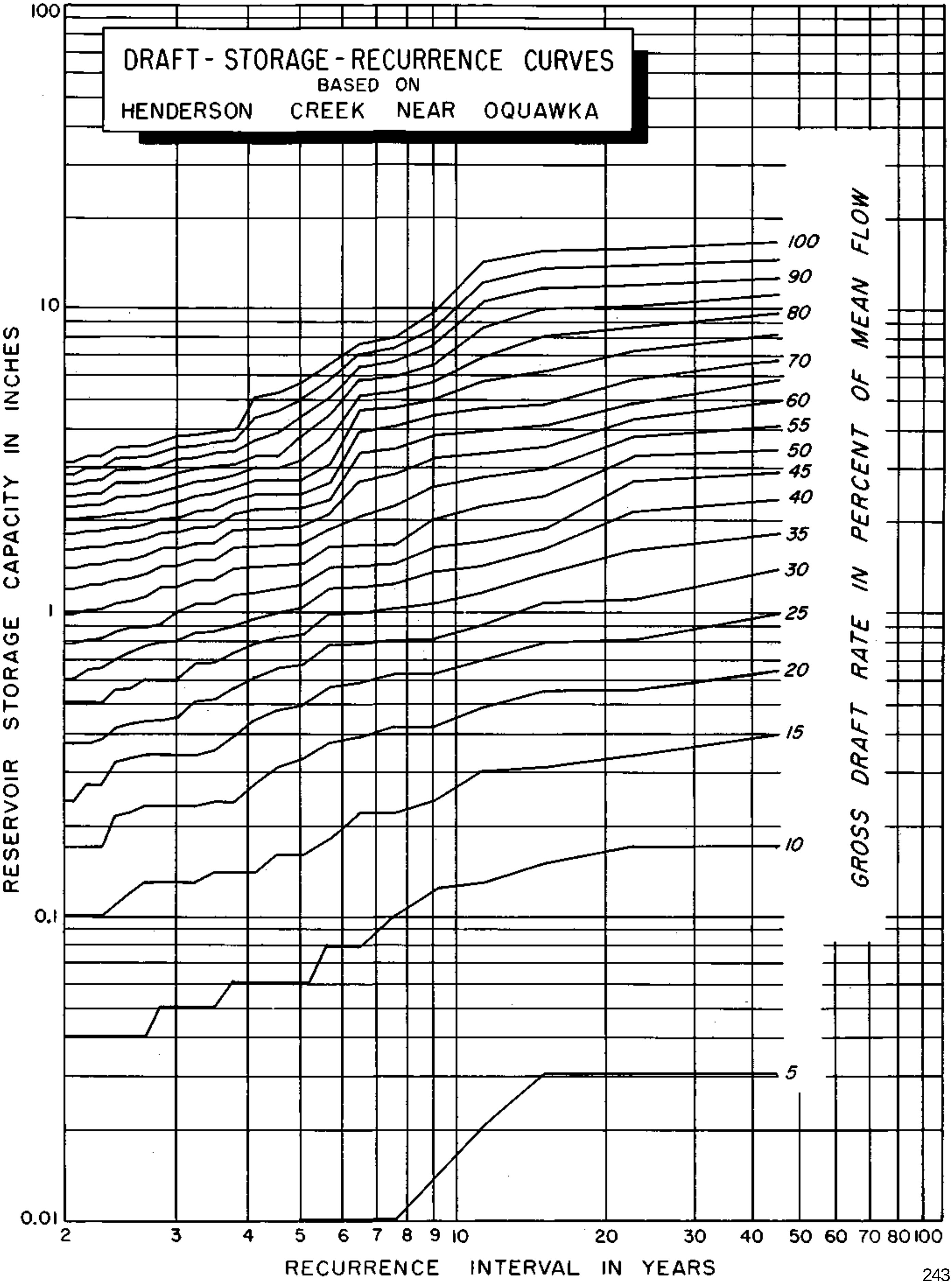
SYNTHETIC FLOW DATA
PERIOD: 20 years; water years 1915-34
INDEX STATION : Spoon River at Seville
COINCIDENT RECORD : 25 years; water years 1935-59

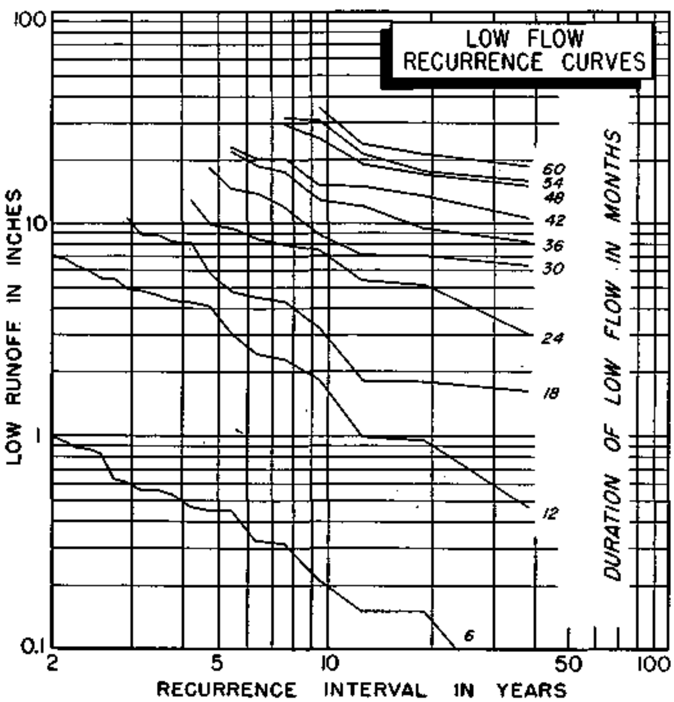
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.69 inch per month

Draft-Storage-Recurrence Data for Henderson Creek near Oquawka

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.03	.17	.40	.65	1.01	1.39	1.82	2.38	2.93	3.48	4.19	5.02	5.90	6.90	8.35	9.79	11.24	12.73	14.80	16.87
	3	5	7	7	11	11	16	16	16	16	24	24	26	42	42	42	42	60	60	60
22.5	.03	.17	.34	.56	.82	1.11	1.60	2.16	2.71	3.26	3.81	4.36	4.92	5.90	7.35	8.79	10.24	12.11	14.11	16.11
	2	5	6	7	8	9	16	16	16	16	16	16	16	42	42	42	42	58	58	58
15.0	.03	.15	.31	.55	.80	1.08	1.35	1.63	1.90	2.44	2.99	3.54	4.16	4.90	6.31	8.17	10.03	11.89	13.76	15.68
	2	4	6	7	8	8	8	8	8	16	16	18	18	30	54	54	54	54	54	60
11.3	.02	.13	.30	.49	.70	.93	1.17	1.43	1.72	2.26	2.81	3.38	4.00	4.73	5.83	6.93	8.72	10.51	12.32	14.39
	2	5	5	6	6	7	7	8	9	16	16	18	18	32	32	32	52	52	60	60
9.0	.02	.12	.24	.42	.63	.83	1.08	1.36	1.63	2.03	2.62	3.24	3.86	4.48	5.14	5.83	6.64	7.67	8.71	9.74
	2	3	5	6	6	6	8	8	8	16	18	18	18	18	20	20	30	30	30	30
7.5	.01	.10	.22	.42	.63	.83	1.04	1.25	1.45	1.68	2.25	2.87	3.49	4.11	4.74	5.36	6.04	6.73	7.42	8.11
	2	3	5	6	6	6	6	6	6	7	18	18	18	18	18	18	20	20	20	20
6.4	.01	.08	.22	.39	.59	.79	1.00	1.21	1.42	1.67	2.08	2.70	3.32	3.94	4.57	5.19	5.81	6.43	7.05	7.67
	2	3	5	5	6	6	6	6	7	7	18	18	18	18	18	18	18	18	18	18
5.6	.01	.08	.18	.37	.58	.78	.99	1.20	1.40	1.64	1.88	2.12	2.36	2.67	3.08	3.77	4.46	5.15	5.84	6.53
	1	3	3	6	6	6	6	6	6	7	7	7	9	9	20	20	20	20	20	20
5.0	.01	.06	.16	.33	.50	.68	.85	1.04	1.24	1.45	1.68	1.93	2.21	2.48	2.76	3.20	3.82	4.44	5.08	5.77
	1	3	5	5	5	5	5	6	6	6	7	8	8	8	8	18	18	18	20	20
4.5	.00	.06	.16	.31	.48	.66	.83	1.00	1.20	1.43	1.67	1.91	2.18	2.45	2.73	3.01	3.28	3.93	4.62	5.31
	1	2	4	5	5	5	5	6	6	7	7	7	8	8	8	8	8	20	20	20
4.1	.00	.06	.14	.27	.44	.62	.79	.96	1.16	1.41	1.65	1.90	2.18	2.45	2.73	3.01	3.28	3.69	4.38	5.07
	1	2	3	5	5	5	5	5	7	7	7	8	8	8	8	8	8	20	20	20
3.8	.00	.06	.14	.24	.39	.57	.74	.91	1.14	1.39	1.63	1.87	2.11	2.35	2.59	2.84	3.11	3.39	3.70	4.03
	1	2	3	3	5	5	5	5	7	7	7	7	7	7	7	8	8	9	9	18
3.5	.00	.05	.14	.24	.35	.52	.69	.87	1.07	1.28	1.49	1.69	1.93	2.19	2.47	2.75	3.04	3.35	3.66	3.97
	1	2	3	3	4	5	5	6	6	6	6	7	7	8	8	8	9	9	9	9
3.2	.00	.05	.13	.23	.34	.51	.68	.87	1.07	1.28	1.49	1.69	1.92	2.16	2.43	2.71	2.98	3.26	3.54	3.85
	1	2	3	3	3	5	5	6	6	6	6	6	7	7	8	8	8	8	9	9
3.0	.00	.05	.13	.23	.34	.45	.62	.81	1.01	1.22	1.43	1.63	1.84	2.05	2.33	2.61	2.91	3.22	3.53	3.84
	1	2	3	3	3	5	5	6	6	6	6	6	6	8	8	8	9	9	9	9
2.8	.00	.05	.13	.23	.34	.44	.61	.80	1.00	1.21	1.42	1.62	1.83	2.04	2.25	2.51	2.78	3.06	3.37	3.68
	1	2	3	3	3	5	5	6	6	6	6	6	6	6	6	8	8	9	9	9
2.6	.00	.04	.13	.23	.34	.44	.61	.78	.95	1.13	1.34	1.54	1.75	1.96	2.17	2.44	2.71	2.99	3.26	3.54
	1	2	3	3	3	5	5	5	5	6	6	6	6	6	6	8	8	8	8	8
2.5	.00	.04	.12	.22	.33	.43	.57	.74	.91	1.09	1.29	1.49	1.70	1.91	2.14	2.42	2.69	2.97	3.24	3.52
	1	2	3	3	3	3	5	5	5	5	6	6	6	6	8	8	8	8	8	8
2.4	.00	.04	.11	.21	.32	.42	.56	.70	.87	1.07	1.28	1.48	1.69	1.90	2.12	2.40	2.67	2.95	3.22	3.50
	1	2	3	3	3	4	4	5	5	6	6	6	6	6	8	8	8	8	8	8
2.3	.00	.04	.10	.17	.27	.38	.52	.66	.83	1.03	1.24	1.44	1.65	1.86	2.07	2.27	2.48	2.74	3.01	3.29
	1	1	2	2	3	4	4	5	5	6	6	6	6	6	6	6	6	8	8	8
2.1	.00	.04	.10	.17	.27	.37	.51	.65	.82	1.02	1.23	1.43	1.64	1.85	2.06	2.26	2.47	2.73	3.00	3.28
	1	1	2	2	3	4	4	5	5	6	6	6	6	6	6	6	6	8	8	8
2.0	.00	.04	.10	.17	.24	.37	.51	.64	.79	.99	1.20	1.40	1.61	1.82	2.03	2.23	2.44	2.65	2.85	3.14
	1	1	2	2	3	4	4	4	5	6	6	6	6	6	6	6	6	6	7	9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
HENDERSON CREEK NEAR OQUAWKA
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 101

LOCATION
In SE ¼ SW ¼ sec 18, T4N, R4W, McDonough County, at bridge on Ill. 61, 1.0 mile southwest of Colmar and 4.0 miles northeast of Plymouth

DRAINAGE AREA
655 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1944 thru Sept 1959
CONTINUOUS RECORD: 15 years; water years 1945-59

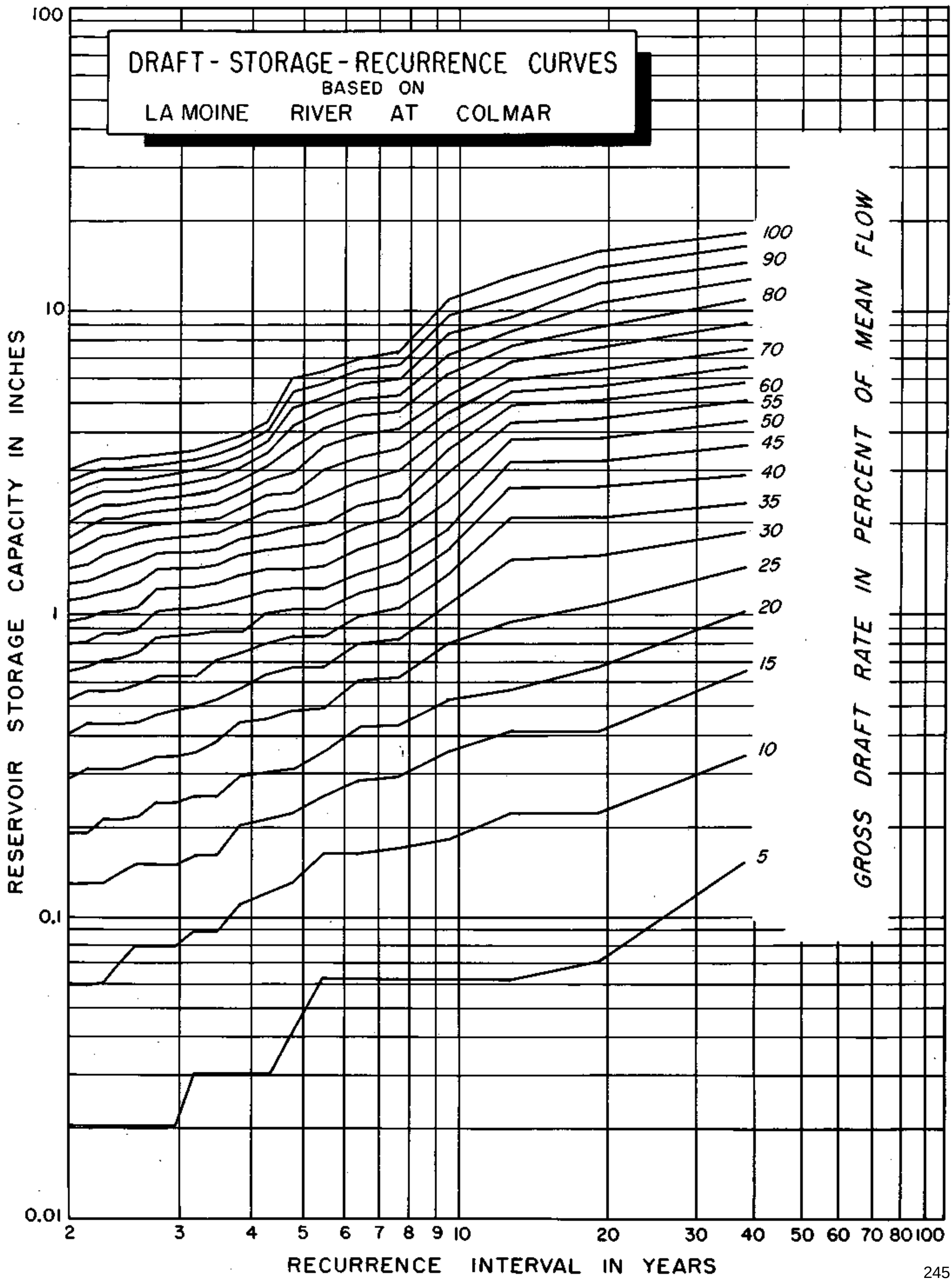
SYNTHETIC FLOW DATA
PERIOD: 23 years; water years 1922-44
INDEX STATION : La Moine River at Ripley
COINCIDENT RECORD: 15 years; water years 1945-59

TOTAL DATA ANALYZED
PERIOD : 38 years; water years 1922-59
MEAN DISCHARGE : 0.62 inch per month

Draft-Storage-Recurrence Data for La Moine River at Colmar

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
36.0	.15	.34	.55	1.02	1.42	1.85	2.34	2.89	3.64	4.38	5.12	5.87	6.63	7.55	9.27	11.01	12.74	14.60	16.46	18.32
	6	8	12	12	14	16	16	24	24	24	24	24	28	44	56	56	60	60	60	60
19.0	.07	.22	.41	.67	1.07	1.57	2.10	2.65	3.23	3.85	4.47	5.09	5.71	6.46	7.64	8.94	10.67	12.41	14.14	15.88
	5	6	8	10	16	16	18	18	20	20	20	20	20	38	38	56	56	56	56	56
12.7	.06	.22	.41	.60	.95	1.51	2.07	2.62	3.18	3.74	4.30	4.86	5.41	5.97	6.78	7.71	8.64	9.57	11.20	13.06
	5	6	6	8	18	18	18	18	18	18	18	18	18	18	30	30	30	30	60	60
9.5	.06	.18	.35	.55	.80	1.07	1.35	1.63	1.91	2.37	2.93	3.49	4.04	4.65	5.27	6.24	7.23	8.40	9.64	10.88
	3	4	6	6	9	9	9	9	9	18	18	18	18	20	20	32	32	40	40	40
7.6	.06	.17	.29	.43	.62	.83	1.05	1.27	1.50	1.81	2.12	2.44	2.99	3.55	4.11	4.70	5.32	6.01	6.69	7.37
	3	4	4	6	7	7	7	7	10	10	10	18	18	18	18	20	22	22	22	22
6.3	.06	.16	.28	.42	.61	.80	.98	1.17	1.36	1.64	1.95	2.29	2.74	3.30	3.92	4.54	5.16	5.78	6.40	7.02
	3	4	4	6	6	6	6	6	9	9	11	11	18	20	20	20	20	20	20	20
5.4	.06	.16	.25	.35	.51	.67	.85	1.04	1.22	1.45	1.73	2.01	2.46	3.02	3.58	4.14	4.70	5.25	5.81	6.37
	3	3	3	5	5	6	6	6	6	9	9	9	18	18	18	18	18	18	18	18
4.8	.04	.13	.22	.31	.48	.67	.85	1.04	1.22	1.41	1.67	1.95	2.23	2.55	2.95	3.57	4.19	4.81	5.43	6.05
	2	3	3	4	6	6	6	6	6	7	9	9	9	10	20	20	20	20	20	20
4.2	.03	.12	.21	.30	.45	.64	.82	1.01	1.19	1.41	1.63	1.85	2.16	2.47	2.78	3.09	3.40	3.71	4.02	4.33
	2	3	3	3	6	6	6	6	7	7	7	10	10	10	10	10	10	10	10	10
3.8	.03	.11	.20	.29	.44	.59	.75	.92	1.13	1.35	1.57	1.78	2.00	2.24	2.52	2.79	3.07	3.35	3.63	3.91
	2	3	3	3	5	5	5	7	7	7	7	7	7	9	9	9	9	9	9	9
3.5	.03	.09	.16	.25	.38	.53	.71	.90	1.06	1.27	1.46	1.64	1.86	2.08	2.32	2.58	2.86	3.14	3.42	3.70
	2	2	3	3	5	6	6	6	6	6	6	7	7	7	8	9	9	9	9	9
3.2	.03	.09	.16	.25	.35	.50	.68	.87	1.05	1.24	1.43	1.61	1.83	2.05	2.27	2.52	2.77	3.01	3.26	3.51
	2	2	3	3	4	6	6	6	6	6	6	7	7	7	8	8	8	8	8	8
2.9	.02	.08	.15	.24	.34	.49	.67	.86	1.04	1.23	1.42	1.60	1.79	2.01	2.23	2.45	2.70	2.94	3.19	3.45
	2	2	3	3	5	6	6	6	6	6	6	6	7	7	7	8	8	8	8	10
2.7	.02	.08	.15	.24	.34	.47	.65	.84	1.02	1.21	1.40	1.58	1.77	1.99	2.21	2.42	2.64	2.88	3.13	3.39
	2	2	3	3	3	6	6	5	6	6	6	6	7	7	7	7	8	8	8	9
2.5	.02	.08	.15	.22	.32	.44	.60	.75	.91	1.06	1.28	1.49	1.71	1.93	2.15	2.36	2.58	2.81	3.08	3.36
	2	2	2	3	4	5	5	5	5	7	7	7	7	7	7	7	[illegible]	8	9	9
2.4	.02	.07	.14	.21	.31	.43	.57	.72	.88	1.03	1.21	1.42	1.64	1.86	2.08	2.31	2.56	2.80	3.05	3.30
	1	2	2	3	4	4	5	5	5	5	7	7	7	7	7	8	8	8	8	8
2.2	.02	.06	.13	.21	.31	.43	.56	.71	.87	1.02	1.18	1.35	1.57	1.81	2.06	2.31	2.56	2.80	3.05	3.30
	1	2	2	3	4	4	5	5	5	5	5	7	7	6	8	8	8	8	8	8
2.1	.02	.06	.13	.19	.31	.43	.56	.68	.83	.98	1.14	1.29	1.47	1.70	1.95	2.20	2.45	2.69	2.94	3.19
	1	2	2	4	4	4	4	4	5	5	5	5	6	8	8	8	8	8	8	8
2.0	.02	.06	.13	.19	.29	.41	.54	.66	.81	.96	1.12	1.27	1.43	1.60	1.81	2.05	2.30	2.54	2.79	3.04
	1	2	2	2	4	4	4	4	5	5	5	5	5	6	7	8	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LA MOINE RIVER AT COLMAR
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
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100
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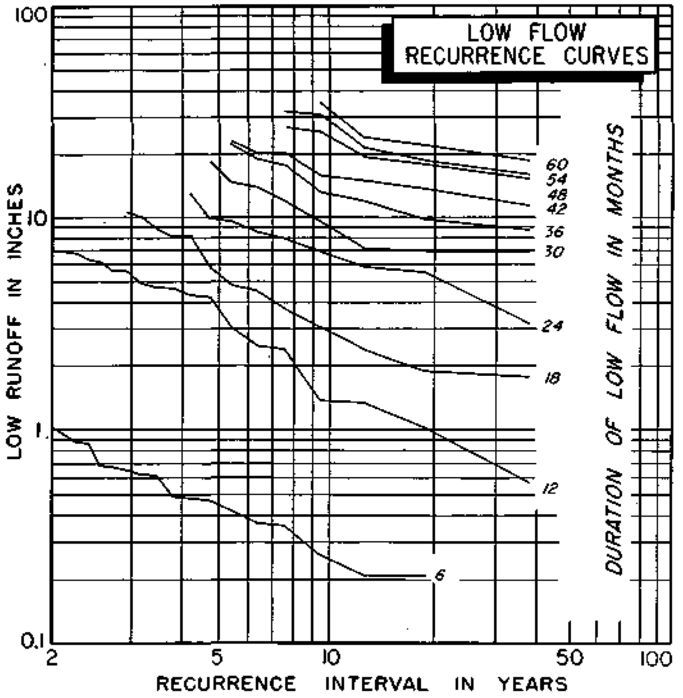


STATION 102

LOCATION

In NE ¼ sec 33, T1N, R2W, Brown County, at bridge on U. S. 24, 0.25 mile east of Ripley

DRAINAGE AREA

1310 square miles, approximately

ACTUAL FLOW DATA

PERIOD: Mar 1921 thru Sept 1959

CONTINUOUS RECORD: 38 years; water years 1922-59

SYNTHETIC FLOW DATA

None; this station utilized as an index station

TOTAL DATA ANALYZED

PERIOD : 38 years; water years 1922-59

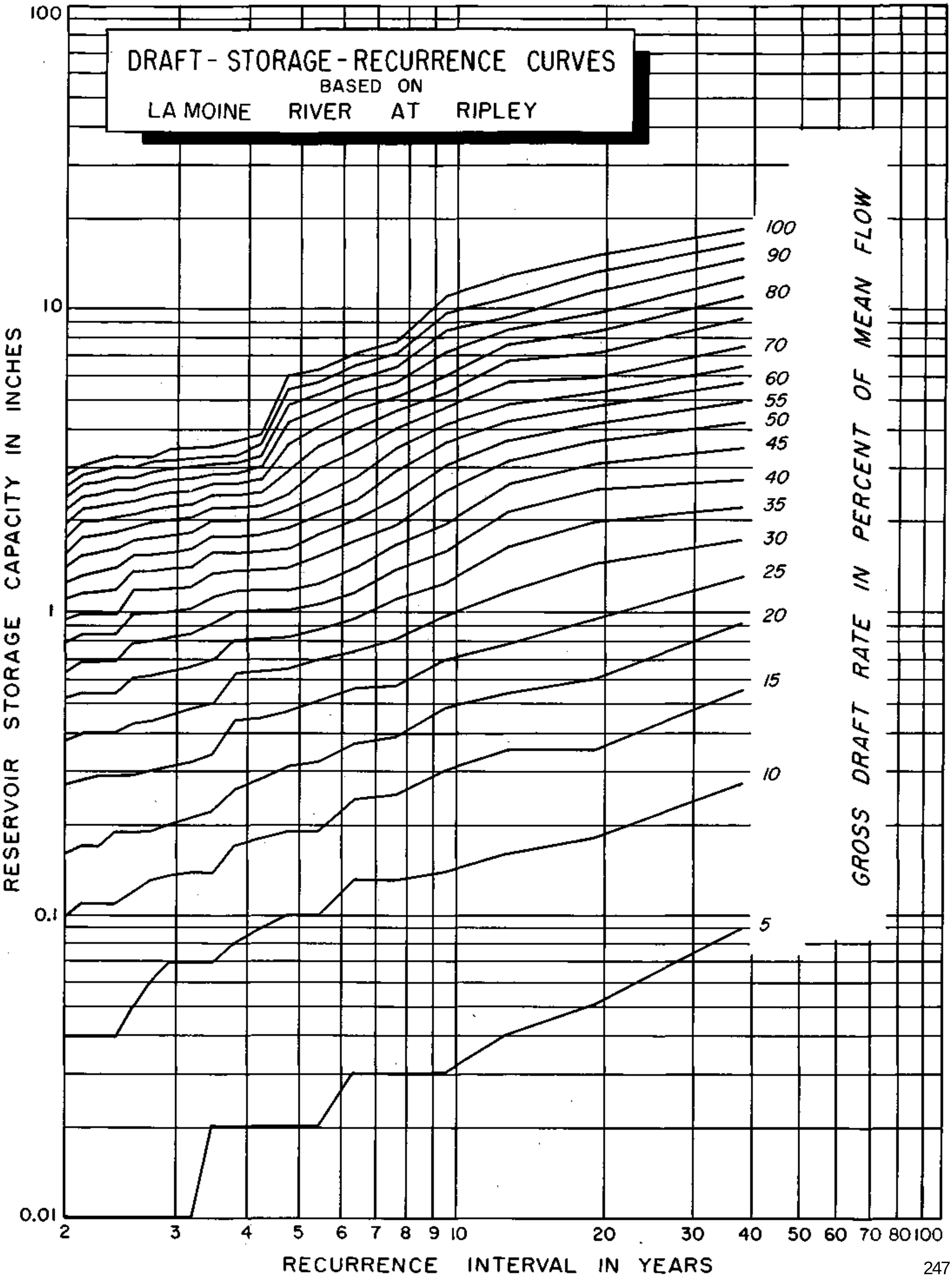
MEAN DISCHARGE : 0.62 inch per month

Draft-Storage-Recurrence Data for La Moine River at Ripley

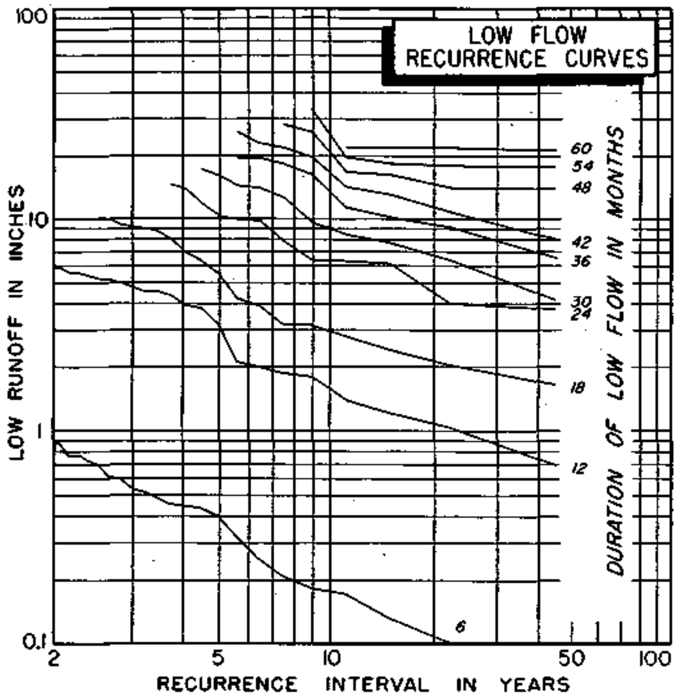
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
38.0	.09	.27	.55	.92	1.31	1.74	2.23	2.74	3.49	4.23	4.97	5.72	6.48	7.58	9.32	11.06	12.79	14.63	16.49	18.35
	6	7	12	12	14	16	16	24	24	24	24	24	28	56	56	56	56	60	60	60
19.0	.05	.18	.35	.60	.95	1.45	1.99	2.54	3.10	3.66	4.22	4.78	5.33	5.99	7.23	8.47	9.78	11.52	13.25	14.99
	4	4	8	10	16	16	18	18	18	18	18	18	18	40	40	40	56	56	56	56
12.7	.04	.16	.35	.54	.79	1.16	1.64	2.14	2.63	3.14	3.70	4.26	4.85	5.78	6.71	7.64	8.57	9.50	11.00	12.66
	3	6	6	8	8	14	16	16	16	18	18	18	30	30	30	30	30	30	60	60
9.5	.03	.14	.30	.48	.70	.97	1.25	1.59	1.96	2.50	3.06	3.62	4.17	4.73	5.29	6.01	7.25	8.49	9.73	10.97
	3	4	6	6	9	9	9	12	12	18	18	18	18	18	18	40	40	40	40	40
7.6	.03	.13	.25	.39	.57	.82	1.10	1.38	1.66	1.94	2.38	2.94	3.49	4.05	4.61	5.17	5.76	6.45	7.13	7.81
	3	4	4	5	7	9	9	9	9	9	18	18	18	18	18	18	22	22	22	22
6.3	.03	.13	.24	.37	.56	.75	.95	1.17	1.40	1.71	2.02	2.33	2.78	3.40	4.02	4.64	5.26	5.88	6.50	7.12
	3	3	4	6	6	6	7	7	10	10	10	10	20	20	20	20	20	20	20	20
5.4	.02	.10	.19	.32	.51	.70	.88	1.07	1.25	1.53	1.81	2.09	2.43	2.99	3.55	4.11	4.67	5.22	5.78	6.34
	2	3	3	6	6	6	6	6	9	9	9	9	18	18	18	18	18	18	18	18
4.8	.02	.10	.19	.31	.47	.65	.83	1.02	1.20	1.40	1.62	1.90	2.18	2.46	2.95	3.57	4.19	4.81	5.43	6.05
	2	3	3	5	5	6	6	6	6	7	9	9	9	9	20	20	20	20	20	20
4.2	.02	.09	.18	.28	.45	.64	.62	1.01	1.19	1.38	1.59	1.80	2.02	2.24	2.49	2.76	3.04	3.32	3.60	3.88
	1	3	3	5	6	6	6	6	6	6	7	7	7	7	9	9	9	9	9	9
3.8	.02	.08	.17	.26	.44	.63	.81	1.00	1.18	1.37	1.57	1.78	2.00	2.22	2.44	2.65	2.88	3.12	3.40	3.68
	1	3	3	3	6	6	6	6	6	6	7	7	7	7	7	7	8	9	9	9
3.5	.02	.07	.14	.22	.34	.50	.70	.92	1.13	1.35	1.57	1.78	2.00	2.22	2.44	2.65	2.87	3.09	3.30	3.54
	1	2	2	3	5	6	7	7	7	7	7	7	7	7	7	7	7	7	7	8
3.2	.01	.07	.14	.21	.32	.48	.66	.85	1.03	1.22	1.41	1.62	1.84	2.06	2.28	2.52	2.77	3.01	3.26	3.51
	2	2	2	3	5	6	6	6	6	6	7	7	7	7	7	8	8	8	8	8
2.9	.01	.07	.14	.20	.31	.46	.64	.83	1.01	1.20	1.39	1.58	1.80	2.02	2.24	2.49	2.74	2.98	3.23	3.48
	2	2	2	3	5	6	6	6	6	6	6	7	7	7	8	8	8	8	8	8
2.7	.01	.06	.13	.19	.30	.44	.62	.81	.99	1.18	1.37	1.55	1.76	1.98	2.20	2.42	2.67	2.91	3.16	3.41
	1	2	2	3	4	6	6	6	6	6	6	6	7	7	7	8	8	8	8	8
2.5	.01	.05	.12	.19	.29	.43	.61	.80	.98	1.17	1.36	1.54	1.73	1.91	2.12	2.33	2.55	2.78	3.03	3.28
	1	2	2	3	4	6	6	6	6	6	6	6	6	6	7	7	7	8	8	8
2.4	.01	.04	.11	.19	.29	.41	.54	.69	.85	1.00	1.19	1.40	1.62	1.84	2.06	2.29	2.54	2.78	3.03	3.28
	1	2	2	3	4	4	5	5	5	5	7	7	7	7	7	8	8	8	8	8
2.2	.01	.04	.11	.17	.29	.41	.54	.69	.85	1.00	1.17	1.36	1.58	1.80	2.02	2.23	2.45	2.68	2.93	3.18
	1	2	2	4	4	4	5	5	5	5	6	7	7	7	7	7	7	8	8	8
2.1	.01	.04	.11	.17	.28	.40	.54	.69	.85	1.00	1.16	1.32	1.54	1.76	1.98	2.19	2.41	2.63	2.84	3.06
	1	2	2	2	4	4	5	5	5	5	5	7	7	7	7	7	7	7	7	7
2.0	.01	.04	.10	.16	.27	.39	.52	.64	.80	.95	1.11	1.26	1.42	1.57	1.76	1.97	2.19	2.41	2.62	2.84
	1	1	2	2	4	4	4	5	5	5	5	5	5	6	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LA MOINE RIVER AT RIPLEY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

MILL CREEK AT MILAN



STATION 111

LOCATION
In SW ¼ SE ¼ sec 24, T17N, R2W, Rock Island County, at bridge on Knoxville Road, 1.0 mile southeast of Milan

DRAINAGE AREA
62.5 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1939 thru May 1940, July 1941 thru Sept 1959
CONTINUOUS RECORD: 18 years; water years 1942-59

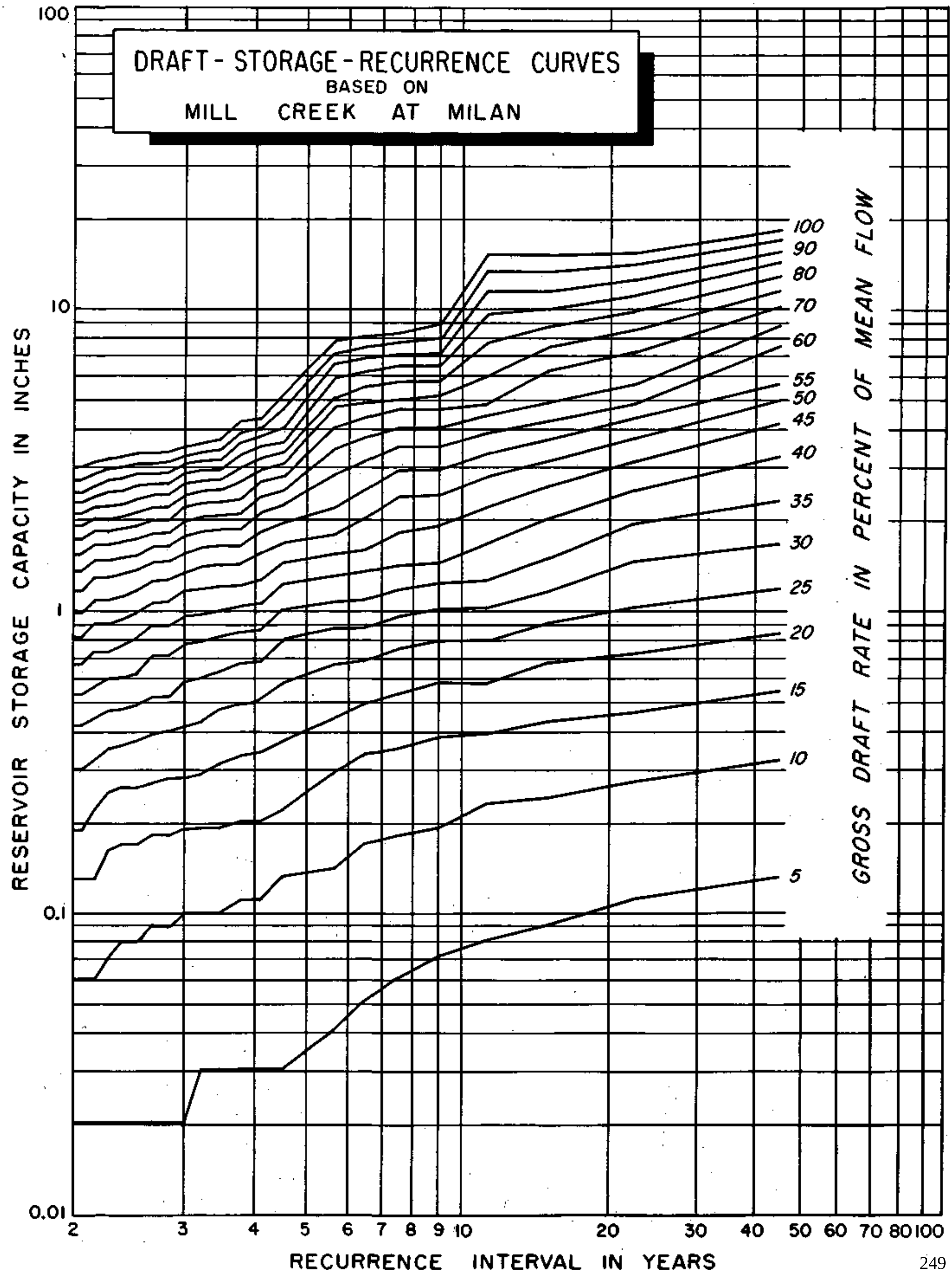
SYNTHETIC FLOW DATA
PERIOD: 27 years; water years 1915-41
INDEX STATION : Spoon River at Seville
COINCIDENT RECORD: 18 years; water years 1942-59

TOTAL DATA ANALYZED
PERIOD : 45 years; water years 1915-59
MEAN DISCHARGE : 0.62 inch per month

Draft-Storage-Recurrence Data for Mill Creek at Milan

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.13 5	.32 7	.54 7	.84 11	1.19 11	1.66 18	2.33 30	3.26 30	4.19 30	5.12 30	6.21 42	7.54 44	8.90 44	10.27 44	11.63 44	12.99 44	14.36 44	15.72 44	17.09 44	18.45 44
22.5	.11 5	.27 6	.46 6	.72 10	1.03 10	1.46 16	1.95 16	2.52 20	3.14 20	3.76 20	4.36 20	5.02 22	5.98 42	7.28 42	8.56 42	9.88 42	11.22 44	12.58 48	14.07 48	15.56 48
15.0	.09 5	.24 6	.43 6	.67 8	.92 5	1.17 8	1.49 16	2.03 18	2.59 18	3.15 18	3.71 18	4.27 18	5.03 40	6.27 40	7.51 40	8.75 40	9.99 40	11.59 58	13.39 58	15.19 60
11.3	.08 5	.23 5	.39 6	.58 7	.80 7	1.02 8	1.27 11	1.67 15	2.22 18	2.76 18	3.34 18	3.90 18	4.45 18	5.11 32	6.10 32	7.71 60	9.57 60	11.43 60	13.29 60	15.15 60
9.0	.07 3	.19 6	.38 6	.58 7	.80 7	1.01 7	1.23 7	1.45 7	1.93 16	2.43 16	2.96 18	3.52 18	4.07 18	4.66 20	5.28 20	5.90 20	6.52 20	7.19 28	8.06 28	8.93 28
7.5	.06 3	.18 5	.35 6	.53 7	.75 7	.96 7	1.18 7	1.41 8	1.83 16	2.38 16	2.94 18	3.50 18	4.05 18	4.64 20	5.26 20	5.88 20	6.50 20	7.12 20	7.74 20	8.36 20
6.4	.05 3	.17 5	.33 5	.49 6	.68 6	.88 7	1.11 8	1.35 8	1.60 14	2.03 14	2.51 20	3.13 20	3.75 20	4.37 20	4.99 20	5.61 20	6.23 20	6.85 20	7.47 20	8.09 20
5.6	.04 3	.14 4	.29 5	.44 7	.66 7	.87 7	1.09 7	1.31 7	1.54 8	1.79 8	2.20 20	2.82 20	3.44 20	4.06 20	4.68 20	5.30 20	5.92 20	6.54 20	7.16 20	7.78 20
5.0	.04 3	.14 3	.26 5	.41 5	.59 7	.80 7	1.02 7	1.24 7	1.45 7	1.70 9	1.98 9	2.26 9	2.54 9	2.82 9	3.17 16	3.67 16	4.16 16	4.66 16	5.15 16	5.65 16
4.5	.03 3	.13 3	.22 5	.37 5	.58 7	.79 7	1.01 7	1.23 7	1.44 7	1.68 9	1.96 9	2.24 9	2.52 9	2.80 9	3.08 9	3.35 9	3.63 9	4.04 20	4.66 20	5.28 20
4.1	.03 2	.11 3	.20 4	.34 5	.50 5	.68 6	.86 5	1.06 7	1.27 9	1.55 9	1.63 9	2.11 9	2.39 9	2.67 9	2.95 9	3.22 9	3.50 9	3.78 9	4.06 9	4.34 9
3.8	.03 2	.11 3	.20 4	.33 5	.49 5	.67 6	.85 6	1.04 6	1.22 6	1.43 7	1.65 7	1.87 8	2.11 8	2.36 10	2.67 10	2.98 10	3.29 10	3.60 10	3.91 10	4.22 10
3.5	.03 1	.10 3	.19 3	.31 5	.47 5	.64 6	.82 6	1.01 6	1.21 7	1.43 7	1.65 7	1.86 7	2.08 7	2.30 7	2.52 7	2.73 7	2.95 7	3.17 7	3.41 9	3.69 9
3.2	.03 1	.10 3	.19 3	.29 4	.43 5	.61 6	.79 6	.98 7	1.19 7	1.41 7	1.63 7	1.84 7	2.06 7	2.28 7	2.50 7	2.71 7	2.93 7	3.15 7	3.36 7	3.60 8
3.0	.02 2	.10 3	.19 3	.28 4	.40 6	.59 6	.77 6	.96 6	1.14 6	1.34 7	1.56 7	1.77 7	1.99 7	2.21 7	2.43 7	2.64 7	2.86 7	3.08 7	3.29 7	3.52 8
2.8	.02 2	.09 3	.18 3	.28 4	.40 4	.53 6	.71 6	.90 6	1.08 6	1.27 6	1.46 6	1.64 6	1.83 6	2.01 6	2.22 7	2.43 7	2.65 7	2.88 8	3.13 8	3.38 8
2.6	.02 2	.09 3	.18 3	.27 4	.39 4	.52 6	.70 6	.89 6	1.07 6	1.26 6	1.45 6	1.63 6	1.82 6	2.00 6	2.21 7	2.42 7	2.64 7	2.86 7	3.10 8	3.35 8
2.5	.02 1	.08 3	.17 3	.26 3	.37 4	.49 4	.62 6	.81 6	.99 6	1.18 6	1.37 6	1.55 6	1.74 6	1.92 6	2.13 7	2.36 8	2.61 8	2.85 8	3.10 8	3.35 8
2.4	.02 1	.08 3	.17 3	.26 3	.36 4	.48 4	.61 5	.77 6	.95 6	1.14 6	1.33 6	1.51 6	1.70 6	1.88 6	2.07 6	2.27 8	2.52 8	2.76 8	3.01 8	3.26 8
2.3	.02 1	.07 3	.16 3	.25 3	.35 4	.47 4	.66 4	.73 6	.91 6	1.10 6	1.29 6	1.47 6	1.66 6	1.84 6	2.03 6	2.24 8	2.49 8	2.73 8	2.98 8	3.23 8
2.1	.02 1	.06 2	.13 3	.22 3	.32 4	.44 4	.57 4	.73 5	.91 6	1.10 6	1.29 6	1.47 6	1.66 6	1.84 6	2.03 6	2.22 6	2.40 6	2.59 6	2.85 9	3.13 9
2.0	.02 1	.06 2	.13 2	.19 3	.30 4	.42 4	.55 4	.67 4	.82 5	.99 6	1.16 6	1.36 6	1.55 6	1.73 6	1.92 6	2.11 6	2.29 6	2.48 6	2.73 9	3.01 9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
MILL CREEK AT MILAN
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
90
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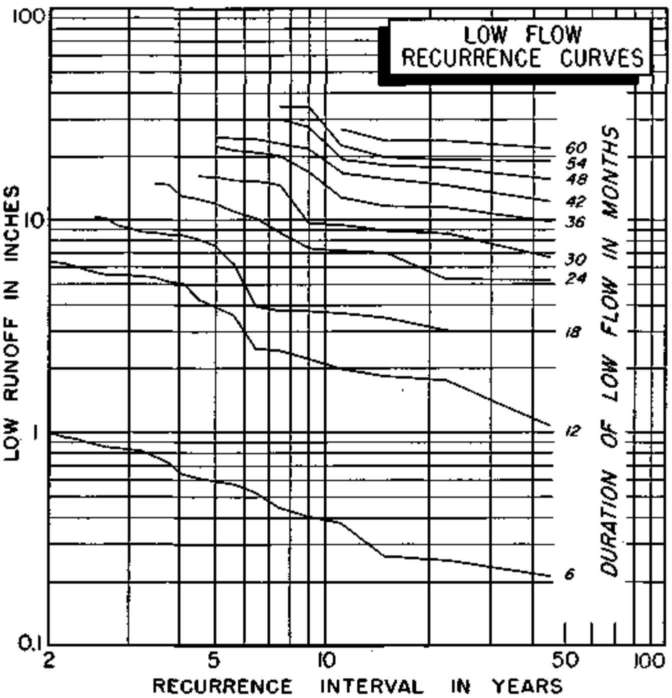
15
10
5

POPE CREEK NEAR KEITHSBURG



STATION 123

LOCATION
In SE ¼ sec 11, T13N, R5W, Mercer County, at highway bridge 2.0 miles northeast of Keithsburg

DRAINAGE AREA
171 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1934 thru Sept 1959
CONTINUOUS RECORD: 25 years; water years 1935-59

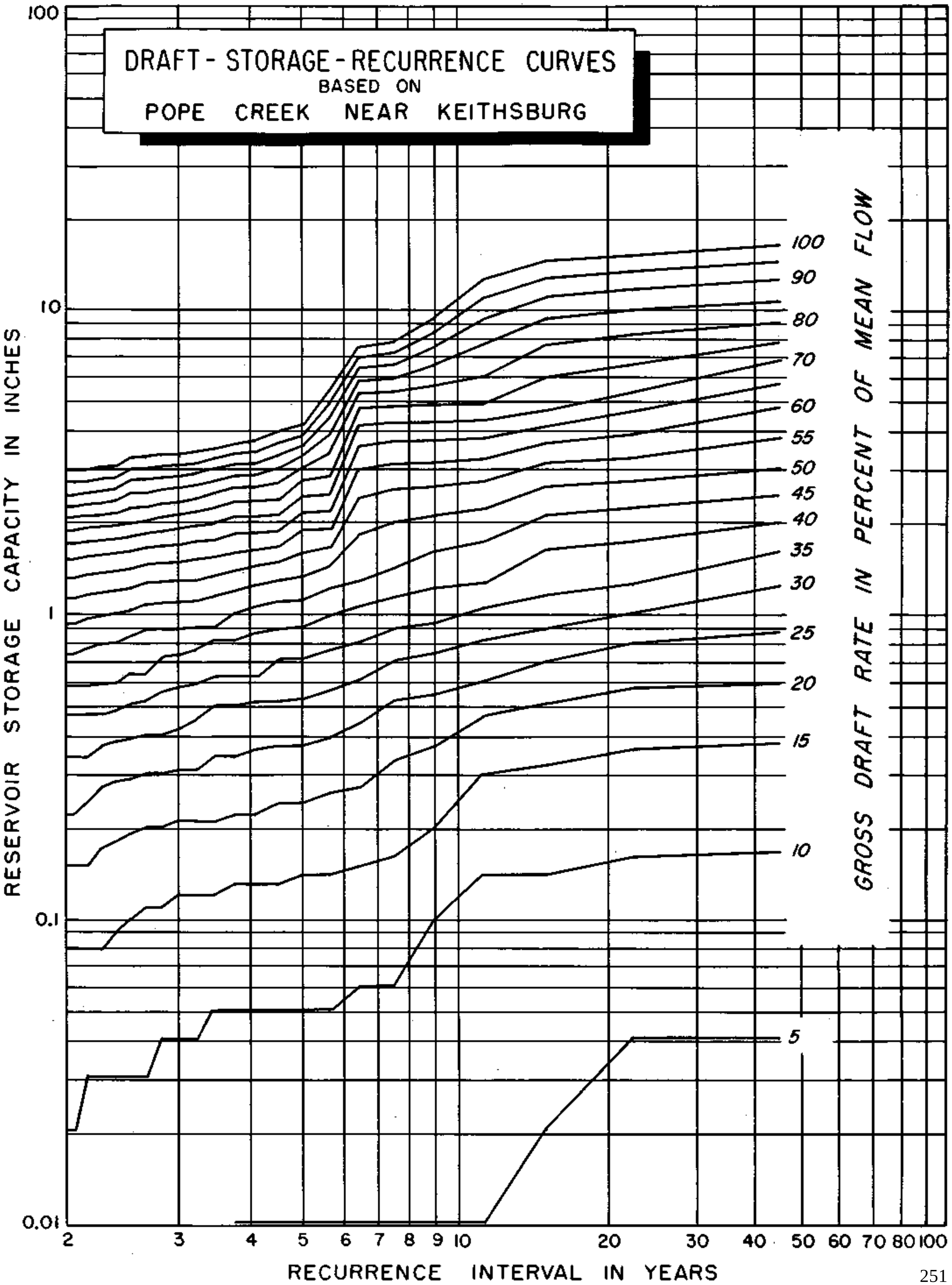
SYNTHETIC FLOW DATA
PERIOD: 20 years; water years 1915-34
INDEX STATION : Spoon River at Seville
COINCIDENT RECORD: 25 years; water years 1935-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.64 inch per month

Draft-Storage-Recurrence Data for Pope Creek near Keithsburg

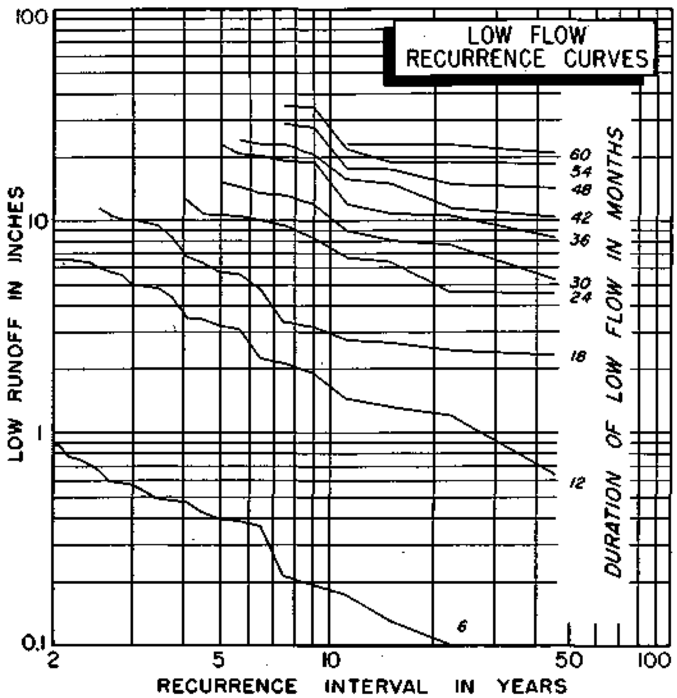
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.04	.17	.38	.61	.90	1.25	1.62	2.03	2.48	3.05	3.84	4.82	5.84	6.87	7.89	9.16	10.92	12.78	14.70	16.62
	4	6	7	7	11	11	12	14	14	20	30	32	32	32	32	42	56	60	60	60
22.5	.04	.16	.36	.59	.81	1.03	1.26	1.75	2.26	2.77	3.30	3.93	4.69	5.46	6.67	8.40	10.13	11.85	13.58	15.31
	3	5	7	7	7	7	7	16	16	16	18	24	24	24	54	54	54	54	54	54
15.0	.02	.14	.32	.51	.71	.93	1.16	1.63	2.14	2.65	3.16	3.67	4.19	4.70	6.04	7.77	9.50	11.22	12.95	14.73
	3	5	6	6	7	7	8	16	16	16	16	16	16	16	54	54	54	54	54	60
11.3	.01	.14	.30	.46	.62	.83	1.06	1.28	1.74	2.25	2.76	3.27	3.83	4.40	4.98	6.12	7.79	9.45	11.12	12.78
	3	5	5	5	5	7	7	7	16	16	16	16	18	18	18	52	52	52	52	52
9.0	.01	.10	.20	.37	.56	.75	.97	1.23	1.62	2.13	2.64	3.17	3.75	4.32	4.90	5.70	6.66	7.62	8.58	9.54
	3	3	3	6	6	6	8	8	16	16	16	18	18	18	20	30	30	30	30	30
7.5	.01	.06	.16	.33	.52	.71	.90	1.14	1.42	2.00	2.58	3.15	3.73	4.30	4.88	5.46	6.03	6.65	7.29	7.93
	1	3	5	6	6	6	6	8	18	18	18	18	18	18	18	18	18	20	20	20
6.4	.01	.06	.15	.27	.44	.63	.84	1.06	1.29	1.83	2.41	2.98	3.56	4.13	4.71	5.29	5.86	6.44	7.01	7.59
	1	2	3	4	6	6	7	7	7	18	18	18	18	18	18	18	18	18	18	18
5.6	.01	.05	.14	.26	.39	.57	.77	.99	1.22	1.44	1.66	1.91	2.19	2.48	2.87	3.38	3.89	4.41	4.92	5.43
	1	2	3	4	4	6	7	7	7	7	7	9	9	9	16	16	16	16	16	16
5.0	.01	.05	.14	.24	.37	.53	.72	.92	1.11	1.33	1.60	1.89	2.17	2.46	2.75	3.04	3.33	3.61	3.90	4.22
	1	2	3	4	5	6	6	6	7	7	9	9	9	9	9	9	9	9	9	20
4.5	.01	.05	.13	.24	.37	.52	.71	.91	1.10	1.29	1.48	1.67	1.89	2.14	2.40	2.71	3.03	3.35	3.67	3.99
	1	2	3	4	4	6	6	6	6	6	6	6	8	8	8	10	10	10	10	10
4.1	.01	.05	.13	.22	.36	.52	.58	.87	1.06	1.25	1.44	1.63	1.86	2.11	2.37	2.63	2.88	3.14	3.43	3.72
	1	2	3	4	5	5	5	6	6	6	6	6	8	8	8	8	8	9	9	9
3.8	.01	.05	.13	.22	.34	.50	.66	.82	1.01	1.20	1.39	1.59	1.85	2.10	2.36	2.62	2.87	3.13	3.38	3.64
	1	2	3	3	5	5	5	6	6	6	6	8	8	8	8	8	8	8	8	8
3.5	.00	.05	.12	.21	.34	.50	.66	.82	.98	1.15	1.34	1.54	1.76	1.99	2.25	2.51	2.76	3.02	3.27	3.53
	1	2	3	3	5	5	5	5	5	6	6	7	7	8	8	8	8	8	8	8
3.2	.00	.04	.12	.21	.31	.45	.61	.77	.93	1.11	1.30	1.52	1.74	1.97	2.19	2.42	2.67	2.93	3.18	3.44
	1	2	3	3	3	5	5	5	5	6	6	7	7	7	7	8	8	8	8	9
3.0	.00	.04	.12	.21	.31	.42	.58	.74	.91	1.10	1.29	1.48	1.70	1.93	2.15	2.37	2.62	2.88	3.13	3.39
	1	2	3	3	3	5	5	5	6	6	6	7	7	7	7	8	8	8	8	8
2.8	.00	.04	.11	.20	.30	.40	.56	.72	.90	1.09	1.28	1.47	1.67	1.87	2.09	2.33	2.58	2.84	3.09	3.35
	1	2	3	3	3	5	5	5	6	6	6	6	6	7	7	8	8	8	8	8
2.6	.00	.03	.11	.20	.30	.40	.52	.70	.89	1.08	1.27	1.46	1.66	1.85	2.04	2.27	2.52	2.78	3.03	3.29
	1	2	3	3	3	3	4	6	6	6	6	6	6	6	7	8	8	8	8	8
2.5	.00	.03	.10	.19	.29	.39	.51	.66	.85	1.04	1.23	1.42	1.62	1.81	2.00	2.26	2.51	2.77	3.02	3.28
	1	2	3	3	3	3	4	6	6	6	6	6	6	6	8	8	8	8	8	8
2.4	.00	.03	.09	.18	.28	.38	.48	.63	.82	1.01	1.20	1.39	1.59	1.78	1.97	2.16	2.38	2.60	2.83	3.09
	1	2	3	3	3	3	4	6	6	6	6	6	6	6	6	6	7	7	8	8
2.3	.00	.03	.08	.17	.27	.37	.47	.61	.80	.99	1.18	1.37	1.57	1.76	1.95	2.14	2.33	2.55	2.80	3.06
	1	1	3	3	3	3	4	6	6	6	6	6	6	6	6	6	7	8	8	8
2.1	.00	.03	.08	.15	.24	.34	.47	.59	.78	.97	1.16	1.35	1.55	1.74	1.93	2.12	2.31	2.51	2.74	3.00
	1	1	2	2	3	4	4	6	6	6	6	6	6	6	6	6	6	6	8	8
2.0	.00	.02	.08	.15	.22	.34	.47	.59	.75	.94	1.13	1.32	1.52	1.71	1.90	2.09	2.28	2.48	2.73	2.99
	-1	2	2	2	3	4	4	4	6	6	6	6	6	6	6	6	6	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
POPE CREEK NEAR KEITHSBURG
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

SOUTH HENDERSON CREEK AT BIGGSV1LLE



STATION 139

LOCATION
Between secs 16 and 17, T10N, R4W, Henderson County, at bridge on Ill. 94 at north edge of Biggsville

DRAINAGE AREA
81.4 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1939 thru Sept 1959
CONTINUOUS RECORD: 20 years; water years 1940-59

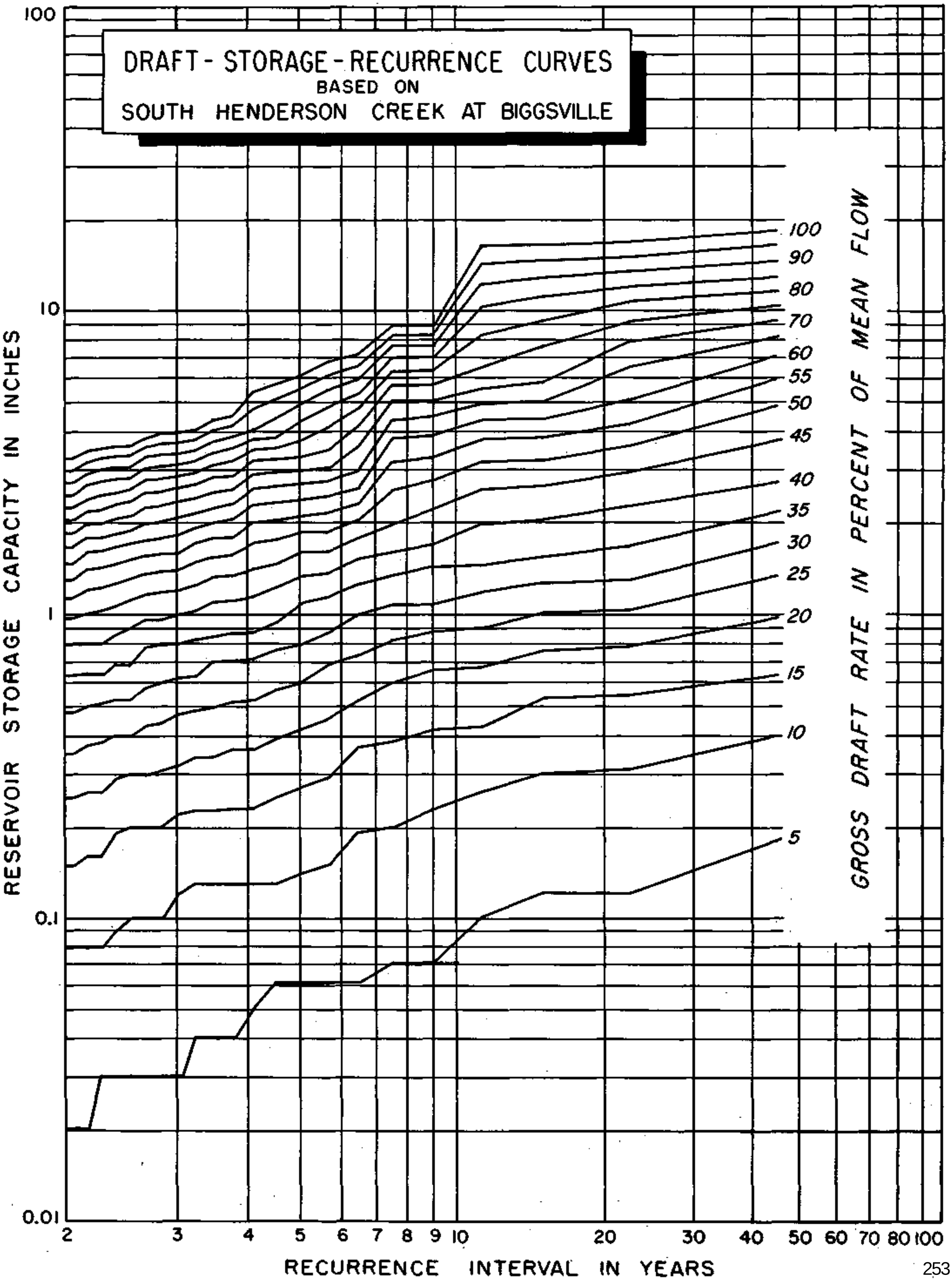
SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1915-39
INDEX STATION : Spoon River at Seville
COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 0.66 inch per month

Draft-Storage-Recurrence Data for South Henderson Creek at Biggsville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.18	.40	.63	.97	1.34	1.74	2.20	2.72	3.76	4.88	5.00	7.12	8.25	9.37	10.49	11.68	13.06	14.65	16.63	18.61
	6	7	7	11	12	12	16	16	34	34	34	34	34	34	34	42	42	60	60	60
22.5	.12	.31	.54	.78	1.04	1.30	1.68	2.29	2.99	3.61	4.27	5.15	6.54	7.92	9.31	10.70	12.08	13.58	15.17	16.94
	5	7	7	8	8	8	18	20	20	20	20	42	42	42	42	42	44	48	48	58
15.0	.12	.30	.53	.76	1.02	1.28	1.55	2.06	2.66	3.25	3.84	4.44	5.03	5.85	7.63	9.41	11.19	12.98	14.79	16.64
	5	7	7	8	8	8	8	18	18	18	18	18	18	54	54	54	54	54	56	56
11.3	.10	.26	.43	.67	.93	1.19	1.46	2.01	2.61	3.20	3.79	4.39	4.98	5.58	6.54	8.37	10.35	12.33	14.31	16.29
	5	5	5	8	8	8	8	18	18	18	18	18	18	18	32	60	60	60	60	60
9.0	.07	.23	.42	.66	.92	1.18	1.45	1.71	2.23	2.76	3.33	3.93	4.52	5.12	5.77	6.43	7.09	7.75	8.41	9.07
	5	5	7	8	8	8	8	8	16	16	18	18	18	18	20	20	20	20	20	20
7.5	.07	.20	.38	.60	.84	1.08	1.35	1.61	2.00	2.59	3.18	3.78	4.37	5.01	5.67	6.33	6.99	7.65	8.31	8.97
	3	5	6	7	7	8	8	8	18	18	18	18	18	20	20	20	20	20	20	20
6.4	.06	.19	.36	.52	.73	.99	1.26	1.52	1.79	2.05	2.33	2.62	2.98	3.58	4.17	4.75	5.36	5.95	6.59	7.25
	2	5	5	5	8	8	8	8	8	8	9	9	18	18	18	18	18	18	20	20
5.6	.06	.15	.29	.45	.68	.91	1.14	1.37	1.61	1.87	2.17	2.46	2.76	3.06	3.49	4.15	4.81	5.47	6.13	6.79
	2	3	5	5	7	7	7	7	8	9	9	9	9	9	20	20	20	20	20	20
5.0	.06	.14	.27	.42	.60	.81	1.08	1.34	1.61	1.87	2.13	2.40	2.70	3.00	3.30	3.77	4.37	4.96	5.56	6.15
	2	3	4	5	6	8	8	8	8	8	8	9	9	9	9	18	18	18	18	18
4.5	.06	.13	.25	.39	.57	.78	1.01	1.24	1.47	1.77	2.07	2.36	2.66	2.96	3.25	3.55	3.85	4.47	5.13	5.79
	2	3	4	5	6	7	7	7	9	9	9	9	9	9	9	9	9	20	20	20
4.1	.05	.13	.23	.36	.53	.72	.92	1.15	1.42	1.72	2.02	2.31	2.61	2.91	3.21	3.50	3.80	4.10	4.76	5.42
	2	3	4	9	5	6	7	7	9	9	9	9	9	9	9	9	9	20	20	20
3.8	.04	.13	.23	.36	.52	.71	.91	1.12	1.35	1.58	1.81	2.07	2.33	2.60	2.89	3.22	3.55	3.88	4.21	4.54
	2	3	4	4	5	6	6	7	7	7	7	8	8	8	10	10	10	10	10	10
3.5	.04	.13	.23	.34	.50	.70	.90	1.10	1.33	1.56	1.79	2.02	2.25	2.54	2.84	3.13	3.43	3.73	4.06	4.39
	2	3	3	4	6	6	6	7	7	7	7	7	7	9	9	9	9	10	10	10
3.2	.04	.13	.23	.34	.49	.65	.84	1.03	1.25	1.49	1.72	1.95	2.18	2.43	2.69	2.95	3.22	3.48	3.77	4.07
	2	3	3	4	5	5	6	7	7	7	7	7	7	8	8	8	8	9	9	9
3.0	.03	.12	.22	.32	.47	.63	.81	1.00	1.20	1.40	1.60	1.84	2.10	2.37	2.63	2.89	3.16	3.42	3.70	4.00
	2	3	3	3	5	5	6	6	6	6	6	8	8	8	8	8	8	8	9	9
2.8	.03	.10	.20	.31	.44	.60	.80	.99	1.19	1.39	1.59	1.79	2.03	2.30	2.55	2.82	3.09	3.39	3.68	3.98
	2	3	3	4	4	6	6	6	6	6	6	6	8	8	8	8	9	9	9	9
2.6	.03	.10	.20	.30	.43	.58	.78	.97	1.17	1.37	1.57	1.77	2.00	2.27	2.53	2.79	3.06	3.32	3.59	3.85
	1	3	3	4	4	6	6	6	6	6	6	6	8	8	8	8	8	8	8	8
2.5	.03	.10	.20	.30	.40	.53	.73	.92	1.12	1.32	1.52	1.72	1.91	2.13	2.37	2.60	2.83	3.09	3.36	3.52
	1	3	3	3	4	6	6	6	6	6	6	6	6	7	7	7	8	8	8	8
2.4	.03	.09	.19	.29	.40	.53	.59	.87	1.07	1.27	1.47	1.67	1.86	2.07	2.31	2.54	2.81	3.07	3.34	3.60
	1	3	3	3	4	4	5	6	6	6	6	6	6	7	7	8	8	8	8	8
2.3	.03	.08	.16	.26	.38	.51	.66	.83	1.03	1.23	1.43	1.63	1.82	2.02	2.23	2.49	2.76	3.02	3.29	3.55
	1	2	3	3	4	4	5	6	6	6	6	6	6	6	8	8	8	8	8	8
2.1	.02	.08	.16	.26	.37	.50	.65	.81	1.01	1.21	1.41	1.61	1.80	2.00	2.20	2.40	2.57	2.93	3.20	3.46
	2	2	3	3	4	4	5	6	6	5	6	6	6	6	6	8	8	8	8	8
2.0	.02	.08	.15	.25	.35	.48	.65	.81	.98	1.14	1.31	1.48	1.67	1.87	2.07	2.27	2.49	2.75	3.02	3.28
	2	2	3	3	3	5	5	5	5	5	5	6	6	6	6	6	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SOUTH HENDERSON CREEK AT BIGGSVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
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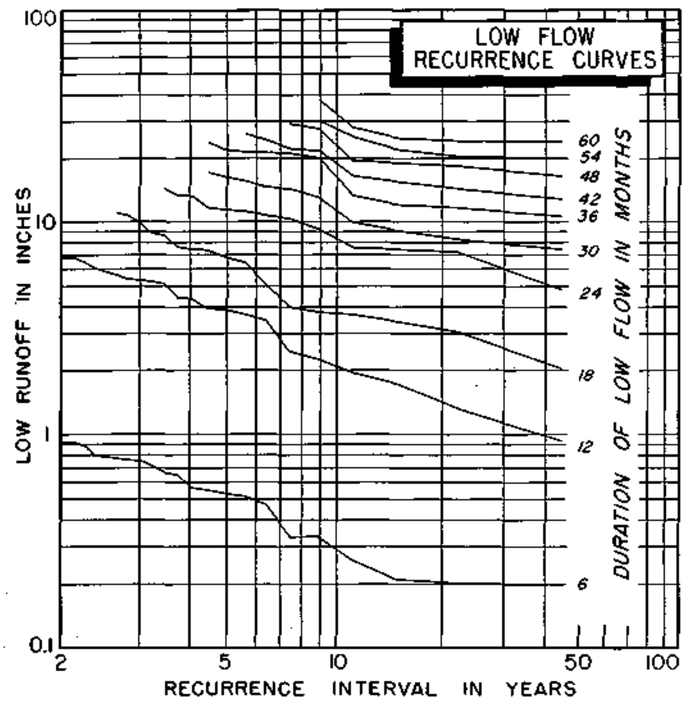
SPOON RIVER AT LONDON MILLS



STATION 143

LOCATION
In NW ¼ sec 3, T8N, R2E, Fulton County, at highway bridge in London Mills

DRAINAGE AREA
1070 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Oct 1942 thru Sept 1959
CONTINUOUS RECORD: 17 years; water years 1943-59

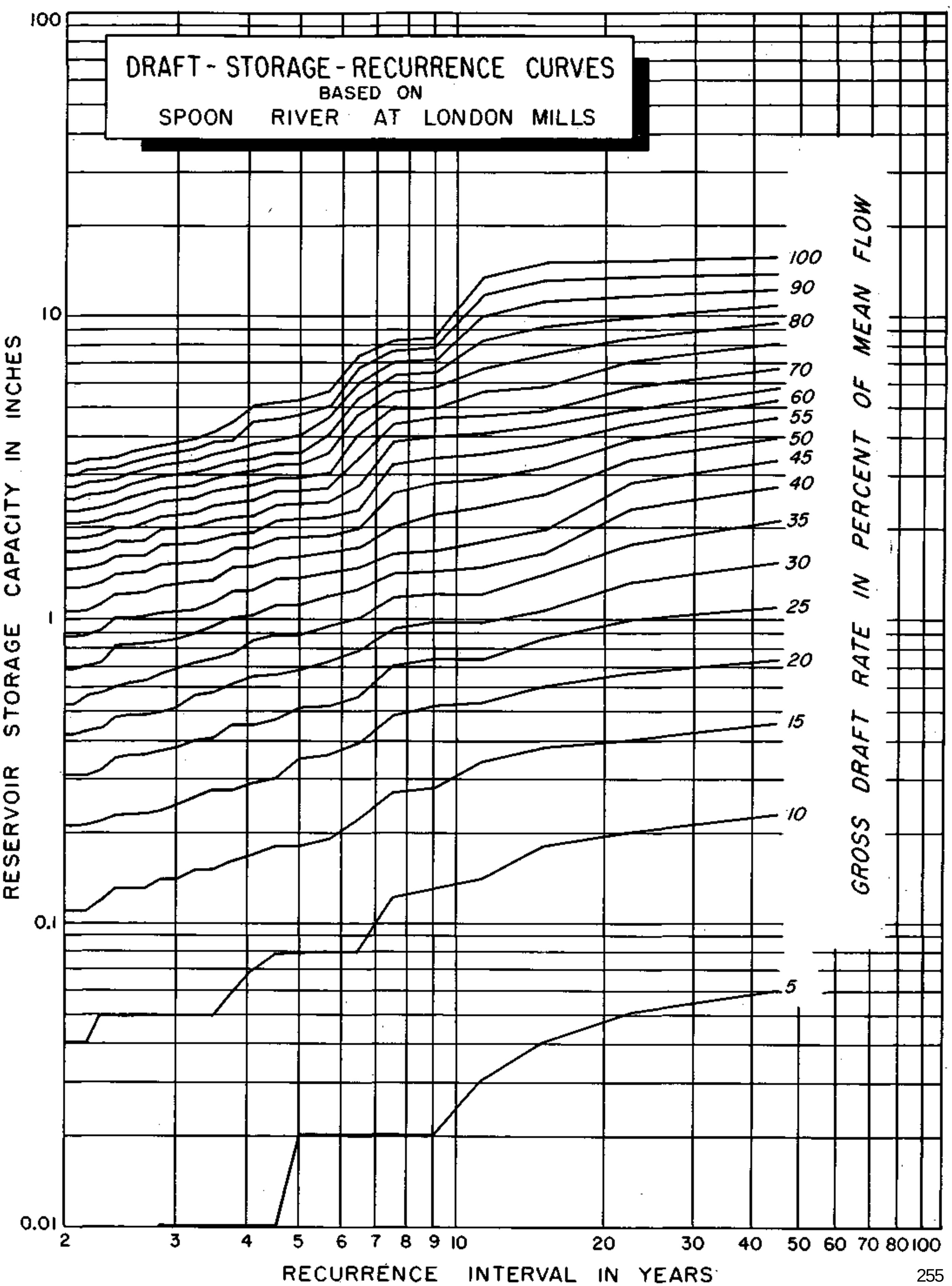
SYNTHETIC FLOW DATA
PERIOD: 28 years; water years 1915-42
INDEX STATION : Spoon River at Seville
COINCIDENT RECORD: 17 years; water years 1943-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.67 inch per month

Draft-Storage-Recurrence Data for Spoon River at London Mills

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.06	.23	.46	.74	1.11	1.56	2.16	2.76	3.37	4.00	4.67	5.34	6.01	6.84	8.22	9.62	11.03	12.44	13.98	15.94
	3	7	7	11	11	18	18	18	16	20	20	20	20	32	42	42	42	42	48	60
22.5	.05	.20	.40	.67	1.00	1.33	1.78	2.32	2.85	3.39	3.93	4.46	5.00	5.98	7.18	8.52	9.97	11.78	13.59	15.40
	2	6	6	9	10	16	16	16	16	16	16	16	16	34	40	40	54	54	54	54
15.0	.04	.18	.38	.60	.87	1.14	1.41	1.67	2.01	2.60	3.20	3.81	4.41	5.01	5.94	7.53	9.35	11.29	13.24	15.18
	3	6	6	8	8	8	8	8	16	18	18	18	18	18	36	52	58	58	58	58
11.3	.03	.14	.34	.54	.75	.99	1.22	1.51	1.82	2.36	2.92	3.53	4.13	4.73	5.71	6.78	8.41	10.08	11.76	13.43
	2	6	6	6	7	7	7	9	16	16	18	18	18	18	32	32	50	50	50	50
9.0	.02	.13	.28	.52	.75	.99	1.22	1.46	1.69	2.24	2.84	3.45	4.05	4.65	5.26	5.92	6.59	7.26	7.93	8.60
	3	4	7	7	7	7	7	7	7	18	18	18	18	18	18	20	20	20	20	20
7.5	.02	.12	.27	.48	.71	.95	1.18	1.42	1.65	2.03	2.62	3.23	3.83	4.43	5.04	5.71	6.38	7.05	7.72	8.39
	3	3	6	7	7	7	7	7	7	15	16	18	16	18	20	20	20	20	20	20
6.4	.02	.08	.22	.39	.56	.79	1.02	1.26	1.49	1.73	2.01	2.31	2.78	3.40	4.07	4.74	5.41	6.08	6.75	7.42
	1	4	5	5	5	7	7	7	7	7	9	9	18	20	20	20	20	20	20	20
5.6	.02	.08	.19	.36	.53	.74	.97	1.21	1.44	1.66	1.92	2.19	2.45	2.72	3.03	3.57	4.10	4.64	5.17	5.71
	1	3	5	5	5	7	7	7	7	7	8	8	8	8	16	16	16	16	16	16
5.0	.02	.08	.18	.35	.52	.69	.89	1.13	1.36	1.62	1.89	2.16	2.42	2.69	2.97	3.27	3.58	4.11	4.78	5.45
	1	3	5	5	5	5	7	7	7	8	8	8	8	8	9	9	9	20	20	20
4.5	.01	.08	.18	.30	.47	.66	.89	1.13	1.36	1.60	1.86	2.13	2.39	2.66	2.95	3.26	3.57	3.94	4.61	5.28
	1	3	3	5	5	7	7	7	7	7	8	8	8	9	9	9	9	20	20	20
4.1	.01	.07	.17	.29	.45	.65	.85	1.05	1.26	1.50	1.73	1.96	2.21	2.50	2.80	3.10	3.41	3.84	4.51	5.18
	1	3	3	4	6	6	6	6	7	7	7	7	8	9	9	9	9	20	20	20
3.8	.01	.06	.16	.28	.45	.62	.78	1.02	1.25	1.49	1.72	1.95	2.19	2.43	2.73	3.03	3.34	3.64	3.94	4.52
	1	3	3	5	5	5	7	7	7	7	7	7	7	9	9	9	9	9	9	20
3.5	.01	.05	.15	.28	.41	.58	.75	.95	1.15	1.35	1.59	1.86	2.12	2.39	2.66	2.93	3.20	3.53	3.87	4.20
	1	3	3	4	5	5	6	6	6	6	6	8	8	8	8	8	10	10	10	10
3.2	.01	.05	.15	.26	.40	.57	.73	.90	1.10	1.34	1.57	1.80	2.04	2.27	2.53	2.80	3.07	3.37	3.67	3.97
	1	3	3	4	5	5	5	6	7	7	7	7	7	7	8	8	9	9	9	9
3.0	.01	.05	.14	.25	.38	.54	.70	.87	1.06	1.30	1.53	1.76	2.00	2.23	2.47	2.73	3.00	3.26	3.53	3.80
	1	2	3	4	4	5	5	5	7	7	7	7	7	7	7	8	8	8	8	8
2.8	.01	.05	.14	.24	.37	.50	.66	.85	1.06	1.30	1.53	1.75	2.00	2.23	2.47	2.72	2.99	3.25	3.52	3.79
	1	2	3	4	4	5	5	6	7	7	7	7	7	7	7	8	8	8	8	8
2.6	.00	.05	.13	.23	.36	.49	.64	.84	1.04	1.24	1.44	1.64	1.84	2.08	2.35	2.62	2.89	3.15	3.42	3.69
	1	2	3	4	4	4	6	6	6	6	6	6	6	8	8	8	8	8	8	8
2.5	.00	.05	.13	.23	.36	.49	.63	.83	1.03	1.23	1.43	1.63	1.83	2.03	2.26	2.53	2.80	3.06	3.33	3.60
	1	2	3	4	4	4	6	6	6	6	6	6	6	6	8	8	8	8	8	8
2.4	.00	.05	.13	.23	.35	.48	.62	.82	1.02	1.22	1.42	1.52	1.82	2.02	2.23	2.43	2.67	2.93	3.20	3.47
	1	2	3	3	4	4	6	6	6	6	6	6	6	6	6	6	8	8	8	8
2.3	.00	.05	.12	.22	.32	.44	.58	.73	.93	1.13	1.33	1.53	1.73	1.93	2.14	2.35	2.63	2.89	3.16	3.43
	1	2	3	3	3	4	4	6	6	6	6	6	6	6	6	8	8	8	8	6
2.1	.00	.04	.11	.21	.31	.43	.57	.71	.89	1.09	1.29	1.49	1.69	1.89	2.10	2.33	2.60	2.86	3.13	3.40
	1	2	3	3	3	4	4	5	6	6	6	6	6	6	6	8	8	8	8	8
2.0	.00	.04	.11	.21	.31	.42	.56	.69	.88	1.08	1.28	1.48	1.68	1.88	2.09	2.29	2.50	2.76	3.03	3.30
	1	2	3	3	3	4	4	4	6	6	6	6	6	6	6	8	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SPOON RIVER AT LONDON MILLS
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
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20
30
40
50
60
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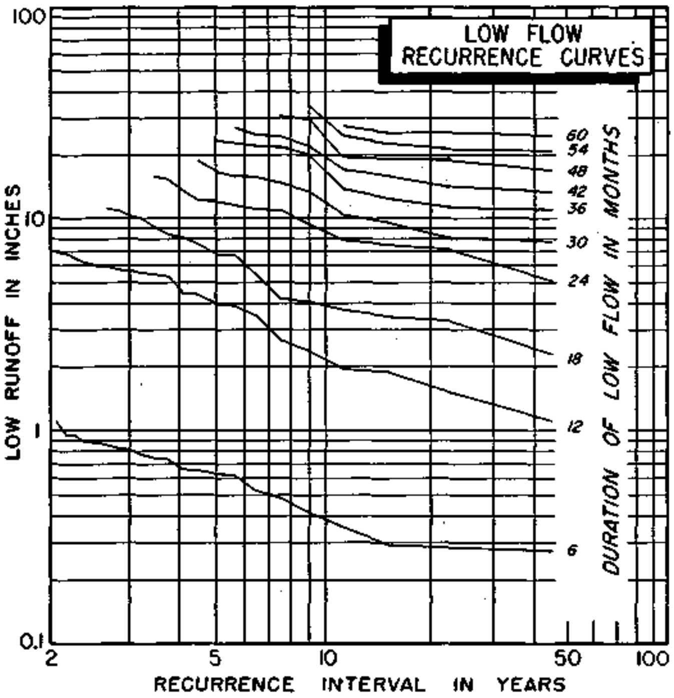
SPOON RIVER AT SEVILLE



STATION 144

LOCATION
In SW ¼ sec 24, T6N, R1E, Fulton County, at highway bridge in Seville

DRAINAGE AREA
1600 square miles, approximately

ACTUAL FLOW DATA
PERIOD: July 1914 thru Sept 1959
CONTINUOUS RECORD: 45 years; water years 1915-59

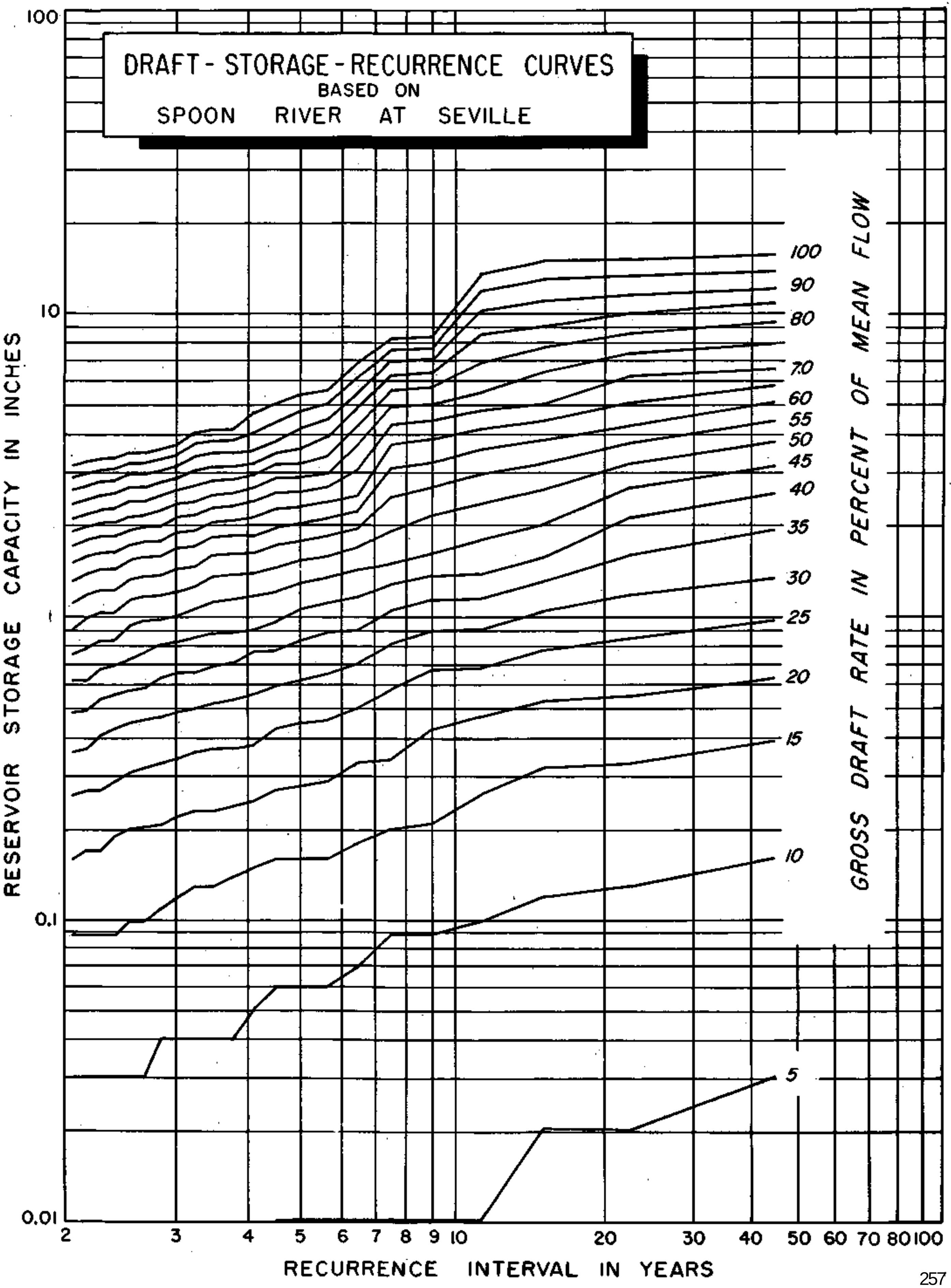
SYNTHETIC FLOW DATA
None; this station utilized as an index station

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 0.68 inch per month

Draft-Storage-Recurrence Data for Spoon River at Seville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.03	.16	.39	.63	.98	1.35	1.96	2.58	3.19	3.81	4.49	5.17	5.85	6.66	8.03	9.46	10.89	12.33	13.92	15.90
	2	7	7	7	11	18	18	18	16	20	20	20	20	32	42	42	42	44	48	-60
22.5	.02	.13	.33	.55	.85	1.19	1.61	2.15	2.70	3.24	3.78	4.33	5.15	6.29	7.45	8.68	10.11	11.65	13.48	15.32
	2	6	6	8	10	10	16	16	16	16	16	16	32	34	34	42	42	54	54	54
15.0	.02	.12	.32	.53	.78	1.05	1.32	1.60	2.04	2.65	3.26	3.87	4.49	5.12	6.48	7.84	9.22	11.20	13.17	15.14
	2	6	6	6	8	8	8	8	18	18	18	18	18	40	40	40	58	58	58	58
11.3	.01	.10	.26	.47	.68	.92	1.16	1.39	1.82	2.39	3.00	3.61	4.23	4.84	5.59	6.96	8.66	10.36	12.06	13.76
	2	3	6	6	7	7	7	11	16	18	18	18	18	18	32	50	50	50	50	50
9.0	.01	.09	.21	.43	.67	.91	1.15	1.38	1.64	2.18	2.72	3.27	3.89	4.50	5.11	5.78	6.46	7.14	7.82	8.50
	2	3	5	7	7	7	7	7	16	16	16	18	18	18	18	20	20	20	20	20
7.5	.01	.09	.20	.34	.58	.82	1.06	1.29	1.53	1.95	2.52	3.13	3.75	4.36	4.99	5.67	6.35	7.03	7.71	8.39
	1	3	4	7	7	7	7	7	7	16	18	18	18	18	20	20	20	20	20	20
6.4	.01	.07	.18	.33	.50	.70	.92	1.17	1.44	1.71	1.98	2.25	2.53	3.10	3.71	4.32	4.93	5.55	6.22	6.90
	1	3	3	5	6	6	7	8	8	8	8	8	9	18	18	18	18	18	20	20
5.6	.01	.06	.16	.29	.46	.65	.89	1.12	1.36	1.60	1.87	2.14	2.42	2.71	3.02	3.43	3.98	4.52	5.07	5.67
	1	2	3	5	5	7	7	7	7	8	8	8	8	9	9	16	16	16	16	20
5.0	.01	.06	.16	.28	.45	.62	.84	1.07	1.31	1.55	1.79	2.05	2.33	2.61	2.92	3.23	3.63	4.25	4.86	5.50
	1	2	3	5	5	5	7	7	7	7	7	8	8	9	9	9	18	18	18	20
4.5	.01	.06	.16	.27	.43	.60	.78	.98	1.22	1.47	1.74	2.01	2.30	2.60	2.91	3.22	3.52	3.83	4.43	5.11
	1	2	3	4	5	5	6	7	7	8	8	8	9	9	9	9	9	9	20	20
4.1	.00	.05	.15	.25	.38	.56	.77	.97	1.18	1.40	1.64	1.88	2.16	2.43	2.70	2.97	3.24	3.58	4.10	4.78
	1	2	3	3	5	6	6	6	6	7	7	8	8	8	8	8	10	10	20	20
3.8	.00	.04	.14	.24	.37	.54	.71	.91	1.15	1.39	1.63	1.87	2.10	2.34	2.59	2.87	3.18	3.52	3.86	4.20
	1	2	3	3	5	5	5	7	7	7	7	7	7	7	8	9	10	10	10	10
3.5	.00	.04	.13	.23	.37	.52	.69	.89	1.13	1.37	1.61	1.85	2.08	2.32	2.56	2.84	3.18	3.52	3.86	4.20
	1	2	3	4	4	5	6	7	7	7	7	7	7	7	7	10	10	10	10	10
3.2	.00	.04	.13	.23	.36	.50	.66	.86	1.07	1.27	1.48	1.72	1.95	2.19	2.43	2.75	3.09	3.43	3.77	4.11
	1	2	3	3	4	4	6	6	6	6	7	7	7	7	7	10	10	10	10	10
3.0	.00	.04	.12	.22	.34	.49	.66	.83	1.02	1.22	1.46	1.70	1.93	2.17	2.41	2.65	2.91	3.19	3.46	3.73
	1	2	3	3	4	5	5	5	6	7	7	7	7	7	7	7	8	8	8	8
2.8	.00	.04	.11	.21	.33	.47	.64	.81	.99	1.19	1.39	1.60	1.80	2.01	2.27	2.54	2.81	3.09	3.36	3.64
	-1	2	3	3	4	5	5	5	6	6	6	6	6	6	8	8	8	8	8	9
2.6	.00	.03	.10	.20	.32	.46	.59	.77	.98	1.18	1.38	1.59	1.79	2.00	2.20	2.44	2.71	2.99	3.26	3.53
	-1	2	3	3	4	4	5	6	6	6	6	6	6	6	6	8	8	8	8	8
2.5	.00	.03	.10	.20	.31	.45	.58	.73	.94	1.14	1.34	1.55	1.75	1.96	2.17	2.44	2.71	2.99	3.26	3.53
	-1	2	3	3	4	4	4	6	6	6	6	6	6	6	8	8	8	8	8	8
2.4	.00	.03	.09	.19	.29	.43	.56	.70	.84	1.04	1.24	1.45	1.65	1.86	2.06	2.31	2.58	2.86	3.13	3.40
	-1	2	3	3	4	4	4	4	6	6	6	6	6	6	6	8	8	8	8	8
2.3	.00	.03	.09	.17	.27	.41	.54	.68	.84	1.04	1.24	1.45	1.65	1.86	2.06	2.28	2.55	2.83	3.10	3.37
	-1	2	2	3	4	4	4	4	6	6	6	6	6	6	6	8	8	8	8	8
2.1	.00	.03	.09	.17	.27	.37	.50	.64	.79	.99	1.19	1.40	1.60	1.81	2.01	2.21	2.47	2.75	3.02	3.29
	-1	2	2	3	3	4	4	4	6	6	6	6	6	6	6	6	8	8	8	8
2.0	.00	.03	.09	.16	.26	.36	.49	.63	.76	.92	1.12	1.33	1.53	1.74	1.94	2.14	2.39	2.67	2.94	3.21
	-1	2	2	3	3	4	4	4	4	6	6	6	6	6	6	6	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SPOON RIVER AT SEVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
100
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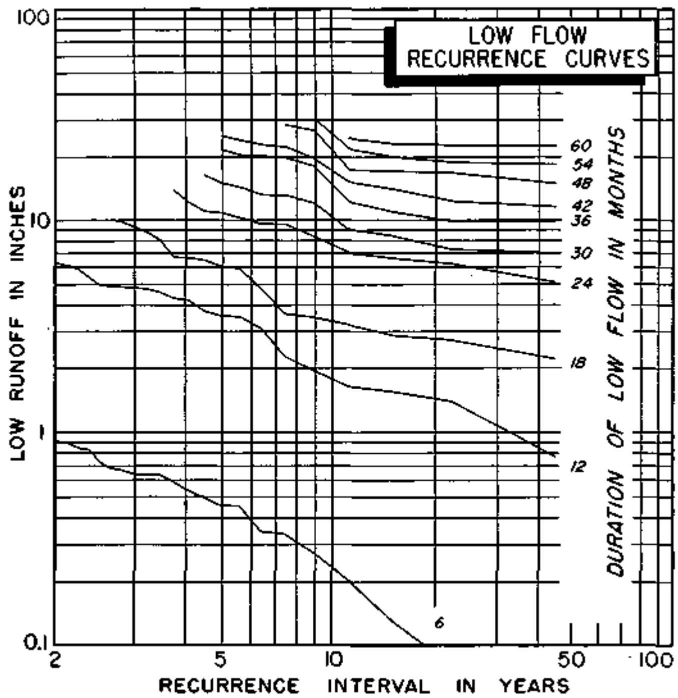
100

NORTH HENDERSON CREEK NEAR SEATON



STATION 188

LOCATION

Near center of sec 30, T13N, R3W, Warren County, at county road bridge 1.6 miles southeast of Seaton

DRAINAGE AREA

66.4 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1940 thru Sept 1951; gaging discontinued Oct 1, 1951

CONTINUOUS RECORD: 11 years; water years 1941-51

SYNTHETIC FLOW DATA

PERIOD: 34 years; water years 1915-40, 1952-59

INDEX STATION: Spoon River at Seville

COINCIDENT RECORD: 11 years; water years 1941-51

TOTAL DATA ANALYZED

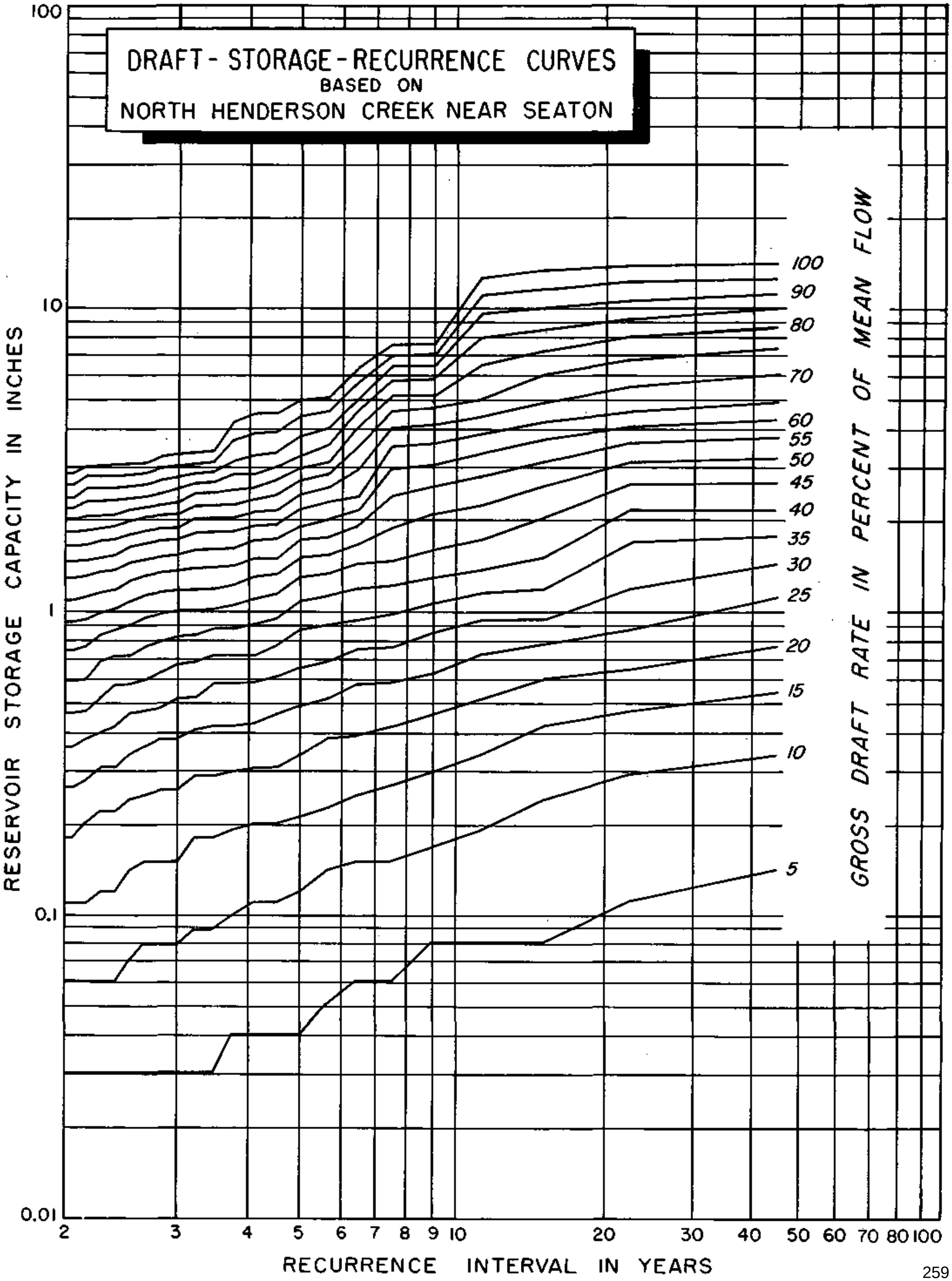
PERIOD: 45 years; water years 1915-59

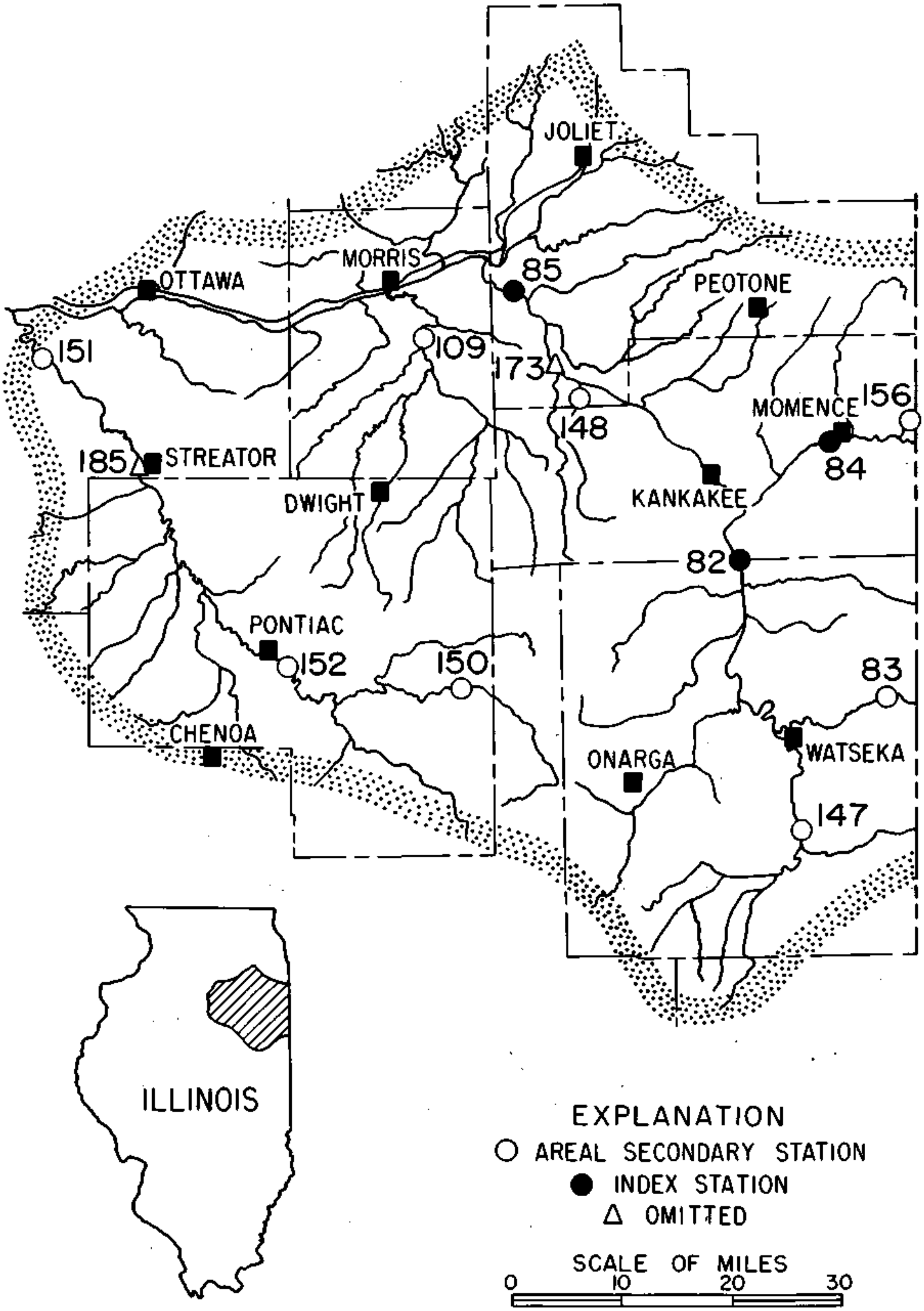
MEAN DISCHARGE: 0.61 inch per month

Draft-Storage-Recurrence Data for North Henderson Creek near Seaton

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.14 5	.34 7	.55 7	.78 11	1.12 11	1.45 11	1.79 12	2.19 14	2.70 18	3.25 16	3.80 18	4.35 18	5.02 34	6.19 42	7.48 42	8.76 42	10.04 42	11.32 44	12.72 48	14.34 54
22.5	.11 5	.29 6	.47 6	.65 8	.89 8	1.20 16	1.69 16	2.17 16	2.66 16	3.15 16	3.64 16	4.13 16	4.61 16	5.57 42	6.86 42	8.14 42	9.42 42	10.77 54	12.41 54	14.06 54
15.0	.06 3	.24 6	.42 6	.60 6	.79 6	.97 7	1.19 9	1.52 18	2.07 18	2.62 18	3.17 18	3.72 18	4.27 18	4.92 40	6.14 40	7.36 40	8.58 40	10.12 52	11.70 58	13.48 60
11.3	.08 3	.19 5	.34 6	.52 7	.74 7	.95 7	1.16 7	1.38 7	1.75 15	2.26 18	2.81 18	3.36 18	3.91 18	4.46 18	5.11 32	6.57 50	8.10 50	9.62 50	11.15 50	12.67 50
9.0	.08 3	.17 3	.30 5	.46 6	.65 7	.86 7	1.07 7	1.30 9	1.62 15	2.11 16	2.60 16	3.09 18	3.64 18	4.19 18	4.74 18	5.33 20	5.94 20	6.55 20	7.16 20	7.77 20
7.5	.06 3	.15 3	.27 5	.42 5	.59 6	.77 6	.99 8	1.23 8	1.48 8	1.92 16	2.42 18	2.97 18	3.52 18	4.07 18	4.62 18	5.22 20	5.83 20	6.44 20	7.05 20	7.66 20
6.4	.06 3	.15 3	.25 4	.39 6	.58 6	.75 6	.96 8	1.20 8	1.45 8	1.69 8	1.93 8	2.18 8	2.42 18	2.97 16	3.52 16	4.06 18	4.61 18	5.16 18	5.76 20	6.37 20
5.6	.05 3	.14 3	.23 5	.38 5	.53 5	.70 7	.91 7	1.13 7	1.34 7	1.56 7	1.77 7	2.03 9	2.31 9	2.58 9	2.86 9	3.13 9	3.57 16	4.05 16	4.61 20	5.22 20
5.0	.04 2	.12 3	.21 3	.34 5	.49 5	.66 7	.87 7	1.09 7	1.30 7	1.52 7	1.73 7	1.94 7	2.18 9	2.45 9	2.73 9	3.00 9	3.28 9	3.81 20	4.42 20	5.03 20
4.5	.04 2	.11 3	.20 3	.31 5	.46 5	.62 5	.78 6	.96 6	1.15 6	1.33 6	1.53 7	1.74 7	1.96 7	2.17 7	2.44 10	2.74 10	3.05 10	3.38 18	3.94 20	4.55 20
4.1	.04 2	.11 3	.20 3	.31 4	.43 5	.59 5	.74 6	.92 6	1.11 6	1.31 7	1.52 7	1.73 7	1.95 7	2.16 7	2.37 7	2.59 7	2.86 10	3.30 20	3.91 20	4.52 20
3.8	.04 2	.10 3	.19 3	.30 4	.42 5	.56 5	.73 5	.85 5	1.06 6	1.24 6	1.42 7	1.63 7	1.85 7	2.06 7	2.27 7	2.55 10	2.86 10	3.16 10	3.68 18	4.23 18
3.5	.03 2	.09 3	.18 3	.29 4	.42 5	.58 5	.73 5	.88 5	1.03 5	1.20 7	1.41 7	1.62 7	1.84 7	2.05 7	2.26 7	2.48 7	2.69 7	2.92 8	3.17 8	3.42 9
3.2	.03 2	.09 3	.18 3	.29 4	.41 4	.54 5	.69 5	.84 5	1.01 6	1.19 7	1.40 7	1.61 7	1.83 7	2.04 7	2.25 7	2.47 7	2.68 7	2.89 7	3.12 8	3.36 9
3.0	.03 1	.08 2	.15 3	.26 4	.38 4	.53 5	.68 5	.83 5	1.01 6	1.19 6	1.37 6	1.56 6	1.74 6	1.92 6	2.11 6	2.32 8	2.57 8	2.81 8	3.06 9	3.33 9
2.8	.03 1	.08 2	.15 3	.26 4	.38 4	.50 5	.65 5	.80 6	.99 6	1.17 6	1.35 6	1.54 6	1.72 6	1.90 6	2.09 6	2.27 6	2.47 9	2.74 9	3.02 9	3.29 9
2.6	.03 1	.06 2	.15 3	.25 3	.35 4	.48 4	.60 4	.77 6	.96 6	1.14 6	1.32 6	1.51 6	1.69 6	1.87 6	2.06 6	2.24 6	2.42 6	2.65 8	2.90 8	3.14 8
2.5	.03 1	.07 2	.14 3	.24 3	.34 4	.46 4	.58 4	.72 6	.91 6	1.09 6	1.27 6	1.46 6	1.64 6	1.82 6	2.01 6	2.19 6	2.38 8	2.62 8	2.87 8	3.11 8
2.4	.03 1	.06 1	.12 3	.22 3	.31 3	.42 5	.57 5	.72 5	.87 5	1.03 5	1.19 6	1.38 6	1.56 6	1.74 6	1.93 6	2.11 6	2.35 8	2.59 8	2.84 8	3.08 8
2.3	.03 1	.06 1	.12 3	.22 3	.31 3	.40 3	.54 5	.69 5	.84 5	1.00 5	1.17 6	1.36 6	1.54 6	1.72 6	1.91 6	2.09 8	2.34 8	2.58 8	2.83 8	3.07 8
2.1	.03 1	.06 1	.11 2	.20 3	.29 3	.38 3	.46 4	.61 4	.77 6	.95 6	1.13 6	1.32 6	1.50 6	1.68 6	1.87 6	2.06 8	2.33 8	2.57 8	2.82 8	3.06 8
2.0	.03 1	.06 1	.11 2	.18 3	.27 3	.36 3	.47 4	.60 4	.75 6	.93 6	1.11 6	1.30 6	1.48 6	1.66 6	1.85 6	2.03 6	2.21 6	2.40 8	2.65 8	2.89 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
NORTH HENDERSON CREEK NEAR SEATON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

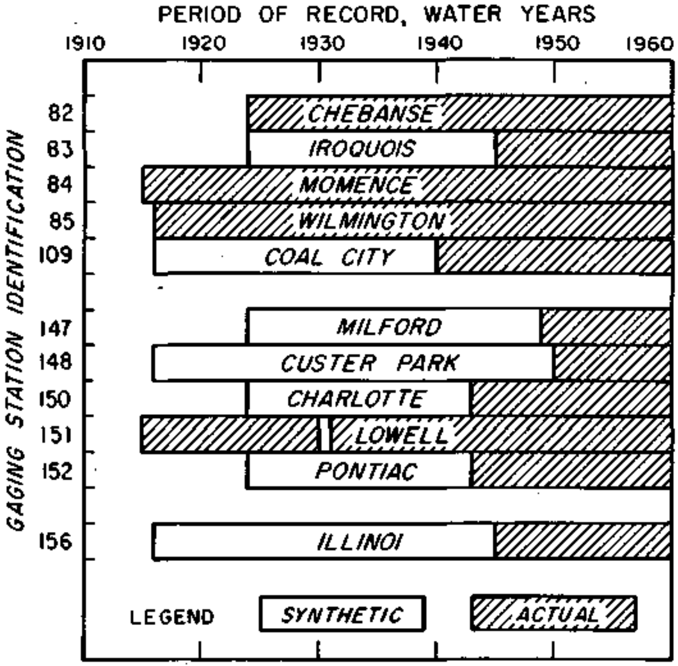


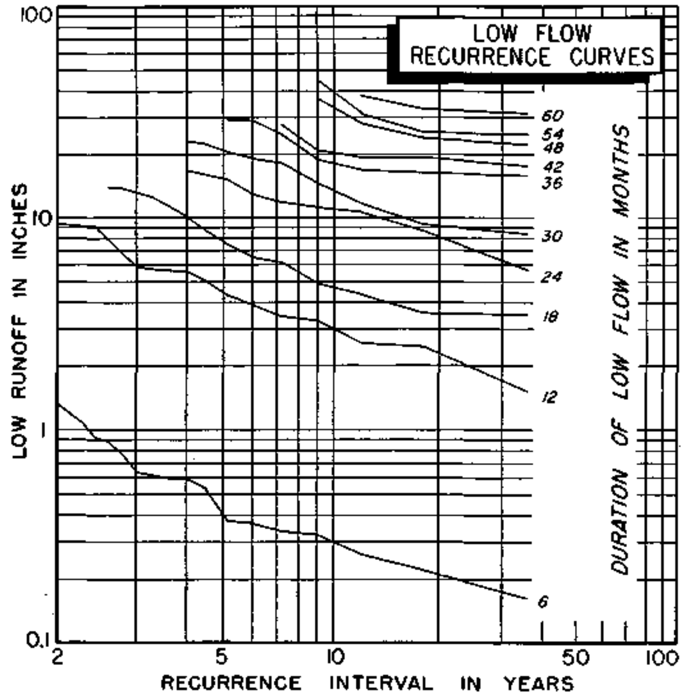
Kankakee Plain

Gaging Stations in Kankakee Plain

STATIONS OMITTED

		REASON
173	Kankakee River at Custer Park	*Combined with the record for Station 85*
185	Vermilion River at Streator	*Combined with the record for Station 151*





STATION 82

LOCATION
In SW ¼ sec 10, T29N, R13W, Kankakee County, at highway bridge, 4.5 miles east of Chebanse

DRAINAGE AREA
2120 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Apr 1923 thru Sept 1959
CONTINUOUS RECORD : 36 years; water years 1924-59

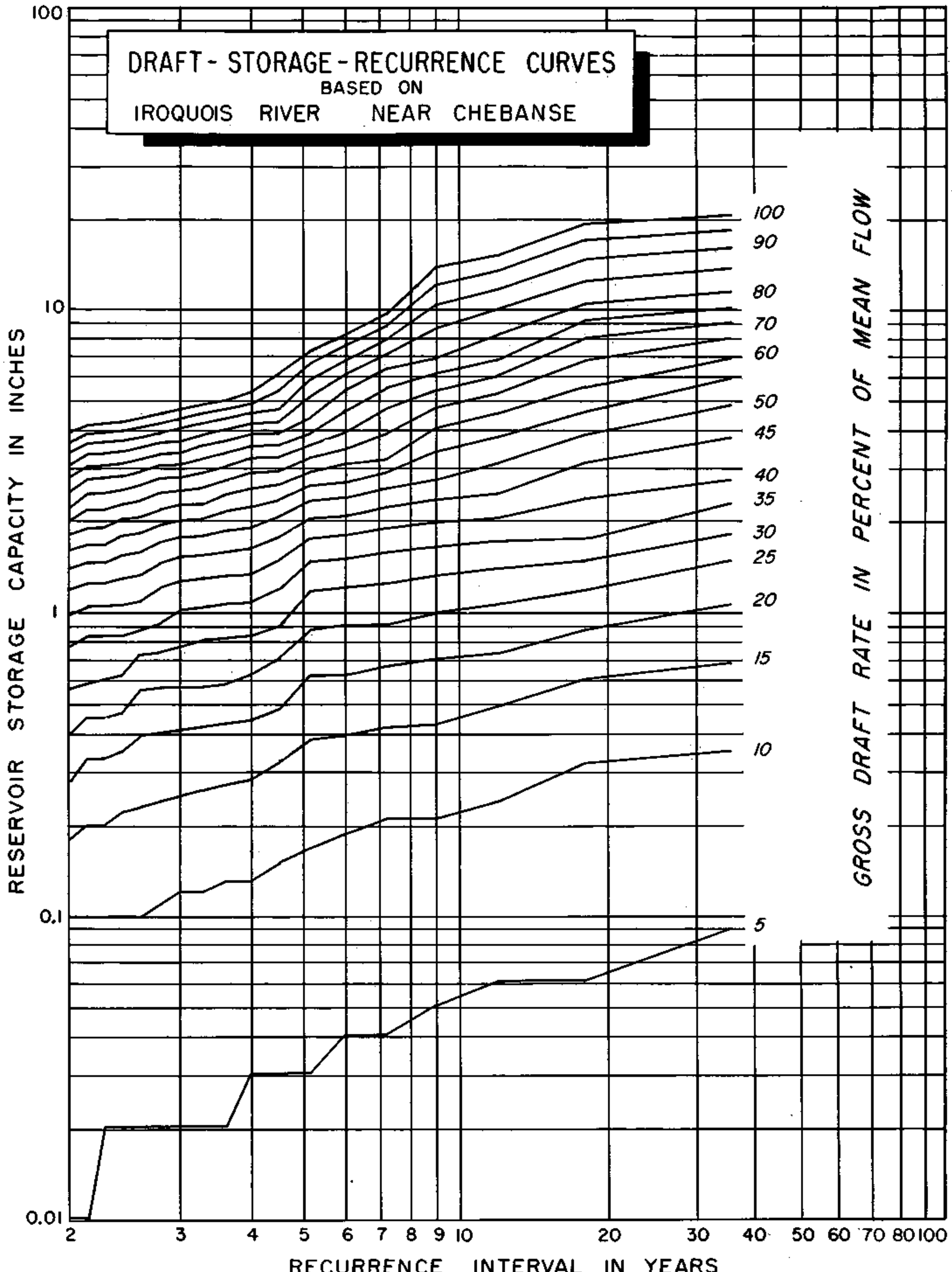
SYNTHETIC FLOW DATA
None; this station utilized as an index station

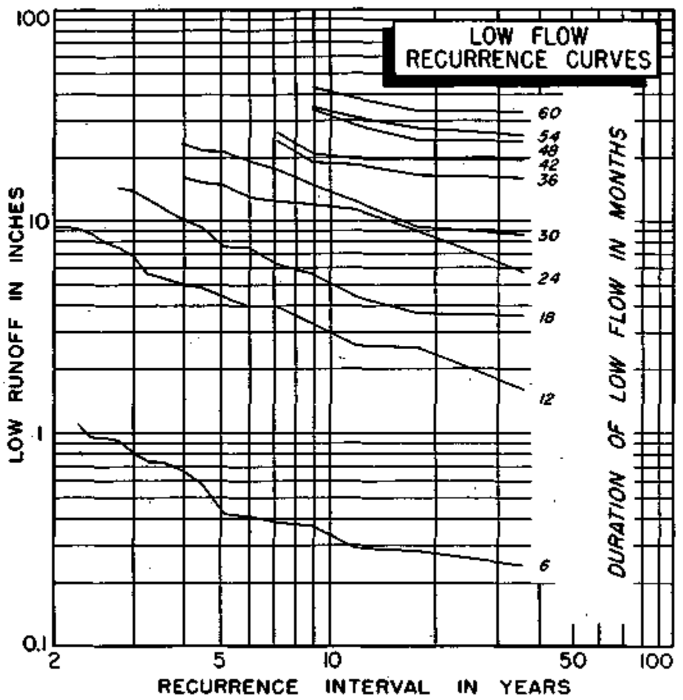
TOTAL DATA ANALYZED
PERIOD: 36 years; water years 1924-59
MEAN DISCHARGE : 0.83 inch per month

Draft-Storage-Recurrence Data for Iroquois River near Chebanse

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
36.0	.09 6	.35 8	.70 9	1.07 10	1.49 10	1.90 10	2.32 10	2.76 11	3.82 26	4.90 26	5.98 26	7.06 26	8.14 26	9.22 26	10.30 26	11.63 56	13.96 56	16.28 56	18.61 56	20.93 56
18.0	.06 5	.32 7	.61 7	.90 7	1.19 7	1.48 7	1.77 7	2.41 18	3.15 18	3.90 18	4.65 18	5.60 30	6.85 30	8.09 30	9.34 30	10.58 30	12.60 54	14.87 56	17.20 56	19.52 56
12.0	.06 4	.24 6	.49 6	.74 8	1.07 8	1.40 8	1.73 8	2.07 8	2.49 16	3.15 16	3.84 18	4.58 18	5.33 18	6.08 18	6.91 30	8.37 42	10.11 42	11.85 42	13.60 42	15.34 42
9.0	.05 3	.21 5	.43 6	.71 7	1.00 8	1.33 8	1.66 8	2.01 9	2.38 9	2.77 16	3.43 16	4.10 16	4.76 16	5.45 18	6.20 18	6.99 42	8.73 42	10.47 42	12.22 42	13.96 42
7.2	.04 3	.21 5	.42 6	.67 6	.95 7	1.25 8	1.58 8	1.92 8	2.25 8	2.58 8	2.91 8	3.24 8	3.91 20	4.74 20	5.57 20	6.40 20	7.23 20	8.06 20	8.89 20	9.72 20
6.0	.04 3	.19 5	.39 6	.64 7	.93 7	1.22 7	1.51 7	1.80 7	2.09 7	2.39 7	2.73 9	3.10 9	3.48 9	3.91 18	4.66 18	5.40 18	6.15 18	6.90 18	7.64 18	8.39 18
5.1	.03 3	.17 5	.38 6	.63 6	.89 7	1.18 7	1.47 7	1.76 7	2.05 7	2.35 7	2.64 7	2.93 7	3.26 8	3.59 8	3.92 8	4.40 18	5.15 18	5.90 18	6.64 18	7.39 18
4.5	.03 2	.15 4	.32 4	.48 4	.71 6	.95 6	1.20 7	1.49 7	1.78 7	2.08 7	2.37 7	2.66 7	2.95 7	3.27 8	3.60 8	3.93 8	4.28 10	4.71 18	5.45 18	6.20 18
4.0	.03 2	.13 3	.28 4	.44 4	.63 5	.84 5	1.08 6	1.34 7	1.63 7	1.93 7	2.25 8	2.58 8	2.92 8	3.25 8	3.58 8	3.91 8	4.24 8	4.58 8	4.91 8	5.36 14
3.6	.02 2	.13 3	.27 4	.43 4	.61 5	.82 6	1.07 6	1.32 6	1.58 7	1.88 7	2.17 7	2.46 7	2.75 7	3.05 8	3.38 8	3.71 8	4.04 8	4.38 8	4.71 8	5.04 8
3.3	.02 2	.12 3	.26 4	.42 4	.59 5	.80 5	1.04 6	1.29 6	1.54 6	1.79 6	2.04 6	2.29 6	2.58 8	2.91 8	3.24 8	3.57 8	3.90 8	4.24 8	4.57 8	4.90 8
3.0	.02 2	.12 3	.25 4	.41 4	.58 4	.78 6	1.03 6	1.28 6	1.53 6	1.78 6	2.03 6	2.28 6	2.53 6	2.79 7	3.08 7	3.37 7	3.67 8	4.01 8	4.34 8	4.67 8
2.8	.02 1	.11 3	.24 4	.40 4	.57 4	.74 5	.96 6	1.21 6	1.46 6	1.71 6	1.96 6	2.21 7	2.50 7	2.79 7	3.08 7	3.37 7	3.66 7	3.95 7	4.24 7	4.55 9
2.6	.02 1	.10 3	.23 4	.39 4	.56 4	.73 4	.89 4	1.09 6	1.34 6	1.59 6	1.84 6	2.09 6	2.36 7	2.65 7	2.94 7	3.23 7	3.52 7	3.81 7	4.10 8	4.43 8
2.4	.02 1	.10 3	.22 3	.35 3	.47 4	.65 5	.85 5	1.06 5	1.30 6	1.55 6	1.80 6	2.05 6	2.30 6	2.55 7	2.84 7	3.13 7	3.42 7	3.71 7	4.00 7	4.29 7
2.3	.02 1	.10 2	.20 3	.33 3	.45 3	.64 5	.84 5	1.05 5	1.26 5	1.47 5	1.67 5	1.92 7	2.21 7	2.50 7	2.79 7	3.08 7	3.37 7	3.66 7	3.95 7	4.24 7
2.1	.01 2	.10 2	.20 3	.33 3	.45 3	.64 5	.84 5	1.05 5	1.26 5	1.47 5	1.67 5	1.91 7	2.20 7	2.49 7	2.78 7	3.07 7	3.36 7	3.65 7	3.94 7	4.23 7
2.0	.01 2	.10 2	.18 2	.28 3	.40 3	.58 5	.78 5	.99 5	1.20 5	1.41 5	1.61 5	1.82 5	2.03 5	2.25 7	2.54 7	2.83 7	3.12 7	3.41 7	3.70 7	3.99 7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
IROQUOIS RIVER NEAR CHEBANSE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5



STATION 83

LOCATION

In SE ¼ sec 15, T27N, R11W, Iroquois County, at bridge on U. S. 52 at Iroquois, 8.0 miles northeast of Watseka

DRAINAGE AREA

682 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1944 thru Sept 1959

CONTINUOUS RECORD: 15 years; water years 1945-59

SYNTHETIC FLOW DATA

PERIOD: 21 years; water years 1924-44

INDEX STATION : Iroquois River near Chebanse

COINCIDENT RECORD: 15 years; water years 1945-59

TOTAL DATA ANALYZED

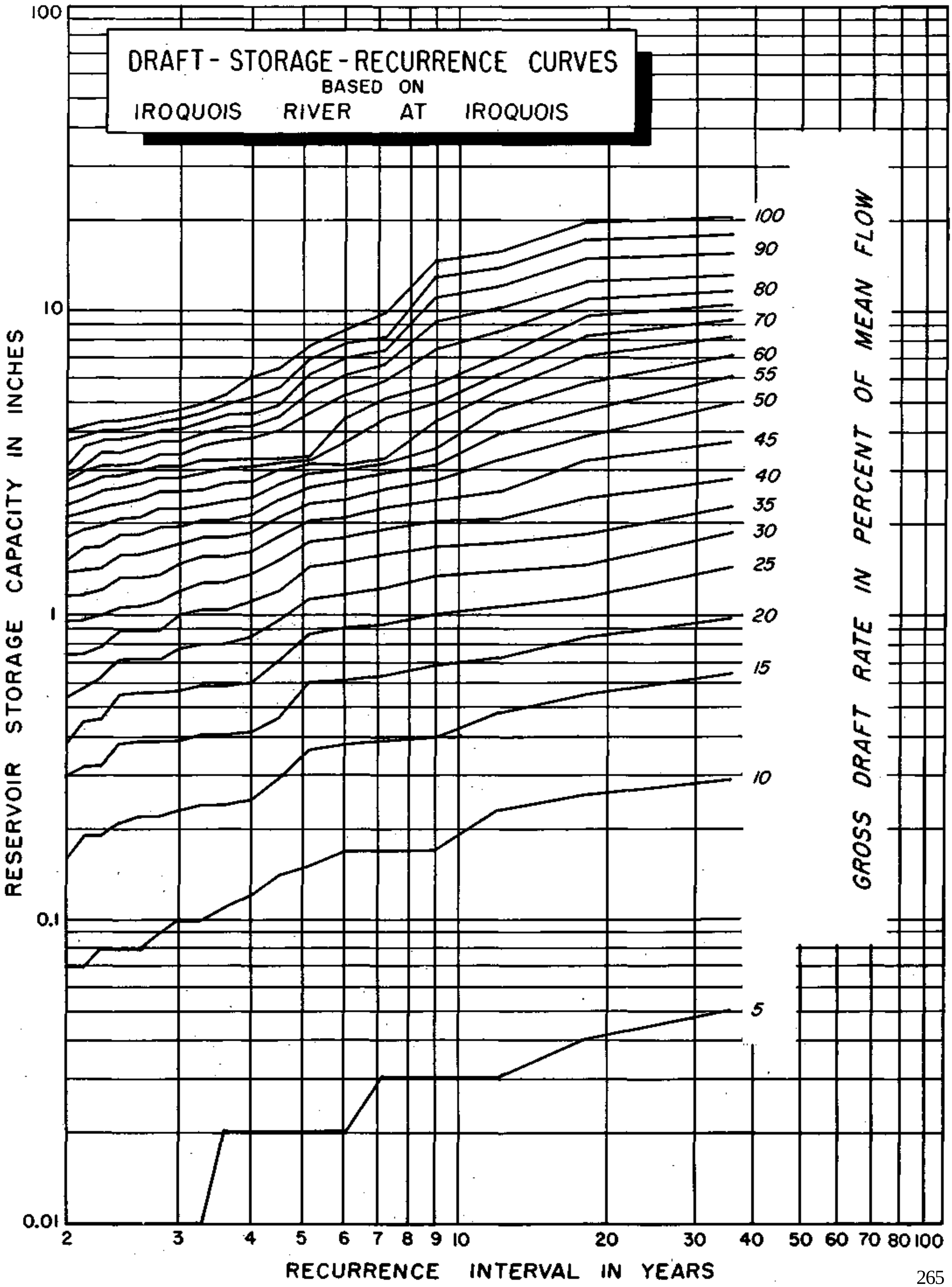
PERIOD : 36 years; water years 1924-59

MEAN DISCHARGE: 0.85 inch per month

Draft-Storage-Recurrence Data for Iroquois River at Iroquois

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
36.0	.05 2	.29 8	.65 9	1.03 10	1.46 10	1.88 10	2.31 10	2.84 26	3.95 26	5.05 26	6.16 26	7.26 26	8.37 26	9.47 26	10.58 26	11.78 30	13.34 54	15.70 56	18.08 56	20.46 56
18.0	.04 2	.26 7	.55 7	.85 7	1.15 7	1.48 9	1.86 9	2.45 18	3.22 18	3.98 18	4.75 18	5.84 30	7.12 30	8.39 30	9.67 30	10.94 30	12.55 56	14.93 56	17.31 56	19.69 56
12.0	.03 3	.23 5	.48 6	.73 8	1.07 8	1.41 8	1.75 8	2.09 8	2.57 16	3.25 16	3.98 18	4.74 18	5.51 18	6.27 18	7.04 18	8.57 42	10.36 42	12.14 42	13.93 42	15.71 42
9.0	.03 3	.17 5	.40 6	.69 7	1.02 8	1.36 8	1.70 8	2.04 8	2.41 9	2.80 9	3.18 9	3.68 16	4.36 16	5.04 16	5.80 18	7.54 42	9.33 42	11.11 42	12.90 42	14.68 42
7.2	.03 2	.17 5	.39 6	.64 7	.94 7	1.25 8	1.59 8	1.93 8	2.27 8	2.61 8	2.95 8	3.32 9	3.77 16	4.45 16	5.18 18	5.94 18	6.71 18	7.47 18	8.26 20	9.91 44
6.0	.02 3	.17 5	.38 5	.62 7	.92 7	1.22 7	1.51 7	1.81 7	2.11 7	2.41 7	2.78 9	3.16 9	3.54 9	3.93 9	4.45 20	5.30 20	6.15 20	7.00 20	7.85 20	8.70 20
5.1	.02 2	.15 5	.36 5	.60 6	.86 6	1.15 7	1.44 7	1.74 7	2.04 7	2.34 7	2.63 7	2.93 8	3.27 8	3.61 8	3.95 8	4.63 18	5.40 18	6.16 18	6.93 18	7.69 18
4.5	.02 2	.14 3	.29 4	.46 4	.71 6	.96 6	1.22 7	1.52 7	1.82 7	2.12 7	2.41 7	2.71 7	3.01 7	3.33 8	3.67 8	4.07 10	4.50 10	4.92 10	5.62 20	6.47 20
4.0	.02 2	.12 3	.25 4	.42 4	.61 6	.86 6	1.12 6	1.37 6	1.63 6	1.88 6	2.16 7	2.46 7	2.78 8	3.12 8	3.48 9	3.86 9	4.24 9	4.63 9	5.23 22	6.16 22
3.6	.02 2	.11 3	.24 4	.41 4	.59 5	.81 5	1.05 6	1.30 6	1.56 6	1.81 6	2.07 6	2.38 8	2.72 8	3.06 8	3.41 9	3.79 9	4.17 9	4.56 9	4.94 9	5.32 9
3.3	.01 2	.10 3	.24 4	.41 4	.59 5	.81 5	1.05 6	1.30 6	1.56 6	1.81 6	2.07 6	2.32 6	2.60 8	2.94 8	3.28 8	3.62 8	3.96 8	4.30 8	4.64 8	4.98 8
3.0	.01 2	.10 3	.23 4	.40 4	.57 5	.79 5	1.00 5	1.22 6	1.48 6	1.73 6	1.99 6	2.25 7	2.55 7	2.85 7	3.14 7	3.44 7	3.77 8	4.11 8	4.45 8	4.79 8
2.8	.01 2	.09 2	.22 4	.39 4	.56 4	.73 4	.90 4	1.11 6	1.37 6	1.66 7	1.95 7	2.25 7	2.55 7	2.85 7	3.14 7	3.44 7	3.74 7	4.04 7	4.33 7	4.63 7
2.6	.01 1	.08 3	.22 4	.39 4	.56 4	.73 4	.90 4	1.08 6	1.34 6	1.59 6	1.85 6	2.11 7	2.41 7	2.71 7	3.00 7	3.30 7	3.60 7	3.90 7	4.19 7	4.49 7
2.4	.01 1	.08 3	.21 4	.38 4	.55 4	.72 4	.89 4	1.07 6	1.33 6	1.58 6	1.84 6	2.09 6	2.35 6	2.63 7	2.92 7	3.22 7	3.52 7	3.82 7	4.11 7	4.41 7
2.3	.01 1	.08 2	.19 3	.32 3	.46 4	.63 4	.80 5	1.01 5	1.22 5	1.44 5	1.69 6	1.98 7	2.28 7	2.58 7	2.87 7	3.17 7	3.47 7	3.77 7	4.06 7	4.36 7
2.1	.01 1	.07 3	.19 3	.32 3	.45 3	.58 3	.76 5	.97 5	1.18 5	1.42 6	1.68 6	1.93 6	2.19 6	2.44 6	2.71 7	3.01 7	3.31 7	3.61 7	3.90 7	4.21 8
2.0	.01 1	.07 2	.16 2	.25 3	.38 3	.54 5	.75 5	.96 5	1.17 5	1.39 5	1.60 5	1.84 6	2.10 6	2.35 6	2.62 7	2.92 7	3.22 7	3.52 7	3.81 7	4.11 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
IROQUOIS RIVER AT IROQUOIS
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
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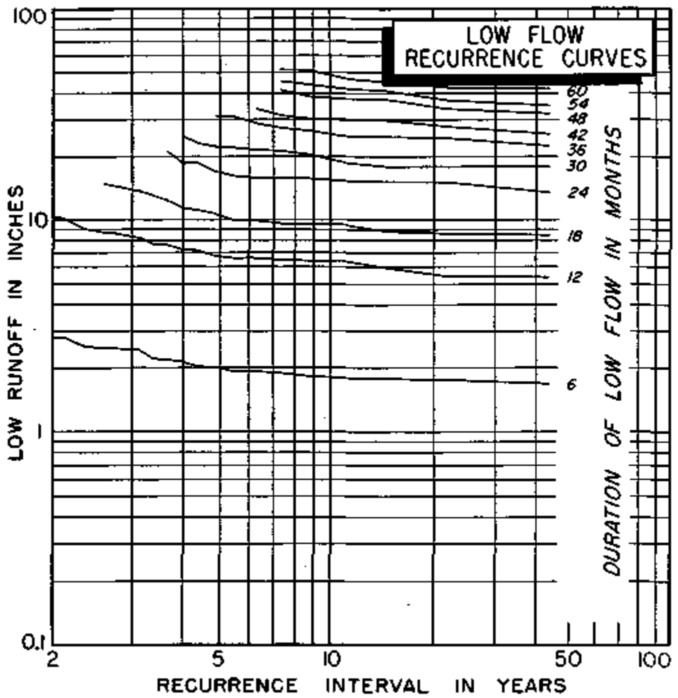


STATION 84

LOCATION
In NE ¼ sec 24, T31N, R13E, Kankakee County, 0.25 mile downstream from highway bridge in Momence

DRAINAGE AREA
2340 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Feb to Dec 1905, Feb to July 1906, Dec 1914 thru Sept 1959
CONTINUOUS RECORD: 45 years; water years 1915-59

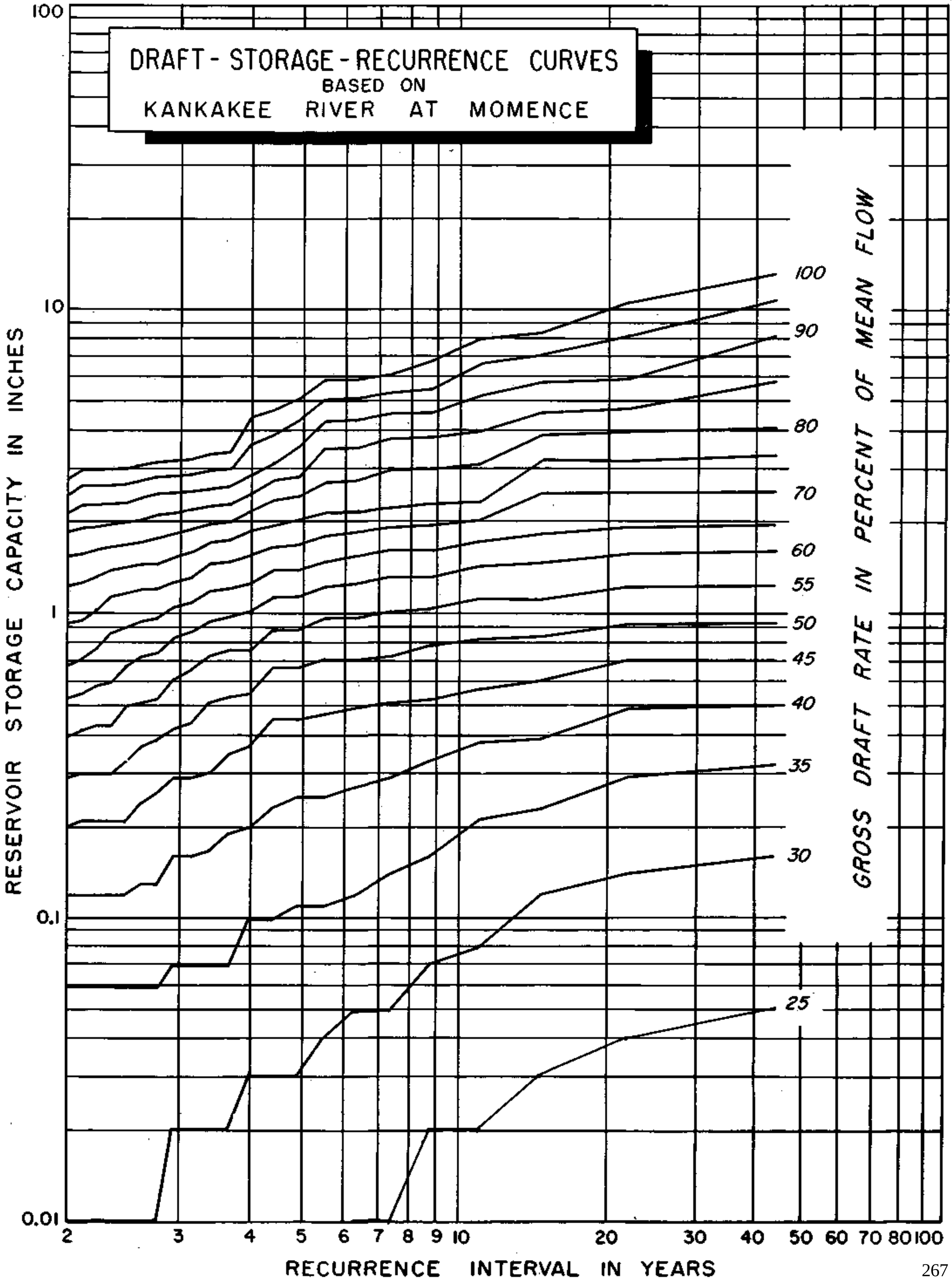
SYNTHETIC FLOW DATA
None; this station utilized as an index station

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.88 inch per month

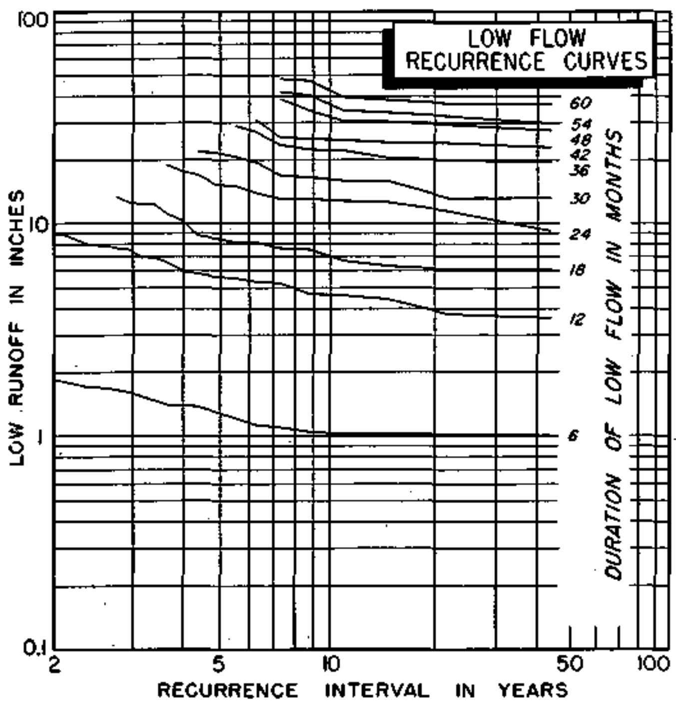
Draft-Storage-Recurrence Data for Kankakee River at Momence

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.00	.00	.00	.00	.05	.16	.32	.50	.71	.94	1.27	1.62	1.98	2.56	3.35	4.14	5.89	8.33	10.80	13.26
	1	1	1	1	2	3	4	4	5	6	8	8	8	18	18	18	42	56	56	56
22.0	.00	.00	.00	.00	.04	.14	.29	.49	.71	.93	1.24	1.59	1.95	2.52	3.22	3.99	4.78	5.97	8.34	10.72
	1	1	1	1	1	3	4	5	5	5	8	8	8	16	16	18	18	54	54	54
14.7	.00	.00	.00	.00	.03	.12	.23	.39	.61	.85	1.13	1.48	1.84	2.51	3.21	3.91	4.62	5.83	7.15	8.47
	1	1	1	1	2	2	3	5	5	6	8	8	8	16	16	16	16	30	30	30
11.0	.00	.00	.00	.00	.02	.08	.21	.38	.57	.83	1.13	1.44	1.74	2.05	2.36	3.15	4.01	5.26	6.67	8.08
	1	1	1	1	1	3	3	4	6	6	7	7	7	7	18	18	20	32	32	32
8.8	.00	.00	.00	.00	.02	.07	.16	.33	.53	.79	1.05	1.33	1.63	1.97	2.32	3.04	3.83	4.63	5.49	6.84
	1	1	1	1	1	2	2	4	6	6	6	7	7	8	8	18	18	18	20	42
7.3	.00	.00	.00	.00	.01	.05	.14	.29	.51	.73	1.02	1.33	1.63	1.94	2.25	3.00	3.79	4.59	5.38	6.17
	1	1	1	1	1	1	3	5	5	6	7	7	7	7	7	18	18	18	18	18
6.3	.00	.00	.00	.00	.01	.05	.12	.27	.49	.71	.97	1.26	1.56	1.87	2.18	2.76	3.55	4.35	5.14	5.93
	1	1	1	1	1	1	3	5	5	6	6	7	7	7	7	18	18	18	18	18
5.5	.00	.00	.00	.00	.00	.04	.11	.25	.47	.71	.97	1.24	1.50	1.81	2.16	2.73	3.52	4.32	5.11	5.90
	1	1	1	1	1	1	3	5	5	6	6	6	6	8	8	18	18	18	18	18
4.9	.00	.00	.00	.00	.00	.03	.11	.25	.45	.67	.89	1.14	1.40	1.70	2.05	2.45	2.84	3.56	4.35	5.14
	1	1	1	1	1	1	2	4	5	5	5	6	6	8	9	9	9	18	18	18
4.4	.00	.00	.00	.00	.00	.03	.10	.23	.45	.67	.89	1.14	1.40	1.67	1.97	2.37	2.76	3.16	3.92	4.71
	1	1	1	1	1	1	2	5	5	5	5	6	6	6	9	9	9	1	18	18
4.0	.00	.00	.00	.00	.00	.03	.10	.20	.37	.55	.76	1.02	1.28	1.57	1.88	2.19	2.51	2.87	3.62	4.41
	1	1	1	1	1	1	2	4	4	4	5	6	6	7	7	7	8	8	1	18
3.7	.00	.00	.00	.00	.00	.02	.07	.19	.35	.54	.76	.98	1.23	1.50	1.76	2.02	2.30	2.64	3.03	3.43
	1	1	1	1	1	1	2	3	4	5	5	5	6	6	6	6	7	9	9	9
3.4	.00	.00	.00	.00	.00	.02	.07	.17	.30	.51	.73	.95	1.20	1.47	1.73	1.99	2.27	2.58	2.97	3.37
	1	1	1	1	1	1	1	3	3	5	5	5	6	6	6	6	7	9	1	9
3.1	.00	.00	.00	.00	.00	.02	.07	.16	.29	.44	.66	.88	1.10	1.32	1.61	1.92	2.23	2.54	2.89	3.24
	1	1	1	1	1	1	1	3	3	5	5	5	5	5	7	7	7	8	8	8
2.9	.00	.00	.00	.00	.00	.02	.07	.16	.29	.42	.62	.84	1.06	1.28	1.54	1.85	2.16	2.51	2.86	3.21
	1	1	1	1	1	1	1	3	3	3	5	5	5	5	7	7	7	8	1	8
2.8	.00	.00	.00	.00	.00	.01	.06	.13	.26	.39	.53	.75	.97	1.21	1.47	1.79	2.14	2.50	2.85	3.20
	1	1	1	1	1	1	1	3	3	3	5	5	5	6	6	8	8	8	1	8
2.6	.00	.00	.00	.00	.00	.01	.06	.13	.24	.37	.51	.73	.95	1.21	1.47	1.73	2.06	2.42	2.77	3.12
	1	1	1	1	1	1	1	2	3	3	5	5	5	6	6	6	8	8	8	8
2.4	.00	.00	.00	.00	.00	.01	.06	.12	.21	.33	.49	.68	.91	1.18	1.44	1.70	2.01	2.34	2.69	3.04
	1	1	1	1	1	1	1	2	2	3	4	5	6	6	6	7	7	8	8	8
2.3	.00	.00	.00	.00	.00	.01	.06	.12	.21	.30	.43	.61	.87	1.14	1.40	1.68	1.99	2.32	2.67	3.02
	1	1	1	1	1	1	1	2	2	3	3	6	6	6	6	7	7	8	1	8
2.2	.00	.00	.00	.00	.00	.01	.06	.12	.21	.30	.43	.59	.77	1.04	1.33	1.64	1.95	2.30	2.65	3.00
	1	1	1	1	1	1	1	2	2	3	3	4	6	6	7	7	7	8	1	8
2.1	.00	.00	.00	.00	.00	.01	.06	.12	.21	.30	.42	.55	.72	.96	1.27	1.58	1.93	2.29	2.64	2.99
	1	1	1	1	1	1	1	2	2	2	3	3	4	7	7	8	8	8	8	8
2.0	.00	.00	.00	.00	.00	.00	.05	.11	.20	.29	.40	.53	.68	.94	1.25	1.56	1.87	2.17	2.48	2.79
	1	1	1	1	1	1	1	2	2	2	3	3	4	7	7	7	7	7	7	7



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KANKAKEE RIVER AT MOMENCE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
90
80
70
60
55
50
45
40
35
30
25



STATION 85

LOCATION

In NW ¼ sec 15, T33N, R9E, Will County, 0.4 mile downstream from Prairie Creek and 5.0 miles downstream from Wilmington

DRAINAGE AREA

5250 square miles, approximately

ACTUAL FLOW DATA

PERIOD: Oct 1933 thru Sept 1959

CONTINUOUS RECORD: 26 years; water years 1934-59

ADDITIONAL RECORD: Kankakee River at Custer Park, Station 173

CONTINUOUS RECORD: 18 years; water years 1916-33

SYNTHETIC FLOW DATA

None; the records from Station 173 were combined with the records from Station 85. The combined record was utilized as an index station record. The difference in drainage area between the two stations is 7 percent.

TOTAL DATA ANALYZED

PERIOD: 44 years; water years 1916-59

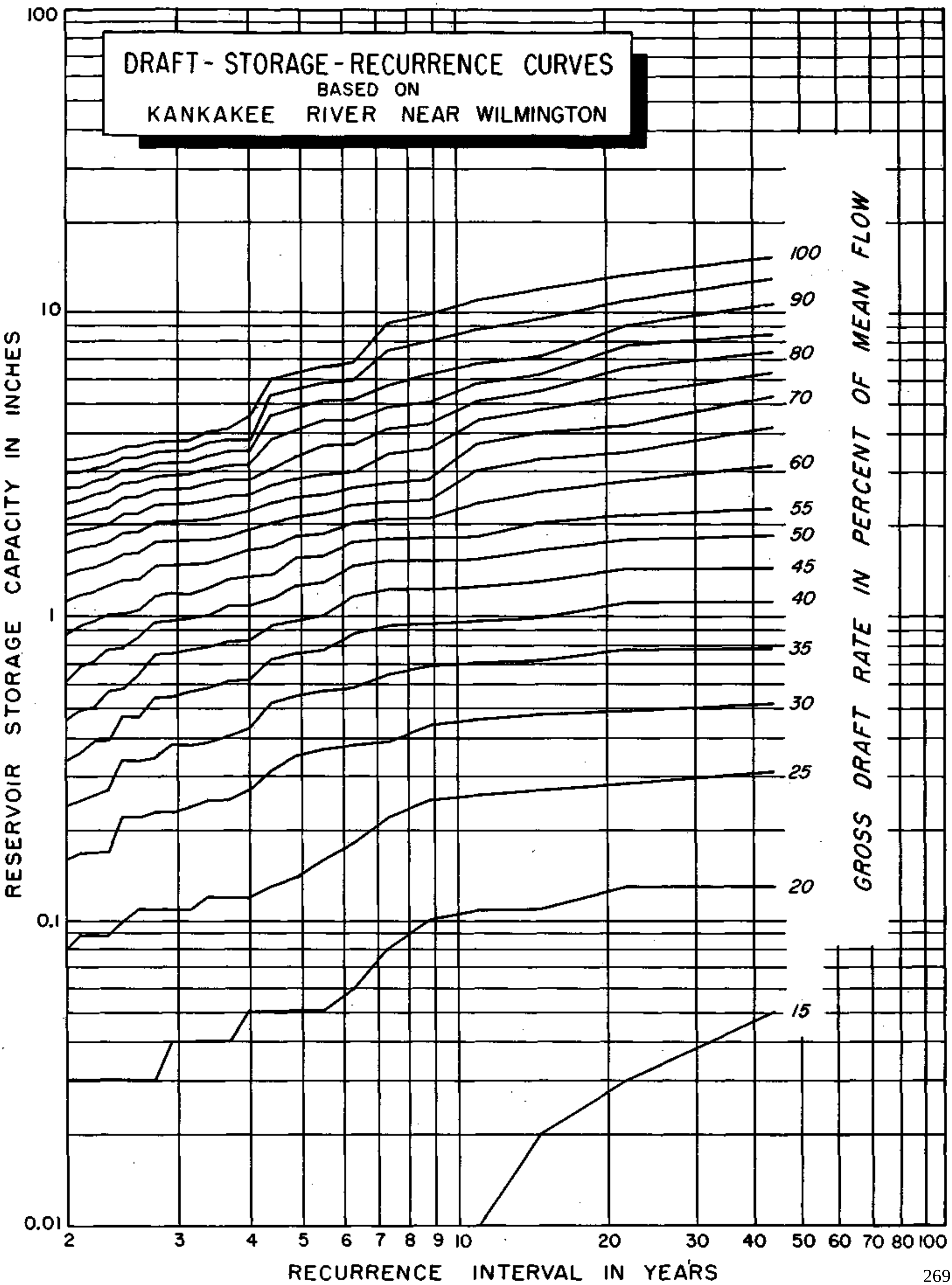
MEAN DISCHARGE : 0.83 inch per month

Draft-Storage-Recurrence Data for Kankakee River near Wilmington

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

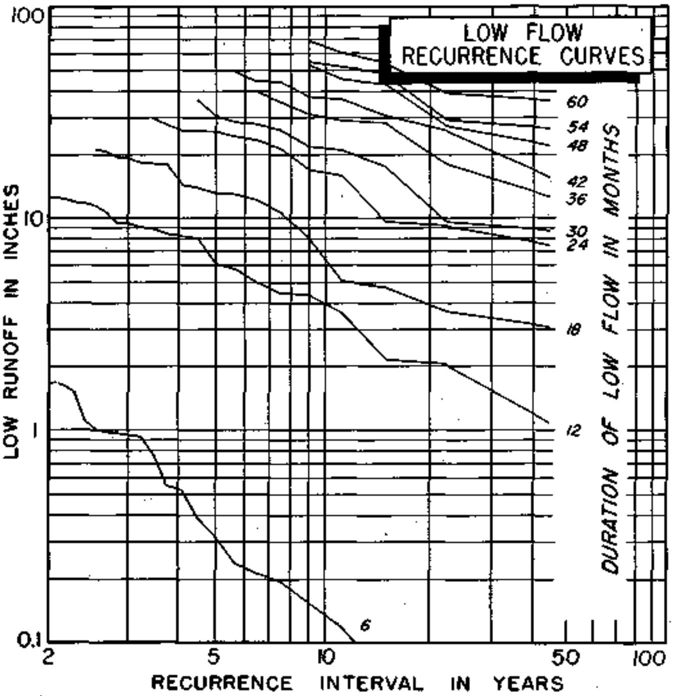
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.00 1	.00 1	.05 2	.13 4	.31 5	.52 5	.79 8	1.13 8	1.46 10	1.87 10	2.29 10	3.17 26	4.25 26	5.33 26	6.41 26	7.48 26	8.56 26	10.75 56	13.08 56	15.40 56
22.0	.00 1	.00 1	.03 2	.13 3	.28 5	.49 5	.78 8	1.12 8	1.45 8	1.80 9	2.17 9	2.81 16	3.51 18	4.26 18	5.39 30	6.63 30	7.88 30	9.12 30	11.09 56	13.41 56
14.7	.00 1	.00 1	.02 1	.11 3	.27 5	.48 5	.72 6	.99 8	1.32 8	1.67 9	2.04 9	2.59 16	3.33 18	4.08 18	4.83 18	5.57 18	6.32 18	7.27 28	9.62 58	12.03 58
11.0	.00 1	.00 1	.01 1	.11 3	.26 4	.46 6	.71 6	.97 7	1.26 7	1.56 7	1.85 7	2.38 16	3.04 16	3.71 16	4.43 18	5.17 18	5.92 18	6.86 28	8.96 52	11.12 52
8.8	.00 1	.00 1	.00 2	.10 3	.25 4	.44 6	.69 6	.95 7	1.24 7	1.54 7	1.83 7	2.12 7	2.44 8	2.83 18	3.58 18	4.32 18	5.07 18	6.29 44	8.11 44	9.94 44
7.3	.00 1	.00 1	.00 2	.08 2	.22 4	.39 4	.65 7	.94 7	1.23 7	1.53 7	1.82 7	2.11 7	2.40 7	2.76 9	3.44 18	4.18 18	4.93 18	5.82 42	7.57 42	9.31 42
6.3	.00 1	.00 1	.00 1	.06 2	.18 4	.38 5	.59 7	.88 7	1.17 7	1.47 7	1.76 7	2.05 7	2.35 8	2.68 8	3.01 8	3.72 18	4.47 18	5.22 18	6.04 1	6.87 20
5.5	.00 1	.00 1	.00 1	.05 1	.16 5	.37 5	.57 5	.78 5	1.01 6	1.30 7	1.59 7	1.88 7	2.20 8	2.53 8	2.95 18	3.69 18	4.44 18	5.19 18	5.93 18	6.68 18
4.9	.00 1	.00 1	.00 1	.05 1	.14 5	.35 5	.55 5	.76 5	.97 7	1.27 7	1.56 7	1.85 7	2.14 7	2.48 9	2.85 9	3.40 18	4.15 18	4.90 1	5.64 18	6.39 18
4.4	.00 1	.00 1	.00 1	.05 1	.13 2	.32 5	.52 5	.73 5	.94 5	1.15 5	1.38 8	1.71 8	2.05 8	2.38 8	2.71 8	3.10 18	3.85 18	4.60 18	5.34 1	6.09 18
4.0	.00 1	.00 1	.00 1	.05 1	.12 3	.27 4	.43 4	.63 5	.84 6	1.09 6	1.37 7	1.66 7	1.95 7	2.24 7	2.53 7	2.85 8	3.18 8	3.52 8	3.85 8	4.59 18
3.7	.00 1	.00 1	.00 1	.04 1	.12 3	.25 4	.41 5	.62 5	.83 6	1.08 6	1.33 6	1.58 6	1.85 8	2.18 8	2.51 8	2.84 8	3.17 8	3.51 8	3.84 8	4.17 8
3.4	.00 1	.00 1	.00 1	.04 1	.12 3	.25 3	.39 4	.59 5	.80 5	1.01 6	1.26 6	1.51 7	1.80 7	2.10 8	2.43 8	2.76 8	3.09 8	3.43 1	3.76 8	4.09 8
3.1	.00 1	.00 1	.00 1	.04 1	.11 3	.24 3	.38 4	.57 5	.78 5	.99 5	1.21 7	1.50 7	1.79 7	2.08 7	2.37 7	2.66 7	2.95 7	3.24 7	3.53 1	3.83 8
2.9	.00 1	.00 1	.00 1	.04 1	.11 2	.23 3	.38 4	.55 5	.76 5	.97 5	1.20 7	1.49 7	1.78 7	2.07 7	2.36 7	2.65 7	2.94 7	3.23 7	3.52 7	3.81 7
2.8	.00 1	.00 1	.00 1	.03 1	.11 2	.23 3	.35 3	.54 5	.75 5	.96 5	1.18 7	1.47 7	1.76 7	2.05 7	2.34 7	2.63 7	2.92 7	3.21 1	3.50 7	3.79 7
2.6	.00 1	.00 1	.00 1	.03 1	.11 2	.22 3	.34 3	.47 3	.65 5	.86 5	1.06 5	1.34 7	1.63 7	1.92 7	2.21 7	2.50 7	2.79 7	3.08 1	3.37 7	3.66 7
2.4	.00 1	.00 1	.00 1	.03 1	.10 2	.22 3	.34 3	.47 3	.59 3	.79 5	1.03 7	1.32 7	1.61 7	1.90 7	2.19 7	2.48 7	2.77 7	3.06 7	3.35 1	3.64 7
2.3	.00 1	.00 1	.00 1	.03 1	.09 2	.17 2	.27 3	.40 3	.57 5	.78 5	1.02 6	1.27 6	1.52 6	1.77 6	2.02 6	2.29 7	2.58 7	2.87 7	3.16 7	3.47 8
2.2	.00 1	.00 1	.00 1	.03 1	.09 2	.17 2	.26 3	.39 3	.51 3	.72 6	.97 6	1.22 6	1.47 6	1.72 6	1.97 6	2.24 7	2.53 7	2.82 7	3.11 7	3.40 7
2.1	.00 1	.00 1	.00 1	.03 1	.09 2	.17 2	.25 2	.36 3	.49 4	.69 6	.94 6	1.19 6	1.44 6	1.69 6	1.94 6	2.18 6	2.43 6	2.68 8	3.01 8	3.34 8
2.0	.00 1	.00 1	.00 1	.03 1	.08 2	.16 2	.24 2	.34 3	.46 3	.63 6	.88 6	1.13 6	1.38 6	1.63 6	1.88 6	2.12 6	2.37 6	2.67 8	3.00 1	3.33 8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KANKAKEE RIVER NEAR WILMINGTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15

MAZON RIVER NEAR COAL CITY



STATION 109

LOCATION

In SW ¼ SW ¼ sec 31, T33N, R8E, Grundy County, at bridge on Ill. 113 S, 4.0 miles west of Coal City and 6.0 miles southeast of Morris

DRAINAGE AREA

470 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1939 thru Sept 1959

CONTINUOUS RECORD: 20 years; water years 1940-59

SYNTHETIC FLOW DATA

PERIOD : 24 years; water years 1916-39

INDEX STATION : Kankakee River near Wilmington

COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED

PERIOD: 44 years; water years 1916-59

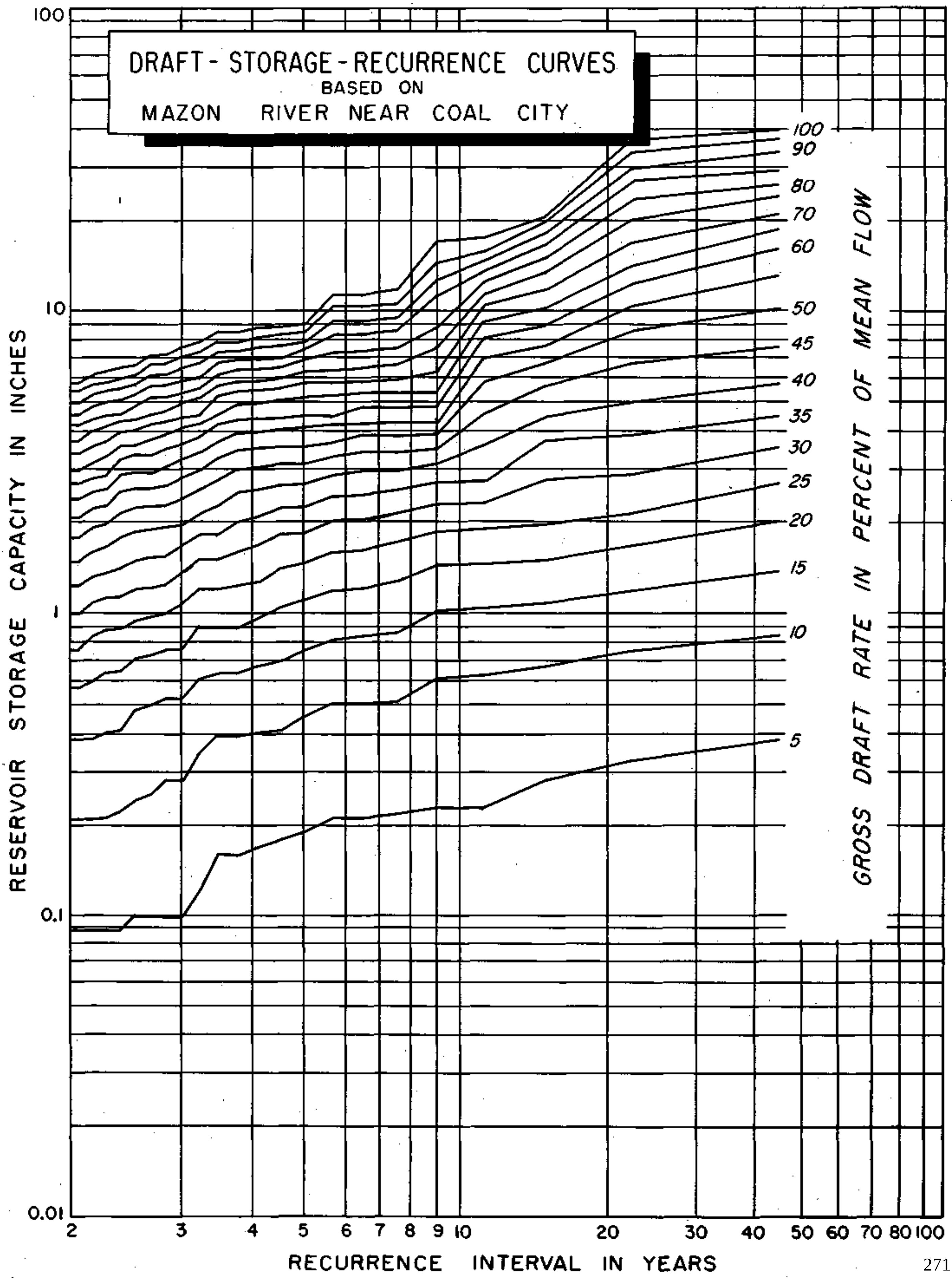
MEAN DISCHARGE : 1.18 inch per month

Draft-Storage-Recurrence Data for Mazon River near Coal City

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.38	.85	1.36	1.99	2.64	3.50	4.45	5.62	7.39	9.91	12.62	15.34	18.05	20.77	23.48	26.19	29.16	32.46	35.77	39.07
	8	8	10	11	11	16	16	30	30	46	46	46	46	46	46	46	56	56	56	56
22.5	.33	.75	1.18	1.65	2.12	2.83	3.85	4.92	6.49	8.26	10.03	11.80	13.56	16.16	19.35	22.54	25.72	28.91	32.09	35.34
	7	7	8	8	8	16	18	18	30	30	30	30	32	54	54	54	54	54	54	56
15.0	.28	.67	1.08	1.49	1.96	2.71	3.66	4.60	5.55	6.49	7.45	8.63	9.87	11.41	12.94	14.47	16.01	17.54	19.08	20.61
	6	7	7	8	8	16	16	16	16	16	20	20	26	26	26	26	26	26	26	26
11.3	.23	.63	1.04	1.45	1.87	2.28	2.69	3.51	4.57	5.63	6.69	7.75	8.62	9.88	10.94	12.00	13.06	14.13	15.19	16.93
	6	7	7	7	7	7	7	18	18	18	18	18	18	18	18	18	18	18	18	38
9.0	.23	.60	1.01	1.42	1.84	2.25	2.66	3.07	3.49	3.90	4.36	4.94	6.12	7.30	8.48	9.66	10.84	12.13	13.79	16.15
	5	7	7	7	7	7	7	7	7	7	8	20	20	20	20	20	22	22	40	40
7.5	.22	.51	.86	1.27	1.69	2.10	2.51	2.92	3.36	3.83	4.30	4.77	5.25	5.63	6.42	7.33	8.28	9.22	10.17	11.36
	5	6	7	7	7	7	7	7	8	8	8	8	8	10	10	16	16	16	16	22
6.4	.21	.50	.84	1.20	1.59	2.00	2.41	2.89	3.36	3.83	4.30	4.77	5.25	5.73	6.30	7.09	8.04	8.98	9.93	10.87
	5	5	6	6	7	7	8	8	8	8	8	8	6	9	10	16	16	16	16	16
5.6	.21	.50	.81	1.17	1.57	1.98	2.39	2.80	3.22	3.65	4.12	4.59	5.12	5.65	6.19	7.03	7.96	8.92	9.87	10.81
	5	5	6	6	7	7	7	7	7	8	8	9	9	9	9	16	16	16	16	16
5.0	.19	.45	.75	1.10	1.45	1.81	2.22	2.63	3.06	3.53	4.05	4.58	5.11	5.64	6.18	6.71	7.24	7.77	8.30	8.83
	4	5	5	6	6	7	7	7	8	8	9	9	9	9	9	9	9	9	9	9
4.5	.18	.41	.69	1.03	1.36	1.78	2.19	2.60	3.05	3.52	3.99	4.46	4.94	5.41	5.88	6.35	6.85	7.44	8.03	8.62
	4	4	5	6	6	7	7	7	8	8	8	8	8	8	8	8	10	10	10	10
4.1	.17	.40	.66	.95	1.25	1.64	2.05	2.50	2.97	3.44	3.91	4.38	4.86	5.33	5.80	6.27	6.77	7.36	7.95	8.54
	4	4	5	5	6	7	7	8	8	8	8	8	8	8	8	8	10	10	10	10
3.8	.16	.39	.63	.89	1.22	1.57	1.97	2.45	2.92	3.39	3.86	4.33	4.81	5.28	5.75	6.22	6.69	7.17	7.66	8.25
	4	4	4	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8	10	10
3.5	.16	.39	.63	.89	1.19	1.48	1.78	2.23	2.70	3.17	3.64	4.11	4.59	5.06	5.53	6.00	6.48	7.07	7.66	8.25
	4	4	4	5	5	5	5	8	8	8	8	8	8	8	8	8	10	10	10	10
3.2	.12	.34	.60	.89	1.19	1.48	1.78	2.09	2.51	2.92	3.33	3.75	4.16	4.57	4.99	5.43	5.90	6.48	7.07	7.66
	3	4	5	5	5	5	5	7	7	7	7	7	7	7	7	8	8	10	10	10
3.0	.10	.28	.52	.76	1.06	1.35	1.65	1.94	2.34	2.75	3.16	3.58	3.99	4.40	4.82	5.23	5.74	6.27	6.80	7.33
	3	4	4	5	5	5	5	5	7	7	7	7	7	7	7	7	9	9	9	9
2.8	.10	.28	.52	.75	.99	1.23	1.52	1.87	2.23	2.58	2.99	3.41	3.82	4.23	4.65	5.07	5.54	6.02	6.49	6.96
	2	4	4	4	4	4	6	6	5	7	7	7	7	7	7	8	8	8	8	8
2.6	.10	.25	.49	.72	.96	1.20	1.51	1.86	2.22	2.57	2.92	3.28	3.63	4.07	4.54	5.01	5.48	5.96	6.43	6.90
	2	4	4	4	4	5	6	6	6	5	6	6	6	8	8	8	8	8	8	8
2.5	.10	.24	.47	.70	.94	1.18	1.47	1.82	2.18	2.53	2.88	3.24	3.59	3.95	4.34	4.75	5.16	5.57	5.99	6.42
	2	3	4	4	4	4	6	6	6	6	6	6	6	6	7	7	7	7	7	8
2.4	.09	.22	.41	.64	.88	1.12	1.39	1.74	2.10	2.45	2.80	3.16	3.51	3.67	4.22	4.57	4.95	5.36	5.63	6.30
	2	3	4	4	4	4	6	6	6	6	6	6	6	6	6	6	7	8	8	8
2.3	.09	.21	.40	.63	.87	1.11	1.34	1.63	1.93	2.22	2.52	2.81	3.22	3.63	4.05	4.46	4.87	5.26	5.70	6.11
	2	3	4	4	4	4	5	5	5	5	5	7	7	7	7	7	7	7	7	7
2.1	.09	.21	.38	.59	.83	1.07	1.30	1.57	1.87	2.16	2.46	2.75	3.06	3.47	3.89	4.30	4.71	5.12	5.54	5.95
	2	2	3	4	4	4	4	5	5	5	5	5	7	7	7	7	7	7	7	7
2.0	.09	.21	.38	.56	.75	.99	1.22	1.46	1.75	2.04	2.34	2.63	2.94	3.30	3.65	4.06	4.47	4.68	5.30	5.71
	2	2	3	3	4	4	4	4	5	5	5	5	6	6	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
MAZON RIVER NEAR COAL CITY
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
2
3
4
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7
8
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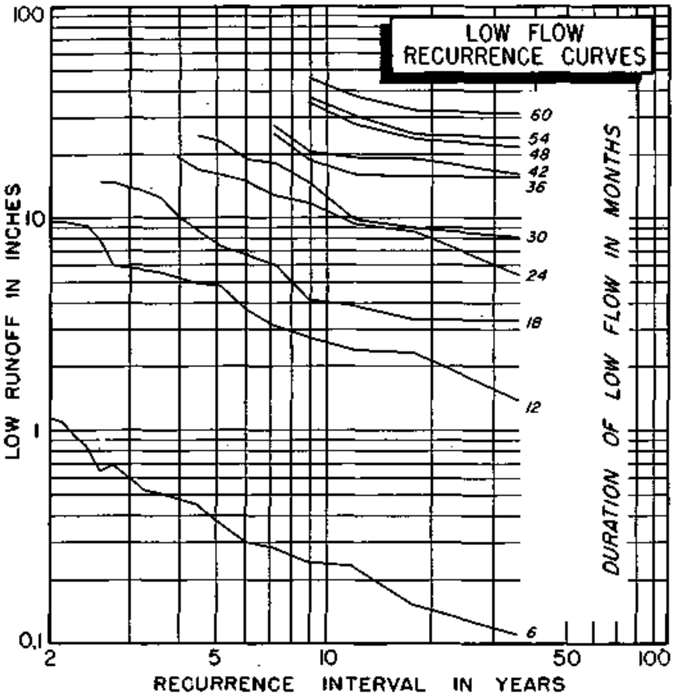
20
30
40
50
60
70
80
100



STATION 147

LOCATION
In N ½ sec 16, T25N, R12W, Iroquois County, at highway bridge 1.5 miles west of Milford

DRAINAGE AREA
430 square miles

ACTUAL FLOW DATA
PERIOD: July 1948 thru Sept 1959
CONTINUOUS RECORD: 11 years; water years 1949-59

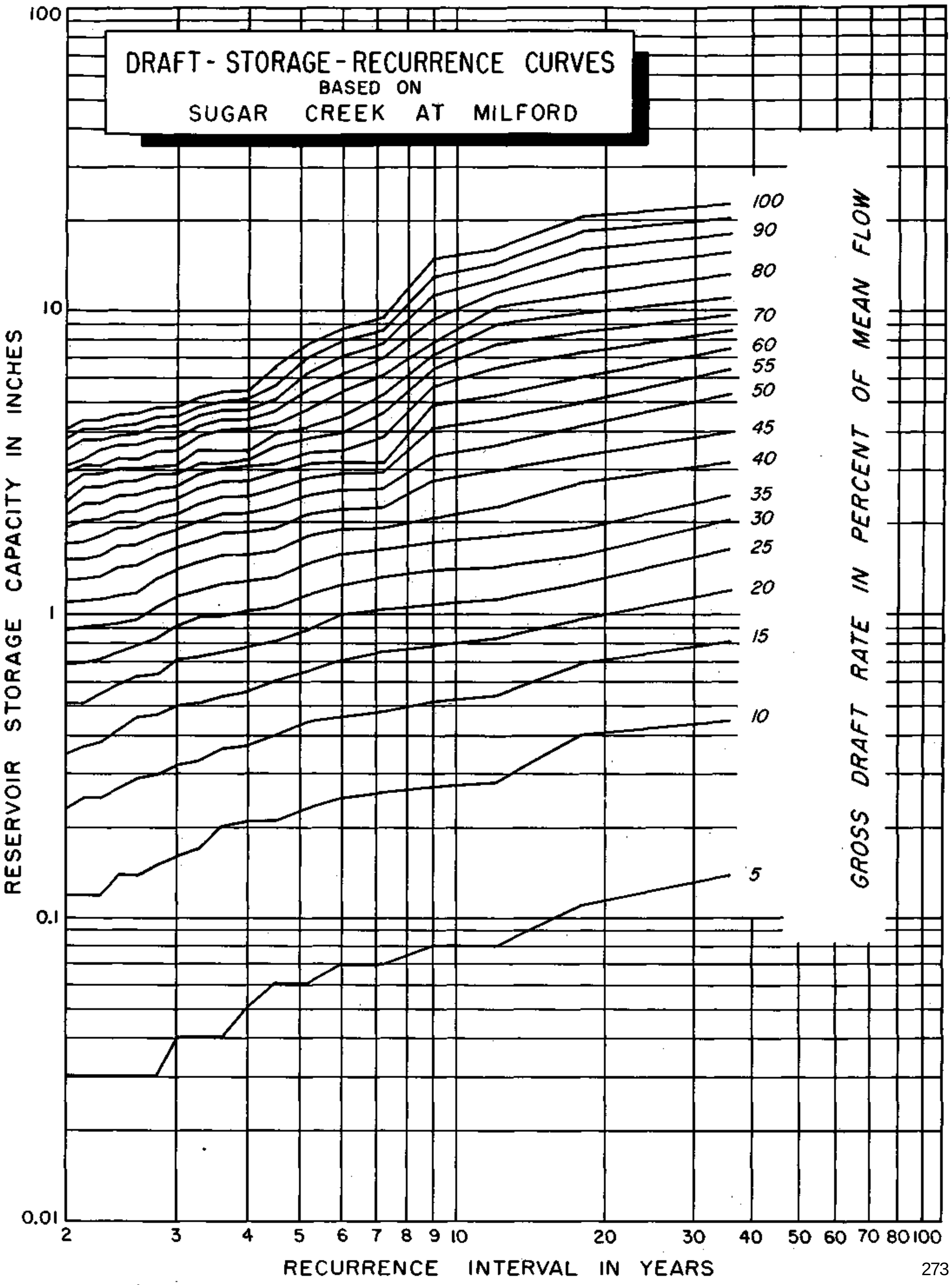
SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1924-48
INDEX STATION: Iroquois River near Chebanse
COINCIDENT RECORD: 11 years; water years 1949-59

TOTAL DATA ANALYZED
PERIOD: 36 years; water years 1924-59
MEAN DISCHARGE: 0.84 inch per month

Draft-Storage-Recurrence Data for Sugar Creek at Milford

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
36.0	.14	.45	.82	1.22	1.64	2.06	2.48	3.17	4.26	5.35	6.44	7.53	8.63	9.72	11.08	13.27	15.62	17.98	20.33	22.68
	6	9	9	10	10	10	11	26	26	26	26	26	26	26	44	56	56	56	56	56
18.0	.11	.40	.69	.99	1.28	1.57	1.95	2.71	3.46	4.22	4.98	6.08	7.34	8.60	9.86	11.32	13.59	15.91	18.26	20.61
	5	7	7	7	7	8	18	18	18	18	18	30	30	30	30	54	54	56	56	56
12.0	.08	.28	.54	.84	1.13	1.44	1.82	2.32	2.99	3.69	4.45	5.26	6.52	7.78	9.04	10.30	11.56	12.82	14.36	16.12
	4	5	7	7	7	9	9	16	16	18	18	30	30	30	30	30	30	30	42	42
9.0	.08	.27	.52	.79	1.08	1.41	1.74	2.10	2.77	3.44	4.17	4.92	5.68	6.43	7.19	7.95	9.48	11.24	13.01	14.77
	4	5	6	7	7	8	8	16	16	16	18	18	18	18	18	18	42	42	42	42
7.2	.07	.26	.48	.76	1.05	1.34	1.64	1.94	2.27	2.61	2.95	3.28	3.95	4.62	5.35	6.19	7.03	7.87	8.71	9.55
	4	5	6	7	7	7	7	8	8	8	8	9	16	16	20	20	20	20	20	20
6.0	.07	.25	.46	.71	1.00	1.29	1.59	1.91	2.24	2.58	2.92	3.25	3.59	3.92	4.59	5.43	6.27	7.11	7.95	8.79
	3	5	6	7	7	7	7	8	8	8	8	8	8	8	20	20	20	20	20	20
5.1	.06	.23	.44	.65	.89	1.18	1.48	1.81	2.14	2.48	2.82	3.15	3.49	3.82	4.16	4.73	5.48	6.24	6.99	7.75
	3	5	5	5	7	7	7	8	8	8	8	8	8	8	8	18	18	18	18	18
4.5	.06	.21	.40	.61	.82	1.07	1.34	1.63	1.94	2.28	2.62	2.95	3.29	3.62	3.96	4.30	4.71	5.13	5.75	6.51
	3	4	5	5	6	6	7	7	8	8	8	8	8	8	8	8	10	10	18	18
4.0	.05	.21	.37	.56	.79	1.04	1.30	1.59	1.89	2.18	2.47	2.77	3.08	3.41	3.75	4.09	4.42	4.76	5.14	5.52
	3	4	4	5	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9
3.6	.04	.20	.36	.54	.76	1.01	1.28	1.57	1.87	2.16	2.45	2.75	3.07	3.40	3.74	4.08	4.41	4.75	5.08	5.44
	3	4	4	5	6	6	7	7	7	7	7	7	8	8	8	8	8	8	8	9
3.3	.04	.17	.33	.51	.74	.99	1.24	1.50	1.75	2.04	2.33	2.63	2.92	3.22	3.54	3.88	4.21	4.55	4.88	5.22
	3	4	4	5	6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	8
3.0	.04	.16	.32	.50	.71	.92	1.16	1.42	1.67	1.92	2.17	2.42	2.68	2.94	3.23	3.54	3.87	4.21	4.54	4.88
	2	4	4	5	5	5	6	6	6	6	6	6	6	7	7	8	8	8	8	8
2.8	.03	.15	.30	.47	.64	.84	1.07	1.33	1.58	1.83	2.08	2.34	2.63	2.93	3.22	3.51	3.84	4.18	4.51	4.85
	3	3	4	4	4	5	6	6	6	6	6	7	7	7	7	8	8	8	8	8
2.6	.03	.14	.29	.46	.63	.80	.97	1.21	1.46	1.71	1.96	2.21	2.50	2.80	3.09	3.38	3.68	3.97	4.27	4.65
	2	3	4	4	4	4	5	6	6	6	6	7	7	7	7	7	7	7	9	9
2.4	.03	.14	.27	.42	.59	.76	.94	1.19	1.44	1.69	1.94	2.19	2.47	2.77	3.06	3.35	3.65	3.94	4.24	4.58
	2	3	3	4	4	4	5	6	6	6	6	6	7	7	7	7	7	7	7	9
2.3	.03	.12	.25	.38	.55	.72	.93	1.14	1.35	1.58	1.83	2.08	2.35	2.65	2.94	3.23	3.53	3.82	4.12	4.41
	2	3	3	4	4	5	5	5	5	6	6	6	7	7	7	7	7	7	7	7
2.1	.03	.12	.25	.37	.51	.70	.91	1.12	1.33	1.54	1.75	2.04	2.33	2.63	2.92	3.21	3.51	3.80	4.10	4.39
	2	3	3	3	4	5	5	5	5	5	5	7	7	7	7	7	7	7	7	7
2.0	.03	.12	.23	.35	.51	.69	.90	1.11	1.32	1.53	1.74	1.95	2.16	2.38	2.67	2.96	3.26	3.55	3.85	4.14
	2	2	3	3	4	5	5	5	5	5	5	5	5	7	7	7	7	7	7	7



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SUGAR CREEK AT MILFORD
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
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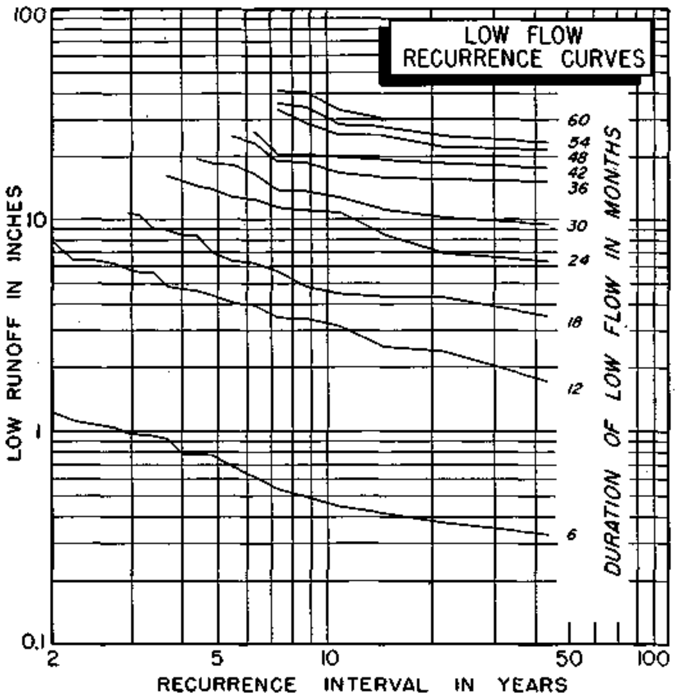
70
80
100



STATION 148

LOCATION

Near southwest corner of SE ¼ sec 20, T32N, R10E, Will County, at bridge on Ill. 113 S, about 1.5 miles southeast of Custer Park

DRAINAGE AREA

12.0 square miles

ACTUAL FLOW DATA

PERIOD: July 1949 thru Sept 1959

CONTINUOUS RECORD: 10 years; water years 1950-59

SYNTHETIC FLOW DATA

PERIOD : 34 years; water years 1916-49

INDEX STATION : Kankakee River near Wilmington

COINCIDENT RECORD: 10 years; water years 1950-59

TOTAL DATA ANALYZED

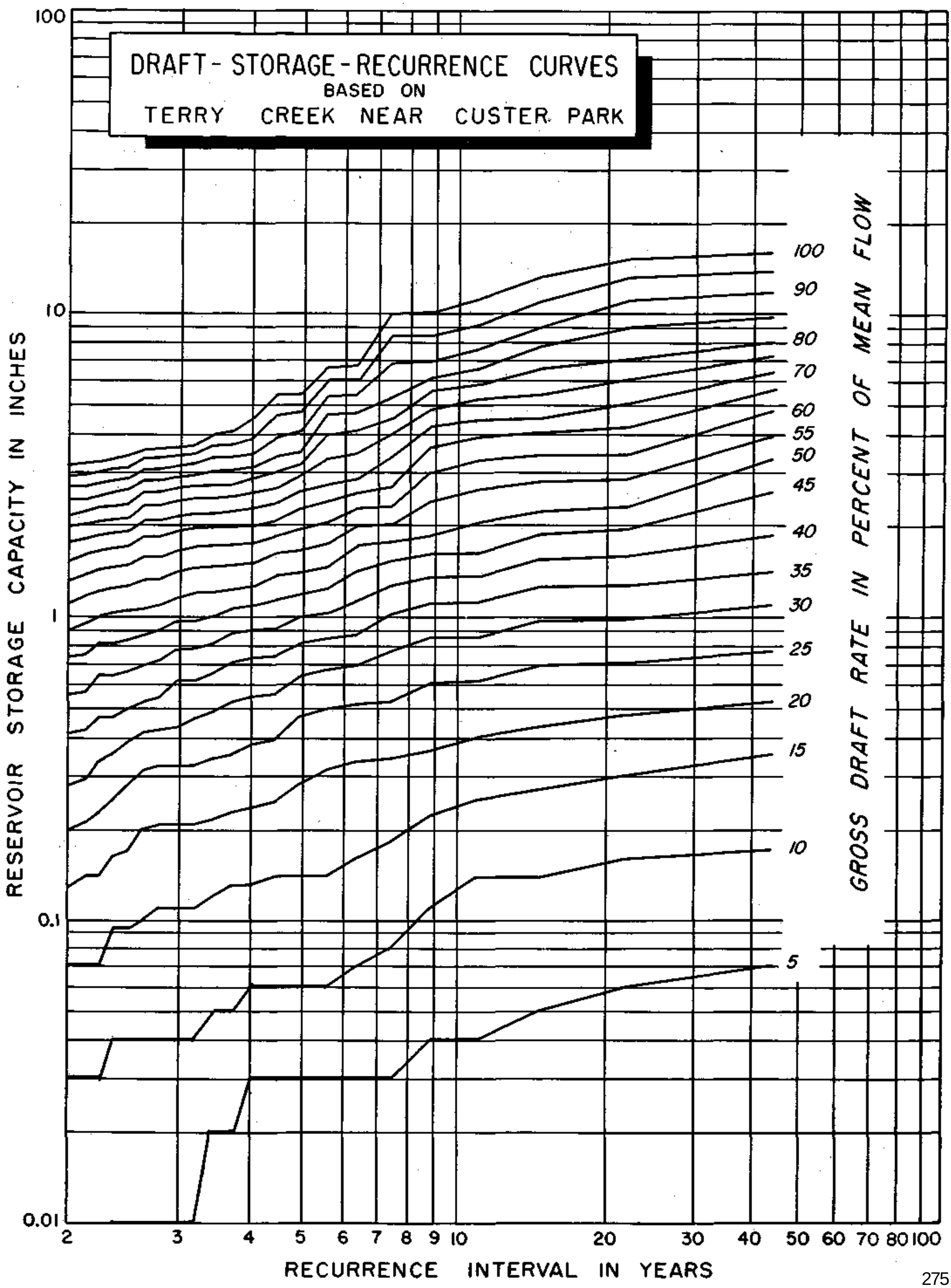
PERIOD : 44 years; water years 1916-59

MEAN DISCHARGE : 0.70 inch per month

Draft-Storage-Recurrence Data for Terry Creek near Custer Park

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.07 2	.17 5	.35 5	.52 5	.76 9	1.07 9	1.39 9	1.82 20	2.52 20	3.22 20	3.92 22	4.69 22	5.45 22	6.23 22	7.00 22	7.77 22	9.37 54	11.31 56	13.27 56	15.23 56
22.0	.06 2	.16 4	.30 5	.47 6	.69 8	.97 8	1.25 8	1.56 10	1.91 10	2.26 10	2.78 16	3.34 18	4.15 24	4.99 24	5.90 28	6.88 30	8.67 56	10.63 56	12.59 56	14.55 56
14.7	.05 2	.14 3	.27 4	.43 6	.68 8	.96 8	1.24 8	1.52 8	1.83 9	2.19 16	2.75 16	3.34 18	3.97 18	4.60 18	5.28 32	6.40 32	7.52 32	8.64 32	10.57 60	12.67 60
11.0	.04 3	.14 3	.25 4	.40 6	.61 7	.85 7	1.10 7	1.34 7	1.59 7	2.02 15	2.58 16	3.19 18	3.82 18	4.45 18	5.08 18	5.71 18	6.34 18	7.38 40	8.92 52	10.74 52
8.8	.04 2	.11 2	.22 4	.36 4	.60 7	.84 7	1.09 7	1.33 7	1.58 7	1.82 7	2.36 16	2.92 16	3.48 16	4.10 18	4.73 18	5.36 18	5.99 18	6.70 42	8.19 44	9.73 44
7.3	.03 1	.08 2	.18 4	.34 5	.52 7	.76 7	1.01 7	1.25 7	1.50 7	1.74 7	1.99 7	2.26 9	2.62 18	3.25 18	3.88 18	4.51 18	5.14 18	6.57 42	8.04 42	9.51 42
6.3	.03 1	.07 2	.16 5	.33 5	.51 5	.68 5	.86 6	1.11 8	1.39 8	1.67 8	1.95 8	2.23 8	2.51 8	2.79 8	3.36 18	3.99 18	4.62 18	5.25 18	5.88 18	6.51 18
5.5	.03 1	.06 2	.14 5	.31 5	.49 5	.66 5	.84 5	1.01 6	1.22 6	1.43 6	1.71 9	2.02 9	2.34 9	2.65 9	3.24 18	3.87 18	4.50 18	5.13 18	5.76 18	6.39 18
4.9	.03 1	.05 1	.14 3	.28 5	.46 5	.63 5	.81 5	.98 5	1.16 5	1.37 7	1.62 7	1.90 9	2.22 9	2.53 9	2.85 9	3.39 16	3.98 18	4.61 18	5.24 18	5.87 18
4.4	.03 1	.06 1	.14 3	.25 4	.39 4	.55 5	.73 5	.91 6	1.12 6	1.34 7	1.59 7	1.83 7	2.08 7	2.32 7	2.59 10	2.94 10	3.29 10	3.77 20	4.47 20	5.17 20
4.0	.03 1	.06 1	.13 3	.24 4	.38 4	.54 5	.72 5	.89 5	1.07 5	1.24 5	1.47 7	1.71 7	1.96 7	2.23 8	2.51 8	2.79 8	3.07 8	3.35 8	3.77 18	4.40 18
3.7	.02 1	.05 1	.13 3	.23 3	.35 5	.52 5	.70 5	.87 5	1.05 5	1.22 5	1.46 7	1.70 7	1.95 7	2.19 7	2.44 7	2.68 7	2.98 9	3.29 9	3.61 9	3.98 18
3.4	.02 1	.05 1	.12 3	.22 3	.34 4	.48 4	.64 5	.81 5	.99 5	1.19 7	1.44 7	1.68 7	1.93 7	2.17 7	2.42 7	2.66 7	2.95 9	3.26 9	3.58 9	3.89 9
3.1	.01 1	.04 2	.11 3	.21 3	.32 4	.46 4	.61 5	.78 5	.96 5	1.18 7	1.43 7	1.67 7	1.92 7	2.16 7	2.41 7	2.65 7	2.90 7	3.14 7	3.39 7	3.63 7
2.9	.01 1	.04 1	.11 3	.21 3	.32 3	.43 4	.60 5	.77 5	.95 5	1.13 7	1.38 7	1.62 7	1.87 7	2.11 7	2.36 7	2.60 7	2.85 7	3.09 7	3.34 7	3.58 7
2.8	.01 1	.04 1	.11 3	.21 3	.32 3	.42 3	.54 5	.71 5	.89 5	1.08 6	1.31 7	1.55 7	1.80 7	2.04 7	2.29 7	2.53 7	2.78 7	3.02 7	3.27 7	3.51 7
2.6	.01 1	.04 1	.10 3	.20 3	.31 3	.41 3	.52 3	.68 5	.86 5	1.05 7	1.30 7	1.54 7	1.79 7	2.03 7	2.28 7	2.52 7	2.77 7	3.01 7	3.26 7	3.50 7
2.4	.01 1	.04 1	.09 2	.17 3	.28 3	.38 3	.49 3	.65 5	.83 6	1.04 6	1.25 6	1.46 6	1.67 6	1.88 6	2.09 6	2.32 7	2.57 7	2.81 7	3.06 8	3.34 8
2.3	.01 1	.04 1	.09 2	.16 2	.25 3	.35 3	.46 5	.63 5	.81 6	1.02 6	1.23 6	1.44 6	1.65 6	1.86 6	2.07 6	2.28 6	2.52 7	2.76 7	3.01 7	3.25 7
2.2	.00 1	.03 1	.07 2	.14 2	.23 3	.33 3	.46 5	.63 5	.81 5	.99 6	1.20 6	1.41 6	1.62 6	1.83 6	2.04 6	2.25 6	2.46 7	2.70 7	2.95 7	3.19 8
2.1	.00 1	.03 1	.07 2	.14 2	.21 2	.29 3	.42 4	.56 5	.74 5	.94 6	1.15 6	1.36 6	1.57 6	1.78 6	1.99 6	2.20 6	2.41 6	2.63 7	2.88 8	3.16 8
2.0	.00 1	.03 1	.07 1	.13 2	.20 2	.28 3	.41 4	.55 5	.73 5	.90 5	1.10 6	1.31 6	1.52 6	1.73 6	1.94 6	2.15 6	2.39 7	2.63 7	2.88 7	3.12 7



DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
TERRY CREEK NEAR CUSTER PARK
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
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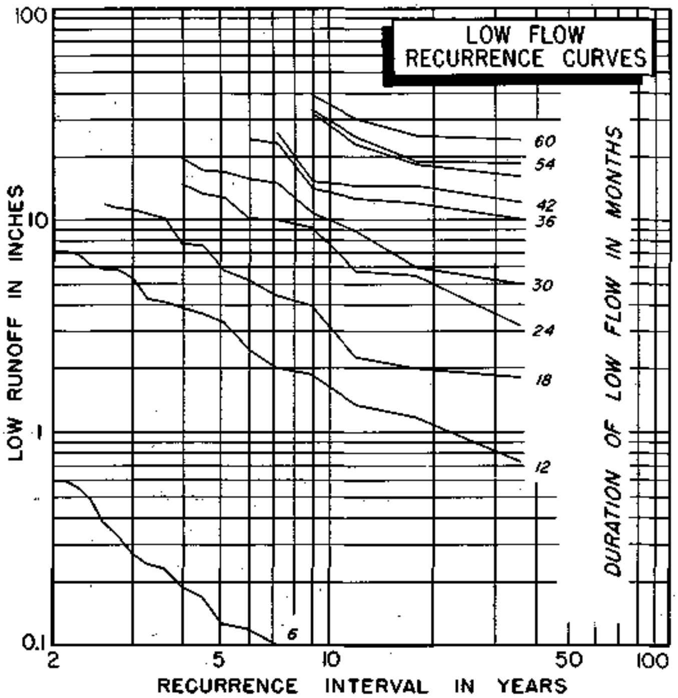
NORTH FORK, VERMILION RIVER NEAR CHARLOTTE



STATION 150

LOCATION
In SE ¼ SE ¼ sec 4, T27N, R8E, Livingston County, at Foreman highway bridge 1.25 miles northwest of Charlotte and 5.5 miles north of Chatsworth

DRAINAGE AREA
184 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1942 thru Sept 1959
CONTINUOUS RECORD: 17 years; water years 1943-59

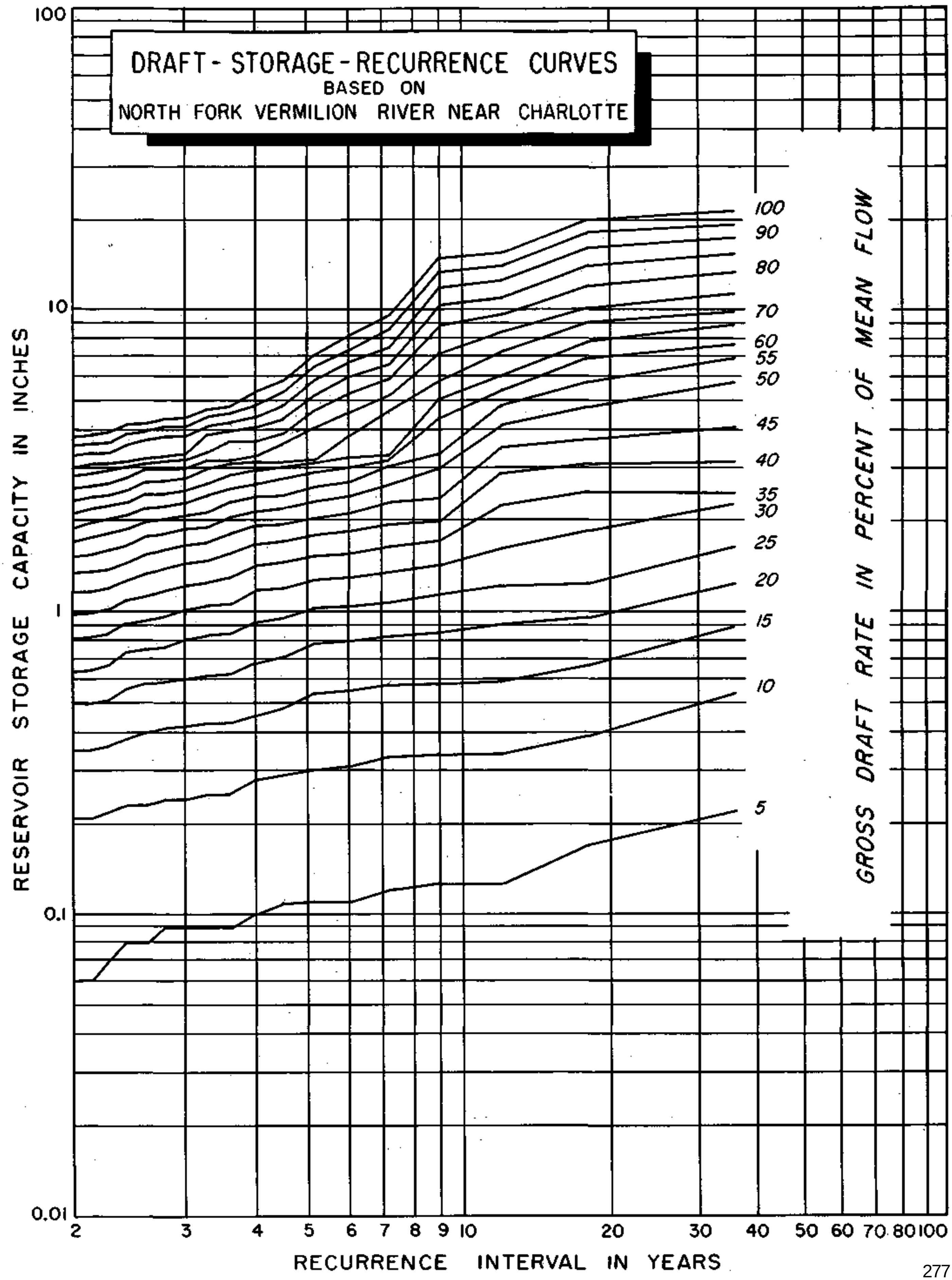
SYNTHETIC FLOW DATA
PERIOD: 19 years; water years 1924-42
INDEX STATION : Iroquois River near Chebanse
COINCIDENT RECORD: 17 years; water years 1943-59

TOTAL DATA ANALYZED
PERIOD: 36 years; water years 1924-59
MEAN DISCHARGE : 0.72 inch per month

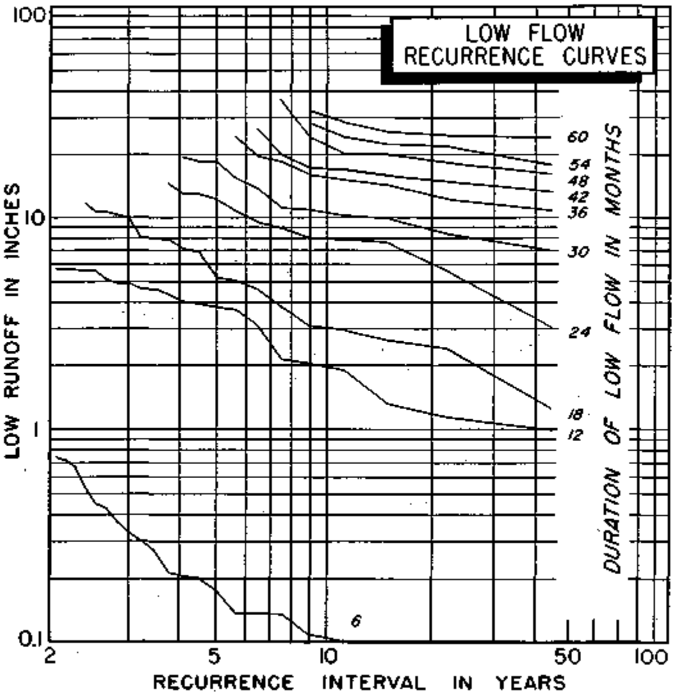
Draft-Storage-Recurrence Data for North Fork, Vermilion River near Charlotte

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
36.0	.22 8	.54 10	.90 10	1.26 10	1.65 11	2.30 26	3.23 26	4.17 26	5.10 26	6.04 26	6.98 26	7.91 26	8.97 30	10.05 30	11.41 56	13.43 56	15.44 56	17.46 56	19.47 56	21.49 56
18.0	.17 6	.39 8	.67 8	.96 8	1.25 10	1.86 18	2.51 18	3.15 18	3.80 18	4.79 30	5.87 30	6.95 30	8.03 30	9.13 32	10.28 32	12.04 56	14.05 56	16.07 56	18.08 56	20.10 56
12.0	.13 6	.34 6	.59 7	.91 9	1.23 9	1.62 16	2.26 18	2.90 18	3.55 18	4.20 18	4.85 18	5.50 18	6.14 18	7.31 34	8.53 34	9.75 34	11.08 42	12.60 42	14.11 42	15.62 42
9.0	.13 6	.34 6	.58 7	.86 8	1.15 8	1.44 8	1.73 8	2.03 10	2.39 10	2.99 20	3.71 20	4.43 20	5.15 20	5.87 20	7.34 42	8.65 42	10.36 42	11.88 42	13.39 42	14.90 42
7.2	.12 6	.33 6	.58 7	.83 7	1.08 7	1.36 8	1.65 8	1.96 10	2.32 10	2.68 10	3.04 10	3.40 10	3.96 18	4.61 18	5.26 18	5.91 18	6.65 28	7.65 28	8.66 28	9.67 28
6.0	.11 5	.31 6	.55 7	.80 7	1.05 7	1.30 7	1.57 8	1.85 8	2.14 8	2.43 8	2.72 8	3.03 9	3.35 9	3.86 20	4.58 20	5.30 20	6.02 20	6.74 20	7.46 20	8.23 26
5.1	.11 5	.30 6	.54 7	.79 7	1.04 7	1.29 7	1.54 7	1.80 7	2.05 7	2.33 8	2.62 8	2.92 9	3.24 9	3.57 9	4.06 16	4.64 16	5.22 18	5.86 18	6.51 18	7.16 18
4.5	.11 5	.29 5	.48 6	.71 7	.96 7	1.21 7	1.46 7	1.72 7	1.97 7	2.22 7	2.49 8	2.78 8	3.06 8	3.35 8	3.64 8	3.93 8	4.39 14	4.89 14	5.40 14	5.90 14
4.0	.10 5	.28 5	.46 6	.68 7	.93 7	1.18 7	1.43 7	1.69 7	1.94 7	2.19 7	2.44 7	2.69 7	2.96 8	3.25 8	3.54 8	3.83 8	4.13 9	4.45 9	4.90 14	5.40 14
3.6	.09 4	.25 5	.43 5	.63 6	.85 6	1.07 6	1.31 7	1.57 7	1.82 7	2.07 7	2.32 7	2.58 8	2.86 8	3.15 8	3.44 8	3.73 8	4.02 8	4.30 8	4.59 8	4.88 8
3.3	.09 4	.25 5	.43 5	.62 6	.84 6	1.06 6	1.27 6	1.49 6	1.70 6	1.92 6	2.15 8	2.44 8	2.72 8	3.01 8	3.30 8	3.59 8	3.88 8	4.16 8	4.45 8	4.74 8
3.0	.09 4	.24 5	.42 5	.60 5	.81 6	1.03 6	1.24 6	1.46 6	1.67 6	1.89 6	2.11 6	2.32 6	2.56 7	2.81 7	3.06 7	3.31 7	3.58 8	3.86 8	4.15 8	4.44 8
2.8	.09 4	.24 4	.41 5	.59 5	.77 5	.97 6	1.18 6	1.40 6	1.61 6	1.83 6	2.05 6	2.26 6	2.50 7	2.75 7	3.00 7	3.27 8	3.56 8	3.84 8	4.13 8	4.42 8
2.6	.08 4	.23 4	.40 5	.58 5	.76 5	.94 5	1.13 6	1.35 6	1.56 6	1.78 6	2.00 6	2.22 7	2.48 7	2.73 7	2.98 7	3.23 7	3.48 7	3.74 7	3.99 7	4.24 8
2.4	.08 4	.23 4	.38 5	.56 5	.74 5	.92 5	1.10 5	1.28 5	1.46 5	1.67 6	1.89 6	2.10 6	2.32 6	2.55 7	2.80 7	3.05 8	3.34 8	3.62 8	3.91 8	4.20 8
2.3	.07 4	.22 4	.36 4	.51 4	.67 5	.85 5	1.03 5	1.21 5	1.39 6	1.61 6	1.83 6	2.04 6	2.26 6	2.47 6	2.70 7	2.95 7	3.20 7	3.46 7	3.71 7	3.96 7
2.1	.06 4	.21 4	.35 4	.50 4	.65 5	.83 5	1.01 5	1.19 5	1.37 5	1.56 6	1.78 6	1.99 6	2.21 6	2.42 6	2.64 7	2.89 7	3.14 7	3.40 7	3.65 7	3.90 7
2.0	.06 4	.21 4	.35 4	.50 4	.64 5	.82 5	1.00 5	1.18 5	1.36 5	1.54 5	1.72 5	1.92 6	2.14 6	2.35 7	2.60 7	2.85 7	3.10 7	3.36 7	3.61 7	3.86 7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
NORTH FORK VERMILION RIVER NEAR CHARLOTTE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

VERMILION RIVER AT LOWELL



STATION 151

LOCATION

In NE ¼ SE ¼ sec 8, T32N, R2E, LaSalle County, at bridge on Ill. 178, 0.25 mile north of Lowell, and 7 miles southeast of LaSalle

DRAINAGE AREA

1230 square miles, approximately

ACTUAL FLOW DATA

PERIOD: May 1931 thru Sept 1959
CONTINUOUS RECORD: 28 years; water years 1932-59
ADDITIONAL RECORD: Station No. 185
CONTINUOUS RECORD: 16 years; water years 1915-30

SYNTHETIC FLOW DATA

PERIOD: 1 year; water year 1931
INDEX STATION : Kankakee River near Wilmington
COINCIDENT RECORD: 26 years; water years 1934-59
Note: The records from Station 185 were combined with the records from Station 151; the difference in drainage areas is 12 percent

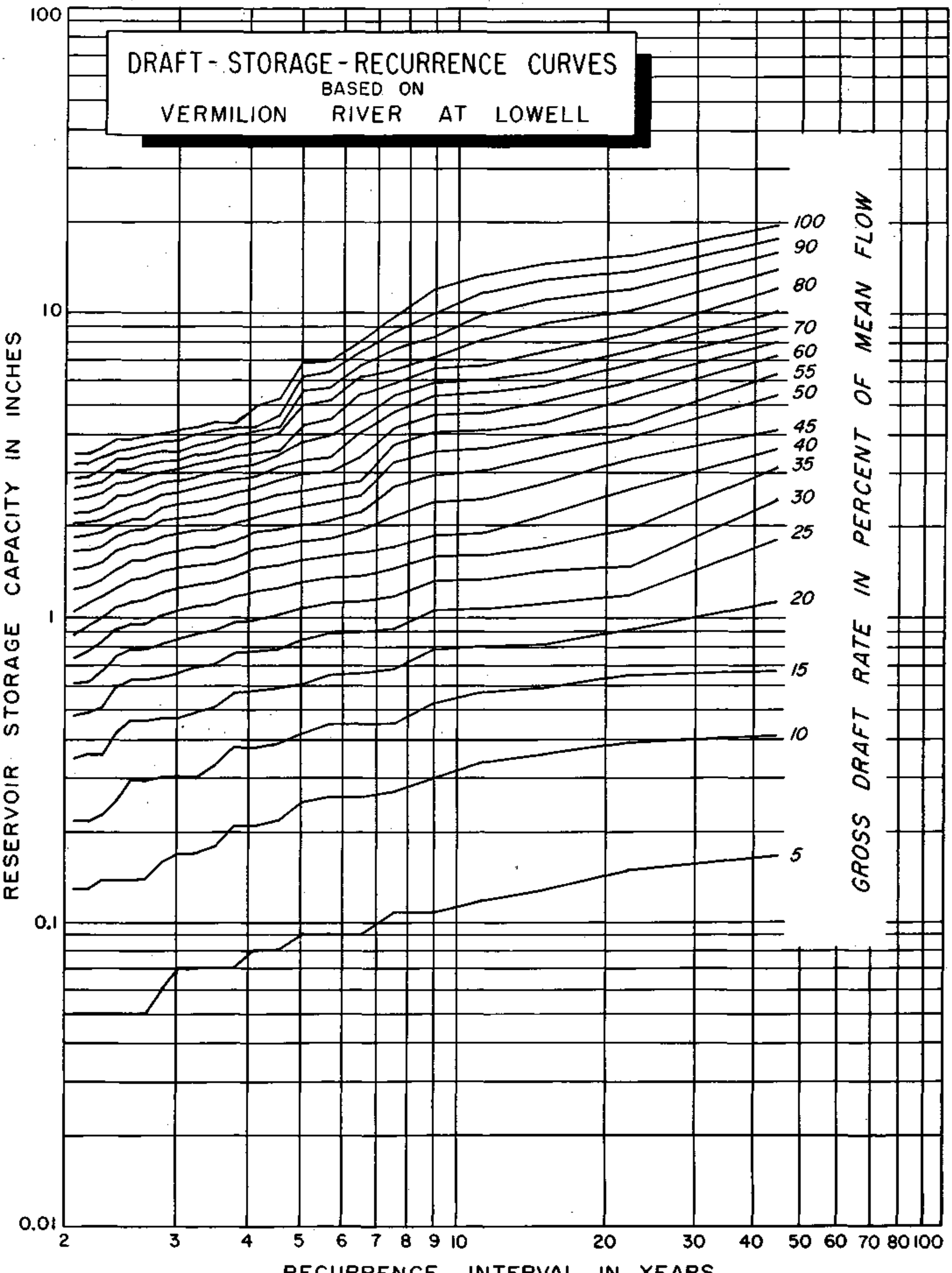
TOTAL DATA ANALYZED

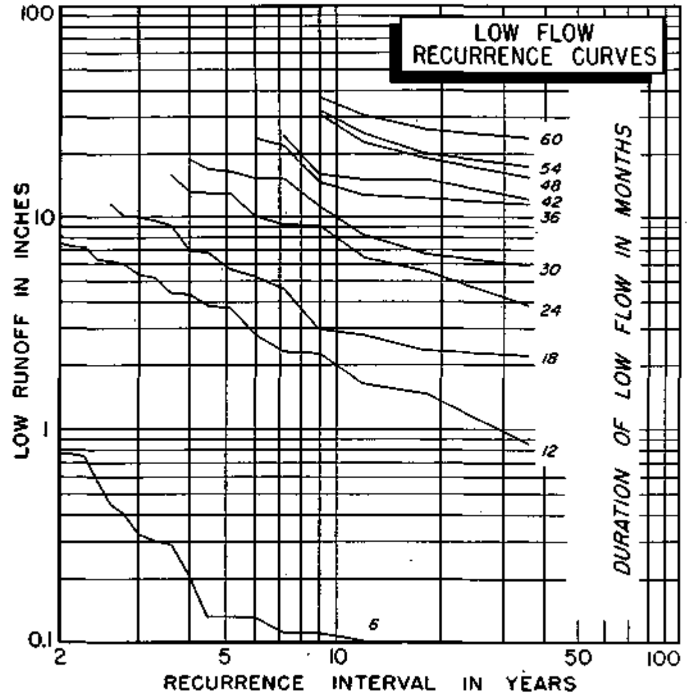
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.66 inch per month

Draft-Storage-Recurrence Data for Vermilion River at Lowell

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.17	.41	.67	1.13	1.79	2.45	3.11	3.77	4.50	5.36	6.22	7.08	7.93	8.79	9.93	11.78	13.63	15.47	17.32	19.17
	7	8	9	20	20	20	20	20	26	26	26	26	26	26	56	56	56	56	56	56
22.5	.16	.39	.65	.92	1.19	1.48	1.96	2.62	3.28	3.94	4.60	5.26	5.93	6.65	7.38	8.30	9.95	11.67	13.38	15.10
	7	8	8	8	9	9	20	20	20	20	20	20	22	22	22	44	52	52	52	52
15.0	.13	.36	.59	.82	1.12	1.41	1.71	2.15	2.75	3.34	3.93	4.53	5.12	5.72	6.31	7.32	9.03	10.75	12.46	14.18
	7	7	7	9	9	9	9	18	18	18	18	18	18	18	18	52	52	52	52	52
11.3	.12	.34	.57	.81	1.07	1.33	1.60	1.88	2.42	3.01	3.60	4.20	4.79	5.39	5.98	6.57	7.96	9.61	11.26	12.91
	5	7	7	8	8	8	8	9	18	18	18	18	18	18	18	18	50	50	50	50
9.0	.11	.30	.53	.80	1.06	1.32	1.59	1.86	2.39	2.92	3.48	4.08	4.67	5.27	5.86	6.45	7.05	8.13	9.70	11.55
	5	7	8	8	8	8	8	16	16	16	18	18	18	18	18	18	18	42	56	56
7.5	.11	.27	.45	.68	.92	1.17	1.44	1.70	2.14	2.67	3.20	3.73	4.25	4.78	5.31	5.84	6.38	7.39	8.44	9.50
	5	5	7	7	7	8	8	8	16	16	16	16	16	16	16	16	18	32	32	32
6.4	.09	.26	.45	.66	.90	1.13	1.36	1.62	1.91	2.21	2.51	2.80	3.32	3.98	4.64	5.30	5.96	6.62	7.28	7.94
	5	6	6	7	7	7	8	9	9	9	9	9	20	20	20	20	20	20	20	20
5.6	.09	.26	.45	.65	.89	1.12	1.35	1.58	1.81	2.08	2.38	2.67	3.00	3.34	3.93	4.52	5.12	5.71	6.31	6.90
	5	6	6	7	7	7	7	7	7	9	9	10	10	18	18	18	18	18	18	18
5.0	.09	.25	.42	.61	.85	1.08	1.31	1.54	1.77	2.01	2.31	2.60	2.93	3.26	3.77	4.36	4.96	5.55	6.15	6.74
	5	5	5	7	7	7	7	7	7	9	9	10	10	10	18	18	18	18	18	18
4.5	.08	.22	.39	.59	.79	1.02	1.25	1.48	1.71	1.94	2.22	2.51	2.81	3.11	3.41	3.70	4.00	4.30	4.59	5.15
	4	5	6	6	7	7	7	7	7	7	9	9	9	9	9	9	9	9	9	18
4.1	.08	.21	.38	.58	.78	.99	1.22	1.45	1.68	1.91	2.14	2.39	2.65	2.92	3.18	3.47	3.77	4.07	4.38	4.91
	4	5	6	6	6	7	7	7	7	7	7	8	8	8	9	9	9	9	10	18
3.8	.07	.21	.38	.57	.77	.97	1.17	1.36	1.56	1.77	2.03	2.30	2.56	2.83	3.09	3.37	3.67	3.97	4.26	4.56
	4	5	5	6	6	6	6	6	6	8	8	8	8	8	8	9	9	9	9	9
3.5	.07	.18	.34	.51	.71	.91	1.11	1.30	1.50	1.70	1.93	2.19	2.45	2.72	2.98	3.24	3.51	3.77	4.09	4.42
	3	4	5	6	6	6	6	6	6	7	7	8	8	8	8	8	8	9	10	10
3.2	.07	.17	.31	.49	.69	.89	1.09	1.28	1.48	1.69	1.92	2.15	2.38	2.64	2.90	3.16	3.43	3.69	3.96	4.22
	3	3	5	6	6	6	6	6	6	7	7	7	7	8	8	8	8	8	8	8
3.0	.07	.17	.31	.47	.66	.86	1.06	1.25	1.45	1.65	1.88	2.11	2.34	2.57	2.81	3.04	3.27	3.50	3.79	4.09
	3	3	5	5	6	6	6	6	6	7	7	7	7	7	7	7	7	9	9	9
2.8	.06	.16	.31	.47	.64	.82	1.02	1.21	1.41	1.61	1.83	2.06	2.29	2.52	2.76	2.99	3.23	3.49	3.76	4.02
	3	3	5	5	5	6	6	6	6	6	7	7	7	7	7	7	8	8	8	10
2.6	.05	.14	.30	.46	.63	.79	.96	1.15	1.35	1.55	1.75	1.95	2.14	2.38	2.64	2.90	3.17	3.43	3.70	3.96
	2	3	5	5	5	5	6	6	6	6	6	6	6	8	8	8	8	8	8	8
2.5	.05	.14	.30	.46	.63	.79	.96	1.13	1.33	1.53	1.73	1.93	2.12	2.32	2.53	2.79	3.06	3.32	3.59	3.85
	2	3	5	5	5	5	5	6	6	6	6	6	6	6	8	8	8	8	8	8
2.4	.05	.14	.26	.42	.59	.75	.92	1.08	1.25	1.44	1.64	1.84	2.03	2.23	2.49	2.75	3.02	3.28	3.55	3.81
	2	3	5	5	5	5	5	5	5	6	6	6	6	8	8	8	8	8	8	8
2.3	.05	.14	.24	.36	.51	.67	.84	1.00	1.17	1.33	1.51	1.71	1.90	2.10	2.30	2.55	2.82	3.08	3.35	3.61
	2	3	3	4	5	5	5	5	5	5	6	6	6	6	6	8	8	8	8	8
2.1	.05	.13	.23	.36	.49	.62	.78	.94	1.11	1.27	1.46	1.66	1.85	2.05	2.25	2.47	2.70	2.93	3.17	3.43
	2	3	4	4	4	4	5	5	5	5	6	6	6	6	6	7	7	7	8	8
2.0	.05	.13	.23	.35	.48	.61	.74	.88	1.05	1.24	1.44	1.64	1.83	2.03	2.23	2.43	2.64	2.90	3.17	3.43
	2	3	3	4	4	4	4	5	5	6	6	6	6	6	6	6	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
VERMILION RIVER AT LOWELL
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 152

LOCATION
In SW ¼ sec 22, T28N, R5E, Livingston County, at Vermilion Street bridge in Pontiac, 0.1 mile upstream from railroad bridge and Ill. 116 bridge

DRAINAGE AREA
568 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1942 thru Sept 1959
CONTINUOUS RECORD: 17 years; water years 1943-59

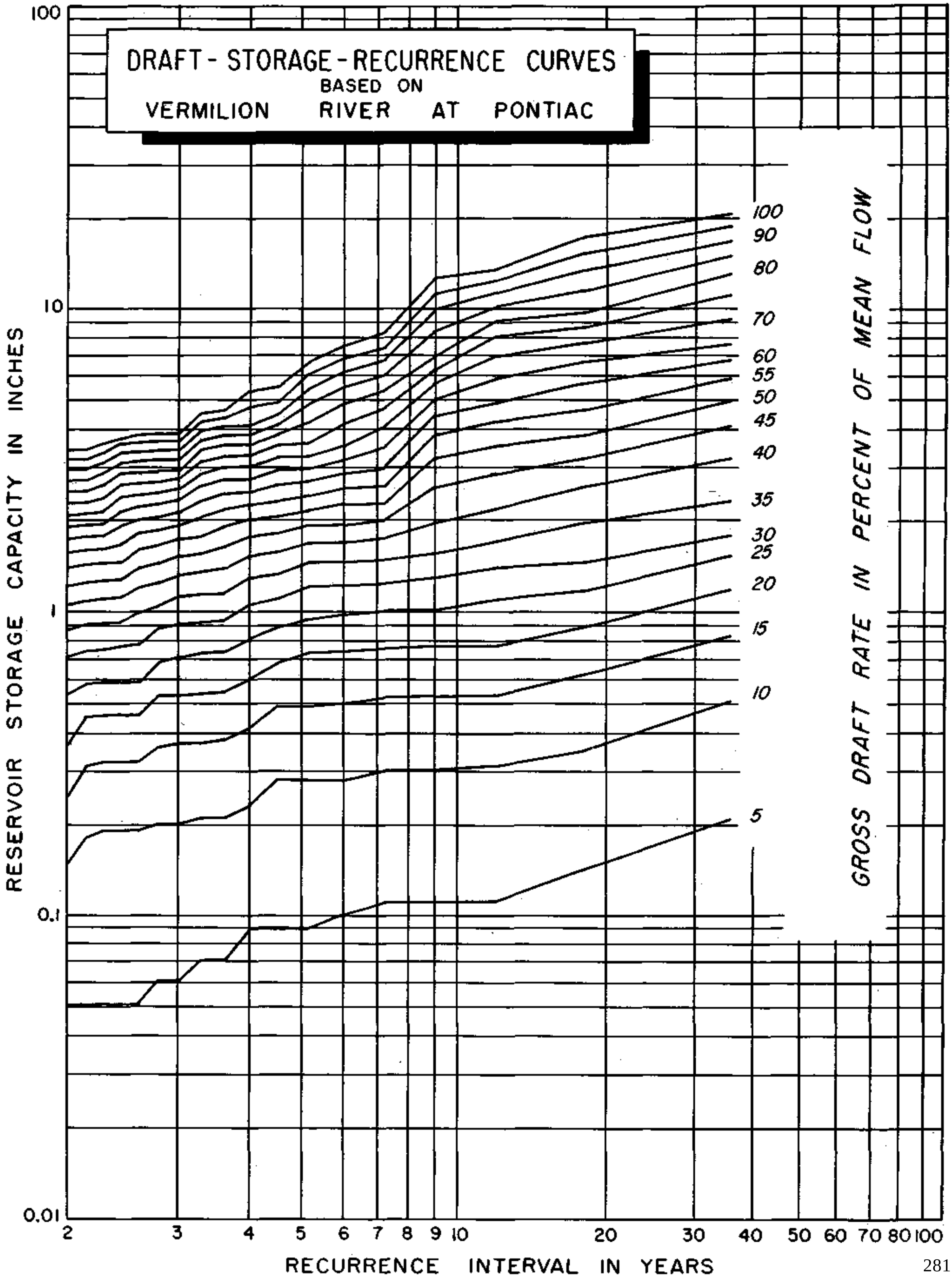
SYNTHETIC FLOW DATA
PERIOD: 19 years; water years 1924-42
INDEX STATION : Iroquois River near Chebanse
COINCIDENT RECORD: 17 years; water years 1943-59

TOTAL DATA ANALYZED
PERIOD: 36 years; water years 1924-59
MEAN DISCHARGE : 0.69 inch per month

Draft-Storage-Recurrence Data for Vermilion River at Pontiac

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
36.0	.21	.51	.85	1.19	1.54	1.91	2.35	3.25	4.14	5.04	5.94	6.83	7.73	9.37	11.30	13.23	15.16	17.10	19.03	20.96
	8	9	10	10	10	11	26	26	26	26	26	26	26	56	56	56	56	56	56	56
18.0	.14	.35	.63	.90	1.18	1.46	1.99	2.61	3.23	3.85	4.68	5.71	6.75	7.78	8.82	9.85	11.63	13.57	15.50	17.43
	5	8	8	8	8	8	18	18	18	18	30	30	30	30	30	30	56	56	56	56
12.0	.11	.31	.53	.79	1.10	1.41	1.72	2.21	2.88	3.57	4.26	4.95	5.95	7.06	8.16	9.26	10.37	11.47	12.58	13.83
	6	6	7	9	9	9	9	16	20	20	20	20	32	32	32	32	32	32	32	42
9.0	.11	.30	.53	.78	1.02	1.30	1.57	2.00	2.62	3.24	3.86	4.48	5.10	5.72	6.35	7.02	8.47	9.92	11.37	12.82
	5	6	7	7	8	8	8	18	18	18	18	18	18	18	18	42	42	42	42	42
7.2	.11	.30	.52	.77	1.01	1.25	1.49	1.75	2.02	2.30	2.61	3.00	3.56	4.13	4.76	5.42	6.11	6.80	7.49	8.42
	5	6	7	7	7	7	7	8	8	8	10	16	16	18	18	20	20	20	20	28
6.0	.10	.28	.50	.75	.99	1.23	1.47	1.71	1.96	2.28	2.59	2.90	3.21	3.53	4.17	4.86	5.55	6.24	6.93	7.62
	5	6	7	7	7	7	7	7	9	9	9	9	9	16	20	20	20	20	20	20
5.1	.09	.28	.49	.74	.98	1.22	1.46	1.70	1.94	2.19	2.44	2.71	2.99	3.28	3.62	4.24	4.86	5.48	6.10	6.72
	4	6	7	7	7	7	7	7	7	7	8	8	8	9	18	18	18	18	18	18
4.5	.09	.28	.49	.70	.91	1.11	1.34	1.58	1.82	2.07	2.34	2.65	2.96	3.27	3.58	3.89	4.20	4.51	4.97	5.59
	4	6	6	6	6	6	7	7	7	7	9	9	9	9	9	9	9	9	18	18
4.0	.09	.23	.41	.62	.83	1.07	1.31	1.55	1.79	2.04	2.28	2.52	2.76	3.03	3.31	3.59	3.86	4.15	4.77	5.39
	4	4	6	6	7	7	7	7	7	7	7	7	8	8	8	8	8	18	18	18
3.6	.07	.21	.38	.55	.75	.95	1.16	1.40	1.65	1.93	2.21	2.48	2.76	3.03	3.31	3.59	3.86	4.14	4.41	4.69
	4	5	5	5	6	6	7	7	8	8	8	8	8	8	8	8	8	8	8	8
3.3	.07	.21	.37	.54	.74	.94	1.15	1.36	1.56	1.78	2.06	2.33	2.61	2.88	3.16	3.44	3.71	3.99	4.26	4.54
	4	4	5	5	6	6	6	6	6	8	8	8	8	8	8	8	8	8	8	8
3.0	.06	.20	.37	.54	.72	.92	1.13	1.34	1.54	1.75	1.96	2.16	2.37	2.58	2.79	2.99	3.21	3.45	3.69	3.93
	4	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7
2.8	.06	.20	.36	.53	.70	.88	1.05	1.26	1.46	1.67	1.88	2.08	2.29	2.50	2.71	2.95	3.20	3.44	3.68	3.92
	4	4	5	5	5	5	6	6	6	6	6	6	6	6	7	7	7	7	7	7
2.6	.05	.19	.32	.46	.61	.79	1.00	1.21	1.41	1.62	1.83	2.03	2.24	2.45	2.67	2.91	3.16	3.40	3.64	3.88
	4	4	4	4	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7
2.4	.05	.19	.32	.46	.60	.78	.95	1.12	1.29	1.47	1.69	1.93	2.17	2.41	2.65	2.89	3.14	3.38	3.62	3.86
	4	4	4	4	5	5	5	5	5	5	7	7	7	7	7	7	7	7	7	7
2.3	.05	.19	.32	.46	.60	.77	.94	1.11	1.28	1.46	1.63	1.80	1.97	2.16	2.40	2.64	2.89	3.13	3.37	3.62
	4	4	4	4	4	5	5	5	5	5	5	5	5	7	7	7	7	7	7	8
2.1	.05	.18	.31	.45	.59	.75	.92	1.09	1.26	1.44	1.61	1.78	1.95	2.13	2.32	2.52	2.74	2.98	3.22	3.46
	2	4	4	4	4	5	5	5	5	5	5	5	5	5	6	6	7	7	7	7
2.0	.05	.15	.25	.37	.54	.72	.89	1.06	1.23	1.41	1.58	1.75	1.92	2.10	2.31	2.51	2.73	2.97	3.21	3.45
	2	3	3	5	5	5	5	5	5	5	5	5	5	6	6	6	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
VERMILION RIVER AT PONTIAC
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
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8
9
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20
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40
50
60
70
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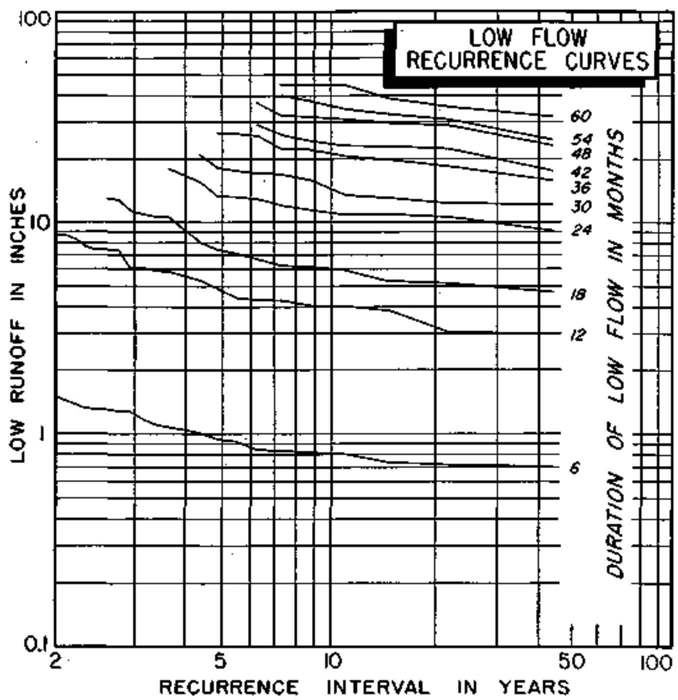


STATION 156

LOCATION

In SW ¼ NW ¼ sec 8, T31N, R15E, Kankakee County, at county highway bridge at Illinoi, at Illinois-Indiana State line, 7.0 miles east of Momence

DRAINAGE AREA

219 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1944 thru Sept 1959
CONTINUOUS RECORD: 15 years; water years 1945-59

SYNTHETIC FLOW DATA

PERIOD: 29 years; water years 1916-44
INDEX STATION : Kankakee River at Momence
COINCIDENT RECORD: 15 years; water years 1945-59

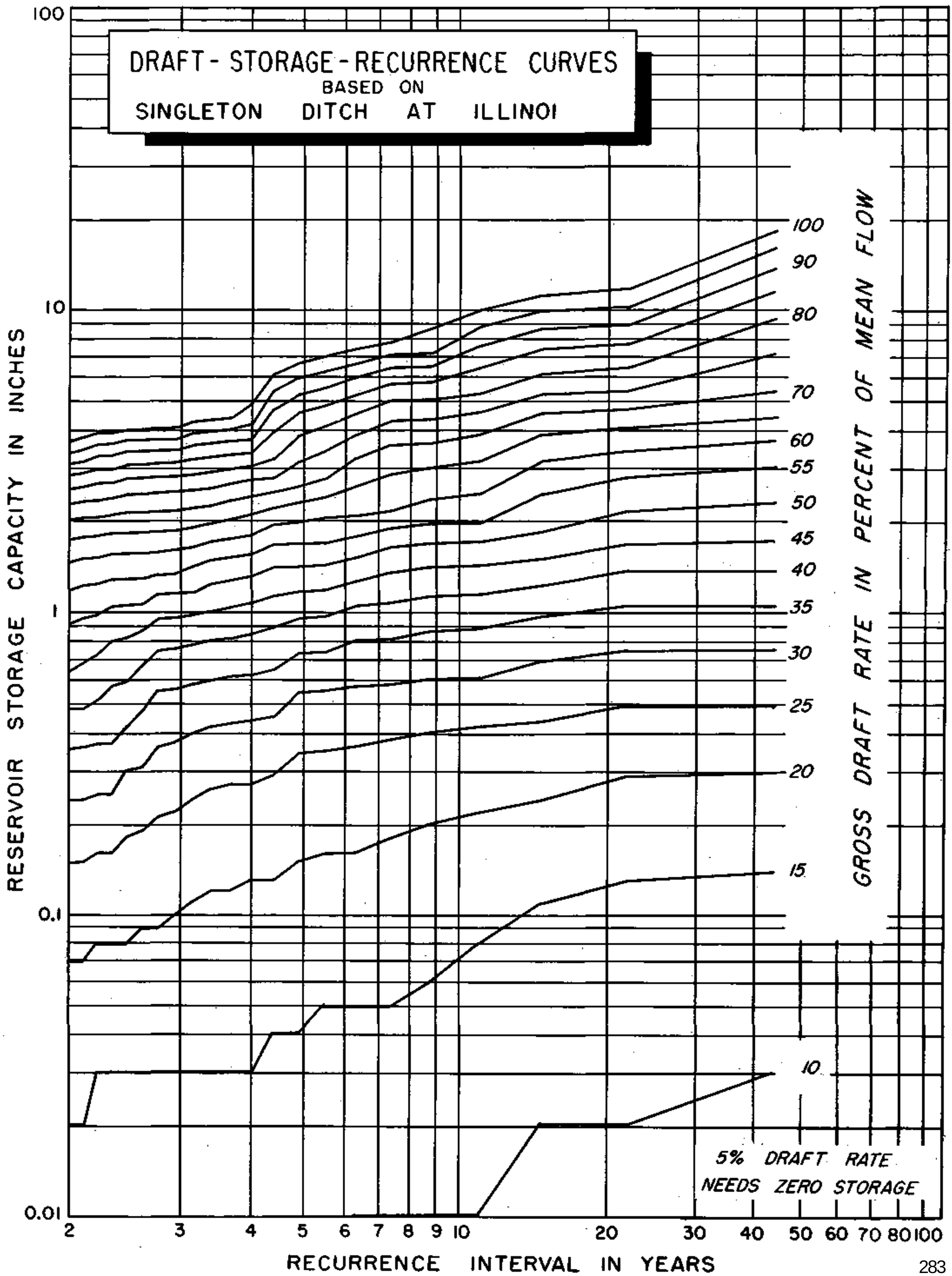
TOTAL DATA ANALYZED

PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.79 inch per month

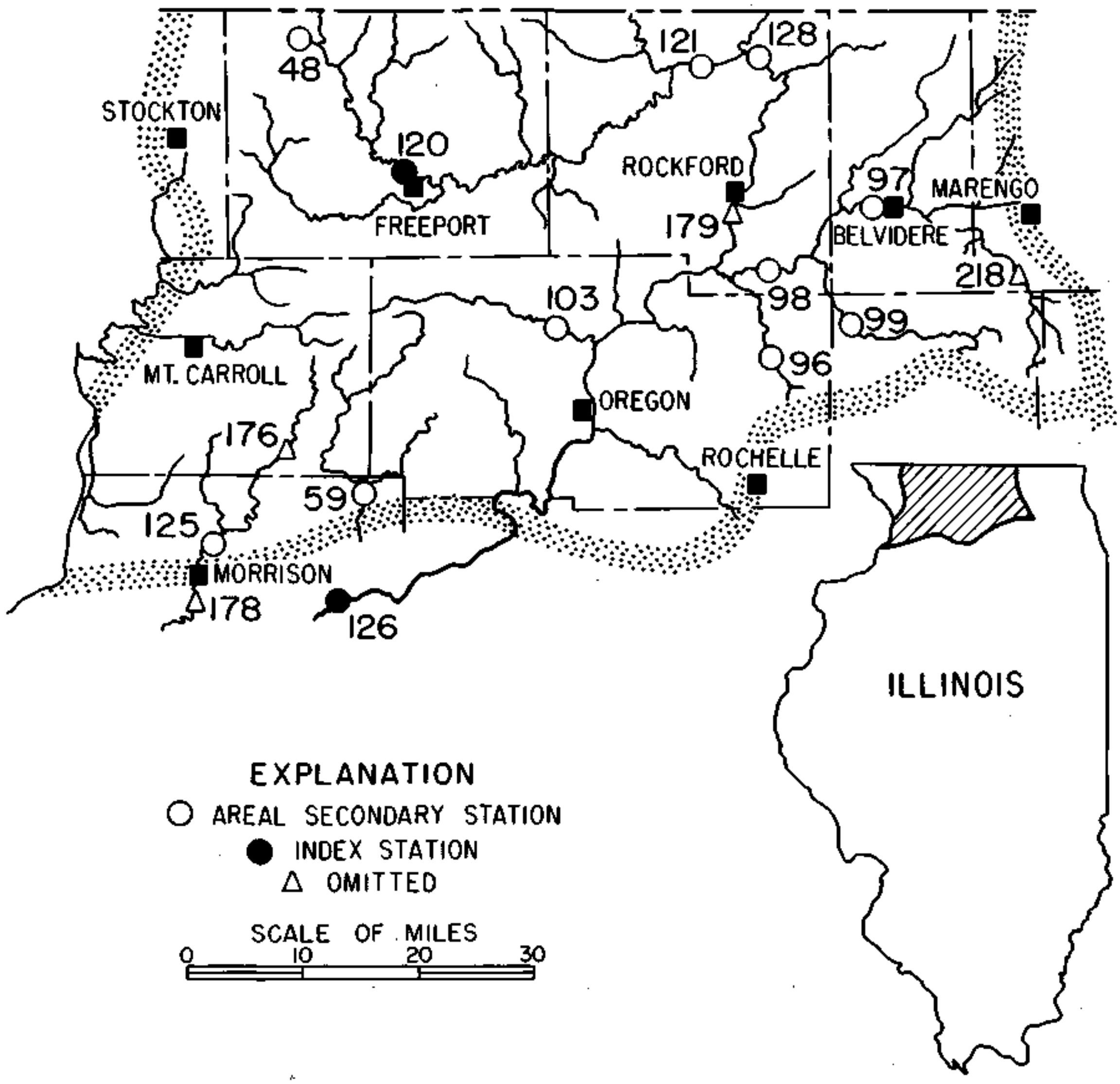
Draft-Storage-Recurrence Data for Singleton Ditch at Illinoi

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.00	.03	.14	.30	.49	.76	1.07	1.39	1.74	2.35	3.06	3.77	4.48	5.44	7.29	9.50	11.71	13.93	16.14	18.35
	1	2	4	4	5	8	8	8	10	18	18	18	18	42	56	56	56	56	56	56
22.0	.00	.02	.13	.29	.49	.75	1.06	1.38	1.69	2.18	2.81	3.44	4.08	4.72	5.44	6.52	7.79	9.05	10.32	11.92
	0	2	3	5	5	8	8	8	8	16	16	16	16	18	18	32	32	32	32	60
14.7	.00	.02	.11	.24	.44	.69	.97	1.24	1.52	1.86	2.49	3.18	3.89	4.60	5.32	6.21	7.48	8.74	10.01	11.27
	0	2	3	5	6	7	7	7	7	16	16	18	18	18	18	32	32	32	32	32
11.0	.00	.01	.08	.22	.42	.62	.89	1.16	1.44	1.72	1.99	2.48	3.19	3.90	4.62	5.33	6.49	7.67	8.86	10.04
	0	1	2	5	5	5	7	7	7	7	7	18	18	18	18	18	30	30	30	30
8.8	.00	.01	.06	.20	.40	.60	.87	1.14	1.42	1.70	1.97	2.37	3.01	3.66	4.38	5.09	5.80	6.51	7.22	8.70
	0	1	3	5	5	5	7	7	7	7	7	16	16	18	18	18	18	18	18	44
7.3	.00	.01	.05	.18	.38	.58	.82	1.08	1.36	1.64	1.91	2.19	2.88	3.59	4.31	5.02	5.73	6.44	7.15	7.86
	0	1	3	5	5	6	6	7	7	7	7	9	18	18	18	18	18	18	18	18
6.3	.00	.01	.05	.16	.36	.57	.81	1.05	1.28	1.52	1.79	2.10	2.61	3.24	3.87	4.56	5.27	5.98	6.69	7.46
	0	1	2	5	5	6	6	6	6	6	8	8	16	16	16	18	18	18	18	20
5.5	.00	.00	.05	.16	.35	.55	.74	.97	1.20	1.44	1.70	2.06	2.41	2.77	3.42	4.13	4.84	5.55	6.26	7.04
	0	1	2	4	5	5	5	6	6	6	9	9	9	9	18	18	18	18	18	20
4.9	.00	.00	.04	.15	.34	.54	.73	.95	1.18	1.42	1.69	1.99	2.31	2.62	3.15	3.86	4.57	5.28	5.99	6.70
	0	1	2	4	5	5	5	6	6	7	7	8	8	8	18	18	18	18	18	18
4.4	.00	.00	.04	.13	.29	.45	.65	.89	1.13	1.41	1.68	1.96	2.23	2.51	2.80	3.25	3.96	4.67	5.38	6.09
	0	1	2	4	4	5	6	6	7	7	7	7	7	7	8	18	18	18	18	18
4.0	.00	.00	.03	.13	.27	.44	.63	.85	1.08	1.32	1.56	1.80	2.12	2.43	2.75	3.07	3.38	3.74	4.21	4.92
	0	1	2	3	4	5	5	6	6	6	6	8	8	8	8	8	9	9	18	18
3.7	.00	.00	.03	.12	.27	.43	.62	.82	1.04	1.28	1.52	1.75	2.04	2.35	2.67	2.99	3.33	3.69	4.04	4.40
	0	1	2	3	4	5	5	5	6	6	6	6	8	8	8	8	9	9	9	9
3.4	.00	.00	.03	.12	.26	.42	.61	.81	1.01	1.25	1.49	1.72	1.98	2.26	2.58	2.94	3.29	3.65	4.00	4.36
	0	1	1	3	4	5	5	5	6	6	6	6	7	7	9	9	9	9	9	9
3.1	.00	.00	.03	.11	.24	.40	.58	.78	.98	1.18	1.42	1.65	1.92	2.23	2.55	2.87	3.22	3.58	3.93	4.29
	0	1	1	3	4	4	5	5	5	6	6	6	8	8	8	9	9	9	9	9
2.9	.00	.00	.03	.10	.22	.37	.56	.76	.96	1.16	1.35	1.61	1.88	2.19	2.51	2.83	3.14	3.46	3.77	4.09
	0	1	1	3	3	5	5	5	5	5	5	7	8	8	8	8	8	8	8	8
2.8	.00	.00	.03	.09	.21	.36	.55	.75	.95	1.15	1.34	1.59	1.86	2.17	2.49	2.81	3.12	3.44	3.75	4.07
	-1	1	1	3	3	5	5	5	5	5	5	7	8	8	8	8	8	8	8	8
2.6	.00	.00	.03	.09	.19	.31	.47	.67	.87	1.07	1.30	1.58	1.85	2.16	2.48	2.80	3.11	3.43	3.74	4.06
	-1	1	1	2	3	3	5	5	5	5	7	7	8	8	8	8	8	8	8	8
2.4	.00	.00	.03	.08	.18	.30	.42	.59	.82	1.06	1.30	1.57	1.84	2.15	2.47	2.79	3.10	3.42	3.73	4.05
	-1	1	1	2	3	3	3	6	6	6	6	7	8	8	8	8	8	8	8	8
2.3	.00	.00	.03	.08	.16	.25	.37	.57	.80	1.04	1.29	1.57	1.84	2.12	2.40	2.69	3.00	3.32	3.63	3.95
	-1	1	1	2	2	3	4	6	6	6	7	7	7	7	7	8	8	8	8	8
2.2	.00	.00	.03	.08	.16	.25	.37	.51	.74	.98	1.25	1.53	1.80	2.08	2.36	2.68	2.99	3.31	3.62	3.94
	-1	1	1	2	2	3	3	6	6	7	7	7	7	7	8	8	8	8	8	8
2.1	.00	.00	.02	.07	.15	.24	.36	.48	.68	.96	1.23	1.51	1.78	2.06	2.34	2.61	2.89	3.17	3.48	3.80
	-1	1	1	2	2	3	3	3	7	7	7	7	7	7	7	7	7	8	8	8
2.0	.00	.00	.02	.07	.15	.24	.36	.48	.64	.92	1.19	1.47	1.74	2.02	2.30	2.57	2.85	3.13	3.40	3.68
	-1	1	1	2	2	3	3	3	7	7	7	7	7	7	7	7	7	7	7	7



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SINGLETON DITCH AT ILLINOI
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5% DRAFT RATE NEEDS ZERO STORAGE
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS

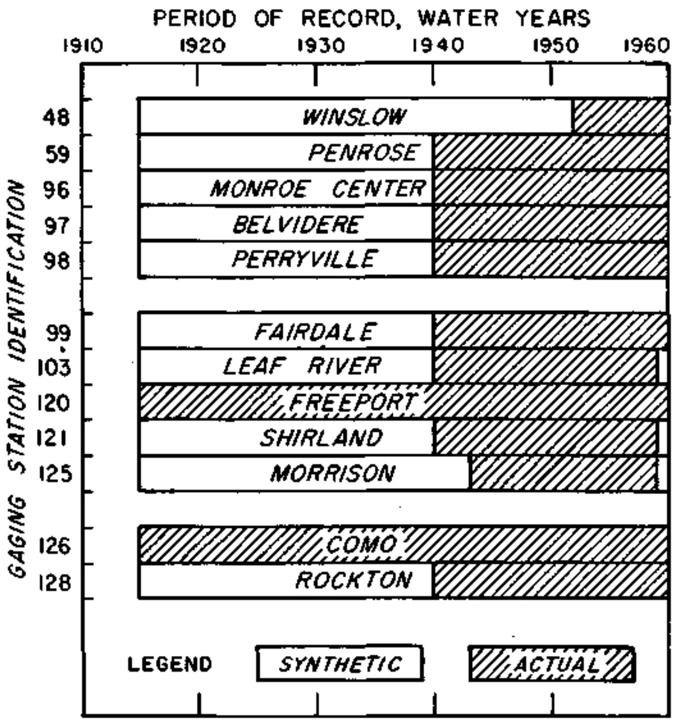


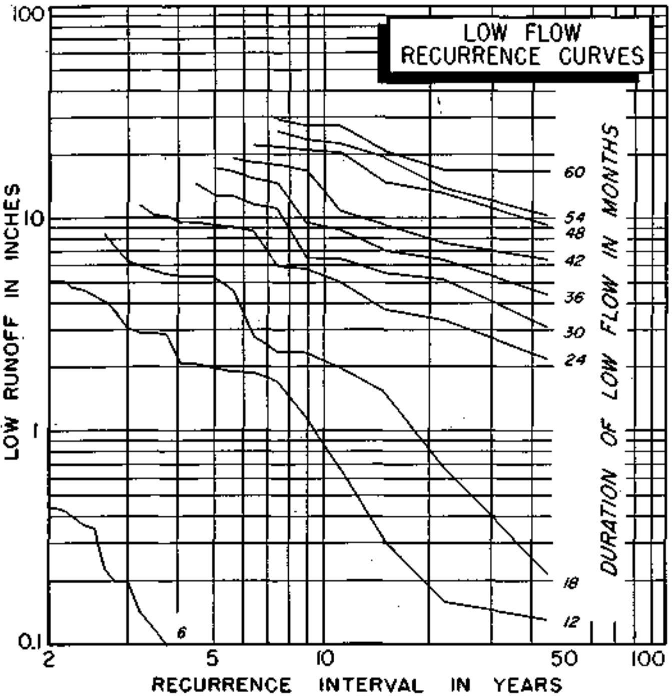
Rock River Hills

Gaging Stations in Rock River Hills

STATIONS OMITTED

		REASON
127	Rock River near Joslin	*Used Station 126 instead*
176	Rock Creek near Coleta	*Record too short*
178	Rock Creek at Morrison	*Used Station 125 instead*
179	Rock River at Rockford	*Used Station 128 instead*
218	Coon Creek at Riley	*Record too short*





STATION 48

LOCATION
In SE ¼ NE ¼ sec 32, T29N, R6E, Stephenson County, at highway bridge 3.0 miles southwest of Winslow

DRAINAGE AREA
1.29 square miles

ACTUAL FLOW DATA
PERIOD: Mar 1951 thru Sept 1959
CONTINUOUS RECORD: 8 years; water years 1952-59

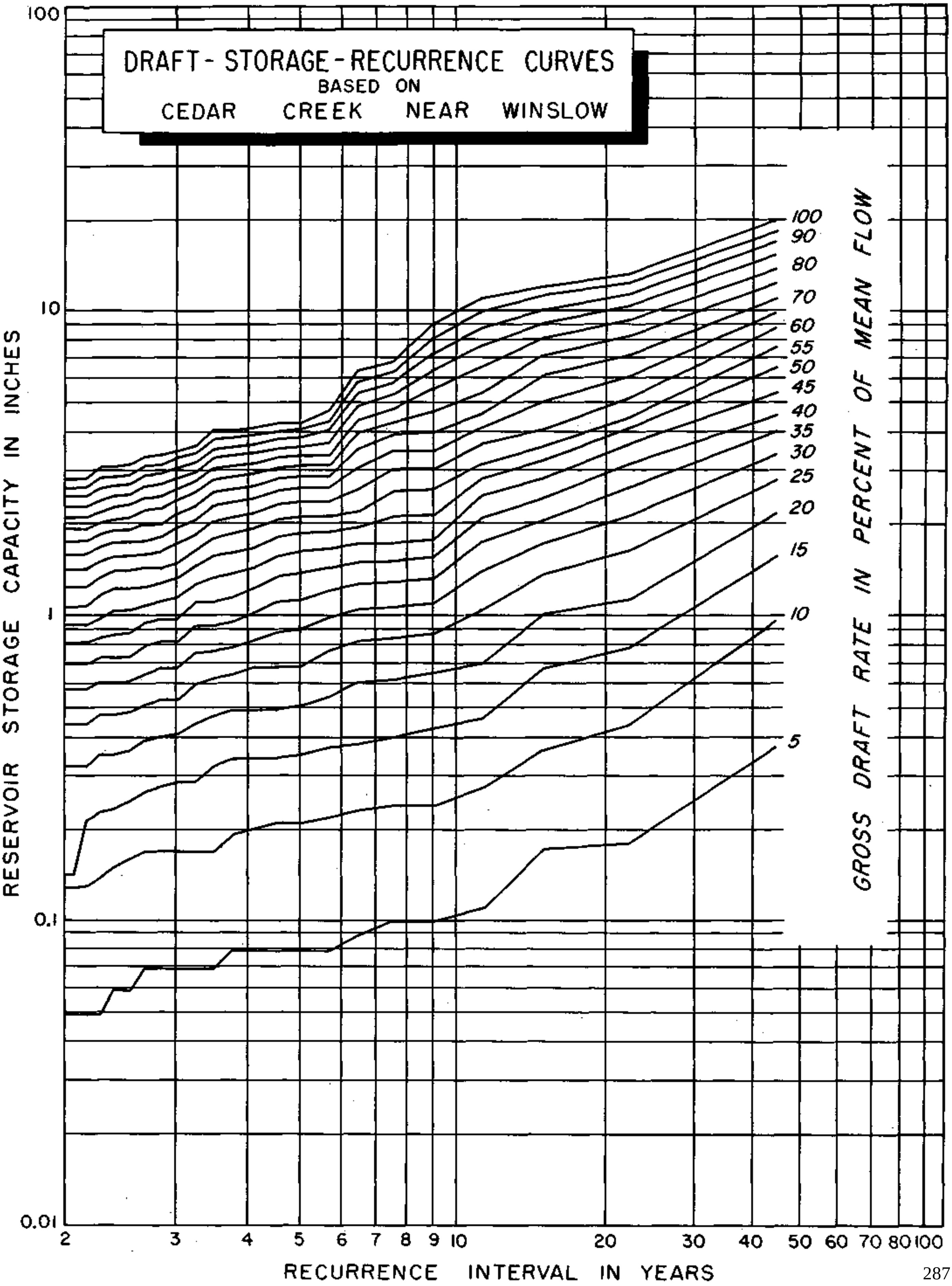
SYNTHETIC FLOW DATA
PERIOD: 37 years; water years 1915-51
INDEX STATION: Pecatonica River at Freeport
COINCIDENT RECORD: 8 years; water years 1952-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1952-59
MEAN DISCHARGE: 0.49 inch per month

Draft-Storage-Recurrence Data for Cedar Creek near Winslow

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.37	.96	1.54	2.13	2.72	3.31	3.90	4.48	5.23	6.31	7.39	8.47	9.54	10.62	12.00	13.47	14.94	16.41	17.88	19.35
	24	24	24	24	24	24	24	24	44	44	44	44	44	44	60	60	60	60	60	60
22.5	.18	.44	.78	1.12	1.61	2.10	2.59	3.08	3.57	4.06	4.55	5.09	5.95	6.98	8.01	9.03	10.06	11.09	12.12	13.17
	8	14	14	20	20	20	20	20	20	20	22	22	42	42	42	42	42	42	42	58
15.0	.17	.36	.66	1.00	1.35	1.69	2.03	2.38	2.77	3.16	3.55	4.03	4.97	5.95	6.93	7.91	8.89	9.87	10.85	11.83
	8	8	14	14	14	14	14	16	16	16	16	38	40	40	40	40	40	40	40	40
11.3	.11	.27	.46	.69	1.04	1.38	1.72	2.06	2.41	2.75	3.09	3.58	4.07	4.56	5.27	6.35	7.43	8.50	9.58	10.66
	6	7	8	14	14	14	14	14	14	14	20	20	20	20	44	44	44	44	44	44
9.0	.10	.24	.43	.65	.87	1.09	1.31	1.53	1.77	2.11	2.55	2.99	3.43	3.94	4.68	5.43	6.26	7.09	7.93	8.76
	6	7	9	9	9	9	9	9	10	18	18	18	18	30	30	34	34	34	34	34
7.5	.10	.24	.40	.62	.84	1.06	1.28	1.50	1.72	2.08	2.52	2.96	3.40	3.84	4.29	4.73	5.21	5.70	6.19	6.68
	6	6	9	9	9	9	9	9	9	18	18	18	18	18	18	18	20	20	20	22
6.4	.09	.23	.38	.60	.82	1.04	1.26	1.48	1.70	1.93	2.17	2.56	3.00	3.44	3.89	4.33	4.77	5.23	5.72	6.21
	6	6	9	9	9	9	9	9	9	9	16	18	18	18	18	18	18	20	20	20
5.6	.08	.22	.37	.54	.76	.98	1.20	1.42	1.64	1.87	2.10	2.34	2.59	2.83	3.08	3.32	3.64	3.98	4.33	4.67
	6	6	6	9	9	9	9	9	9	9	10	10	10	10	10	10	14	14	14	14
5.0	.08	.21	.35	.51	.68	.89	1.12	1.36	1.61	1.85	2.10	2.34	2.59	2.83	3.08	3.32	3.57	3.81	4.06	4.30
	5	5	6	7	7	9	10	10	10	10	10	10	10	10	10	10	10	10	10	10
4.5	.08	.21	.34	.49	.66	.88	1.10	1.32	1.55	1.79	2.04	2.28	2.53	2.77	3.02	3.26	3.51	3.75	4.00	4.24
	5	5	6	7	9	9	9	9	10	10	10	10	10	10	10	10	10	10	10	10
4.1	.08	.20	.34	.49	.65	.83	1.02	1.22	1.42	1.65	1.90	2.14	2.39	2.63	2.88	3.12	3.37	3.61	3.86	4.10
	4	5	6	6	7	8	8	8	9	10	10	10	10	10	10	10	10	10	10	10
3.8	.08	.19	.34	.49	.64	.78	.95	1.14	1.36	1.59	1.84	2.08	2.33	2.57	2.82	3.06	3.31	3.55	3.80	4.04
	4	6	6	6	6	7	7	9	9	10	10	10	10	10	10	10	10	10	10	10
3.5	.07	.17	.32	.47	.62	.76	.93	1.10	1.32	1.55	1.77	2.01	2.26	2.50	2.75	2.99	3.24	3.48	3.73	3.97
	4	6	6	6	6	7	7	9	9	9	10	10	10	10	10	10	10	10	10	10
3.2	.07	.17	.29	.44	.59	.75	.92	1.09	1.26	1.44	1.61	1.83	2.05	2.27	2.49	2.71	2.93	3.15	3.37	3.59
	4	5	6	6	6	7	7	7	7	7	9	9	9	9	9	9	9	9	9	9
3.0	.07	.17	.29	.41	.53	.67	.82	.97	1.14	1.32	1.49	1.71	1.93	2.15	2.37	2.59	2.81	3.03	3.25	3.47
	4	5	5	5	6	6	6	7	7	7	9	9	9	9	9	9	9	9	9	9
2.8	.07	.17	.28	.40	.53	.67	.82	.97	1.11	1.26	1.42	1.60	1.80	2.00	2.22	2.44	2.66	2.88	3.10	3.32
	4	4	5	5	6	6	6	6	6	6	7	8	8	9	9	9	9	9	9	9
2.6	.07	.17	.27	.39	.51	.64	.79	.94	1.08	1.24	1.41	1.58	1.75	1.97	2.19	2.41	2.63	2.85	3.07	3.29
	4	4	5	5	5	6	6	6	6	7	7	7	9	9	9	9	9	9	9	9
2.5	.06	.16	.25	.36	.48	.61	.73	.87	1.04	1.22	1.39	1.56	1.73	1.90	2.09	2.29	2.48	2.68	2.87	3.07
	4	4	4	5	5	5	5	7	7	7	7	7	7	7	8	8	8	8	8	9
2.4	.06	.15	.24	.35	.47	.60	.72	.86	1.03	1.21	1.38	1.55	1.72	1.89	2.06	2.25	2.44	2.64	2.83	3.05
	3	4	4	5	5	5	5	7	7	7	7	7	7	7	7	8	8	8	9	9
2.3	.05	.14	.23	.35	.47	.60	.72	.84	.97	1.15	1.32	1.49	1.66	1.83	2.00	2.17	2.36	2.58	2.80	3.02
	3	4	5	5	5	5	5	5	7	7	7	7	7	7	7	7	9	9	9	9
2.1	.05	.13	.22	.32	.44	.57	.69	.81	.93	1.07	1.24	1.41	1.58	1.75	1.92	2.09	2.27	2.44	2.61	2.80
	3	4	4	5	5	5	5	5	5	7	7	7	7	7	7	7	7	7	7	9
2.0	.05	.13	.20	.32	.44	.57	.69	.81	.93	1.06	1.23	1.40	1.57	1.74	1.91	2.08	2.26	2.43	2.60	2.77
	3	3	5	5	5	5	5	5	5	7	7	7	7	7	7	7	7	7	7	9


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
CEDAR CREEK NEAR WINSLOW
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
100
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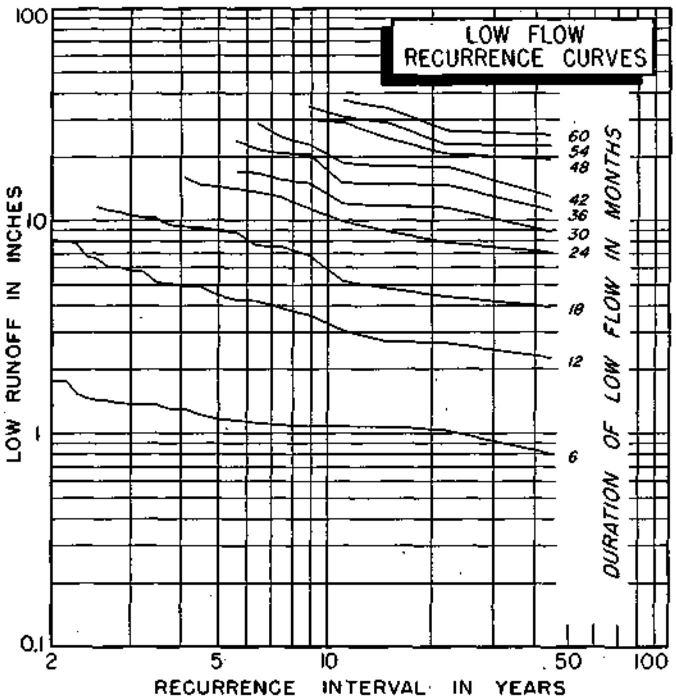
50
60
70
80
100



STATION 59

LOCATION
In SW ¼ SE ¼ sec 9, T22N, R7E, Whiteside County, 50 feet upstream from highway bridge, 2.0 miles northwest of Penrose and 8 miles north of Sterling

DRAINAGE AREA
153 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1939 thru Sept 1959
CONTINUOUS RECORD: 20 years; water years 1940-59

SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1915-39
INDEX STATION : Rock River at Como
COINCIDENT RECORD: 20 years; water years 1940-59

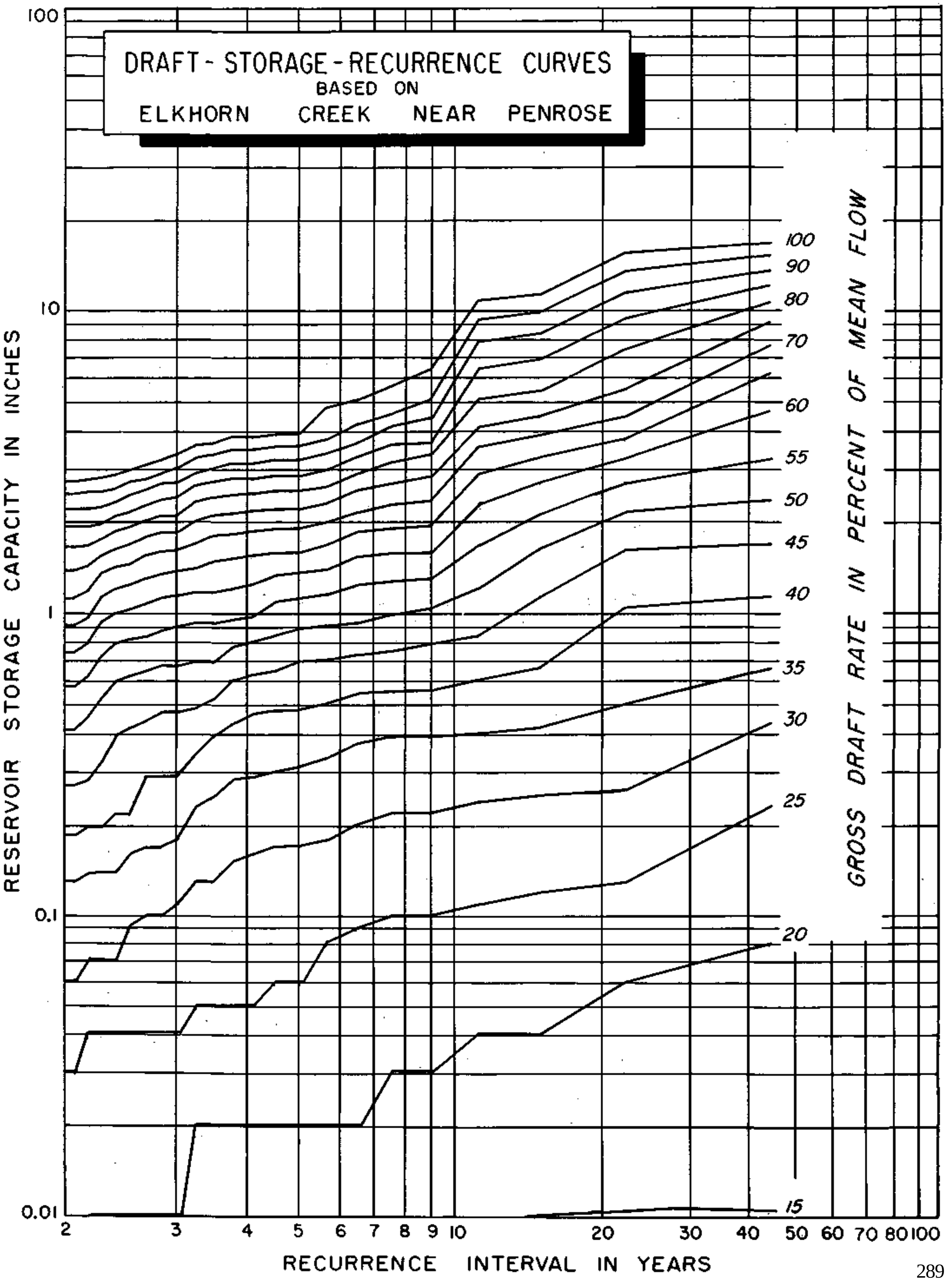
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.68 inch per month

Draft-Storage-Recurrence Data for Elkhorn Creek near Penrose

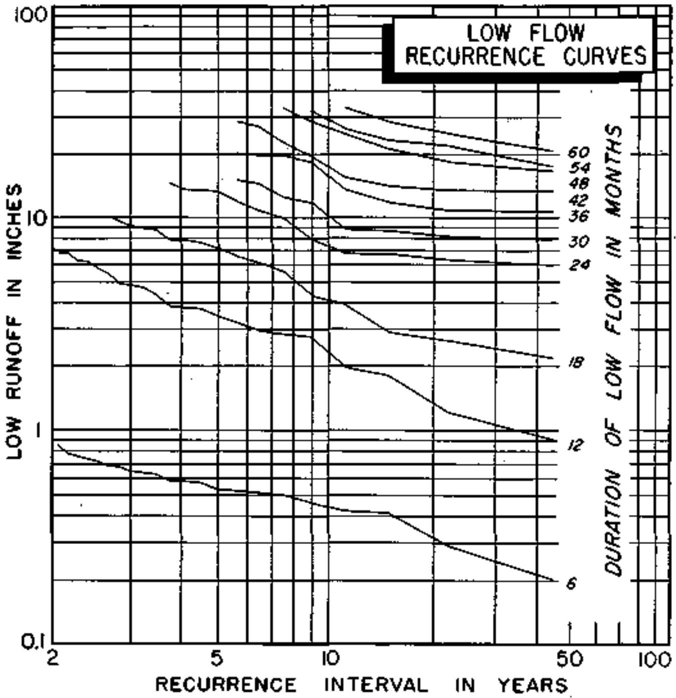
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00 1	.00 1	.01 1	.08 3	.23 6	.43 6	.65 14	1.13 14	1.66 18	2.33 20	3.19 40	4.59 42	6.01 42	7.44 42	8.87 42	10.30 42	11.77 44	13.27 44	14.76 44	16.26 44
22.5	.00 1	.00 1	.01 1	.06 2	.13 2	.26 5	.50 16	1.04 16	1.59 16	2.13 16	2.67 16	3.22 16	3.76 16	4.44 22	5.36 56	7.26 56	9.17 56	11.13 58	13.10 58	15.07 58
15.0	.00 1	.00 1	.00 1	.04 2	.12 3	.25 5	.42 5	.66 14	1.13 14	1.61 14	2.09 16	2.64 16	3.23 18	3.84 18	4.47 20	5.28 42	6.71 42	8.13 42	9.56 42	11.01 44
11.3	.00 1	.00 1	.00 1	.04 2	.11 2	.24 4	.40 5	.60 7	.84 7	1.21 16	1.75 16	2.30 16	2.87 18	3.48 18	4.09 18	5.00 36	6.23 36	7.64 42	9.07 42	10.50 42
9.0	.00 1	.00 1	.00 1	.03 2	.10 3	.22 5	.39 5	.56 6	.79 7	1.03 7	1.29 8	1.58 10	1.93 11	2.34 14	2.82 14	3.30 14	3.77 14	4.37 18	5.01 32	6.29 42
7.5	.00 1	.00 1	.00 1	.03 1	.10 3	.22 5	.39 5	.56 5	.75 6	.99 8	1.27 9	1.57 9	1.90 11	2.28 11	2.65 14	3.13 14	3.60 1	4.08 14	4.55 14	5.53 32
6.4	.00 1	.00 1	.00 1	.02 1	.09 3	.20 5	.37 5	.54 5	.73 6	.93 6	1.23 9	1.53 9	1.84 9	2.14 11	2.51 11	2.88 11	3.26 11	3.63 11	4.15 18	4.99 34
5.6	.00 1	.00 1	.00 1	.02 1	.08 3	.18 3	.33 5	.50 5	.70 6	.91 7	1.15 7	1.39 7	1.68 9	1.98 9	2.29 9	2.60 11	2.98 11	3.35 11	3.73 1	4.69 32
5.0	.00 1	.00 1	.00 1	.02 1	.06 2	.17 4	.31 5	.48 6	.69 6	.89 6	1.11 7	1.35 7	1.58 9	1.88 9	2.19 9	2.51 10	2.85 10	3.19 10	3.55 11	3.92 11
4.5	.00 1	.00 1	.00 1	.02 1	.06 2	.17 4	.30 5	.47 5	.64 5	.84 7	1.08 7	1.32 7	1.58 9	1.88 9	2.19 9	2.51 10	2.85 10	3.19 1	3.53 10	3.87 10
4.1	.00 1	.00 1	.00 1	.02 1	.05 2	.16 4	.29 5	.46 5	.63 5	.80 5	.97 5	1.24 9	1.55 9	1.85 9	2.16 9	2.47 9	2.77 10	3.11 10	3.45 10	3.79 10
3.8	.00 1	.00 1	.00 1	.02 1	.05 2	.15 4	.26 4	.43 5	.60 5	.77 5	.95 6	1.20 9	1.51 9	1.81 9	2.12 9	2.43 10	2.77 10	3.11 1	3.45 10	3.79 10
3.5	.00 1	.00 1	.00 1	.02 1	.05 2	.13 3	.25 4	.39 4	.52 4	.69 7	.93 7	1.17 9	1.48 9	1.78 9	2.09 9	2.40 9	2.70 9	3.01 9	3.31 1	3.62 9
3.2	.00 1	.00 1	.00 1	.02 1	.05 1	.13 3	.23 3	.34 3	.48 6	.69 7	.93 7	1.17 7	1.40 7	1.69 9	2.00 9	2.31 9	2.61 9	2.92 9	3.22 9	3.53 9
3.0	.00 1	.00 1	.00 1	.01 1	.04 2	.11 2	.18 3	.29 4	.47 6	.67 6	.90 7	1.14 7	1.37 7	1.61 7	1.85 7	2.11 8	2.40 9	2.71 9	3.01 1	3.32 9
2.8	.00 1	.00 1	.00 1	.01 1	.04 1	.10 2	.17 2	.29 4	.47 6	.67 6	.88 7	1.12 7	1.35 7	1.59 7	1.83 7	2.09 8	2.36 8	2.64 1	2.91 8	3.18 8
2.6	.00 1	.00 1	.00 1	.01 1	.04 1	.10 2	.17 2	.29 4	.44 6	.64 6	.84 6	1.07 7	1.30 7	1.54 7	1.78 7	2.02 7	2.26 8	2.54 8	2.81 1	3.08 8
2.5	.00 1	.00 1	.00 1	.01 1	.04 1	.09 2	.16 2	.22 4	.42 6	.62 6	.82 6	1.03 6	1.23 6	1.44 6	1.67 7	1.91 7	2.15 8	2.43 8	2.70 8	2.97 8
2.4	.00 1	.00 1	.00 1	.01 1	.04 1	.07 2	.14 2	.22 3	.39 6	.59 6	.79 6	1.00 6	1.20 6	1.41 6	1.61 7	1.85 7	2.09 7	2.32 7	2.56 9	2.87 9
2.3	.00 1	.00 1	.00 1	.01 1	.04 1	.07 2	.14 2	.20 2	.32 6	.52 6	.72 6	.93 6	1.13 6	1.34 6	1.54 6	1.74 6	1.97 8	2.25 8	2.52 1	2.83 9
2.1	.00 1	.00 1	.00 1	.01 1	.04 1	.07 2	.14 2	.20 2	.28 5	.45 5	.62 5	.79 5	.96 5	1.18 7	1.42 7	1.66 7	1.92 8	2.20 9	2.50 9	2.81 9
2.0	.00 1	.00 1	.00 1	.00 1	.03 1	.06 2	.13 2	.19 2	.27 4	.41 4	.57 5	.74 5	.91 6	1.12 6	1.38 8	1.65 8	1.92 8	2.20 1	2.47 8	2.74 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
ELKHORN CREEK NEAR PENROSE
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15

KILLBUCK CREEK NEAR MONROE CENTER



STATION 96

LOCATION
In NW ¼ SW ¼ sec 19, T42N, R2E, Ogle County, 800 feet downstream from railroad bridge and 800 feet upstream from bridge on Ill. 72, 3.0 miles west of Monroe Center

DRAINAGE AREA
114 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1939 thru Sept 1959
CONTINUOUS RECORD: 20 years; water years 1940-59

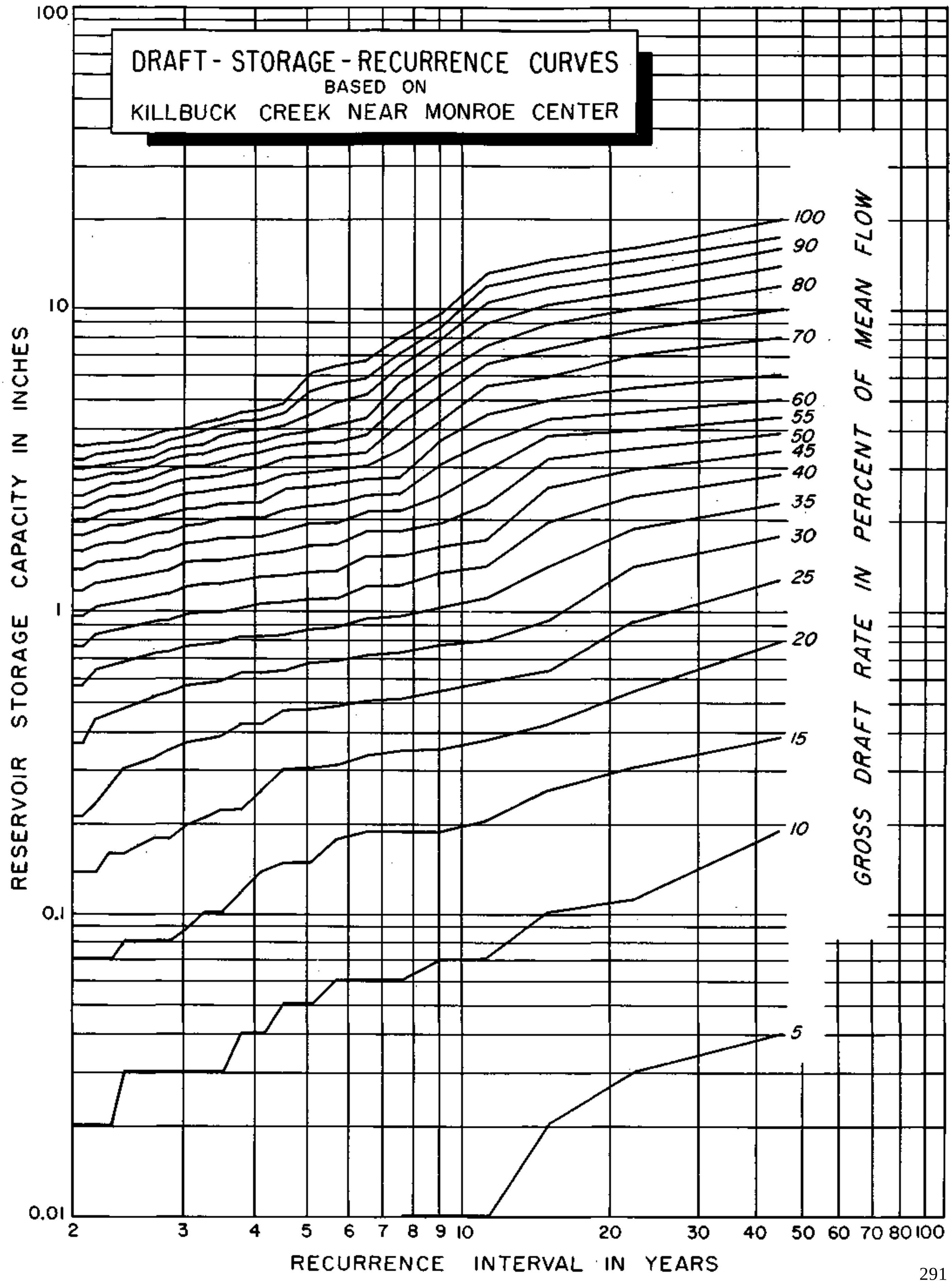
SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1915-39
INDEX STATION : Rock River at Como
COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED
PERIOD : 45 years; water years 1915-59
MEAN DISCHARGE : 0.67 inch per month

Draft-Storage-Recurrence Data for Killbuck Creek near Monroe Center

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.04	.19	.39	.80	1.27	1.77	2.30	2.84	3.37	3.91	4.45	5.04	6.05	7.92	9.80	11.68	13.61	15.55	17.50	19.44
	2	6	6	14	14	16	16	16	16	16	16	18	56	56	56	56	58	58	58	58
22.5	.03	.11	.31	.55	.94	1.40	1.87	2.40	2.93	3.47	4.01	4.62	5.43	6.89	8.36	9.83	11.31	12.78	14.26	15.73
	2	6	6	9	14	14	14	16	16	16	18	18	32	44	44	44	44	44	44	44
15.0	.02	.10	.26	.43	.64	.94	1.40	1.96	2.57	3.17	3.77	4.38	4.98	5.87	7.28	8.68	10.09	11.50	12.90	14.31
	2	5	5	5	9	9	16	18	18	18	18	18	18	42	42	42	42	42	42	42
11.3	.01	.07	.21	.38	.59	.81	1.11	1.41	1.72	2.25	2.92	3.59	4.44	5.44	6.45	7.45	8.77	10.18	11.58	12.99
	1	3	5	6	6	9	9	9	10	20	20	20	30	30	30	30	42	42	42	42
9.0	.01	.07	.19	.35	.55	.78	1.04	1.34	1.64	1.95	2.42	3.03	3.63	4.23	5.09	5.96	6.83	7.70	8.57	9.48
	1	3	4	5	6	7	9	9	9	9	18	18	18	18	26	26	26	26	1	44
7.5	.01	.06	.19	.35	.52	.74	.97	1.23	1.53	1.84	2.14	2.44	2.77	3.40	4.14	4.87	5.61	6.35	7.08	7.93
	1	4	4	5	5	7	8	9	9	9	9	9	10	22	22	22	22	22	22	30
6.4	.00	.06	.19	.34	.51	.72	.95	1.22	1.52	1.83	2.13	2.43	2.73	3.03	3.34	3.83	4.50	5.17	5.87	6.61
	1	4	4	5	5	7	7	9	9	9	9	9	9	9	10	20	20	20	1	22
5.6	.00	.06	.18	.32	.49	.69	.89	1.10	1.36	1.66	1.96	2.28	2.62	2.95	3.29	3.62	4.14	4.88	5.61	6.35
	1	3	4	5	6	6	6	7	8	9	9	10	10	10	10	10	22	22	22	22
5.0	.00	.05	.15	.31	.48	.68	.88	1.10	1.34	1.65	1.95	2.25	2.56	2.89	3.23	3.56	3.90	4.49	5.22	5.96
	1	3	3	5	6	6	6	7	9	9	9	9	10	10	10	10	1	22	22	22
4.5	.00	.05	.15	.30	.47	.64	.84	1.08	1.31	1.57	1.84	2.16	2.50	2.83	3.17	3.50	3.84	4.17	4.51	4.84
	1	3	3	5	5	6	7	7	7	8	8	10	10	10	10	10	1	10	10	10
4.1	.00	.04	.14	.26	.43	.63	.83	1.07	1.30	1.54	1.77	2.02	2.30	2.63	2.97	3.30	3.64	3.97	4.31	4.64
	1	3	3	5	6	6	7	7	7	7	7	8	10	10	10	10	10	10	10	10
3.8	.00	.04	.12	.23	.43	.63	.83	1.03	1.26	1.50	1.75	2.02	2.28	2.58	2.91	3.24	3.58	3.91	4.25	4.56
	1	2	3	5	6	6	6	7	7	7	8	8	9	9	10	10	10	1	10	10
3.5	.00	.03	.10	.23	.39	.59	.79	1.00	1.23	1.47	1.73	2.00	2.26	2.53	2.80	3.12	3.46	3.79	4.13	4.46
	1	2	3	4	6	6	6	7	7	7	8	8	8	8	8	1	10	10	10	10
3.2	.00	.03	.10	.22	.38	.58	.78	1.00	1.23	1.47	1.70	1.94	2.20	2.47	2.74	3.01	3.28	3.55	3.89	4.22
	1	1	3	4	6	6	6	7	7	7	7	8	8	8	8	8	8	1	10	10
3.0	.00	.03	.09	.20	.37	.57	.77	.98	1.21	1.45	1.68	1.91	2.17	2.44	2.71	2.98	3.25	3.51	3.78	4.05
	1	1	2	4	6	6	6	7	7	7	7	8	8	8	8	8	8	1	8	8
2.8	.00	.03	.08	.18	.35	.54	.74	.94	1.14	1.36	1.59	1.82	2.08	2.35	2.62	2.89	3.16	3.42	3.69	3.96
	1	1	3	5	5	6	6	6	6	7	7	8	8	8	8	8	8	1	8	8
2.6	.00	.03	.08	.18	.33	.53	.73	.93	1.13	1.34	1.57	1.80	2.04	2.27	2.51	2.74	3.00	3.26	3.53	3.82
	1	1	3	3	6	6	6	6	6	7	7	7	7	7	7	7	8	1	8	9
2.5	.00	.03	.08	.17	.32	.50	.70	.90	1.10	1.30	1.50	1.73	1.97	2.20	2.44	2.67	2.91	3.15	3.42	3.70
	1	1	2	3	5	6	6	6	6	6	7	7	7	7	7	7	7	8	1	9
2.4	.00	.03	.08	.16	.31	.48	.68	.88	1.08	1.28	1.48	1.68	1.92	2.15	2.39	2.62	2.86	3.11	3.38	3.65
	1	1	2	3	5	6	6	6	6	6	6	7	7	7	7	7	1	8	8	8
2.3	.00	.02	.07	.16	.27	.46	.66	.86	1.06	1.26	1.46	1.68	1.92	2.15	2.39	2.62	2.86	3.09	3.33	3.60
	1	1	2	3	5	6	6	6	6	6	6	7	7	7	7	7	7	1	7	9
2.1	.00	.02	.07	.14	.24	.44	.64	.84	1.04	1.24	1.44	1.64	1.84	2.04	2.28	2.51	2.75	3.00	3.28	3.58
	1	1	2	3	6	6	6	6	6	6	6	6	6	7	7	7	7	8	1	9
2.0	.00	.02	.07	.14	.23	.37	.57	.77	.97	1.17	1.37	1.57	1.77	1.97	2.18	2.42	2.69	2.95	3.22	3.49
	1	1	2	2	3	6	6	6	6	6	6	6	6	6	6	8	8	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KILLBUCK CREEK NEAR MONROE CENTER
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
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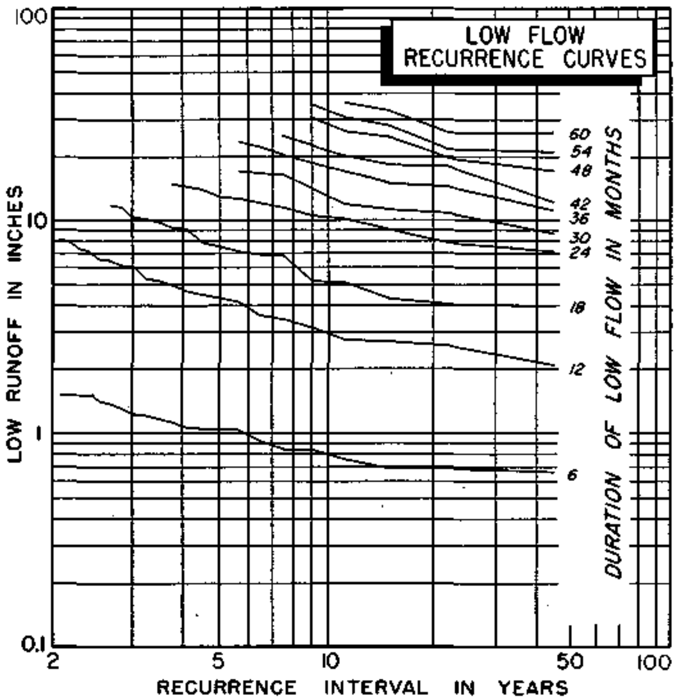
5



STATION 97

LOCATION
Near southeast corner of sec 27, T44N, R3E, Boone County, at Belvidere sewage treatment plant, 1.25 miles downstream from State Street Bridge in Belvidere

DRAINAGE AREA
525 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1939 thru Sept 1959
CONTINUOUS RECORD: 20 years; water years 1940-59

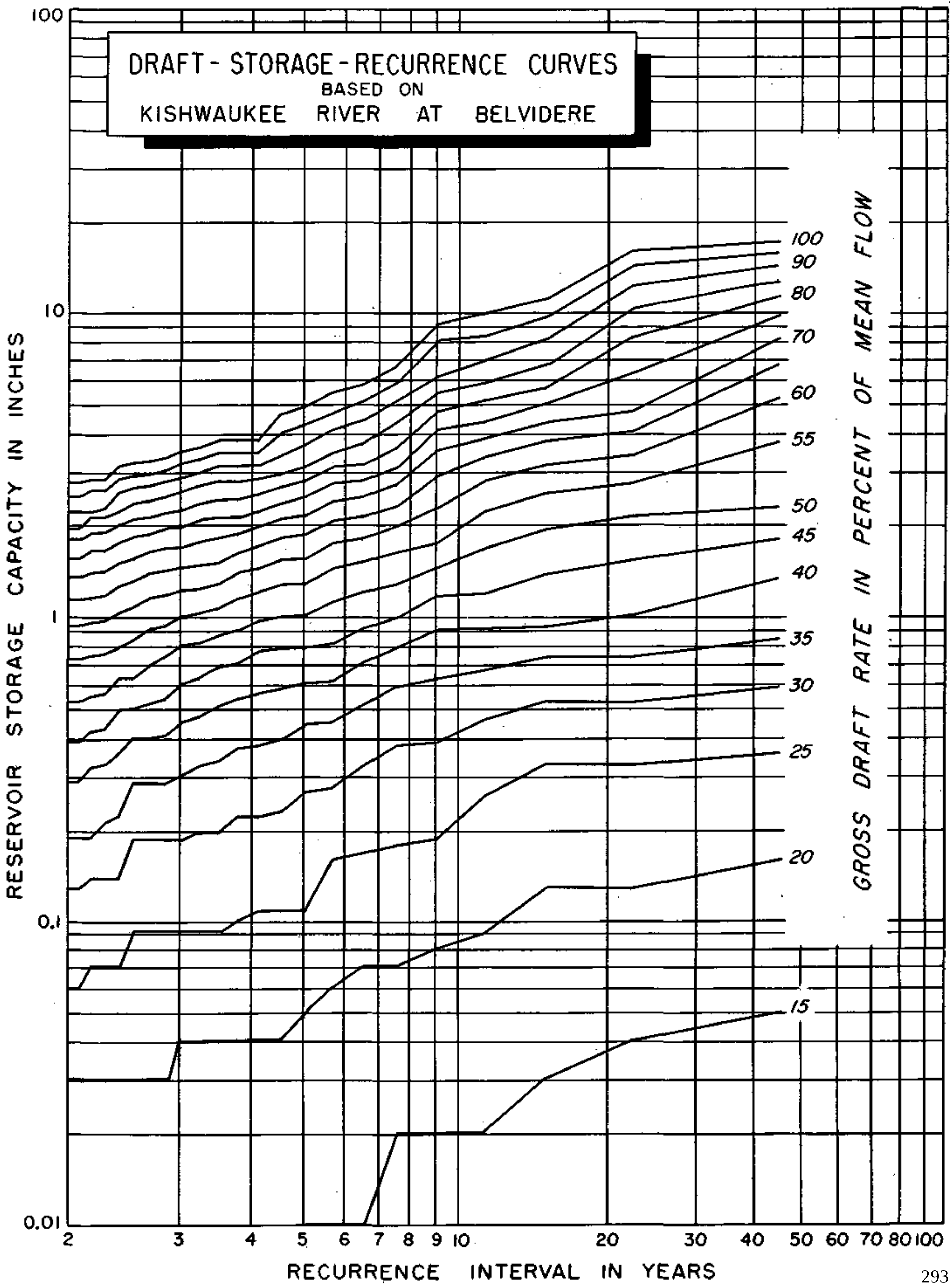
SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1915-39
INDEX STATION : Rock River at Como
COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 0.68 inch per month

Draft-Storage-Recurrence Data for Kishwaukee River at Belvidere

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.01	.05	.16	.36	.59	.85	1.33	1.80	2.32	3.73	5.16	6.58	8.01	9.47	10.97	12.46	13.96	15.45	16.97
	1	1	3	6	6	7	14	14	14	16	42	42	42	42	44	44	44	44	44	46
22.5	.00	.01	.04	.13	.33	.53	.74	1.02	1.53	2.14	2.75	3.37	4.05	4.73	6.22	8.06	9.97	11.87	13.78	15.68
	1	1	2	6	6	6	6	9	18	18	18	20	20	20	54	56	56	56	56	56
15.0	.00	.00	.03	.13	.33	.53	.74	.94	1.37	1.92	2.53	3.14	3.76	4.37	4.98	5.59	6.57	7.96	9.39	10.82
	1	1	2	6	6	6	6	6	16	18	18	18	18	18	18	18	40	42	42	42
11.3	.00	.00	.02	.09	.26	.46	.67	.92	1.19	1.66	2.20	2.75	3.29	3.84	4.44	5.12	5.80	6.74	8.12	9.62
	1	1	1	5	6	6	6	8	8	16	16	16	16	16	20	20	20	30	44	44
9.0	.00	.00	.02	.08	.19	.39	.63	.91	1.18	1.45	1.72	2.26	2.88	3.49	4.10	4.71	5.32	6.06	7.49	8.92
	1	1	1	3	5	7	8	8	8	8	8	18	18	18	18	18	18	42	42	42
7.5	.00	.00	.02	.07	.18	.38	.59	.79	1.00	1.28	1.62	1.96	2.32	2.70	3.07	3.55	4.30	5.04	5.79	6.54
	1	1	1	3	6	6	6	6	6	10	10	10	11	11	11	22	22	1	22	22
6.4	.00	.00	.01	.07	.17	.33	.51	.71	.92	1.20	1.51	1.81	2.12	2.46	2.80	3.14	3.67	4.35	5.03	5.71
	1	1	1	3	3	5	6	6	6	9	9	9	10	10	10	10	20	1	20	20
5.6	.00	.00	.01	.06	.16	.28	.45	.62	.82	1.12	1.43	1.73	2.05	2.39	2.73	3.07	3.42	4.04	4.67	5.35
	1	1	1	3	3	5	5	5	7	9	9	9	10	10	10	10	18	18	1	20
5.0	.00	.00	.01	.05	.11	.27	.44	.61	.79	1.01	1.28	1.55	1.86	2.16	2.47	2.78	3.08	3.64	4.25	4.86
	1	1	1	1	3	5	5	5	6	8	8	9	9	9	9	9	9	1	18	18
4.5	.00	.00	.00	.04	.11	.24	.40	.58	.79	1.01	1.27	1.54	1.82	2.09	2.36	2.64	2.94	3.35	3.96	4.57
	1	1	1	2	3	4	5	6	6	7	8	8	8	8	8	9	9	1	18	18
4.1	.00	.00	.00	.04	.11	.23	.38	.56	.77	.97	1.20	1.44	1.70	1.97	2.24	2.52	2.82	3.13	3.44	3.78
	1	1	1	1	3	4	5	6	6	6	7	7	8	8	8	9	9	1	10	16
3.8	.00	.00	.00	.04	.10	.23	.37	.54	.71	.91	1.15	1.39	1.62	1.86	2.12	2.43	2.76	3.10	3.44	3.78
	1	1	1	1	3	4	5	5	6	7	7	7	7	7	9	9	10	1	10	10
3.5	.00	.00	.00	.04	.09	.20	.34	.51	.68	.87	1.07	1.28	1.50	1.80	2.11	2.42	2.75	3.09	3.43	3.77
	1	1	1	1	3	4	5	5	5	6	6	6	9	9	9	9	10	10	1	10
3.2	.00	.00	.00	.04	.09	.20	.33	.47	.63	.83	1.03	1.24	1.48	1.75	2.06	2.37	2.67	2.98	3.28	3.59
	1	1	1	1	3	4	4	4	6	6	6	7	8	9	9	9	9	9	9	9
3.0	.00	.00	.00	.04	.09	.19	.31	.45	.61	.81	1.01	1.22	1.45	1.69	1.96	2.25	2.55	2.86	3.16	3.47
	1	1	1	1	3	3	4	4	6	6	6	7	7	8	8	9	9	9	9	9
2.8	.00	.00	.00	.03	.09	.19	.29	.41	.54	.74	.94	1.18	1.41	1.67	1.94	2.21	2.48	2.76	3.03	3.30
	1	1	1	1	3	3	3	4	6	6	7	7	7	8	8	8	8	8	8	8
2.6	.00	.00	.00	.03	.09	.19	.29	.40	.52	.69	.91	1.15	1.38	1.62	1.86	2.12	2.39	2.67	2.94	3.21
	1	1	1	1	3	3	3	3	5	5	7	7	7	7	7	8	8	8	8	8
2.5	.00	.00	.00	.03	.09	.19	.29	.40	.50	.63	.84	1.08	1.31	1.55	1.82	2.09	2.36	2.64	2.91	3.18
	1	1	1	1	3	3	3	3	3	6	7	7	7	8	8	8	8	6	1	8
2.4	.00	.00	.00	.03	.07	.14	.23	.36	.49	.63	.79	1.03	1.26	1.50	1.74	2.00	2.27	2.55	2.82	3.09
	1	1	1	1	2	2	3	4	4	4	7	7	7	7	7	8	8	8	1	8
2.3	.00	.00	.00	.03	.07	.14	.22	.33	.43	.56	.76	.97	1.17	1.40	1.64	1.88	2.12	2.35	2.59	2.83
	1	1	1	1	2	2	3	3	3	6	6	6	6	7	7	7	7	7	1	7
2.1	.00	.00	.00	.03	.07	.14	.21	.32	.42	.55	.75	.96	1.16	1.39	1.63	1.87	2.11	2.34	2.58	2.82
	1	1	1	1	2	2	3	3	3	6	6	6	6	7	7	7	7	7	7	7
2.0	.00	.00	.00	.03	.06	.13	.20	.29	.39	.53	.73	.94	1.14	1.35	1.55	1.75	1.96	2.21	2.48	2.75
	1	1	1	1	2	2	2	3	3	6	6	6	6	6	6	6	6	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KISHWAUKEE RIVER AT BELVIDERE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
100
10
1
0.1
0.01
2
3
4
5
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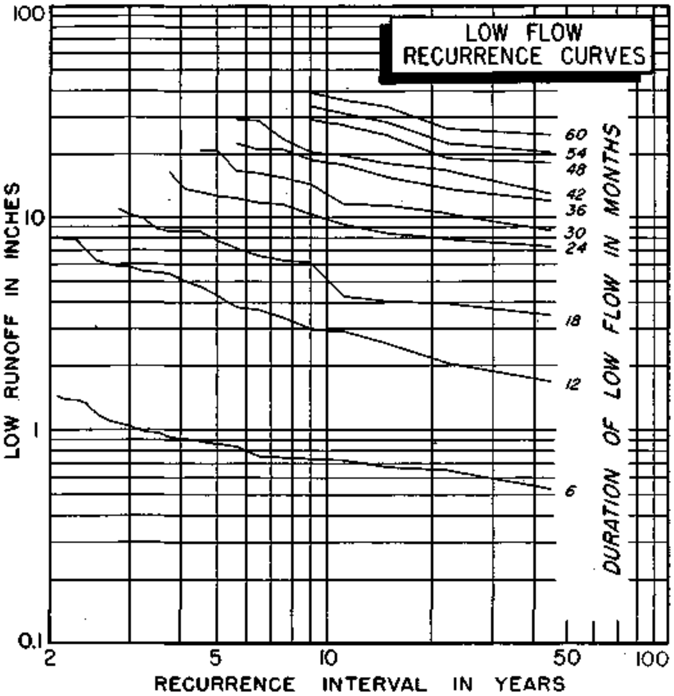
40
50
60
70
80
100



STATION 98

LOCATION

In northeast corner of sec 21, T43N, R2E. Winnebago County, at Forest Preserve Road bridge, 2.0 miles southwest of Perryville and 7.0 miles southeast of Rockford

DRAINAGE AREA

1090 square miles, approximately

ACTUAL FLOW DATA

PERIOD: Oct 1939 thru Sept 1959

CONTINUOUS RECORD: 20 years; water years 1940-59

SYNTHETIC FLOW DATA

PERIOD: 25 years; water years 1915-39

INDEX STATION: Rock River at Como

COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

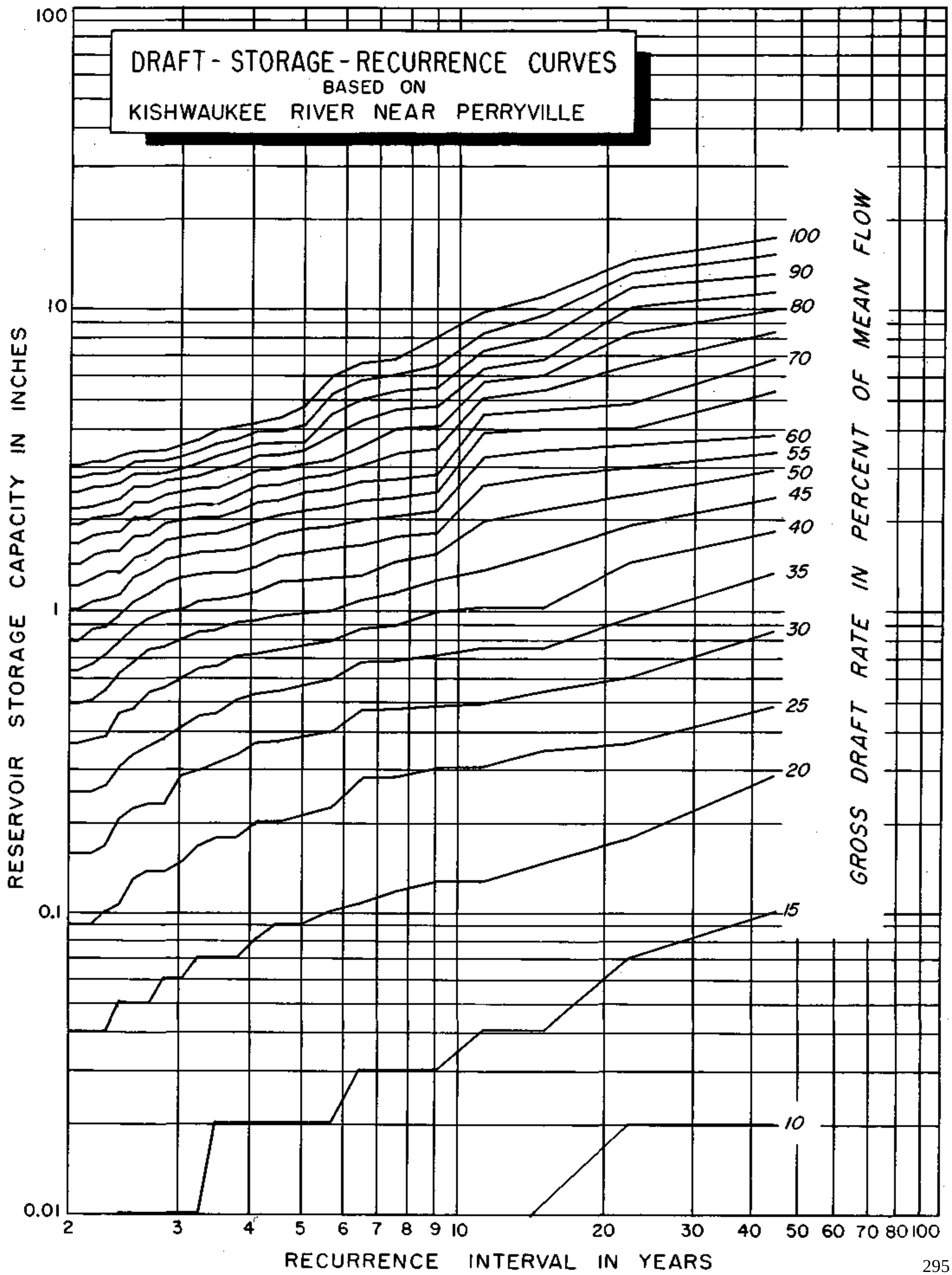
MEAN DISCHARGE: 0.68 inch per month

Draft-Storage-Recurrence Data for Kishwaukee River near Perryville

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.02	.10	.29	.49	.87	1.34	1.84	2.39	2.93	3.47	4.02	5.35	6.78	8.25	9.75	11.24	13.10	15.03	17.00
	1	2	3	6	6	14	14	16	16	16	16	16	42	42	44	44	44	56	58	58
22.5	.00	.02	.07	.18	.37	.61	.96	1.44	1.91	2.44	2.98	3.53	4.20	4.88	6.43	8.13	9.83	11.53	13.23	14.93
	1	1	2	5	6	9	14	14	14	16	16	16	20	20	50	50	50	50	50	50
15.0	.00	.00	.04	.15	.35	.55	.76	1.04	1.56	2.17	2.78	3.39	4.01	4.69	5.37	6.05	6.73	7.94	9.37	10.80
	1	1	2	6	6	6	8	8	18	18	18	18	20	20	20	20	20	42	42	42
11.3	.00	.00	.04	.13	.30	.50	.76	1.04	1.37	1.96	2.57	3.18	3.80	4.41	5.02	5.63	6.24	7.11	8.13	9.52
	1	1	2	5	6	7	8	8	16	18	18	18	18	18	18	18	18	30	30	44
9.0	.00	.00	.03	.13	.30	.49	.72	1.00	1.27	1.54	1.81	2.14	2.48	2.82	3.41	4.09	4.77	5.45	6.39	7.82
	1	1	1	5	5	6	8	8	8	8	8	10	10	10	20	20	20	20	42	42
7.5	.00	.00	.03	.12	.29	.48	.69	.90	1.15	1.45	1.76	2.06	2.38	2.72	3.28	3.96	4.64	5.32	6.00	6.68
	1	1	1	5	5	6	6	7	8	9	5	9	10	10	20	20	1	20	20	20
6.4	.00	.00	.03	.11	.28	.47	.68	.88	1.09	1.31	1.65	1.99	2.33	2.67	3.01	3.49	4.24	4.98	5.73	6.48
	1	1	1	5	5	6	6	6	6	10	10	10	10	10	10	22	22	22	22	22
5.6	.00	.00	.02	.10	.23	.40	.60	.80	1.01	1.29	1.60	1.90	2.21	2.51	2.82	3.13	3.77	4.45	5.13	5.81
	1	1	1	3	5	5	6	6	7	9	9	9	9	9	9	9	20	20	20	20
5.0	.00	.00	.02	.09	.22	.39	.58	.78	.99	1.26	1.55	1.85	2.16	2.46	2.77	3.08	3.38	3.69	4.13	4.74
	1	1	1	3	5	5	6	6	8	8	9	9	9	9	9	9	1	9	18	18
4.5	.00	.00	.02	.09	.20	.37	.55	.75	.98	1.25	1.52	1.79	2.07	2.34	2.61	2.93	3.27	3.61	3.95	4.35
	1	1	1	3	5	5	6	6	8	8	8	8	8	8	8	10	10	10	1	16
4.1	.00	.00	.02	.08	.20	.37	.54	.73	.94	1.16	1.40	1.67	1.98	2.28	2.59	2.90	3.24	3.58	3.92	4.26
	1	1	1	3	5	5	5	6	6	7	7	9	9	9	9	10	1	10	10	10
3.8	.00	.00	.02	.07	.18	.34	.51	.71	.92	1.12	1.34	1.60	1.88	2.15	2.42	2.71	3.05	3.39	3.73	4.07
	1	1	1	3	4	5	6	6	6	6	7	8	8	8	8	10	10	10	10	10
3.5	.00	.00	.02	.07	.18	.32	.46	.66	.87	1.10	1.34	1.58	1.81	2.05	2.29	2.56	2.90	3.24	3.58	3.92
	1	1	1	3	4	4	6	6	6	7	7	7	7	7	8	10	10	1	10	10
3.2	.00	.00	.01	.07	.17	.30	.45	.65	.86	1.08	1.32	1.56	1.79	2.03	2.28	2.55	2.82	3.10	3.40	3.71
	1	1	1	3	3	4	6	6	6	7	7	7	7	7	8	8	8	1	9	9
3.0	.00	.00	.01	.06	.15	.29	.42	.60	.81	1.05	1.29	1.53	1.76	2.00	2.24	2.48	2.72	2.95	3.24	3.55
	1	1	1	2	4	4	4	6	7	7	7	7	7	7	7	7	7	7	1	9
2.8	.00	.00	.01	.06	.14	.24	.38	.56	.77	1.00	1.24	1.48	1.71	1.95	2.19	2.43	2.67	2.90	3.16	3.43
	1	1	1	2	3	4	5	6	6	7	7	7	7	7	7	7	7	7	8	8
2.6	.00	.00	.01	.05	.14	.24	.36	.54	.75	.95	1.15	1.36	1.56	1.78	2.04	2.31	2.58	2.86	3.13	3.40
	1	1	1	2	3	3	4	6	6	6	6	6	6	7	8	8	1	8	8	8
2.5	.00	.00	.01	.05	.13	.23	.34	.48	.68	.88	1.08	1.29	1.49	1.76	2.03	2.30	2.57	2.85	3.12	3.39
	1	1	1	1	3	3	4	5	6	6	6	6	8	8	8	8	8	1	8	8
2.4	.00	.00	.01	.05	.11	.21	.31	.46	.63	.80	.97	1.14	1.34	1.58	1.83	2.10	2.37	2.65	2.94	3.25
	1	1	1	1	3	3	3	5	5	5	5	5	7	7	8	8	8	8	1	9
2.3	.00	.00	.00	.04	.10	.17	.27	.39	.55	.72	.89	1.11	1.34	1.58	1.82	2.06	2.30	2.58	2.85	3.12
	1	1	1	1	2	3	3	4	5	5	5	7	7	7	7	7	8	8	8	8
2.1	.00	.00	.00	.04	.09	.16	.26	.38	.51	.67	.87	1.08	1.28	1.52	1.76	2.02	2.29	2.57	2.84	3.11
	1	1	1	1	2	3	3	4	4	6	6	6	7	7	7	8	8	8	8	8
2.0	.00	.00	.00	.04	.09	.16	.26	.37	.50	.64	.81	1.02	1.22	1.43	1.67	1.94	2.21	2.49	2.76	3.03
	1	1	1	1	2	3	3	4	4	4	6	6	6	6	8	8	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
KISHWAUKEE RIVER NEAR PERRYVILLE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
80
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45
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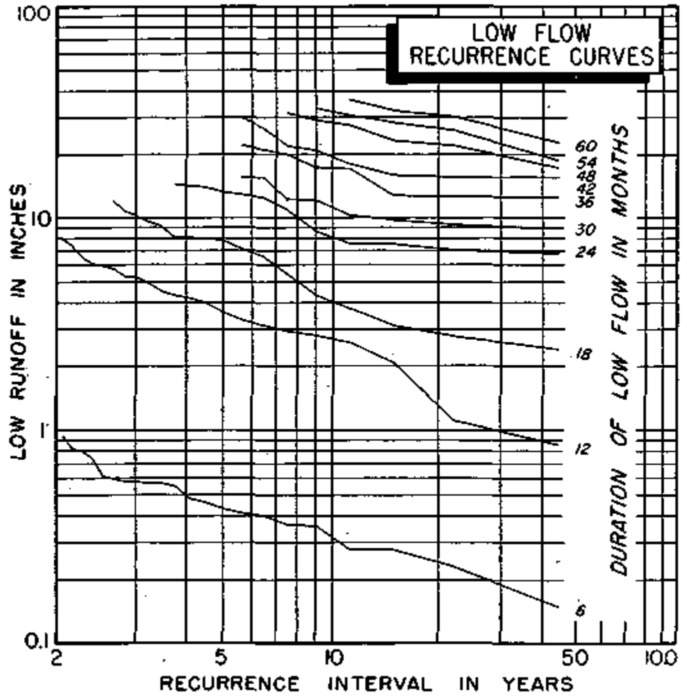
35
30
25
20
15
10

SOUTH BRANCH, KISHWAUKEE RIVER NEAR FAIRDALE



STATION 99

LOCATION
On line between and near south boundary of sec 16 and 17, T42N, R3E, DeKalb County, at highway bridge 1.75 miles northeast of Fairdale and 3.0 miles northwest of Kirkland

DRAINAGE AREA
386 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1939 thru Sept 1959
CONTINUOUS RECORD: 20 years; water years 1940-59

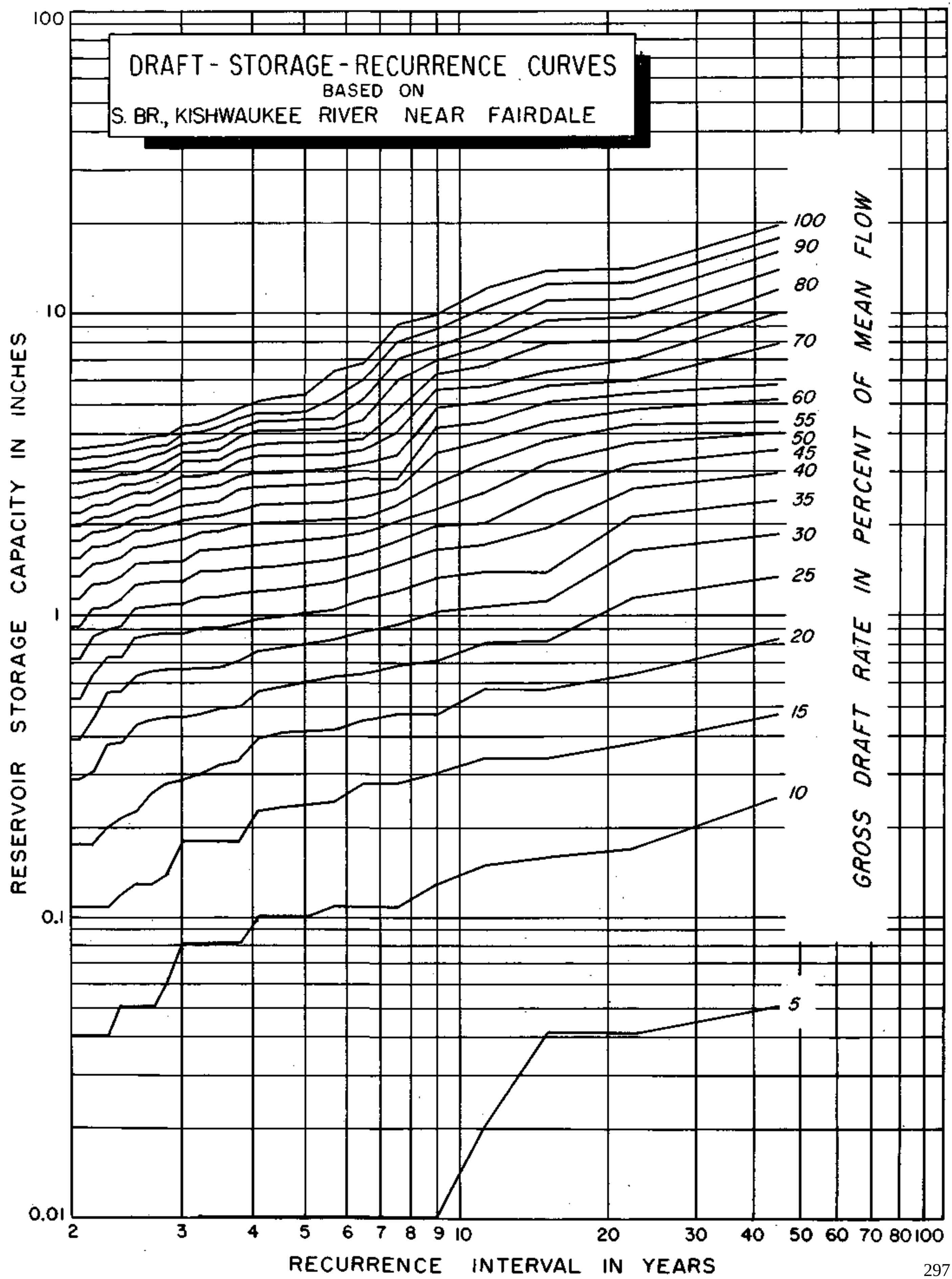
SYNTHETIC FLOW DATA
PERIOD : 25 years; water years 1915-39
INDEX STATION : Rock River at Como
COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.69 inch per month

Draft-Storage-Recurrence Data for South Branch, Kishwaukee River near Fairdale

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.05	.25	.47	.84	1.33	1.85	2.40	2.96	3.51	4.06	4.61	5.16	5.82	7.70	9.63	11.56	13.49	15.43	17.36	19.29
	6	6	8	14	14	16	16	16	16	16	16	16	54	56	56	56	56	56	56	56
22.5	.04	.17	.38	.64	1.13	1.61	2.09	2.59	3.14	3.65	4.24	4.79	5.35	5.92	6.87	7.97	9.41	10.86	12.31	13.80
	2	6	6	14	14	14	14	16	16	16	16	16	16	18	32	32	42	42	42	44
15.0	.04	.16	.34	.57	.83	1.11	1.38	1.92	2.51	3.13	3.75	4.37	4.99	5.61	6.29	7.73	9.18	10.63	12.08	13.53
	2	5	6	7	8	8	9	16	18	18	18	18	18	18	42	42	42	42	42	42
11.3	.02	.15	.34	.57	.81	1.07	1.38	1.69	2.00	2.52	3.14	3.76	4.38	5.00	5.63	6.51	7.55	8.58	10.05	11.57
	2	5	6	7	7	9	9	9	9	18	18	18	18	18	18	30	30	30	44	44
9.0	.01	.13	.30	.47	.71	1.02	1.33	1.64	1.95	2.27	2.69	3.38	4.07	4.76	5.45	6.14	6.83	7.63	8.59	9.56
	2	5	5	6	9	9	9	9	9	9	20	20	20	20	20	20	20	28	28	28
7.5	.01	.11	.28	.47	.68	.93	1.20	1.48	1.75	2.03	2.31	2.58	2.86	3.32	3.95	4.69	5.73	6.76	7.80	8.83
	2	5	5	6	6	8	8	8	8	8	8	8	8	18	18	30	30	30	1	30
6.4	.01	.11	.28	.45	.64	.88	1.12	1.36	1.60	1.85	2.12	2.45	2.80	3.14	3.49	3.83	4.35	5.11	5.87	6.65
	2	5	5	5	7	7	7	7	7	7	8	10	10	10	10	10	22	22	1	32
5.6	.01	.11	.25	.42	.63	.83	1.04	1.28	1.52	1.79	2.07	2.37	2.69	3.03	3.38	3.72	4.07	4.41	5.13	6.23
	2	4	5	6	6	6	7	7	7	8	8	9	10	10	10	10	10	10	32	32
5.0	.01	.10	.24	.41	.61	.81	1.02	1.25	1.50	1.78	2.06	2.35	2.67	3.01	3.36	3.70	4.05	4.39	4.74	5.26
	2	4	5	5	6	6	6	7	8	8	8	9	10	10	10	10	10	10	10	22
4.5	.01	.10	.24	.41	.58	.78	.99	1.21	1.45	1.73	2.02	2.33	2.64	2.97	3.32	3.66	4.01	4.35	4.70	5.19
	2	4	5	5	6	6	6	7	8	8	9	9	9	10	10	10	1	10	10	20
4.1	.01	.10	.23	.39	.56	.76	.97	1.19	1.43	1.69	2.00	2.31	2.62	2.95	3.30	3.64	3.99	4.33	4.68	5.02
	1	4	4	5	6	6	6	7	7	9	9	9	9	10	10	10	10	10	10	10
3.8	.01	.08	.18	.33	.50	.70	.94	1.18	1.42	1.67	1.95	2.26	2.57	2.88	3.19	3.50	3.81	4.12	4.43	4.77
	1	3	4	5	5	7	7	7	7	7	9	9	9	9	9	9	9	1	10	10
3.5	.01	.08	.18	.32	.49	.67	.91	1.15	1.39	1.64	1.88	2.12	2.38	2.65	2.93	3.21	3.48	3.79	4.13	4.47
	1	3	3	5	5	7	7	7	7	7	7	7	8	8	8	8	9	1	10	10
3.2	.01	.08	.18	.30	.47	.67	.90	1.14	1.38	1.63	1.87	2.11	2.35	2.60	2.88	3.16	3.43	3.71	3.98	4.26
	1	3	3	5	6	6	7	7	7	7	7	7	7	8	8	8	8	8	8	8
3.0	.00	.08	.18	.29	.46	.66	.87	1.08	1.28	1.50	1.77	2.04	2.32	2.59	2.87	3.15	3.42	3.70	3.97	4.25
	1	3	3	5	6	6	6	6	6	7	8	8	8	8	8	8	8	8	1	8
2.8	.00	.06	.14	.28	.46	.66	.87	1.08	1.28	1.49	1.72	1.96	2.20	2.44	2.68	2.92	3.17	3.41	3.65	3.91
	1	2	3	5	6	6	6	6	6	6	7	7	7	7	7	7	7	1	7	8
2.6	.00	.05	.13	.26	.45	.65	.86	1.07	1.27	1.48	1.69	1.89	2.10	2.31	2.53	2.77	3.02	3.30	3.57	3.85
	1	2	3	5	6	6	6	6	6	6	6	6	6	6	7	7	8	8	1	8
2.5	.00	.05	.13	.23	.43	.63	.84	1.05	1.25	1.46	1.67	1.87	2.08	2.29	2.50	2.70	2.92	3.18	3.45	3.73
	1	2	3	3	6	6	6	6	6	6	6	6	6	6	6	6	7	1	8	8
2.4	.00	.05	.12	.22	.38	.56	.73	.92	1.12	1.33	1.54	1.74	1.95	2.19	2.43	2.67	2.92	3.16	3.40	3.64
	1	2	3	3	5	5	5	6	6	6	6	6	7	7	7	7	7	7	1	7
2.3	.00	.04	.11	.20	.37	.55	.72	.89	1.06	1.27	1.48	1.68	1.89	2.10	2.32	2.56	2.81	3.06	3.33	3.61
	1	2	2	5	5	5	5	5	6	6	6	6	6	6	7	7	7	8	1	8
2.1	.00	.04	.11	.18	.31	.45	.63	.84	1.04	1.25	1.46	1.66	1.87	2.08	2.29	2.51	2.76	3.03	3.30	3.58
	1	2	2	3	4	4	6	6	6	6	6	6	6	6	6	7	7	8	8	8
2.0	.00	.04	.11	.18	.29	.39	.53	.72	.92	1.13	1.34	1.54	1.75	1.96	2.17	2.42	2.69	2.97	3.24	3.52
	1	2	2	3	3	4	4	6	6	6	6	5	6	6	6	8	8	8	1	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
S. BR., KISHWAUKEE RIVER NEAR FAIRDALE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
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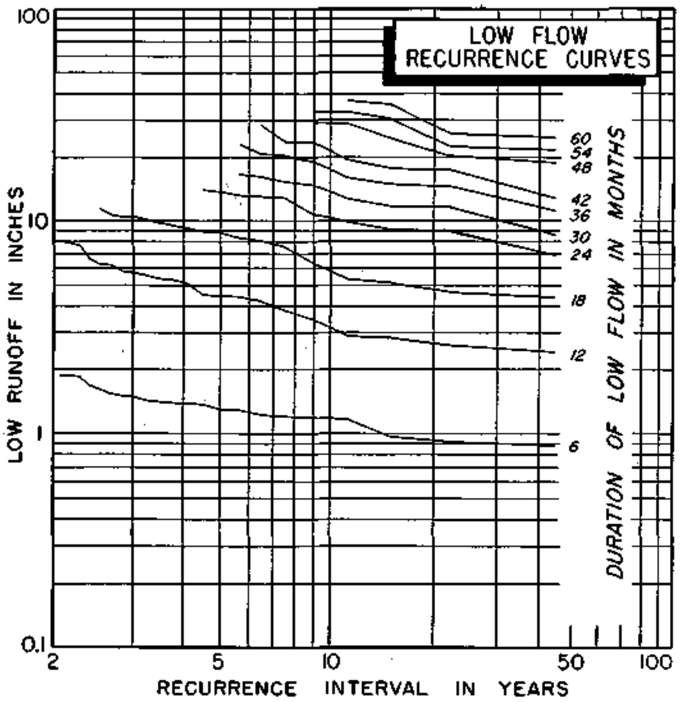


STATION 103

LOCATION

In NW ¼ sec 31, T25N, R10E, Ogle County, at bridge on Ill. 72, 0.5 mile east of the town of Leaf River and 7.0 miles west of Byron

DRAINAGE AREA

102 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1939 thru Sept 1958; gaging discontinued Oct 1, 1958

CONTINUOUS RECORD: 19 years; water years 1940-58

SYNTHETIC FLOW DATA

PERIOD: 25 years; water years 1915-39

INDEX STATION : Rock River at Como

COINCIDENT RECORD : 19 years; water years 1940-58

TOTAL DATA ANALYZED

PERIOD: 44 years; water years 1915-58

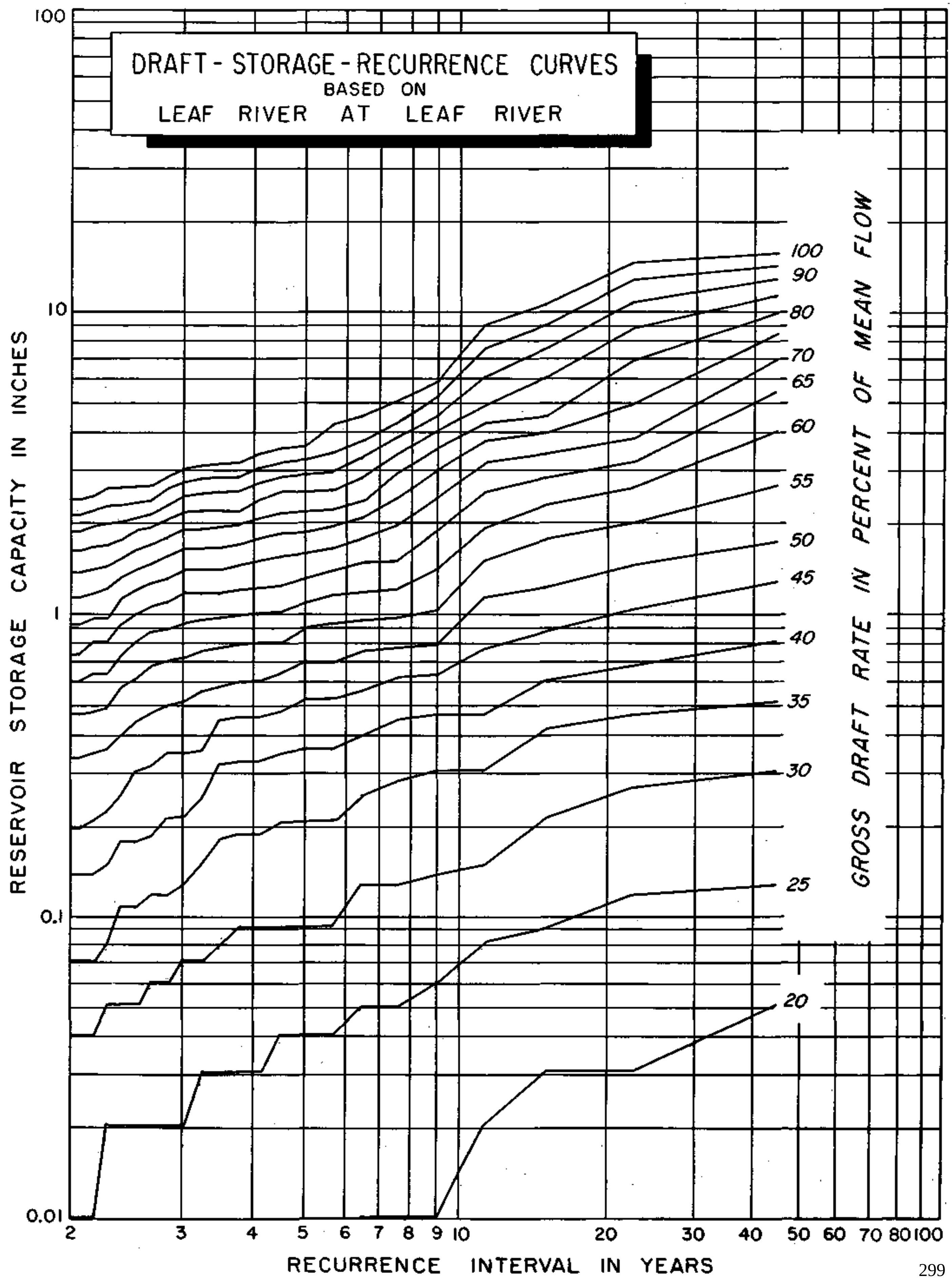
MEAN DISCHARGE : 0.66 inch per month

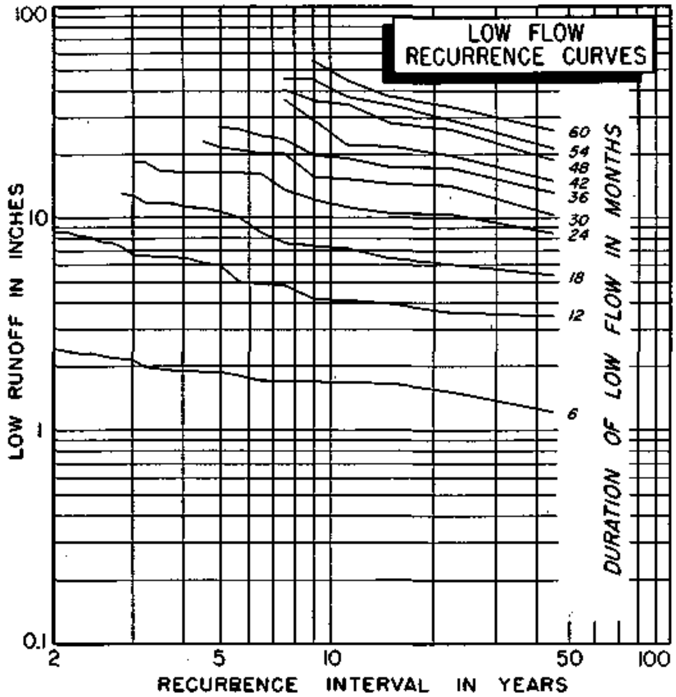
Draft-Storage-Recurrence Data for Leaf River at Leaf River

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00 1	.00 1	.00 1	.05 2	.13 3	.31 6	.52 8	.82 14	1.28 14	1.75 16	2.64 42	4.02 42	5.41 42	6.79 42	8.20 44	9.65 44	11.10 44	12.56 44	14.01 44	15.46 44
22.5	.00 1	.00 1	.00 1	.03 2	.12 3	.27 6	.47 6	.68 9	1.04 11	1.44 16	1.99 18	2.59 18	3.18 18	3.78 18	4.88 56	6.73 56	8.58 56	10.43 58	12.35 58	14.26 58
15.0	.00 1	.00 1	.00 1	.03 1	.09 2	.22 6	.42 6	.61 8	.88 8	1.23 16	1.76 16	2.29 16	2.81 16	3.34 16	3.96 20	4.62 20	5.96 44	7.42 44	8.87 44	10.32 44
11.3	.00 1	.00 1	.00 1	.02 1	.08 2	.15 3	.31 5	.47 5	.77 11	1.13 11	1.50 12	1.90 18	2.49 18	3.09 18	3.68 18	4.27 18	4.87 18	5.99 38	7.36 42	8.75 42
9.0	.00 1	.00 1	.00 1	.01 1	.06 2	.14 5	.31 5	.47 5	.64 5	.80 6	1.04 11	1.41 11	1.88 16	2.41 16	2.94 16	3.47 16	4.00 16	4.52 18	5.17 20	5.83 28
7.5	.00 1	.00 1	.00 1	.01 1	.05 1	.13 4	.29 5	.45 5	.62 5	.78 6	.98 6	1.21 9	1.51 9	1.96 14	2.42 14	2.88 14	3.34 14	3.81 14	4.27 14	5.00 30
6.4	.00 1	.00 1	.00 1	.01 1	.05 1	.13 4	.26 4	.40 4	.56 6	.76 6	.96 6	1.19 8	1.48 9	1.78 9	2.08 9	2.37 9	2.80 14	3.27 14	3.73 14	4.45 32
5.6	.00 1	.00 1	.00 1	.00 1	.04 1	.09 4	.22 4	.36 5	.53 5	.70 7	.93 7	1.16 7	1.39 7	1.65 9	1.95 9	2.24 9	2.55 10	2.92 14	3.38 14	4.16 32
5.0	.00 1	.00 1	.00 1	.00 1	.04 1	.09 3	.21 4	.36 5	.53 5	.70 6	.90 6	1.10 6	1.32 7	1.58 9	1.88 10	2.21 10	2.54 10	2.87 11	3.24 11	3.60 11
4.5	.00 1	.00 1	.00 1	.00 1	.04 1	.09 3	.21 4	.35 4	.48 5	.64 5	.82 6	1.02 6	1.25 9	1.55 9	1.85 9	2.17 10	2.50 10	2.83 1	3.16 10	3.52 12
4.1	.00 1	.00 1	.00 1	.00 1	.03 1	.09 3	.19 4	.33 4	.46 4	.61 6	.81 6	1.01 6	1.23 8	1.50 8	1.77 9	2.06 9	2.38 10	2.71 1	3.04 10	3.37 10
3.8	.00 1	.00 1	.00 1	.00 1	.03 1	.09 3	.19 4	.33 4	.46 4	.60 6	.80 6	1.00 6	1.21 7	1.45 8	1.71 8	1.97 8	2.24 9	2.54 9	2.83 1	3.15 10
3.5	.00 1	.00 1	.00 1	.00 1	.03 1	.08 2	.18 4	.32 4	.45 4	.58 6	.78 6	.98 6	1.17 7	1.40 8	1.66 6	1.94 9	2.24 9	2.54 9	2.83 1	3.13 9
3.2	.00 1	.00 1	.00 1	.00 1	.03 1	.07 2	.15 3	.25 3	.36 6	.56 6	.76 6	.96 6	1.17 7	1.40 7	1.64 8	1.90 9	2.20 9	2.50 9	2.79 1	3.09 9
3.0	.00 1	.00 1	.00 1	.00 1	.02 1	.07 2	.13 2	.22 4	.35 4	.52 6	.72 6	.93 7	1.16 7	1.39 7	1.63 8	1.89 8	2.16 8	2.42 8	2.69 1	2.95 8
2.8	.00 1	.00 1	.00 1	.00 1	.02 1	.06 2	.12 2	.22 4	.35 4	.50 6	.70 6	.90 6	1.09 6	1.30 7	1.54 7	1.77 8	2.04 8	2.30 1	2.57 8	2.83 8
2.6	.00 1	.00 1	.00 1	.00 1	.02 1	.06 2	.12 2	.19 4	.32 4	.47 6	.67 6	.87 6	1.06 6	1.26 6	1.46 7	1.69 7	1.92 7	2.15 1	2.38 7	2.63 9
2.5	.00 1	.00 1	.00 1	.00 1	.02 1	.05 2	.11 2	.18 4	.31 4	.44 4	.61 6	.81 6	1.00 6	1.20 6	1.40 6	1.62 7	1.85 7	2.08 7	2.34 1	2.62 9
2.4	.00 1	.00 1	.00 1	.00 1	.02 1	.05 2	.11 2	.18 2	.26 4	.40 5	.57 5	.73 6	.92 6	1.12 6	1.32 6	1.52 6	1.74 8	2.01 1	2.30 9	2.60 9
2.3	.00 1	.00 1	.00 1	.00 1	.02 1	.05 1	.08 2	.15 2	.23 4	.36 4	.49 4	.64 5	.81 5	.97 7	1.21 7	1.44 7	1.69 9	1.99 9	2.28 1	2.58 9
2.1	.00 1	.00 1	.00 1	.00 1	.01 1	.04 1	.07 2	.14 2	.22 4	.35 4	.48 5	.64 5	.81 5	.97 5	1.17 7	1.40 7	1.66 8	1.92 8	2.19 8	2.45 9
2.0	.00 1	.00 1	.00 1	.00 1	.01 1	.04 1	.07 2	.14 2	.21 4	.34 4	.47 4	.60 4	.74 4	.93 6	1.14 7	1.37 7	1.61 8	1.87 8	2.14 8	2.41 9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LEAF RIVER AT LEAF RIVER
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
65
60
55
50
45
40
35
30
25
20



STATION 120

LOCATION
In SE ¼ sec 30, T27N, R8E, Stephenson County, on property of Public Service Co. of Northern Illinois at Freeport, 0.3 mile upstream from Stephenson Street Bridge

DRAINAGE AREA
1330 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Sept 1914 thru Sept 1959
CONTINUOUS RECORD : 45 years; water years 1915-59

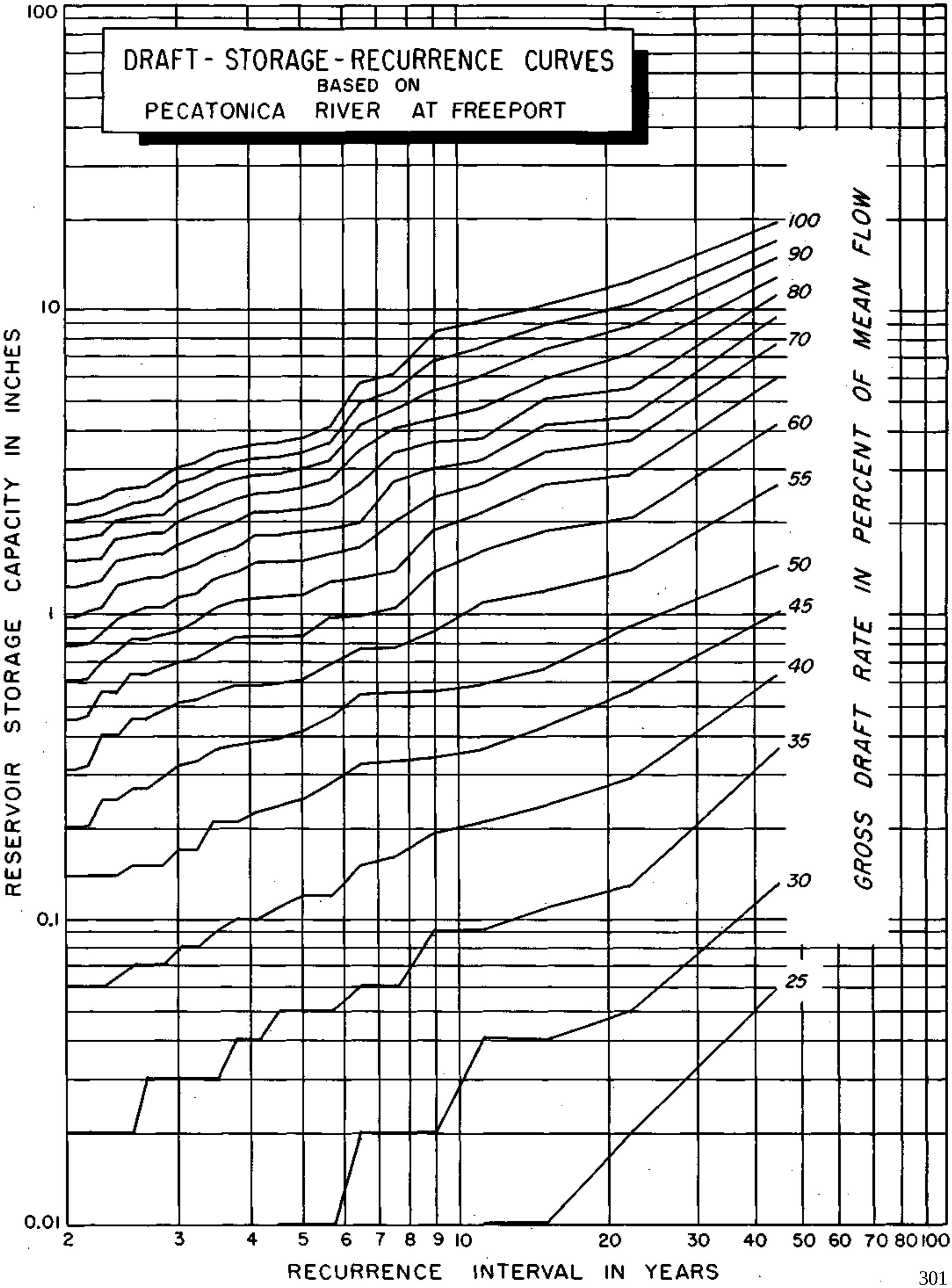
SYNTHETIC FLOW DATA
None; this station utilized as an index station

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.74 inch per month

Draft-Storage-Recurrence Data for Pecatonica River at Freeport

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.00	.00	.01	.06	.13	.36	.63	1.00	1.42	2.60	4.23	5.85	7.48	9.11	10.76	12.46	14.46	16.68	18.90
	1	1	1	1	2	6	7	10	10	18	44	44	44	44	44	46	46	60	60	60
22.5	.00	.00	.00	.00	.02	.05	.13	.29	.55	.91	1.38	2.04	2.81	3.63	4.44	5.41	6.97	8.52	10.08	11.92
	1	1	1	1	1	2	3	7	8	12	18	18	22	22	22	42	42	42	42	60
15.0	.00	.00	.00	.00	.01	.04	.11	.24	.43	.66	1.18	1.84	2.58	3.32	4.13	4.94	5.76	7.17	8.57	10.03
	1	1	1	1	1	1	3	5	5	14	14	20	20	22	22	22	38	38	38	40
11.3	.00	.00	.00	.00	.01	.04	.09	.21	.36	.59	1.08	1.60	2.11	2.63	3.15	3.72	4.67	5.92	7.33	8.96
	1	1	1	1	1	1	2	4	4	9	14	14	14	14	14	16	34	34	44	44
9.0	.00	.00	.00	.00	.00	.02	.09	.19	.34	.56	.87	1.34	1.85	2.37	2.95	3.57	4.31	5.25	6.58	7.91
	1	1	1	1	1	1	2	4	6	6	12	14	14	14	16	20	20	36	36	36
7.5	.00	.00	.00	.00	.00	.02	.06	.16	.33	.55	.77	1.04	1.37	1.97	2.64	3.31	3.97	4.64	5.30	5.97
	1	1	1	1	1	1	2	4	6	6	6	9	9	18	18	18	18	18	18	18
6.4	.00	.00	.00	.00	.00	.02	.06	.15	.32	.54	.76	.98	1.30	1.63	1.97	2.61	3.35	4.09	4.83	5.57
	1	1	1	1	1	1	2	4	6	6	6	8	9	9	9	20	20	20	20	20
5.6	.00	.00	.00	.00	.00	.01	.05	.12	.28	.46	.68	.97	1.27	1.56	1.89	2.29	2.70	3.12	3.57	4.01
	1	1	1	1	1	1	1	3	5	5	8	8	8	8	11	11	11	12	12	12
5.0	.00	.00	.00	.00	.00	.01	.05	.12	.25	.41	.61	.86	1.15	1.47	1.84	2.21	2.58	2.95	3.32	3.69
	1	1	1	1	1	1	1	3	4	5	6	7	8	10	10	10	10	10	10	11
4.5	.00	.00	.00	.00	.00	.01	.05	.11	.24	.39	.59	.84	1.13	1.46	1.80	2.13	2.47	2.84	3.21	3.58
	1	1	1	1	1	1	1	3	4	4	6	7	9	9	9	9	10	10	10	10
4.1	.00	.00	.00	.00	.00	.00	.04	.10	.23	.38	.58	.84	1.12	1.45	1.79	2.12	2.45	2.81	3.18	3.55
	1	1	1	1	1	1	1	3	4	4	7	7	9	9	9	9	9	10	1	10
3.8	.00	.00	.00	.00	.00	.00	.04	.10	.22	.37	.58	.83	1.09	1.35	1.62	1.97	2.34	2.71	3.08	3.45
	1	1	1	1	1	1	1	3	4	4	6	7	7	7	9	10	10	10	1	10
3.5	.00	.00	.00	.00	.00	.00	.03	.09	.21	.36	.55	.77	1.03	1.29	1.55	1.86	2.20	2.57	2.94	3.31
	1	1	1	1	1	1	1	3	4	4	6	7	7	7	7	9	10	10	1	10
3.2	.00	.00	.00	.00	.00	.00	.03	.08	.17	.33	.52	.71	.94	1.16	1.44	1.77	2.10	2.43	2.77	3.10
	1	1	1	1	1	1	1	2	3	5	5	6	6	6	9	9	9	9	9	9
3.0	.00	.00	.00	.00	.00	.00	.03	.08	.17	.32	.51	.69	.88	1.12	1.38	1.66	1.99	2.32	2.66	2.99
	1	1	1	1	1	1	1	2	3	5	5	5	5	7	7	9	9	9	9	9
2.8	.00	.00	.00	.00	.00	.00	.03	.07	.15	.29	.48	.66	.85	1.04	1.30	1.55	1.81	2.07	2.41	2.74
	1	1	1	1	1	1	1	2	2	5	5	5	5	7	7	7	7	9	1	9
2.6	.00	.00	.00	.00	.00	.00	.03	.07	.15	.27	.45	.63	.82	1.04	1.30	1.55	1.81	2.07	2.33	2.59
	1	1	1	1	1	1	1	2	2	4	5	5	5	7	7	7	7	7	1	9
2.5	.00	.00	.00	.00	.00	.00	.02	.07	.15	.27	.45	.63	.82	1.00	1.26	1.51	1.77	2.03	2.29	2.55
	1	1	1	1	1	1	1	2	2	4	5	5	5	7	7	7	7	7	7	7
2.4	.00	.00	.00	.00	.00	.00	.02	.06	.14	.25	.40	.55	.74	.95	1.21	1.46	1.72	1.98	2.24	2.50
	1	1	1	1	1	1	1	2	2	4	4	5	5	7	7	7	7	7	1	7
2.3	.00	.00	.00	.00	.00	.00	.02	.06	.14	.25	.40	.55	.69	.85	1.04	1.26	1.50	1.79	2.08	2.38
	1	1	1	1	1	1	1	2	2	4	4	4	4	5	6	6	7	8	1	8
2.1	.00	.00	.00	.00	.00	.00	.02	.06	.14	.21	.32	.46	.61	.79	1.01	1.23	1.48	1.75	2.04	2.34
	1	1	1	1	1	1	1	2	2	3	3	4	5	6	6	6	7	8	1	8
2.0	.00	.00	.00	.00	.00	.00	.02	.06	.14	.21	.31	.45	.60	.78	.97	1.22	1.48	1.74	2.00	2.28
	1	1	1	1	1	1	1	2	2	2	3	4	5	5	7	7	7	7	1	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
PECATONICA RIVER AT FREEPORT
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
100
10
1
0.1
0.01
2
3
4
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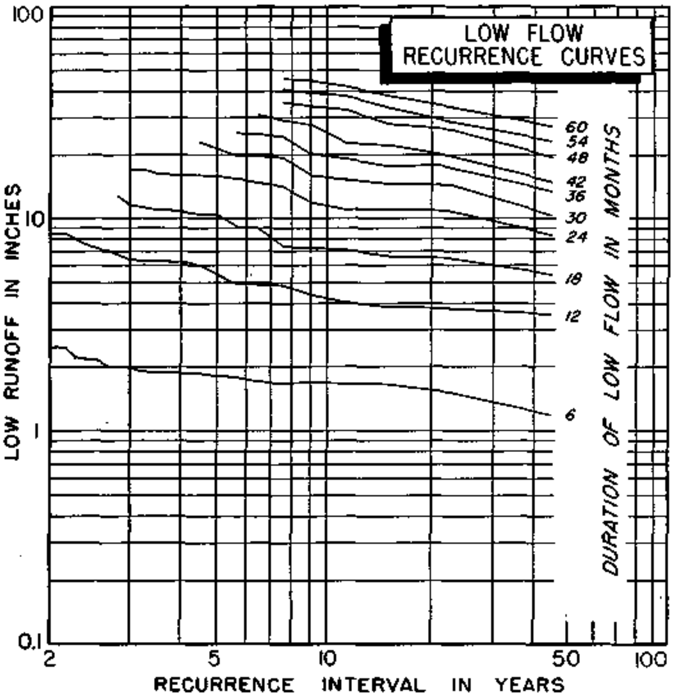
70
80
100

PECATONICA RIVER AT SHIRLAND



STATION 121

LOCATION
In SW ¼ sec 11, T28N, R11E, Winnebago County, at mouth of Sugar River, 0.5 mile south of Shirland and 6.0 miles southwest of Rockton

DRAINAGE AREA
2540 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Oct 1939 thru Sept 1958; gaging discontinued Oct 1, 1958
CONTINUOUS RECORD: 19 years; water years 1940-58

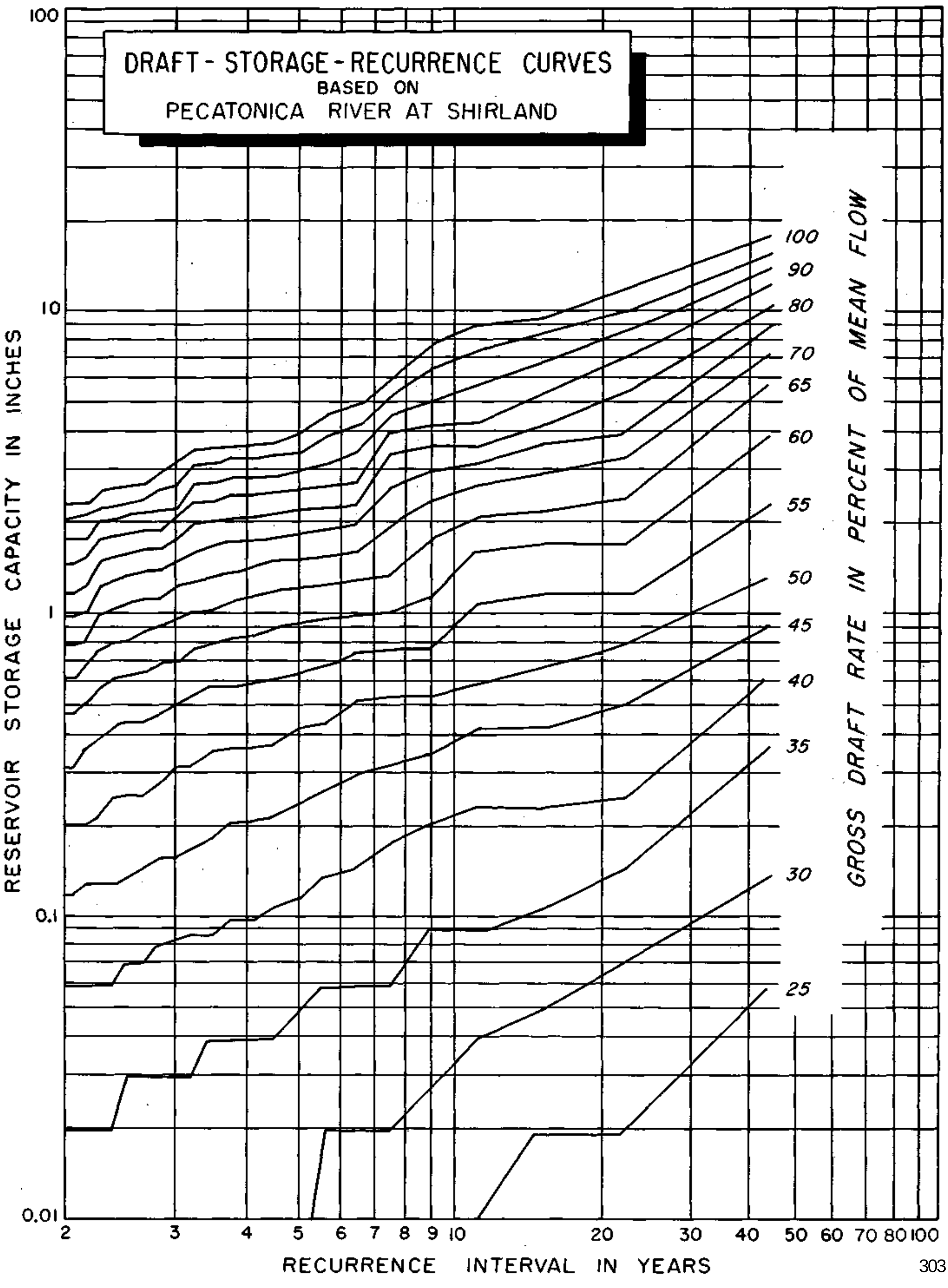
SYNTHETIC FLOW DATA
PERIOD: 26 years; water years 1915-39, 1959
INDEX STATION: Pecatonica River at Freeport
COINCIDENT RECORD: 19 years; water years 1940-58

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 0.74 inch per month

Draft-Storage-Recurrence Data for Pecatonica River at Shirland

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.00	.00	.01	.06	.15	.38	.64	.97	1.34	2.35	3.98	5.60	7.23	8.86	10.49	12.13	13.84	15.59	17.81
	1	1	1	1	2	6	7	7	10	10	44	44	44	44	44	44	46	46	60	60
22.5	.00	.00	.00	.00	.02	.07	.15	.26	.52	.82	1.19	1.71	2.44	3.26	4.07	5.41	6.97	8.52	10.08	11.92
	1	1	1	1	1	2	3	7	8	8	14	14	22	22	22	42	42	42	42	60
15.0	.00	.00	.00	.00	.02	.05	.11	.24	.43	.66	1.18	1.70	2.21	2.87	3.61	4.35	5.32	6.76	8.24	9.72
	1	1	1	1	1	1	3	5	5	14	14	14	14	20	20	20	38	40	40	40
11.3	.00	.00	.00	.00	.01	.04	.09	.24	.43	.61	1.08	1.60	2.11	2.63	3.15	3.67	4.33	5.70	7.33	8.96
	1	1	1	1	1	1	2	5	5	5	14	14	14	14	14	14	22	44	44	44
9.0	.00	.00	.00	.00	.00	.02	.09	.21	.36	.55	.77	1.17	1.77	2.36	2.95	3.57	4.31	5.11	6.37	7.63
	1	1	1	1	1	1	2	4	4	6	6	16	16	16	16	20	20	34	34	34
7.5	.00	.00	.00	.00	.00	.02	.06	.18	.33	.55	.77	1.03	1.36	1.97	2.64	3.31	3.97	4.64	5.30	5.97
	1	1	1	1	1	1	2	4	6	6	6	9	16	18	18	18	18	18	18	18
6.4	.00	.00	.00	.00	.00	.02	.06	.15	.31	.53	.75	.99	1.30	1.63	1.97	2.31	2.72	3.43	4.17	4.91
	1	1	1	1	1	1	1	4	6	6	6	8	9	9	9	11	11	20	20	20
5.6	.00	.00	.00	.00	.00	.02	.06	.14	.27	.45	.68	.97	1.27	1.56	1.90	2.23	2.68	3.12	3.79	4.53
	1	1	1	1	1	1	1	3	5	6	8	8	8	9	9	12	12	12	1	20
5.0	.00	.00	.00	.00	.00	.00	.04	.12	.25	.43	.65	.92	1.22	1.51	1.84	2.21	2.58	2.98	3.38	3.96
	1	1	1	1	1	1	1	3	4	6	6	8	8	8	10	10	10	11	11	22
4.5	.00	.00	.00	.00	.00	.00	.04	.11	.23	.38	.62	.91	1.21	1.50	1.80	2.14	2.51	2.88	3.28	3.69
	1	1	1	1	1	1	1	3	4	6	8	8	8	8	8	10	10	11	11	11
4.1	.00	.00	.00	.00	.00	.00	.04	.10	.22	.37	.59	.85	1.15	1.44	1.75	2.10	2.47	2.84	3.21	3.58
	1	1	1	1	1	1	1	3	4	6	6	8	8	8	9	10	10	10	10	10
3.8	.00	.00	.00	.00	.00	.00	.04	.10	.22	.37	.58	.84	1.10	1.36	1.73	2.10	2.47	2.84	3.21	3.58
	1	1	1	1	1	1	1	3	4	4	7	7	7	10	10	10	10	10	1	10
3.5	.00	.00	.00	.00	.00	.00	.04	.09	.19	.36	.58	.80	1.03	1.33	1.67	2.00	2.34	2.71	3.08	3.45
	1	1	1	1	1	1	1	2	3	6	6	6	7	9	9	9	10	10	10	10
3.2	.00	.00	.00	.00	.00	.00	.03	.09	.17	.33	.55	.77	1.02	1.28	1.59	1.96	2.33	2.70	3.07	3.44
	1	1	1	1	1	1	1	2	2	6	6	6	7	7	10	10	10	10	1	10
3.0	.00	.00	.00	.00	.00	.00	.03	.08	.16	.32	.51	.71	.97	1.23	1.49	1.74	2.00	2.26	2.63	3.00
	1	1	1	1	1	1	1	2	2	5	5	7	7	7	7	7	7	10	10	10
2.8	.00	.00	.00	.00	.00	.00	.03	.08	.16	.28	.47	.68	.91	1.13	1.39	1.64	1.90	2.19	2.56	2.93
	1	1	1	1	1	1	1	2	2	5	5	6	6	7	7	7	7	10	1	10
2.6	.00	.00	.00	.00	.00	.00	.03	.07	.15	.26	.45	.65	.88	1.12	1.38	1.63	1.89	2.15	2.41	2.69
	1	1	1	1	1	1	1	2	2	5	5	6	6	7	7	7	1	7	7	9
2.5	.00	.00	.00	.00	.00	.00	.03	.07	.14	.26	.45	.63	.82	1.08	1.34	1.59	1.85	2.11	2.37	2.63
	1	1	1	1	1	1	1	1	2	5	5	5	7	7	7	7	7	7	7	7
2.4	.00	.00	.00	.00	.00	.00	.02	.06	.13	.25	.43	.61	.80	1.04	1.30	1.55	1.81	2.07	2.33	2.59
	1	1	1	1	1	1	1	1	2	4	5	5	5	7	7	7	7	7	1	7
2.3	.00	.00	.00	.00	.00	.00	.02	.06	.13	.22	.39	.57	.76	.99	1.25	1.50	1.76	2.02	2.28	2.54
	1	1	1	1	1	1	1	1	2	4	5	5	5	7	7	7	7	7	1	7
2.1	.00	.00	.00	.00	.00	.00	.02	.06	.13	.21	.36	.51	.65	.81	1.00	1.23	1.52	1.82	2.11	2.41
	1	1	1	1	1	1	1	1	2	4	4	4	4	5	5	8	8	8	1	8
2.0	.00	.00	.00	.00	.00	.00	.02	.06	.12	.20	.32	.47	.61	.79	.98	1.16	1.45	1.75	2.04	2.34
	1	1	1	1	1	1	1	1	2	3	4	4	5	5	5	8	8	8	8	9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
PECATONICA RIVER AT SHIRLAND
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
65
60
55
50
45
40
35
30
25
100
10
1
0.1
0.01
2
3
4
5
6
7
8
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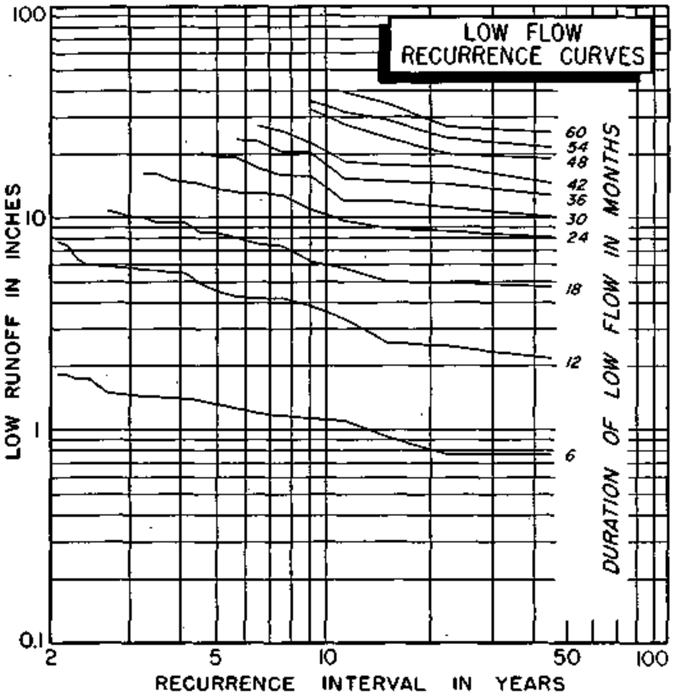
30
40
50
60
70
80
100



STATION 125

LOCATION
In SW ¼ SE ¼ sec 6, T21N, R5E, Whiteside County, 1.5 miles north of Morrison

DRAINAGE AREA
143 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1942 thru Sept 1958; gaging discontinued Oct 1, 1958
CONTINUOUS RECORD: 16 years; water years 1943-58

SYNTHETIC FLOW DATA
PERIOD: 37 years; water years 1915-50, 1959
INDEX STATION : Rock River at Como
COINCIDENT RECORD: 16 years; water years 1943-58

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.66 inch per month

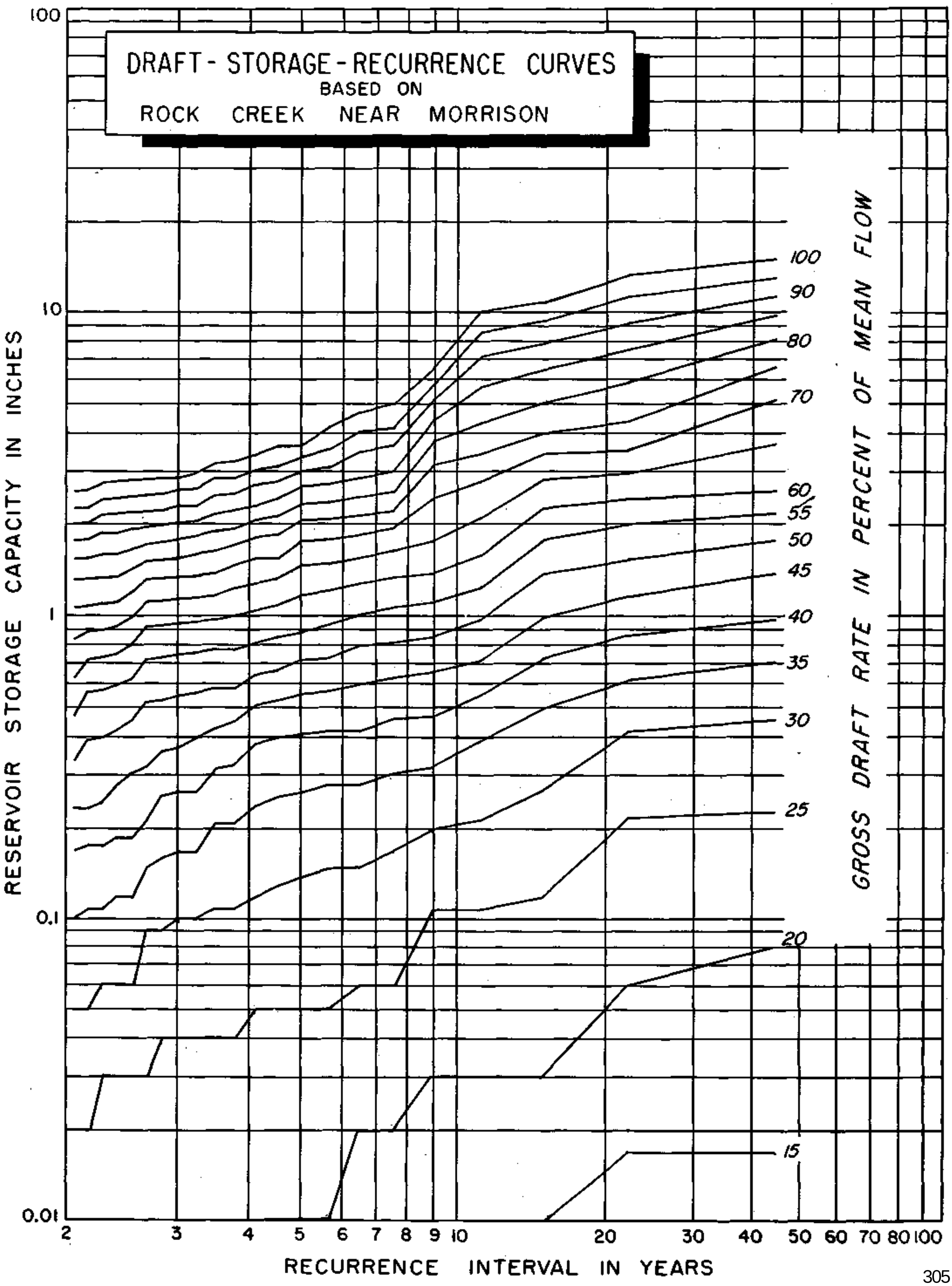
Draft-Storage-Recurrence Data for Rock Creek near Morrison

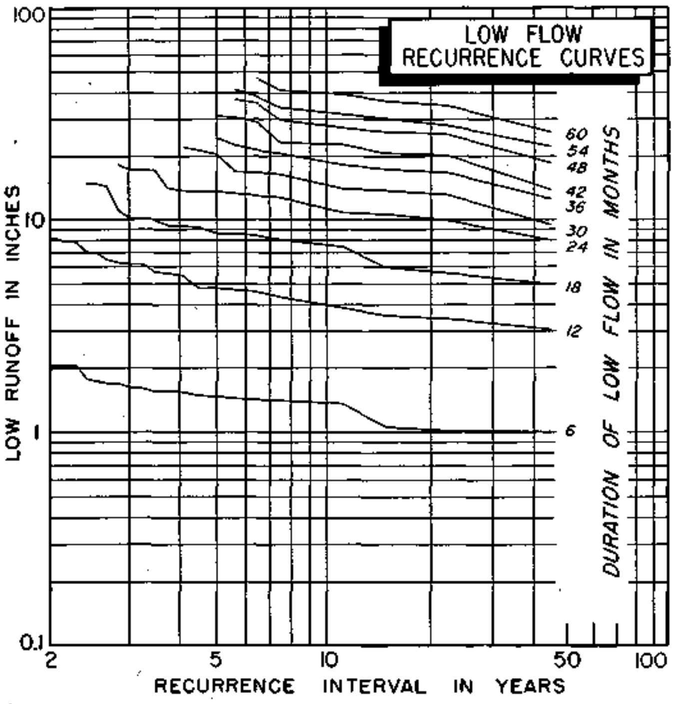
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50
45.0	.00	.00	.02	.08	.23	.46	.71	.98	1.37	1.77
	1	1	1	3	7	7	8	12	12	12
22.5	.00	.00	.02	.06	.22	.42	.62	.87	1.16	1.54
	1	1	1	2	6	6	6	9	9	14
15.0	.00	.00	.00	.03	.12	.27	.50	.73	.99	1.37
	1	1	1	2	3	7	7	7	11	12
11.3	.00	.00	.00	.03	.11	.22	.39	.55	.72	.98
	1	1	1	2	3	5	5	5	8	8
9.0	.00	.00	.00	.03	.11	.20	.31	.47	.66	.86
	1	1	1	1	3	3	5	5	6	6
7.5	.00	.00	.00	.02	.06	.17	.30	.46	.63	.82
	1	1	1	1	2	4	5	5	5	6
6.4	.00	.00	.00	.02	.06	.15	.28	.42	.60	.80
	1	1	1	1	1	4	4	5	6	6
5.6	.00	.00	.00	.01	.05	.15	.28	.42	.57	.73
	1	1	1	1	3	4	4	4	5	6
5.0	.00	.00	.00	.01	.05	.14	.27	.41	.56	.72
	1	1	1	1	1	4	4	4	5	5
4.5	.00	.00	.00	.01	.05	.13	.26	.40	.53	.66
	1	1	1	1	1	4	4	4	4	4
4.1	.00	.00	.00	.01	.05	.12	.24	.38	.51	.64
	1	1	1	1	1	5	4	4	4	4
3.8	.00	.00	.00	.00	.04	.11	.21	.32	.45	.58
	1	1	1	1	2	3	3	4	4	6
3.5	.00	.00	.00	.00	.04	.11	.21	.31	.43	.58
	1	1	1	1	1	3	3	3	4	6
3.2	.00	.00	.00	.00	.04	.10	.17	.27	.40	.56
	1	1	1	1	1	2	3	4	4	6
3.0	.00	.00	.00	.00	.04	.10	.17	.27	.37	.55
	1	1	1	1	1	2	3	3	3	6
2.8	.00	.00	.00	.00	.04	.09	.16	.26	.36	.53
	1	1	1	1	1	2	3	3	3	6
2.6	.00	.00	.00	.00	.03	.09	.15	.22	.32	.52
	1	1	1	1	1	2	2	2	6	6
2.5	.00	.00	.00	.00	.03	.06	.12	.19	.31	.45
	1	1	1	1	1	2	2	3	4	5
2.4	.00	.00	.00	.00	.03	.06	.12	.19	.28	.42
	1	1	1	1	1	2	2	2	4	5
2.3	.00	.00	.00	.00	.03	.06	.11	.18	.25	.40
	1	1	1	1	1	1	2	2	4	5
2.1	.00	.00	.00	.00	.02	.05	.11	.18	.24	.39
	1	1	1	1	1	2	2	2	3	5
2.0	.00	.00	.00	.00	.02	.05	.10	.17	.24	.34
	1	1	1	1	1	1	2	2	3	3

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
45.0	2.17	2.61	3.73	5.11	6.52	7.99	9.51	11.02	12.74	14.61
	12	16	42	42	44	46	46	46	56	58
22.5	2.00	2.46	2.97	3.50	4.37	5.82	7.41	9.06	11.04	13.02
	14	14	16	16	34	48	48	60	60	60
15.0	1.78	2.26	2.80	3.40	3.99	4.99	6.37	7.76	9.14	10.53
	14	16	18	18	18	42	42	42	42	42
11.3	1.25	1.58	2.09	2.75	3.41	4.28	5.61	7.00	8.38	9.77
	10	10	20	20	20	34	42	42	42	42
9.0	1.11	1.38	1.77	2.43	3.09	3.75	4.41	5.07	5.73	6.39
	8	10	20	20	20	20	20	20	20	20
7.5	1.07	1.34	1.64	1.94	2.24	2.55	3.00	3.59	4.19	4.93
	8	9	9	9	9	11	18	18	18	32
6.4	1.01	1.28	1.55	1.85	2.15	2.48	2.84	3.42	4.02	4.61
	8	8	9	9	9	11	11	18	18	20
5.6	.94	1.21	1.48	1.78	2.08	2.37	2.71	3.07	3.53	4.12
	8	8	9	9	9	9	11	11	18	18
5.0	.89	1.17	1.47	1.77	2.07	2.36	2.67	3.00	3.33	3.66
	8	9	9	9	9	9	10	10	10	10
4.5	.86	1.09	1.32	1.55	1.85	2.14	2.44	2.76	3.09	3.65
	7	7	7	9	9	9	9	10	10	18
4.1	.82	1.05	1.28	1.55	1.81	2.07	2.36	2.69	3.02	3.35
	7	7	8	8	8	8	10	1	10	10
3.8	.78	1.01	1.24	1.47	1.71	1.94	2.21	2.53	2.86	3.19
	7	7	7	7	7	8	8	10	1	10
3.5	.78	.98	1.17	1.37	1.63	1.89	2.17	2.50	2.83	3.16
	6	6	6	8	8	8	10	10	10	10
3.2	.76	.96	1.15	1.35	1.59	1.82	2.05	2.31	2.61	2.94
	6	6	6	7	7	7	8	9	10	10
3.0	.75	.95	1.14	1.34	1.55	1.78	2.02	2.31	2.60	2.90
	6	6	6	6	7	7	8	9	1	9
2.8	.73	.93	1.12	1.32	1.52	1.73	1.98	2.24	2.51	2.81
	6	6	6	6	6	7	8	8	8	10
2.6	.72	.92	1.11	1.31	1.51	1.71	1.96	2.22	2.49	2.79
	6	6	6	6	6	7	8	1	9	9
2.5	.62	.80	.99	1.19	1.41	1.65	1.92	2.20	2.49	2.79
	5	6	6	6	7	8	8	9	1	9
2.4	.59	.75	.92	1.11	1.34	1.59	1.86	2.16	2.45	2.75
	5	5	5	6	7	8	9	9	1	9
2.3	.57	.73	.90	1.10	1.33	1.59	1.86	2.13	2.42	2.72
	5	5	6	6	8	8	8	9	1	9
2.1	.56	.72	.89	1.08	1.32	1.55	1.78	2.01	2.28	2.58
	5	5	5	7	7	7	7	7	9	9
2.0	.47	.63	.84	1.07	1.31	1.54	1.77	2.00	2.27	2.57
	5	5	7	7	7	7	7	7	1	9


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
ROCK CREEK NEAR MORRISON
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
0.01
0.1
1
10
100
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100



STATION 126

LOCATION
In NE ¼ sec 25, T21N, R6E, Whiteside County, 1.0 mile upstream from Como and 3.0 miles downstream from Rock Falls

DRAINAGE AREA
8700 square miles, approximately

ACTUAL FLOW DATA
PERIOD: Mar thru Dec 1905, Oct 1914 thru Sept 1959
CONTINUOUS RECORD: 45 years; water years 1915-59

SYNTHETIC FLOW DATA
None; this station utilized as an index station

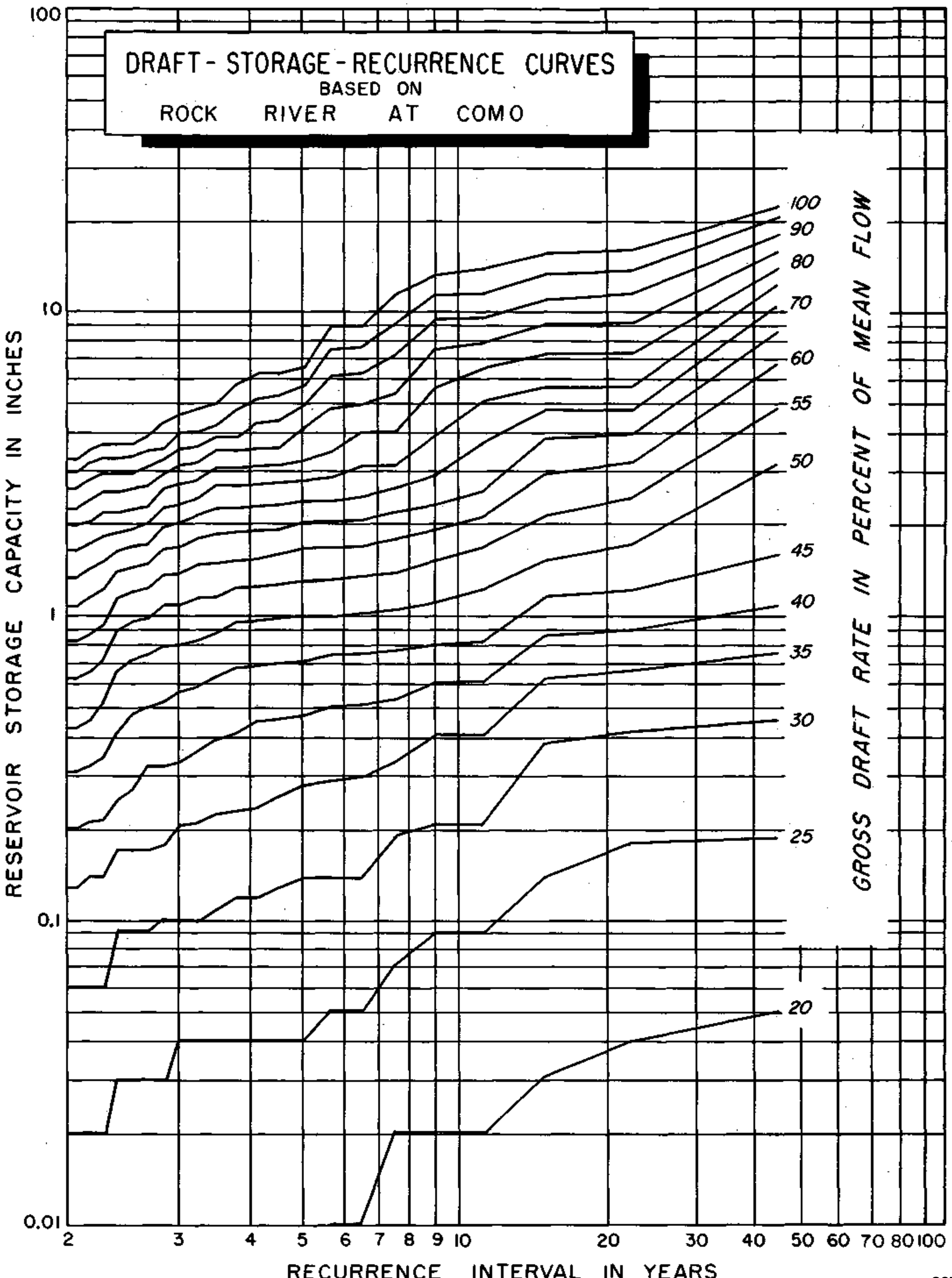
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.80 inch per month

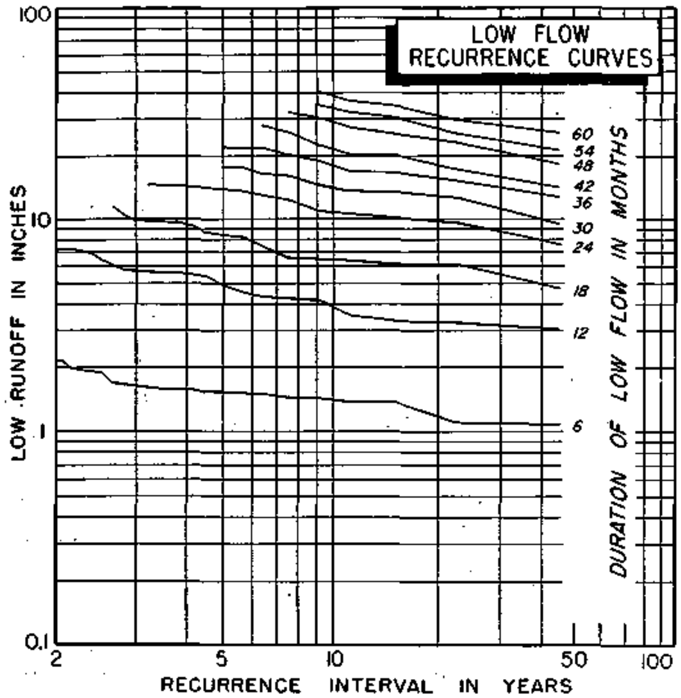
Draft-Storage-Recurrence Data for Rock River at Como

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.00	.00	.05	.19	.46	.76	1.08	1.59	3.12	4.80	6.56	8.32	10.08	11.84	13.60	15.40	17.68	20.08	22.48
	1	1	1	2	6	7	8	8	18	42	44	44	44	44	44	44	46	60	60	60
22.5	.00	.00	.00	.04	.18	.42	.66	.90	1.21	1.71	2.43	3.16	3.96	4.76	5.62	7.19	8.98	11.14	13.33	15.57
	1	1	1	2	6	6	6	6	9	18	18	20	20	20	28	44	54	54	56	56
15.0	.00	.00	.00	.03	.14	.38	.62	.86	1.15	1.51	2.09	2.89	3.76	4.64	5.52	7.10	8.86	10.62	12.78	15.02
	1	1	1	2	6	6	6	6	9	9	20	20	22	22	22	44	44	44	56	56
11.3	.00	.00	.00	.02	.09	.21	.41	.61	.82	1.22	1.66	2.10	2.54	3.61	4.97	6.33	7.69	9.24	11.08	13.39
	1	1	1	1	3	5	5	5	9	11	11	11	14	34	34	34	34	46	46	58
9.0	.00	.00	.00	.02	.09	.21	.40	.60	.80	1.10	1.50	1.90	2.30	2.86	3.82	5.41	7.25	9.09	10.93	12.77
	1	1	1	1	3	3	5	5	5	10	10	10	14	24	24	46	46	46	46	46
7.5	.00	.00	.00	.02	.07	.19	.33	.53	.77	1.05	1.37	1.77	2.17	2.59	3.07	3.95	5.23	6.97	8.83	10.91
	1	1	1	1	3	3	4	6	6	8	10	10	10	11	22	32	32	44	52	52
6.4	.00	.00	.00	.01	.05	.14	.30	.51	.75	1.02	1.34	1.67	2.04	2.44	3.06	3.94	4.86	6.14	7.42	8.70
	1	1	1	1	2	4	5	6	6	8	8	9	10	11	22	22	32	32	32	32
5.6	.00	.00	.00	.01	.05	.14	.29	.50	.74	.99	1.31	1.66	2.02	2.38	2.81	3.39	4.67	5.95	7.23	8.51
	1	1	1	1	2	3	4	6	6	8	8	9	9	10	11	32	32	32	1	32
5.0	.00	.00	.00	.00	.04	.14	.28	.47	.71	.99	1.30	1.65	2.01	2.37	2.73	3.19	3.99	4.79	5.59	6.39
	1	1	1	1	2	3	4	6	7	7	8	9	9	9	9	20	20	1	20	20
4.5	.00	.00	.00	.00	.04	.13	.26	.46	.70	.98	1.26	1.58	1.90	2.29	2.69	3.09	3.54	4.30	5.17	6.05
	1	1	1	1	1	3	5	5	7	7	8	8	8	10	10	10	12	20	22	22
4.1	.00	.00	.00	.00	.04	.12	.25	.45	.68	.96	1.24	1.52	1.88	2.27	2.67	3.07	3.47	4.22	5.03	5.96
	1	1	1	1	1	3	5	5	7	7	7	9	9	10	10	10	10	1	22	24
3.8	.00	.00	.00	.00	.04	.12	.24	.41	.67	.95	1.23	1.51	1.86	2.24	2.64	3.04	3.44	3.84	4.64	5.60
	1	1	1	1	1	3	4	5	7	7	7	8	9	10	1	10	10	10	24	24
3.5	.00	.00	.00	.00	.04	.11	.23	.39	.63	.87	1.15	1.48	1.84	2.23	2.63	3.03	3.43	3.83	4.23	4.89
	1	1	1	1	1	3	3	6	6	6	8	9	9	10	10	10	10	1	10	20
3.2	.00	.00	.00	.00	.04	.10	.22	.36	.58	.83	1.13	1.45	1.77	2.09	2.41	2.74	3.14	3.54	3.97	4.68
	1	1	1	1	1	3	3	4	6	7	8	8	8	8	8	10	10	10	1	22
3.0	.00	.00	.00	.00	.04	.10	.21	.33	.56	.80	1.08	1.36	1.66	1.98	2.30	2.66	3.06	3.46	3.89	4.57
	1	1	1	1	1	2	3	4	6	7	7	7	8	8	8	10	10	10	11	18
2.8	.00	.00	.00	.00	.03	.10	.18	.32	.52	.79	1.07	1.35	1.63	1.92	2.24	2.56	2.88	3.20	3.52	4.25
	1	1	1	1	1	2	2	4	6	7	7	7	7	8	8	8	8	1	11	20
2.6	.00	.00	.00	.00	.03	.09	.17	.32	.50	.74	.98	1.22	1.46	1.70	1.98	2.26	2.62	3.02	3.42	3.82
	1	1	1	1	1	2	3	4	6	6	6	6	6	7	7	7	10	10	10	10
2.5	.00	.00	.00	.00	.03	.09	.17	.27	.47	.71	.95	1.19	1.43	1.67	1.91	2.21	2.55	2.91	3.27	3.63
	1	1	1	1	1	2	2	3	6	6	6	6	6	6	6	8	9	9	9	9
2.4	.00	.00	.00	.00	.03	.09	.17	.25	.41	.65	.89	1.13	1.37	1.61	1.85	2.16	2.52	2.88	3.24	3.60
	1	1	1	1	1	2	2	2	6	6	6	6	6	6	6	9	9	9	9	9
2.3	.00	.00	.00	.00	.02	.06	.14	.22	.34	.51	.71	.93	1.21	1.49	1.80	2.16	2.52	2.88	3.24	3.60
	1	1	1	1	1	2	2	2	4	5	5	7	7	7	9	9	9	9	1	9
2.1	.00	.00	.00	.00	.02	.06	.14	.22	.32	.45	.65	.86	1.13	1.41	1.69	2.01	2.37	2.73	3.09	3.45
	1	1	1	1	1	2	2	2	3	5	5	6	7	7	7	9	9	9	9	9
2.0	.00	.00	.00	.00	.02	.06	.13	.21	.31	.43	.62	.83	1.07	1.32	1.62	1.94	2.26	2.58	2.90	3.22
	1	1	1	1	1	1	2	2	3	3	5	6	6	7	8	8	1	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
ROCK RIVER AT COMO
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
55
45
35
25



STATION 128

LOCATION
In SE ¼ NW ¼ sec 24, T46N, R1E, Winnebago County, at bridge on Ill. 2 in Rockton

DRAINAGE AREA
6290 square miles, approximately

ACTUAL FLOW DATA
PERIOD: June 1903 thru July 1906; Oct 1906 thru Mar 1909, July 1914 thru Sept 1919, Oct 1939 thru Sept 1959
CONTINUOUS RECORD : 20 years; water years 1940-59

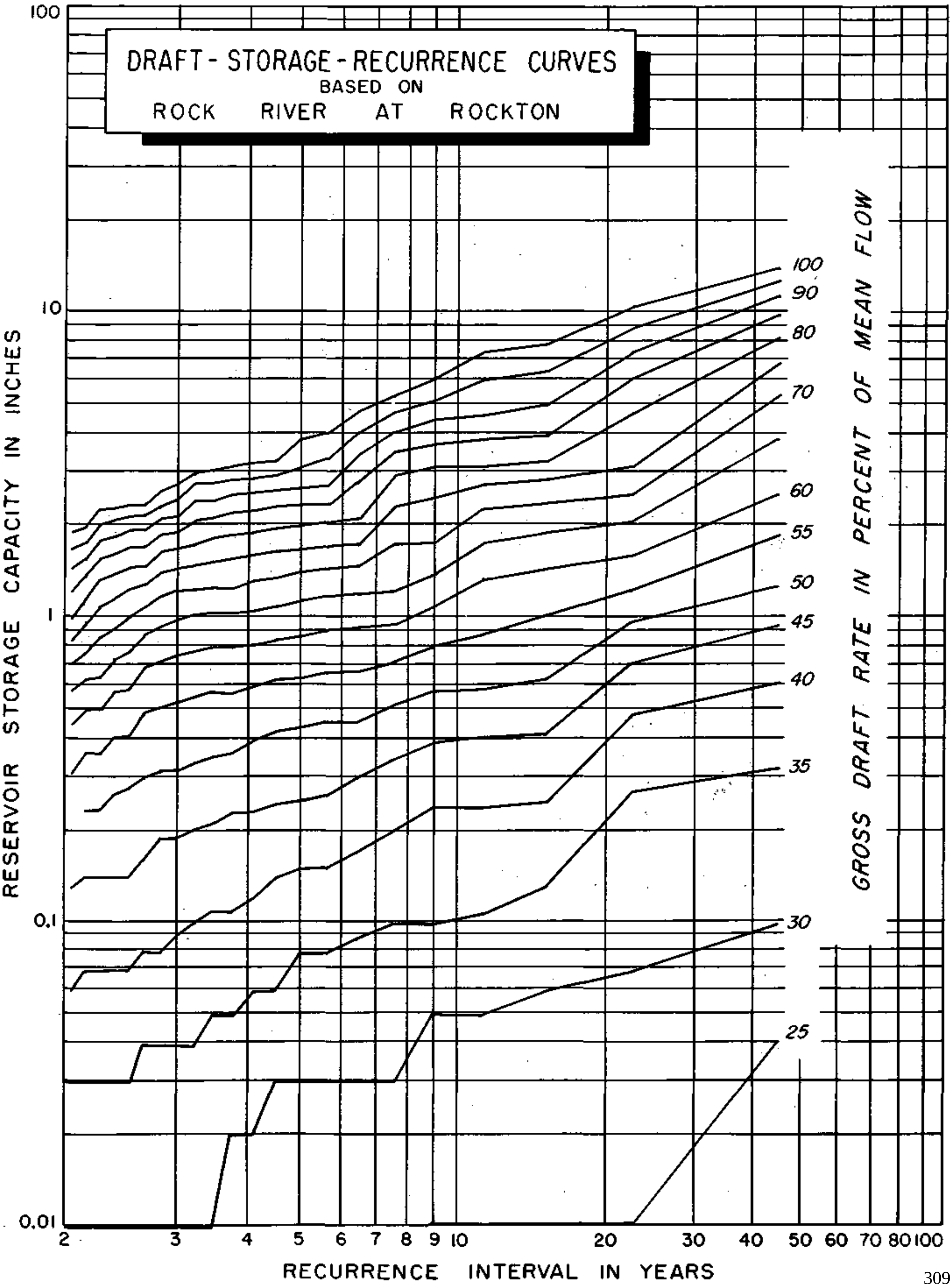
SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1915-39
INDEX STATION : Pecatonica River at Freeport
COINCIDENT RECORD: 20 years; water years 1940-59

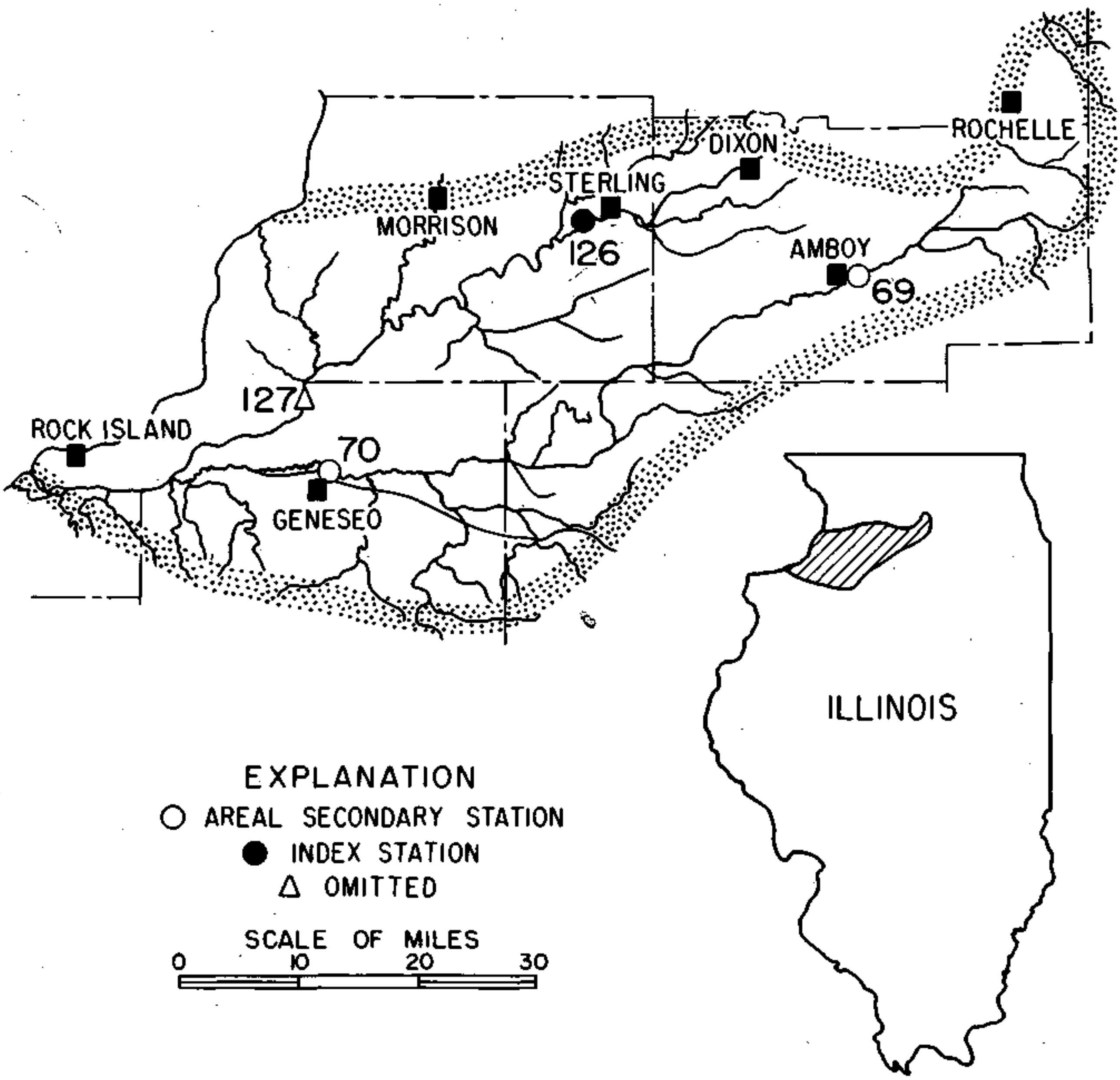
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.65 inch per month

Draft-Storage-Recurrence Data for Rock River at Rockton

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

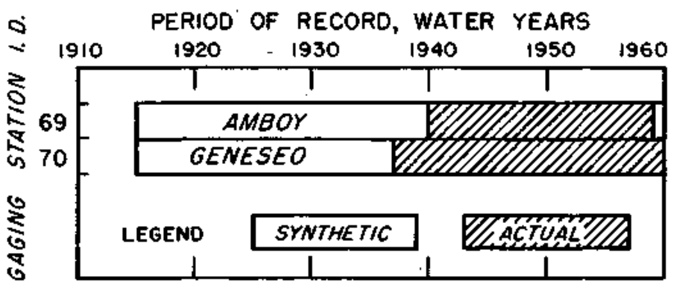
Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00 1	.00 1	.00 1	.00 1	.04 2	.10 7	.32 9	.61 10	.94 10	1.26 10	1.84 20	2.49 20	3.80 44	5.23 44	6.66 44	8.09 44	9.52 44	10.95 44	12.38 44	13.81 44
22.5	.00 1	.00 1	.00 1	.00 1	.01 2	.07 6	.27 6	.47 7	.70 8	.96 8	1.22 9	1.59 14	2.05 14	2.50 14	3.22 42	4.58 42	5.95 42	7.31 42	8.68 42	10.27 60
15.0	.00 1	.00 1	.00 1	.00 1	.01 1	.06 2	.13 2	.25 5	.41 5	.62 12	1.01 12	1.43 14	1.89 14	2.34 14	2.80 14	3.25 22	3.97 22	4.86 44	6.29 44	7.72 44
11.3	.00 1	.00 1	.00 1	.00 1	.01 1	.05 1	.11 3	.24 5	.40 5	.58 6	.88 14	1.33 14	1.79 14	2.24 14	2.70 14	3.15 20	3.80 20	4.55 34	5.90 42	7.26 42
9.0	.00 1	.00 1	.00 1	.00 1	.01 1	.05 1	.10 3	.24 5	.40 5	.57 5	.79 9	1.08 9	1.37 9	1.80 20	2.45 20	3.10 20	3.75 20	4.40 20	5.05 20	6.01 34
7.5	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.10 3	.20 4	.34 5	.51 6	.71 6	.94 8	1.21 9	1.69 18	2.28 18	2.86 18	3.45 18	4.03 18	4.62 18	5.20 18
6.4	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.09 2	.17 4	.30 4	.45 6	.66 8	.92 8	1.18 8	1.45 9	1.75 10	2.07 20	2.72 20	3.37 20	4.02 20	4.67 20
5.6	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.08 2	.15 3	.26 6	.45 6	.65 6	.90 8	1.16 8	1.42 8	1.69 10	2.01 10	2.34 10	2.66 11	3.29 22	4.00 22
5.0	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.08 2	.15 3	.25 5	.43 6	.63 6	.86 8	1.12 8	1.38 8	1.65 9	1.96 10	2.29 10	2.61 10	3.11 20	3.76 20
4.5	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.06 2	.14 3	.24 5	.42 6	.62 6	.84 7	1.07 8	1.33 8	1.62 10	1.94 10	2.27 10	2.59 10	2.92 10	3.24 10
4.1	.00 1	.00 1	.00 1	.00 1	.00 1	.02 1	.06 2	.12 2	.23 4	.39 6	.59 6	.80 7	1.04 8	1.30 8	1.58 9	1.88 10	2.21 10	2.53 10	2.86 10	3.18 10
3.8	.00 1	.00 1	.00 1	.00 1	.00 1	.02 1	.05 2	.11 3	.23 4	.36 6	.56 7	.79 7	1.02 7	1.25 9	1.54 9	1.84 10	2.17 10	2.49 10	2.82 1	3.14 10
3.5	.00 1	.00 1	.00 1	.00 1	.00 1	.01 1	.05 2	.11 2	.21 4	.35 6	.56 7	.79 7	1.02 7	1.25 7	1.51 9	1.80 9	2.09 9	2.39 9	2.71 1	3.03 10
3.2	.00 1	.00 1	.00 1	.00 1	.00 1	.01 1	.04 1	.10 3	.20 4	.34 6	.54 7	.77 7	1.00 7	1.23 7	1.46 8	1.72 8	2.04 10	2.36 10	2.69 1	3.01 10
3.0	.00 1	.00 1	.00 1	.00 1	.00 1	.01 1	.04 1	.09 3	.19 4	.32 6	.52 7	.75 7	.98 7	1.21 7	1.43 7	1.66 7	1.89 7	2.12 9	2.41 9	2.70 9
2.8	.00 1	.00 1	.00 1	.00 1	.00 1	.01 1	.04 1	.08 2	.19 4	.32 4	.50 6	.70 7	.93 7	1.16 7	1.38 7	1.61 7	1.84 7	2.07 1	2.29 8	2.55 8
2.6	.00 1	.00 1	.00 1	.00 1	.00 1	.01 1	.04 1	.08 2	.16 4	.29 4	.48 6	.67 6	.87 6	1.06 6	1.26 6	1.45 7	1.68 7	1.91 7	2.13 7	2.37 9
2.5	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.07 2	.14 4	.27 4	.41 5	.57 5	.76 7	.99 7	1.21 7	1.44 7	1.67 1	1.90 7	2.12 7	2.35 7
2.4	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.07 2	.14 2	.26 4	.40 5	.56 5	.72 5	.91 7	1.13 7	1.36 7	1.59 7	1.82 7	2.04 7	2.27 7
2.3	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.07 2	.14 2	.23 4	.36 4	.49 4	.63 6	.85 7	1.07 7	1.30 7	1.53 7	1.76 7	1.98 7	2.21 7
2.1	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.07 2	.14 2	.23 4	.36 4	.49 4	.62 4	.75 6	.95 6	1.14 6	1.34 6	1.53 6	1.73 1	1.95 7
2.0	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.06 2	.13 2	.20 3	.31 4	.44 4	.57 4	.70 4	.83 4	.98 6	1.20 7	1.43 7	1.65 1	1.88 7

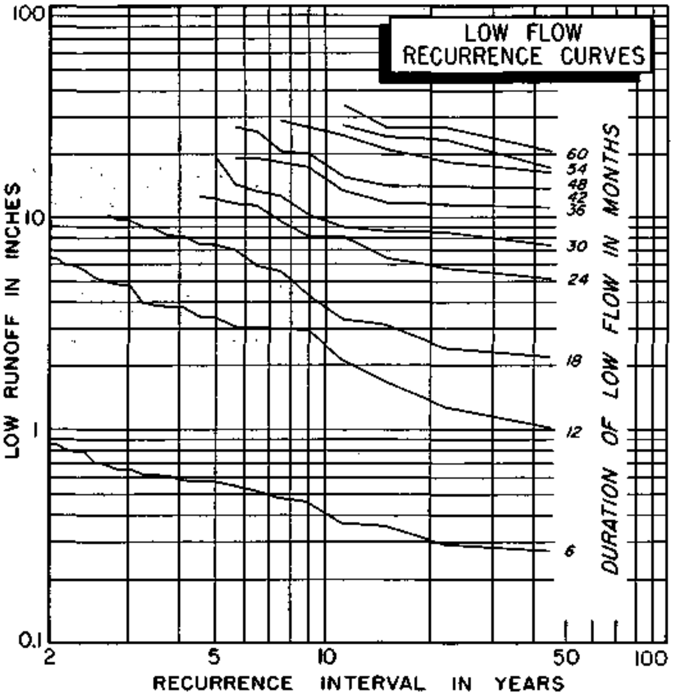

DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
ROCK RIVER AT ROCKTON
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25



Green River Lowland

Gaging Stations in Green River Lowland





STATION 69

LOCATION

In SE ¼ NE ¼ sec 22, T20N, R10E, Lee County, at bridge on U. S. 52, at southeast edge of Amboy

DRAINAGE AREA

199 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1939 thru Sept 1958; gaging discontinued Oct 1, 1958

CONTINUOUS RECORD: 19 years; water years 1940-58

SYNTHETIC FLOW DATA

PERIOD: 25 years; water years 1915-39

INDEX STATION: Rock River at Como

COINCIDENT RECORD: 19 years; water years 1940-58

TOTAL DATA ANALYZED

PERIOD: 44 years; water years 1915-58

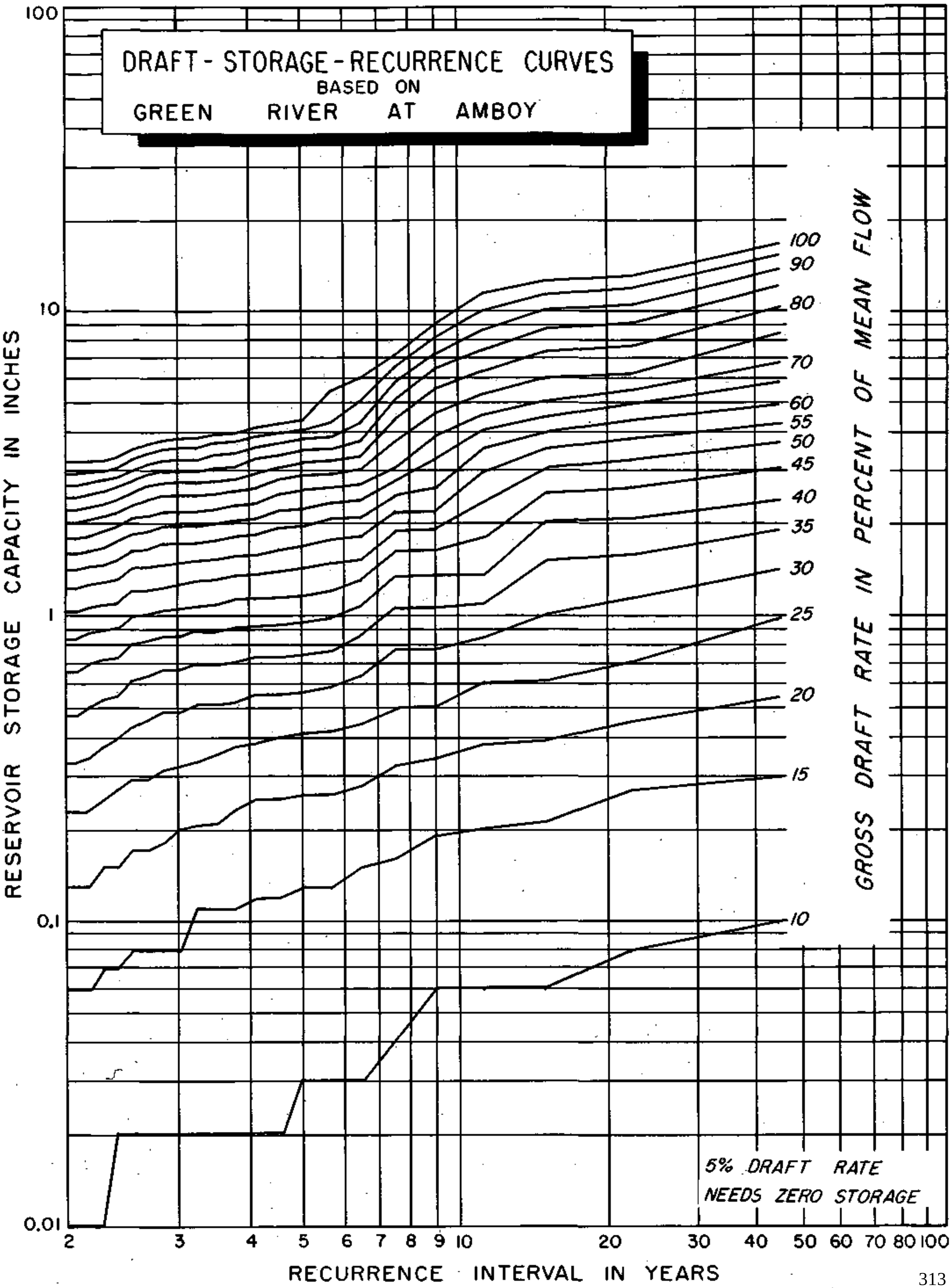
MEAN DISCHARGE : 0.62 inch per month

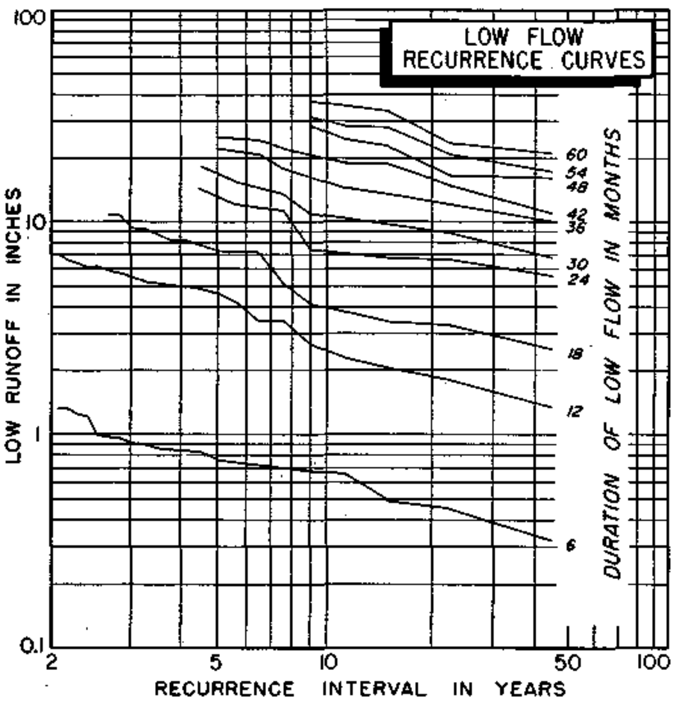
Draft-Storage-Recurrence Data for Green River at Amboy

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.01	.10	.30	.54	.97	1.41	1.90	2.40	3.02	3.64	4.26	4.88	5.74	6.61	8.28	10.02	11.75	13.49	15.22	17.00
	2	6	7	14	14	16	16	20	20	20	20	28	28	28	56	56	56	56	56	58
22.5	.01	.08	.27	.45	.71	1.13	1.57	2.07	2.63	3.19	3.75	4.31	4.86	5.42	6.12	7.48	8.85	10.21	11.58	12.97
	1	6	6	6	9	14	14	12	18	18	18	18	18	18	44	44	44	44	44	46
15.0	.00	.06	.21	.39	.61	1.00	1.49	1.99	2.48	2.98	3.48	3.97	4.47	4.96	5.86	7.16	8.46	9.77	11.07	12.37
	2	3	6	6	8	15	16	16	16	16	16	16	16	16	42	42	42	42	42	42
11.3	.00	.06	.20	.38	.60	.64	1.09	1.35	1.79	2.35	2.91	3.47	4.02	4.58	5.25	6.24	7.23	8.41	9.77	11.13
	1	3	6	7	7	8	8	9	18	18	18	18	18	18	32	32	32	42	44	44
9.0	.00	.06	.19	.34	.50	.77	1.05	1.33	1.61	1.89	2.17	2.57	3.19	3.81	4.50	5.37	6.24	7.10	7.97	8.84
	1	3	5	5	9	9	9	9	9	9	9	20	20	20	28	28	28	28	28	28
7.5	.00	.04	.16	.30	.50	.77	1.05	1.33	1.61	1.89	2.17	2.45	2.73	3.01	3.64	4.32	5.00	5.69	6.37	7.05
	1	4	4	5	9	9	9	9	9	9	9	9	9	9	22	22	22	22	22	22
6.4	.00	.03	.15	.28	.44	.63	.85	1.07	1.28	1.52	1.80	2.08	2.36	2.66	2.97	3.28	3.67	4.22	4.94	5.87
	1	4	4	5	5	7	7	7	7	9	9	9	9	10	10	10	18	18	1	30
5.6	.00	.03	.13	.26	.42	.58	.76	.98	1.20	1.48	1.76	2.04	2.32	2.60	2.88	3.19	3.50	3.81	4.25	5.30
	1	3	4	5	5	6	7	7	9	9	9	9	9	9	10	10	10	10	34	34
5.0	.00	.03	.13	.26	.41	.56	.74	.95	1.16	1.38	1.66	1.94	2.22	2.52	2.83	3.14	3.45	3.76	4.07	4.36
	1	3	4	4	5	6	6	7	7	9	9	9	9	10	10	1	10	10	10	10
4.5	.00	.02	.12	.25	.40	.55	.73	.93	1.14	1.38	1.64	1.92	2.20	2.48	2.76	3.03	3.32	3.63	3.94	4.25
	1	3	4	4	5	6	6	7	7	8	9	9	9	9	9	9	1	10	10	10
4.1	.00	.02	.12	.25	.38	.55	.73	.92	1.13	1.35	1.57	1.82	2.06	2.31	2.59	2.90	3.21	3.52	3.83	4.14
	1	3	4	4	5	6	6	7	7	7	8	8	8	8	10	10	10	10	10	10
3.8	.00	.02	.11	.23	.37	.52	.70	.91	1.12	1.34	1.56	1.79	2.03	2.28	2.53	2.78	3.05	3.36	3.67	3.98
	1	3	3	4	5	6	6	7	7	7	7	8	8	8	8	8	1	10	10	10
3.5	.00	.02	.11	.21	.35	.51	.69	.88	1.08	1.30	1.52	1.74	1.98	2.23	2.46	2.73	3.00	3.31	3.62	3.93
	1	3	3	4	5	6	6	5	7	7	7	8	8	8	8	8	10	1	10	10
3.2	.00	.02	.11	.21	.33	.51	.59	.88	1.06	1.28	1.50	1.71	1.95	2.20	2.45	2.70	2.95	3.21	3.49	3.77
	1	3	3	4	5	6	6	6	7	7	7	8	8	8	8	8	8	9	1	10
3.0	.00	.02	.08	.20	.32	.46	.66	.85	1.04	1.26	1.48	1.70	1.94	2.19	2.44	2.69	2.94	3.20	3.48	3.76
	1	1	3	4	4	6	6	6	7	7	7	8	8	8	8	8	8	1	9	10
2.8	.00	.02	.08	.18	.31	.48	.66	.85	1.03	1.22	1.45	1.70	1.94	2.19	2.44	2.69	2.94	3.18	3.43	3.69
	1	1	3	4	5	6	6	6	6	7	8	8	8	8	8	8	8	8	8	9
2.6	.00	.02	.08	.17	.29	.45	.63	.82	1.00	1.20	1.42	1.63	1.86	2.11	2.36	2.61	2.86	3.10	3.35	3.60
	1	1	3	4	4	6	6	6	6	7	7	7	8	8	8	8	8	8	8	8
2.5	.00	.02	.08	.17	.29	.43	.61	.80	.98	1.19	1.41	1.62	1.84	2.06	2.28	2.49	2.72	2.96	3.21	3.46
	1	1	2	4	4	6	6	6	6	7	7	7	7	7	7	1	8	8	8	8
2.4	.00	.02	.07	.15	.27	.39	.54	.72	.90	1.09	1.29	1.50	1.72	1.94	2.16	2.37	2.59	2.81	3.02	3.26
	1	1	2	4	4	4	5	6	6	6	7	7	7	7	7	7	1	7	7	8
2.3	.00	.01	.07	.15	.25	.37	.53	.71	.89	1.08	1.27	1.45	1.65	1.87	2.09	2.30	2.52	2.74	2.95	3.17
	1	1	2	3	3	5	5	6	6	6	6	6	7	7	7	7	7	7	1	9
2.1	.00	.01	.06	.13	.23	.34	.50	.69	.87	1.06	1.25	1.43	1.62	1.83	2.05	2.26	2.48	2.70	2.91	3.15
	1	1	2	3	3	5	6	6	6	6	6	6	6	7	7	1	7	7	7	8
2.0	.00	.01	.06	.13	.23	.33	.47	.65	.83	1.02	1.21	1.39	1.56	1.77	1.99	2.20	2.42	2.64	2.89	3.14
	1	1	2	3	3	4	5	6	6	6	6	6	5	7	7	7	1	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
GREEN RIVER AT AMBOY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5% DRAFT RATE
NEEDS ZERO STORAGE
2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 100
RECURRENCE INTERVAL IN YEARS



STATION 70

LOCATION
In NE ¼ SW ¼ sec 4, T17N, R3E, Henry County, at bridge on Ill. 82, 2.5 miles north of Geneseo

DRAINAGE AREA
958 square miles

ACTUAL FLOW DATA
PERIOD: Mar 1936 thru Sept 1959
CONTINUOUS RECORD: 23 years; water years 1937-59

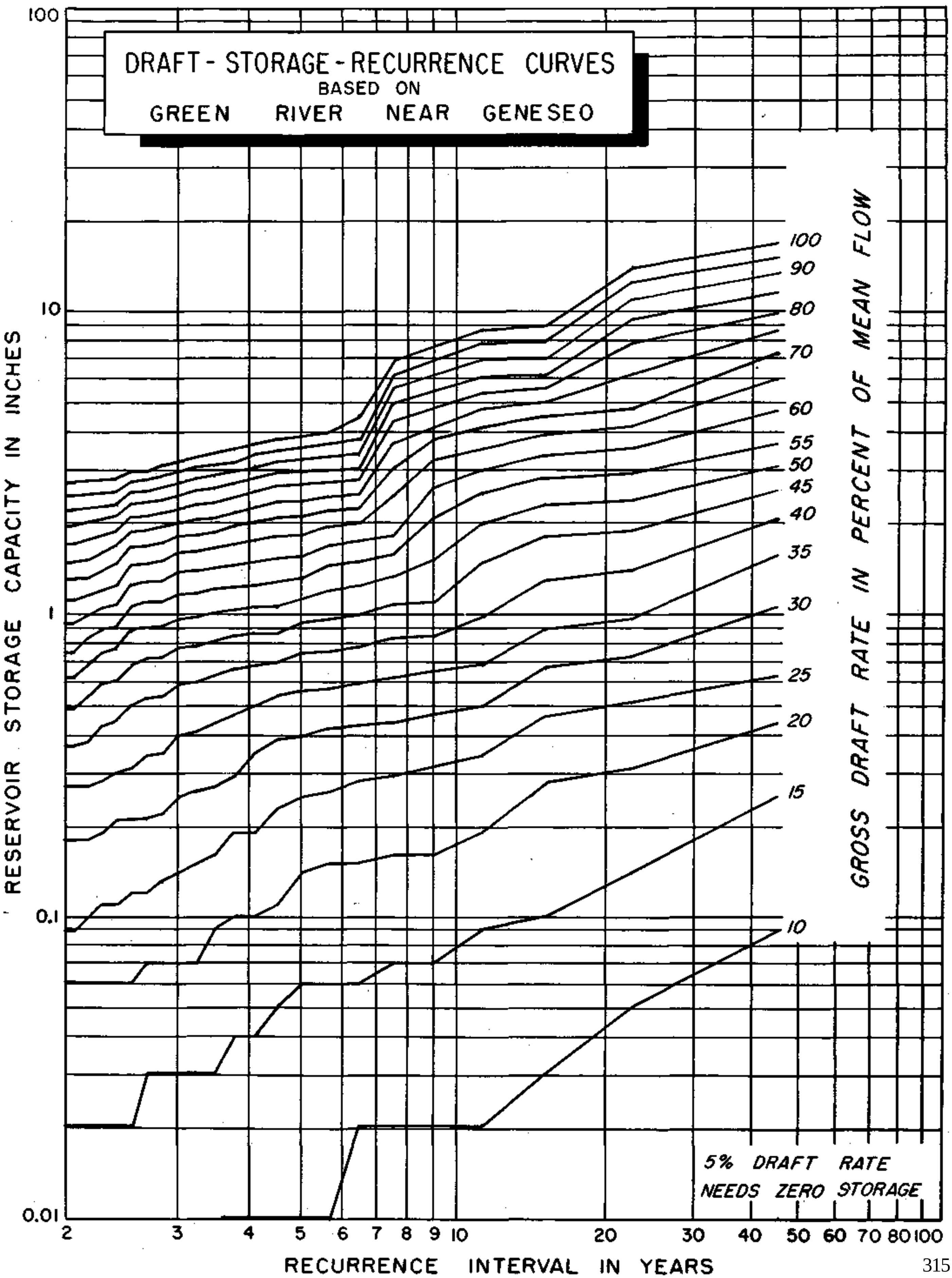
SYNTHETIC FLOW DATA
PERIOD: 22 years; water years 1915-36
INDEX STATION : Rock River at Como
COINCIDENT RECORD: 23 years; water years 1937-59

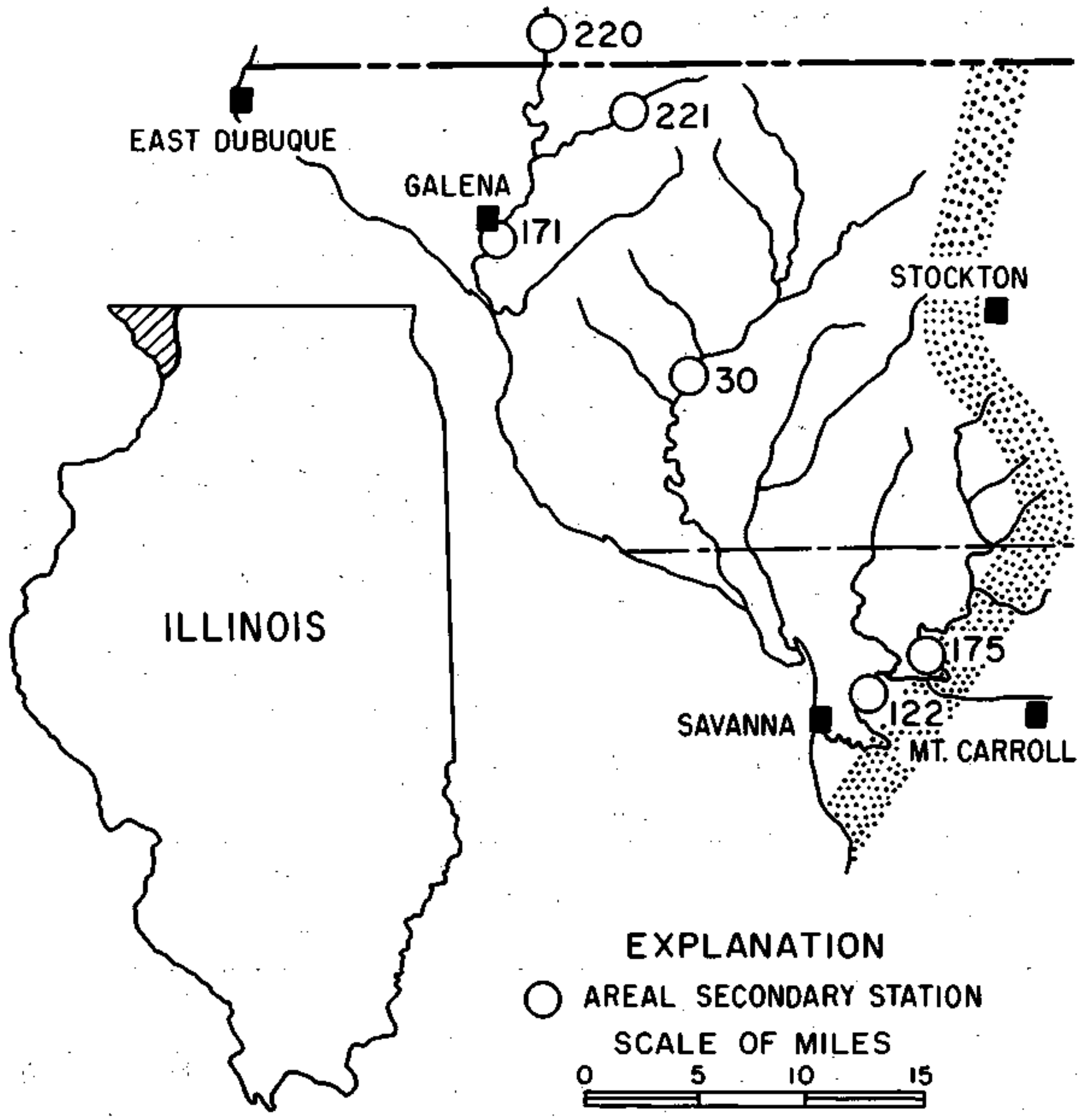
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.63 inch per month

Draft-Storage-Recurrence Data for Green River near Geneseo

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

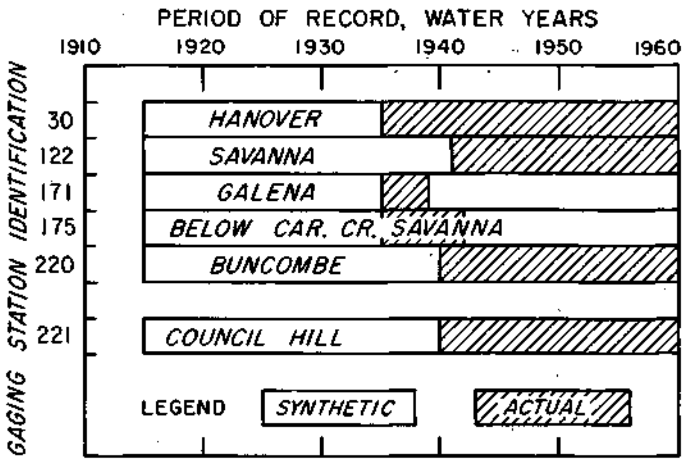
Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.01	.09	.25	.44	.63	1.07	1.58	2.08	2.59	3.12	3.69	4.74	6.06	7.38	8.71	10.03	11.72	13.48	15.25	17.07
	1	3	6	6	6	16	16	16	16	18	18	42	42	42	42	42	56	56	56	58
22.5	.00	.05	.14	.31	.51	.73	.97	1.41	1.91	2.41	2.93	3.56	4.19	4.82	6.37	7.94	9.52	11.09	12.67	14.24
	1	2	5	6	7	7	14	14	16	16	20	20	20	20	50	50	50	50	50	50
15.0	.00	.03	.10	.27	.46	.66	.89	1.30	1.81	2.31	2.81	3.37	3.94	4.51	5.08	5.64	6.21	7.08	7.96	9.01
	1	1	5	6	6	7	8	16	16	16	18	18	18	18	18	18	18	28	28	36
11.3	.00	.02	.09	.19	.34	.50	.68	.99	1.50	2.00	2.50	3.01	3.55	4.18	4.81	5.44	6.16	7.05	7.93	8.81
	1	1	3	3	5	5	9	16	16	16	16	16	20	20	20	20	28	28	28	28
9.0	.00	.02	.07	.16	.31	.47	.65	.85	1.10	1.52	2.09	2.65	3.22	3.79	4.37	5.25	6.13	7.02	7.90	8.78
	1	1	2	4	5	5	6	8	8	18	18	18	18	18	28	28	28	28	28	28
7.5	.00	.02	.07	.16	.29	.44	.62	.84	1.09	1.34	1.59	1.84	2.47	3.10	3.73	4.36	4.99	5.62	6.25	6.88
	1	1	2	4	4	5	6	8	8	8	8	20	20	20	20	20	20	20	20	20
6.4	.00	.02	.06	.15	.28	.43	.59	.78	1.00	1.25	1.50	1.75	2.01	2.26	2.51	2.79	3.07	3.36	3.80	4.57
	1	1	2	4	4	5	6	6	8	8	8	8	8	8	8	9	9	10	16	32
5.6	.00	.01	.06	.15	.26	.42	.57	.76	.97	1.21	1.46	1.71	1.97	2.22	2.48	2.77	3.05	3.36	3.68	4.02
	1	1	2	3	5	5	6	6	7	8	8	8	8	8	9	9	10	10	10	18
5.0	.00	.01	.06	.14	.25	.40	.56	.75	.94	1.13	1.32	1.57	1.84	2.12	2.40	2.69	2.97	3.25	3.57	3.90
	1	1	2	3	4	5	6	6	6	6	8	8	9	9	9	9	9	10	10	18
4.5	.00	.01	.05	.11	.23	.39	.54	.70	.87	1.06	1.29	1.54	1.83	2.11	2.39	2.68	2.96	3.24	3.53	3.81
	1	1	2	3	5	5	5	5	6	6	8	9	9	9	9	9	9	9	9	9
4.1	.00	.01	.04	.10	.19	.35	.50	.68	.87	1.06	1.25	1.50	1.76	2.01	2.29	2.58	2.86	3.14	3.43	3.71
	1	1	2	3	5	5	5	6	6	6	8	8	8	9	9	9	9	9	9	9
3.8	.00	.01	.04	.10	.19	.29	.47	.66	.85	1.04	1.24	1.46	1.71	1.96	2.21	2.46	2.71	2.97	3.22	3.52
	1	1	2	3	3	3	6	6	6	6	7	7	8	8	8	8	8	8	9	10
3.5	.00	.00	.03	.09	.16	.27	.44	.63	.82	1.01	1.22	1.44	1.66	1.88	2.11	2.36	2.61	2.87	3.12	3.42
	1	1	2	2	2	4	6	6	6	6	7	7	7	7	8	8	8	8	8	10
3.2	.00	.00	.03	.07	.15	.26	.41	.60	.79	.98	1.18	1.40	1.62	1.84	2.09	2.34	2.59	2.85	3.10	3.35
	1	1	1	2	3	5	6	6	6	6	7	7	7	8	8	8	8	8	8	8
3.0	.00	.00	.03	.07	.14	.25	.40	.59	.78	.97	1.17	1.39	1.61	1.83	2.05	2.27	2.50	2.76	3.01	3.26
	1	1	1	2	2	5	6	6	6	6	7	7	7	7	7	7	8	8	8	8
2.8	.00	.00	.03	.07	.13	.22	.35	.54	.73	.92	1.11	1.30	1.52	1.74	1.96	2.18	2.40	2.65	2.90	3.15
	1	1	1	1	2	3	6	6	6	6	6	7	7	7	7	7	7	8	8	8
2.6	.00	.00	.03	.07	.12	.21	.34	.53	.72	.91	1.10	1.29	1.48	1.70	1.92	2.14	2.36	2.58	2.80	3.02
	1	1	1	1	2	3	6	6	6	6	6	6	7	7	7	7	7	7	7	7
2.5	.00	.00	.02	.06	.12	.21	.31	.50	.69	.88	1.07	1.26	1.46	1.68	1.90	2.12	2.34	2.56	2.78	3.00
	1	1	1	1	2	3	6	6	6	6	6	6	7	7	7	7	7	7	7	7
2.4	.00	.00	.02	.06	.11	.21	.30	.45	.61	.77	.92	1.08	1.26	1.48	1.70	1.92	2.14	2.36	2.58	2.81
	1	1	1	1	3	3	3	5	5	5	5	5	7	7	7	7	7	7	7	8
2.3	.00	.00	.02	.06	.11	.19	.28	.43	.59	.75	.90	1.06	1.22	1.40	1.62	1.84	2.06	2.30	2.55	2.80
	1	1	1	1	2	3	3	5	5	5	5	5	5	7	7	7	7	8	8	8
2.1	.00	.00	.02	.06	.10	.18	.27	.38	.53	.69	.84	1.00	1.16	1.33	1.53	1.78	2.03	2.29	2.54	2.79
	1	1	1	1	2	3	3	4	5	5	5	5	5	6	8	8	8	8	8	8
2.0	.00	.00	.02	.06	.09	.18	.27	.37	.49	.62	.76	.94	1.13	1.32	1.51	1.73	1.98	2.24	2.49	2.74
	1	1	1	1	2	3	3	4	4	4	5	6	6	6	6	8	8	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
GREEN RIVER NEAR GENESEO
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
100
10
1
0.1
0.01
5% DRAFT RATE NEEDS ZERO STORAGE
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS

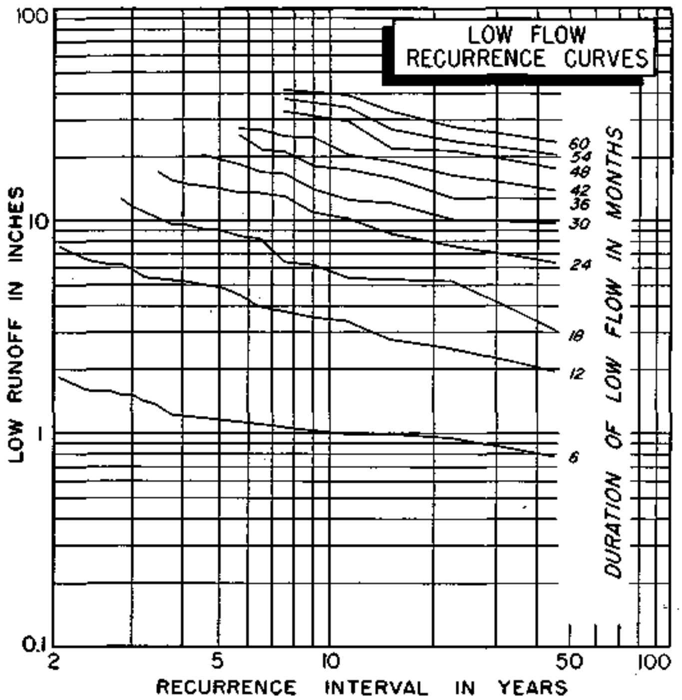


Wisconsin Driftless Region

Gaging Stations in Wisconsin Driftless Region



APPLE RIVER NEAR HANOVER



STATION 30

LOCATION
In NE ¼ NW ¼ sec 16, T26N, R2E, JoDaviess County, 0.3 mile southwest of Hanover

DRAINAGE AREA
244 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1934 thru Sept 1959
CONTINUOUS RECORD: 25 years; water years 1935-59

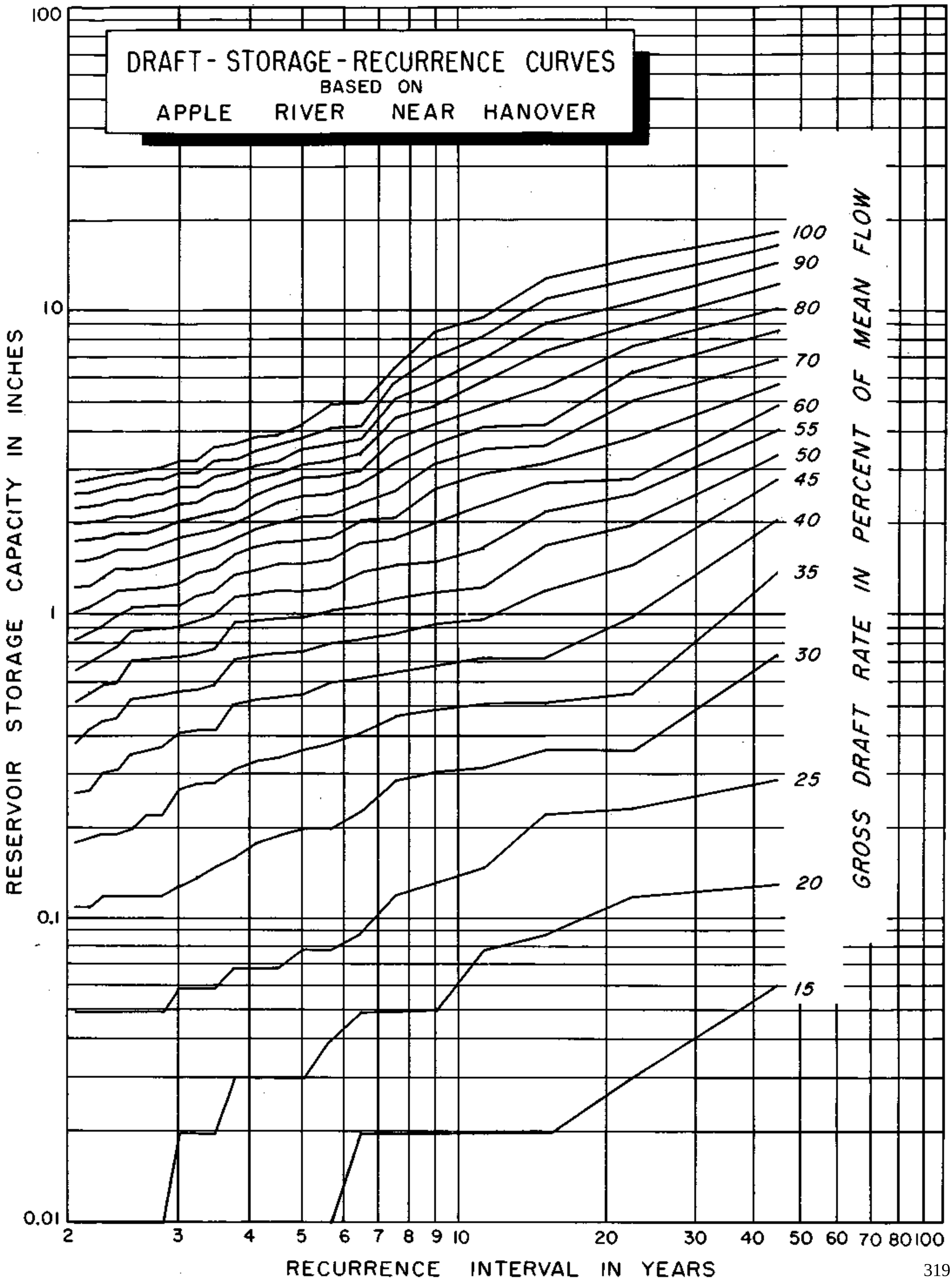
SYNTHETIC FLOW DATA
PERIOD: 20 years; water years 1915-34
INDEX STATION : Pecatonica River at Freeport
COINCIDENT RECORD: 25 years; water years 1935-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.72 inch per month

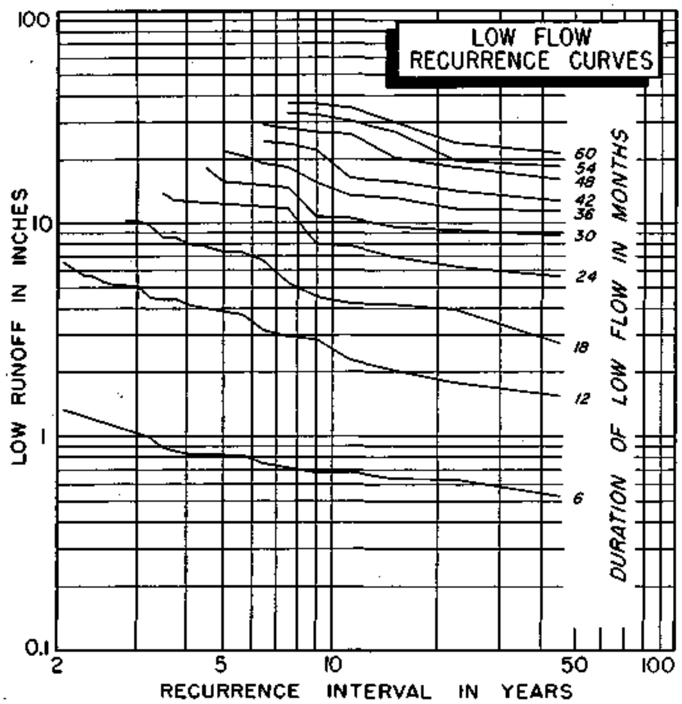
Draft-Storage-Recurrence Data for Apple River near Hanover

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.00	.06	.13	.29	.74	1.39	2.07	2.79	3.51	4.23	4.98	5.78	6.94	8.52	10.16	12.32	14.48	16.64	18.80
	1	1	2	3	9	18	18	20	20	20	20	22	22	44	44	60	60	60	60	60
22.5	.00	.00	.03	.12	.23	.36	.55	.98	1.49	1.99	2.49	3.00	3.91	5.09	6.39	7.69	9.10	10.71	12.87	15.03
	1	1	2	3	3	4	6	14	14	14	14	14	32	36	36	36	42	60	60	60
15.0	.00	.00	.02	.09	.22	.36	.51	.73	1.20	1.70	2.20	2.71	3.21	3.72	4.32	5.64	7.44	9.24	11.04	12.84
	1	1	2	3	4	4	6	6	14	14	14	14	14	14	18	50	50	50	50	52
11.3	.00	.00	.02	.08	.15	.32	.51	.73	.97	1.29	1.66	2.31	2.95	3.60	4.25	4.90	5.90	7.06	8.28	9.62
	1	1	1	2	2	5	6	6	9	9	18	18	18	18	18	18	32	32	34	40
9.0	.00	.00	.02	.05	.13	.31	.49	.71	.93	1.22	1.51	2.02	2.60	3.17	3.75	4.33	4.91	5.91	7.16	8.60
	1	1	1	1	5	5	6	6	8	8	8	16	16	16	16	16	28	28	40	40
7.5	.00	.00	.02	.05	.12	.29	.47	.65	.87	1.14	1.46	1.79	2.11	2.58	3.23	3.88	4.53	5.17	5.84	6.56
	1	1	1	1	4	5	5	6	7	9	9	9	9	18	18	18	18	18	20	20
6.4	.00	.00	.02	.05	.09	.23	.41	.62	.83	1.07	1.39	1.72	2.04	2.37	2.69	3.07	3.46	3.86	4.30	5.02
	1	1	1	1	4	5	5	6	6	9	9	9	9	9	9	11	11	11	1	20
5.6	.00	.00	.01	.04	.08	.20	.38	.60	.81	1.03	1.26	1.53	1.81	2.15	2.51	2.90	3.29	3.69	4.24	4.96
	1	1	1	1	3	4	6	6	6	6	7	8	8	10	10	11	11	11	20	20
5.0	.00	.00	.00	.03	.08	.20	.36	.55	.76	.98	1.23	1.48	1.77	2.13	2.49	2.85	3.21	3.57	3.93	4.29
	1	1	1	1	3	4	5	6	6	7	7	7	10	10	10	10	10	10	10	10
4.5	.00	.00	.00	.03	.07	.19	.34	.54	.75	.98	1.23	1.48	1.74	2.02	2.34	2.66	2.99	3.32	3.68	4.04
	1	1	1	1	3	4	4	6	6	7	7	7	7	9	9	9	9	10	10	10
4.1	.00	.00	.00	.03	.07	.18	.33	.53	.74	.96	1.18	1.43	1.69	1.94	2.19	2.50	2.83	3.18	3.54	3.90
	1	1	1	1	2	4	4	6	6	6	7	7	7	7	7	9	9	10	10	10
3.8	.00	.00	.00	.03	.07	.16	.31	.51	.72	.94	1.16	1.37	1.59	1.80	2.02	2.25	2.61	2.97	3.33	3.65
	1	1	1	1	2	4	4	6	6	6	6	6	6	6	6	10	10	10	1	10
3.5	.00	.00	.00	.02	.06	.15	.28	.42	.59	.78	1.00	1.21	1.43	1.67	1.92	2.19	2.55	2.91	3.27	3.63
	1	1	1	1	2	3	4	4	5	6	6	6	6	7	7	10	10	10	10	10
3.2	.00	.00	.00	.02	.06	.14	.28	.42	.57	.75	.96	1.17	1.39	1.61	1.86	2.11	2.36	2.66	2.99	3.31
	1	1	1	1	2	3	4	4	5	5	6	6	6	7	7	7	7	9	1	9
3.0	.00	.00	.00	.02	.06	.13	.27	.41	.56	.73	.91	1.09	1.30	1.55	1.80	2.05	2.34	2.66	2.99	3.31
	1	1	1	1	2	2	4	4	4	5	5	5	7	7	7	7	9	9	1	9
2.8	.00	.00	.00	.01	.05	.12	.22	.37	.55	.73	.91	1.09	1.28	1.49	1.71	1.94	2.23	2.51	2.82	3.14
	1	1	1	1	2	2	4	5	5	5	5	5	6	6	6	8	8	8	9	9
2.6	.00	.00	.00	.01	.05	.12	.22	.36	.54	.72	.90	1.08	1.26	1.44	1.65	1.87	2.17	2.49	2.82	3.14
	1	1	1	1	2	2	4	5	5	5	5	5	5	5	6	6	1	9	9	9
2.5	.00	.00	.00	.01	.05	.12	.20	.35	.53	.71	.89	1.07	1.25	1.43	1.65	1.87	2.12	2.40	2.73	3.05
	1	1	1	1	2	2	4	5	5	5	5	5	5	6	6	6	8	1	9	9
2.4	.00	.00	.00	.01	.05	.12	.19	.31	.46	.60	.79	1.00	1.22	1.43	1.65	1.87	2.12	2.40	2.69	2.98
	1	1	1	1	2	2	3	4	4	4	6	6	6	6	6	6	8	8	1	8
2.3	.00	.00	.00	.01	.05	.12	.19	.30	.45	.59	.74	.92	1.13	1.34	1.56	1.80	2.05	2.32	2.61	2.90
	1	1	1	1	2	2	2	4	4	4	5	5	6	6	6	7	7	8	8	8
2.1	.00	.00	.00	.01	.05	.11	.18	.27	.42	.56	.70	.88	1.06	1.27	1.52	1.77	2.02	2.28	2.54	2.84
	1	1	1	1	1	2	2	4	4	4	5	5	5	7	7	7	7	7	8	9
2.0	.00	.00	.00	.01	.05	.11	.18	.26	.38	.52	.66	.84	1.02	1.26	1.51	1.76	2.01	2.27	2.52	2.77
	1	1	1	1	1	2	2	3	4	4	5	5	5	7	7	7	7	1	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
APPLE RIVER NEAR HANOVER
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100

PLUM RIVER BELOW CARROLL CREEK, NEAR SAVANNA



STATION 122

LOCATION
In NE ¼ SW ¼ sec 31, T25N, R4E, Carroll County, 0.7 mile upstream from Camp Creek, 2.6 miles downstream from Carroll Creek and 3.5 miles northeast of Savanna

DRAINAGE AREA
231 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1940 thru Sept 1959
CONTINUOUS RECORD: 19 years; water years 1941-59

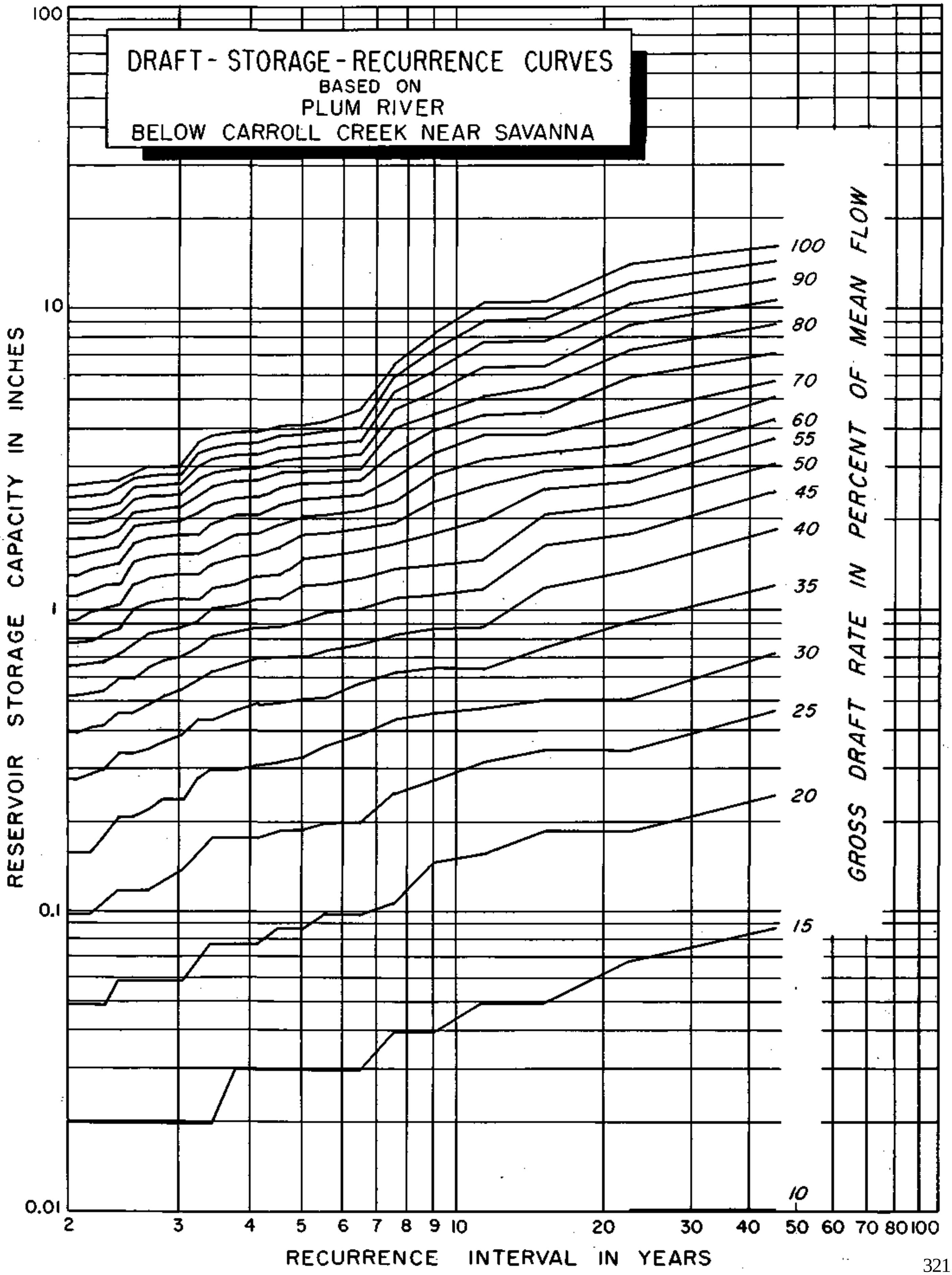
SYNTHETIC FLOW DATA
PERIOD : 26 years; water years 1915-40
INDEX STATION: Pecatonica River at Freeport
COINCIDENT RECORD: 19 years; water years 1941-59

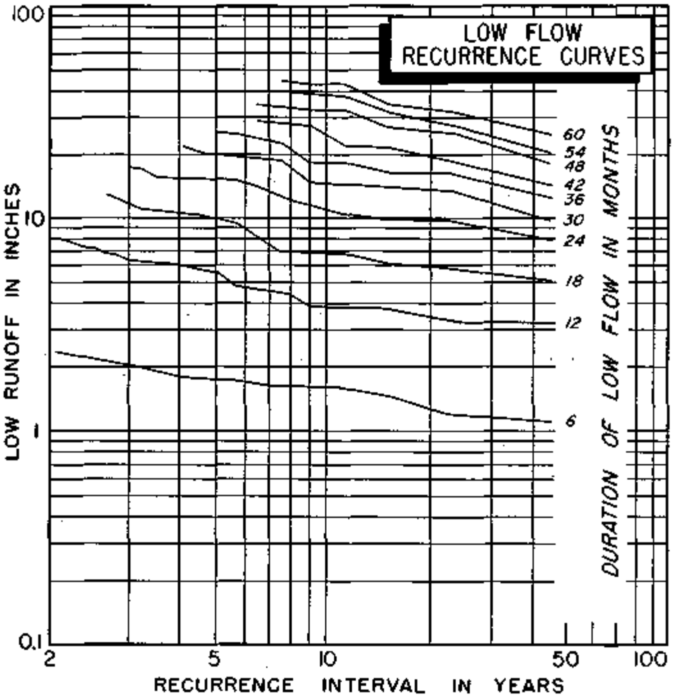
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.64 inch per month

Draft-Storage-Recurrence Data for Plum River below Carroll Creek, near Savanna

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.01	.09	.25	.47	.73	1.24	1.66	2.52	3.16	3.80	4.44	5.12	5.83	7.20	8.99	10.84	12.70	14.55	16.45
	1	2	3	7	8	8	20	20	20	20	20	20	22	22	56	58	58	58	58	60
22.5	.00	.01	.07	.19	.35	.51	.94	1.36	1.83	2.28	2.73	3.18	3.69	4.60	6.01	7.42	8.90	10.62	12.37	14.23
	1	1	3	[illegible]	5	6	14	14	14	14	14	14	16	44	44	44	54	54	58	58
15.0	.00	.00	.05	.19	.35	.51	.77	1.21	1.66	2.11	2.56	3.01	3.45	3.91	4.61	5.57	6.56	7.94	9.35	10.76
	1	1	2	5	5	6	14	14	14	14	14	14	14	20	30	30	42	44	44	44
11.3	.00	.00	.05	.16	.32	.48	.65	.90	1.19	1.49	2.02	2.61	3.25	3.89	4.53	5.25	6.48	7.68	9.29	10.70
	1	1	2	5	5	5	6	9	9	11	18	20	20	20	20	28	44	44	44	44
9.0	.00	.00	.04	.15	.28	.46	.65	.89	1.14	1.43	1.83	2.34	2.89	3.46	4.04	4.62	5.36	6.36	7.39	8.41
	1	1	2	4	4	6	6	8	9	9	16	16	18	18	18	18	30	32	32	32
7.5	.00	.00	.04	.11	.25	.44	.63	.84	1.11	1.40	1.69	1.98	2.33	2.81	3.45	4.09	4.73	5.37	6.01	6.65
	1	1	1	3	6	6	6	8	9	9	9	9	14	20	20	20	20	20	20	20
6.4	.00	.00	.03	.10	.20	.39	.58	.78	1.02	1.31	1.60	1.89	2.17	2.46	2.76	3.08	3.40	3.75	4.12	4.70
	1	1	2	3	6	6	6	6	9	9	9	9	9	9	10	10	10	11	18	18
5.6	.00	.00	.03	.10	.20	.36	.52	.74	.99	1.25	1.53	1.82	2.10	2.39	2.69	3.01	3.33	3.67	4.02	4.37
	1	1	2	3	5	5	5	8	8	8	9	9	9	9	10	10	10	11	1	32
5.0	.00	.00	.03	.09	.19	.33	.51	.71	.94	1.23	1.52	1.81	2.09	2.38	2.67	2.96	3.27	3.59	3.91	4.23
	1	1	1	3	4	5	6	6	9	9	9	9	9	9	9	9	10	10	10	10
4.5	.00	.00	.03	.09	.19	.32	.50	.70	.89	1.10	1.34	1.63	1.95	2.27	2.59	2.91	3.23	3.55	3.87	4.19
	1	1	1	3	4	4	6	6	6	7	8	10	10	10	10	10	10	10	10	10
4.1	.00	.00	.03	.08	.18	.31	.50	.70	.89	1.10	1.32	1.55	1.82	2.11	2.41	2.73	3.05	3.37	3.69	4.01
	1	1	1	3	4	6	6	6	6	7	7	8	9	9	10	10	10	10	10	10
3.8	.00	.00	.03	.08	.18	.30	.47	.67	.85	1.05	1.25	1.52	1.80	2.09	2.39	2.71	3.03	3.35	3.67	3.99
	1	1	1	3	3	4	6	6	6	6	7	9	9	9	10	10	10	10	10	10
3.5	.00	.00	.02	.08	.18	.30	.44	.64	.83	1.02	1.21	1.43	1.65	1.95	2.28	2.60	2.92	3.24	3.56	3.88
	1	1	1	3	3	4	6	6	6	6	6	[illegible]	9	10	10	10	10	10	1	10
3.2	.00	.00	.02	.07	.16	.28	.44	.60	.76	.92	1.11	1.34	1.56	1.80	2.12	2.44	2.76	3.08	3.40	3.72
	1	1	1	2	3	5	5	5	5	5	[illegible]	7	7	10	10	10	10	10	1	10
3.0	.00	.00	.02	.05	.14	.24	.39	.55	.71	.89	1.11	1.34	1.56	1.79	2.01	2.23	2.46	2.68	2.91	3.13
	1	1	1	2	3	4	5	5	5	7	7	7	7	7	7	7	7	[illegible]	1	7
2.8	.00	.00	.02	.06	.13	.24	.37	.53	.69	.87	1.09	1.32	1.54	1.77	1.99	2.21	2.44	2.66	2.89	3.11
	1	1	1	2	3	4	5	5	5	7	7	7	7	7	7	[illegible]	[illegible]	7	1	7
2.6	.00	.00	.02	.06	.12	.22	.35	.49	.65	.85	1.07	1.30	1.52	1.75	1.97	2.19	2.42	2.64	2.87	3.09
	1	1	1	2	2	4	4	5	5	7	7	7	7	7	7	7	1	7	7	7
2.5	.00	.00	.02	.06	.12	.21	.34	.46	.59	.79	1.01	1.24	1.46	1.69	1.91	2.13	2.36	2.58	2.81	3.03
	1	1	1	2	2	4	4	4	4	7	7	7	7	7	7	7	7	[illegible]	7	7
2.4	.00	.00	.02	.06	.12	.21	.34	.46	.59	.72	.88	1.05	1.25	1.44	1.65	1.87	2.10	2.32	2.55	2.77
	1	1	1	2	2	4	4	4	4	5	5	6	6	6	7	7	1	7	7	7
2.3	.00	.00	.02	.05	.11	.18	.30	.42	.55	.68	.84	1.02	1.22	1.41	1.60	1.79	2.02	2.24	2.47	2.73
	1	1	1	2	2	3	4	4	4	5	5	6	6	6	6	7	7	1	8	8
2.1	.00	.00	.02	.05	.10	.16	.29	.41	.54	.67	.80	.99	1.19	1.38	1.57	1.76	1.98	2.20	2.43	2.68
	1	1	1	1	2	4	4	4	4	4	6	6	6	6	5	6	7	1	7	8
2.0	.00	.00	.02	.05	.10	.16	.28	.40	.53	.66	.79	.94	1.14	1.33	1.53	1.75	1.98	2.20	2.43	2.65
	1	1	1	1	2	3	4	4	4	4	4	6	6	6	7	7	7	1	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
PLUM RIVER
BELOW CARROLL CREEK NEAR SAVANNA
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10



STATION 171

LOCATION
In NE ¼ NE ¼ sec 24, T28N, R1W, JoDaviess County, at Green Street Bridge in Galena

DRAINAGE AREA
200 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1934 thru Sept 1938
CONTINUOUS RECORD: 4 years; water years 1935-38

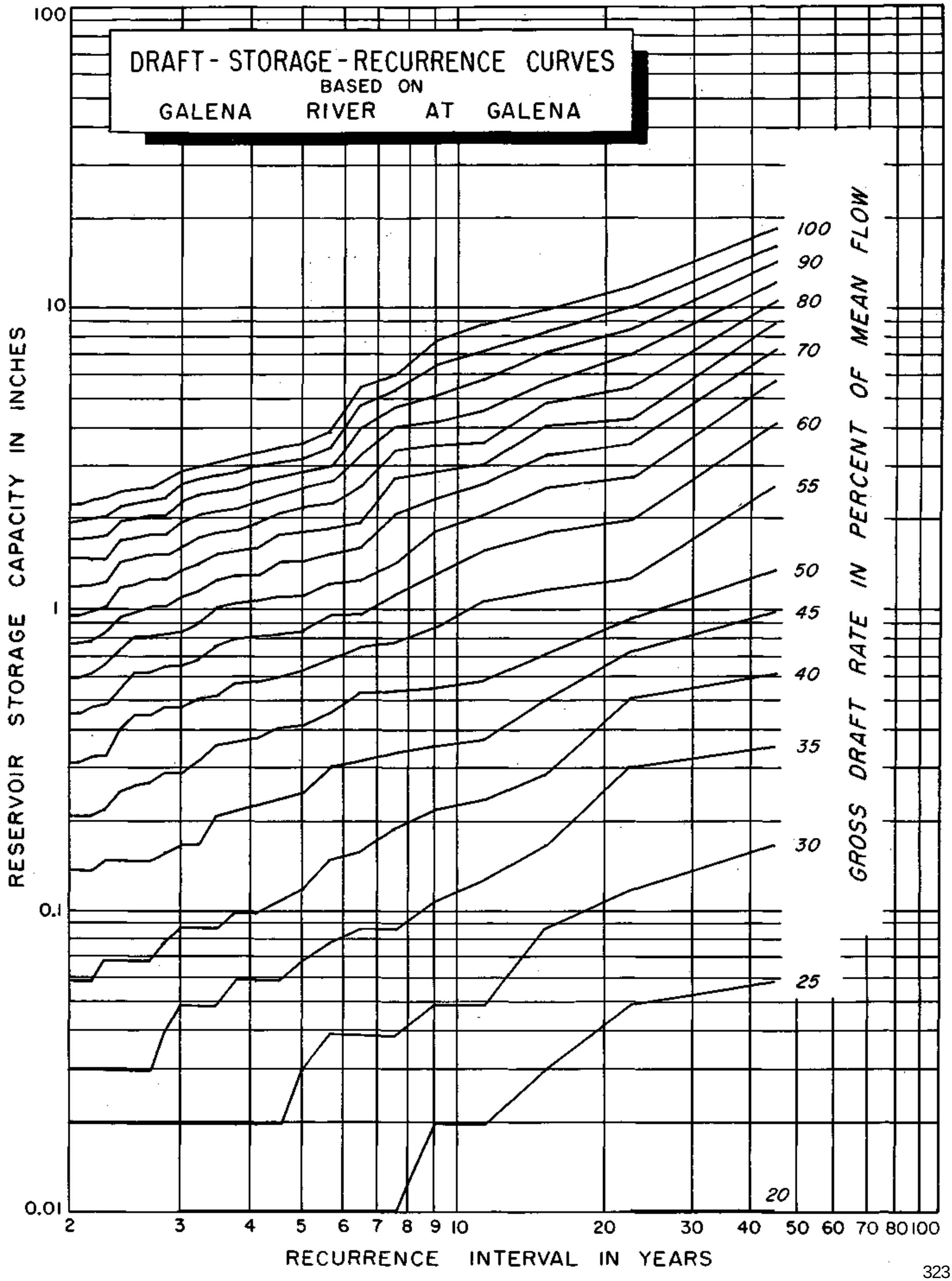
SYNTHETIC FLOW DATA
PERIOD: 41 years; water years 1915, 1939-59
INDEX STATION : Pecatonica River at Freeport
COINCIDENT RECORD: 4 years; water years 1935-38

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.74 inch per month

Draft-Storage-Recurrence Data for Galena River at Galena

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, *years*	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00 1	.00 1	.00 1	.01 1	.06 2	.17 5	.36 7	.63 10	1.00 10	1.42 18	2.60 44	4.23 44	5.85 44	7.48 44	9.11 44	10.76 46	12.46 46	14.46 60	16.68 60	18.90 60
22.5	.00 1	.00 1	.00 1	.01 1	.05 1	.12 5	.31 5	.52 6	.74 6	.96 6	1.36 18	2.04 18	2.81 22	3.63 22	4.44 22	5.60 42	7.16 42	8.71 42	10.27 42	12.02 58
15.0	.00 1	.00 1	.00 1	.00 1	.03 1	.09 2	.17 3	.29 6	.51 6	.73 6	1.18 14	1.84 20	2.58 20	3.32 22	4.13 22	4.94 22	5.76 38	7.17 38	8.57 38	10.03 40
11.3	.00 1	.00 1	.00 1	.00 1	.02 1	.05 2	.13 3	.24 3	.38 4	.59 9	1.08 14	1.60 14	2.11 14	2.63 14	3.15 14	3.74 20	4.67 34	5.92 34	7.33 44	8.96 44
9.0	.00 1	.00 1	.00 1	.00 1	.02 1	.05 1	.11 3	.22 3	.36 4	.56 9	.89 10	1.34 14	1.85 14	2.37 14	2.91 18	3.59 20	4.33 20	5.25 36	6.58 36	7.91 36
7.5	.00 1	.00 1	.00 1	.00 1	.01 1	.04 1	.09 2	.19 4	.34 4	.55 6	.79 9	1.13 9	1.46 18	2.12 18	2.79 18	3.46 18	4.12 18	4.79 18	5.45 18	6.12 18
6.4	.00 1	.00 1	.00 1	.00 1	.01 1	.04 1	.09 2	.16 4	.32 6	.54 6	.76 6	.98 8	1.30 9	1.63 9	1.97 9	2.61 20	3.35 20	4.09 20	4.83 20	5.57 20
5.6	.00 1	.00 1	.00 1	.00 1	.01 1	.04 1	.08 1	.15 4	.30 4	.46 5	.69 7	.97 8	1.27 8	1.56 8	1.89 11	2.29 11	2.70 11	3.11 11	3.54 12	3.98 12
5.0	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.07 1	.12 3	.25 4	.42 6	.64 6	.86 7	1.14 9	1.47 10	1.84 10	2.21 10	2.58 10	2.95 10	3.32 10	3.69 10
4.5	.00 1	.00 1	.00 1	.00 1	.00 1	.02 1	.06 1	.11 3	.24 4	.41 5	.61 6	.84 7	1.13 9	1.46 9	1.80 9	2.13 9	2.46 9	2.81 10	3.18 10	3.55 10
4.1	.00 1	.00 1	.00 1	.00 1	.00 1	.02 1	.06 1	.10 3	.23 4	.38 4	.59 6	.83 7	1.09 7	1.35 7	1.62 9	1.97 10	2.34 10	2.71 10	3.08 1	3.45 10
3.8	.00 1	.00 1	.00 1	.00 1	.00 1	.02 1	.06 1	.10 3	.22 4	.37 4	.58 6	.81 7	1.07 7	1.33 7	1.59 7	1.86 9	2.20 10	2.57 10	2.94 1	3.31 10
3.5	.00 1	.00 1	.00 1	.00 1	.00 1	.01 1	.05 1	.09 3	.21 4	.36 4	.52 5	.77 7	1.03 7	1.29 7	1.55 7	1.84 9	2.17 9	2.50 9	2.84 1	3.17 9
3.2	.00 1	.00 1	.00 1	.00 1	.00 1	.01 1	.05 1	.09 1	.17 3	.32 5	.51 5	.69 5	.91 7	1.17 7	1.44 9	1.77 9	2.10 9	2.43 9	2.77 9	3.10 9
3.0	.00 1	.00 1	.00 1	.00 1	.00 1	.01 1	.05 1	.09 1	.17 3	.29 5	.48 5	.66 5	.86 7	1.12 7	1.38 7	1.66 9	1.99 9	2.32 9	2.66 9	2.99 9
2.8	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.04 1	.08 2	.16 2	.29 5	.48 5	.66 5	.85 5	1.04 7	1.30 7	1.55 7	1.81 7	2.07 9	2.41 1	2.74 9
2.6	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.07 2	.15 2	.27 4	.45 5	.63 5	.82 5	1.04 7	1.30 7	1.55 7	1.81 7	2.07 7	2.33 7	2.59 9
2.5	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.07 2	.15 2	.26 5	.45 5	.63 5	.82 5	1.00 7	1.26 7	1.51 7	1.77 7	2.03 7	2.29 7	2.55 7
2.4	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.07 2	.15 2	.25 4	.40 4	.55 5	.74 5	.95 7	1.21 7	1.46 7	1.72 7	1.98 7	2.24 1	2.50 7
2.3	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.03 1	.07 2	.15 2	.22 3	.34 4	.49 4	.67 5	.85 5	1.04 6	1.26 6	1.50 7	1.79 8	2.08 1	2.38 8
2.1	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.02 1	.06 2	.14 2	.21 3	.33 4	.48 4	.62 4	.79 6	1.01 6	1.23 6	1.48 7	1.75 8	2.04 1	2.34 8
2.0	.00 1	.00 1	.00 1	.00 1	.00 1	.00 1	.02 1	.06 2	.14 2	.21 3	.32 3	.46 4	.60 5	.78 5	.97 7	1.22 7	1.48 7	1.74 7	2.00 1	2.28 6


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
GALENA RIVER AT GALENA
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
100
10
1
0.1
0.01
2
3
4
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20
30
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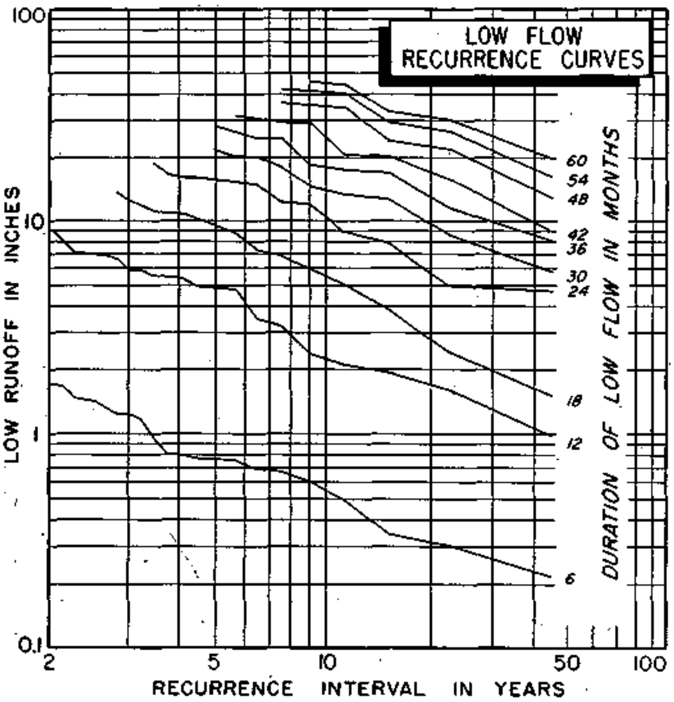
50
60
70
80
100



STATION 175

LOCATION
In SW ¼ NW ¼ sec 33, T25N, R4E, Carroll County, 0.9 mile upstream from Carroll Creek and 5.0 miles northeast of Savanna

DRAINAGE AREA
164 square miles

ACTUAL FLOW DATA
PERIOD : Oct 1934 thru Sept 1941; gaging discontinued Oct 1, 1941
CONTINUOUS RECORD: 7 years; water years 1935-41

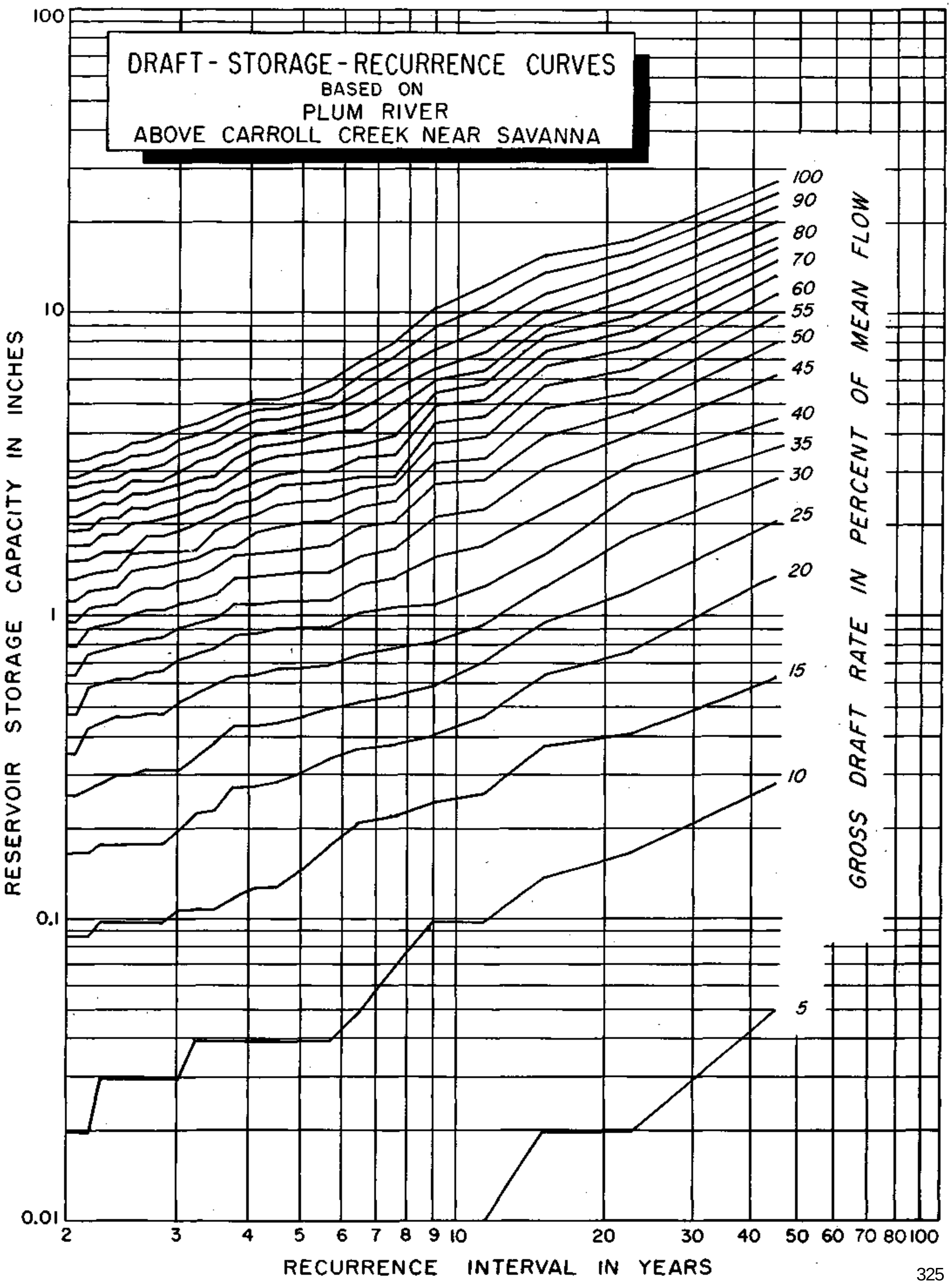
SYNTHETIC FLOW DATA
PERIOD: 38 years; water years 1942-59, 1915-34
INDEX STATION: Pecatonica River at Freeport
COINCIDENT RECORD: 7 years; water years 1935-41

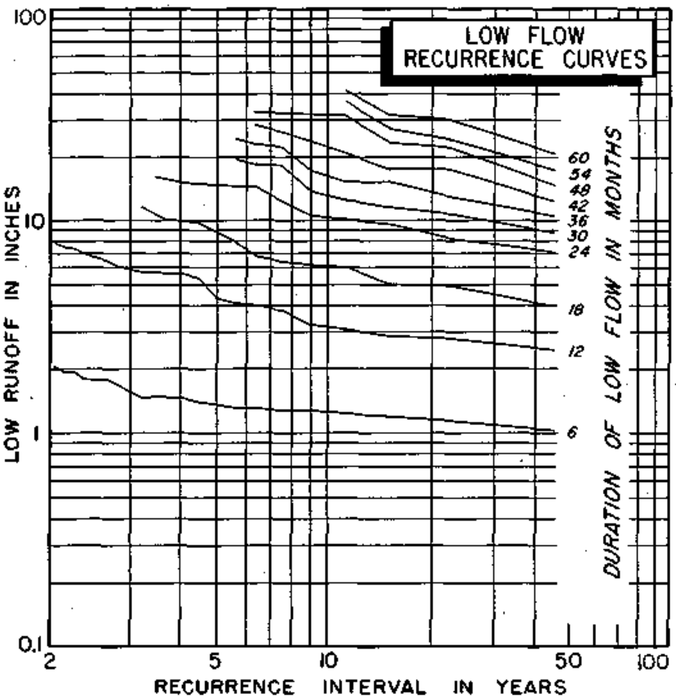
TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.81 inch per month

Draft-Storage-Recurrence Data for Plum River above Carroll Creek, near Savanna

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.05	.29	.65	1.37	2.10	2.90	3.71	4.57	6.35	8.13	9.91	11.59	13.48	15.26	17.04	18.87	20.79	23.22	25.65	28.08
	2	7	16	18	18	20	20	44	44	44	44	44	44	44	44	46	60	60	60	60
22.5	.02	.17	.42	.78	1.23	1.87	2.60	3.33	4.06	4.79	5.56	6.38	7.61	8.95	10.08	11.45	12.91	14.43	16.15	17.94
	2	6	7	11	11	18	18	18	18	18	24	28	28	28	28	35	35	38	44	44
15.0	.02	.14	.38	.65	.97	1.29	1.62	2.25	3.15	4.04	4.93	5.82	6.71	7.60	8.50	9.39	10.28	11.79	13.82	15.84
	1	6	6	8	8	8	8	22	22	22	22	22	22	22	22	22	22	50	50	50
11.3	.01	.10	.27	.47	.72	.96	1.31	1.74	2.30	2.87	3.44	4.01	4.65	5.30	5.95	6.60	7.55	9.01	10.74	12.52
	1	4	4	6	6	6	9	14	14	14	14	15	15	15	16	16	26	40	44	44
9.0	.01	.10	.25	.41	.60	.84	1.10	1.61	2.17	2.74	3.31	3.87	4.44	5.01	5.58	6.14	6.71	7.73	9.19	10.65
	1	3	4	4	6	6	7	14	14	14	14	14	14	14	14	14	14	36	35	36
7.5	.01	.07	.22	.38	.55	.80	1.08	1.37	1.71	2.08	2.44	2.80	3.17	3.53	4.11	4.92	5.73	6.54	7.35	8.16
	1	2	4	4	5	7	7	7	9	9	9	9	9	9	20	20	20	20	20	20
6.4	.01	.05	.21	.37	.53	.76	1.02	1.31	1.61	1.98	2.34	2.70	3.07	3.43	3.80	4.22	4.89	5.62	6.35	7.08
	1	2	4	4	4	6	7	7	9	9	9	9	9	9	10	11	18	18	18	18
5.6	.00	.04	.18	.34	.50	.70	.93	1.17	1.45	1.77	2.09	2.45	2.82	3.22	3.64	4.09	4.53	4.98	5.42	6.12
	1	3	4	4	4	5	6	6	8	8	9	9	10	10	11	11	11	11	1	20
5.0	.00	.04	.15	.31	.47	.66	.92	1.16	1.42	1.71	2.06	2.42	2.79	3.15	3.52	3.92	4.33	4.73	5.14	5.54
	1	1	4	4	5	6	6	6	7	7	9	9	9	9	10	10	10	10	10	10
4.5	.00	.04	.13	.29	.45	.68	.92	1.16	1.41	1.67	2.01	2.37	2.74	3.10	3.47	3.83	4.20	4.55	4.95	5.35
	1	1	4	4	4	6	6	6	6	7	9	9	9	9	9	9	9	9	1	10
4.1	.00	.04	.13	.28	.44	.65	.89	1.13	1.38	1.64	1.52	2.20	2.49	2.87	3.28	3.68	4.09	4.49	4.90	5.30
	1	1	3	4	4	6	6	6	5	7	7	7	7	10	10	10	10	10	1	10
3.8	.00	.04	.12	.28	.44	.64	.88	1.12	1.37	1.61	1.85	2.10	2.36	2.66	2.99	3.39	3.80	4.20	4.61	5.01
	1	1	4	4	4	6	6	6	6	6	6	6	7	7	10	10	10	10	10	10
3.5	.00	.04	.11	.23	.39	.60	.80	1.00	1.22	1.46	1.70	1.95	2.19	2.43	2.68	3.05	3.46	3.86	4.27	4.67
	1	1	2	4	5	5	5	5	6	6	6	6	5	6	6	10	10	10	10	10
3.2	.00	.04	.11	.22	.35	.55	.76	.96	1.15	1.37	1.57	1.77	2.05	2.33	2.61	2.94	3.31	3.67	4.04	4.42
	1	1	2	3	5	5	5	5	5	5	5	5	7	7	7	9	9	9	9	10
3.0	.00	.03	.11	.20	.32	.53	.73	.93	1.13	1.34	1.54	1.74	1.94	2.22	2.50	2.79	3.10	3.50	3.91	4.31
	1	2	2	3	5	5	5	5	5	5	5	5	7	7	7	7	10	10	10	10
2.8	.00	.03	.10	.18	.32	.48	.67	.87	1.07	1.28	1.48	1.68	1.88	2.13	2.41	2.70	2.98	3.26	3.67	4.07
	1	1	2	3	4	4	5	5	5	5	5	5	5	7	7	7	7	10	10	10
2.6	.00	.03	.10	.18	.32	.48	.66	.86	1.06	1.27	1.47	1.67	1.87	2.08	2.30	2.59	2.87	3.15	3.49	3.89
	1	1	2	3	4	4	5	5	5	5	5	5	5	5	7	7	7	7	1	10
2.5	.00	.03	.10	.18	.31	.47	.63	.82	1.02	1.23	1.43	1.63	1.83	2.04	2.30	2.59	2.87	3.15	3.46	3.82
	1	1	2	2	4	4	4	5	5	5	5	5	5	5	7	7	1	7	9	9
2.4	.00	.03	.10	.18	.31	.47	.63	.80	.96	1.12	1.28	1.44	1.66	1.90	2.15	2.39	2.63	2.93	3.26	3.58
	1	1	2	2	4	4	4	4	4	4	4	4	5	6	6	6	6	8	1	9
2.3	.00	.03	.10	.18	.29	.45	.61	.78	.94	1.10	1.25	1.42	1.65	1.89	2.14	2.38	2.62	2.89	3.22	3.54
	1	1	2	2	4	4	4	4	4	4	4	4	5	6	6	6	6	8	1	8
2.1	.00	.02	.09	.17	.27	.43	.59	.76	.92	1.08	1.24	1.40	1.57	1.77	1.98	2.27	2.55	2.83	3.12	3.40
	1	1	2	2	4	4	4	4	4	4	4	4	4	5	7	7	7	1	7	8
2.0	.00	.02	.09	.17	.26	.36	.48	.55	.61	.97	1.15	1.35	1.55	1.76	1.96	2.18	2.46	2.74	3.03	3.32
	1	1	2	2	2	3	4	4	4	4	5	5	5	5	5	7	7	7	1	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
PLUM RIVER
ABOVE CARROLL CREEK NEAR SAVANNA
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
55
45
35
25
15
5



STATION 220

LOCATION
Near center of sec 33, T1N, R1E, LaFayette County, Wisconsin, 2.0 miles upstream from the Wisconsin-Illinois state line, at Buncombe

DRAINAGE AREA
128 square miles

ACTUAL FLOW DATA
PERIOD: Sept 1939 thru Sept 1959
CONTINUOUS RECORD: 20 years; water years 1940-59

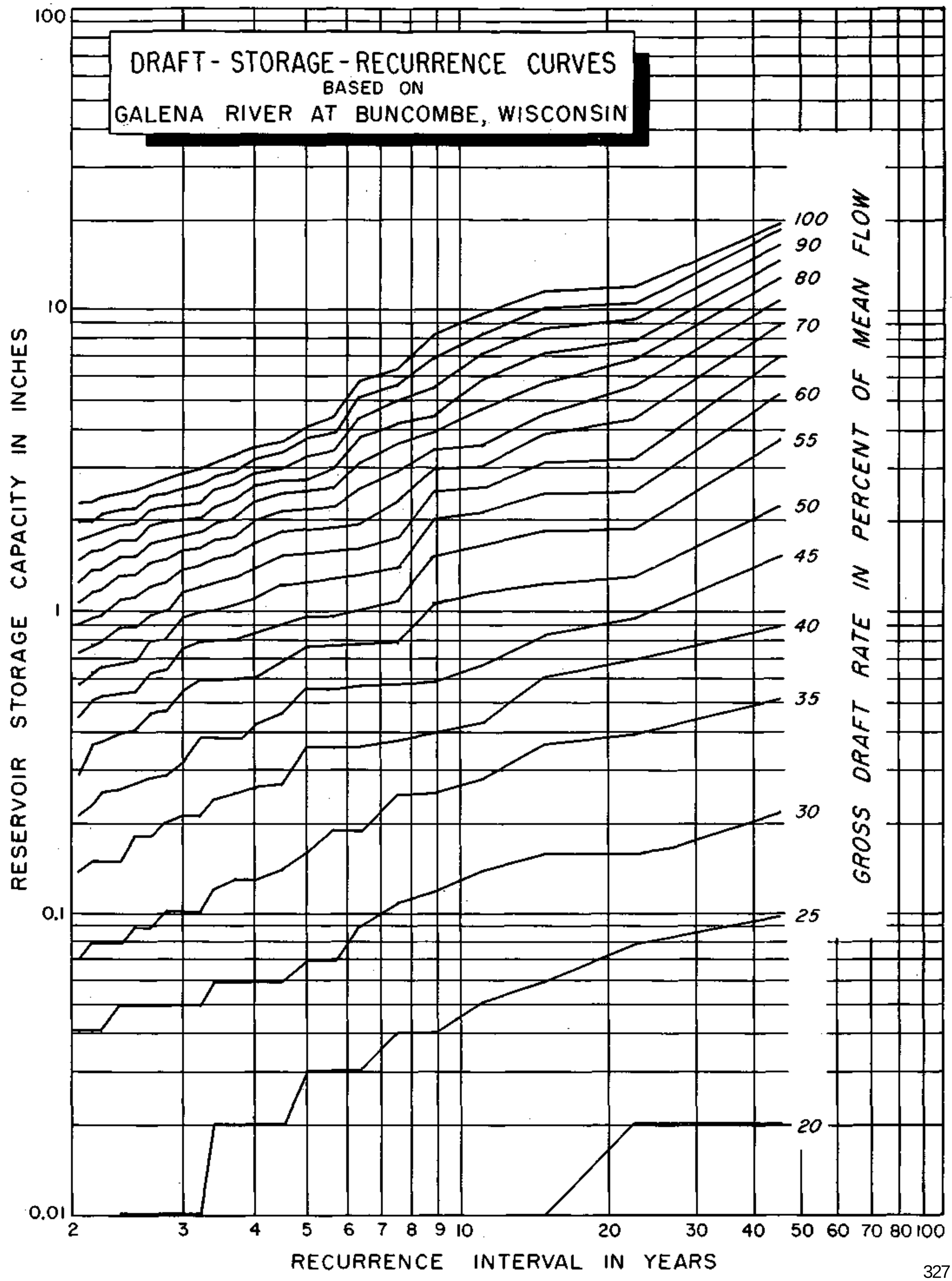
SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1915-39
INDEX STATION : Pecatonica River at Freeport
COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.69 inch per month

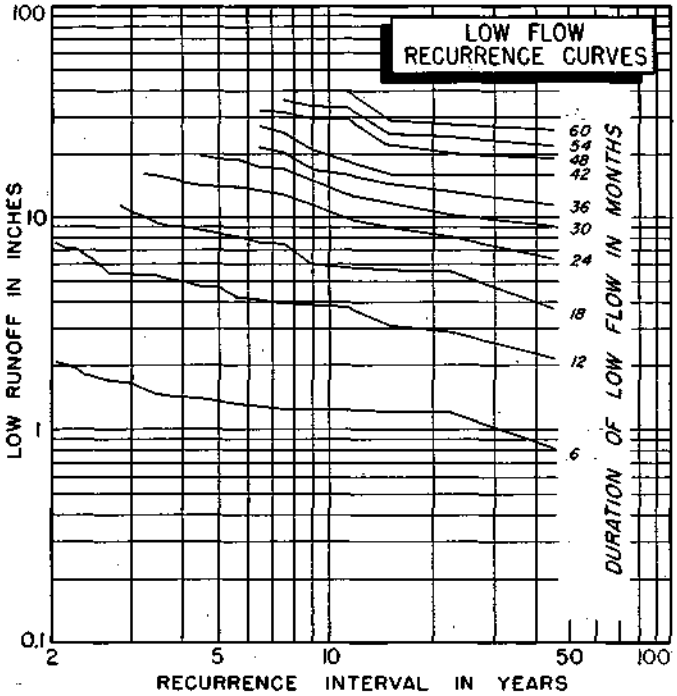
Draft-Storage-Recurrence Data for Galena River at Buncombe, Wisconsin

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.00	.00	.02	.10	.22	.52	.91	1.53	2.25	3.77	5.29	7.01	8.94	10.87	12.80	14.73	16.67	18.60	20.53
	1	1	1	2	3	6	10	18	18	44	44	44	56	56	56	56	56	56	56	56
22.5	.00	.00	.00	.02	.08	.16	.42	.70	.97	1.34	1.90	2.56	3.25	4.43	5.67	6.91	8.15	9.40	10.65	11.96
	1	1	1	1	2	3	8	8	8	11	18	20	20	36	36	36	36	36	38	38
15.0	.00	.00	.00	.01	.06	.16	.37	.61	.86	1.24	1.86	2.48	3.17	3.86	4.62	5.76	7.21	8.66	10.11	11.56
	1	1	1	1	3	3	7	7	11	18	18	20	20	22	22	42	42	42	42	42
11.3	.00	.00	.00	.00	.05	.14	.28	.44	.68	1.16	1.64	2.13	2.61	3.09	3.60	4.72	5.96	7.21	8.45	9.69
	1	1	1	1	2	4	4	5	14	14	14	14	14	14	16	36	36	36	36	36
9.0	.00	.00	.00	.00	.04	.12	.25	.42	.59	1.06	1.54	2.03	2.51	2.99	3.48	3.96	4.51	5.53	6.91	8.29
	1	1	1	1	2	3	5	5	5	14	14	14	14	14	14	14	28	40	1	40
7.5	.00	.00	.00	.00	.04	.11	.25	.38	.58	.79	1.09	1.40	1.78	2.33	2.93	3.62	4.31	5.00	5.69	6.39
	1	1	1	1	2	4	4	6	6	6	9	9	16	16	20	20	20	20	20	22
6.4	.00	.00	.00	.00	.03	.09	.19	.37	.57	.78	1.01	1.32	1.63	1.95	2.54	3.16	3.78	4.44	5.13	5.82
	1	1	1	1	2	2	5	6	6	6	9	9	9	11	18	18	18	20	20	20
5.6	.00	.00	.00	.00	.03	.07	.19	.36	.56	.77	.98	1.28	1.59	1.90	2.23	2.57	3.01	3.49	3.98	4.46
	1	1	1	1	1	3	5	6	6	6	6	9	9	9	10	10	14	14	14	14
5.0	.00	.00	.00	.00	.03	.07	.16	.36	.56	.77	.98	1.25	1.56	1.87	2.18	2.49	2.82	3.30	3.79	4.27
	1	1	1	1	1	1	3	6	6	6	6	9	9	9	9	9	14	14	14	14
4.5	.00	.00	.00	.00	.02	.06	.14	.27	.47	.68	.91	1.22	1.53	1.84	2.15	2.46	2.77	3.08	3.39	3.70
	1	1	1	1	1	1	3	6	6	6	9	9	9	9	9	9	9	9	1	9
4.1	.00	.00	.00	.00	.02	.06	.13	.26	.43	.61	.85	1.12	1.40	1.70	2.01	2.32	2.63	2.94	3.25	3.56
	1	1	1	1	1	1	4	5	5	5	8	8	8	9	9	9	9	9	9	9
3.8	.00	.00	.00	.00	.02	.06	.13	.25	.39	.60	.82	1.06	1.30	1.54	1.78	2.04	2.35	2.66	2.97	3.31
	1	1	1	1	1	1	3	4	5	6	7	7	7	7	7	9	9	9	10	10
3.5	.00	.00	.00	.00	.02	.06	.12	.24	.39	.60	.81	1.01	1.25	1.49	1.73	1.97	2.23	2.54	2.85	3.16
	1	1	1	1	1	1	3	4	6	6	6	7	7	7	7	7	9	9	9	9
3.2	.00	.00	.00	.00	.01	.05	.10	.21	.39	.60	.81	1.01	1.22	1.43	1.64	1.84	2.05	2.31	2.66	3.00
	1	1	1	1	1	1	3	4	6	6	6	6	6	6	6	6	6	10	10	10
3.0	.00	.00	.00	.00	.01	.05	.10	.21	.35	.55	.76	.96	1.17	1.38	1.59	1.79	2.01	2.25	2.56	2.90
	1	1	1	1	1	1	2	4	5	6	6	6	6	6	6	6	7	7	10	10
2.8	.00	.00	.00	.00	.01	.05	.10	.20	.31	.48	.65	.82	1.01	1.25	1.49	1.73	1.98	2.22	2.46	2.77
	1	1	1	1	1	1	2	3	4	5	5	5	7	7	7	7	7	1	9	9
2.6	.00	.00	.00	.00	.01	.05	.09	.18	.29	.46	.63	.80	.97	1.21	1.45	1.69	1.94	2.18	2.42	2.66
	1	1	1	1	1	1	2	3	4	5	5	5	7	7	7	7	7	7	7	7
2.5	.00	.00	.00	.00	.01	.05	.09	.18	.28	.41	.55	.69	.90	1.11	1.32	1.52	1.73	1.96	2.20	2.51
	1	1	1	1	1	1	2	3	3	4	4	6	6	6	6	6	6	7	1	9
2.4	.00	.00	.00	.00	.01	.05	.08	.15	.26	.40	.54	.68	.89	1.10	1.31	1.51	1.72	1.93	2.18	2.46
	1	1	1	1	1	1	2	2	4	4	4	6	6	6	6	6	6	6	8	8
2.3	.00	.00	.00	.00	.00	.04	.08	.15	.25	.39	.53	.67	.80	.97	1.18	1.38	1.59	1.64	2.11	2.39
	1	1	1	1	1	1	2	2	4	4	4	4	4	6	6	6	6	8	8	8
2.1	.00	.00	.00	.00	.00	.04	.08	.15	.23	.37	.51	.65	.78	.96	1.17	1.37	1.58	1.79	1.99	2.30
	1	1	1	1	1	1	2	2	4	4	4	4	4	6	6	6	6	6	1	9
2.0	.00	.00	.00	.00	.00	.04	.07	.14	.21	.31	.45	.59	.73	.91	1.08	1.25	1.49	1.73	1.98	2.29
	1	1	1	1	1	1	2	2	2	4	4	4	5	5	5	6	7	7	9	9



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
GALENA RIVER AT BUNCOMBE, WISCONSIN
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20



STATION 221

LOCATION
In W ½ sec 31, T29N, R2E, JoDaviess County, at Council Hill and 6.0 miles northeast of Galena

DRAINAGE AREA
20.1 square miles

ACTUAL FLOW DATA
PERIOD: Sept 1939 thru Sept 1959
CONTINUOUS RECORD: 20 years; water years 1940-59

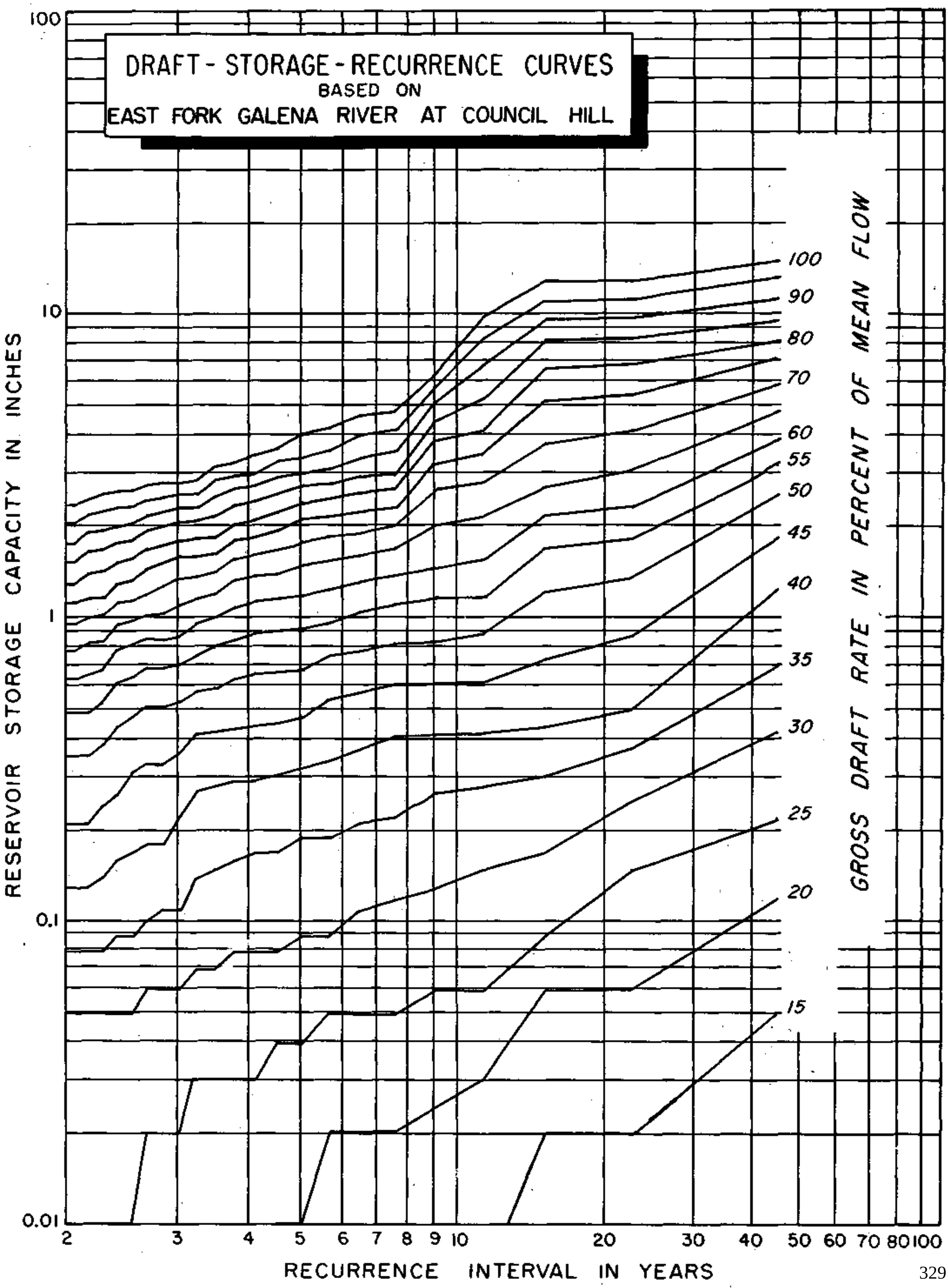
SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1915-39
INDEX STATION: Pecatonica River at Freeport
COINCIDENT RECORD: 20 years; water years 1940-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.69 inch per month

Draft-Storage-Recurrence Data for East Fork, Galena River at Council Hill

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.00	.00	.05	.12	.22	.42	.70	1.24	1.85	2.54	3.23	3.92	4.63	5.89	7.13	8.37	9.62	11.38	13.31	15.24
	1	1	2	2	6	6	12	16	20	20	20	20	28	36	36	36	38	56	56	56
22.5	.00	.00	.02	.05	.15	.25	.37	.50	.88	1.36	1.84	2.33	3.05	4.22	5.44	6.88	8.33	9.78	11.31	12.98
	1	1	1	1	3	3	4	5	14	14	14	14	34	34	42	42	42	42	46	58
15.0	.00	.00	.02	.06	.09	.17	.30	.44	.74	1.22	1.70	2.19	2.67	3.80	5.25	6.69	8.14	9.59	11.04	12.84
	1	1	1	1	2	3	4	6	14	14	14	14	14	42	42	42	42	42	42	58
11.3	.00	.00	.00	.03	.05	.15	.28	.42	.62	.90	1.18	1.56	2.18	2.82	3.51	4.20	5.31	6.82	8.34	9.86
	1	1	1	1	2	3	4	6	8	8	8	18	18	20	20	20	44	44	44	44
9.0	.00	.00	.00	.02	.06	.13	.27	.41	.61	.84	1.15	1.46	2.01	2.63	3.26	3.88	4.50	5.12	5.74	6.36
	1	1	1	1	2	4	4	6	6	9	9	9	18	18	18	18	18	18	18	18
7.5	.00	.00	.00	.02	.05	.12	.22	.41	.61	.83	1.11	1.39	1.70	2.01	2.32	2.67	3.05	3.58	4.20	4.82
	1	1	1	1	2	3	4	6	6	8	8	9	9	9	9	11	11	18	18	18
6.4	.00	.00	.00	.02	.05	.11	.21	.37	.57	.78	1.05	1.32	1.60	1.90	2.25	2.59	2.94	3.41	4.03	4.65
	1	1	1	1	2	2	4	6	6	6	8	8	8	10	10	10	10	18	18	18
5.6	.00	.00	.00	.02	.05	.09	.19	.34	.54	.75	.96	1.24	1.55	1.86	2.17	2.48	2.79	3.16	3.60	4.22
	1	1	1	1	1	3	4	5	5	6	6	9	9	9	9	9	10	12	18	18
5.0	.00	.00	.00	.01	.04	.09	.19	.32	.47	.68	.92	1.19	1.49	1.80	2.11	2.42	2.73	3.06	3.41	4.03
	1	1	1	1	1	3	4	4	6	7	8	8	9	9	9	9	9	10	18	18
4.5	.00	.00	.00	.01	.04	.08	.17	.30	.45	.67	.91	1.15	1.40	1.67	1.95	2.23	2.58	2.94	3.32	3.70
	1	1	1	1	1	2	4	4	6	7	7	7	8	8	8	10	10	11	11	11
4.1	.00	.00	.00	.00	.03	.08	.17	.29	.44	.56	.90	1.14	1.38	1.62	1.86	2.12	2.43	2.74	3.05	3.47
	1	1	1	1	1	2	3	4	6	7	7	7	7	7	7	9	9	9	9	22
3.8	.00	.00	.00	.00	.03	.08	.16	.29	.43	.63	.85	1.09	1.33	1.57	1.81	2.06	2.37	2.68	2.99	3.30
	1	1	1	1	1	2	4	4	4	6	7	7	7	7	7	9	9	9	9	11
3.5	.00	.00	.00	.00	.03	.07	.15	.28	.42	.59	.80	1.00	1.21	1.42	1.63	1.87	2.17	2.51	2.86	3.20
	1	1	1	1	1	2	4	4	4	6	6	6	6	6	7	7	10	10	10	10
3.2	.00	.00	.00	.00	.03	.07	.14	.27	.41	.57	.75	.95	1.16	1.37	1.60	1.84	2.09	2.33	2.57	2.87
	1	1	1	1	1	1	4	4	4	5	6	6	6	6	7	7	7	7	7	9
3.0	.00	.00	.00	.00	.02	.06	.11	.22	.36	.53	.70	.87	1.11	1.35	1.59	1.83	2.08	2.32	2.56	2.84
	1	1	1	1	1	1	2	4	4	5	5	7	7	7	7	7	7	1	7	9
2.8	.00	.00	.00	.00	.02	.06	.11	.18	.33	.51	.68	.85	1.04	1.28	1.52	1.76	2.01	2.25	2.49	2.81
	1	1	1	1	1	1	2	4	5	5	5	5	7	7	7	7	7	7	1	10
2.6	.00	.00	.00	.00	.02	.06	.10	.18	.33	.51	.68	.85	1.02	1.22	1.46	1.70	1.95	2.19	2.43	2.75
	1	1	1	1	1	1	2	4	5	5	5	5	5	7	7	7	7	1	7	12
2.5	.00	.00	.00	.00	.01	.05	.09	.17	.31	.47	.64	.81	.98	1.16	1.34	1.57	1.82	2.06	2.33	2.64
	1	1	1	1	1	1	2	4	4	5	5	5	5	5	6	7	7	7	9	9
2.4	.00	.00	.00	.00	.01	.05	.09	.16	.26	.44	.61	.78	.95	1.13	1.30	1.53	1.78	2.02	2.32	2.63
	1	1	1	1	1	1	2	2	5	5	5	5	5	5	5	7	7	7	9	9
2.3	.00	.00	.00	.00	.01	.05	.08	.14	.24	.38	.52	.67	.84	1.02	1.19	1.43	1.68	1.94	2.25	2.56
	1	1	1	1	1	1	1	2	4	4	4	5	5	5	7	7	7	9	1	9
2.1	.00	.00	.00	.00	.01	.05	.08	.13	.21	.35	.49	.65	.82	1.00	1.17	1.40	1.65	1.92	2.19	2.47
	1	1	1	1	1	1	1	2	4	4	4	5	5	5	5	7	7	1	8	8
2.0	.00	.00	.00	.00	.01	.05	.08	.13	.21	.35	.49	.63	.78	.96	1.13	1.30	1.53	1.77	2.05	2.36
	1	1	1	1	1	1	1	2	4	4	4	4	5	5	5	5	7	7	1	9


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
EAST FORK GALENA RIVER AT COUNCIL HILL
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
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0.1
0.01
2
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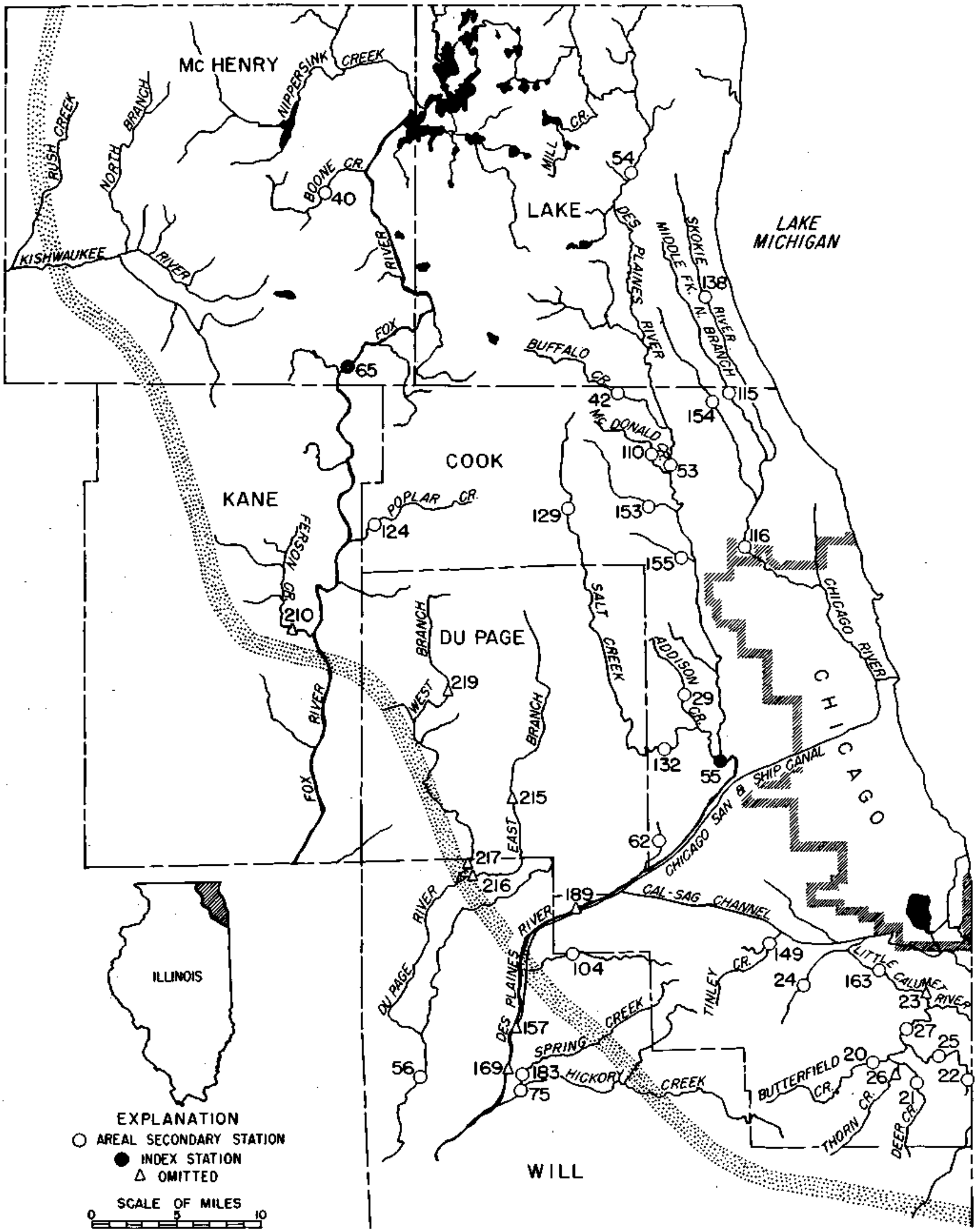
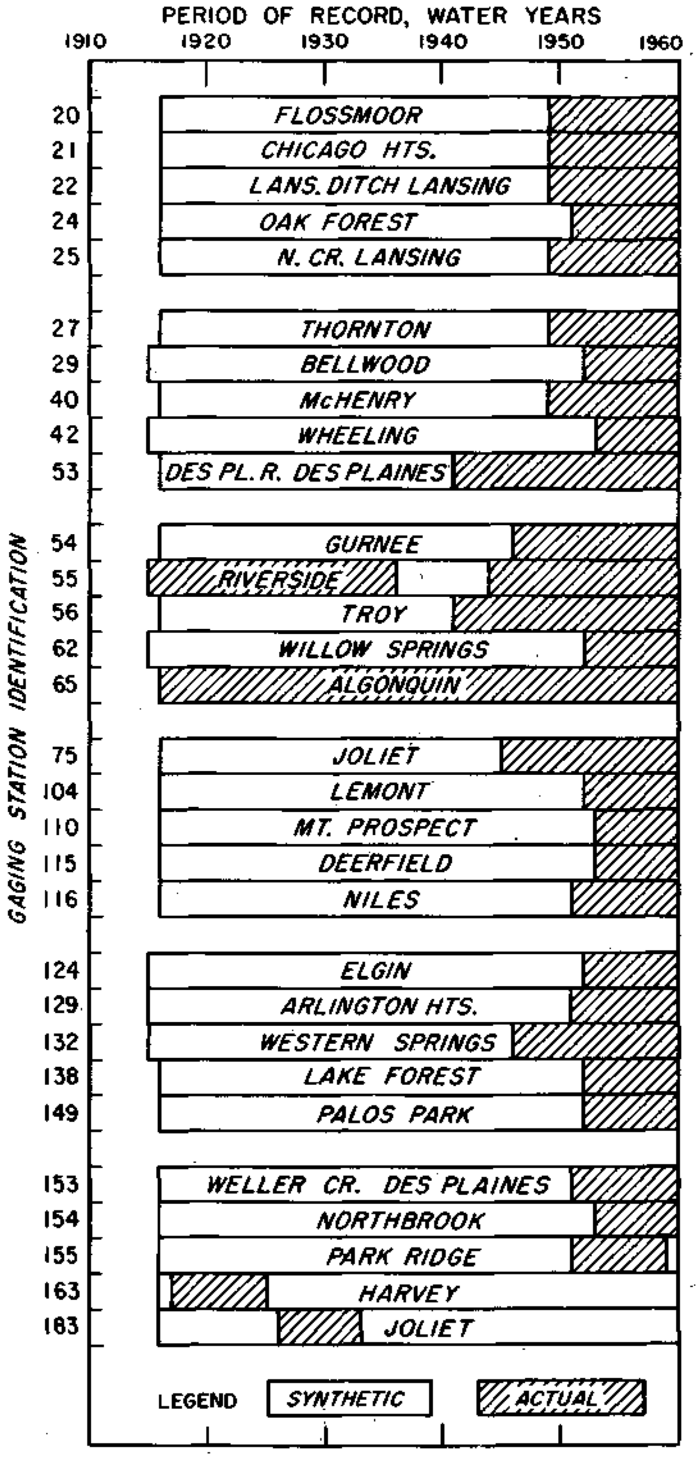


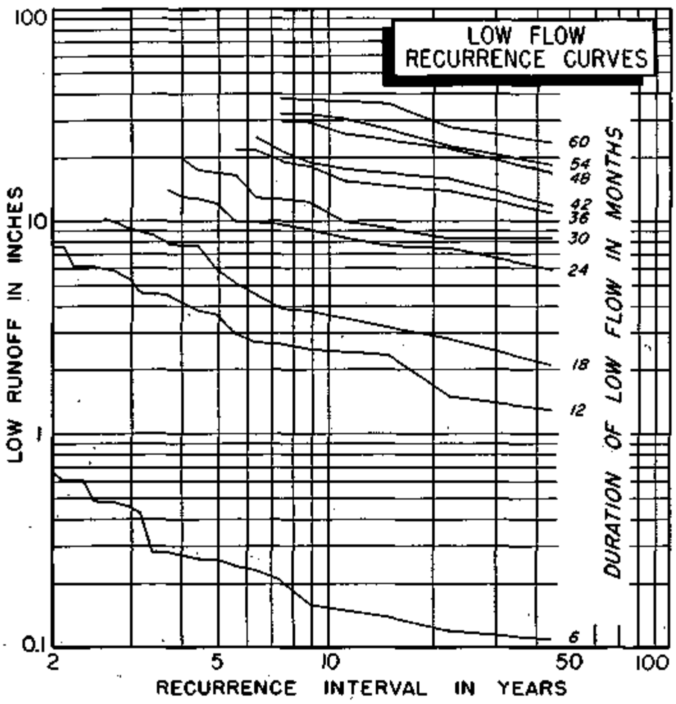
Wheaton Morainal Region

Gaging Stations in Wheaton Morainai Region

	STATIONS OMITTED	REASON
23	Little Calumet River at South Holland	*Diversion*
26	Thorn Creek at Glenwood	*Diversion*
157	Chicago Sanitary and Ship Canal at Lockport	*Regulated*
168	DesPlaines River above Jackson Creek at Channahan	*Same information as Station 189*
169	DesPlaines River at Joliet	*Regulated, diversion*
189	DesPlaines River at Lemont	*Combined with record for Station 55*
210	Ferson Creek near St. Charles	*Record too short*
215	East Branch, DuPage River at Lisle	*Record too short*
216	East Branch, DuPage River near Naperville	*Record too short*
217	West Branch, DuPage River near Naperville	*Record too short*
219	West Branch, DuPage River near West Chicago	*Record too short*



BUTTERFIELD CREEK AT FLOSSMOOR



STATION 20

LOCATION
In NE ¼ NW ¼ sec 8, T35N, R14E, Cook County, at Reigle Road Bridge at Homewood city limits, 0.75 mile east of Flossmoor

DRAINAGE AREA
22.9 square miles

ACTUAL FLOW DATA
PERIOD: June 1948 thru Sept 1959
CONTINUOUS RECORD: 11 years; water years 1949-59

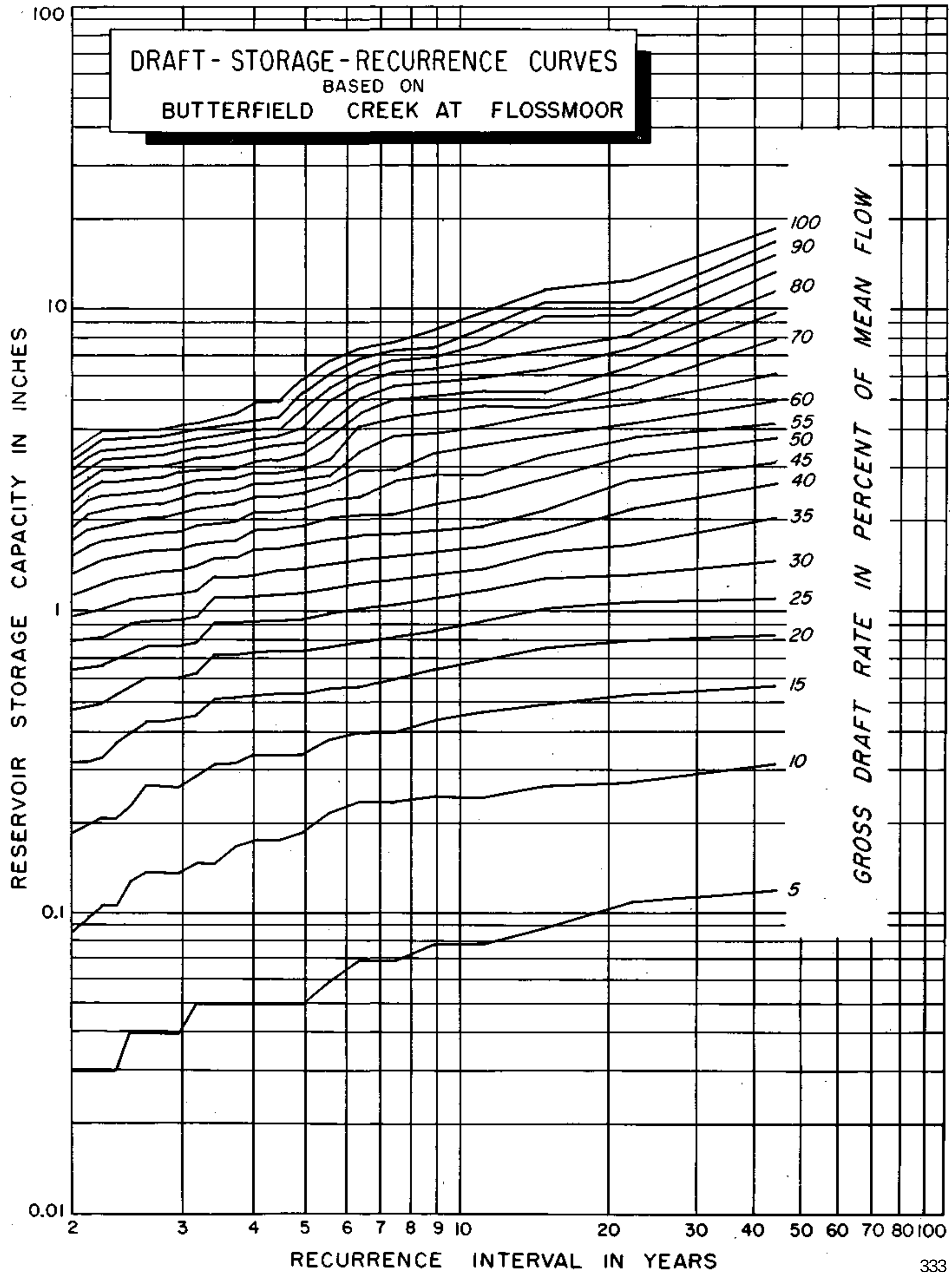
SYNTHETIC FLOW DATA
PERIOD: 33 years; water years 1916-48
INDEX STATION: Kankakee River at Momence
COINCIDENT RECORD: 11 years; water years 1949-59

TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-1959
MEAN DISCHARGE : 0.67 inch per month

Draft-Storage-Recurrence Data for Butterfield Creek at Flossmoor

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.12 5	.32 8	.58 8	.85 8	1.12 8	1.49 16	2.05 18	2.65 18	3.26 18	3.86 18	4.46 18	5.07 18	6.15 42	7.90 56	9.78 56	11.66 56	13.53 56	15.41 56	17.28 56	19.16 56
22.0	.11 5	.28 8	.54 8	.81 8	1.08 8	1.35 8	1.69 16	2.23 16	2.76 16	3.30 16	3.84 16	4.37 16	4.96 18	5.56 18	6.51 30	7.53 32	8.60 32	9.68 32	10.82 54	12.63 54
14.7	.09 5	.27 7	.50 8	.77 8	1.04 8	1.31 8	1.58 8	1.84 8	2.20 18	2.80 18	3.40 18	4.01 18	4.61 18	5.35 32	6.42 32	7.49 32	8.56 32	9.64 32	10.71 32	11.78 32
11.0	.08 5	.25 6	.47 7	.71 7	.94 7	1.18 7	1.41 7	1.66 8	1.93 8	2.44 18	3.04 18	3.65 18	4.25 18	4.85 18	5.46 18	6.06 18	6.85 30	7.85 30	8.86 30	9.96 42
8.8	.08 5	.25 5	.44 6	.65 7	.88 7	1.12 7	1.35 7	1.60 8	1.87 8	2.29 16	2.83 16	3.43 18	4.03 18	4.63 18	5.24 18	5.84 18	6.44 18	7.04 18	7.65 18	8.77 44
7.3	.07 5	.24 5	.40 5	.60 7	.83 7	1.07 7	1.30 7	1.54 8	1.82 9	2.13 9	2.65 18	3.26 18	3.86 18	4.46 18	5.07 18	5.67 18	6.27 18	6.87 18	7.48 18	8.08 18
6.3	.07 5	.24 5	.40 5	.57 7	.80 7	1.04 7	1.27 7	1.51 9	1.81 9	2.12 9	2.42 16	2.95 16	3.49 16	4.02 16	4.56 18	5.16 18	5.76 18	6.36 18	6.97 1	7.57 18
5.5	.06 3	.22 5	.38 5	.56 6	.77 6	.95 7	1.22 7	1.46 7	1.75 9	2.06 9	2.36 9	2.66 9	2.96 9	3.26 9	3.82 18	4.42 18	5.02 18	5.62 18	6.23 18	6.83 18
4.9	.05 4	.19 4	.34 6	.54 6	.75 6	.95 6	1.16 7	1.41 8	1.68 8	1.95 8	2.22 8	2.49 9	2.79 9	3.09 9	3.39 9	3.69 9	4.15 18	4.75 1	5.36 18	5.96 18
4.4	.05 3	.18 5	.34 6	.54 6	.75 6	.95 6	1.15 7	1.39 7	1.63 8	1.90 8	2.17 8	2.44 8	2.71 9	3.01 9	3.31 9	3.61 9	3.92 9	4.22 9	4.52 1	5.03 20
4.0	.05 3	.18 5	.34 5	.53 6	.74 6	.94 6	1.14 6	1.35 8	1.62 8	1.89 8	2.16 8	2.43 8	2.69 8	2.96 8	3.23 8	3.51 9	3.82 9	4.12 9	4.42 9	5.01 20
3.7	.05 3	.17 4	.32 6	.52 6	.73 6	.93 6	1.13 6	1.33 6	1.53 6	1.75 8	2.02 8	2.29 8	2.55 8	2.82 8	3.10 9	3.40 9	3.71 9	4.01 9	4.31 9	4.61 9
3.4	.05 3	.15 4	.32 6	.52 6	.73 6	.93 6	1.13 6	1.33 6	1.53 6	1.73 6	1.99 8	2.26 8	2.52 8	2.79 8	3.06 8	3.33 8	3.60 8	3.88 1	4.18 9	4.48 9
3.1	.05 3	.15 4	.29 5	.46 5	.63 5	.80 5	.98 6	1.20 7	1.43 7	1.69 8	1.96 8	2.23 8	2.49 8	2.76 8	3.03 8	3.30 8	3.57 8	3.83 8	4.10 1	4.37 8
2.9	.04 3	.14 3	.27 5	.44 5	.61 5	.78 5	.95 6	1.16 7	1.39 7	1.63 7	1.88 8	2.15 8	2.41 8	2.68 8	2.95 8	3.22 8	3.49 1	3.75 8	4.02 8	4.29 8
2.8	.04 3	.14 3	.27 5	.44 5	.61 5	.78 5	.94 5	1.15 7	1.38 7	1.62 7	1.85 7	2.08 7	2.32 7	2.56 8	2.83 8	3.10 8	3.37 8	3.63 1	3.90 8	4.17 8
2.6	.04 3	.14 3	.27 5	.44 5	.61 5	.78 5	.94 5	1.14 7	1.37 7	1.61 7	1.84 7	2.07 7	2.31 7	2.54 7	2.79 8	3.06 8	3.33 8	3.59 1	3.86 8	4.13 8
2.4	.04 2	.13 3	.23 5	.40 5	.57 5	.74 5	.92 6	1.12 6	1.33 7	1.57 7	1.80 7	2.03 7	2.27 7	2.50 8	2.77 8	3.04 8	3.31 8	3.57 1	3.84 8	4.11 8
2.3	.03 2	.11 3	.21 3	.37 5	.54 5	.71 5	.87 5	1.07 7	1.30 7	1.54 7	1.77 7	2.00 7	2.24 7	2.47 8	2.74 8	3.01 8	3.28 8	3.54 8	3.81 1	4.08 8
2.2	.03 2	.11 3	.21 3	.33 5	.50 5	.67 5	.83 5	1.03 7	1.26 7	1.50 7	1.73 7	1.96 7	2.20 7	2.45 8	2.72 8	2.99 8	3.26 8	3.52 8	3.79 1	4.06 8
2.1	.03 2	.10 3	.20 3	.32 5	.49 5	.66 5	.82 5	1.00 6	1.20 6	1.43 7	1.66 7	1.89 7	2.13 7	2.36 7	2.60 7	2.83 7	3.07 7	3.30 7	3.54 7	3.78 8
2.0	.03 2	.09 3	.19 3	.32 4	.48 5	.65 5	.81 5	.98 5	1.16 6	1.36 6	1.56 6	1.76 6	1.96 6	2.16 6	2.37 6	2.59 7	2.83 7	3.06 7	3.30 7	3.53 7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BUTTERFIELD CREEK AT FLOSSMOOR
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
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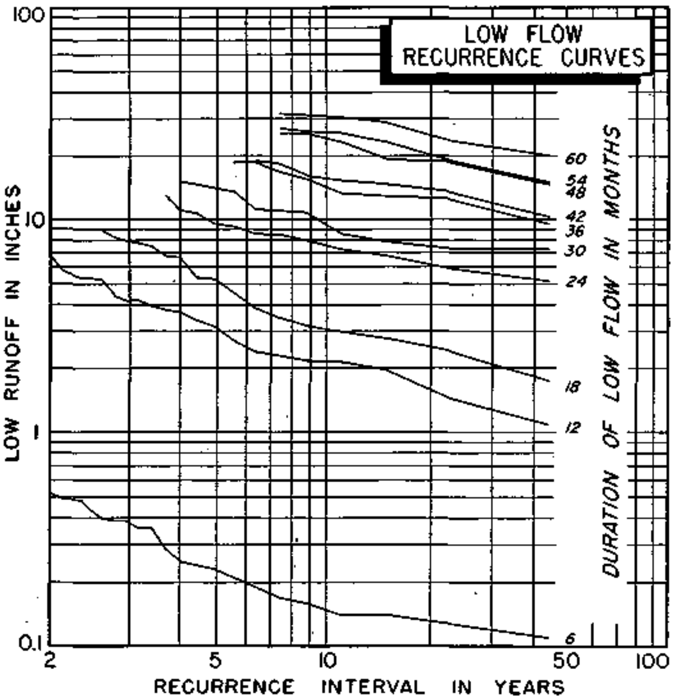


STATION 21

LOCATION
Near center of sec 14, T35N, R14E, Cook County, at bridge on Joe Orr road, 1.5 miles northeast of Chicago Heights

DRAINAGE AREA
24.4 square miles

ACTUAL FLOW DATA
PERIOD: June 1948 thru Sept 1959
CONTINUOUS RECORD: 11 years; water years 1949-59

SYNTHETIC FLOW DATA
PERIOD: 33 years; water years 1916-48
INDEX STATION: Kankakee River at Momence
COINCIDENT RECORD: 11 years; water years 1949-59

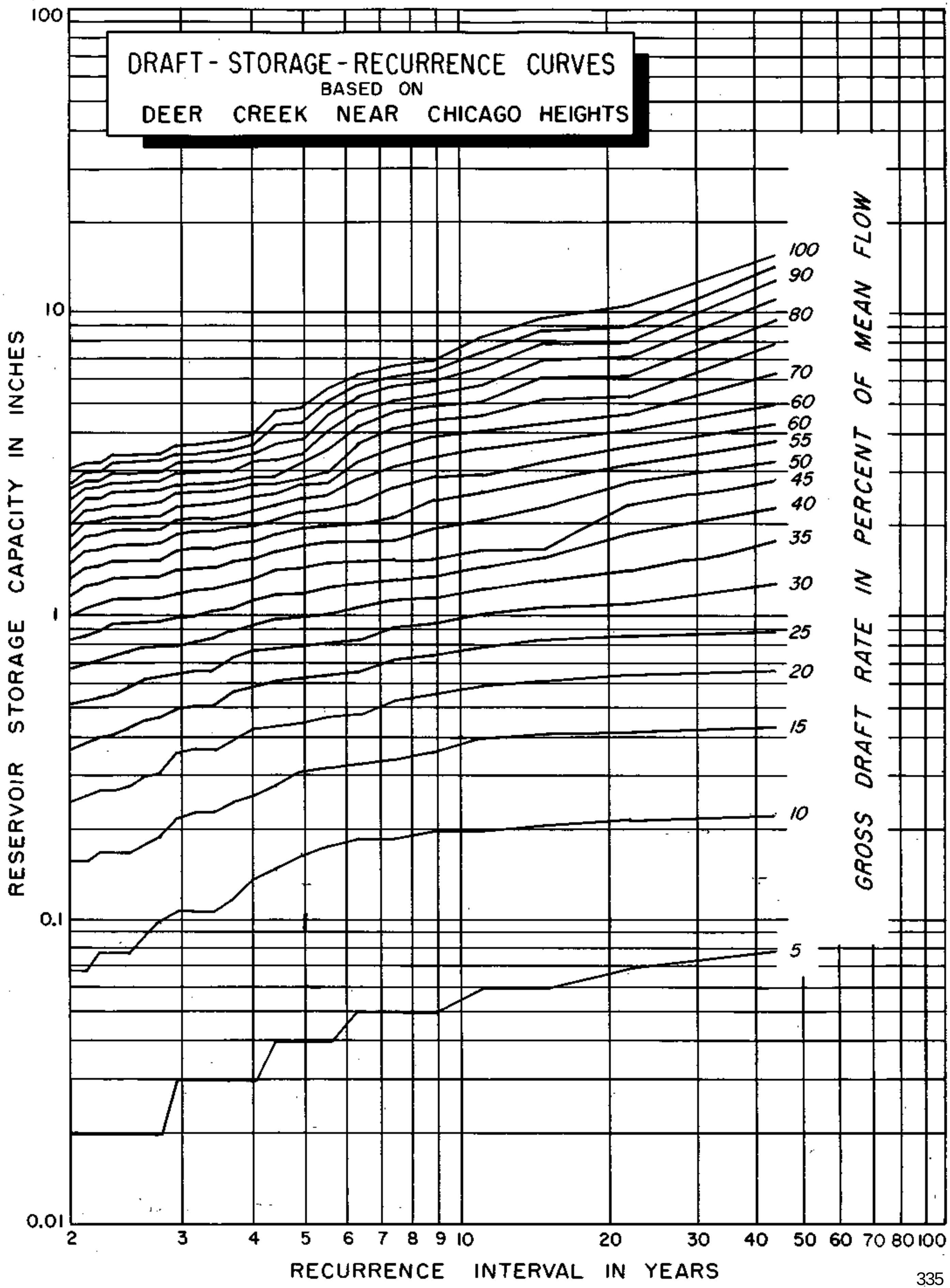
TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE: 0.57 inch per month

Draft-Storage-Recurrence Data for Deer Creek near Chicago Heights

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow									
	5	10	15	20	25	30	35	40	45	50
44.0	.08 3	.23 6	.44 8	.67 8	.90 8	1.30 18	1.81 18	2.32 18	2.84 18	3.35 18
22.0	.07 5	.22 5	.42 8	.65 8	.88 8	1.11 8	1.44 16	1.90 16	2.35 16	2.81 16
14.7	.06 5	.21 7	.41 7	.62 8	.85 8	1.08 8	1.32 9	1.57 9	1.83 9	2.33 18
11.0	.06 3	.20 7	.40 7	.60 7	.80 8	1.03 8	1.26 8	1.48 8	1.71 8	2.11 18
8.8	.05 5	.20 5	.36 7	.56 7	.76 7	.96 7	1.16 7	1.36 7	1.58 9	1.97 16
7.3	.05 3	.19 5	.34 6	.53 7	.73 7	.93 7	1.13 7	1.33 7	1.56 9	1.82 9
6.3	.05 3	.19 5	.33 5	.48 6	.66 6	.85 8	1.08 8	1.30 8	1.53 9	1.79 9
5.5	.04 4	.18 5	.32 5	.47 6	.65 6	.82 6	1.03 8	1.25 9	1.51 9	1.77 9
4.9	.04 3	.17 5	.31 5	.45 6	.63 6	.80 7	1.00 8	1.22 8	1.46 9	1.72 9
4.4	.04 3	.15 4	.28 5	.44 6	.62 6	.79 7	.99 7	1.20 8	1.43 8	1.66 8
4.0	.03 3	.14 4	.26 6	.43 6	.61 6	.78 6	.95 6	1.14 7	1.34 7	1.56 8
3.7	.03 3	.12 4	.25 5	.39 6	.57 6	.74 6	.91 6	1.08 6	1.29 8	1.52 8
3.4	.03 3	.11 3	.23 5	.37 5	.51 5	.67 6	.86 7	1.06 7	1.26 7	1.47 8
3.1	.03 3	.11 3	.23 5	.37 5	.51 5	.67 6	.84 6	1.01 8	1.24 8	1.47 8
2.9	.03 3	.11 3	.22 5	.36 5	.50 5	.65 5	.81 6	1.00 7	1.21 8	1.44 8
2.8	.02 3	.10 3	.19 3	.31 5	.47 6	.64 6	.81 6	.98 6	1.17 7	1.37 7
2.6	.02 2	.09 3	.18 3	.30 5	.46 6	.63 6	.80 6	.97 6	1.16 7	1.36 7
2.4	.02 2	.08 3	.17 3	.28 4	.43 6	.60 6	.77 6	.96 7	1.16 7	1.36 7
2.3	.02 2	.08 3	.17 3	.27 5	.41 5	.56 5	.75 7	.95 7	1.15 7	1.35 7
2.2	.02 2	.08 3	.17 3	.27 4	.40 5	.55 5	.71 6	.90 7	1.10 7	1.30 7
2.1	.02 2	.07 3	.16 3	.26 4	.39 5	.54 5	.70 6	.87 7	1.07 7	1.27 7
2.0	.02 2	.07 3	.16 3	.25 4	.37 5	.52 5	.68 6	.85 6	1.02 6	1.19 6

Recurrence interval, years	Gross draft rate in percent of mean flow									
	55	60	65	70	75	80	85	90	95	100
44.0	3.86 18	4.38 18	5.06 42	6.42 56	8.02 56	9.62 56	11.21 56	12.81 56	14.40 56	16.00 56
22.0	3.27 16	3.72 16	4.18 18	4.69 18	5.41 30	6.27 32	7.18 32	8.10 32	9.22 54	10.76 54
14.7	2.84 18	3.36 18	3.87 18	4.38 18	5.24 32	6.15 32	7.05 32	7.98 32	8.89 32	9.80 32
11.0	2.62 18	3.14 18	3.65 18	4.16 18	4.68 18	5.19 18	5.64 30	6.69 30	7.55 30	8.40 30
8.8	2.43 18	2.95 18	3.46 18	3.97 18	4.49 18	5.00 18	5.51 18	6.02 18	6.54 18	7.06 42
7.3	2.16 18	2.68 18	3.19 18	3.70 18	4.22 18	4.73 18	5.24 18	5.75 18	6.27 18	6.78 18
6.3	2.04 9	2.39 16	2.85 16	3.30 16	3.81 18	4.32 18	4.83 18	5.34 18	5.86 1	6.37 18
5.5	2.02 9	2.28 9	2.53 9	2.79 9	3.10 18	3.61 18	4.12 18	4.63 18	5.15 18	5.66 18
4.9	1.97 9	2.23 9	2.48 9	2.74 9	3.00 9	3.25 9	3.51 9	3.88 1	4.40 18	4.91 18
4.4	1.89 8	2.12 8	2.34 8	2.57 8	2.82 9	3.07 9	3.33 9	3.79 1	4.31 18	4.82 18
4.0	1.79 8	2.02 8	2.26 9	2.52 9	2.78 9	3.03 9	3.29 9	3.55 9	3.80 9	4.06 9
3.7	1.75 8	1.98 8	2.20 8	2.43 8	2.66 8	2.89 8	3.12 9	3.38 9	3.63 9	3.89 9
3.4	1.70 8	1.93 8	2.15 8	2.38 8	2.61 8	2.84 8	3.07 8	3.32 1	3.57 9	3.83 9
3.1	1.70 8	1.93 8	2.15 8	2.38 8	2.61 8	2.84 8	3.07 8	3.29 8	3.52 8	3.75 8
2.9	1.67 8	1.90 8	2.12 8	2.35 8	2.58 8	2.81 8	3.04 8	3.26 1	3.49 8	3.72 8
2.8	1.56 7	1.76 7	1.96 7	2.17 8	2.40 8	2.63 8	2.86 8	3.08 1	3.31 6	3.54 8
2.6	1.55 7	1.75 7	1.95 7	2.16 8	2.39 8	2.62 8	2.85 8	3.07 1	3.30 8	3.53 8
2.4	1.55 7	1.75 7	1.95 7	2.15 7	2.36 8	2.59 8	2.82 8	3.04 1	3.27 8	3.50 8
2.3	1.54 7	1.74 7	1.94 7	2.14 7	2.36 8	2.59 8	2.82 8	3.04 1	3.27 8	3.50 8
2.2	1.49 7	1.69 7	1.89 7	2.09 7	2.29 7	2.49 7	2.69 7	2.89 7	3.09 7	3.29 7
2.1	1.46 7	1.66 7	1.86 7	2.06 7	2.26 7	2.46 7	2.66 7	2.86 1	3.06 7	3.25 7
2.0	1.36 6	1.53 6	1.70 6	1.87 6	2.05 6	2.24 8	2.47 8	2.69 8	2.92 8	3.15 8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
DEER CREEK NEAR CHICAGO HEIGHTS
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
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45
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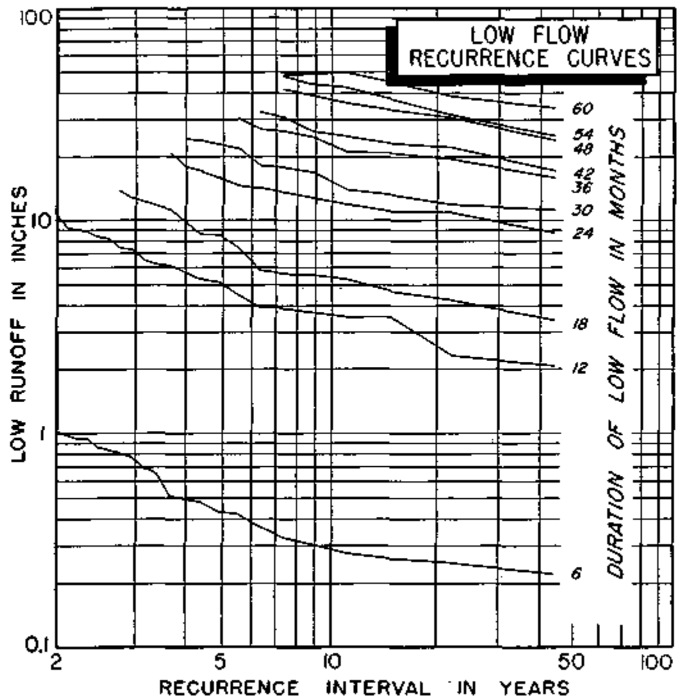
15
10
5



STATION 22

LOCATION
At north boundary of sec 17, T35N, R15E, Cook County, at bridge on farm road, 0.5 mile east of Burnham Avenue and 2.0 miles south of Lansing

DRAINAGE AREA
8.3 square miles

ACTUAL FLOW DATA
PERIOD: June 1948 thru Sept 1959
CONTINUOUS RECORD: 11 years; water years 1949-59

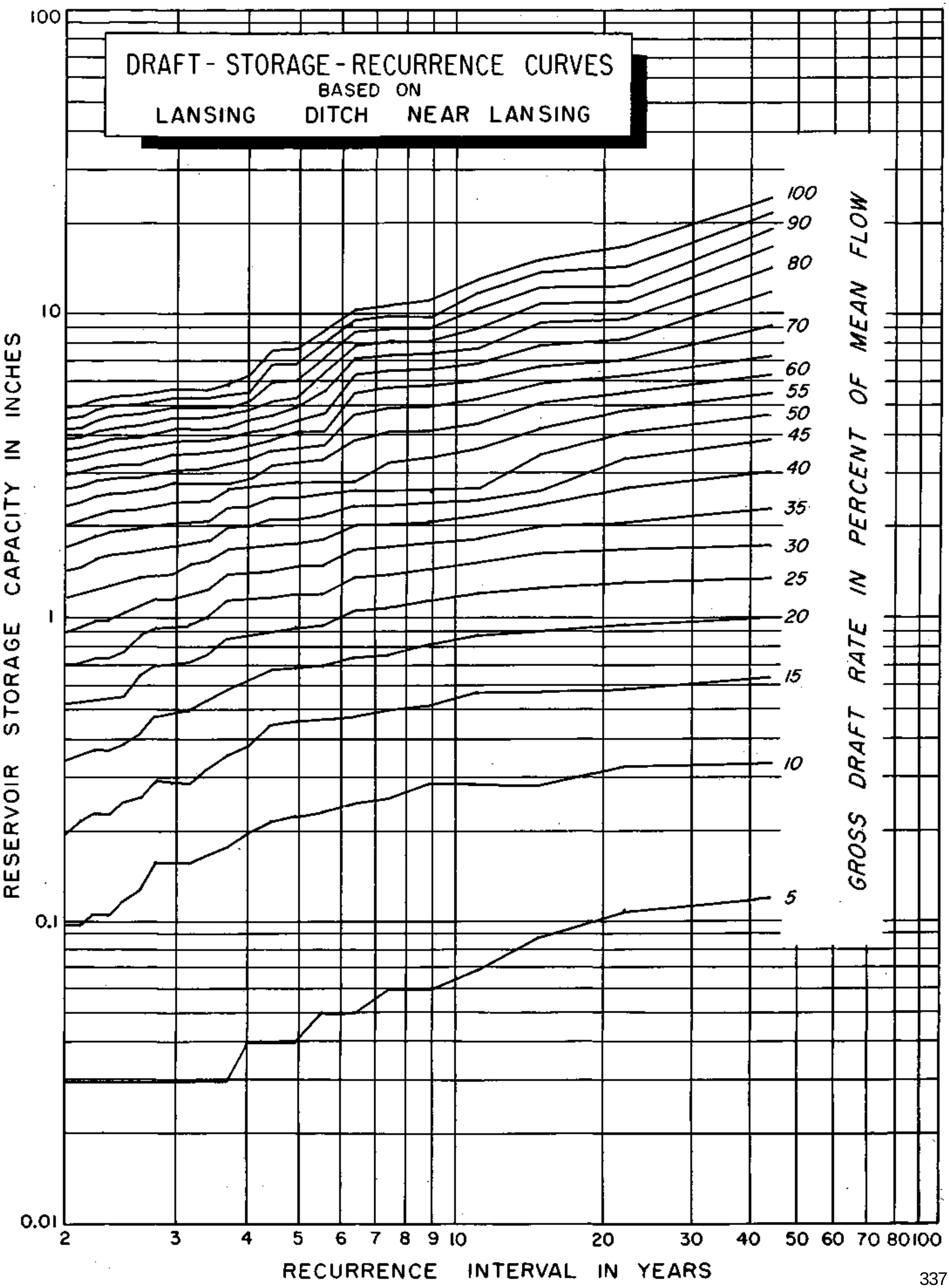
SYNTHETIC FLOW DATA
PERIOD: 33 years; water years 1916-48
INDEX STATION: Kankakee River at Momence
COINCIDENT RECORD: 11 years; water years 1949-59

TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.92 inch per month

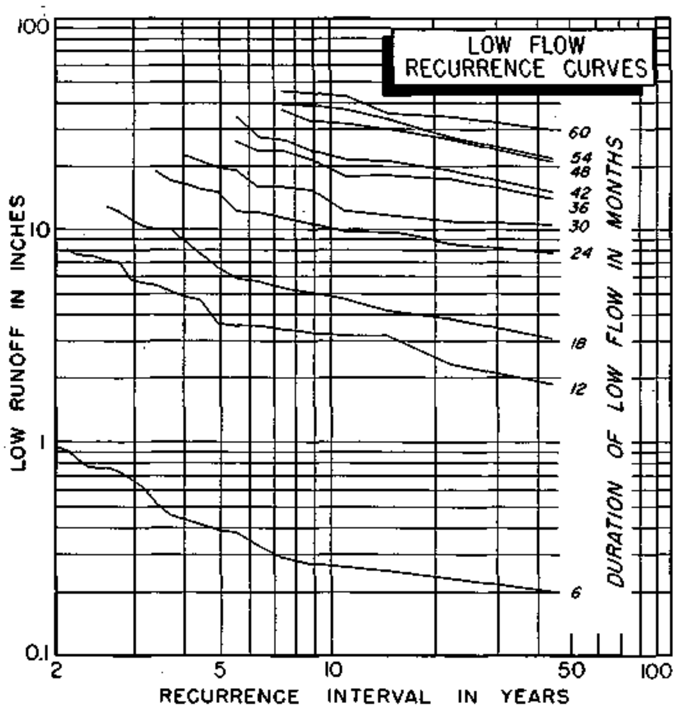
Draft-Storage-Recurrence Data for Lansing Ditch near Lansing

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.12 4	.34 5	.65 8	1.02 8	1.39 8	1.76 8	2.33 16	3.12 18	3.95 18	4.78 18	5.61 18	6.44 18	7.41 42	9.40 56	11.98 56	14.56 56	17.13 56	19.71 56	22.28 56	24.86 56
22.0	.11 4	.33 5	.60 8	.97 8	1.34 8	1.71 8	2.08 8	2.72 16	3.45 16	4.19 16	4.93 16	5.66 16	5.40 16	7.22 18	8.47 30	9.85 30	11.23 30	12.67 32	14.71 54	17.19 54
14.7	.09 3	.29 6	.58 7	.92 8	1.29 8	1.66 8	2.03 8	2.39 8	2.76 8	3.53 18	4.36 18	5.19 18	6.01 18	6.84 18	8.07 32	9.54 32	11.01 32	12.49 32	13.96 32	15.43 32
11.0	.07 3	.29 5	.58 7	.90 7	1.22 7	1.54 7	1.86 7	2.19 7	2.51 8	2.88 8	3.69 18	4.52 18	5.34 18	6.17 18	7.00 18	7.83 18	9.19 30	10.57 30	11.95 30	13.33 30
8.8	.06 5	.29 5	.52 6	.83 7	1.15 7	1.47 7	1.79 7	2.12 7	2.44 7	2.76 7	3.46 16	4.23 18	5.05 18	5.88 18	6.71 18	7.54 18	8.37 18	9.19 18	10.02 18	11.37 42
7.3	.06 3	.25 5	.50 6	.77 7	1.09 7	1.41 7	1.73 7	2.06 7	2.32 7	2.70 9	3.35 18	4.18 18	5.00 18	5.83 18	6.66 18	7.49 18	8.32 18	9.14 18	9.97 18	10.80 18
6.3	.05 3	.25 5	.48 5	.75 7	1.07 7	1.39 7	1.71 7	2.04 7	2.36 7	2.55 7	3.10 18	3.93 18	4.75 18	5.58 18	6.41 18	7.24 18	8.07 18	8.89 18	9.72 1	10.55 18
5.5	.05 3	.24 5	.47 5	.70 5	.96 6	1.24 6	1.51 6	1.85 8	2.22 8	2.59 9	3.00 9	3.42 9	3.83 9	4.25 9	4.82 18	5.65 18	6.48 18	7.30 18	8.13 18	8.96 18
4.9	.04 3	.23 5	.46 5	.69 5	.95 6	1.23 6	1.50 6	1.78 6	2.14 8	2.51 8	2.91 9	3.33 9	3.74 9	4.15 9	4.57 9	4.98 9	5.40 1	6.15 18	6.98 18	7.81 20
4.4	.04 3	.22 5	.45 5	.68 5	.91 5	1.18 6	1.45 6	1.77 8	2.14 8	2.51 8	2.88 8	3.25 8	3.61 8	3.98 8	4.35 8	4.72 8	5.22 18	6.04 18	6.87 18	7.70 18
4.0	.04 2	.20 4	.38 5	.61 6	.89 6	1.17 6	1.44 6	1.72 5	2.03 7	2.36 8	2.73 8	3.10 8	3.46 8	3.83 8	4.20 8	4.57 8	4.94 8	5.30 8	5.67 9	6.41 20
3.7	.03 3	.18 4	.36 4	.59 5	.87 5	1.15 6	1.42 6	1.71 7	2.03 7	2.35 7	2.67 7	2.99 7	3.32 7	3.65 8	4.02 8	4.39 8	4.76 8	5.12 8	5.53 9	5.94 9
3.4	.03 3	.17 3	.32 4	.54 5	.77 5	1.01 6	1.28 6	1.56 6	1.83 6	2.11 6	2.47 8	2.84 8	3.20 8	3.57 8	3.94 8	4.31 8	4.68 8	5.04 1	5.41 8	5.78 8
3.1	.03 2	.16 3	.29 4	.50 5	.73 5	.97 6	1.24 6	1.52 6	1.79 6	2.08 8	2.45 8	2.82 8	3.18 8	3.55 8	3.92 8	4.29 8	4.66 8	5.02 8	5.39 8	5.76 8
2.9	.03 2	.16 3	.29 3	.49 5	.72 5	.95 5	1.16 5	1.42 7	1.74 7	2.07 8	2.44 8	2.81 8	3.17 8	3.54 8	3.91 8	4.28 8	4.65 1	5.01 8	5.38 8	5.75 8
2.8	.03 2	.16 3	.29 3	.48 5	.71 5	.94 5	1.17 5	1.40 7	1.72 7	2.04 7	2.36 7	2.70 8	3.05 8	3.43 8	3.80 8	4.17 8	4.54 1	4.90 8	5.27 8	5.64 8
2.6	.03 1	.13 3	.26 3	.42 5	.65 5	.88 5	1.11 5	1.37 6	1.68 7	2.00 7	2.32 7	2.64 7	2.97 7	3.31 8	3.68 8	4.05 8	4.42 1	4.78 8	5.15 8	5.52 8
2.4	.03 1	.12 3	.25 3	.39 3	.56 4	.79 6	1.03 6	1.34 6	1.65 7	1.97 7	2.29 7	2.61 7	2.94 7	3.27 8	3.64 8	4.01 8	4.38 8	4.74 1	5.11 8	5.48 8
2.3	.03 1	.11 2	.23 3	.37 4	.55 4	.75 5	.99 6	1.31 7	1.63 7	1.95 7	2.27 7	2.59 7	2.92 7	3.24 7	3.60 8	3.97 8	4.34 8	4.70 8	5.07 8	5.44 8
2.2	.03 1	.11 2	.23 3	.37 3	.54 4	.75 5	.99 6	1.27 6	1.58 7	1.90 7	2.22 7	2.54 7	2.87 7	3.19 7	3.51 7	3.85 8	4.22 8	4.58 8	4.95 8	5.32 8
2.1	.03 1	.10 2	.22 3	.36 3	.53 4	.71 4	.94 6	1.22 5	1.49 6	1.80 7	2.12 7	2.44 7	2.77 7	3.09 7	3.41 7	3.73 7	4.05 1	4.38 7	4.72 8	5.09 8
2.0	.03 1	.10 2	.20 3	.35 4	.53 4	.71 4	.91 6	1.19 6	1.46 6	1.74 7	2.06 7	2.38 7	2.71 7	3.03 7	3.35 7	3.67 7	3.99 7	4.32 7	4.57 8	5.04 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LANSING DITCH NEAR LANSING
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

MIDLOTHIAN CREEK AT OAK FOREST



STATION 24

LOCATION
In SE ¼ NW ¼ sec 15, T36N, R13E, Cook County, at Kilbourn Avenue Bridge in Oak Forest

DRAINAGE AREA
12.7 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1950 thru Sept 1959
CONTINUOUS RECORD: 9 years; water years 1951-59

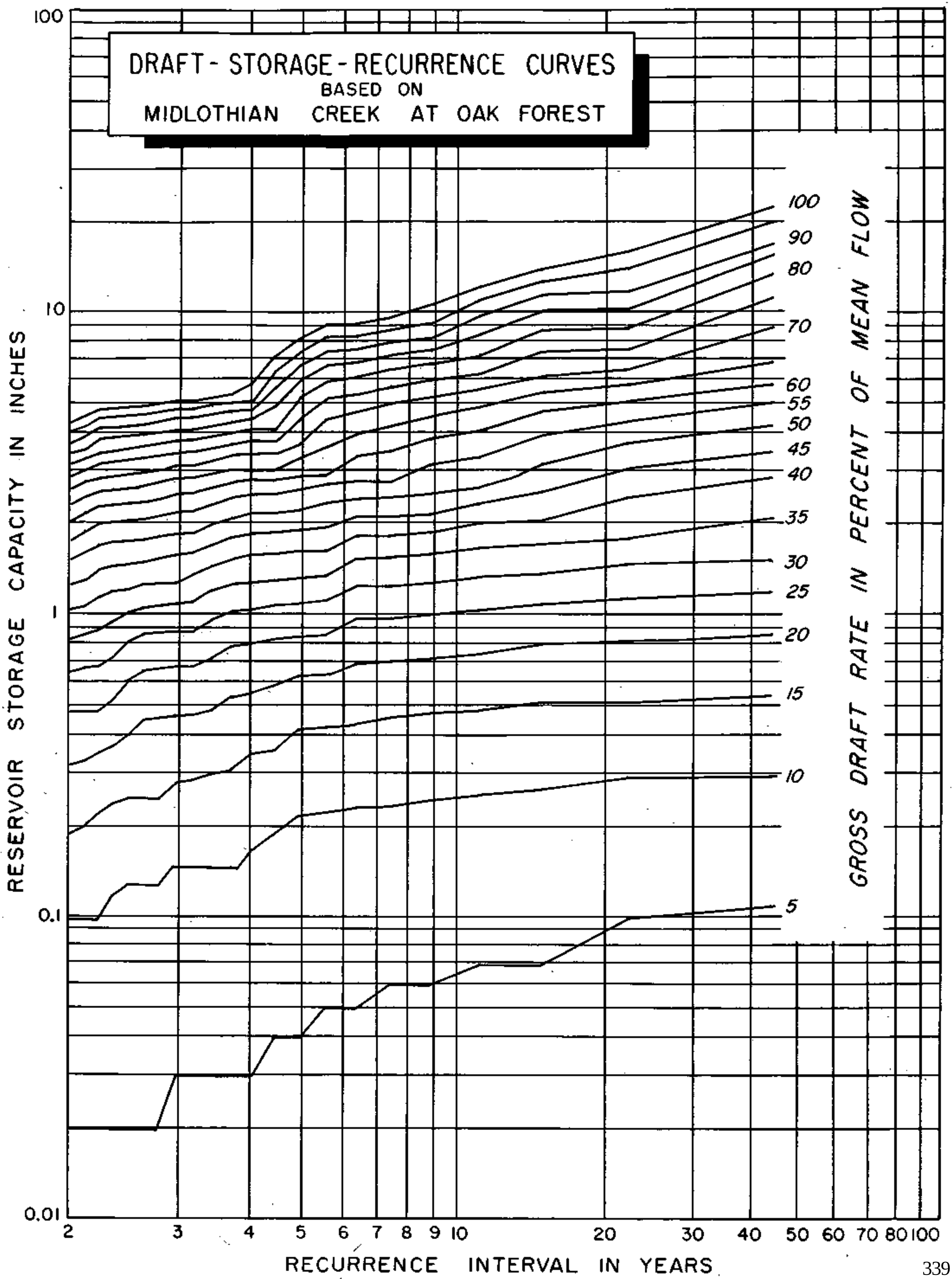
SYNTHETIC FLOW DATA
PERIOD: 35 years; water years 1916-50
INDEX STATION : Kankakee River at Momence
COINCIDENT RECORD: 9 years; water years 1951-59

TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.83 inch per month

Draft-Storage-Recurrence Data for Midlothian Creek at Oak Forest

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.11	.30	.55	.88	1.21	1.54	2.12	2.85	3.59	4.34	5.09	5.83	7.00	9.00	11.32	13.64	15.97	18.29	20.62	22.94
	4	6	8	8	8	8	16	18	18	18	18	18	42	56	56	56	56	56	56	56
22.0	.10	.30	.52	.83	1.16	1.49	1.82	2.47	3.14	3.80	4.46	5.13	5.82	6.57	7.67	9.00	10.33	11.91	14.15	16.39
	4	5	7	8	8	8	8	16	16	16	16	16	18	18	32	32	32	54	54	54
14.7	.07	.27	.52	.81	1.10	1.39	1.72	2.06	2.54	3.26	4.01	4.75	5.50	6.25	7.52	8.65	10.18	11.50	12.83	14.16
	4	5	7	7	7	8	8	8	16	18	18	18	18	18	32	32	32	32	32	32
11.0	.07	.26	.49	.75	1.04	1.35	1.68	2.02	2.35	2.68	3.42	4.16	4.91	5.66	6.41	7.38	8.63	9.87	11.12	12.36
	4	5	6	7	7	8	8	8	8	8	18	18	18	18	18	30	30	30	30	30
8.8	.06	.25	.48	.73	1.02	1.31	1.60	1.89	2.18	2.55	3.21	3.88	4.57	5.32	6.07	5.81	7.58	8.41	9.24	10.76
	4	5	6	7	7	7	7	7	7	16	16	16	18	18	18	18	20	20	20	42
7.3	.06	.24	.46	.71	.98	1.27	1.56	1.85	2.14	2.47	2.84	3.55	4.30	5.05	5.80	6.54	7.29	8.08	8.91	9.74
	3	5	6	6	7	7	7	7	7	9	9	18	18	18	18	18	18	20	20	20
6.3	.05	.24	.44	.69	.98	1.27	1.56	1.85	2.14	2.44	2.81	3.42	4.08	4.75	5.41	6.15	6.90	7.65	8.42	9.25
	4	5	5	7	7	7	7	7	7	9	9	16	16	16	18	18	18	1	20	20
5.5	.05	.23	.43	.64	.87	1.11	1.36	1.64	1.97	2.35	2.72	3.09	3.71	4.46	5.21	5.95	6.75	7.58	8.41	9.24
	4	5	5	5	6	6	6	7	9	9	9	9	18	18	18	18	20	20	20	20
4.9	.04	.22	.42	.63	.86	1.10	1.35	1.64	1.93	2.25	2.62	2.99	3.37	3.75	4.50	5.24	5.99	6.74	7.48	8.23
	4	5	5	5	6	6	7	7	7	9	9	9	9	18	18	18	1	18	18	18
4.4	.04	.19	.36	.59	.84	1.08	1.33	1.60	1.89	2.20	2.53	2.86	3.20	3.53	3.86	4.20	4.95	5.70	6.44	7.19
	2	4	5	6	6	6	6	7	7	8	8	8	8	8	8	18	18	18	18	18
4.0	.03	.17	.35	.56	.81	1.05	1.30	1.59	1.88	2.20	2.53	2.86	3.20	3.53	3.86	4.19	4.52	4.86	5.19	5.91
	2	4	5	6	6	6	7	7	7	8	8	8	8	8	8	8	8	8	1	18
3.7	.03	.15	.31	.54	.79	1.03	1.28	1.53	1.81	2.12	2.45	2.78	3.12	3.45	3.78	4.11	4.44	4.78	5.11	5.44
	2	3	4	6	6	6	6	6	7	8	8	8	8	8	8	8	8	8	8	8
3.4	.03	.15	.30	.49	.73	.97	1.22	1.47	1.72	2.01	2.34	2.67	3.01	3.34	3.67	4.00	4.33	4.67	5.00	5.33
	2	3	4	5	6	6	6	6	6	8	8	8	8	8	8	8	8	8	8	8
3.1	.03	.15	.29	.47	.68	.89	1.12	1.37	1.62	1.89	2.22	2.55	2.89	3.22	3.55	3.88	4.21	4.55	4.88	5.21
	1	3	4	5	5	5	6	6	6	8	8	8	8	8	8	8	8	8	1	8
2.9	.03	.15	.28	.47	.68	.89	1.09	1.30	1.58	1.88	2.21	2.54	2.88	3.21	3.54	3.87	4.20	4.54	4.87	5.20
	1	3	4	5	5	5	5	5	7	8	8	8	8	8	8	8	8	8	8	8
2.8	.02	.13	.25	.46	.67	.88	1.08	1.29	1.55	1.85	2.14	2.44	2.78	3.11	3.44	3.77	4.10	4.44	4.77	5.10
	2	3	5	5	5	5	5	5	7	7	7	8	8	8	8	8	1	8	8	8
2.6	.02	.13	.25	.45	.66	.87	1.07	1.28	1.50	1.80	2.09	2.38	2.69	3.02	3.35	3.68	4.01	4.35	4.68	5.01
	2	3	3	5	5	5	5	5	7	7	7	7	8	8	8	8	8	1	8	8
2.4	.02	.13	.25	.40	.61	.82	1.02	1.23	1.48	1.78	2.07	2.36	2.65	2.97	3.30	3.63	3.96	4.30	4.63	4.96
	2	3	3	5	5	5	5	6	7	7	7	7	7	8	8	8	1	8	8	8
2.3	.02	.12	.24	.37	.52	.73	.96	1.21	1.46	1.76	2.05	2.34	2.63	2.92	3.25	3.56	3.91	4.25	4.58	4.91
	2	3	3	3	5	5	6	6	7	7	7	7	7	8	8	8	8	8	1	8
2.2	.02	.10	.22	.35	.48	.68	.90	1.15	1.42	1.72	2.01	2.30	2.59	2.88	3.21	3.54	3.87	4.21	4.54	4.87
	1	3	3	3	4	5	6	6	7	7	7	7	7	8	8	8	8	8	8	8
2.1	.02	.10	.20	.33	.48	.67	.87	1.08	1.32	1.62	1.91	2.20	2.49	2.78	3.07	3.36	3.65	3.95	4.28	4.61
	1	2	3	3	4	5	5	5	7	7	7	7	7	7	7	7	7	8	8	8
2.0	.02	.10	.19	.32	.48	.65	.84	1.05	1.28	1.53	1.78	2.05	2.34	2.63	2.92	3.21	3.50	3.79	4.08	4.40
	1	2	3	3	4	4	5	5	6	6	6	7	7	7	7	7	7	7	7	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
MIDLOTHIAN CREEK AT OAK FOREST
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
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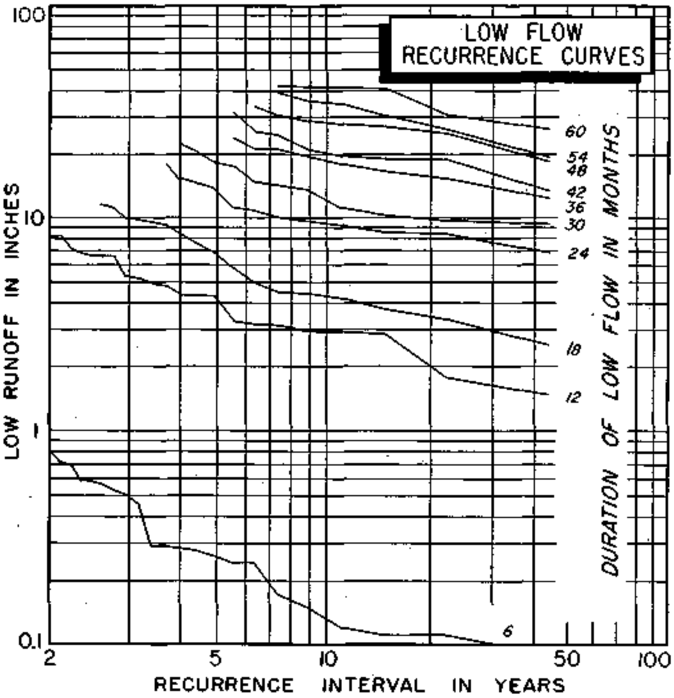
50
60
70
80
100



STATION 25

LOCATION
In SE ¼ SE ¼ sec 1, T35N, R14E, Cook County, at Torrence Avenue Bridge, 1.1 miles south of Lansing and 2.7 miles north of U. S. 30

DRAINAGE AREA
18.2 square miles

ACTUAL FLOW DATA
PERIOD: June 1948 thru Sept 1959
CONTINUOUS RECORD: 11 years; water years 1949-59

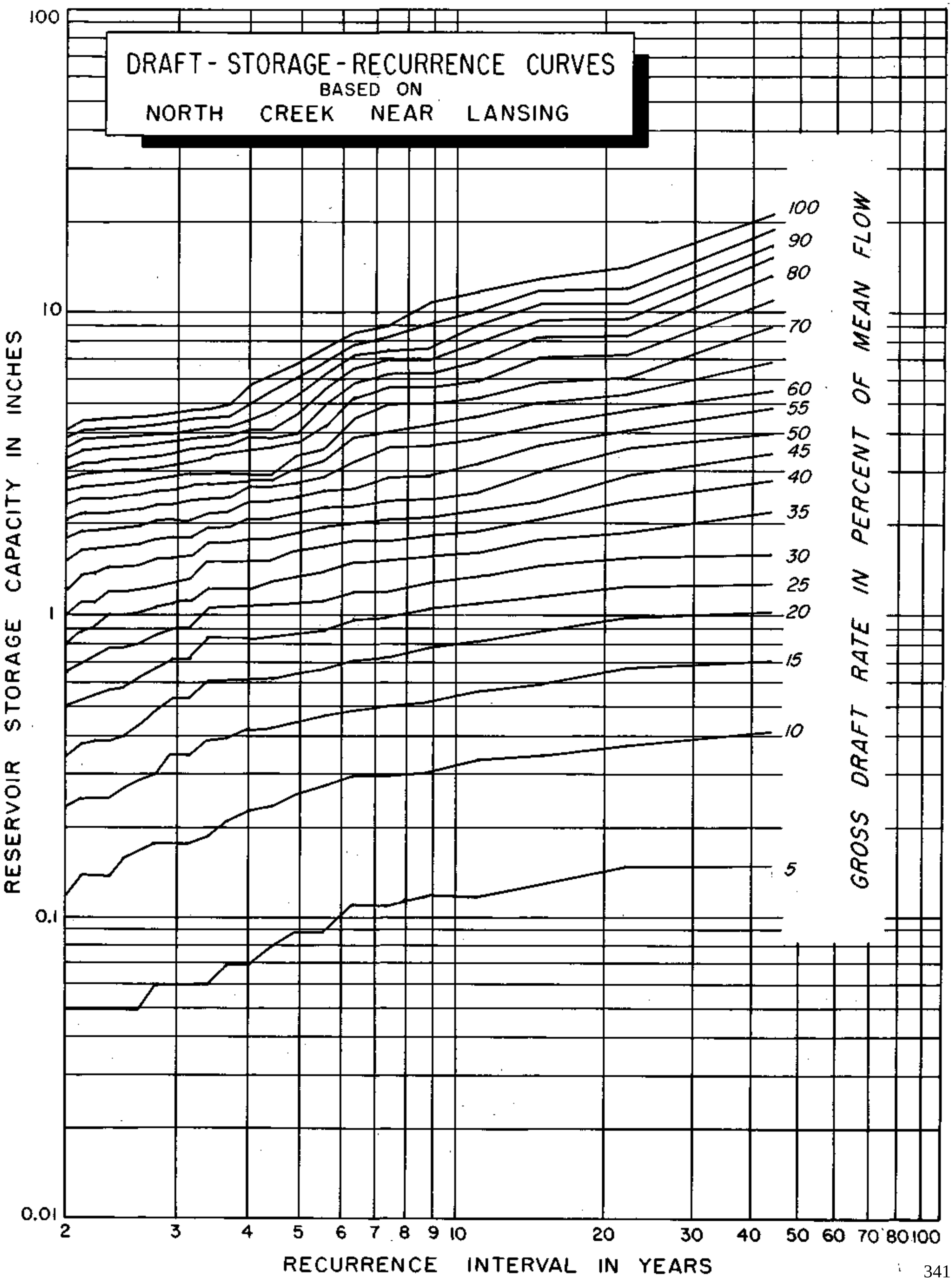
SYNTHETIC FLOW DATA
PERIOD: 33 years; water years 1916-48
INDEX STATION : Kankakee River at Momence
COINCIDENT RECORD: 11 years; water years 1949-59

TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.76 inch per month

Draft-Storage-Recurrence Data for North Creek near Lansing

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.15	.42	.72	1.03	1.33	1.63	2.24	2.88	3.57	4.25	4.93	5.62	6.98	9.09	11.22	13.35	15.48	17.60	19.73	21.86
	5	8	8	8	8	16	16	18	18	18	18	18	42	56	56	56	56	56	56	56
22.0	.15	.38	.68	.99	1.29	1.59	1.90	2.42	3.03	3.64	4.25	4.86	5.46	6.15	7.35	8.57	9.78	11.00	12.21	14.40
	5	8	8	8	8	8	8	16	16	16	16	16	18	18	32	32	32	32	32	60
14.7	.14	.35	.60	.90	1.20	1.50	1.81	2.11	2.42	3.06	3.74	4.43	5.11	5.97	7.19	8.41	9.62	10.84	12.05	13.27
	5	6	7	8	8	8	8	8	8	18	18	18	18	32	32	32	32	32	32	32
11.0	.12	.34	.57	.83	1.10	1.37	1.64	1.94	2.25	2.59	3.27	3.96	4.64	5.33	6.01	6.99	8.13	9.27	10.41	11.83
	5	6	7	7	7	7	8	8	8	18	18	18	18	18	18	30	30	30	30	42
8.8	.12	.31	.53	.79	1.06	1.33	1.59	1.86	2.15	2.45	3.01	3.70	4.38	5.07	5.75	6.43	7.12	7.80	9.27	10.94
	5	6	7	7	7	7	7	7	8	8	18	18	18	18	18	18	18	18	44	44
7.3	.11	.30	.51	.74	1.00	1.27	1.53	1.80	2.11	2.41	2.98	3.67	4.35	5.04	5.72	6.40	7.09	7.77	8.46	9.14
	5	5	6	6	7	7	7	8	8	8	18	18	18	18	18	18	18	18	18	18
6.3	.11	.30	.49	.72	.99	1.26	1.52	1.79	2.05	2.33	2.71	3.32	3.92	4.57	5.25	5.93	6.62	7.30	7.99	8.67
	5	5	5	7	7	7	7	7	7	9	16	16	16	18	18	18	18	18	1	18
5.5	.09	.28	.47	.67	.90	1.16	1.42	1.69	1.97	2.31	2.65	2.99	3.34	3.68	4.27	4.95	5.64	6.32	7.01	7.69
	5	5	5	6	6	7	7	7	9	9	9	9	9	9	18	18	18	18	18	18
4.9	.09	.26	.45	.65	.88	1.12	1.38	1.65	1.91	2.21	2.51	2.82	3.12	3.46	3.80	4.14	4.69	5.39	6.15	6.91
	4	5	5	6	6	7	7	7	8	8	8	8	9	9	9	9	1	20	20	20
4.4	.08	.24	.43	.63	.86	1.09	1.32	1.55	1.82	2.12	2.42	2.73	3.03	3.34	3.64	3.94	4.25	4.84	5.60	6.36
	4	5	5	6	6	6	6	7	8	8	8	8	8	8	8	8	8	20	1	20
4.0	.07	.23	.42	.62	.85	1.08	1.31	1.54	1.81	2.11	2.41	2.72	3.02	3.33	3.63	3.93	4.24	4.54	5.09	5.85
	4	5	5	6	6	6	6	7	8	8	8	8	8	8	8	8	8	8	20	20
3.7	.07	.21	.39	.62	.85	1.08	1.31	1.53	1.76	1.99	2.25	2.51	2.80	3.11	3.41	3.71	4.02	4.32	4.65	5.07
	3	4	6	6	6	6	6	6	6	6	7	7	8	8	8	8	8	8	9	20
3.4	.06	.19	.39	.62	.85	1.08	1.31	1.53	1.76	1.99	2.22	2.47	2.77	3.08	3.38	3.68	3.99	4.29	4.60	4.90
	3	4	6	6	6	6	6	6	6	6	6	8	8	8	8	8	8	1	8	8
3.1	.06	.18	.35	.54	.73	.92	1.14	1.36	1.59	1.84	2.11	2.42	2.72	3.03	3.33	3.63	3.94	4.24	4.55	4.85
	3	3	5	5	5	5	6	6	6	7	8	8	8	8	8	8	1	8	8	8
2.9	.06	.18	.35	.54	.73	.92	1.11	1.32	1.57	1.84	2.11	2.37	2.64	2.93	3.23	3.53	3.84	4.14	4.45	4.75
	3	3	5	5	5	5	5	6	7	7	7	7	7	8	8	8	8	1	8	8
2.8	.06	.18	.30	.49	.68	.87	1.07	1.29	1.55	1.82	2.09	2.35	2.62	2.88	3.16	3.46	3.77	4.07	4.38	4.68
	3	3	5	5	5	5	6	7	7	7	7	7	7	7	8	8	8	1	8	8
2.6	.05	.17	.28	.44	.63	.82	1.04	1.26	1.49	1.74	2.01	2.27	2.54	2.80	3.10	3.40	3.71	4.01	4.32	4.62
	3	3	3	5	5	5	6	6	6	7	7	7	7	8	8	8	8	8	1	8
2.4	.05	.16	.27	.40	.58	.79	1.02	1.24	1.47	1.71	1.98	2.24	2.51	2.77	3.06	3.36	3.67	3.97	4.28	4.58
	2	3	3	4	5	6	6	6	6	7	7	7	7	7	8	8	1	8	8	8
2.3	.05	.14	.25	.39	.57	.79	1.02	1.24	1.47	1.70	1.94	2.20	2.47	2.75	3.05	3.35	3.66	3.96	4.27	4.57
	2	3	3	4	5	6	6	6	6	6	7	7	7	8	8	8	8	8	8	8
2.2	.05	.14	.25	.39	.55	.74	.93	1.13	1.39	1.66	1.93	2.19	2.46	2.72	3.01	3.31	3.62	3.92	4.23	4.53
	2	3	3	4	5	5	5	7	7	7	7	7	7	7	8	8	8	8	8	8
2.1	.05	.14	.25	.38	.53	.70	.89	1.12	1.38	1.65	1.92	2.18	2.45	2.71	2.98	3.28	3.59	3.89	4.20	4.50
	2	3	3	4	4	5	5	7	7	7	7	7	7	7	8	8	8	8	8	8
2.0	.05	.12	.23	.35	.50	.65	.81	1.03	1.28	1.55	1.82	2.08	2.35	2.61	2.88	3.15	3.41	3.68	3.95	4.25
	2	3	3	4	4	4	6	6	7	7	7	7	7	7	7	7	7	7	1	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
NORTH CREEK NEAR LANSING
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
90
80
70
60
55
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45
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35
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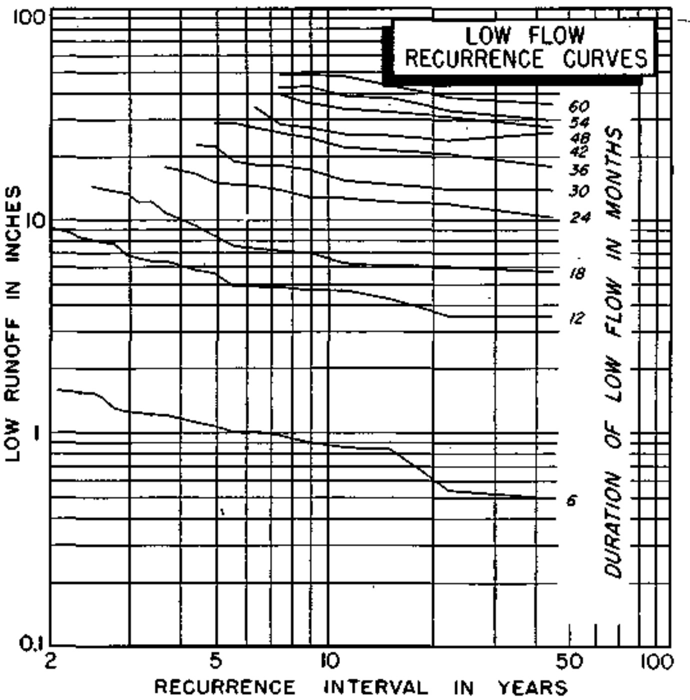
20
15
10
5

THORN CREEK AT THORNTON



STATION 27

LOCATION
Near center of N ½ sec 34, T36N, R14E, Cook County, at Ridge Road Bridge in Thornton

DRAINAGE AREA
106 square miles

ACTUAL FLOW DATA
PERIOD: June 1948 thru Sept 1959
CONTINUOUS RECORD: 11 years; water years 1949-59

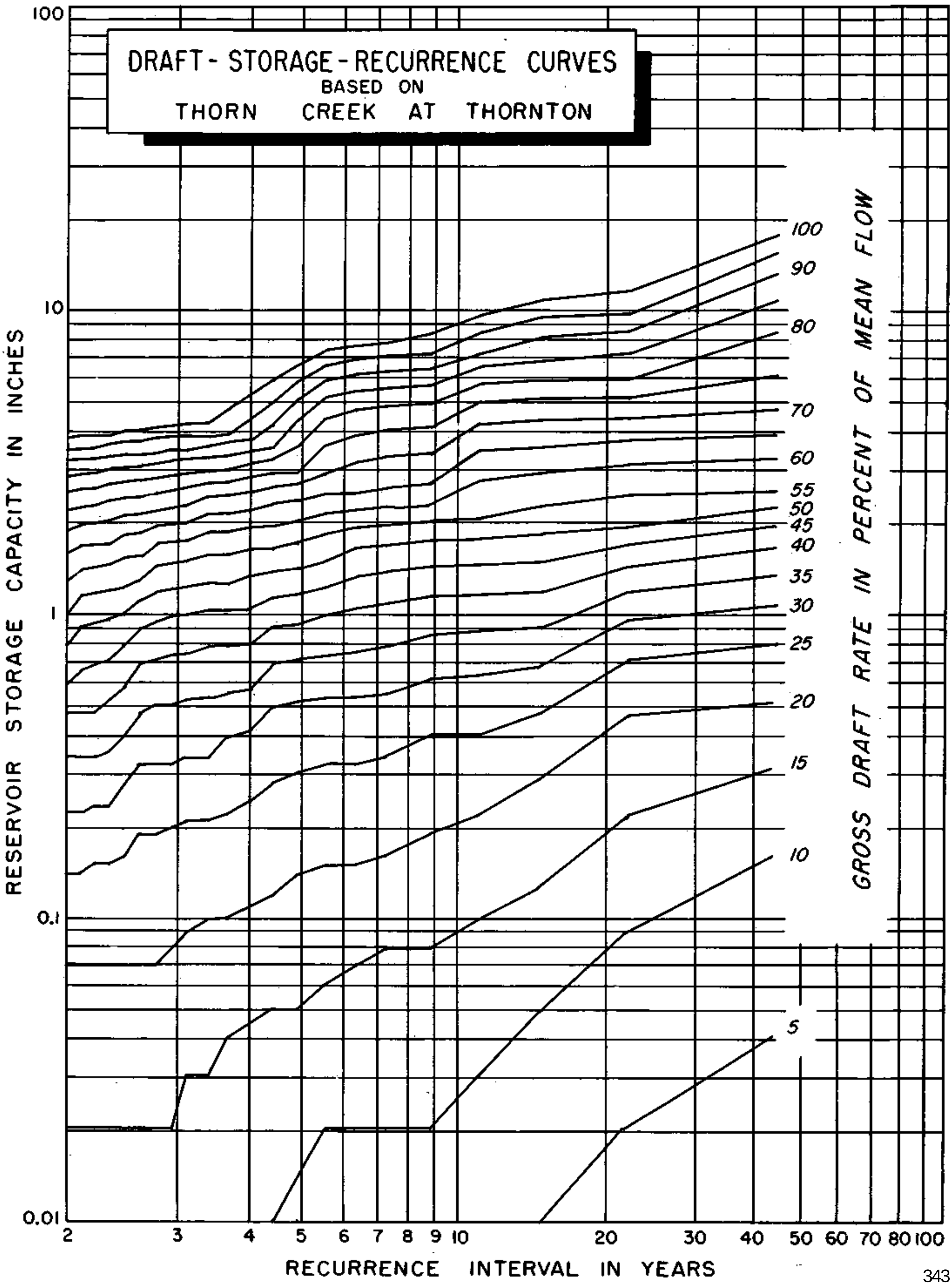
SYNTHETIC FLOW DATA
PERIOD : 33 years; water years 1916-48
INDEX STATION: Kankakee River at Momence
COINCIDENT RECORD: 11 years; water years 1949-59

TOTAL DATA ANALYZED
PERIOD : 44 years; water years 1916-59
MEAN DISCHARGE : 0.83 inch per month

Draft-Storage-Recurrence Data for Thorn Creek at Thornton

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.04	.16	.31	.51	.79	1.08	1.37	1.66	1.95	2.25	2.54	3.25	4.00	4.75	6.14	8.46	10.79	13.11	15.44	17.76
	2	3	4	6	7	7	7	7	7	7	7	18	18	18	56	55	55	56	56	56
22.0	.02	.09	.22	.46	.71	.95	1.20	1.45	1.70	1.95	2.47	3.14	3.80	4.47	5.13	5.96	7.24	8.56	9.89	11.59
	1	2	5	6	6	6	6	6	6	6	16	16	16	16	18	30	32	32	32	54
14.7	.01	.05	.13	.29	.47	.68	.90	1.18	1.50	1.83	2.26	2.93	3.63	4.38	5.13	5.87	6.83	8.15	9.48	10.81
	1	1	4	4	5	5	6	7	8	8	16	16	18	18	18	18	32	32	32	32
11.0	.00	.03	.10	.22	.40	.63	.88	1.17	1.46	1.76	2.05	2.74	3.49	4.24	4.99	5.73	6.48	7.23	8.43	9.67
	1	1	2	3	5	6	7	7	7	7	7	18	16	18	18	18	16	18	30	30
8.8	.00	.02	.08	.19	.40	.61	.86	1.15	1.44	1.74	2.03	2.32	2.68	3.43	4.16	4.92	5.67	6.42	7.16	8.41
	1	1	2	5	5	5	7	7	7	7	7	7	18	18	18	18	18	18	18	44
7.3	.00	.02	.08	.16	.34	.55	.79	1.08	1.37	1.67	1.96	2.25	2.56	3.31	4.06	4.80	5.55	6.30	7.04	7.79
	1	1	2	3	5	5	7	7	7	7	7	7	16	18	18	18	18	18	18	18
6.3	.00	.02	.07	.15	.32	.53	.75	1.04	1.33	1.63	1.92	2.21	2.50	3.18	3.93	4.67	5.42	6.17	6.91	7.66
	1	1	2	3	5	5	7	7	7	7	7	7	8	18	18	18	18	18	18	18
5.5	.00	.02	.06	.15	.32	.53	.73	.98	1.23	1.49	1.82	2.15	2.49	2.91	3.64	4.38	5.13	5.88	6.62	7.37
	1	1	1	3	5	5	6	6	6	8	8	8	8	16	18	18	18	18	18	18
4.9	.00	.01	.05	.14	.30	.51	.71	.92	1.16	1.41	1.69	2.02	2.35	2.69	3.02	3.59	4.34	5.09	5.83	6.58
	1	1	1	3	5	5	5	5	6	6	8	8	8	8	8	18	18	18	18	18
4.4	.00	.01	.05	.12	.28	.49	.69	.90	1.13	1.38	1.63	1.95	2.29	2.62	2.95	3.28	3.61	4.18	5.01	5.84
	1	1	1	2	5	5	5	5	6	6	7	8	8	8	8	8	8	20	20	20
4.0	.00	.01	.05	.11	.24	.41	.57	.79	1.04	1.34	1.63	1.92	2.21	2.51	2.84	3.17	3.50	3.84	4.19	4.94
	1	1	1	2	4	4	5	6	7	7	7	7	7	8	8	8	8	8	18	18
3.7	.00	.00	.04	.10	.22	.39	.55	.78	1.03	1.28	1.56	1.85	2.14	2.43	2.73	3.06	3.39	3.73	4.06	4.71
	1	1	1	3	4	4	4	6	6	6	7	7	7	7	8	8	8	8	8	20
3.4	.00	.00	.03	.10	.21	.34	.53	.78	1.03	1.28	1.56	1.85	2.14	2.43	2.72	3.01	3.30	3.63	3.96	4.29
	1	1	1	2	3	3	6	6	6	6	7	7	7	7	7	7	7	8	1	8
3.1	.00	.00	.03	.09	.21	.34	.52	.74	.99	1.24	1.49	1.74	1.99	2.27	2.60	2.93	3.26	3.60	3.93	4.26
	1	1	1	3	3	3	5	6	6	5	6	6	6	8	8	8	1	8	8	8
2.9	.00	.00	.02	.08	.20	.33	.50	.73	.98	1.23	1.48	1.73	1.98	2.23	2.55	2.88	3.21	3.55	3.88	4.21
	1	1	1	3	3	3	5	6	6	6	6	6	6	6	8	8	8	1	8	8
2.8	.00	.00	.02	.07	.19	.32	.50	.71	.94	1.19	1.44	1.69	1.94	2.19	2.50	2.83	3.16	3.50	3.83	4.16
	1	1	1	3	3	3	5	5	6	6	6	6	6	6	8	8	8	8	1	8
2.6	.00	.00	.02	.07	.19	.32	.47	.68	.89	1.10	1.30	1.55	1.84	2.13	2.42	2.75	3.08	3.42	3.75	4.08
	1	1	1	3	3	3	5	5	5	5	5	7	7	7	8	8	8	8	1	8
2.4	.00	.00	.02	.07	.16	.27	.39	.57	.78	.99	1.23	1.52	1.81	2.10	2.40	2.73	3.06	3.40	3.73	4.06
	1	1	1	2	2	3	3	5	5	5	7	7	7	7	8	8	8	8	8	8
2.3	.00	.00	.02	.07	.15	.23	.35	.52	.70	.95	1.20	1.45	1.70	2.02	2.35	2.68	3.01	3.35	3.68	4.01
	1	1	1	1	2	2	4	4	6	5	6	6	7	8	8	8	8	8	8	8
2.2	.00	.00	.02	.07	.15	.23	.34	.47	.68	.93	1.18	1.43	1.69	1.98	2.27	2.59	2.92	3.26	3.59	3.92
	1	1	1	1	2	2	3	3	6	6	6	6	7	7	7	8	3	8	8	8
2.1	.00	.00	.02	.07	.14	.22	.34	.47	.65	.90	1.15	1.40	1.67	1.96	2.25	2.58	2.91	3.25	3.58	3.91
	1	1	1	1	2	3	3	3	6	5	6	6	7	7	6	8	8	8	1	8
2.0	.00	.00	.01	.06	.14	.22	.34	.47	.59	.79	1.00	1.29	1.56	1.87	2.19	2.52	2.85	3.19	3.52	3.85
	1	1	1	1	2	3	3	3	3	5	7	7	7	7	8	8	8	8	1	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
THORN CREEK AT THORNTON
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
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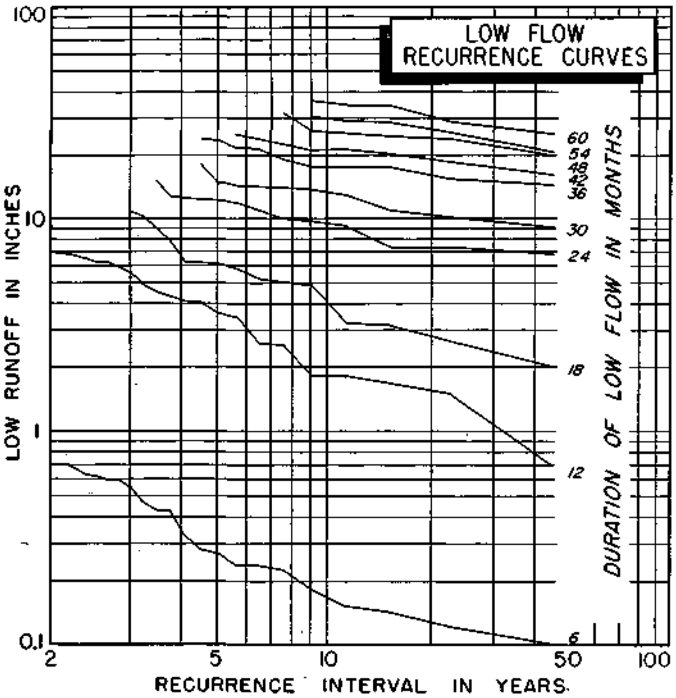


STATION 29

LOCATION
In SE ¼ sec 9, T39N, R12E, Cook County, at bridge on Washington Boulevard in Bellwood

DRAINAGE AREA
18.2 square miles

ACTUAL FLOW DATA
PERIOD : Aug 1950 thru June 1951, Oct 1951 thru Sept 1959
CONTINUOUS RECORD: 8 years; water years 1952-59

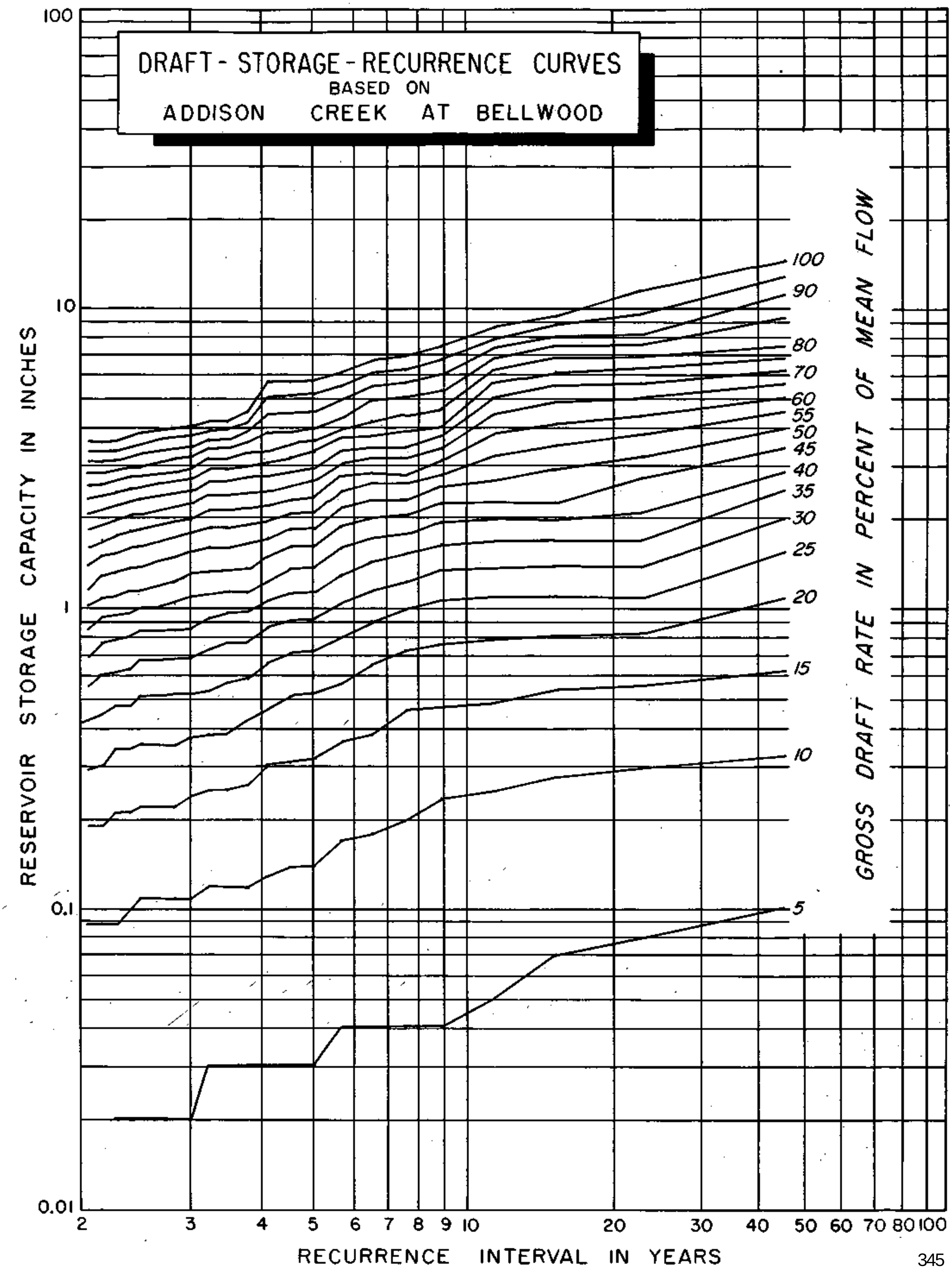
SYNTHETIC FLOW DATA
PERIOD: 37 years; water years 1915-1951
INDEX STATION : DesPlaines River at Riverside
COINCIDENT RECORD : 8 years; water years 1952-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.66 inch per month

Draft-Storage-Recurrence Data for Addison Creek at Bellwood

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.10	.33	.63	1.09	1.55	2.01	2.48	3.00	3.53	4.06	4.59	5.12	5.69	6.29	6.88	7.56	9.34	11.13	12.91	14.70
	7	7	14	14	14	14	16	16	16	16	16	16	18	18	18	54	54	54	54	56
22.5	.08	.30	.56	.83	1.10	1.39	1.69	2.09	2.69	3.28	3.87	4.47	5.06	5.66	6.32	6.98	7.64	8.30	9.63	11.54
	6	8	8	8	9	9	9	18	18	18	18	18	18	20	20	20	20	20	58	58
15.0	.07	.28	.54	.81	1.10	1.39	1.69	1.99	2.28	2.89	3.55	4.21	4.87	5.53	6.19	6.85	7.51	8.17	8.83	9.49
	5	8	8	8	9	9	9	9	10	20	20	20	20	20	20	20	20	20	20	20
11.3	.05	.25	.49	.79	1.09	1.38	1.68	1.98	2.27	2.70	3.29	3.89	4.48	5.08	5.67	6.26	6.86	7.45	8.05	8.64
	6	7	9	9	9	9	9	9	9	18	18	18	18	18	18	18	18	18	18	18
9.0	.04	.24	.47	.76	1.06	1.35	1.65	1.95	2.24	2.54	2.84	3.16	3.49	3.82	4.15	4.68	5.34	6.06	6.78	7.51
	3	7	8	9	9	9	9	9	9	9	9	10	10	10	10	20	20	22	22	22
7.5	.04	.20	.46	.73	.99	1.25	1.52	1.78	2.05	2.31	2.61	2.90	3.20	3.50	3.93	4.46	5.06	5.65	6.25	6.95
	3	8	8	8	8	8	8	8	8	9	9	9	9	9	16	18	18	18	18	22
6.4	.04	.18	.38	.65	.91	1.17	1.44	1.71	2.00	2.30	2.60	2.89	3.19	3.49	3.79	4.30	4.90	5.49	6.09	6.68
	3	5	8	8	8	8	8	9	9	9	9	9	9	9	10	18	16	18	1	18
5.6	.04	.17	.36	.56	.80	1.03	1.30	1.58	1.87	2.17	2.47	2.76	3.06	3.38	3.71	4.04	4.37	4.93	5.53	6.12
	3	6	6	7	7	8	8	9	9	9	9	9	9	10	10	10	10	18	18	18
5.0	.03	.14	.32	.52	.72	.92	1.15	1.38	1.61	1.84	2.09	2.36	2.68	3.01	3.34	3.67	4.03	4.56	5.16	5.75
	3	5	6	6	6	7	7	7	7	7	8	8	10	10	10	10	16	18	18	18
4.5	.03	.14	.31	.51	.71	.91	1.14	1.37	1.60	1.83	2.06	2.29	2.56	2.89	3.22	3.55	3.90	4.49	5.09	5.68
	3	5	6	6	6	7	7	7	7	7	7	7	10	10	10	10	18	18	18	18
4.1	.03	.13	.30	.46	.65	.86	1.06	1.26	1.49	1.72	1.95	2.21	2.47	2.76	3.06	3.35	3.86	4.45	5.05	5.64
	2	5	5	6	6	6	6	7	7	7	7	8	8	9	9	9	18	18	18	18
3.8	.03	.12	.26	.42	.59	.77	.97	1.16	1.38	1.64	1.90	2.17	2.44	2.74	3.04	3.33	3.63	3.93	4.22	4.52
	2	4	5	5	5	6	6	6	8	8	8	8	9	9	9	9	1	9	9	9
3.5	.03	.12	.25	.38	.57	.77	.97	1.16	1.36	1.60	1.86	2.13	2.39	2.66	2.92	3.18	3.45	3.71	3.98	4.24
	2	3	4	5	6	6	6	6	6	8	8	8	8	8	8	8	8	8	1	9
3.2	.03	.12	.25	.38	.53	.73	.93	1.12	1.34	1.60	1.86	2.13	2.39	2.66	2.92	3.18	3.45	3.71	3.98	4.24
	2	3	4	4	6	6	6	6	8	8	8	8	8	8	8	8	8	8	8	8
3.0	.02	.11	.24	.37	.52	.68	.86	1.09	1.32	1.55	1.78	2.01	2.24	2.47	2.72	2.98	3.25	3.51	3.80	4.10
	2	3	4	4	5	5	7	7	7	7	7	7	7	7	8	8	8	9	9	9
2.8	.02	.11	.22	.35	.52	.68	.85	1.03	1.26	1.49	1.72	1.95	2.18	2.41	2.65	2.88	3.16	3.46	3.75	4.05
	2	3	4	5	5	5	5	7	7	7	7	7	7	7	7	7	9	9	9	9
2.6	.02	.11	.22	.35	.51	.67	.84	1.00	1.21	1.44	1.67	1.90	2.13	2.36	2.60	2.83	3.10	3.40	3.69	3.99
	2	3	4	4	5	5	5	6	7	7	7	7	7	7	7	7	9	9	9	9
2.5	.02	.11	.22	.35	.51	.67	.84	1.00	1.17	1.37	1.60	1.83	2.06	2.29	2.53	2.76	2.99	3.28	3.57	3.87
	2	3	4	4	5	5	5	5	6	7	7	7	7	7	7	7	7	9	9	9
2.4	.02	.10	.21	.34	.47	.63	.80	.96	1.16	1.36	1.59	1.82	2.05	2.28	2.52	2.75	2.98	3.22	3.49	3.75
	2	3	4	4	5	5	5	6	6	7	7	7	7	7	7	7	7	8	1	8
2.3	.02	.09	.21	.34	.47	.61	.78	.94	1.12	1.32	1.52	1.74	1.97	2.20	2.44	2.67	2.90	3.13	3.39	3.65
	2	3	4	4	4	5	5	5	6	6	6	7	7	7	7	7	7	7	8	8
2.1	.01	.09	.19	.30	.44	.60	.77	.93	1.10	1.29	1.49	1.69	1.90	2.13	2.37	2.60	2.84	3.10	3.37	3.63
	2	3	3	4	5	5	5	5	5	6	6	6	7	7	7	7	8	1	8	8
2.0	.01	.09	.19	.29	.42	.55	.69	.85	1.02	1.19	1.39	1.60	1.83	2.06	2.31	2.57	2.84	3.10	3.37	3.63
	2	3	3	4	4	4	5	5	5	6	6	7	7	7	8	8	8	1	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
ADDISON CREEK AT BELLWOOD
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
80
70
60
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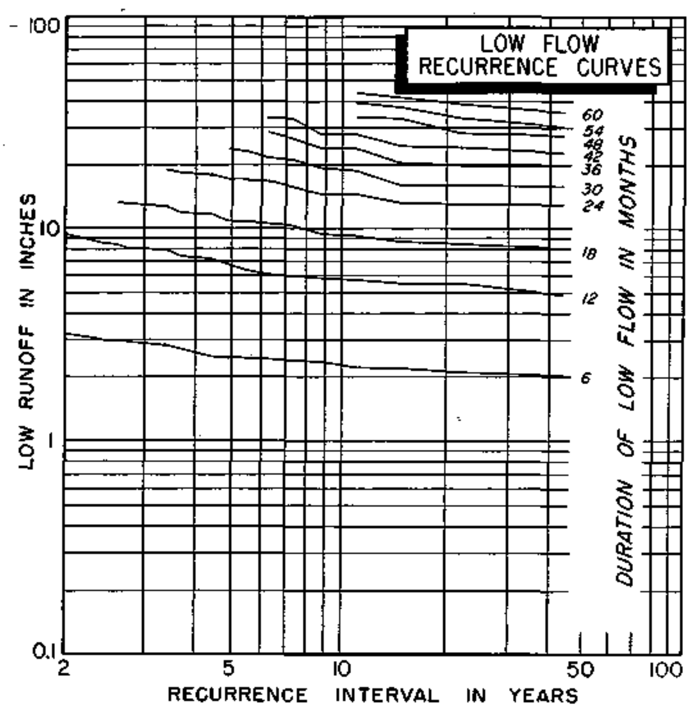
15
10
5

BOONE CREEK NEAR McHENRY



STATION 40

LOCATION

In W ½ sec 4, T44N, R8E, McHenry County, at county highway bridge, 0.5 mile west of Clemens School, 2.5 miles southwest of McHenry and 6.5 miles east of Woodstock

DRAINAGE AREA

15.6 square miles

ACTUAL FLOW DATA

PERIOD: July 1948 thru Sept 1959

CONTINUOUS RECORD: 11 years; water years 1949-59

SYNTHETIC FLOW DATA

PERIOD: 33 years; water years 1916-48

INDEX STATION: Fox River at Algonquin

COINCIDENT RECORD: 11 years; water years 1949-59

TOTAL DATA ANALYZED

PERIOD: 44 years; water years 1916-59

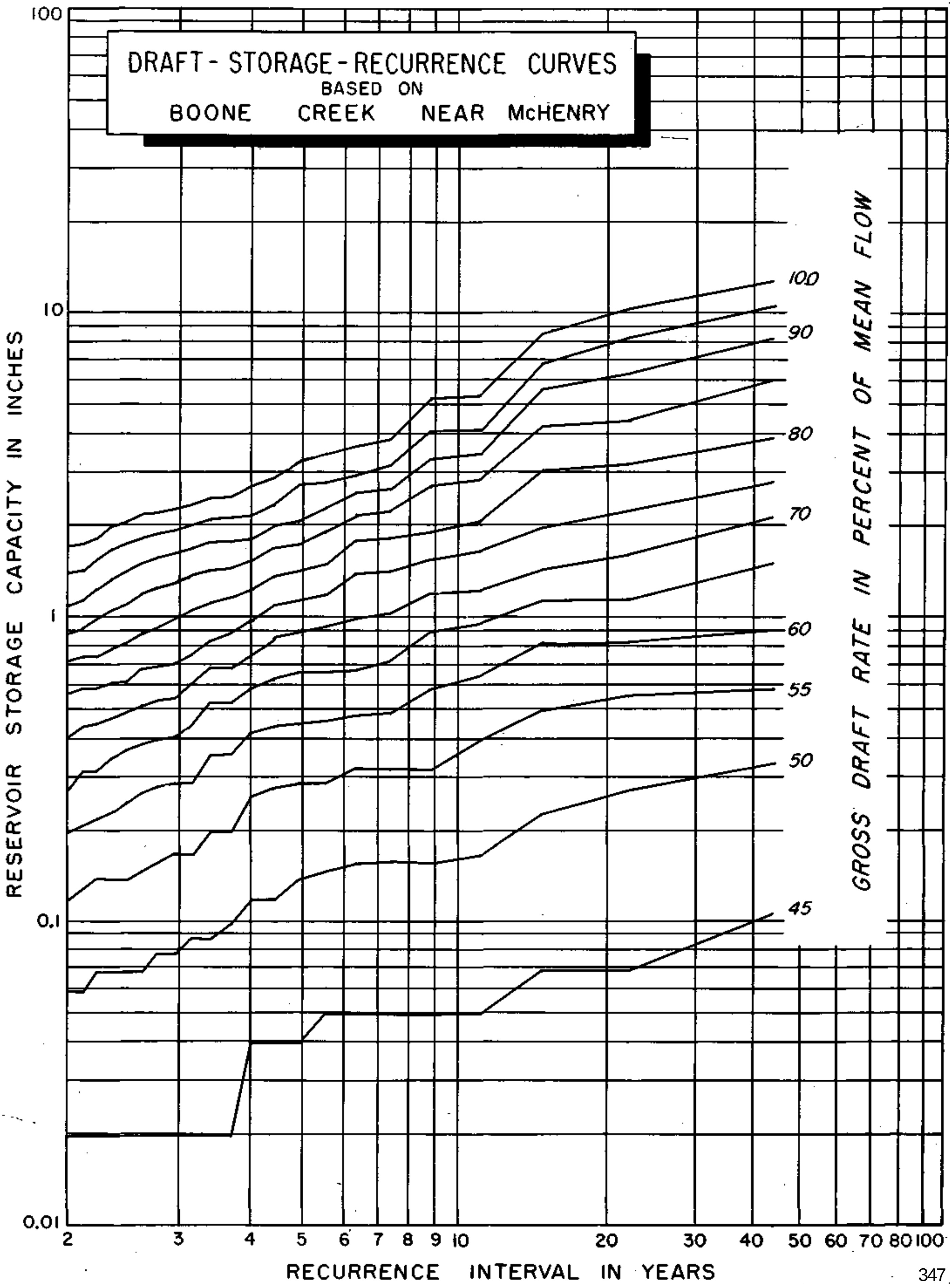
MEAN DISCHARGE : 0.81 inch per month

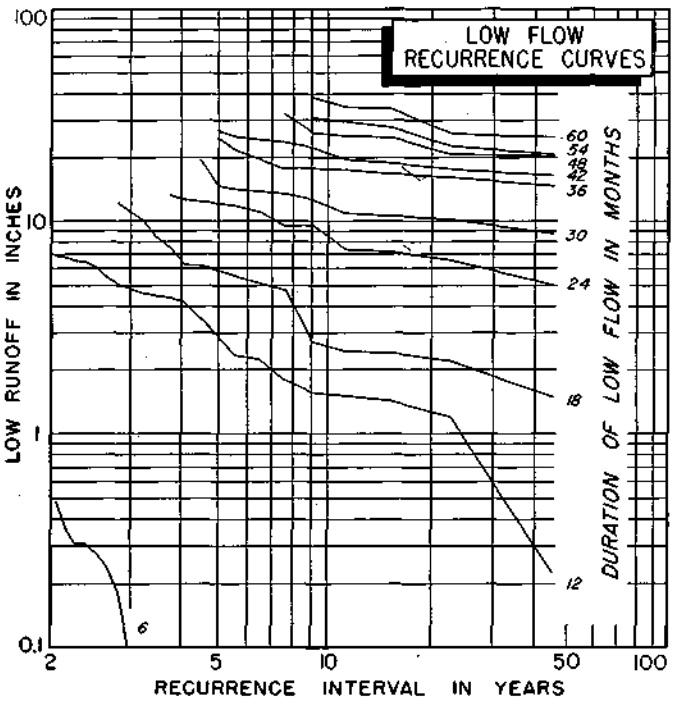
Draft-Storage-Recurrence Data for Boone Creek near McHenry

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.00	.00	.00	.00	.00	.00	.00	.01	.11	.34	.59	.92	1.33	2.18	2.83	3.96	6.15	8.40	10.67	12.98
	1	1	1	1	1	1	1	1	5	6	7	9	16	16	16	54	54	56	56	58
22.0	.00	.00	.00	.00	.00	.00	.00	.00	.07	.28	.56	.85	1.17	1.63	2.28	3.26	4.56	6.42	8.45	10.47
	1	1	1	1	1	1	1	1	4	7	7	8	8	15	16	32	38	50	50	50
14.7	.00	.00	.00	.00	.00	.00	.00	.00	.07	.23	.50	.83	1.15	1.48	2.01	3.08	4.37	5.67	6.96	8.64
	1	1	1	1	1	1	1	1	4	4	8	8	8	8	18	32	32	32	32	42
11.0	.00	.00	.00	.00	.00	.00	.00	.00	.05	.17	.40	.65	.97	1.31	1.68	2.10	2.83	3.56	4.36	5.46
	1	1	1	1	1	1	1	1	2	3	6	8	8	9	9	18	18	18	20	44
8.8	.00	.00	.00	.00	.00	.00	.00	.00	.05	.16	.32	.59	.91	1.24	1.58	1.94	2.67	3.40	4.20	5.37
	1	1	1	1	1	1	1	1	2	4	4	6	8	8	9	18	18	18	20	42
7.3	.00	.00	.00	.00	.00	.00	.00	.00	.05	.16	.32	.49	.73	1.05	1.46	1.86	2.27	2.67	3.27	3.92
	1	1	1	1	1	1	1	1	2	4	4	6	7	10	10	10	10	10	15	18
6.3	.00	.00	.00	.00	.00	.00	.00	.00	.05	.16	.32	.48	.68	1.00	1.41	1.81	2.22	2.62	3.03	3.74
	1	1	1	1	1	1	1	1	2	4	4	5	6	10	10	10	10	10	10	18
5.5	.00	.00	.00	.00	.00	.00	.00	.00	.05	.15	.29	.45	.57	.94	1.22	1.52	1.93	2.34	2.80	3.53
	1	1	1	1	1	1	1	1	2	3	4	5	6	7	7	10	10	11	18	18
4.9	.00	.00	.00	.00	.00	.00	.00	.00	.04	.14	.29	.45	.67	.91	1.16	1.45	1.77	2.09	2.75	3.48
	1	1	1	1	1	1	1	1	2	3	4	4	6	6	7	7	8	8	18	18
4.4	.00	.00	.00	.00	.00	.00	.00	.00	.04	.12	.28	.44	.63	.87	1.12	1.39	1.71	2.03	2.36	2.92
	1	1	1	1	1	1	1	1	2	4	4	4	6	6	6	7	8	8	8	16
4.0	.00	.00	.00	.00	.00	.00	.00	.00	.04	.12	.26	.42	.59	.75	.99	1.28	1.56	1.84	2.19	2.71
	1	1	1	1	1	1	1	1	2	3	4	4	4	4	7	7	7	7	9	16
3.7	.00	.00	.00	.00	.00	.00	.00	.00	.02	.10	.20	.36	.53	.59	.90	1.19	1.48	1.80	2.16	2.53
	1	1	1	1	1	1	1	1	2	2	4	4	4	4	7	7	8	8	9	16
3.4	.00	.00	.00	.00	.00	.00	.00	.00	.02	.09	.20	.36	.53	.69	.85	1.14	1.47	1.79	2.14	2.50
	1	1	1	1	1	1	1	1	1	2	4	4	4	4	4	8	8	8	9	9
3.1	.00	.00	.00	.00	.00	.00	.00	.00	.02	.09	.17	.29	.45	.61	.77	1.07	1.40	1.72	2.05	2.39
	1	1	1	1	1	1	1	1	1	2	3	3	4	4	4	8	8	8	1	9
2.9	.00	.00	.00	.00	.00	.00	.00	.00	.02	.08	.17	.29	.41	.55	.72	1.01	1.32	1.64	1.97	2.30
	1	1	1	1	1	1	1	1	1	2	3	3	5	4	7	7	8	8	1	9
2.8	.00	.00	.00	.00	.00	.00	.00	.00	.02	.08	.16	.28	.40	.54	.70	.94	1.27	1.59	1.92	2.24
	1	1	1	1	1	1	1	1	1	2	3	3	3	4	4	8	8	8	8	9
2.6	.00	.00	.00	.00	.00	.00	.00	.00	.02	.07	.15	.27	.39	.52	.68	.90	1.21	1.53	1.86	2.21
	1	1	1	1	1	1	1	1	1	2	3	3	3	4	4	7	8	8	1	9
2.4	.00	.00	.00	.00	.00	.00	.00	.00	.02	.07	.14	.25	.37	.49	.62	.83	1.12	1.44	1.77	2.09
	1	1	1	1	1	1	1	1	1	1	2	3	3	3	4	7	8	8	1	8
2.3	.00	.00	.00	.00	.00	.00	.00	.00	.02	.07	.14	.23	.35	.47	.61	.80	1.07	1.37	1.70	2.02
	1	1	1	1	1	1	1	1	1	1	2	3	3	3	4	5	7	8	1	8
2.2	.00	.00	.00	.00	.00	.00	.00	.00	.02	.07	.14	.22	.33	.45	.59	.73	1.00	1.28	1.57	1.85
	1	1	1	1	1	1	1	1	1	1	2	2	3	3	4	4	7	7	7	7
2.1	.00	.00	.00	.00	.00	.00	.00	.00	.01	.06	.13	.21	.32	.44	.59	.75	.92	1.15	1.45	1.77
	1	1	1	1	1	1	1	1	1	1	2	2	3	3	4	4	5	6	8	8
2.0	.00	.00	.00	.00	.00	.00	.00	.00	.01	.05	.12	.20	.28	.41	.57	.73	.90	1.11	1.42	1.74
	1	1	1	1	1	1	1	1	1	1	2	2	2	4	4	4	5	5	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BOONE CREEK NEAR McHENRY
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100



STATION 42

LOCATION

In NE ¼ NW ¼ sec 4, T42N, R11E, Cook County, at highway bridge 2.5 miles west of Wheeling

DRAINAGE AREA

19.4 square miles

ACTUAL FLOW DATA

PERIOD: Aug 1952 thru Sept 1959

CONTINUOUS RECORD: 7 years; water years 1953-59

SYNTHETIC FLOW DATA

PERIOD: 38 years; water years 1915-52

INDEX STATION : DesPlaines River at Riverside

COINCIDENT RECORD: 7 years; water years 1953-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

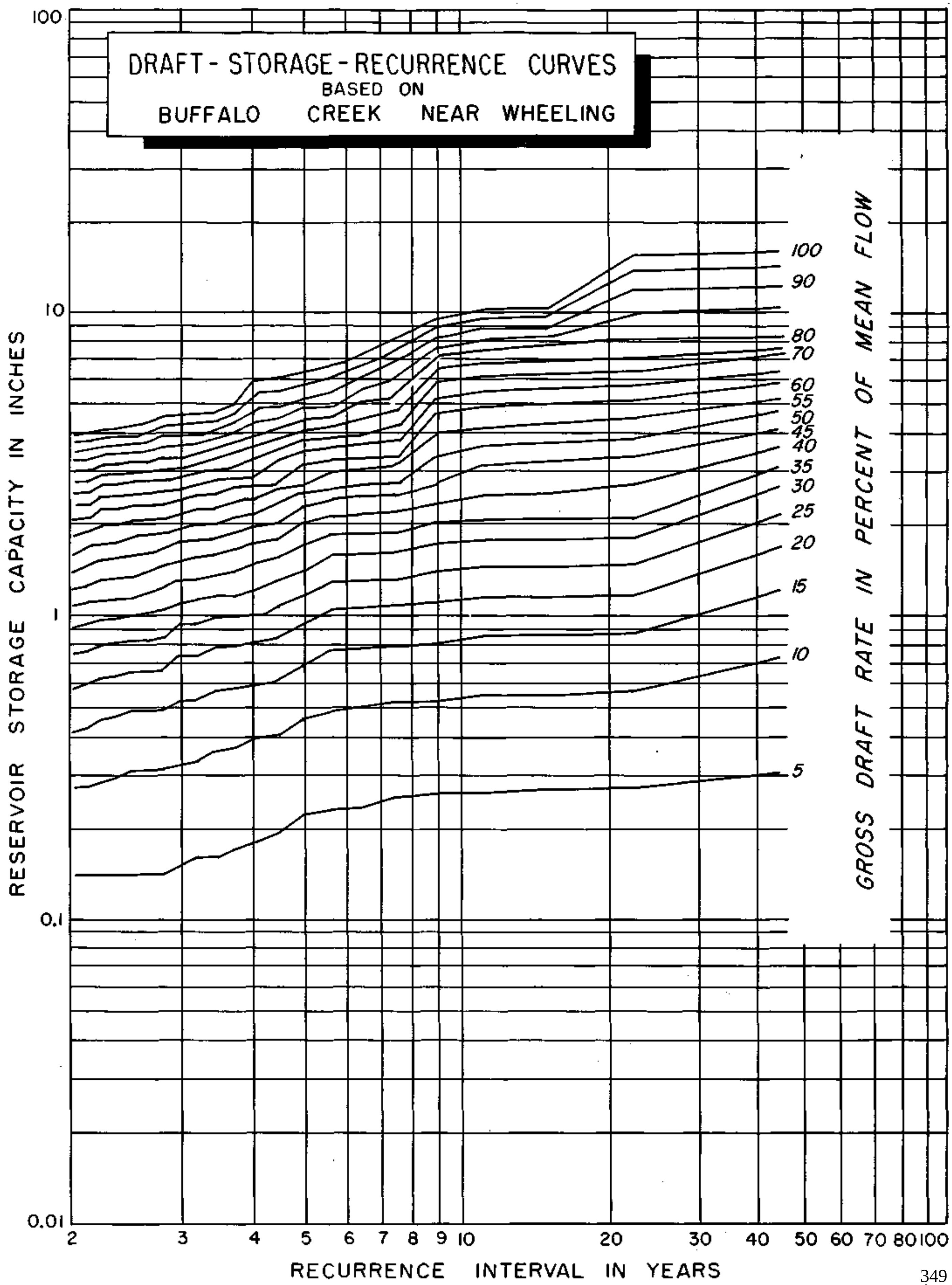
MEAN DISCHARGE : 0.68 inch per month

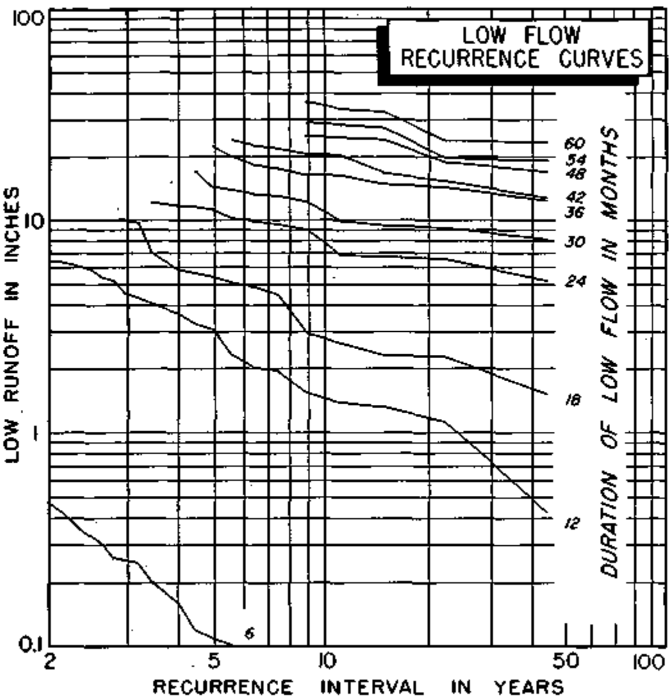
Draft-Storage-Recurrence Data for Buffalo Creek near Wheeling

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.31	.73	1.21	1.68	2.16	2.64	3.15	3.69	4.24	4.78	5.32	5.87	6.46	7.07	7.68	8.46	10.37	12.27	14.18	16.10
	9	14	14	14	14	14	16	16	16	16	16	16	18	18	18	56	56	56	56	60
22.5	.27	.57	.88	1.18	1.49	1.80	2.10	2.69	3.30	3.91	4.52	5.13	5.75	6.36	7.03	8.13	10.00	11.90	13.81	15.71
	9	9	9	9	9	9	9	18	18	16	18	18	18	18	20	54	56	56	56	56
15.0	.27	.55	.86	1.16	1.47	1.78	2.08	2.50	3.11	3.72	4.33	4.94	5.60	6.28	6.96	7.64	8.32	9.00	9.68	10.36
	8	9	9	9	9	9	9	18	18	16	18	18	20	20	20	20	20	20	20	20
11.3	.26	.55	.86	1.16	1.47	1.78	2.08	2.46	3.07	3.68	4.29	4.90	5.52	6.20	6.88	7.56	8.24	8.92	9.60	10.28
	8	9	9	9	9	9	9	18	18	18	18	18	20	20	20	20	20	20	20	20
9.0	.26	.53	.81	1.11	1.42	1.73	2.03	2.34	2.78	3.39	4.00	4.61	5.23	5.84	6.45	7.06	7.67	8.29	8.90	9.51
	8	8	9	9	9	9	9	9	18	18	18	18	18	18	18	18	18	18	18	18
7.5	.25	.52	.80	1.07	1.34	1.61	1.88	2.18	2.48	2.79	3.10	3.40	3.80	4.27	4.75	5.27	6.02	6.76	7.51	8.26
	8	8	8	8	8	8	8	9	9	9	9	9	14	14	14	22	22	22	22	22
6.4	.23	.50	.78	1.05	1.32	1.59	1.86	2.15	2.45	2.76	3.07	3.37	3.68	3.98	4.47	5.01	5.56	6.10	6.65	7.25
	8	8	8	8	8	8	8	9	9	9	9	9	9	9	16	16	16	16	1	18
5.6	.23	.49	.77	1.04	1.31	1.58	1.85	2.13	2.40	2.69	3.00	3.30	3.61	3.91	4.22	4.53	4.85	5.47	6.08	6.69
	7	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	18	18	1	18
5.0	.22	.46	.69	.93	1.17	1.44	1.71	1.99	2.27	2.58	2.89	3.19	3.50	3.80	4.13	4.47	4.81	5.18	5.79	6.40
	7	7	7	7	8	8	8	8	9	9	9	9	9	9	10	10	10	18	18	18
4.5	.19	.40	.60	.84	1.08	1.32	1.56	1.79	2.03	2.33	2.64	2.94	3.25	3.55	3.86	4.17	4.47	4.84	5.45	6.06
	6	6	7	7	7	7	7	7	7	9	9	9	9	9	9	9	11	18	18	18
4.1	.18	.39	.59	.80	1.01	1.25	1.49	1.72	1.96	2.20	2.44	2.68	2.96	3.30	3.64	3.98	4.32	4.83	5.44	6.05
	6	6	6	6	7	7	7	7	7	7	7	7	10	10	10	10	10	18	18	18
3.8	.17	.37	.57	.78	.98	1.18	1.42	1.65	1.89	2.13	2.37	2.61	2.87	3.14	3.45	3.76	4.06	4.37	4.67	4.98
	5	6	6	6	6	7	7	7	7	7	7	7	8	9	9	9	1	9	9	9
3.5	.16	.36	.56	.77	.97	1.17	1.38	1.58	1.79	2.01	2.25	2.51	2.79	3.06	3.33	3.60	3.87	4.15	4.42	4.69
	5	6	6	6	6	6	6	6	6	7	7	8	8	8	8	8	1	8	8	8
3.2	.16	.33	.52	.73	.93	1.13	1.34	1.54	1.77	2.01	2.25	2.49	2.72	2.96	3.20	3.44	3.70	4.01	4.31	4.62
	5	5	6	6	6	6	6	6	7	7	7	7	7	7	7	7	9	9	1	9
3.0	.15	.32	.52	.73	.93	1.13	1.34	1.54	1.75	1.95	2.15	2.39	2.62	2.86	3.10	3.36	3.66	3.97	4.27	4.58
	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	9	9	9	9	9
2.8	.14	.31	.48	.65	.84	1.04	1.25	1.45	1.66	1.86	2.06	2.32	2.55	2.79	3.03	3.34	3.64	3.95	4.25	4.56
	5	5	5	5	6	6	6	6	6	6	7	7	7	7	9	9	9	9	9	9
2.6	.14	.31	.48	.65	.82	.99	1.20	1.40	1.61	1.83	2.07	2.31	2.54	2.78	3.02	3.26	3.50	3.74	4.03	4.34
	5	5	5	5	5	6	6	6	6	7	7	7	7	7	7	7	7	8	9	9
2.5	.14	.31	.48	.65	.82	.99	1.16	1.35	1.57	1.81	2.05	2.29	2.52	2.76	3.00	3.24	3.48	3.71	3.96	4.27
	5	5	5	5	5	5	5	6	7	7	7	7	7	7	7	7	7	1	9	9
2.4	.14	.29	.46	.63	.80	.97	1.14	1.32	1.53	1.74	1.98	2.22	2.45	2.69	2.93	3.17	3.41	3.64	3.89	4.16
	4	5	5	5	5	5	5	6	6	7	7	7	7	7	7	7	7	1	8	8
2.3	.14	.28	.45	.62	.79	.96	1.13	1.32	1.53	1.74	1.98	2.22	2.45	2.69	2.93	3.17	3.41	3.64	3.88	4.15
	4	5	5	5	5	5	5	6	6	7	7	7	7	7	7	7	7	7	8	8
2.1	.14	.27	.42	.59	.76	.93	1.10	1.27	1.48	1.68	1.88	2.09	2.30	2.54	2.78	3.02	3.26	3.53	3.80	4.07
	4	4	5	5	5	5	5	6	6	6	6	6	7	7	7	7	7	8	8	8
2.0	.14	.27	.41	.57	.74	.91	1.08	1.25	1.42	1.59	1.82	2.06	2.29	2.53	2.77	3.01	3.25	3.50	3.77	4.04
	4	4	4	5	5	5	5	5	5	5	7	7	7	7	7	7	7	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
BUFFALO CREEK NEAR WHEELING
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 53

LOCATION
In SE ¼ SE ¼ sec 25, T42N, R11E, Cook County, 50 feet upstream from dam No. 2 of Cook County Forest Preserve, 2.5 miles north of DesPlaines

DRAINAGE AREA
359 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1940 thru Sept 1959
CONTINUOUS RECORD: 19 years; water years 1941-59

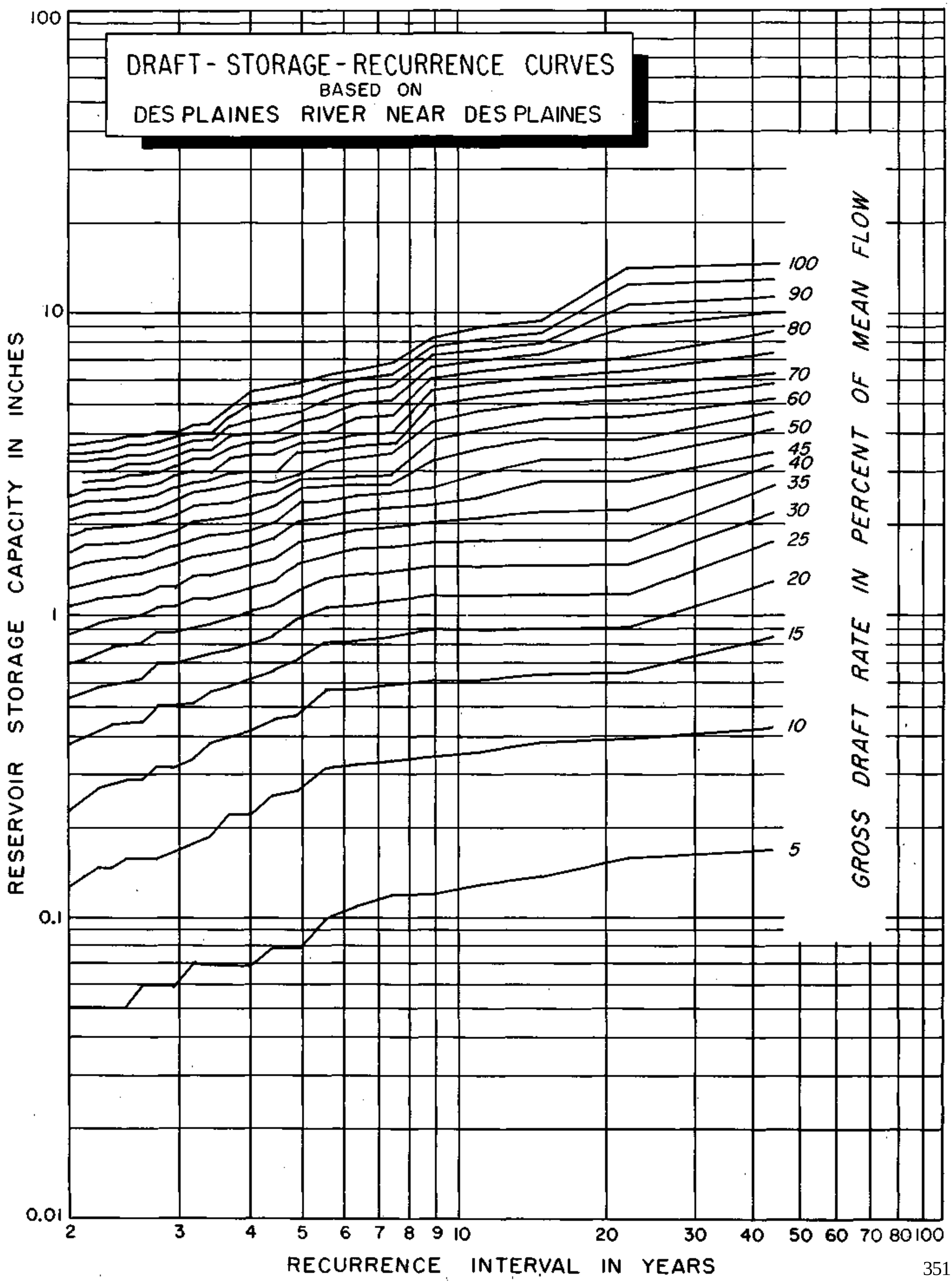
SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1916-40
INDEX STATION: DesPlaines River at Riverside
COINCIDENT RECORD: 19 years; water years 1941-59

TOTAL DATA ANALYZED
PERIOD : 44 years; water years 1916-59
MEAN DISCHARGE : 0.64 inch per month

Draft-Storage-Recurrence Data for DesPlaines River near DesPlaines

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.17 7	.44 14	.88 14	1.33 14	1.78 14	2.23 14	2.73 16	3.25 16	3.76 16	4.27 16	4.78 18	5.35 18	5.93 18	6.50 18	7.51 44	8.92 44	10.33 44	11.73 44	13.18 54	14.93 56
22.0	.16 7	.40 8	.66 8	.93 9	1.22 9	1.51 9	1.82 10	2.26 18	2.83 18	3.41 18	3.99 18	4.62 20	5.26 20	5.90 20	6.54 20	7.33 56	9.12 56	10.92 56	12.71 56	14.50 56
14.7	.14 8	.39 8	.65 8	.92 9	1.21 9	1.50 10	1.82 10	2.24 18	2.81 18	3.39 18	3.97 18	4.54 18	5.12 18	5.69 18	6.27 18	6.85 18	7.48 20	8.12 20	8.76 20	9.60 30
11.0	.13 6	.36 8	.62 9	.91 9	1.20 9	1.49 9	1.80 10	2.12 10	2.51 18	3.09 18	3.67 18	4.24 18	4.82 18	5.39 18	5.97 18	6.55 18	7.13 20	7.77 20	8.41 20	9.10 30
8.8	.12 7	.35 7	.62 9	.91 9	1.20 9	1.49 9	1.78 9	2.06 9	2.35 10	2.71 18	3.29 18	3.86 18	4.44 18	5.01 18	5.59 18	6.17 18	6.74 18	7.32 18	7.89 18	8.47 18
7.3	.12 6	.34 8	.60 8	.86 9	1.15 9	1.44 9	1.73 9	2.01 9	2.30 9	2.59 9	2.88 9	3.17 9	3.48 10	3.80 10	4.16 16	4.67 16	5.23 18	5.81 1	6.38 16	3.96 18
6.3	.11 6	.33 7	.58 8	.83 8	1.10 9	1.39 9	1.68 9	1.96 9	2.25 9	2.54 9	2.83 9	3.12 9	3.40 9	3.69 9	4.05 16	4.56 16	5.07 16	5.59 16	6.10 1	6.61 16
5.5	.10 5	.32 8	.58 8	.83 8	1.09 8	1.35 8	1.60 8	1.86 8	2.14 9	2.43 9	2.72 9	3.01 9	3.29 9	3.58 9	3.87 9	4.18 10	4.63 18	5.21 18	5.78 1	6.36 18
4.9	.08 6	.27 6	.48 8	.73 8	.99 8	1.25 8	1.51 9	1.79 9	2.08 9	2.37 9	2.66 9	2.95 9	3.23 9	3.52 9	3.81 9	4.12 10	4.44 10	4.82 18	5.39 18	5.97 18
4.4	.08 5	.26 6	.46 6	.66 7	.88 7	1.10 7	1.33 7	1.56 8	1.81 8	2.07 6	2.33 8	2.61 9	2.89 9	3.19 10	3.51 10	3.83 10	4.15 10	4.61 18	5.18 1	5.76 18
4.0	.07 4	.22 6	.42 6	.61 7	.83 7	1.05 7	1.28 7	1.50 7	1.73 7	1.95 6	2.22 9	2.52 10	2.84 10	3.16 10	3.48 10	3.80 10	4.12 10	4.49 18	5.06 18	5.64 18
3.7	.07 3	.22 5	.40 6	.59 6	.78 6	.99 7	1.22 7	1.44 7	1.67 7	1.90 8	2.16 8	2.41 10	2.73 10	3.05 10	3.37 10	3.69 10	4.01 10	4.33 1	4.65 10	4.98 18
3.4	.07 3	.19 5	.38 5	.57 6	.76 6	.95 6	1.16 7	1.38 7	1.61 8	1.87 8	2.13 8	2.38 8	2.64 8	2.89 8	3.15 8	3.41 1	3.66 8	3.92 8	4.17 8	4.43 8
3.1	.07 3	.18 5	.34 5	.52 6	.71 6	.92 7	1.15 7	1.37 7	1.60 7	1.82 8	2.08 8	2.33 8	2.59 8	2.84 8	3.10 8	3.36 8	3.61 8	3.87 1	4.12 8	4.38 8
2.9	.06 3	.17 4	.32 6	.51 6	.70 6	.89 6	1.08 6	1.28 6	1.50 7	1.72 7	1.94 8	2.19 8	2.45 8	2.70 8	2.96 8	3.22 8	3.47 8	3.73 1	3.98 8	4.24 8
2.8	.06 3	.16 4	.32 6	.51 6	.70 6	.89 6	1.08 6	1.28 6	1.47 6	1.66 6	1.87 7	2.10 7	2.32 7	2.55 7	2.78 8	3.04 8	3.29 8	3.55 9	3.84 9	4.13 9
2.6	.06 3	.16 4	.29 5	.45 5	.63 6	.82 6	1.01 6	1.21 6	1.40 6	1.59 7	1.81 7	2.04 7	2.26 7	2.49 7	2.73 8	2.99 8	3.24 8	3.50 8	3.75 8	4.03 9
2.4	.05 3	.16 4	.29 5	.45 5	.61 6	.80 6	.99 6	1.19 6	1.38 6	1.57 6	1.77 7	2.00 7	2.22 7	2.46 8	2.72 8	2.98 8	3.23 8	3.49 1	3.74 8	4.02 9
2.3	.05 3	.15 4	.28 5	.44 5	.60 6	.79 6	.98 6	1.18 6	1.37 6	1.56 6	1.77 7	2.00 7	2.22 7	2.45 7	2.67 7	2.89 7	3.12 8	3.38 8	3.63 1	3.89 8
2.2	.05 3	.15 4	.27 5	.43 5	.59 5	.76 6	.95 6	1.15 6	1.34 6	1.53 7	1.75 7	1.98 7	2.20 7	2.43 7	2.65 7	2.87 7	3.10 1	3.35 8	3.60 8	3.86 8
2.1	.05 3	.14 3	.25 4	.40 5	.56 5	.72 6	.91 6	1.11 6	1.30 6	1.51 7	1.73 7	1.96 7	2.18 7	2.41 7	2.63 7	2.85 7	3.08 1	3.30 7	3.53 8	3.79 8
2.0	.04 3	.13 3	.23 4	.38 5	.54 5	.70 5	.88 6	1.08 6	1.27 6	1.46 6	1.65 7	1.88 7	2.10 7	2.33 7	2.55 7	2.77 7	3.00 7	3.23 1	3.48 8	3.74 8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
DES PLAINES RIVER NEAR DES PLAINES
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
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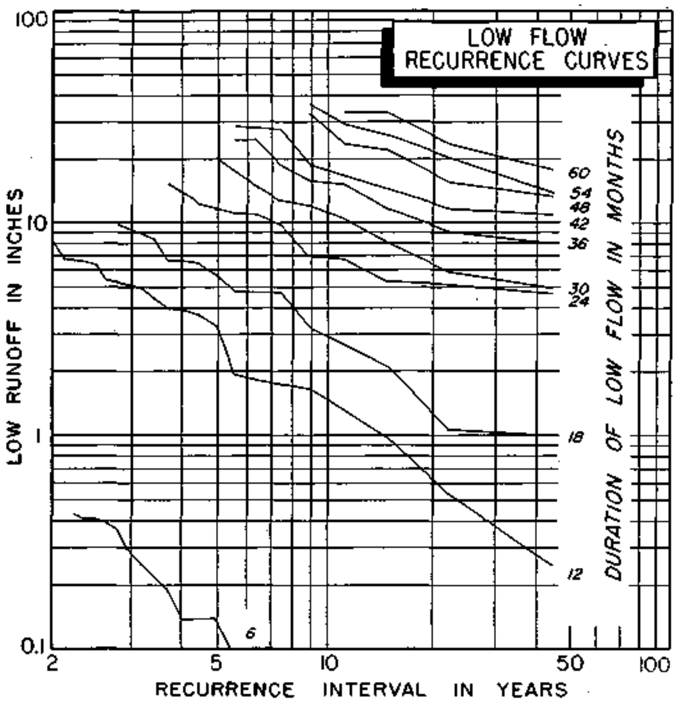


STATION 54

LOCATION

In SW ¼ sec 27, T45N, R11E, Lake County, at bridge on Ill. 120, 2.5 miles southwest of Gurnee and 5.5 miles west of Waukegan

DRAINAGE AREA

215 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1945 thru Sept 1958; gaging discontinued Sept 30, 1958

CONTINUOUS RECORD: 13 years; water years 1946-58

SYNTHETIC FLOW DATA

PERIOD: 31 years; water years 1916-45, 1959

INDEX STATION: Fox River at Algonquin

COINCIDENT RECORD: 13 years; water years 1946-58

TOTAL DATA ANALYZED

PERIOD: 44 years; water years 1916-59

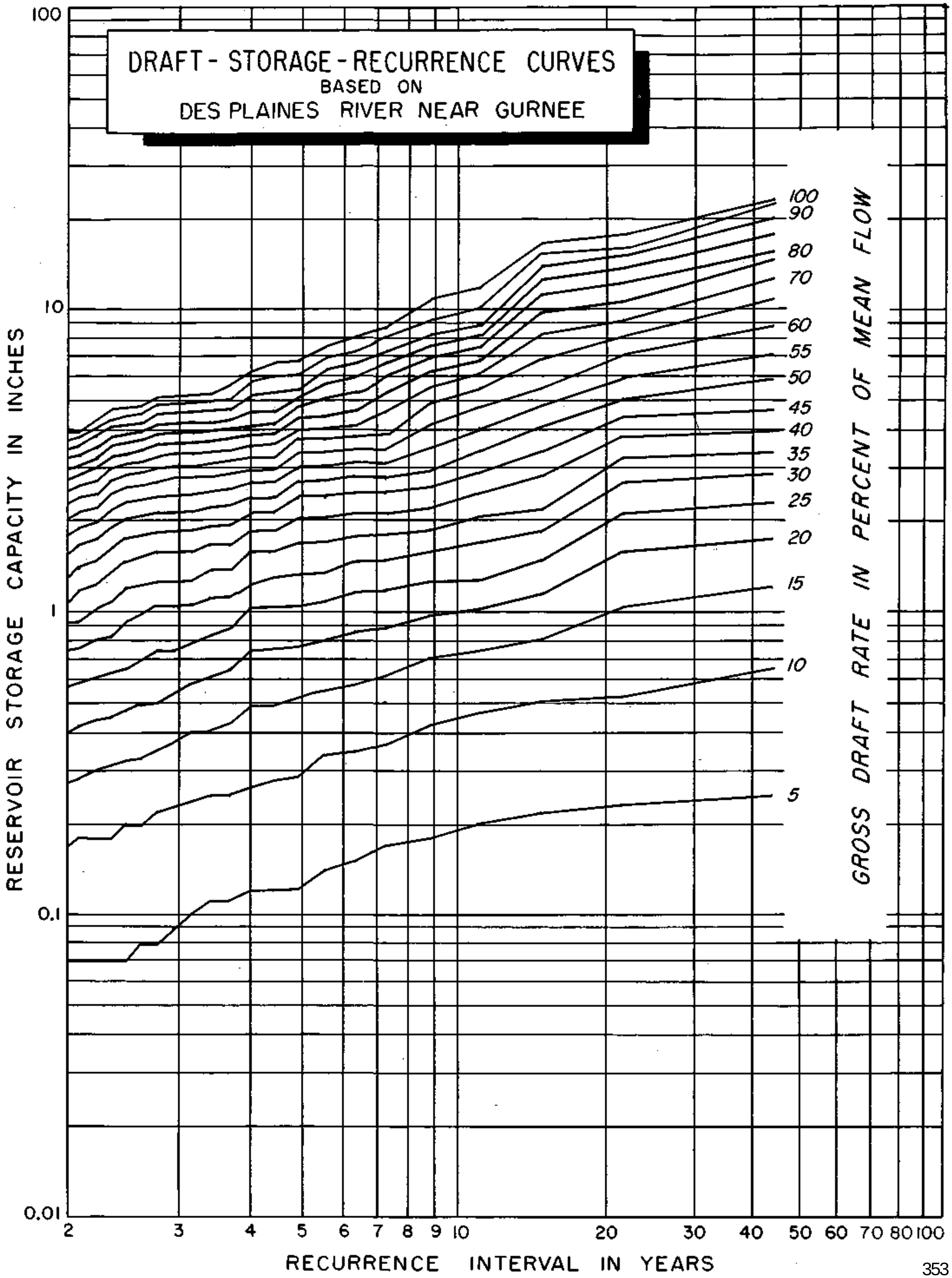
MEAN DISCHARGE : 0.69 inch per month

Draft-Storage-Recurrence Data for DesPlaines River near Gurnee

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.25 8	.66 16	1.22 16	1.77 16	2.32 16	2.87 16	3.42 16	4.07 20	4.76 34	5.93 34	7.10 34	8.94 56	10.68 56	12.81 56	14.74 56	16.69 58	18.69 58	20.69 58	22.69 58	24.69 58
22.0	.23 8	.53 9	1.04 16	1.59 16	2.14 16	2.69 16	3.27 18	3.89 18	4.51 18	5.13 18	5.98 32	7.09 32	8.19 32	9.30 32	10.75 44	12.27 44	13.79 44	15.30 44	16.83 46	18.42 46
14.7	.22 8	.51 9	.82 10	1.16 10	1.51 10	1.85 10	2.20 18	2.52 18	3.47 20	4.16 20	4.85 20	5.54 20	6.89 42	8.34 42	9.79 42	11.23 42	12.68 42	14.13 42	15.58 42	17.03 42
11.0	.20 8	.47 8	.75 8	1.02 8	1.34 11	1.72 11	2.10 11	2.48 11	2.92 16	3.47 18	4.15 20	4.84 20	5.53 20	6.22 20	6.91 20	7.60 20	8.29 20	8.98 20	10.31 44	11.83 44
8.8	.18 6	.43 8	.71 8	.98 8	1.28 9	1.59 9	1.90 9	2.23 10	2.60 11	2.98 11	3.54 20	4.23 20	4.92 20	5.61 20	6.30 20	6.99 20	7.68 20	8.37 20	9.31 44	10.83 44
7.3	.17 6	.37 7	.62 8	.89 9	1.20 9	1.51 9	1.82 9	2.14 10	2.49 10	2.83 10	3.18 10	3.52 10	3.97 20	4.66 20	5.35 20	6.04 20	6.73 20	7.42 20	8.11 1	8.80 20
6.3	.15 6	.35 6	.58 7	.87 9	1.18 9	1.49 9	1.80 9	2.13 10	2.48 10	2.82 10	3.17 10	3.51 10	3.86 10	4.20 10	4.65 20	5.34 20	6.03 20	6.72 20	7.41 20	8.10 20
5.5	.14 6	.34 6	.55 6	.81 8	1.09 8	1.37 8	1.71 10	2.05 10	2.40 10	2.74 10	3.09 10	3.43 10	3.78 10	4.12 10	4.47 10	5.08 18	5.70 18	6.32 18	6.94 18	7.56 18
4.9	.12 4	.29 5	.52 7	.77 8	1.05 8	1.35 10	1.70 10	2.04 10	2.39 10	2.73 10	3.08 10	3.42 10	3.77 10	4.11 10	4.46 10	4.80 10	5.15 10	5.49 10	6.10 20	6.80 22
4.4	.12 4	.28 5	.49 8	.76 8	1.04 8	1.32 8	1.59 8	1.87 8	2.14 8	2.42 8	2.71 9	3.02 9	3.33 9	3.64 9	3.95 9	4.26 9	4.66 16	5.31 1	6.00 20	6.69 20
4.0	.12 4	.27 6	.49 7	.75 8	1.03 8	1.31 8	1.58 8	1.86 8	2.13 8	2.41 8	2.69 8	2.99 9	3.30 9	3.61 9	3.92 9	4.23 9	4.64 16	5.20 16	5.75 16	6.30 16
3.7	.11 4	.25 4	.43 6	.65 7	.89 7	1.13 8	1.40 8	1.68 8	1.95 8	2.26 9	2.57 9	2.88 9	3.19 9	3.50 9	3.81 9	4.12 9	4.43 9	4.75 10	5.10 10	5.65 18
3.4	.11 4	.25 4	.40 6	.61 6	.84 8	1.12 8	1.39 8	1.67 8	1.94 8	2.22 8	2.51 9	2.82 9	3.13 9	3.44 9	3.75 9	4.06 1	4.37 9	4.68 9	4.99 10	5.33 10
3.1	.10 4	.24 4	.40 5	.58 6	.79 6	1.05 8	1.32 8	1.60 8	1.87 8	2.15 8	2.45 9	2.76 9	3.07 9	3.38 9	3.69 9	4.00 9	4.31 1	4.62 9	4.95 10	5.29 10
2.9	.09 4	.23 4	.37 5	.54 5	.75 8	1.03 8	1.30 8	1.58 8	1.85 8	2.13 9	2.44 9	2.75 9	3.06 9	3.37 9	3.68 9	3.99 9	4.30 1	4.61 9	4.92 9	5.23 9
2.8	.08 4	.22 4	.35 4	.50 5	.75 8	1.03 8	1.30 8	1.58 8	1.85 8	2.13 8	2.41 8	2.70 9	3.01 9	3.32 9	3.63 9	3.94 9	4.25 1	4.56 9	4.87 9	5.18 9
2.6	.08 3	.20 4	.33 4	.49 5	.70 8	.98 8	1.25 8	1.53 8	1.80 8	2.08 6	2.36 8	2.63 8	2.91 8	3.18 8	3.46 8	3.74 8	4.01 1	4.29 8	4.56 8	4.84 6
2.4	.07 3	.20 4	.33 4	.47 4	.65 8	.93 8	1.20 8	1.48 8	1.75 8	2.03 8	2.31 8	2.58 8	2.86 8	3.13 8	3.41 8	3.69 1	3.96 8	4.24 8	4.51 8	4.79 8
2.3	.07 3	.18 4	.31 4	.45 4	.63 6	.83 6	1.08 8	1.36 8	1.63 8	1.91 8	2.19 8	2.46 8	2.74 8	3.01 8	3.29 8	3.57 8	3.84 1	4.12 8	4.39 8	4.67 8
2.2	.07 3	.18 3	.30 4	.44 4	.61 6	.81 6	1.02 6	1.25 7	1.49 7	1.74 7	1.98 7	2.22 7	2.46 8	2.73 8	3.01 8	3.29 8	3.56 8	3.84 1	4.11 8	4.39 8
2.1	.07 3	.18 3	.25 4	.42 4	.58 5	.76 5	.93 7	1.17 7	1.41 7	1.66 7	1.90 7	2.14 7	2.38 7	2.62 7	2.86 7	3.10 7	3.35 7	3.59 7	3.83 7	4.07 8
2.0	.07 2	.17 3	.27 3	.40 5	.57 5	.75 5	.92 5	1.09 5	1.32 7	1.57 7	1.81 7	2.05 7	2.29 7	2.53 7	2.77 7	3.01 7	3.26 7	3.50 7	3.74 7	3.98 7



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
DES PLAINES RIVER NEAR GURNEE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
0.1
1
10
100
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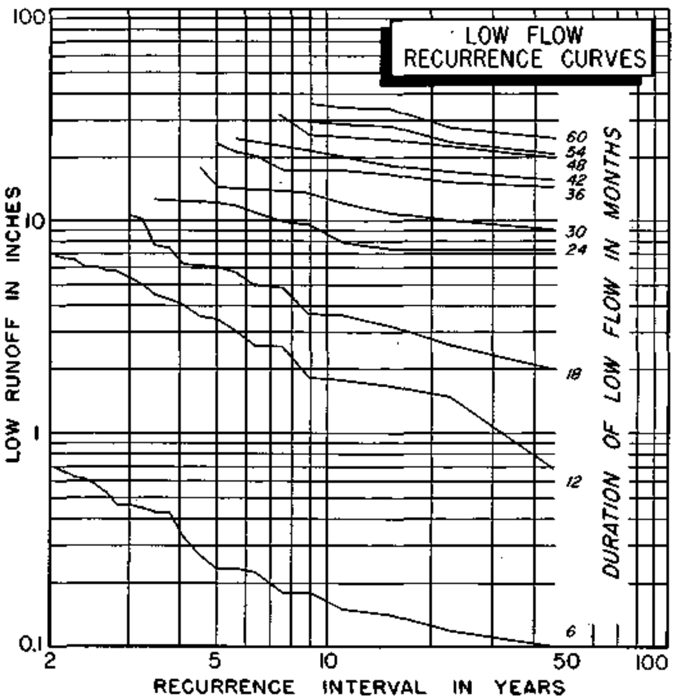
70
80
100



STATION 55

LOCATION

In SW ¼ SW ¼ sec 36, T39N, R12E, Cook County, 300 feet downstream from Barry Point Road Bridge in Riverside

DRAINAGE AREA

635 square miles

ACTUAL FLOW DATA

PERIOD: Fragmentary May 1886 thru Dec 1890; complete for May 1892 thru Sept 1936, and Oct 1943 thru Sept 1959

CONTINUOUS RECORD: 44 years; water years 1893-36,
16 years; water years 1944-59

SYNTHETIC FLOW DATA

PERIOD : 7 years; water years 1937-43

INDEX STATION : DesPlaines River at Lemont

COINCIDENT RECORD: 21 years; water years 1916-36

Note: The 45 year composite record was used as an index station record. The 23 years of data for water years 1893-1915 were omitted.

TOTAL DATA ANALYZED

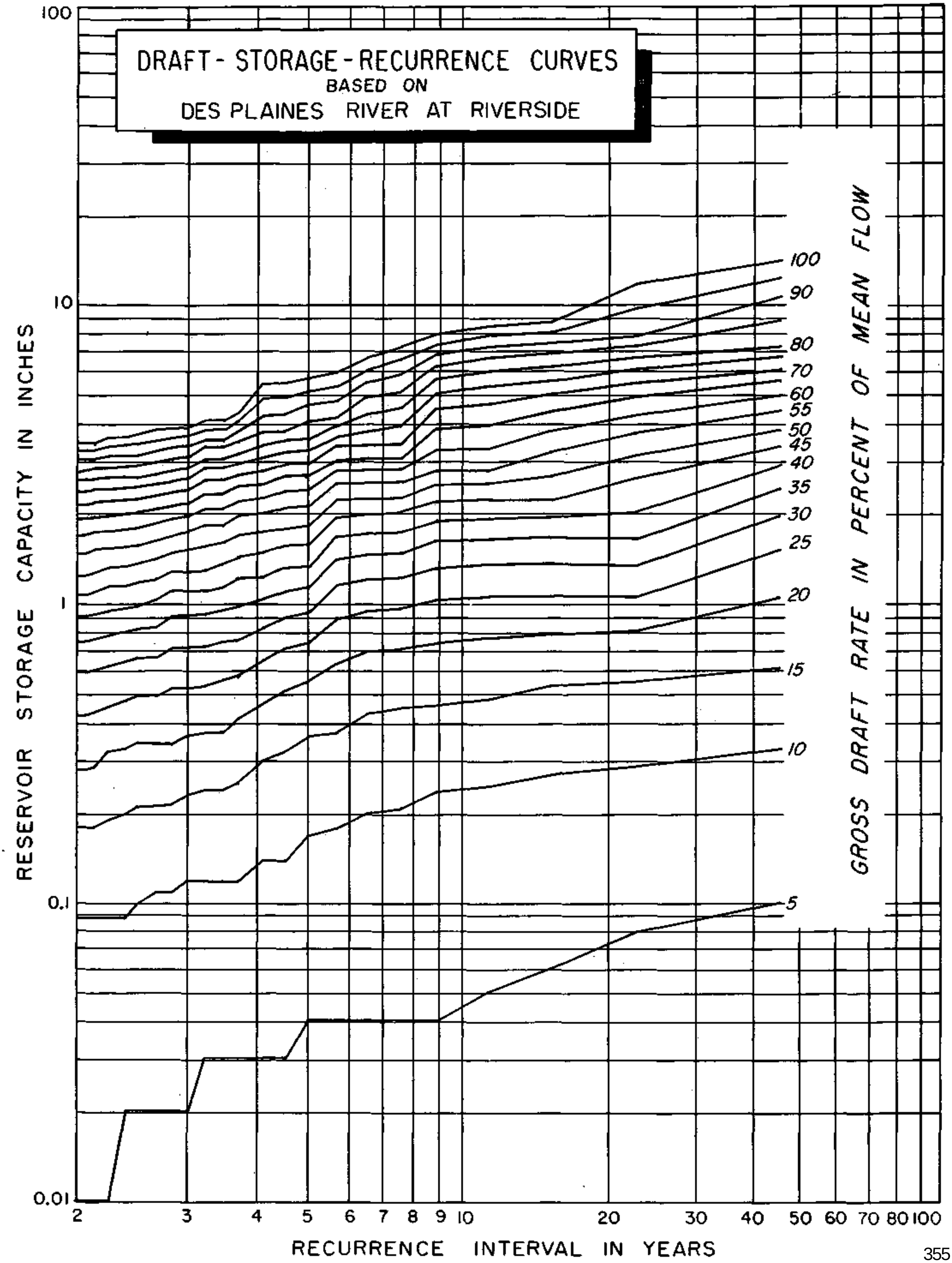
PERIOD : 45 years; water years 1915-59

MEAN DISCHARGE : 0.65 inch per month

Draft-Storage-Recurrence Data for DesPlaines River at Riverside

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.10	.33	.61	1.06	1.52	1.97	2.43	2.94	3.46	3.98	4.50	5.02	5.58	6.16	6.75	7.33	8.89	10.64	12.40	14.15
	7	7	14	14	14	14	14	16	16	16	16	16	18	18	18	18	54	54	54	54
22.5	.08	.29	.55	.81	1.07	1.37	1.66	2.02	2.61	3.19	3.78	4.36	4.95	5.53	6.12	6.70	7.34	7.99	9.72	11.58
	6	8	8	8	9	9	9	18	18	18	18	18	18	18	18	18	20	20	56	58
15.0	.06	.27	.53	.79	1.07	1.37	1.66	1.95	2.24	2.67	3.26	3.84	4.43	5.01	5.60	6.24	6.89	7.54	8.19	8.84
	6	8	8	8	9	9	9	9	10	18	18	18	18	18	18	20	20	20	20	20
11.3	.05	.25	.48	.77	1.06	1.36	1.65	1.94	2.23	2.53	2.82	3.38	4.03	4.68	5.33	5.98	6.63	7.28	7.93	8.58
	6	7	9	9	9	9	9	9	9	9	9	20	20	20	20	20	20	20	20	20
9.0	.04	.24	.46	.74	1.03	1.33	1.62	1.91	2.20	2.50	2.79	3.34	3.93	4.51	5.10	5.68	6.27	6.85	7.45	8.10
	3	7	8	9	9	9	9	9	9	9	9	18	18	18	16	18	18	18	20	20
7.5	.04	.21	.45	.71	.97	1.23	1.49	1.75	2.01	2.27	2.56	2.85	3.14	3.50	4.02	4.54	5.15	5.86	6.58	7.29
	3	7	8	8	8	8	8	8	8	9	9	9	9	16	16	16	22	22	22	22
6.4	.04	.20	.43	.69	.95	1.21	1.47	1.73	1.99	2.26	2.55	2.84	3.13	3.43	3.81	4.33	4.91	5.49	6.08	6.66
	3	7	8	8	8	8	8	8	8	9	9	9	9	9	16	16	18	18	1	18
5.6	.04	.18	.37	.63	.89	1.15	1.41	1.67	1.93	2.22	2.51	2.80	3.09	3.39	3.68	3.97	4.26	4.77	5.36	5.94
	3	5	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	18	18	18
5.0	.04	.17	.36	.55	.75	.94	1.14	1.35	1.58	1.83	2.12	2.41	2.70	3.00	3.29	3.80	4.12	4.64	5.16	5.68
	3	5	6	6	6	6	6	7	7	9	9	9	9	9	9	16	16	16	16	16
4.5	.03	.14	.32	.51	.71	.90	1.11	1.34	1.57	1.80	2.09	2.38	2.67	2.97	3.26	3.55	3.84	4.33	4.92	5.50
	3	5	6	6	6	6	7	7	7	9	9	9	9	9	9	9	9	18	1	18
4.1	.03	.14	.30	.46	.65	.84	1.04	1.23	1.48	1.74	2.00	2.26	2.52	2.81	3.14	3.46	3.79	4.29	4.88	5.46
	3	5	5	5	6	6	6	7	8	8	8	8	8	10	10	10	1	18	18	18
3.8	.03	.12	.25	.41	.57	.76	.98	1.21	1.44	1.70	1.96	2.22	2.48	2.74	3.00	3.26	3.55	3.85	4.14	4.43
	2	4	5	5	5	7	7	7	8	8	8	8	8	8	8	9	9	1	9	9
3.5	.03	.12	.24	.37	.56	.75	.95	1.14	1.37	1.60	1.82	2.08	2.34	2.60	2.86	3.12	3.38	3.64	3.90	4.16
	2	3	4	5	6	6	6	7	7	7	8	8	8	8	8	8	1	8	8	8
3.2	.03	.12	.24	.37	.53	.72	.92	1.11	1.31	1.56	1.82	2.08	2.34	2.60	2.86	3.12	3.38	3.64	3.90	4.16
	2	3	4	4	6	6	6	6	7	8	8	8	8	8	8	8	8	8	1	8
3.0	.02	.12	.23	.36	.52	.71	.91	1.10	1.30	1.52	1.74	1.97	2.20	2.43	2.66	2.92	3.18	3.44	3.72	4.01
	3	3	4	4	6	6	6	6	6	7	7	7	7	7	8	8	8	8	1	9
2.8	.02	.11	.21	.34	.52	.71	.91	1.10	1.30	1.49	1.69	1.91	2.14	2.37	2.59	2.82	3.08	3.38	3.67	3.96
	2	3	4	4	6	6	6	6	6	6	6	7	7	7	7	7	9	9	9	9
2.6	.02	.11	.21	.34	.49	.66	.84	1.03	1.23	1.42	1.63	1.86	2.09	2.32	2.54	2.77	3.02	3.32	3.61	3.90
	2	3	4	4	5	5	6	6	6	6	7	7	7	7	7	7	9	1	9	9
2.5	.02	.10	.21	.34	.49	.66	.82	.98	1.18	1.37	1.57	1.79	2.02	2.25	2.47	2.70	2.93	3.18	3.45	3.74
	2	3	4	4	5	5	5	6	6	6	6	7	7	7	7	7	7	1	9	9
2.4	.02	.09	.20	.33	.47	.64	.80	.96	1.15	1.34	1.55	1.78	2.01	2.24	2.46	2.69	2.92	3.16	3.42	3.68
	2	3	4	4	5	5	5	5	6	6	7	7	7	7	7	7	7	8	1	8
2.3	.01	.09	.19	.32	.45	.62	.78	.94	1.14	1.33	1.53	1.75	1.98	2.21	2.43	2.66	2.89	3.15	3.41	3.67
	2	3	4	4	5	5	5	6	6	6	6	7	7	7	7	7	1	8	8	8
2.1	.01	.09	.18	.29	.43	.60	.76	.92	1.10	1.29	1.51	1.74	1.97	2.20	2.42	2.65	2.88	3.11	3.33	3.57
	2	3	3	4	5	5	5	5	6	7	7	7	7	7	7	7	7	1	7	8
2.0	.01	.09	.18	.28	.42	.59	.75	.91	1.07	1.26	1.47	1.70	1.93	2.16	2.38	2.61	2.84	3.07	3.29	3.55
	2	3	3	4	5	5	5	5	6	6	7	7	7	7	7	7	7	1	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
DES PLAINES RIVER AT RIVERSIDE
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
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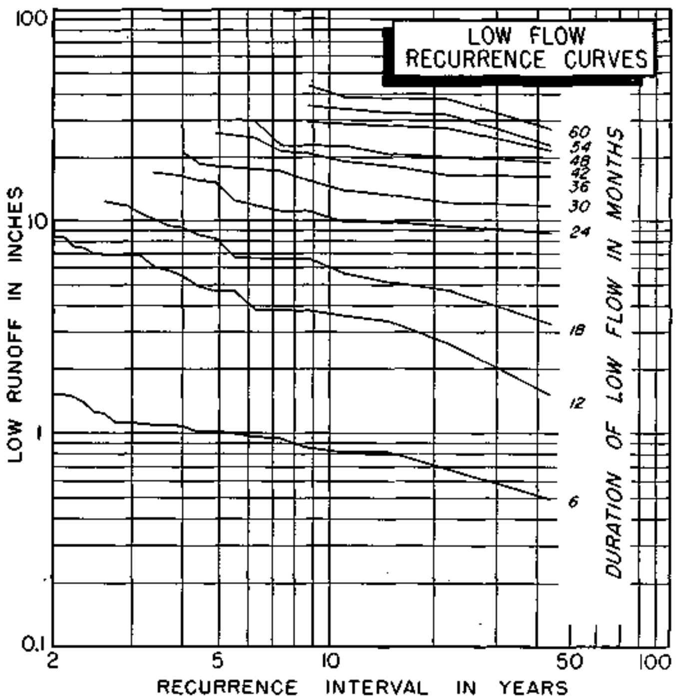
15
10
5

DUPAGE RIVER AT TROY



STATION 56

LOCATION
In SE ¼ SW ¼ sec 10, T35N, R9E, Will County, 400 feet upstream from U. S. 52 at Troy, 6.0 miles west of Joliet

DRAINAGE AREA
325 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1940 thru Sept 1959
CONTINUOUS RECORD: 19 years; water years 1941-59

SYNTHETIC FLOW DATA
PERIOD: 25 years; water years 1916-40
INDEX STATION: Fox River at Dayton
COINCIDENT RECORD : 19 years; water years 1941-59

TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.73 inch per month

Draft-Storage-Recurrence Data for DuPage River at Troy

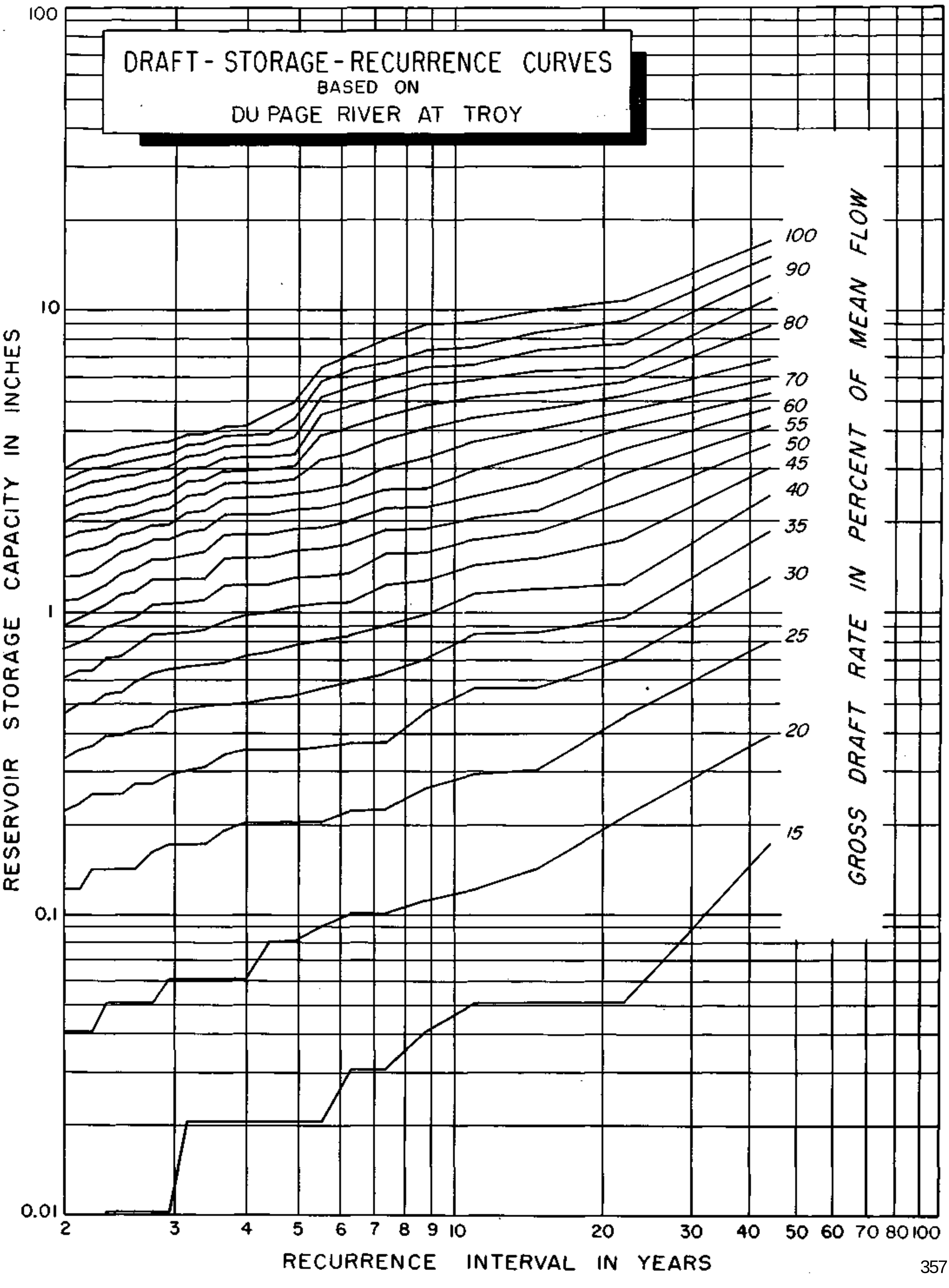
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Gross draft rate in percent of mean flow

Recurrence interval, years	5	10	15	20	25	30	35	40	45	50
44.0	.00 1	.02 2	.17 6	.39 6	.80 14	1.31 14	1.85 16	2.43 16	3.02 16	3.60 16
22.0	.00 1	.00 1	.05 4	.21 6	.45 7	.70 7	.96 7	1.24 8	1.74 16	2.32 16
14.7	.00 1	.00 1	.05 2	.14 3	.30 7	.56 8	.86 9	1.19 9	1.52 9	1.85 9
11.0	.00 1	.00 1	.05 2	.12 2	.29 6	.56 8	.85 8	1.15 8	1.44 8	1.73 8
8.8	.00 1	.00 1	.04 2	.11 3	.26 6	.47 6	.70 7	.99 8	1.28 8	1.57 9
7.3	.00 1	.00 1	.03 2	.10 2	.22 4	.37 7	.63 7	.90 9	1.23 9	1.56 9
6.3	.00 1	.00 1	.03 2	.10 2	.22 4	.37 5	.59 7	.84 7	1.10 7	1.37 9
5.5	.00 1	.00 1	.02 2	.09 2	.20 4	.36 5	.56 7	.81 7	1.07 7	1.33 8
4.9	.00 1	.00 1	.02 1	.08 3	.20 4	.35 5	.53 7	.78 7	1.04 7	1.31 8
4.4	.00 1	.00 1	.02 1	.08 3	.20 4	.35 4	.52 6	.74 7	1.00 7	1.26 7
4.0	.00 1	.00 1	.02 1	.06 3	.20 4	.35 4	.50 5	.72 7	.98 7	1.24 7
3.7	.00 1	.00 1	.02 1	.06 3	.19 4	.34 4	.50 5	.68 5	.94 8	1.23 8
3.4	.00 1	.00 1	.02 1	.06 3	.17 3	.31 5	.45 5	.67 5	.88 6	1.10 6
3.1	.00 1	.00 1	.02 1	.06 3	.17 3	.30 5	.48 5	.66 5	.86 6	1.08 6
2.9	.00 1	.00 1	.01 1	.06 3	.17 3	.29 5	.47 5	.65 5	.85 6	1.07 6
2.8	.00 1	.00 1	.01 1	.05 3	.16 3	.27 4	.42 5	.63 6	.85 6	1.07 6
2.6	.00 1	.00 1	.01 1	.05 1	.14 3	.27 4	.41 5	.59 5	.77 5	.96 6
2.4	.00 1	.00 1	.01 1	.05 1	.14 3	.25 4	.39 4	.54 5	.72 5	.93 6
2.3	.00 1	.00 1	.01 1	.05 1	.14 3	.25 4	.39 4	.54 4	.71 5	.90 5
2.2	.00 1	.00 1	.00 1	.04 2	.14 3	.25 3	.36 3	.50 4	.54 5	.83 5
2.1	.00 1	.00 1	.00 1	.04 2	.12 3	.23 3	.35 4	.50 4	.64 4	.79 4
2.0	.00 1	.00 1	.00 1	.04 2	.12 2	.22 3	.33 3	.47 4	.61 4	.76 4

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
44.0	4.18 16	4.77 16	5.35 16	5.94 18	6.90 54	8.91 56	10.96 56	13.00 56	15.05 56	17.09 56
22.0	2.90 16	3.49 16	4.07 16	4.66 16	5.24 16	5.82 16	6.48 30	7.77 38	9.24 42	10.77 42
14.7	2.17 10	2.71 18	3.37 18	4.03 18	4.69 18	5.36 20	6.32 28	7.35 28	8.45 42	9.98 42
11.0	2.06 10	2.42 10	2.96 20	3.69 20	4.42 20	5.15 20	5.88 20	6.61 20	7.52 44	9.13 44
8.8	1.89 9	2.22 9	2.55 9	3.26 22	4.07 22	4.87 22	5.67 22	6.47 22	7.36 44	8.97 44
7.3	1.88 9	2.21 9	2.54 9	3.02 20	3.75 20	4.48 20	5.21 20	5.94 20	6.67 20	8.02 42
6.3	1.69 9	2.02 9	2.35 9	2.68 9	3.37 20	4.10 20	4.83 20	5.56 20	6.36 22	7.16 22
5.5	1.62 8	1.91 8	2.21 8	2.55 18	3.21 18	3.85 18	4.52 18	5.18 18	5.83 18	6.49 18
4.9	1.60 8	1.89 8	2.19 8	2.48 8	2.77 8	3.06 8	3.35 8	3.79 16	4.36 16	4.96 16
4.4	1.52 8	1.81 8	2.11 8	2.40 8	2.69 8	2.98 8	3.27 8	3.57 8	3.90 18	4.56 18
4.0	1.52 8	1.81 8	2.11 8	2.40 8	2.69 8	2.98 8	3.27 8	3.57 8	3.86 1	4.15 8
3.7	1.52 8	1.81 8	2.11 8	2.40 8	2.69 8	2.98 8	3.27 8	3.57 8	3.86 1	4.15 8
3.4	1.32 6	1.58 8	1.88 8	2.17 8	2.46 8	2.75 8	3.04 8	3.34 8	3.63 8	3.93 10
3.1	1.30 6	1.55 8	1.85 8	2.14 8	2.43 8	2.72 8	3.01 8	3.31 8	3.60 1	3.89 8
2.9	1.29 6	1.51 6	1.73 6	1.95 7	2.20 7	2.47 8	2.76 8	3.06 8	3.35 8	3.67 10
2.8	1.29 6	1.51 6	1.73 6	1.95 6	2.17 6	2.41 7	2.69 8	2.99 8	3.29 1	3.52 9
2.6	1.18 6	1.40 6	1.62 6	1.84 6	2.06 6	2.27 8	2.56 8	2.86 9	3.19 9	3.52 9
2.4	1.15 6	1.37 6	1.59 6	1.81 6	2.03 6	2.24 8	2.53 8	2.83 8	3.13 9	3.46 9
2.3	1.08 5	1.26 5	1.46 6	1.68 6	1.90 6	2.16 8	2.45 8	2.75 8	3.04 8	3.33 8
2.2	1.01 5	1.19 5	1.37 5	1.62 7	1.87 7	2.13 8	2.42 8	2.72 1	3.01 8	3.30 8
2.1	.95 5	1.13 5	1.34 7	1.60 7	1.85 7	2.11 7	2.36 7	2.62 8	2.91 8	3.20 8
2.0	.91 4	1.11 6	1.33 6	1.55 6	1.77 6	2.00 7	2.25 7	2.51 7	2.76 7	3.02 7



DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
DU PAGE RIVER AT TROY
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
0.01
0.1
1
10
100
2
3
4
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7
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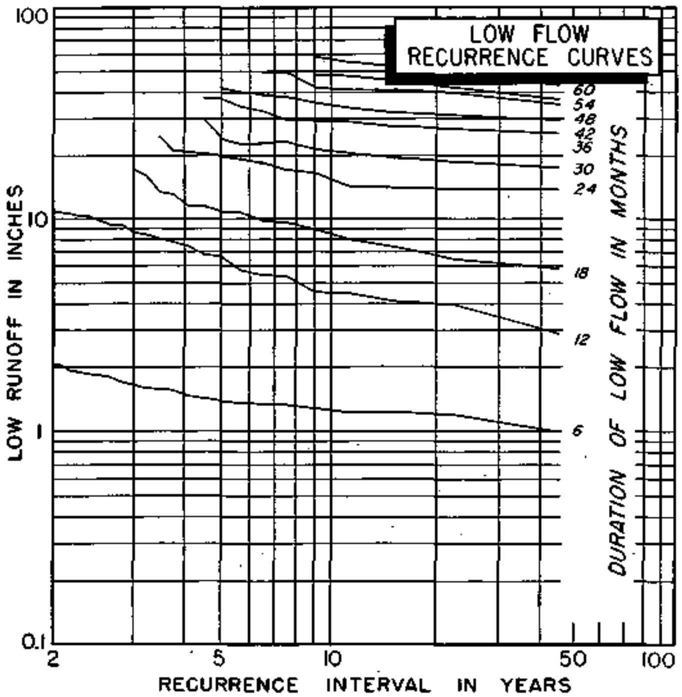
20
30
40
50
60
70
80
100



STATION 62

LOCATION
In SE ¼ NE ¼ sec 31, T38N, R12E, Cook County, at bridge on German Church Road, 1.1 miles northwest of Willow Springs

DRAINAGE AREA
16.2 square miles

ACTUAL FLOW DATA
PERIOD: July 1951 thru Sept 1959
CONTINUOUS RECORD: 8 years; water years 1952-59

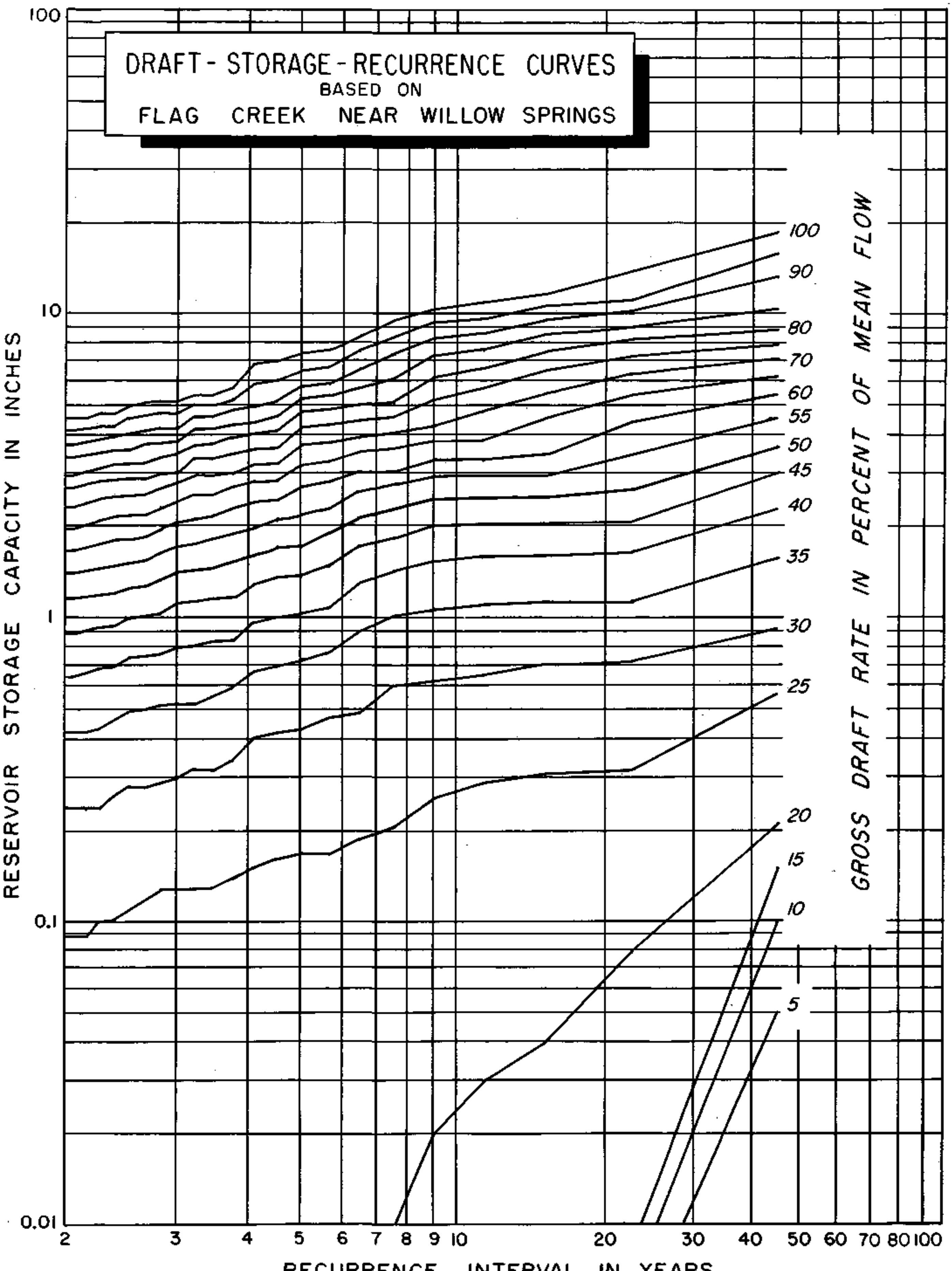
SYNTHETIC FLOW DATA
PERIOD : 37 years; water years 1915-51
INDEX STATION: DesPlaines River at Riverside
COINCIDENT RECORD: 8 years; water years 1952-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE: 1.01 inches per month

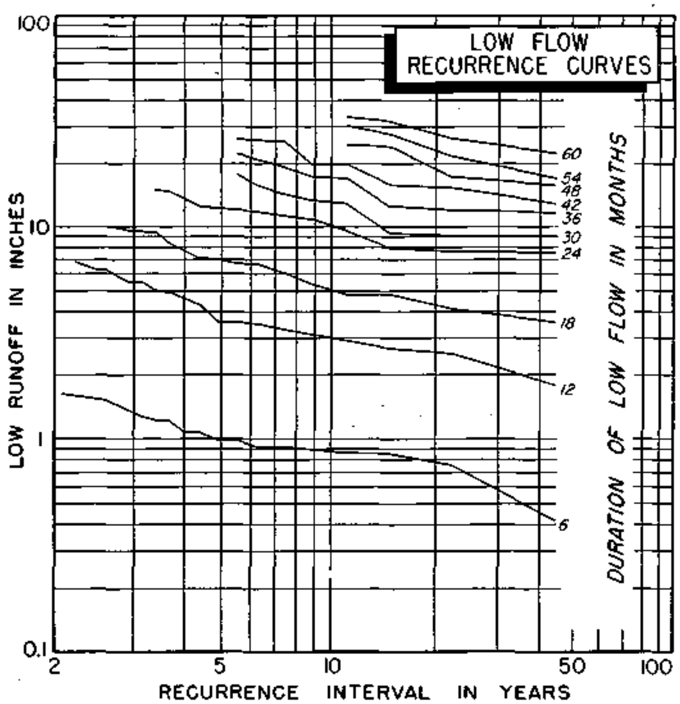
Draft-Storage-Recurrence Data for Flag Creek near Willow Springs

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.05	.10	.15	.21	.56	.92	1.55	2.26	2.96	3.71	4.52	5.33	6.13	6.94	7.82	8.72	10.11	12.84	15.56	18.29
	1	1	1	6	7	5	14	14	14	16	16	16	16	16	18	18	54	54	54	54
22.5	.00	.00	.00	.08	.32	.72	1.13	1.58	2.03	2.60	3.51	4.42	5.33	6.24	7.15	8.05	8.96	9.91	10.92	13.51
	1	1	1	2	8	8	8	9	9	16	18	18	18	18	18	18	18	20	20	60
15.0	.00	.00	.00	.04	.31	.71	1.12	1.57	2.02	2.48	2.93	3.56	4.47	5.38	6.39	7.40	8.41	9.42	10.43	11.44
	1	1	1	1	8	8	8	9	9	9	9	18	18	20	20	20	20	20	20	30
11.3	.00	.00	.00	.03	.29	.65	1.10	1.56	2.01	2.47	2.92	3.37	3.83	4.70	5.61	6.51	7.45	8.46	9.47	10.74
	1	1	1	1	6	9	9	9	9	9	9	9	9	18	18	18	20	20	20	28
9.0	.00	.00	.00	.02	.26	.62	1.07	1.53	1.98	2.44	2.89	3.34	3.80	4.29	5.14	6.15	7.16	8.17	9.18	10.19
	1	1	1	1	7	9	9	9	9	9	9	9	9	10	20	20	20	20	20	20
7.5	.00	.00	.00	.01	.21	.60	1.01	1.41	1.82	2.26	2.71	3.16	3.62	4.07	4.53	5.00	6.09	7.20	8.31	9.42
	1	1	1	3	7	8	8	8	8	9	9	9	9	9	9	10	22	22	22	22
6.4	.00	.00	.00	.01	.19	.49	.90	1.30	1.71	2.12	2.57	3.02	3.48	3.93	4.43	4.93	5.62	6.52	7.43	8.34
	1	1	1	3	5	8	8	8	8	9	9	9	9	9	10	10	16	18	18	18
5.6	.00	.00	.00	.01	.17	.47	.77	1.07	1.46	1.86	2.27	2.77	3.28	3.78	4.29	4.79	5.30	5.80	6.57	7.48
	1	1	1	3	6	6	6	7	8	8	10	10	10	10	10	10	10	10	1	18
5.0	.00	.00	.00	.01	.17	.43	.73	1.03	1.35	1.71	2.17	2.67	3.18	3.68	4.19	4.69	5.20	5.70	6.39	7.30
	1	1	1	3	4	6	6	6	7	7	10	10	10	10	10	10	10	10	18	18
4.5	.00	.00	.00	.00	.16	.42	.69	1.00	1.35	1.71	2.06	2.41	2.81	3.22	3.64	4.09	4.57	5.07	5.94	6.85
	1	1	1	3	5	5	6	7	7	7	7	8	8	9	9	9	10	10	18	18
4.1	.00	.00	.00	.00	.15	.40	.66	.96	1.27	1.58	1.98	2.39	2.79	3.20	3.60	4.00	4.41	4.90	5.81	6.72
	1	1	1	3	3	5	6	6	6	8	8	8	8	8	8	8	8	18	18	18
3.8	.00	.00	.00	.00	.14	.34	.59	.85	1.16	1.51	1.87	2.28	2.68	3.09	3.49	3.89	4.30	4.75	5.21	5.66
	1	1	1	2	3	5	5	6	6	7	8	8	8	8	8	8	9	1	9	9
3.5	.00	.00	.00	.00	.13	.32	.55	.84	1.15	1.45	1.80	2.15	2.52	2.93	3.33	3.73	4.14	4.54	4.95	5.35
	1	1	1	2	3	4	5	6	6	7	7	7	8	8	8	8	8	8	8	8
3.2	.00	.00	.00	.00	.13	.32	.52	.81	1.12	1.42	1.73	2.11	2.51	2.92	3.32	3.72	4.13	4.53	4.94	5.34
	1	1	1	2	3	4	5	6	6	6	7	8	8	8	8	8	8	8	1	8
3.0	.00	.00	.00	.00	.13	.30	.52	.80	1.11	1.41	1.71	2.04	2.40	2.75	3.10	3.46	3.81	4.18	4.64	5.09
	1	1	1	1	3	4	5	6	6	6	6	7	7	7	7	7	7	9	9	9
2.8	.00	.00	.00	.00	.13	.29	.51	.76	1.02	1.32	1.62	1.94	2.30	2.65	3.00	3.36	3.73	4.18	4.64	5.09
	1	1	1	1	3	4	5	5	6	6	6	7	7	7	7	7	9	9	9	9
2.6	.00	.00	.00	.00	.12	.28	.50	.75	1.00	1.26	1.53	1.84	2.17	2.52	2.87	3.23	3.67	4.12	4.58	5.03
	1	1	1	1	3	4	5	5	5	5	6	6	7	7	7	7	9	1	9	9
2.5	.00	.00	.00	.00	.11	.28	.49	.74	.99	1.25	1.50	1.80	2.15	2.50	2.85	3.21	3.56	4.01	4.47	4.92
	1	1	1	1	3	4	5	5	5	5	5	6	7	7	7	7	9	9	1	9
2.4	.00	.00	.00	.00	.10	.26	.46	.69	.94	1.20	1.48	1.79	2.14	2.49	2.84	3.20	3.55	3.90	4.26	4.66
	1	1	1	1	3	4	4	5	5	5	6	6	7	7	7	7	7	7	8	8
2.3	.00	.00	.00	.00	.10	.24	.43	.68	.93	1.19	1.44	1.74	2.09	2.44	2.79	3.15	3.50	3.85	4.26	4.66
	1	1	1	1	2	3	5	5	5	5	5	6	7	7	7	7	7	8	8	8
2.1	.00	.00	.00	.00	.09	.24	.42	.66	.91	1.17	1.42	1.69	2.02	2.37	2.72	3.08	3.43	3.78	4.14	4.51
	1	1	1	1	3	3	4	5	5	5	5	6	7	7	7	7	7	1	7	8
2.0	.00	.00	.00	.00	.09	.24	.42	.64	.89	1.15	1.40	1.65	1.95	2.30	2.65	3.01	3.36	3.71	4.11	4.51
	1	1	1	1	3	3	4	5	5	5	5	5	7	7	7	7	7	1	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
FLAG CREEK NEAR WILLOW SPRINGS
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5

FOX RIVER AT ALGONQUIN



STATION 65

LOCATION

In NW ¼ sec 34, T43N, R8E, McHenry County, at Chicago Street Bridge at Algonquin, 5.0 miles north of Dundee

DRAINAGE AREA

1364 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1915 thru Sept 1959

CONTINUOUS RECORD: 44 years; water years 1916-59

SYNTHETIC FLOW DATA

None; this station utilized as an index station

TOTAL DATA ANALYZED

PERIOD: 44 years; water years 1916-59

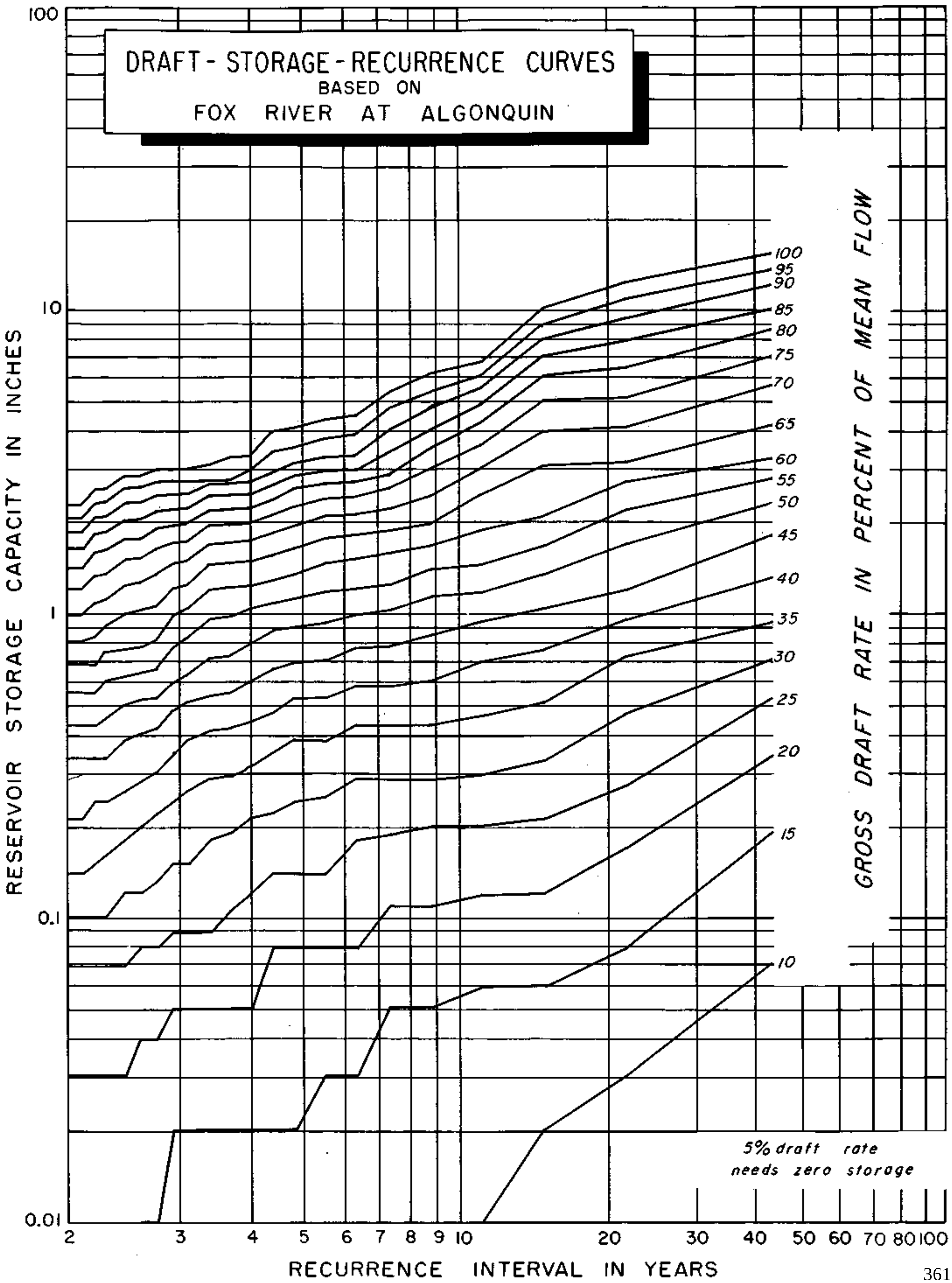
MEAN DISCHARGE : 0.62 inch per month

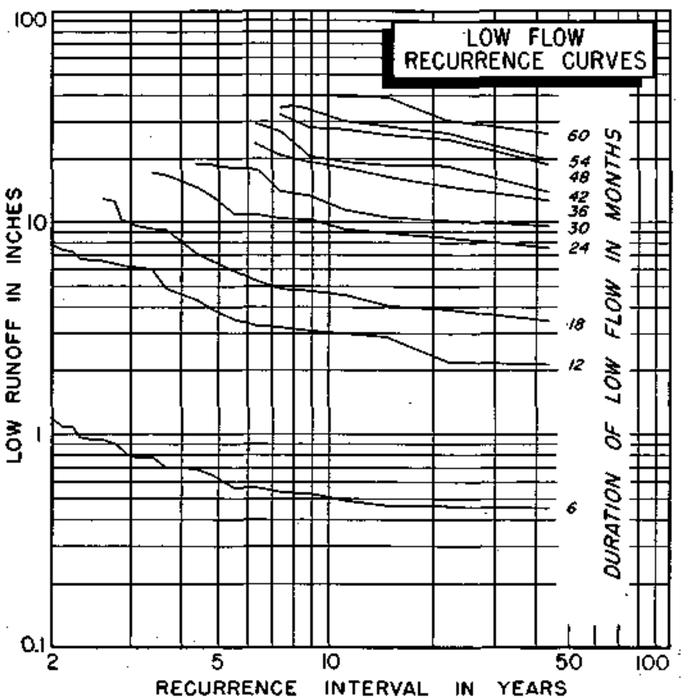
Draft-Storage-Recurrence Data for Fox River at Algonquin

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.00	.07	.49	.34	.52	.71	.94	1.32	1.81	2.31	2.81	3.30	4.27	5.64	7.00	8.62	10.35	12.09	13.82	15.60
	1	3	5	5	6	6	9	16	16	16	16	16	44	44	44	56	56	56	56	58
22.0	.00	.03	.08	.17	.27	.47	.72	.96	1.21	1.70	2.20	2.69	3.19	4.18	5.17	6.49	7.98	9.46	10.95	12.44
	1	1	3	3	3	8	8	8	8	16	16	16	32	32	32	48	48	48	48	48
14.7	.00	.02	.06	.12	.21	.33	.51	.76	1.05	1.36	1.67	2.07	3.07	4.06	5.05	6.04	7.03	8.03	9.02	10.25
	1	1	2	2	4	4	8	9	10	10	10	32	32	32	32	32	32	32	32	42
11.0	.00	.01	.06	.12	.20	.31	.46	.69	.94	1.19	1.47	1.89	2.45	3.07	3.69	4.31	4.93	5.55	6.17	6.79
	1	1	2	2	3	4	7	8	8	8	11	18	20	20	20	20	20	20	20	20
8.8	.00	.00	.05	.11	.20	.30	.43	.60	.85	1.13	1.41	1.69	1.99	2.45	3.01	3.57	4.15	4.77	5.40	6.17
	1	1	2	2	3	4	4	7	9	9	9	9	10	18	18	18	20	20	22	42
7.3	.00	.00	.05	.11	.19	.30	.43	.58	.78	1.03	1.28	1.58	1.89	2.23	2.58	2.92	3.51	4.13	4.75	5.37
	1	1	2	2	3	4	4	6	8	8	8	10	11	11	11	11	20	20	20	20
6.3	.00	.00	.03	.08	.18	.30	.43	.58	.77	.99	1.24	1.52	1.81	2.12	2.43	2.74	3.05	3.39	3.95	4.54
	1	1	1	2	4	4	4	6	7	7	9	9	10	10	10	10	10	18	18	22
5.5	.00	.00	.03	.08	.14	.25	.38	.53	.70	.93	1.20	1.48	1.78	2.09	2.40	2.71	3.02	3.33	3.84	4.40
	1	1	1	2	3	4	5	5	7	8	9	9	10	10	10	10	10	10	18	18
4.9	.00	.00	.02	.08	.14	.24	.38	.53	.69	.90	1.12	1.37	1.64	1.95	2.26	2.57	2.88	3.19	3.55	4.17
	1	1	2	2	2	4	5	5	5	7	8	8	10	10	10	10	10	11	20	20
4.4	.00	.00	.02	.08	.14	.22	.35	.47	.66	.88	1.10	1.31	1.56	1.84	2.12	2.39	2.67	2.98	3.49	4.05
	1	1	2	2	2	4	4	4	7	7	7	7	9	9	9	9	10	10	18	18
4.0	.00	.00	.02	.05	.12	.21	.32	.44	.60	.81	1.03	1.26	1.50	1.75	2.00	2.25	2.50	2.74	3.03	3.38
	1	1	1	1	3	3	4	5	5	7	7	8	8	8	8	8	8	8	10	16
3.7	.00	.00	.02	.05	.10	.19	.30	.42	.56	.73	.98	1.23	1.47	1.72	1.97	2.22	2.47	2.71	2.96	3.32
	1	1	1	1	3	3	4	4	5	8	8	8	8	8	8	8	8	8	8	16
3.4	.00	.00	.02	.05	.09	.18	.29	.41	.54	.71	.96	1.21	1.45	1.70	1.93	2.20	2.45	2.69	2.94	3.20
	1	1	1	1	3	3	4	4	4	8	8	8	8	8	8	8	8	8	8	16
3.1	.00	.00	.02	.05	.09	.15	.26	.38	.51	.63	.83	1.04	1.26	1.49	1.74	1.99	2.24	2.49	2.77	3.05
	1	1	1	1	1	3	4	4	4	4	7	7	7	8	8	8	8	9	1	9
2.9	.00	.00	.02	.05	.09	.15	.24	.35	.48	.60	.77	.98	1.22	1.47	1.72	1.97	2.22	2.48	2.76	3.04
	1	1	1	1	1	3	3	4	4	4	7	8	8	8	8	8	8	9	1	9
2.8	.00	.00	.01	.04	.08	.13	.22	.31	.42	.54	.66	.82	1.07	1.35	1.63	1.90	2.18	2.46	2.74	3.02
	1	1	1	1	1	3	3	3	4	4	4	8	9	9	9	9	9	9	9	9
2.6	.00	.00	.01	.04	.08	.12	.20	.29	.40	.52	.64	.78	1.02	1.27	1.52	1.77	2.05	2.33	2.61	2.89
	1	1	1	1	1	2	3	3	4	4	4	8	8	8	8	9	9	9	1	9
2.4	.00	.00	.00	.03	.07	.12	.18	.26	.38	.50	.62	.76	1.00	1.25	1.50	1.76	2.04	2.32	2.60	2.88
	1	1	1	1	1	2	2	3	4	4	4	8	8	8	8	9	9	9	1	9
2.3	.00	.00	.00	.03	.07	.10	.16	.24	.34	.45	.60	.75	.91	1.11	1.36	1.61	1.86	2.10	2.35	2.60
	1	1	1	1	1	2	2	3	3	4	5	5	5	8	8	8	8	8	1	8
2.2	.00	.00	.00	.03	.07	.10	.15	.24	.34	.43	.55	.68	.84	1.08	1.33	1.58	1.83	2.07	2.32	2.57
	1	1	1	1	1	1	3	3	3	4	4	4	7	8	8	8	8	8	8	8
2.1	.00	.00	.00	.03	.07	.10	.14	.21	.31	.43	.55	.68	.81	.99	1.21	1.42	1.64	1.86	2.07	2.29
	1	1	1	1	1	1	2	2	4	4	4	4	6	7	7	7	7	7	1	7
2.0	.00	.00	.00	.02	.06	.09	.13	.20	.29	.39	.51	.64	.78	.96	1.18	1.39	1.61	1.83	2.04	2.26
	1	1	1	1	1	1	2	2	3	4	4	4	5	7	7	7	7	7	7	7


DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
FOX RIVER AT ALGONQUIN
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5% draft rate needs zero storage
0.01
0.1
1
10
100
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100



STATION 75

LOCATION
In SW ¼ NE ¼ sec 15, T35N, R10E, Will County, at bridge on Third Avenue in Joliet

DRAINAGE AREA
107 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1944 thru Sept 1959
CONTINUOUS RECORD: 15 years; water years 1945-59

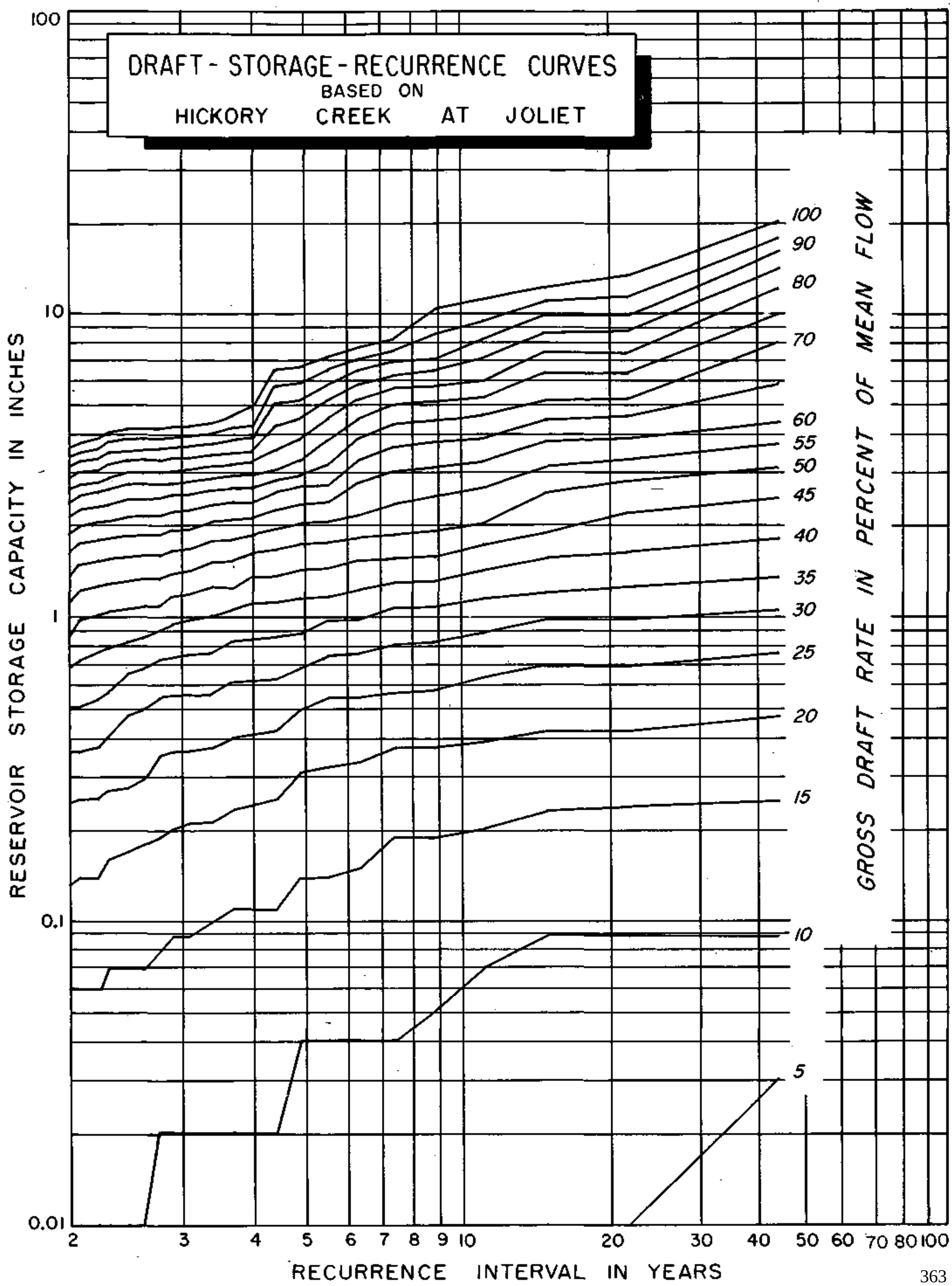
SYNTHETIC FLOW DATA
PERIOD: 29 years; water years 1916-44
INDEX STATION : Kankakee River at Momence
COINCIDENT RECORD: 15 years; water years 1945-59

TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.73 inch per month

Draft-Storage-Recurrence Data for Hickory Creek at Joliet

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.03	.09	.25	.47	.76	1.05	1.37	1.81	2.46	3.12	3.78	4.43	5.91	7.96	10.00	12.04	14.09	16.13	18.18	20.22
	1	4	5	8	8	8	9	18	18	18	18	18	56	56	56	56	56	56	56	56
22.0	.01	.09	.24	.42	.69	.98	1.29	1.65	2.22	2.80	3.38	3.97	4.61	5.27	6.36	7.55	8.79	10.03	11.27	13.32
	1	3	5	6	8	8	10	10	16	16	16	16	18	18	32	34	34	34	34	60
14.7	.01	.09	.23	.42	.69	.98	1.27	1.57	1.90	2.52	3.18	3.83	4.49	5.16	6.33	7.50	8.67	9.83	11.00	12.17
	1	3	5	6	8	8	8	9	16	18	18	18	18	32	32	32	32	32	32	32
11.0	.00	.07	.20	.39	.63	.88	1.15	1.45	1.74	2.03	2.67	3.32	3.98	4.64	5.30	6.00	7.10	8.19	9.55	11.08
	1	3	5	6	7	7	8	8	8	8	18	18	18	18	18	30	30	30	42	42
8.8	.00	.05	.19	.37	.57	.82	1.08	1.33	1.59	1.91	2.49	3.13	3.79	4.45	5.11	5.76	6.42	7.08	8.53	10.14
	1	2	5	5	7	7	7	7	7	16	16	18	18	18	18	18	18	18	44	44
7.3	.00	.04	.19	.37	.56	.81	1.07	1.32	1.58	1.86	2.35	3.00	3.66	4.32	4.98	5.63	6.29	6.95	7.60	8.26
	1	2	5	5	7	7	7	7	7	9	18	18	18	18	18	18	18	18	18	18
6.3	.00	.04	.15	.33	.54	.75	.97	1.25	1.54	1.83	2.17	2.76	3.34	3.93	4.51	5.16	5.82	6.48	7.13	7.79
	1	2	5	5	6	6	6	8	8	8	16	16	16	16	13	18	18	18	13	18
5.5	.00	.04	.14	.32	.54	.75	.97	1.19	1.46	1.75	2.05	2.38	2.71	3.21	3.87	4.52	5.18	5.84	6.49	7.15
	1	2	4	6	6	6	6	6	8	8	9	9	9	18	18	18	18	18	1	13
4.9	.00	.04	.14	.31	.49	.68	.88	1.15	1.44	1.73	2.02	2.34	2.67	3.00	3.33	3.84	4.50	5.16	5.87	6.60
	1	2	4	5	5	5	7	8	8	8	8	9	9	9	9	18	18	1	20	20
4.4	.00	.02	.11	.25	.42	.62	.86	1.11	1.37	1.66	1.95	2.24	2.54	2.83	3.12	3.55	4.28	5.01	5.74	6.47
	1	2	4	4	5	6	7	7	8	8	8	8	8	8	8	20	20	20	1	20
4.0	.00	.02	.11	.24	.41	.62	.85	1.10	1.36	1.62	1.87	2.13	2.38	2.67	3.00	3.33	3.65	3.98	4.31	4.95
	1	2	3	4	6	6	7	7	7	7	7	7	8	9	9	9	9	9	9	18
3.7	.00	.02	.11	.23	.40	.61	.83	1.05	1.27	1.53	1.79	2.08	2.38	2.67	2.96	3.25	3.57	3.90	4.23	4.56
	1	2	3	4	6	6	6	6	7	7	8	8	8	8	8	9	9	9	9	9
3.4	.00	.02	.10	.21	.37	.56	.76	1.01	1.27	1.53	1.78	2.04	2.32	2.61	2.90	3.19	3.48	3.78	4.07	4.36
	1	2	3	4	5	5	7	7	7	7	7	7	8	8	8	8	8	8	8	8
3.1	.00	.02	.09	.21	.36	.55	.75	.97	1.19	1.42	1.67	1.94	2.24	2.53	2.82	3.11	3.40	3.70	3.99	4.28
	1	2	3	4	5	5	6	6	6	7	7	8	8	8	8	8	8	8	8	8
2.9	.00	.02	.09	.20	.36	.55	.73	.94	1.16	1.39	1.64	1.92	2.22	2.51	2.80	3.09	3.38	3.68	3.97	4.26
	1	1	3	4	5	5	5	6	6	7	7	8	8	8	8	8	8	8	8	8
2.8	.00	.02	.08	.19	.35	.54	.72	.90	1.08	1.34	1.59	1.85	2.15	2.44	2.73	3.02	3.31	3.61	3.90	4.19
	1	1	3	3	5	5	5	5	7	7	7	8	8	8	8	8	8	8	8	8
2.6	.00	.01	.07	.18	.30	.49	.67	.85	1.08	1.34	1.59	1.85	2.14	2.43	2.72	3.01	3.30	3.60	3.89	4.18
	1	1	3	3	5	5	5	5	7	7	7	7	8	8	8	8	8	8	8	8
2.4	.00	.01	.07	.17	.28	.47	.65	.83	1.06	1.32	1.57	1.84	2.14	2.43	2.72	3.01	3.30	3.60	3.89	4.18
	1	1	2	3	5	5	5	5	7	7	7	8	8	8	8	8	8	8	1	8
2.3	.00	.01	.07	.16	.27	.40	.56	.78	1.04	1.30	1.55	1.81	2.06	2.33	2.62	2.91	3.20	3.50	3.79	4.08
	1	1	2	3	3	4	6	7	7	7	7	7	7	8	8	8	8	8	1	8
2.2	.00	.01	.06	.14	.25	.37	.53	.76	1.02	1.28	1.53	1.79	2.04	2.30	2.55	2.81	3.06	3.34	3.63	3.92
	1	1	2	3	3	4	5	7	7	7	7	7	7	7	7	7	7	8	1	8
2.1	.00	.01	.06	.14	.25	.36	.50	.71	.97	1.23	1.48	1.74	1.99	2.25	2.50	2.76	3.01	3.27	3.52	3.78
	1	1	2	3	3	4	4	7	7	7	7	7	7	7	7	7	7	7	1	8
2.0	.00	.01	.06	.13	.24	.36	.50	.65	.82	1.08	1.33	1.59	1.84	2.10	2.35	2.61	2.86	3.12	3.37	3.63
	1	1	2	3	3	4	4	4	7	7	7	7	7	7	7	7	7	7	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
HICKORY CREEK AT JOLIET
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
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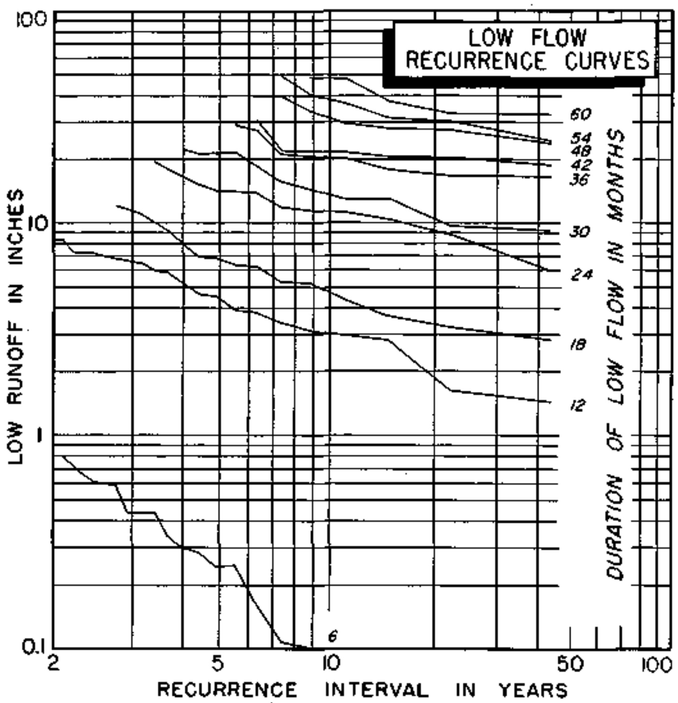
5

LONG RUN NEAR LEMONT



STATION 104

LOCATION
In SW ¼ SE ¼ sec 32, T37N, R11E, Cook County, at highway bridge 2.0 miles south of Lemont

DRAINAGE AREA
20.8 square miles

ACTUAL FLOW DATA
PERIOD: July 1951 thru Sept 1959
CONTINUOUS RECORD : 8 years; water years 1952-59

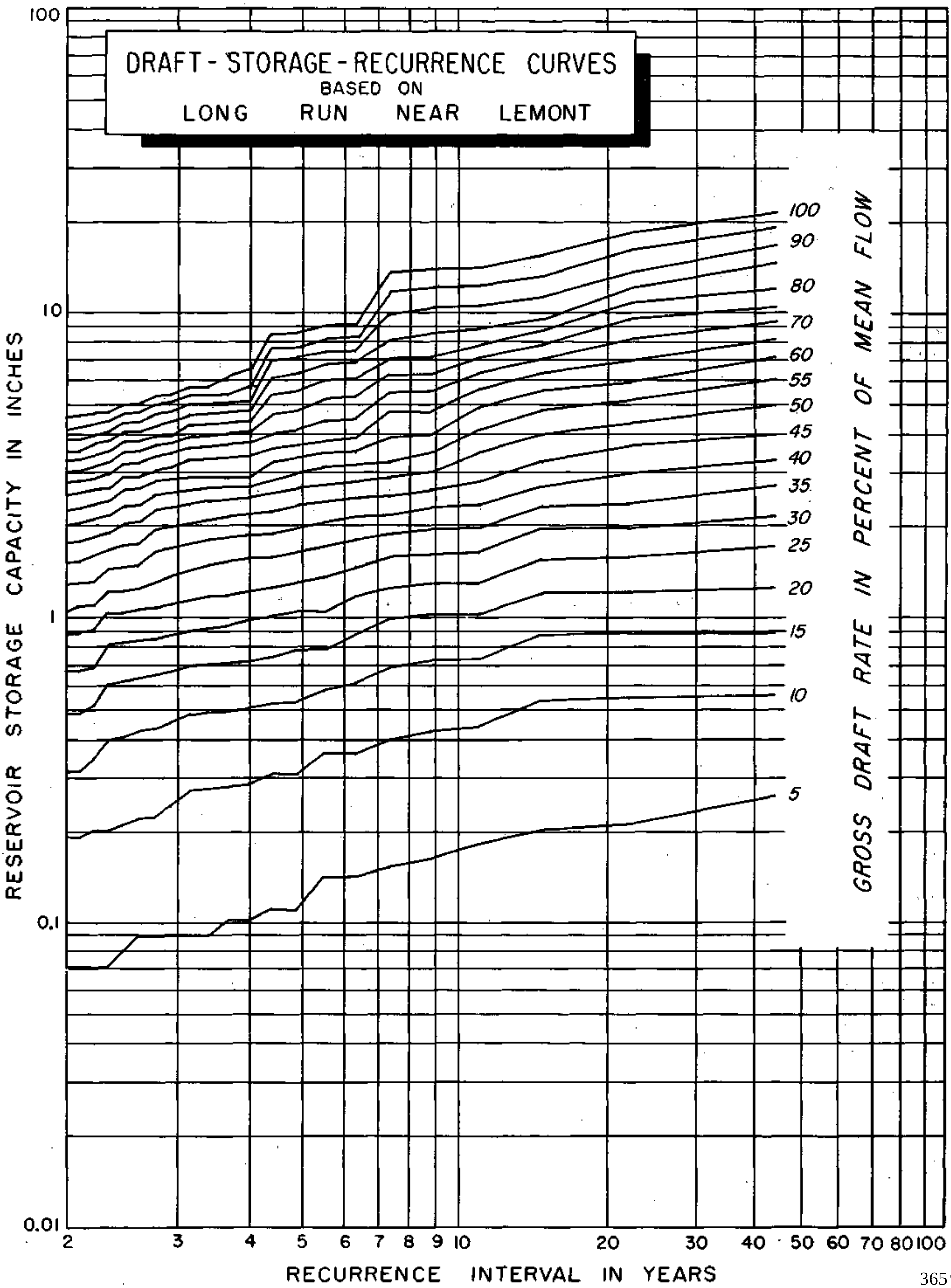
SYNTHETIC FLOW DATA
PERIOD: 36 years; water years 1916-51
INDEX STATION : Kankakee River near Wilmington
COINCIDENT RECORD: 8 years; water years 1952-59

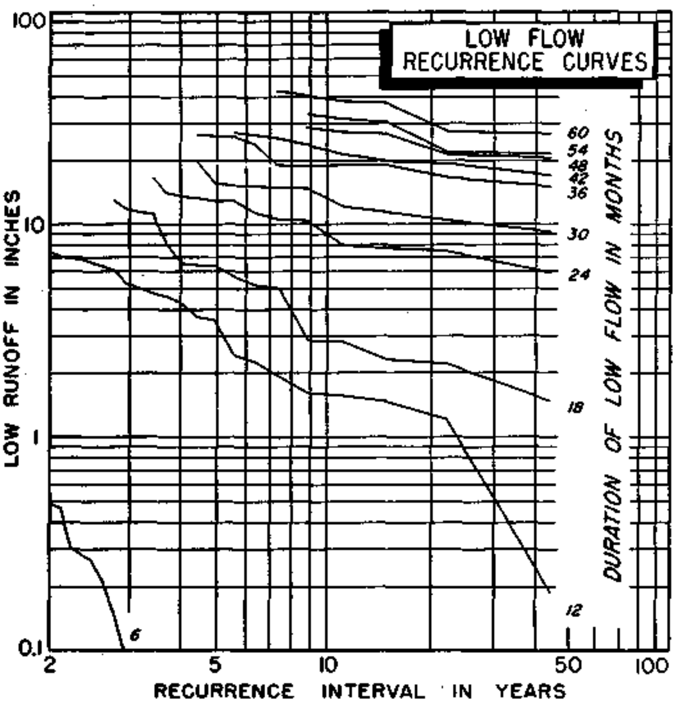
TOTAL DATA ANALYZED
PERIOD : 44 years; water years 1916-59
MEAN DISCHARGE : 0.85 inch per month

Draft-Storage-Recurrence Data for Long Run near Lemont

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.26	.56	.89	1.30	1.73	2.15	2.67	3.35	4.04	4.97	6.08	7.18	8.29	9.39	10.50	12.13	14.48	16.86	19.24	21.62
	7	7	8	10	10	10	16	16	18	26	25	26	26	26	26	54	56	56	56	56
22.0	.21	.55	.89	1.23	1.59	1.98	2.36	2.99	3.67	4.41	5.18	5.94	6.95	8.22	9.50	10.77	12.05	13.52	16.07	18.62
	8	8	8	8	9	9	9	16	16	18	18	18	30	30	30	30	30	60	60	60
14.7	.20	.54	.88	1.22	1.56	1.95	2.33	2.71	3.25	4.01	4.78	5.54	6.31	7.07	7.88	8.73	9.58	11.25	13.23	15.44
	8	8	8	8	9	9	9	9	18	18	18	18	18	18	20	20	20	40	52	52
11.0	.18	.44	.75	1.05	1.35	1.63	1.97	2.34	2.82	3.50	4.18	4.86	5.60	6.36	7.13	7.89	8.87	10.50	12.29	14.15
	6	7	7	7	7	8	8	9	16	16	16	16	18	18	18	18	28	42	42	44
8.8	.16	.43	.72	1.02	1.32	1.62	1.95	2.29	2.65	3.04	3.42	3.97	4.74	5.50	6.27	7.03	8.54	10.32	12.11	13.89
	6	7	7	7	7	7	8	8	9	9	9	18	18	18	18	18	42	42	42	42
7.3	.15	.40	.68	.98	1.28	1.58	1.87	2.17	2.49	2.87	3.25	3.93	4.70	5.46	6.23	6.99	8.10	9.88	11.67	13.45
	6	6	7	7	7	7	7	7	8	9	9	18	18	18	18	18	42	42	42	42
6.3	.14	.36	.61	.88	1.18	1.48	1.80	2.14	2.48	2.82	3.16	3.54	3.92	4.53	5.30	6.06	6.83	7.59	8.36	9.12
	5	5	6	7	7	7	8	8	8	8	9	9	9	18	18	18	18	1	18	18
5.5	.14	.36	.57	.78	1.04	1.37	1.71	2.05	2.39	2.73	3.09	3.47	3.85	4.41	5.18	5.94	6.71	7.47	8.24	9.00
	5	5	5	6	6	8	8	8	8	8	9	9	9	18	18	18	18	18	18	18
4.9	.11	.31	.53	.78	1.04	1.33	1.64	1.98	2.32	2.66	3.00	3.36	3.74	4.13	4.75	5.51	6.28	7.04	7.81	8.57
	4	5	5	6	6	7	8	8	8	8	8	9	9	9	18	18	1	18	18	18
4.4	.11	.31	.52	.74	1.00	1.28	1.57	1.87	2.21	2.55	2.89	3.25	3.63	4.02	4.64	5.40	6.17	6.93	7.70	8.46
	4	5	5	6	6	7	7	8	8	8	8	9	9	9	18	18	18	18	18	18
4.0	.10	.29	.50	.72	.98	1.27	1.56	1.86	2.16	2.46	2.75	3.07	3.41	3.75	4.09	4.43	4.77	5.11	5.72	6.48
	4	5	5	6	6	7	7	7	7	7	7	8	8	8	8	8	8	8	18	18
3.7	.10	.28	.49	.70	.94	1.24	1.53	1.83	2.13	2.43	2.72	3.05	3.39	3.73	4.07	4.41	4.75	5.09	5.43	6.18
	4	5	5	5	7	7	7	7	7	7	7	8	8	8	8	8	8	1	8	18
3.4	.09	.28	.49	.70	.91	1.20	1.49	1.79	2.09	2.39	2.68	3.00	3.34	3.68	4.02	4.36	4.70	5.04	5.38	5.72
	4	5	5	5	5	7	7	7	7	7	7	8	8	8	8	8	8	8	1	6
3.1	.09	.27	.48	.69	.90	1.14	1.43	1.73	2.03	2.33	2.62	2.95	3.29	3.63	3.97	4.31	4.65	4.99	5.33	5.67
	4	5	5	5	5	7	7	7	7	7	7	8	8	8	8	8	1	8	8	8
2.9	.09	.24	.45	.66	.87	1.10	1.38	1.68	1.98	2.28	2.57	2.87	3.17	3.47	3.76	4.07	4.41	4.75	5.09	5.43
	3	5	5	5	5	6	7	7	7	7	7	7	7	7	7	8	1	8	8	8
2.8	.09	.22	.43	.64	.85	1.07	1.33	1.63	1.93	2.23	2.52	2.82	3.12	3.42	3.71	4.01	4.31	4.65	4.99	5.33
	3	5	5	5	5	5	7	7	7	7	7	7	7	7	7	7	8	8	8	8
2.6	.09	.22	.42	.63	.84	1.06	1.27	1.48	1.74	2.04	2.33	2.63	2.93	3.23	3.52	3.82	4.12	4.42	4.71	5.01
	3	3	5	5	5	5	5	5	7	7	7	7	7	7	7	7	1	7	7	7
2.4	.08	.21	.40	.61	.82	1.04	1.25	1.46	1.71	2.01	2.30	2.60	2.90	3.20	3.49	3.79	4.09	4.39	4.68	4.98
	3	3	5	5	5	5	5	5	7	7	7	7	7	7	7	7	7	7	7	7
2.3	.07	.20	.39	.60	.81	1.03	1.24	1.45	1.66	1.89	2.15	2.40	2.55	2.95	3.24	3.54	3.84	4.14	4.43	4.73
	3	3	5	5	5	5	5	5	5	6	6	6	5	7	7	1	7	7	7	7
2.2	.07	.20	.34	.51	.68	.90	1.11	1.33	1.59	1.84	2.10	2.35	2.61	2.85	3.13	3.43	3.73	4.03	4.32	4.66
	3	3	4	4	5	5	5	6	6	5	6	6	6	6	7	7	7	7	1	8
2.1	.07	.19	.31	.48	.56	.88	1.09	1.30	1.52	1.77	2.03	2.28	2.54	2.79	3.05	3.30	3.57	3.89	4.23	4.57
	2	3	4	4	5	5	5	5	6	5	6	6	6	6	6	6	1	8	8	8
2.0	.07	.19	.31	.46	.55	.82	1.03	1.24	1.50	1.75	2.01	2.26	2.52	2.77	3.03	3.28	3.57	3.87	4.19	4.53
	2	3	4	4	4	5	5	6	6	6	6	6	6	6	6	6	1	7	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LONG RUN NEAR LEMONT
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 110

LOCATION
In NW ¼ NE ¼ sec 26, T42N, R11E, Cook County, at bridge on McDonald Road, 2.5 miles northeast of Mount Prospect

DRAINAGE AREA
7.52 square miles

ACTUAL FLOW DATA
PERIOD: Aug 1952 thru Sept 1959
CONTINUOUS RECORD: 7 years; water years 1953-59

SYNTHETIC FLOW DATA
PERIOD: 37 years; water years 1916-52
INDEX STATION: DesPlaines River at Riverside
COINCIDENT RECORD: 7 years; water years 1953-59

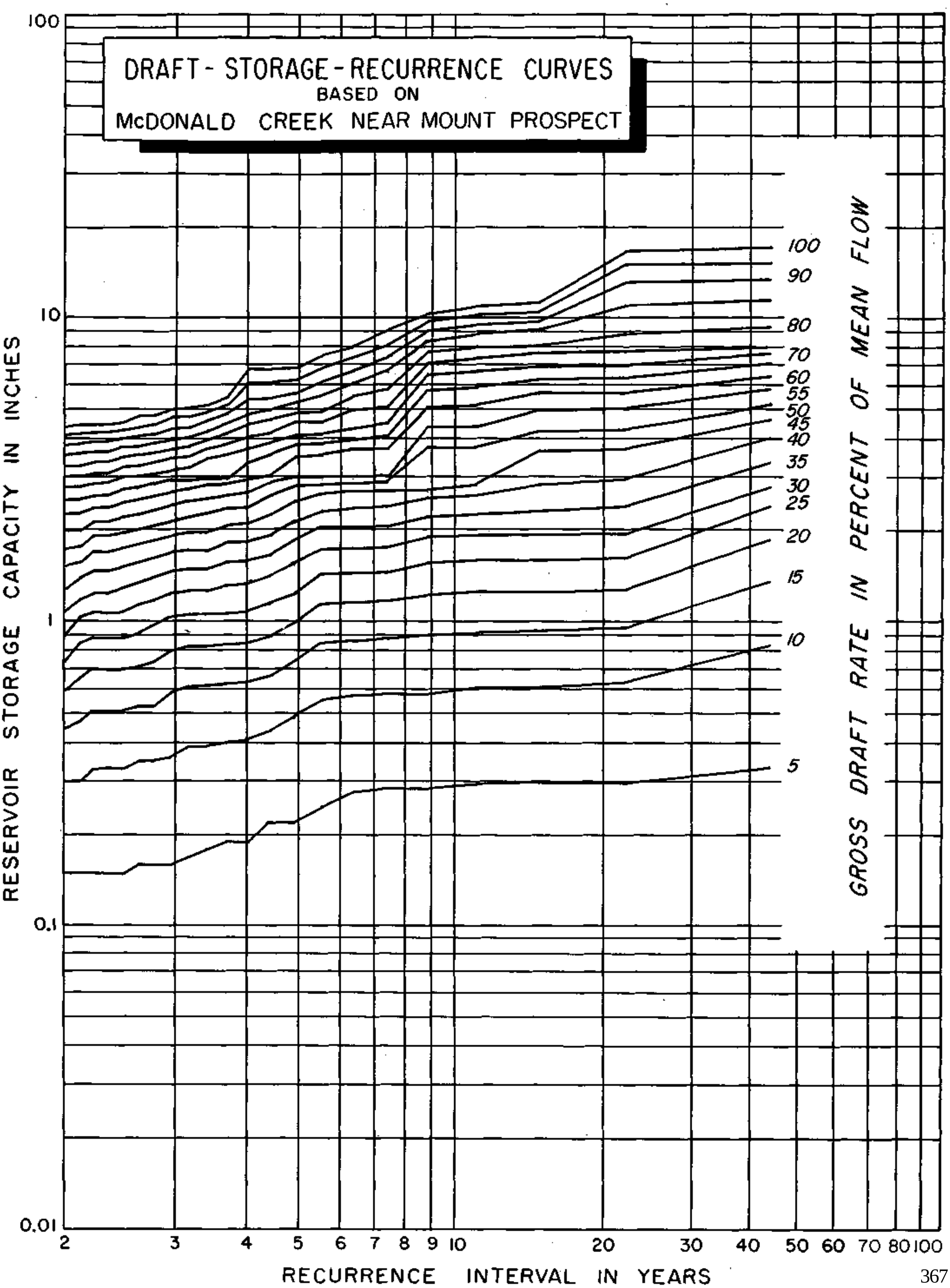
TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE: 0.75 inch per month

Draft-Storage-Recurrence Data for McDonald Creek near Mount Prospect

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.34	.86	1.39	1.91	2.44	2.96	3.55	4.15	4.75	5.35	5.95	6.56	7.24	7.91	8.59	9.67	11.70	13.72	15.75	17.77
	14	14	14	14	14	14	16	16	16	16	16	18	18	18	18	54	54	54	54	54
22.0	.30	.64	.97	1.31	1.65	1.99	2.44	3.11	3.79	4.46	5.14	5.81	6.49	7.16	7.91	9.14	11.24	13.34	15.44	17.54
	9	9	9	9	9	9	18	18	18	18	18	18	18	20	20	56	56	56	56	56
14.7	.30	.62	.95	1.29	1.63	1.97	2.35	3.02	3.70	4.37	5.05	5.72	6.40	7.07	7.76	8.51	9.26	10.01	10.76	11.51
	8	9	9	9	9	9	18	18	18	18	18	18	18	18	20	20	20	20	20	20
11.0	.30	.62	.95	1.29	1.63	1.97	2.30	2.66	3.17	3.84	4.52	5.24	5.99	6.74	7.49	8.24	8.99	9.74	10.49	11.24
	8	9	9	9	9	9	9	10	18	18	18	20	20	20	20	20	20	20	20	20
8.8	.29	.59	.91	1.25	1.59	1.93	2.26	2.60	3.16	3.83	4.51	5.18	5.86	6.53	7.21	7.88	8.56	9.23	9.91	10.58
	8	8	9	9	9	9	9	9	18	18	18	18	18	18	18	18	18	18	18	18
7.5	.29	.59	.89	1.19	1.49	1.79	2.10	2.44	2.78	3.12	3.45	3.79	4.17	4.62	5.15	5.88	6.71	7.53	8.36	9.18
	8	8	8	8	8	8	9	9	9	9	9	10	10	14	14	22	22	1	22	22
6.3	.28	.58	.88	1.18	1.48	1.78	2.08	2.40	2.74	3.08	3.41	3.75	4.09	4.45	5.05	5.65	6.25	6.85	7.51	8.18
	8	8	8	8	8	8	8	9	9	9	9	9	9	16	16	16	16	16	1	18
5.5	.26	.56	.86	1.16	1.46	1.76	2.06	2.36	2.66	2.96	3.26	3.58	3.92	4.26	4.61	4.98	5.61	6.28	6.96	7.63
	8	8	8	8	8	8	8	8	8	8	8	9	9	9	10	10	18	18	18	18
4.9	.22	.49	.75	1.01	1.28	1.58	1.68	2.19	2.53	2.87	3.20	3.54	3.88	4.22	4.60	4.97	5.35	5.72	6.31	6.95
	7	7	7	7	8	8	8	9	9	9	9	9	9	10	10	10	10	10	16	18
4.4	.22	.44	.67	.90	1.16	1.43	1.69	1.95	2.27	2.61	2.94	3.28	3.62	3.96	4.30	4.67	5.05	5.53	6.21	6.88
	6	6	6	7	7	7	7	7	9	9	9	9	9	9	10	10	10	18	18	18
4.0	.19	.41	.64	.86	1.09	1.35	1.61	1.87	2.13	2.41	2.71	3.04	3.42	3.79	4.17	4.54	4.92	5.49	6.17	6.84
	6	6	6	6	6	7	7	7	7	8	8	10	10	10	10	10	10	18	18	18
3.7	.19	.40	.63	.85	1.08	1.33	1.59	1.85	2.11	2.38	2.64	2.93	3.25	3.59	3.92	4.26	4.60	4.94	5.27	5.61
	5	6	6	6	6	7	7	7	7	7	7	8	9	9	9	1	9	9	9	9
3.4	.18	.39	.62	.84	1.07	1.29	1.52	1.74	1.99	2.28	2.58	2.88	3.18	3.48	3.78	4.08	4.38	4.68	4.98	5.28
	5	6	6	6	6	6	6	6	7	8	8	8	8	8	8	8	8	8	1	8
3.1	.17	.39	.62	.84	1.07	1.29	1.52	1.74	1.98	2.25	2.51	2.77	3.03	3.30	3.56	3.82	4.13	4.47	4.80	5.14
	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	9	9	9	9
2.9	.16	.36	.59	.81	1.04	1.26	1.49	1.71	1.94	2.19	2.45	2.71	2.97	3.24	3.50	3.76	4.07	4.41	4.74	5.08
	5	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	9	9	1	9
2.8	.16	.35	.53	.75	.98	1.20	1.43	1.65	1.88	2.11	2.37	2.63	2.89	3.16	3.42	3.68	3.94	4.21	4.54	4.88
	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	9	9	9
2.6	.16	.35	.53	.72	.92	1.14	1.37	1.59	1.82	2.04	2.28	2.54	2.80	3.07	3.33	3.59	3.85	4.16	4.49	4.83
	5	5	5	5	6	6	6	6	6	6	7	7	7	7	7	7	7	9	9	9
2.4	.15	.33	.51	.70	.89	1.08	1.31	1.53	1.76	1.98	2.24	2.50	2.76	3.03	3.29	3.55	3.81	4.08	4.34	4.60
	4	5	5	5	5	6	6	6	6	7	7	7	7	7	7	7	7	7	1	7
2.3	.15	.33	.51	.70	.89	1.08	1.27	1.49	1.72	1.94	2.17	2.39	2.63	2.90	3.16	3.42	3.68	3.97	4.27	4.57
	4	5	5	5	5	5	6	6	6	6	6	6	7	7	7	1	7	8	8	8
2.2	.15	.33	.51	.70	.89	1.08	1.27	1.49	1.72	1.54	2.17	2.39	2.62	2.89	3.15	3.41	3.67	3.97	4.27	4.57
	4	5	5	5	5	5	6	6	6	6	6	6	7	7	7	1	8	8	8	8
2.1	.15	.30	.47	.66	.85	1.04	1.22	1.41	1.60	1.79	2.02	2.28	2.54	2.81	3.07	3.34	3.64	3.94	4.24	4.54
	4	4	5	5	5	5	5	5	5	5	7	7	7	7	7	1	8	8	8	8
2.0	.15	.30	.45	.60	.75	.92	1.10	1.31	1.54	1.76	2.02	2.28	2.54	2.81	3.07	3.33	3.59	3.88	4.18	4.48
	4	4	4	4	4	5	5	6	6	7	7	7	7	7	7	7	1	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
McDONALD CREEK NEAR MOUNT PROSPECT
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
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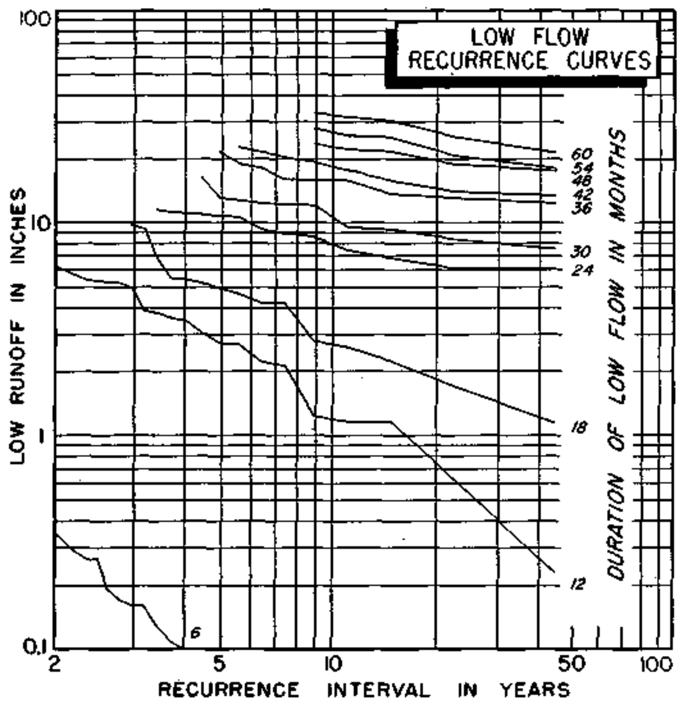
NORTH BRANCH, CHICAGO RIVER AT DEERFIELD



STATION 115

LOCATION
In NW ¼ NE ¼ sec 3, T42N, R12E, Cook County, at bridge on county line road, 1.7 miles southeast of Deerfield

DRAINAGE AREA
20.7 square miles

ACTUAL FLOW DATA
PERIOD: Aug 1952 thru Sept 1959
CONTINUOUS RECORD: 7 years; water years 1953-59

SYNTHETIC FLOW DATA
PERIOD: 37 years; water years 1916-52
INDEX STATION : DesPlaines River at Riverside
COINCIDENT RECORD: 7 years; water years 1953-59

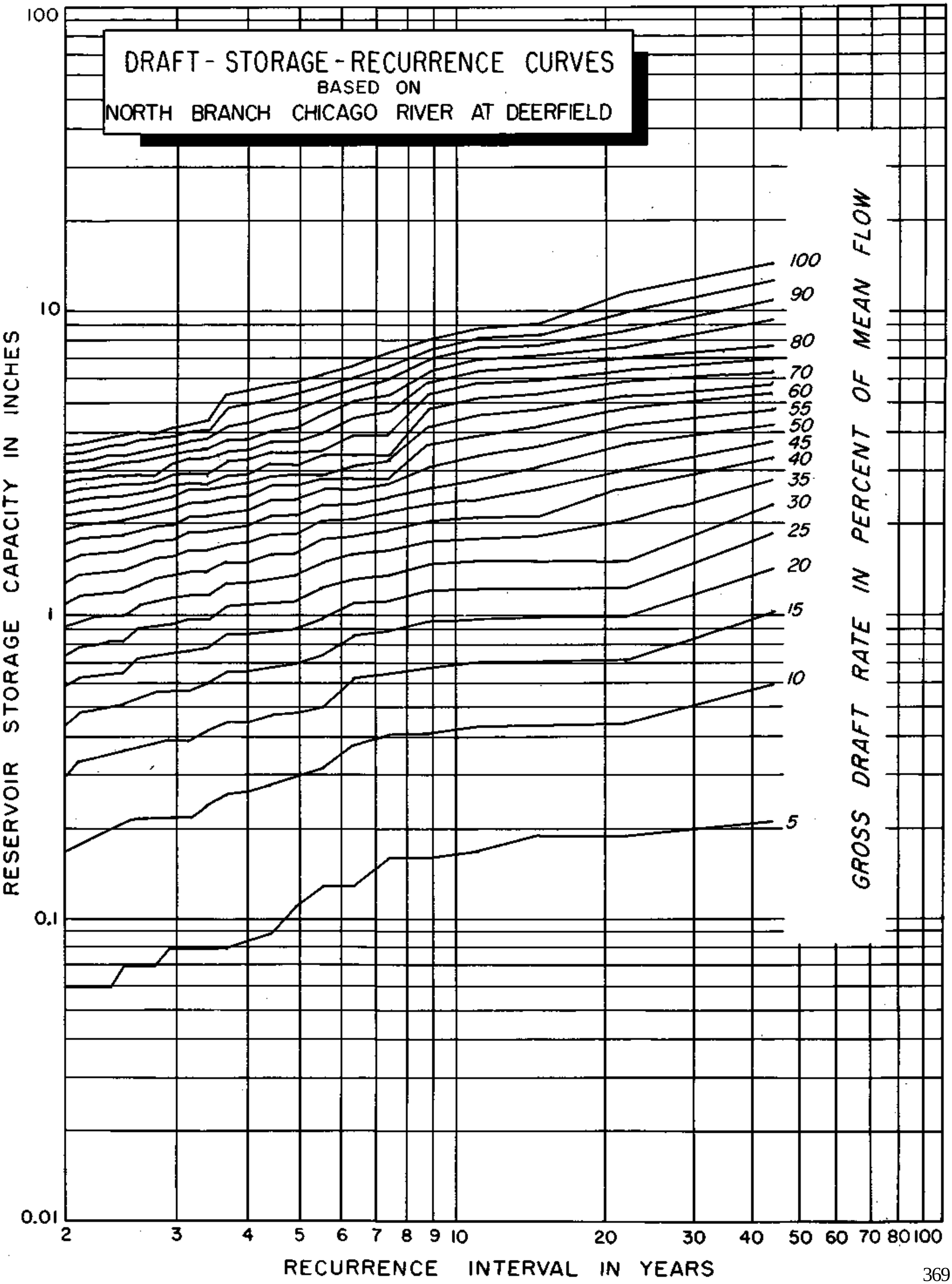
TOTAL DATA ANALYZED
PERIOD : 44 years; water years 1916-59
MEAN DISCHARGE: 0.61 inch per month

Draft-Storage-Recurrence Data for North Branch, Chicago River at Deerfield

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50
44.0	.21	.60	1.03	1.46	1.89	2.35	2.84	3.32	3.81	4.30
	8	14	14	14	14	16	16	16	16	18
22.0	.19	.45	.72	1.00	1.27	1.55	2.10	2.65	3.20	3.75
	8	9	9	9	9	18	18	18	18	18
14.7	.19	.44	.71	.99	1.26	1.54	1.85	2.15	2.64	3.19
	8	9	9	9	9	10	10	10	18	18
11.0	.17	.44	.71	.99	1.26	1.54	1.82	2.12	2.43	2.82
	8	9	9	9	9	9	10	10	10	20
8.6	.16	.41	.68	.96	1.23	1.51	1.78	2.06	2.36	2.66
	8	9	9	9	9	9	9	9	10	10
7.3	.15	.41	.65	.90	1.14	1.39	1.66	1.94	2.21	2.49
	8	8	8	8	8	9	9	9	9	9
6.3	.15	.38	.62	.87	1.11	1.35	1.60	1.84	2.09	2.35
	8	8	8	8	8	8	8	8	8	5
5.5	.13	.32	.50	.75	.99	1.25	1.52	1.80	2.07	2.35
	6	6	8	8	8	9	9	9	9	9
4.9	.11	.29	.49	.70	.92	1.13	1.37	1.51	1.88	2.16
	5	6	7	7	7	7	8	9	9	9
4.4	.09	.28	.47	.68	.90	1.11	1.34	1.60	1.87	2.15
	6	6	7	7	7	7	8	9	9	9
4.0	.08	.27	.45	.66	.88	1.09	1.30	1.52	1.77	2.01
	5	5	7	7	7	7	7	8	8	8
3.7	.08	.25	.45	.66	.88	1.09	1.30	1.52	1.73	1.95
	4	6	7	7	7	7	7	7	7	7
3.4	.08	.24	.42	.60	.79	.98	1.19	1.41	1.66	1.90
	4	6	6	6	6	7	7	8	6	8
3.1	.08	.22	.39	.57	.77	.98	1.19	1.41	1.65	1.90
	4	5	6	6	7	7	7	8	8	3
2.9	.08	.22	.39	.37	.76	.94	1.15	1.37	1.58	1.80
	4	5	6	6	6	7	7	7	7	7
2.8	.07	.22	.38	.56	.75	.93	1.13	1.35	1.56	1.79
	4	5	6	6	6	6	7	7	7	7
2.6	.07	.22	.37	.54	.73	.91	1.09	1.28	1.49	1.71
	4	5	5	6	6	6	6	7	7	7
2.4	.07	.21	.36	.51	.66	.83	1.01	1.21	1.42	1.64
	4	5	5	5	5	6	6	7	7	7
2.3	.06	.20	.35	.50	.65	.83	1.01	1.20	1.41	1.63
	4	5	5	5	6	6	6	7	7	7
2.2	.06	.19	.34	.49	.64	.81	.99	1.19	1.40	1.52
	4	5	5	5	5	6	6	7	7	7
2.1	.05	.18	.33	.48	.63	.79	.96	1.17	1.38	1.60
	3	5	5	5	5	5	6	7	7	7
2.0	.06	.17	.30	.44	.59	.75	.93	1.11	1.31	1.53
	3	4	4	5	5	6	6	6	7	7

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
44.0	4.85	5.40	5.95	6.50	7.05	7.79	9.44	11.09	12.73	14.41
	18	18	18	18	18	54	54	54	54	56
22.0	4.30	4.85	5.40	5.95	6.51	7.12	7.73	8.82	10.16	11.64
	18	18	18	18	20	20	20	44	44	58
14.7	3.74	4.29	4.84	5.43	6.04	6.65	7.26	7.87	8.48	9.26
	18	18	18	20	20	20	20	20	20	38
11.0	3.43	4.04	4.65	5.26	5.87	6.48	7.09	7.70	8.31	8.92
	20	20	20	20	20	20	20	20	20	20
8.6	3.17	3.72	4.27	4.82	5.37	5.91	6.46	7.01	7.61	8.22
	18	18	18	18	18	18	18	18	20	20
7.3	2.76	3.03	3.31	3.58	4.06	4.73	5.40	6.07	6.74	7.41
	9	9	9	9	22	22	22	1	22	22
6.3	2.62	2.89	3.17	3.45	3.98	4.52	5.07	5.62	6.17	6.72
	9	9	9	16	18	18	18	18	1	18
5.5	2.62	2.89	3.17	3.44	3.73	4.09	4.64	5.19	5.74	6.29
	9	9	9	9	10	18	18	18	18	18
4.9	2.43	2.70	2.98	3.25	3.55	3.85	4.27	4.82	5.37	5.92
	9	9	9	9	10	10	18	18	18	18
4.4	2.42	2.69	2.97	3.24	3.52	3.79	4.10	4.65	5.20	5.75
	9	9	9	9	9	9	18	18	1	18
4.0	2.25	2.51	2.79	3.06	3.34	3.61	3.89	4.39	4.94	5.49
	8	9	9	9	9	9	1	18	18	18
3.7	2.20	2.47	2.75	3.02	3.30	3.57	3.85	4.29	4.84	5.39
	9	9	9	9	9	1	9	18	18	18
3.4	2.14	2.39	2.63	2.88	3.12	3.36	3.64	3.91	4.19	4.46
	8	8	6	6	8	9	1	9	9	9
3.1	2.14	2.39	2.63	2.88	3.12	3.36	3.61	3.85	4.10	4.34
	8	8	8	8	8	8	8	8	1	9
2.9	2.01	2.25	2.49	2.74	2.98	3.22	3.47	3.71	3.96	4.23
	7	8	8	8	8	8	8	8	1	9
2.8	1.99	2.20	2.42	2.63	2.84	3.07	3.35	3.62	3.90	4.17
	7	7	7	7	7	9	9	9	9	9
2.6	1.92	2.13	2.35	2.56	2.77	3.01	3.29	3.56	3.84	4.11
	1	7	7	7	7	9	1	9	9	9
2.4	1.85	2.06	2.28	2.50	2.74	2.98	3.23	3.47	3.72	3.98
	7	7	7	8	8	8	1	8	8	9
2.3	1.84	2.05	2.27	2.48	2.72	2.96	3.21	3.45	3.70	3.94
	7	7	7	8	8	8	8	8	1	8
2.2	1.83	2.04	2.26	2.47	2.68	2.90	3.11	3.35	3.60	3.84
	7	7	7	7	7	1	8	8	8	8
2.1	1.81	2.02	2.24	2.45	2.66	2.88	3.09	3.30	3.52	3.73
	7	7	7	7	7	7	1	7	7	8
2.0	1.74	1.95	2.17	2.38	2.59	2.81	3.02	3.24	3.49	3.73
	7	7	7	1	7	7	7	1	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
NORTH BRANCH CHICAGO RIVER AT DEERFIELD
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
80
70
60
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45
40
35
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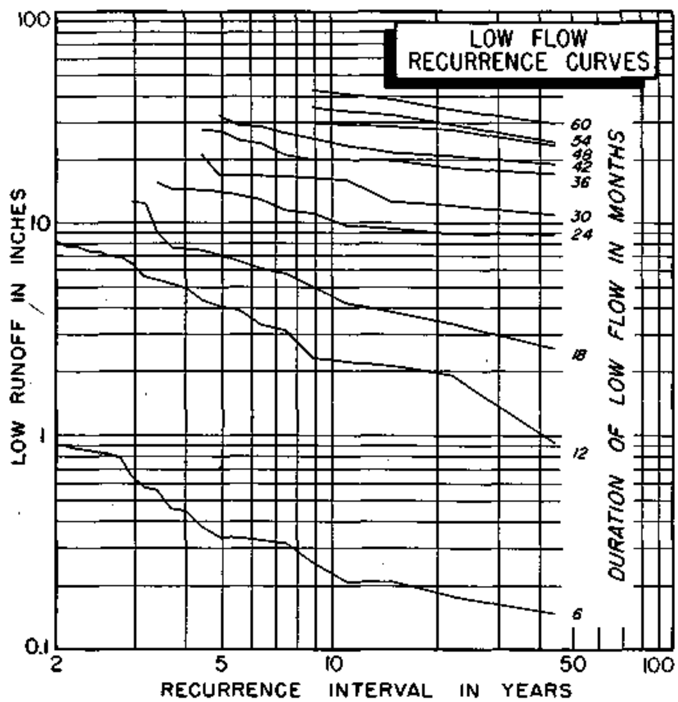
20
15
10
5



STATION 116

LOCATION
In SW ¼ SE ¼ sec 30, T41N, R13E, Cook County, at bridge on Touhy Avenue in Niles

DRAINAGE AREA
102 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1950 thru Sept 1959
CONTINUOUS RECORD: 9 years; water years 1951-59

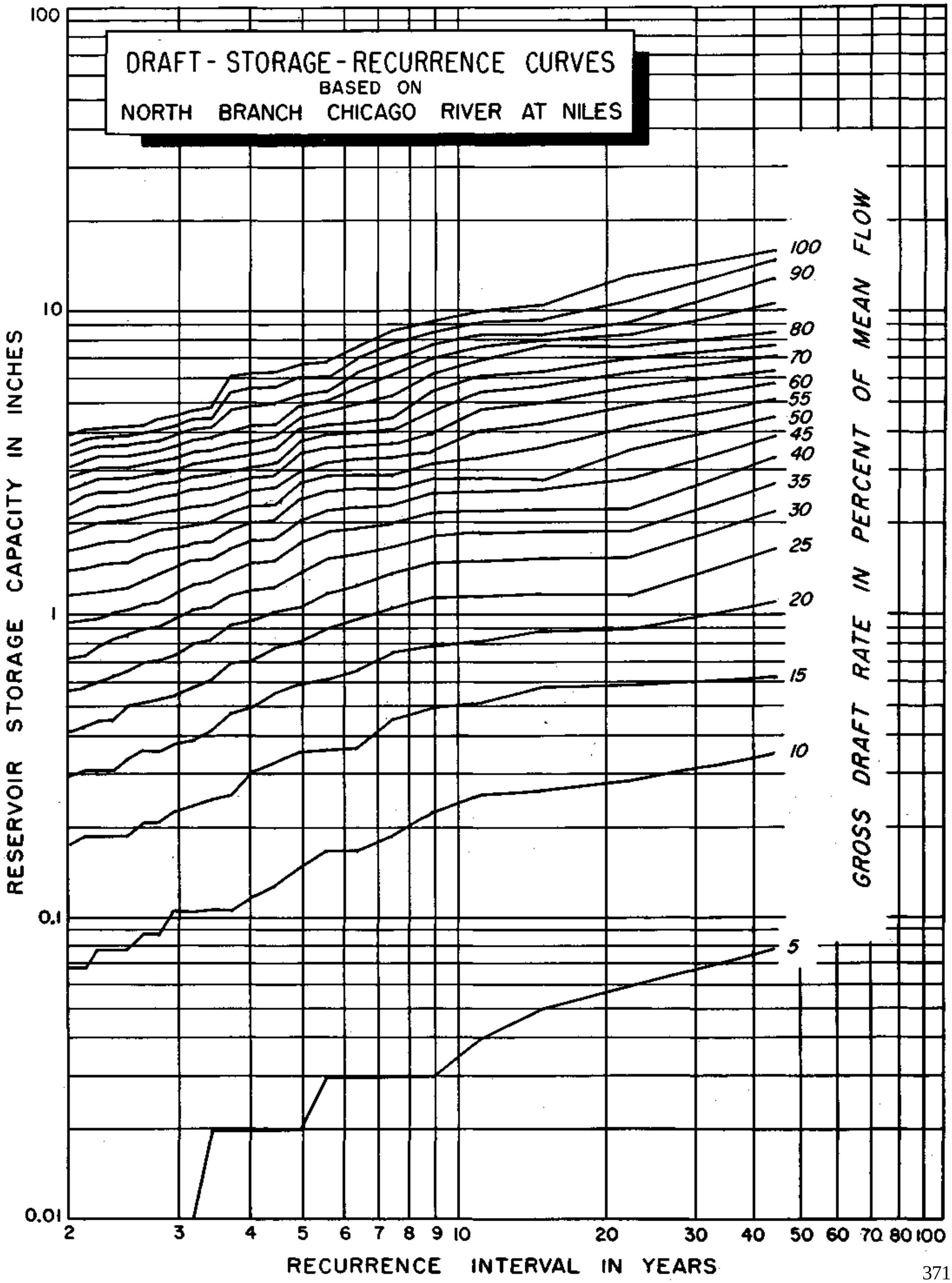
SYNTHETIC FLOW DATA
PERIOD: 35 years; water years 1916-50
INDEX STATION : DesPlaines River at Riverside
COINCIDENT RECORD: 9 years; water years 1951-59

TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE: 0.78 inch per month

Draft-Storage-Recurrence Data for North Branch, Chicago River at Niles

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.08 7	.36 7	.63 8	1.12 14	1.67 14	2.22 14	2.76 14	3.35 16	3.98 16	4.60 16	5.22 16	5.85 16	6.48 18	7.18 18	7.88 18	8.69 54	10.79 54	12.90 54	15.00 54	17.11 54
22.0	.06 4	.29 6	.60 8	.91 8	1.22 9	1.57 9	1.92 9	2.27 9	2.88 18	3.58 18	4.28 18	4.98 18	5.69 18	6.39 18	7.09 18	7.79 18	8.53 20	9.31 20	11.01 56	13.19 56
14.7	.05 5	.27 8	.59 8	.90 8	1.21 9	1.56 9	1.91 9	2.26 9	2.61 9	2.96 9	3.65 18	4.35 18	5.06 18	5.76 18	6.46 18	7.16 18	7.86 18	8.61 20	9.45 30	10.62 30
11.0	.04 5	.26 6	.52 7	.82 9	1.18 9	1.53 9	1.88 9	2.23 9	2.58 9	2.93 9	3.42 18	4.12 18	4.83 18	5.53 18	6.26 20	7.04 20	7.82 20	8.60 20	9.38 20	10.16 20
8.8	.03 3	.23 7	.50 7	.80 8	1.15 9	1.50 9	1.85 9	2.20 9	2.55 9	2.90 9	3.25 9	3.60 9	4.01 18	4.75 20	5.53 20	6.31 20	7.09 20	7.87 20	8.65 20	9.43 20
7.3	.03 3	.19 5	.46 8	.77 8	1.08 8	1.39 8	1.70 8	2.02 8	2.33 8	2.65 9	3.02 10	3.41 10	3.80 10	4.19 10	4.58 18	5.35 22	6.21 22	7.06 22	7.92 1	8.78 22
6.3	.03 3	.17 5	.37 6	.67 8	.98 8	1.29 8	1.60 9	1.95 9	2.30 9	2.65 9	3.00 9	3.35 9	3.70 9	4.05 9	4.41 16	5.03 16	5.67 18	6.38 18	7.08 1	7.78 18
5.3	.03 3	.17 5	.37 5	.62 7	.91 8	1.22 8	1.55 9	1.90 9	2.25 9	2.60 9	2.95 9	3.30 9	3.65 9	4.00 9	4.37 10	4.76 10	5.15 10	5.54 10	6.21 18	6.91 18
4.9	.02 3	.15 5	.36 6	.60 6	.83 6	1.07 8	1.39 9	1.74 9	2.09 9	2.44 9	2.79 9	3.14 9	3.49 9	3.84 9	4.20 9	4.56 10	4.97 10	5.41 18	6.11 18	6.81 18
4.4	.02 3	.13 5	.33 5	.56 6	.79 6	1.02 6	1.26 7	1.53 7	1.81 7	2.08 7	2.35 8	2.66 8	2.98 8	3.29 8	3.60 8	3.97 10	4.36 10	5.03 18	5.73 18	6.43 18
4.0	.02 2	.12 3	.31 5	.50 5	.72 6	.97 7	1.24 7	1.51 7	1.79 7	2.05 7	2.33 7	2.61 7	2.88 7	3.18 8	3.49 8	3.80 9	4.26 18	4.97 18	5.67 18	6.37 18
3.7	.02 2	.11 3	.26 4	.48 6	.71 6	.94 6	1.18 6	1.41 6	1.67 7	1.94 7	2.21 7	2.49 7	2.76 7	3.04 9	3.40 9	3.75 9	4.10 18	4.81 18	5.51 1	6.21 18
3.4	.02 2	.11 3	.25 4	.42 5	.62 5	.84 6	1.08 6	1.31 6	1.55 6	1.78 6	2.04 8	2.35 8	2.67 8	2.98 8	3.29 8	3.60 8	3.91 1	4.23 8	4.54 8	4.91 18
3.1	.01 2	.11 3	.24 4	.39 5	.59 6	.82 6	1.06 6	1.29 6	1.53 6	1.76 6	2.01 8	2.32 8	2.64 8	2.95 8	3.26 8	3.57 8	3.88 8	4.20 8	4.51 1	4.82 8
2.9	.01 2	.11 3	.23 4	.38 4	.55 5	.75 6	.99 6	1.22 6	1.46 6	1.69 7	1.96 7	2.24 7	2.51 7	2.78 8	3.09 8	3.40 8	3.71 8	4.03 8	4.34 8	4.65 8
2.8	.01 2	.09 3	.21 4	.36 4	.53 5	.72 5	.92 5	1.11 7	1.39 7	1.66 7	1.93 7	2.21 7	2.48 7	2.75 7	3.03 7	3.30 7	3.57 7	3.84 9	4.19 9	4.54 9
2.6	.01 2	.09 2	.21 4	.36 4	.52 5	.71 5	.91 5	1.10 5	1.33 7	1.60 7	1.87 7	2.15 7	2.42 7	2.69 7	2.97 7	3.24 7	3.51 7	3.78 7	4.06 7	4.33 8
2.4	.01 1	.08 2	.19 4	.34 4	.50 4	.66 5	.86 5	1.05 5	1.26 6	1.51 7	1.78 7	2.06 7	2.33 7	2.60 7	2.88 7	3.15 7	3.42 7	3.69 7	3.97 1	4.28 8
2.3	.01 1	.08 2	.19 3	.31 3	.45 5	.64 5	.84 5	1.03 5	1.24 6	1.49 7	1.76 7	2.04 7	2.31 7	2.58 7	2.86 7	3.13 7	3.40 1	3.67 7	3.95 7	4.25 8
2.2	.01 1	.08 2	.19 3	.31 3	.45 4	.61 4	.80 5	.99 6	1.23 6	1.49 7	1.76 7	2.04 7	2.31 7	2.58 7	2.86 7	3.13 7	3.40 1	3.57 7	3.95 7	4.22 7
2.1	.01 1	.07 3	.19 3	.31 3	.43 3	.58 4	.74 6	.97 6	1.21 6	1.44 6	1.69 7	1.97 7	2.24 7	2.51 7	2.79 7	3.06 7	3.33 1	3.60 7	3.88 7	4.15 8
2.0	.01 1	.07 2	.18 3	.30 3	.42 3	.57 4	.73 6	.96 6	1.20 6	1.43 6	1.66 6	1.90 6	2.13 6	2.37 6	2.64 7	2.91 7	3.18 7	3.45 1	3.73 7	4.02 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
NORTH BRANCH CHICAGO RIVER AT NILES
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
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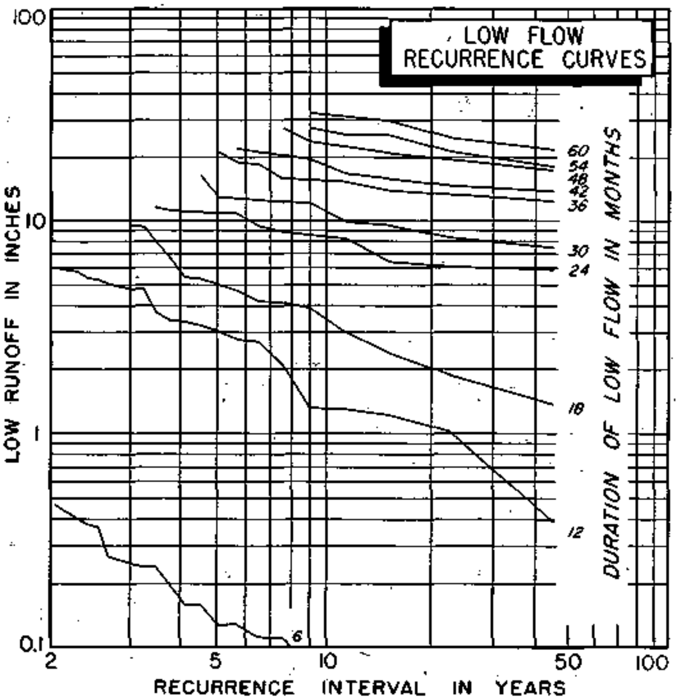
POPLAR CREEK AT ELGIN



STATION 124

LOCATION
In SE ¼ NW ¼ sec 19, T41N, R9E, Cook County, just upstream from bridge on U. S. 20 in Elgin

DRAINAGE AREA
35.8 square miles

ACTUAL FLOW DATA
PERIOD: Aug 1951 thru Sept 1959
CONTINUOUS RECORD: 8 years; water years 1952-59

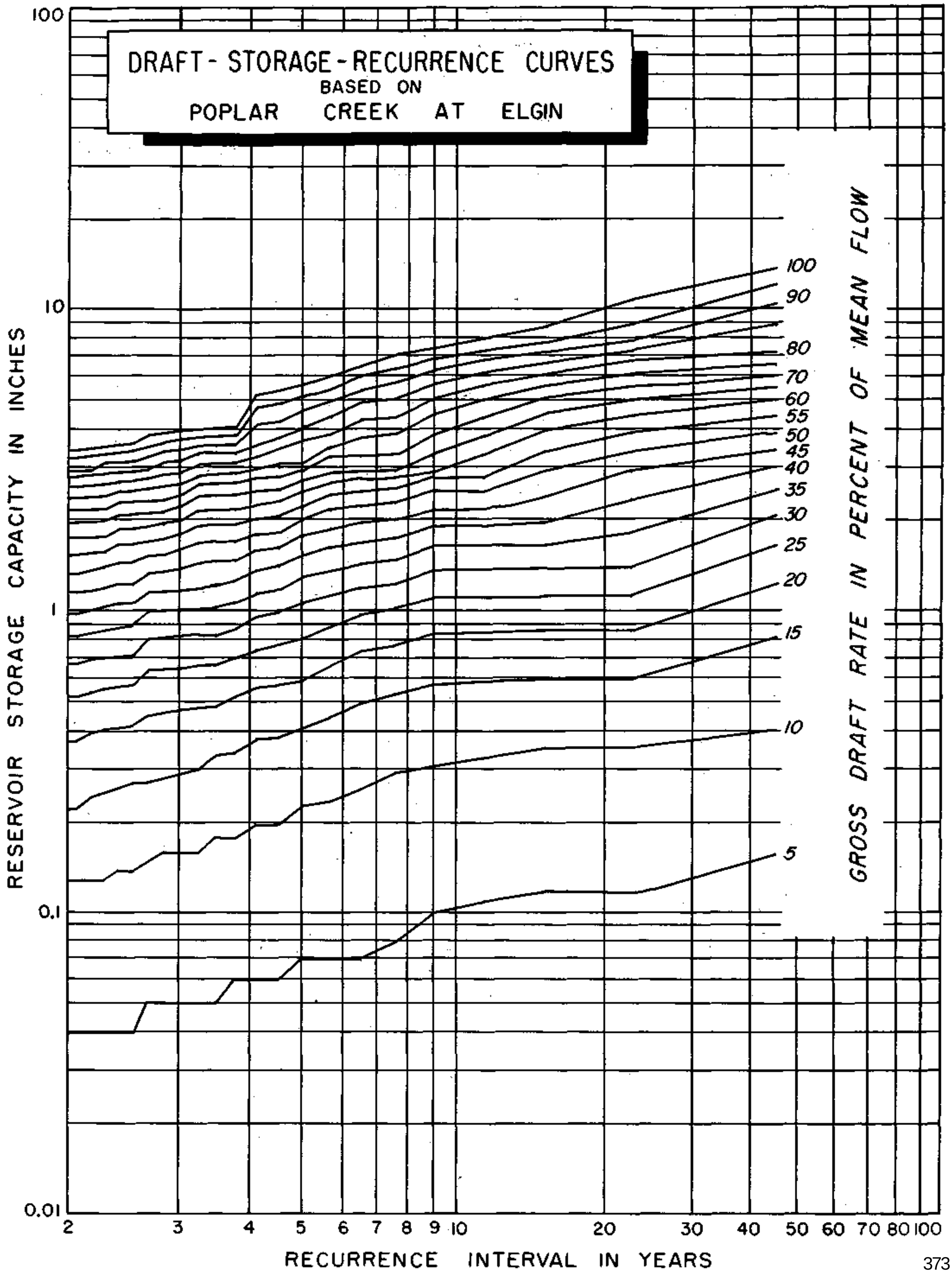
SYNTHETIC FLOW DATA
PERIOD: 37 years; water years 1915-51
INDEX STATION : DesPlaines River at Riverside
COINCIDENT RECORD: 8 years; water years 1952-59

TOTAL DATA ANALYZED
PERIOD: 45 years; water years 1915-59
MEAN DISCHARGE : 0.60 inch per month

Draft-Storage-Recurrence Data for Poplar Creek at Elgin

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.16 7	.41 14	.83 14	1.25 14	1.67 14	2.10 16	2.58 16	3.06 16	3.54 16	4.02 16	4.53 18	5.07 18	5.61 18	6.15 18	6.69 18	7.36 54	8.98 54	10.60 54	12.24 56	13.92 56
22.5	.12 8	.36 8	.60 9	.87 9	1.14 9	1.41 9	1.85 18	2.39 18	2.93 18	3.47 18	4.01 18	4.55 18	5.09 18	5.63 18	6.21 20	6.81 20	7.41 20	8.01 20	9.04 60	10.84 60
15.0	.12 8	.36 8	.60 9	.87 9	1.14 9	1.41 9	1.68 10	1.98 10	2.43 18	2.97 18	3.51 18	4.05 18	4.59 18	5.13 18	5.67 18	6.21 18	6.75 18	7.29 20	7.89 20	8.92 44
11.3	.11 7	.33 8	.59 9	.86 9	1.13 9	1.40 9	1.67 9	1.94 9	2.21 10	2.51 10	2.83 18	3.37 18	3.91 18	4.45 20	5.05 20	5.65 20	6.25 20	6.85 20	7.45 20	8.12 46
9.0	.10 7	.31 9	.58 9	.85 9	1.12 9	1.39 9	1.66 9	1.93 9	2.20 10	2.50 10	2.80 10	3.10 10	3.40 10	3.93 20	4.53 20	5.13 20	5.73 20	6.33 20	6.93 20	7.53 20
7.5	.08 7	.30 8	.54 8	.78 8	1.02 8	1.26 8	1.50 8	1.76 9	2.03 9	2.30 9	2.57 9	2.84 9	3.11 9	3.39 18	3.93 18	4.47 18	5.08 22	5.74 22	6.40 22	7.06 22
6.4	.07 5	.26 8	.50 8	.74 8	.98 8	1.22 8	1.46 8	1.70 9	1.97 9	2.24 9	2.51 9	2.78 9	3.05 9	3.32 9	3.85 18	4.39 18	4.93 18	5.47 18	6.01 1	6.55 18
5.6	.07 5	.24 7	.45 7	.66 7	.89 8	1.13 8	1.37 8	1.63 9	1.90 9	2.17 9	2.44 9	2.71 9	3.00 10	3.30 10	3.60 10	3.91 18	4.45 16	4.99 18	5.53 18	6.07 18
5.0	.07 5	.23 6	.41 6	.59 6	.82 8	1.06 8	1.30 8	1.54 8	1.78 8	2.02 8	2.26 8	2.50 8	2.74 8	2.99 10	3.29 10	3.73 16	4.21 16	4.69 16	5.17 16	5.69 18
4.5	.06 4	.20 6	.38 6	.57 7	.78 7	.99 7	1.20 7	1.41 7	1.62 7	1.84 8	2.08 8	2.32 8	2.56 9	2.83 9	3.11 10	3.41 10	3.79 18	4.33 18	4.87 18	5.41 18
4.1	.06 4	.20 6	.38 6	.56 6	.75 7	.96 7	1.17 7	1.38 7	1.59 7	1.80 8	2.04 8	2.28 8	2.53 9	2.80 9	3.07 9	3.34 9	3.66 18	4.20 18	4.74 18	5.28 18
3.8	.06 3	.18 5	.34 6	.52 6	.70 6	.88 6	1.07 7	1.28 7	1.49 7	1.71 8	1.95 8	2.19 8	2.43 8	2.67 8	2.91 8	3.15 1	3.39 8	3.63 8	3.87 9	4.14 9
3.5	.05 4	.18 5	.33 5	.48 6	.66 6	.84 6	1.03 7	1.24 7	1.47 8	1.71 8	1.95 8	2.19 8	2.43 8	2.67 8	2.91 8	3.15 8	3.39 1	3.63 8	3.87 8	4.11 8
3.2	.05 3	.16 4	.30 6	.48 6	.66 6	.84 6	1.02 6	1.21 8	1.45 8	1.69 8	1.93 8	2.17 8	2.41 8	2.65 8	2.89 8	3.13 8	3.37 8	3.61 1	3.85 8	4.09 8
3.0	.05 3	.16 4	.29 6	.47 6	.65 6	.83 6	1.01 6	1.19 7	1.40 7	1.61 7	1.82 7	2.03 7	2.24 7	2.45 7	2.67 9	2.94 9	3.21 9	3.48 9	3.75 1	4.02 9
2.8	.05 3	.16 4	.28 6	.46 6	.64 6	.82 6	1.00 6	1.18 6	1.36 6	1.54 6	1.74 7	1.95 7	2.16 7	2.37 7	2.62 9	2.89 9	3.16 9	3.43 9	3.70 1	3.97 9
2.6	.05 3	.15 4	.27 6	.45 6	.63 6	.81 6	.99 6	1.17 6	1.35 6	1.53 6	1.71 7	1.92 7	2.13 7	2.34 7	2.55 7	2.78 9	3.05 9	3.32 9	3.59 9	3.86 9
2.5	.04 3	.14 4	.27 5	.42 5	.57 5	.72 5	.89 6	1.07 6	1.25 7	1.46 7	1.67 7	1.88 7	2.09 7	2.30 7	2.51 7	2.72 8	2.96 8	3.20 8	3.44 8	3.68 8
2.4	.04 3	.14 4	.26 5	.41 5	.56 5	.71 5	.88 6	1.06 6	1.25 7	1.46 7	1.67 7	1.88 7	2.09 7	2.30 7	2.51 7	2.72 7	2.93 8	3.17 8	3.41 1	3.65 8
2.3	.04 3	.13 4	.25 5	.40 5	.55 5	.70 5	.86 6	1.04 6	1.22 6	1.40 6	1.58 6	1.78 7	1.99 7	2.20 7	2.42 8	2.66 8	2.90 1	3.14 8	3.38 8	3.62 8
2.1	.04 3	.13 3	.24 5	.39 5	.54 5	.69 5	.84 5	1.01 6	1.19 6	1.37 6	1.56 7	1.77 7	1.98 7	2.19 7	2.40 7	2.61 8	2.85 1	3.09 8	3.33 8	3.57 8
2.0	.04 3	.13 3	.22 5	.37 5	.52 5	.67 5	.82 5	.98 6	1.16 6	1.34 7	1.55 7	1.76 7	1.97 7	2.18 7	2.39 7	2.60 7	2.81 7	3.02 1	3.26 8	3.50 8



DRAFT-STORAGE-RECURRENCE CURVES
BASED ON
POPLAR CREEK AT ELGIN
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
0.01
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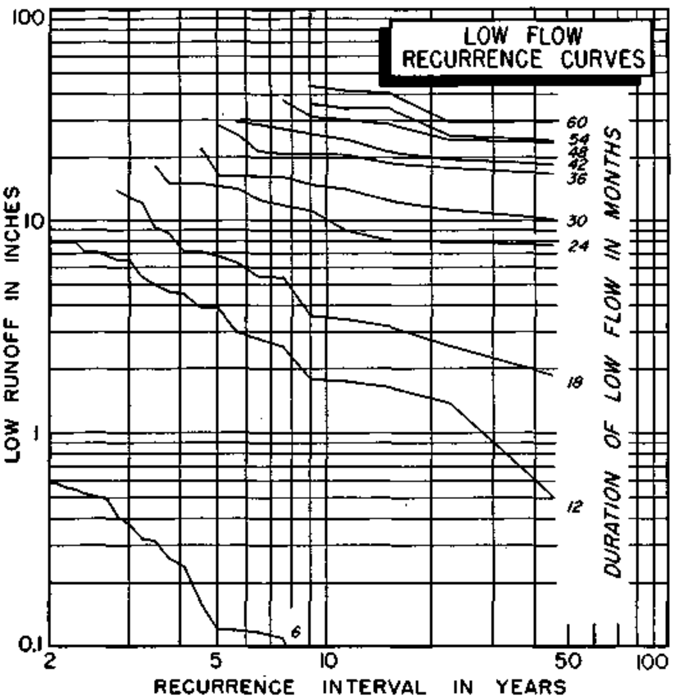


STATION 129

LOCATION

On north boundary of sec 17, T41N, R11E, Cook County, at bridge on Ill. 58, Golf Road, 2.75 miles southwest of Arlington Heights

DRAINAGE AREA

33.7 square miles

ACTUAL FLOW DATA

PERIOD: Aug 1950 thru Sept 1959

CONTINUOUS RECORD: 9 years; water years 1951-59

SYNTHETIC FLOW DATA

PERIOD: 36 years; water years 1915-1950

INDEX STATION : DesPlaines River at Riverside

COINCIDENT RECORD: 9 years; water years 1951-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

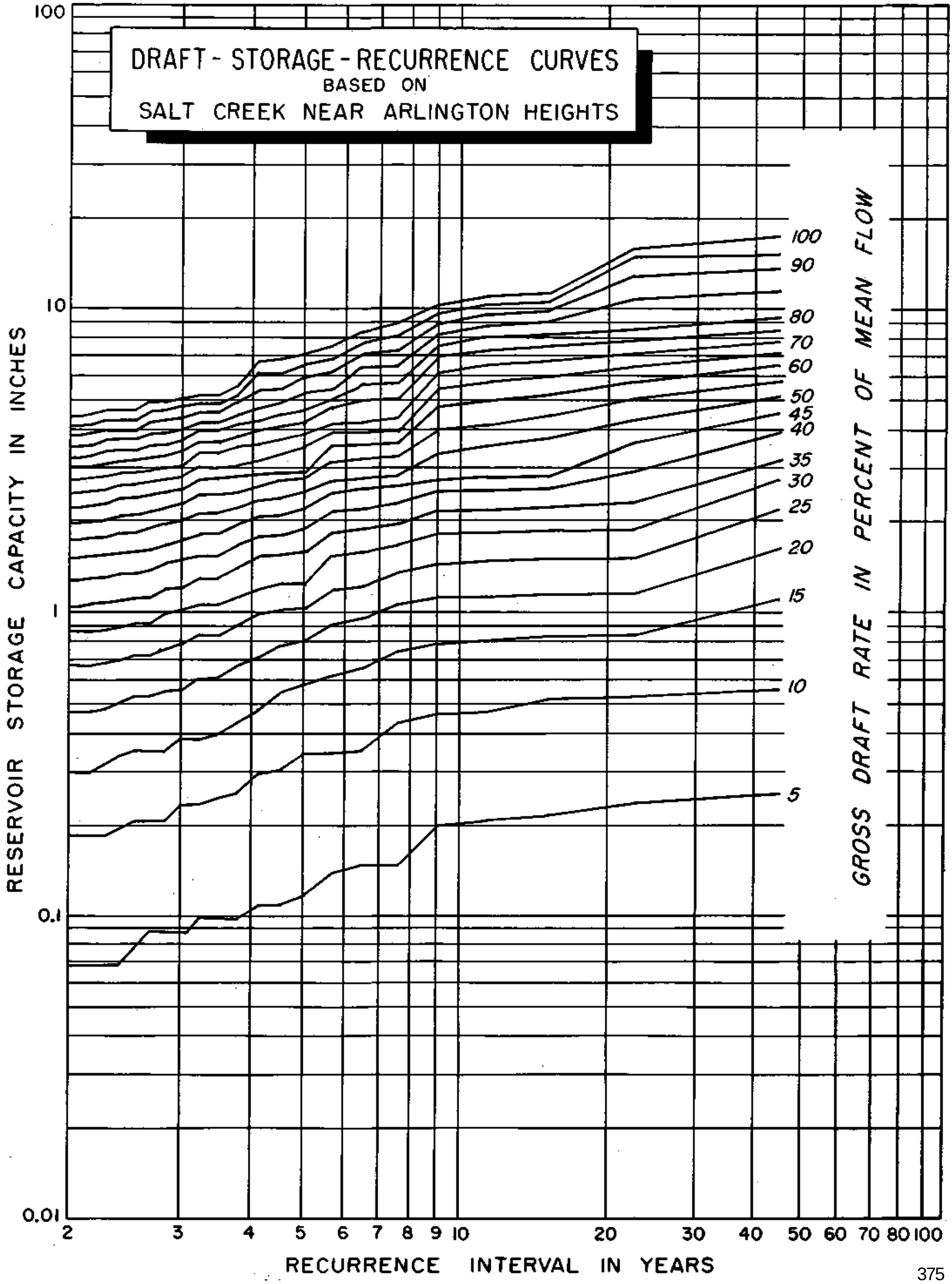
MEAN DISCHARGE : 0.79 inch per month

Draft-Storage-Recurrence Data for Salt Creek near Arlington Heights

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.26	.57	1.12	1.67	2.23	2.78	3.39	4.03	4.56	5.29	5.92	6.62	7.35	8.04	8.76	9.65	11.78	13.91	16.05	18.24
	7	14	14	14	14	14	15	16	16	16	16	18	18	18	18	54	54	54	54	56
22.5	.24	.54	.85	1.20	1.56	1.91	2.35	3.06	3.77	4.48	5.19	5.90	6.61	7.32	8.04	8.83	10.93	13.15	15.36	17.72
	7	8	8	9	9	9	16	18	18	18	18	18	18	18	20	20	56	56	56	60
15.0	.22	.56	.85	1.19	1.55	1.90	2.25	2.61	3.14	3.85	4.56	5.31	6.10	6.89	7.68	8.47	9.26	10.05	10.84	11.63
	8	8	8	9	9	9	9	10	18	18	18	20	20	20	20	20	20	20	20	20
11.3	.21	.48	.82	1.17	1.53	1.68	2.24	2.59	2.95	3.61	4.32	5.09	5.88	6.67	7.46	8.25	9.04	9.83	10.62	11.41
	6	8	9	9	9	9	9	9	9	18	18	20	20	20	20	20	20	20	20	20
9.0	.20	.47	.80	1.15	1.51	1.86	2.22	2.57	2.93	3.46	4.17	4.88	5.59	6.30	7.02	7.73	8.44	9.15	9.86	10.57
	7	7	9	9	9	9	9	9	9	18	18	18	18	18	18	18	18	18	18	18
7.5	.15	.44	.76	1.07	1.39	1.71	2.02	2.34	2.67	3.03	3.38	3.74	4.09	4.55	5.18	5.84	6.59	7.46	8.33	9.20
	7	8	8	8	8	8	8	8	9	9	9	9	9	16	16	18	22	22	22	22
6.4	.15	.36	.67	.98	1.30	1.62	1.93	2.25	2.60	2.96	3.31	3.67	4.03	4.42	5.09	5.80	6.51	7.22	7.93	8.64
	5	7	8	8	8	8	8	8	9	9	9	9	10	10	18	18	18	18	1	18
5.6	.14	.35	.63	.93	1.25	1.57	1.88	2.20	2.51	2.83	3.23	3.62	4.02	4.41	4.81	5.20	5.60	6.31	7.02	7.73
	5	7	7	8	8	8	8	8	8	10	10	10	10	10	10	10	18	18	1	18
5.0	.12	.35	.59	.83	1.07	1.31	1.62	1.94	2.25	2.57	2.89	3.20	3.58	3.97	4.37	4.79	5.42	6.06	6.69	7.32
	6	6	6	6	6	8	8	8	8	8	8	8	10	10	10	16	16	16	16	16
4.5	.11	.31	.55	.79	1.06	1.30	1.58	1.85	2.13	2.44	2.76	3.07	3.43	3.82	4.22	4.61	5.01	5.58	6.29	7.00
	4	6	6	6	6	7	7	7	7	8	8	8	10	10	10	10	10	18	18	16
4.1	.11	.30	.49	.73	1.00	1.28	1.55	1.83	2.11	2.39	2.66	2.94	3.28	3.66	4.06	4.45	4.85	5.51	6.22	6.93
	4	5	5	7	7	7	7	7	7	7	7	8	9	10	10	10	10	18	18	18
3.8	.10	.26	.44	.66	.92	1.16	1.44	1.71	1.99	2.27	2.54	2.88	3.23	3.59	3.94	4.30	4.65	5.01	5.36	5.72
	4	4	6	6	6	7	7	7	7	7	7	9	9	9	9	9	1	9	9	9
3.5	.10	.25	.40	.62	.86	1.09	1.33	1.57	1.86	2.18	2.50	2.81	3.13	3.44	3.76	4.08	4.39	4.71	5.02	5.35
	3	4	4	6	6	6	6	7	8	8	8	8	8	8	8	8	8	8	1	9
3.2	.10	.24	.39	.62	.86	1.09	1.33	1.57	1.86	2.18	2.50	2.81	3.13	3.44	3.76	4.08	4.39	4.71	5.02	5.34
	3	4	4	6	6	6	6	6	8	8	8	8	8	8	8	8	8	8	8	8
3.0	.09	.24	.39	.57	.81	1.04	1.28	1.52	1.80	2.08	2.35	2.63	2.90	3.18	3.49	3.82	4.17	4.53	4.88	5.24
	3	4	4	6	6	6	6	7	7	7	7	7	7	7	8	9	9	9	1	9
2.8	.09	.21	.36	.56	.78	1.01	1.25	1.49	1.72	1.99	2.26	2.54	2.81	3.09	3.38	3.70	4.04	4.40	4.75	5.11
	3	4	5	5	6	6	6	6	6	7	7	7	7	7	8	8	9	9	9	9
2.6	.09	.21	.36	.54	.74	.94	1.17	1.41	1.66	1.94	2.21	2.49	2.76	3.04	3.34	3.66	4.00	4.36	4.71	5.07
	3	4	4	5	5	5	6	6	7	7	7	7	7	7	8	8	9	9	9	9
2.5	.08	.21	.36	.54	.74	.94	1.15	1.39	1.62	1.88	2.15	2.43	2.70	2.98	3.26	3.53	3.84	4.16	4.47	4.79
	3	4	4	5	5	5	6	6	6	7	7	7	7	7	7	8	1	8	8	8
2.4	.07	.20	.35	.51	.71	.91	1.14	1.38	1.61	1.87	2.14	2.42	2.69	2.97	3.25	3.53	3.84	4.16	4.47	4.79
	3	4	4	5	5	5	6	6	6	7	7	7	7	7	7	8	8	8	1	8
2.3	.07	.19	.33	.49	.69	.89	1.11	1.35	1.58	1.82	2.06	2.33	2.60	2.88	3.18	3.50	3.81	4.13	4.44	4.76
	3	3	4	5	5	5	6	6	5	6	6	7	7	7	8	8	1	8	8	8
2.1	.07	.19	.31	.48	.68	.88	1.10	1.34	1.57	1.81	2.05	2.30	2.57	2.85	3.13	3.40	3.68	4.00	4.31	4.63
	3	3	4	5	5	5	6	6	6	6	6	7	7	7	7	7	8	1	8	8
2.0	.07	.19	.31	.48	.68	.88	1.07	1.31	1.54	1.78	2.02	2.26	2.53	2.81	3.09	3.36	3.64	3.94	4.25	4.57
	3	3	3	5	5	5	6	6	6	6	6	7	7	7	7	7	7	1	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SALT CREEK NEAR ARLINGTON HEIGHTS
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
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100
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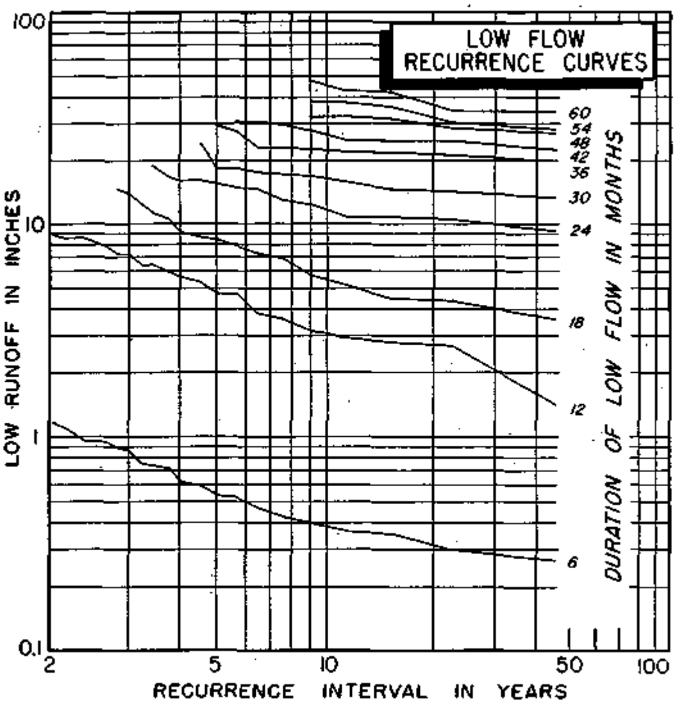
5

SALT CREEK AT WESTERN SPRINGS



STATION 132

LOCATION

On boundary between secs 31 and 32, T39N, R12E, Cook County, at bridge on Wolf Road, 0.5 mile north of Western Springs

DRAINAGE AREA

122 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1945 thru Sept 1959

CONTINUOUS RECORD: 14 years; water years 1946-59

SYNTHETIC FLOW DATA

PERIOD: 31 years; water years 1915-45

INDEX STATION: DesPlaines River at Riverside

COINCIDENT RECORD: 4 years; water years 1956-59

TOTAL DATA ANALYZED

PERIOD: 45 years; water years 1915-59

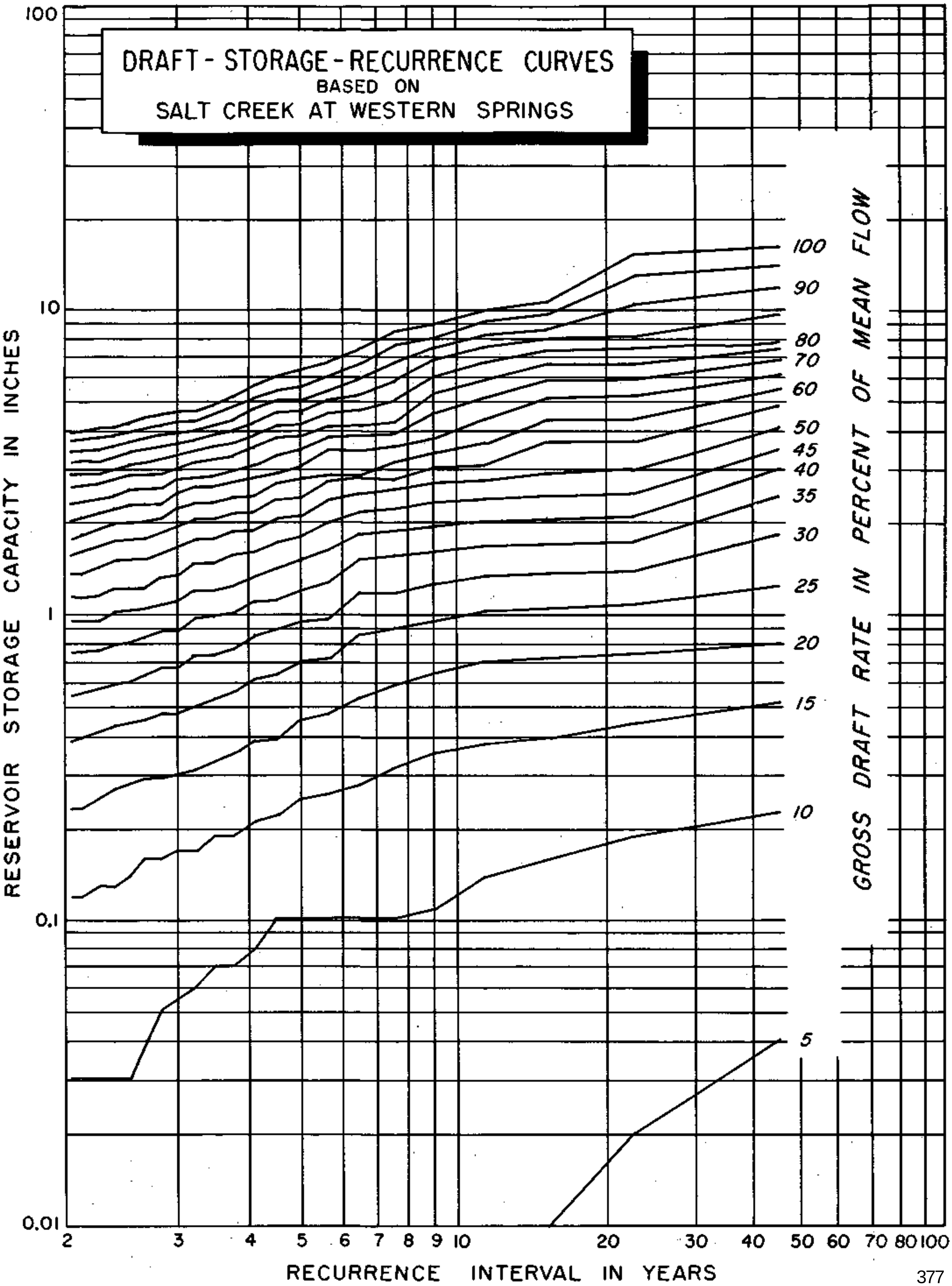
MEAN DISCHARGE : 0.82 inch per month

Draft-Storage-Recurrence Data for Salt Creek at Western Springs

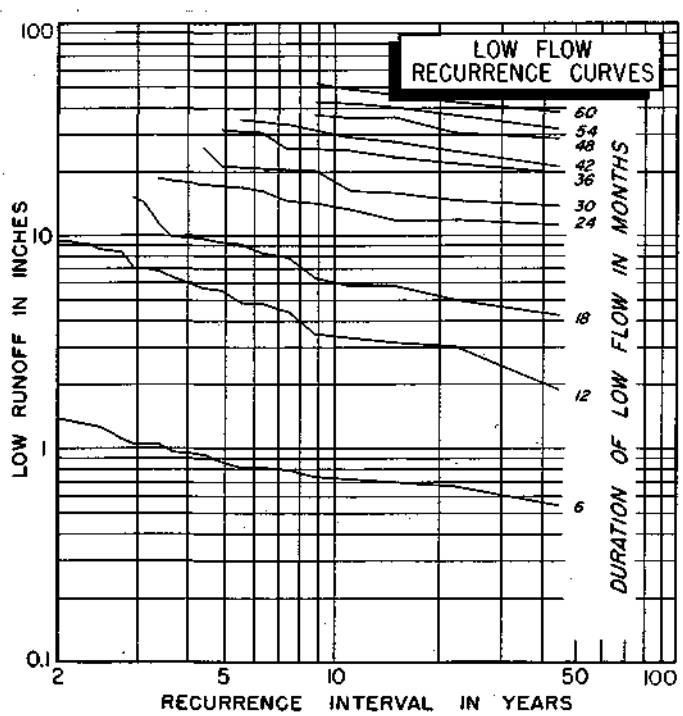
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
45.0	.04	.23	.52	.81	1.27	1.84	2.42	2.99	3.57	4.22	4.88	5.53	6.19	6.84	7.50	8.40	9.62	11.83	14.05	16.26
	1	7	7	7	14	14	14	14	14	16	16	16	16	16	22	22	54	54	54	54
22.5	.02	.19	.44	.75	1.08	1.41	1.74	2.10	2.47	3.00	3.74	4.48	5.21	5.95	6.69	7.46	8.28	10.49	12.85	15.31
	2	6	6	8	8	8	8	9	9	18	18	18	18	18	18	20	20	56	60	60
15.0	.01	.16	.39	.72	1.05	1.38	1.71	2.08	2.45	2.93	3.67	4.41	5.14	5.88	6.62	7.36	8.10	8.84	9.66	10.57
	2	5	8	8	8	8	9	9	9	16	18	18	18	16	18	18	18	20	20	46
11.3	.01	.14	.38	.70	1.03	1.36	1.69	2.02	2.39	2.76	3.13	3.68	4.41	5.15	5.89	6.71	7.53	8.35	9.17	9.99
	1	5	7	8	8	8	8	9	9	9	9	18	18	18	20	20	20	20	20	20
9.0	.01	.11	.36	.65	.95	1.28	1.61	1.97	2.34	2.71	3.08	3.45	3.85	4.59	5.33	6.07	6.81	7.54	8.28	9.02
	1	5	7	7	8	8	8	9	9	9	9	9	18	18	16	16	18	18	18	18
7.5	.01	.10	.32	.59	.91	1.24	1.57	1.89	2.22	2.55	2.88	3.23	3.60	3.97	4.35	5.01	5.79	6.70	7.60	8.50
	1	4	6	7	8	8	6	8	8	8	8	9	9	9	16	16	22	22	22	22
6.4	.00	.10	.28	.53	.86	1.19	1.52	1.84	2.17	2.50	2.83	3.16	3.51	3.88	4.26	4.67	5.24	5.91	6.65	7.42
	1	3	6	8	8	8	8	8	8	6	8	8	9	9	10	10	16	18	1	32
5.6	.00	.10	.26	.47	.72	.97	1.29	1.63	2.00	2.37	2.74	3.11	3.48	3.85	4.22	4.61	5.02	5.43	6.00	6.74
	1	3	5	6	6	6	8	9	9	9	9	9	9	9	9	10	10	10	18	18
5.0	.00	.10	.25	.45	.70	.95	1.23	1.52	1.80	2.09	2.41	2.78	3.15	3.52	3.89	4.25	4.62	5.03	5.57	6.31
	1	3	5	6	6	6	7	7	7	7	9	9	9	9	9	9	10	10	18	18
4.5	.00	.10	.22	.39	.64	.89	1.13	1.42	1.72	2.05	2.38	2.71	3.03	3.38	3.79	4.20	4.61	5.02	5.43	6.03
	1	3	4	6	6	6	7	7	8	8	8	8	8	10	10	10	10	10	10	18
4.1	.00	.08	.21	.38	.61	.86	1.10	1.35	1.60	1.89	2.18	2.46	2.83	3.20	3.57	3.93	4.32	4.73	5.14	5.67
	1	3	4	4	6	6	6	6	7	7	7	9	9	9	9	9	10	10	10	18
3.8	.00	.07	.19	.35	.56	.77	1.01	1.29	1.57	1.86	2.15	2.43	2.72	3.02	3.35	3.68	4.01	4.40	4.81	5.22
	1	3	3	5	5	6	6	7	7	7	7	7	7	8	8	8	1	10	10	10
3.5	.00	.07	.19	.33	.53	.74	.98	1.23	1.48	1.77	2.06	2.34	2.63	2.94	3.27	3.60	3.93	4.25	4.58	4.91
	1	3	3	4	5	6	6	6	7	7	7	7	7	8	8	6	8	8	1	8
3.2	.00	.06	.17	.31	.50	.73	.97	1.22	1.47	1.76	2.05	2.33	2.62	2.91	3.20	3.48	3.77	4.06	4.34	4.68
	1	2	3	4	5	6	6	6	7	7	7	7	7	7	7	7	7	7	8	9
3.0	.00	.06	.17	.30	.47	.67	.88	1.11	1.36	1.65	1.94	2.22	2.51	2.80	3.09	3.37	3.68	4.00	4.33	4.66
	1	2	3	4	5	5	5	6	7	7	7	7	7	7	7	7	8	8	8	8
2.8	.00	.05	.16	.29	.47	.67	.88	1.09	1.33	1.56	1.83	2.07	2.32	2.61	2.91	3.24	3.57	3.89	4.22	4.55
	1	2	3	4	5	5	5	6	6	6	6	6	7	7	8	8	8	8	8	8
2.6	.00	.04	.16	.29	.45	.63	.84	1.04	1.27	1.52	1.77	2.01	2.30	2.59	2.88	3.17	3.50	3.82	4.15	4.48
	1	3	3	4	4	5	5	5	6	6	6	7	7	7	7	8	6	8	8	8
2.5	.00	.03	.14	.28	.44	.60	.81	1.02	1.26	1.51	1.76	2.00	2.29	2.58	2.87	3.15	3.44	3.73	4.01	4.30
	1	2	3	4	4	5	5	6	6	6	6	7	7	7	7	7	7	7	1	7
2.4	.00	.03	.13	.27	.43	.59	.79	1.01	1.25	1.50	1.75	1.99	2.24	2.48	2.74	3.02	3.31	3.60	3.88	4.18
	1	2	3	4	4	4	5	6	6	6	6	6	6	6	7	7	7	7	1	8
2.3	.00	.03	.13	.25	.41	.57	.76	.96	1.18	1.43	1.68	1.92	2.17	2.41	2.66	2.92	3.21	3.51	3.84	4.17
	1	2	3	4	4	4	5	5	6	6	6	6	6	6	6	7	7	8	8	8
2.1	.00	.03	.12	.23	.39	.55	.75	.95	1.16	1.36	1.60	1.84	2.09	2.34	2.63	2.91	3.20	3.49	3.77	4.06
	1	2	2	4	4	4	5	5	5	5	6	6	6	7	7	7	7	1	7	8
2.0	.00	.03	.12	.23	.38	.54	.75	.95	1.15	1.36	1.57	1.78	2.03	2.32	2.61	2.89	3.18	3.47	3.75	4.04
	1	2	2	3	4	5	5	5	5	5	5	6	7	7	7	7	7	7	1	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SALT CREEK AT WESTERN SPRINGS
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
50
45
40
35
30
25
20
15
10
5

SKOKIE RIVER AT LAKE FOREST



STATION 138

LOCATION
In NW ¼ SW ¼ sec 4, T43N, R12E, Lake County, at bridge on Ill. 59A at Lake Forest

DRAINAGE AREA
12.8 square miles

ACTUAL FLOW DATA
PERIOD: Oct 1951 thru Sept 1959
CONTINUOUS RECORD: 8 years; water years 1952-59

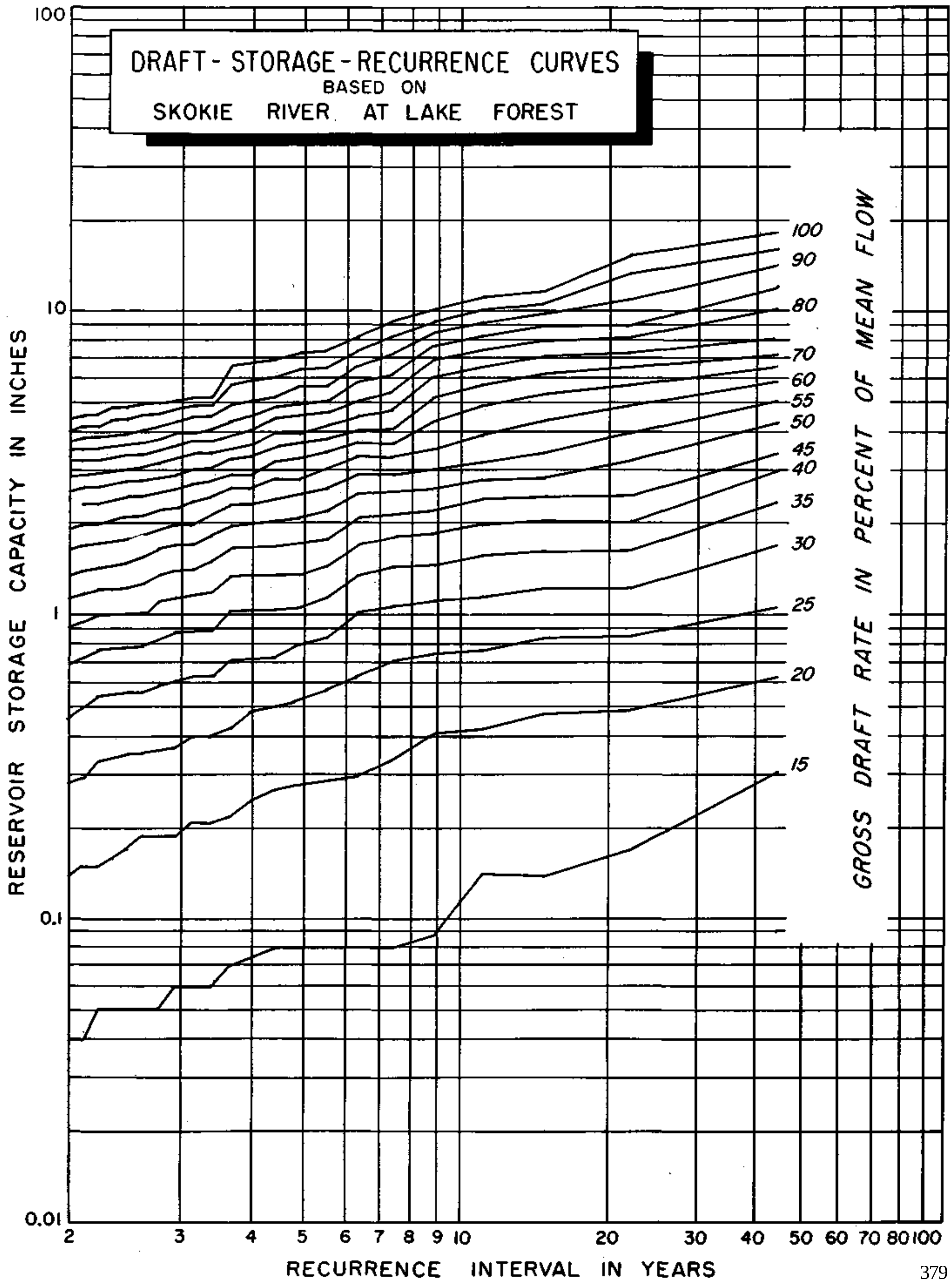
SYNTHETIC FLOW DATA
PERIOD: 36 years; water years 1916-1951
INDEX STATION: DesPlaines River at Riverside
COINCIDENT RECORD: 8 years; water years 1952-59

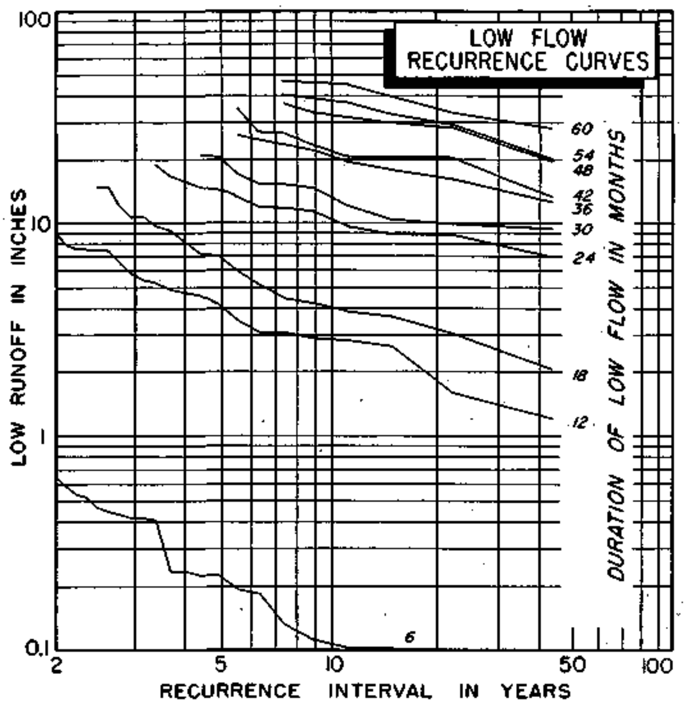
TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.92 inch per month

Draft-Storage-Recurrence Data for Skokie River at Lake Forest

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.05	.09	.31	.63	1.06	1.70	2.35	2.99	3.65	4.39	5.13	5.86	6.60	7.33	8.15	10.17	12.20	14.22	16.25	18.27
	1	1	7	7	14	14	14	14	16	16	16	16	16	16	44	44	44	44	44	44
22.0	.02	.06	.17	.49	.86	1.23	1.65	2.06	2.48	3.27	4.10	4.93	5.75	6.56	7.41	8.24	9.08	11.04	13.34	15.64
	1	1	6	8	8	9	9	9	9	18	18	18	18	18	18	18	20	50	50	50
14.7	.00	.02	.14	.48	.85	1.22	1.63	2.04	2.46	2.87	3.50	4.42	5.34	6.26	7.18	8.10	9.02	9.94	10.86	11.78
	1	1	6	8	8	8	9	9	9	9	20	20	20	20	20	20	20	20	20	20
11.0	.00	.00	.14	.43	.77	1.16	1.58	1.99	2.41	2.82	3.25	4.08	4.90	5.73	6.56	7.48	6.40	9.32	10.24	11.35
	1	1	6	7	8	9	9	9	9	9	18	18	18	18	20	20	20	20	20	30
8.8	.00	.00	.09	.41	.75	1.12	1.49	1.85	2.22	2.59	2.98	3.60	4.42	5.25	6.08	6.91	7.74	8.56	9.39	10.22
	1	1	7	7	8	8	8	8	8	8	9	18	18	18	18	18	18	18	18	18
7.3	.00	.00	.08	.34	.71	1.08	1.45	1.81	2.18	2.55	2.94	3.36	3.77	4.19	4.75	5.45	6.30	7.32	8.33	9.34
	1	1	4	8	8	8	8	8	8	8	9	9	9	9	16	16	22	22	1	22
6.3	.00	.00	.08	.30	.63	1.00	1.37	1.73	2.10	2.51	2.92	3.34	3.75	4.17	4.58	5.13	5.86	6.62	7.45	8.28
	1	1	4	5	8	8	8	8	9	9	9	9	9	9	9	16	16	18	1	18
5.5	.00	.00	.08	.29	.57	.85	1.14	1.47	1.79	2.20	2.61	3.03	3.44	3.86	4.27	4.68	5.10	5.72	6.55	7.46
	1	1	3	6	6	6	7	7	9	9	9	9	9	9	9	9	9	18	18	20
4.9	.00	.00	.08	.28	.52	.80	1.07	1.37	1.73	2.10	2.51	2.93	3.34	3.76	4.17	4.58	5.00	5.66	6.49	7.32
	1	1	3	5	6	6	6	7	8	9	9	9	9	9	9	9	9	18	18	18
4.4	.00	.00	.08	.27	.50	.73	1.04	1.37	1.69	2.06	2.43	2.83	3.24	3.66	4.07	4.48	4.90	5.31	6.12	6.95
	1	1	3	5	5	6	7	7	8	8	8	9	9	9	9	9	9	9	1	18
4.0	.00	.00	.07	.25	.48	.72	1.04	1.37	1.69	2.01	2.33	2.65	3.01	3.38	3.75	4.12	4.56	5.17	6.00	6.63
	1	1	3	5	5	7	7	7	7	7	7	8	8	8	8	8	10	18	18	18
3.7	.00	.00	.07	.22	.43	.71	1.03	1.36	1.68	2.00	2.32	2.64	2.97	3.29	3.64	4.01	4.38	4.97	5.80	6.63
	1	1	3	4	6	7	7	7	7	7	7	7	7	7	8	8	1	18	18	18
3.4	.00	.00	.06	.21	.40	.63	.89	1.19	1.51	1.83	2.15	2.47	2.80	3.12	3.46	3.83	4.20	4.56	4.93	5.30
	1	1	3	4	5	5	6	7	7	7	7	7	7	7	8	8	1	8	8	8
3.1	.00	.00	.06	.21	.40	.63	.89	1.17	1.44	1.72	2.00	2.36	2.72	3.09	3.46	3.83	4.20	4.56	4.93	5.30
	1	1	2	4	5	5	6	6	6	6	6	8	8	8	8	8	8	8	1	8
2.9	.00	.00	.06	.19	.37	.61	.88	1.16	1.43	1.71	1.99	2.26	2.59	2.96	3.33	3.70	4.07	4.43	4.80	5.17
	1	1	2	4	4	6	6	6	6	6	6	7	8	8	8	8	8	8	8	8
2.8	.00	.00	.05	.19	.36	.59	.83	1.11	1.38	1.66	1.94	2.23	2.56	2.88	3.20	3.54	3.91	4.27	4.64	5.02
	1	1	3	3	5	5	6	6	6	6	6	7	7	7	7	8	8	8	8	9
2.6	.00	.00	.05	.19	.35	.56	.79	1.02	1.29	1.57	1.85	2.15	2.48	2.80	3.12	3.44	3.76	4.16	4.58	4.99
	1	1	3	3	4	5	5	6	6	6	6	7	7	7	7	7	7	1	9	9
2.4	.00	.00	.05	.17	.35	.56	.79	1.02	1.25	1.51	1.81	2.13	2.46	2.78	3.10	3.42	3.74	4.07	4.45	4.86
	1	1	2	4	4	5	5	5	5	6	7	7	7	7	7	7	7	7	9	9
2.3	.00	.00	.05	.16	.34	.55	.78	1.01	1.24	1.48	1.76	2.07	2.40	2.72	3.04	3.36	3.68	4.03	4.45	4.86
	1	1	2	4	4	5	5	5	5	6	6	7	7	7	7	7	1	9	9	9
2.2	.00	.00	.05	.15	.33	.54	.77	1.00	1.23	1.46	1.74	2.01	2.33	2.65	2.97	3.29	3.61	3.94	4.26	4.62
	1	1	2	4	4	5	5	5	5	6	6	6	7	7	7	7	1	7	7	8
2.1	.00	.00	.04	.15	.29	.50	.73	.96	1.19	1.43	1.71	2.00	2.33	2.65	2.97	3.29	3.61	3.94	4.26	4.62
	1	1	2	3	4	5	5	5	5	6	6	7	7	7	7	7	7	1	7	8
2.0	.00	.00	.04	.14	.28	.46	.69	.92	1.15	1.38	1.66	1.93	2.23	2.55	2.87	3.19	3.51	3.84	4.16	4.49
	1	1	2	3	4	5	5	5	5	6	6	6	7	7	7	7	7	1	7	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SKOKIE RIVER AT LAKE FOREST
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
100
90
80
70
60
55
50
45
40
35
30
25
20
15
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW



STATION 149

LOCATION
In SW ¼ SE ¼ sec 32, T37N, R13E, Cook County, at bridge on 135th Street, 1.5 miles west of Ill. 50 and 3.0 miles southeast of Palos Park

DRAINAGE AREA
11.3 square miles

ACTUAL FLOW DATA
PERIOD: July 1951 thru Sept 1959
CONTINUOUS RECORD: 8 years; water years 1952-59

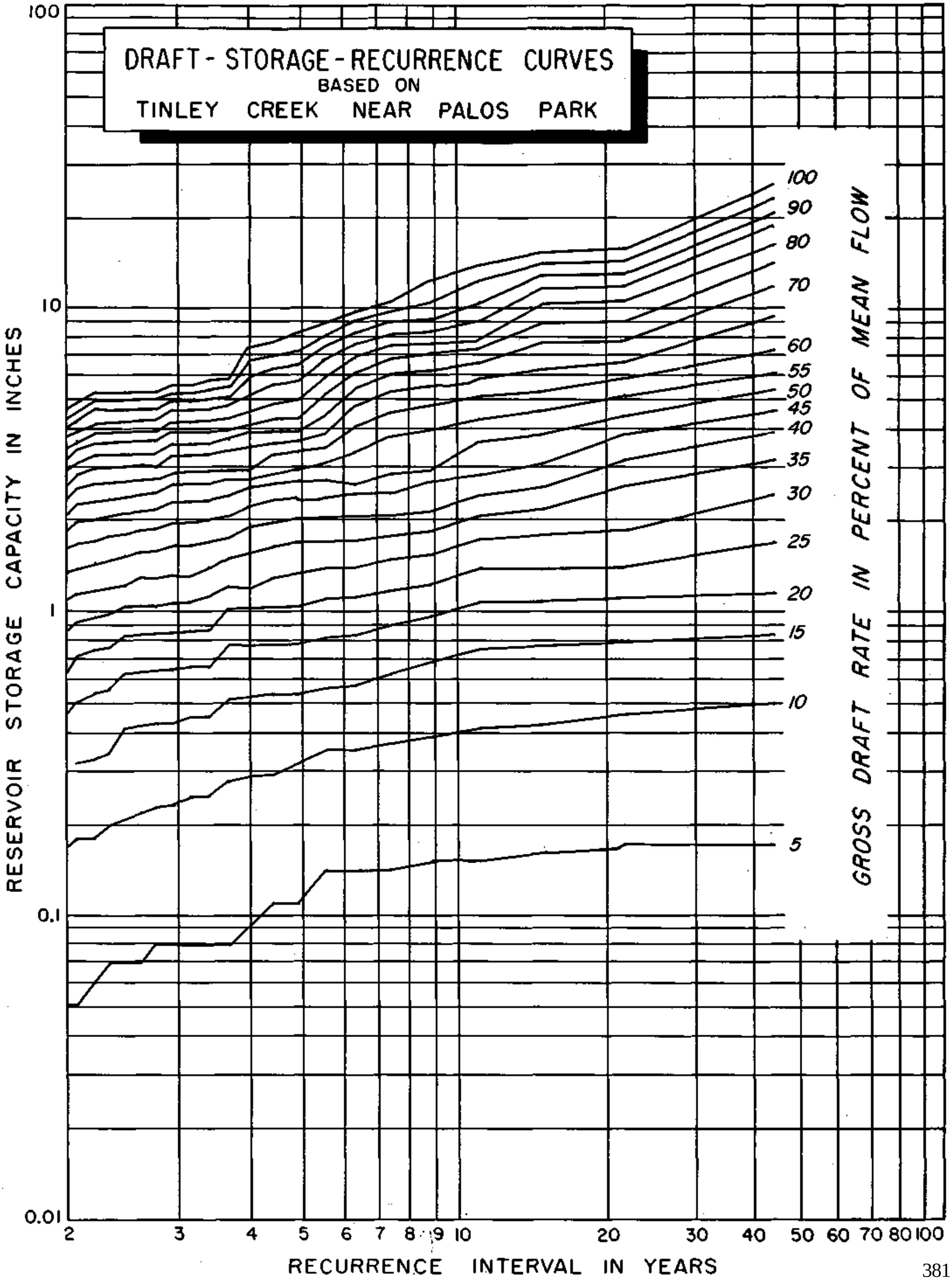
SYNTHETIC FLOW DATA
PERIOD: 36 years; water years 1916-51
INDEX STATION : Kankakee River at Momence
COINCIDENT RECORD: 8 years; water years 1952-59

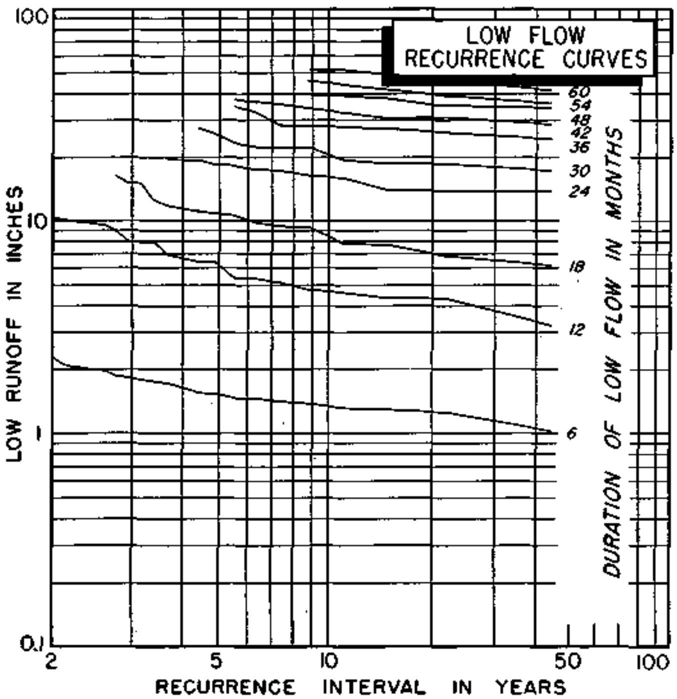
TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.83 inch per month

Draft-Storage-Recurrence Data for Tinley Creek near Palos Park

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.17	.50	.84	1.17	1.71	2.41	3.16	3.91	4.65	5.40	6.15	7.34	9.46	11.79	14.11	16.43	18.76	21.08	23.41	25.73
	8	8	8	8	16	18	18	18	18	18	18	42	56	56	56	56	56	56	56	56
22.0	.17	.46	.80	1.13	1.46	1.86	2.53	3.19	3.86	4.52	5.18	5.89	6.64	7.84	9.17	10.50	11.83	13.15	14.48	15.95
	6	8	8	8	9	16	16	15	16	16	16	18	18	32	32	32	32	32	32	54
14.7	.16	.43	.77	1.10	1.43	1.80	2.17	2.55	3.10	3.85	4.60	5.34	6.33	7.66	8.99	10.32	11.65	12.97	14.30	15.63
	5	8	8	8	9	9	9	9	18	18	18	18	32	32	32	32	32	32	32	32
11.0	.15	.42	.75	1.08	1.41	1.74	2.07	2.41	2.87	3.62	4.37	5.11	5.86	6.61	7.36	8.10	9.08	10.47	12.22	13.96
	6	7	8	8	8	8	8	8	18	18	18	18	18	18	18	18	30	42	42	42
8.8	.15	.39	.68	.97	1.26	1.55	1.84	2.14	2.68	3.34	4.03	4.77	5.52	6.27	7.02	7.76	8.51	9.26	10.47	12.30
	5	7	7	7	7	7	7	9	16	16	18	18	18	18	18	18	18	18	44	44
7.3	.14	.37	.62	.90	1.19	1.48	1.77	2.07	2.44	3.05	3.80	4.54	5.29	6.04	6.79	7.53	8.28	9.03	9.77	10.52
	5	6	6	7	7	7	7	9	9	18	18	18	18	18	18	18	18	18	18	18
6.3	.14	.35	.57	.83	1.12	1.41	1.71	2.06	2.43	2.81	3.43	4.10	4.76	5.43	6.12	6.86	7.61	8.36	9.10	9.85
	5	5	6	7	7	7	6	9	9	9	16	16	16	16	18	18	1	18	18	18
5.5	.14	.35	.56	.82	1.11	1.40	1.70	2.04	2.39	2.77	3.14	3.51	3.89	4.47	5.22	5.96	6.71	7.46	8.20	8.95
	5	5	6	7	7	7	6	8	9	9	9	9	9	18	18	18	18	18	18	18
4.9	.11	.32	.53	.78	1.03	1.36	1.69	2.03	2.36	2.69	3.02	3.35	3.69	4.02	4.38	5.00	5.75	6.50	7.24	8.29
	5	5	6	6	8	8	8	8	8	6	8	8	8	8	9	18	1	18	18	32
4.4	.11	.29	.53	.78	1.03	1.31	1.64	1.98	2.31	2.64	2.97	3.30	3.64	4.00	4.37	4.81	5.56	6.31	7.05	7.80
	4	5	6	6	6	8	8	8	8	8	8	8	8	9	9	18	1	18	18	18
4.0	.10	.29	.52	.77	1.02	1.26	1.56	1.90	2.23	2.56	2.89	3.22	3.56	3.89	4.22	4.58	5.20	5.95	6.69	7.44
	4	5	6	6	6	6	8	8	6	8	8	8	8	8	8	9	18	18	1	18
3.7	.08	.28	.52	.77	1.02	1.26	1.51	1.76	2.07	2.40	2.73	3.06	3.40	3.73	4.06	4.40	4.77	5.14	5.52	5.89
	3	5	6	6	6	6	6	6	8	8	8	8	8	8	8	9	9	1	9	9
3.4	.08	.25	.45	.66	.87	1.13	1.42	1.71	2.00	2.31	2.64	2.97	3.31	3.64	3.97	4.31	4.68	5.05	5.43	5.80
	3	5	5	5	5	7	7	7	7	8	8	8	8	8	8	9	9	9	1	9
3.1	.08	.25	.45	.66	.87	1.08	1.33	1.64	1.97	2.30	2.63	2.96	3.30	3.63	3.96	4.29	4.62	4.96	5.29	5.62
	3	5	5	5	5	6	6	8	8	8	8	8	8	8	8	8	8	1	8	8
2.9	.08	.23	.43	.64	.85	1.08	1.33	1.63	1.96	2.29	2.62	2.95	3.29	3.62	3.95	4.28	4.61	4.95	5.28	5.61
	3	5	5	5	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8	8
2.8	.08	.23	.43	.64	.85	1.06	1.31	1.58	1.87	2.17	2.46	2.75	3.04	3.37	3.70	4.03	4.36	4.70	5.03	5.36
	3	5	5	5	5	6	6	7	7	7	7	7	8	8	8	8	1	8	8	8
2.6	.07	.22	.42	.63	.84	1.05	1.30	1.56	1.85	2.15	2.44	2.73	3.03	3.36	3.69	4.02	4.35	4.69	5.02	5.35
	3	5	5	5	5	6	6	7	7	7	7	7	8	8	8	8	8	8	8	8
2.4	.07	.21	.41	.62	.83	1.04	1.28	1.53	1.80	2.10	2.39	2.68	3.01	3.34	3.67	4.00	4.33	4.67	5.00	5.33
	3	5	5	5	5	5	6	6	7	7	7	7	8	8	8	8	8	8	8	8
2.3	.07	.20	.34	.55	.76	.98	1.23	1.48	1.77	2.07	2.36	2.65	2.99	3.32	3.65	3.98	4.31	4.65	4.98	5.31
	3	3	5	5	5	6	6	7	7	7	7	8	8	8	8	8	8	1	8	8
2.2	.06	.18	.33	.54	.75	.96	1.21	1.46	1.71	2.00	2.31	2.64	2.98	3.31	3.64	3.97	4.30	4.64	4.97	5.30
	2	3	5	5	5	6	6	6	6	7	6	8	8	8	8	8	8	8	8	8
2.1	.05	.18	.32	.50	.71	.92	1.15	1.40	1.67	1.97	2.26	2.55	2.84	3.13	3.42	3.71	4.00	4.29	4.58	4.87
	3	3	4	5	5	5	6	6	7	7	7	7	7	7	7	7	7	7	7	7
2.0	.05	.17	.30	.46	.63	.86	1.11	1.36	1.61	1.86	2.11	2.36	2.64	2.93	3.22	3.51	3.80	4.09	4.38	4.67
	2	3	4	4	5	6	6	6	6	6	6	6	7	7	7	7	7	1	7	7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
TINLEY CREEK NEAR PALOS PARK
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100



STATION 153

LOCATION

In NW ¼ NW ¼ sec 18, T41N, R12E, Cook County, at bridge on Ill. 58 in DesPlaines, 2.0 miles west of U. S. 45

DRAINAGE AREA

13.1 square miles

ACTUAL FLOW DATA

PERIOD: Oct 1950 thru Sept 1959

CONTINUOUS RECORD: 9 years; water years 1951-59

SYNTHETIC FLOW DATA

PERIOD: 35 years; water years 1916-50

INDEX STATION : DesPlaines River at Riverside

COINCIDENT RECORD: 9 years; water years 1951-59

TOTAL DATA ANALYZED

PERIOD: 44 years; water years 1916-59

MEAN DISCHARGE : 0.95 inch per month

Draft-Storage-Recurrence Data for Weller Creek at DesPlaines

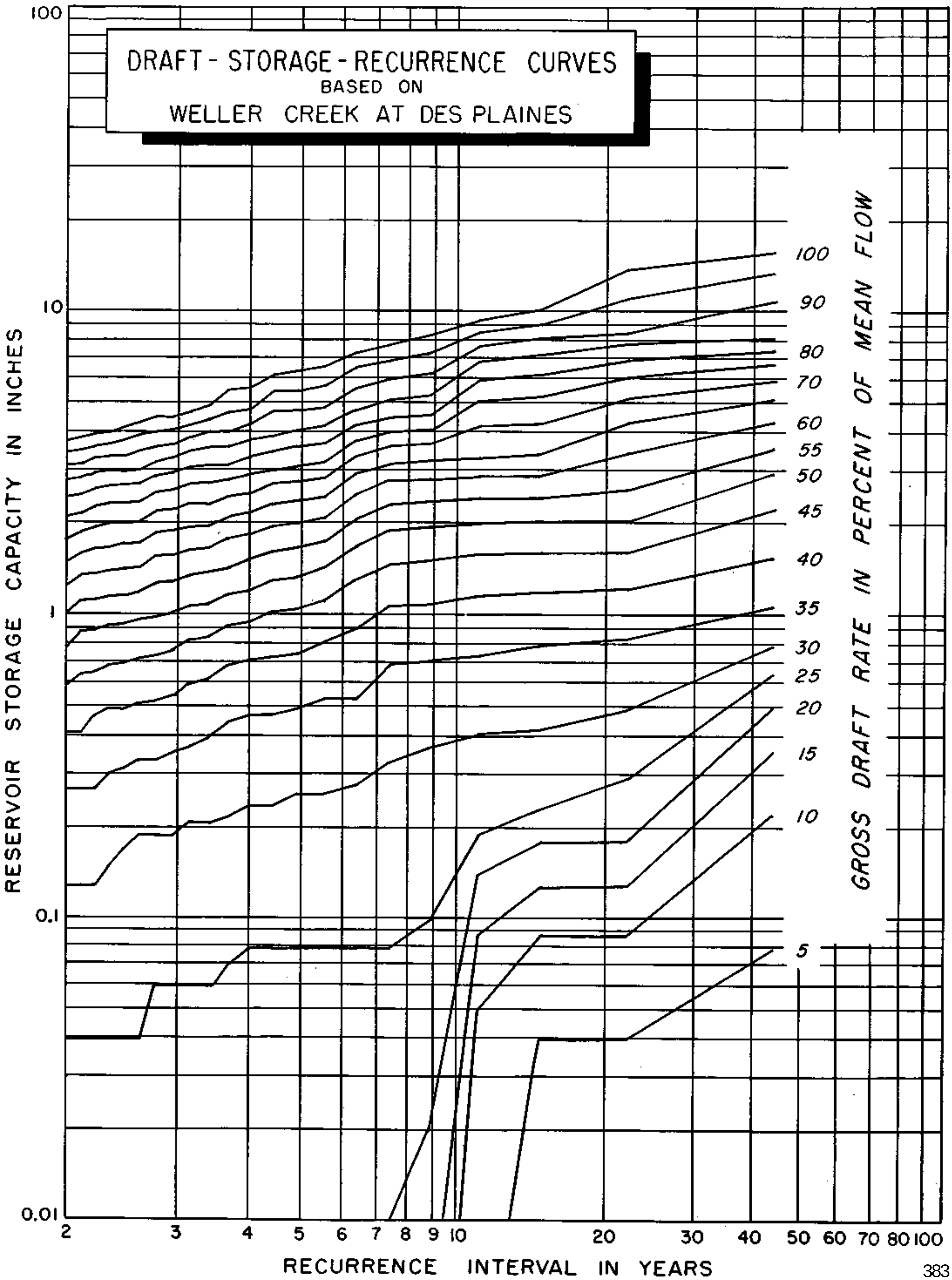
Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

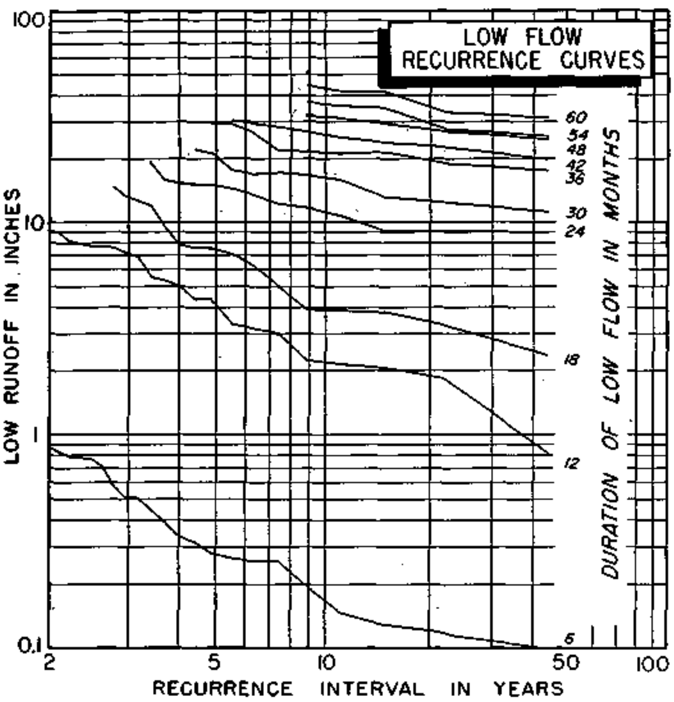
(Duration of critical drawdown period in months shown below each capacity value)

Gross draft rate in percent of mean flow

Recurrence interval, years	5	10	15	20	25	30	35	40	45	50
44.0	.08 2	.22 3	.36 3	.50 3	.64 3	.79 3	1.07 8	1.57 14	2.24 14	2.90 14
22.0	.04 1	.09 1	.13 1	.18 1	.30 4	.49 4	.84 8	1.22 8	1.60 9	2.03 9
14.7	.04 1	.09 1	.13 1	.18 1	.23 1	.42 8	.80 8	1.18 8	1.59 9	2.02 9
11.0	.00 1	.05 1	.09 1	.14 1	.19 1	.41 7	.74 7	1.15 9	1.58 9	2.01 9
8.8	.00 1	.00 1	.00 1	.02 1	.10 4	.37 7	.71 8	1.09 8	1.51 9	1.94 9
7.3	.00 1	.00 1	.00 1	.01 1	.08 3	.33 7	.69 8	1.07 8	1.46 9	1.89 9
6.3	.00 1	.00 1	.00 1	.00 1	.08 3	.28 5	.53 8	.91 8	1.29 8	1.67 8
5.5	.00 1	.00 1	.00 1	.00 1	.08 3	.26 5	.53 6	.81 6	1.10 6	1.42 7
4.9	.00 1	.00 1	.00 1	.00 1	.08 3	.26 5	.49 5	.75 6	1.04 6	1.33 7
4.4	.00 1	.00 1	.00 1	.00 1	.08 3	.24 5	.47 5	.73 6	1.02 6	1.30 6
4.0	.00 1	.00 1	.00 1	.00 1	.08 3	.24 5	.47 5	.71 5	.95 5	1.21 6
3.7	.00 1	.00 1	.00 1	.00 1	.07 3	.22 3	.44 5	.68 5	.92 5	1.16 5
3.4	.00 1	.00 1	.00 1	.00 1	.06 3	.21 3	.39 4	.61 5	.85 5	1.09 6
3.1	.00 1	.00 1	.00 1	.00 1	.05 3	.21 3	.37 4	.59 5	.83 5	1.07 5
2.9	.00 1	.00 1	.00 1	.00 1	.06 2	.19 3	.35 4	.54 4	.77 5	1.01 5
2.8	.00 1	.00 1	.00 1	.00 1	.06 2	.19 3	.33 4	.52 4	.74 5	.98 6
2.6	.00 1	.00 1	.00 1	.00 1	.04 3	.19 3	.33 3	.51 4	.72 5	.96 5
2.4	.00 1	.00 1	.00 1	.00 1	.04 2	.17 3	.31 3	.49 4	.69 5	.93 5
2.3	.00 1	.00 1	.00 1	.00 1	.04 2	.15 3	.30 4	.49 4	.68 5	.92 5
2.2	.00 1	.00 1	.00 1	.00 1	.04 2	.13 3	.27 4	.46 4	.65 5	.89 5
2.1	.00 1	.00 1	.00 1	.00 1	.04 2	.13 3	.27 3	.41 4	.64 5	.86 5
2.0	.00 1	.00 1	.00 1	.00 1	.03 1	.13 3	.27 3	.41 3	.59 4	.79 5

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
44.0	3.60 16	4.36 16	5.12 16	5.88 16	6.64 16	7.45 18	8.31 18	10.68 54	13.25 54	15.81 54
22.0	2.56 18	3.43 18	4.29 18	5.14 18	6.00 18	6.85 18	7.71 18	8.56 18	10.91 56	13.57 56
14.7	2.44 9	2.87 9	3.42 18	4.27 18	5.18 20	6.13 20	7.08 20	8.03 20	8.98 20	9.99 30
11.0	2.43 9	2.86 9	3.31 18	4.16 18	5.02 18	5.87 18	6.73 18	7.58 18	8.44 18	9.29 18
8.8	2.36 9	2.79 9	3.22 9	3.65 9	4.07 9	4.53 10	5.24 16	6.15 22	7.20 22	8.24 22
7.3	2.31 9	2.74 9	3.17 9	3.60 9	4.02 9	4.45 9	5.06 18	5.91 18	6.77 1	7.62 18
6.3	2.05 8	2.46 9	2.89 9	3.32 9	3.74 9	4.18 10	4.67 18	5.52 18	6.38 18	7.23 18
5.5	1.75 7	2.08 7	2.42 8	2.80 8	3.20 10	3.67 11	4.19 11	4.78 18	5.64 18	6.49 18
4.9	1.66 7	1.99 7	2.35 8	2.73 8	3.11 8	3.55 10	4.03 10	4.66 16	5.44 18	6.29 18
4.4	1.61 7	1.94 7	2.30 8	2.68 8	3.06 8	3.44 8	3.86 16	4.62 16	5.38 16	6.14 16
4.0	1.51 7	1.84 7	2.17 7	2.51 8	2.89 8	3.29 10	3.77 10	4.24 10	4.72 1	5.56 18
3.7	1.43 7	1.76 7	2.09 7	2.43 7	2.76 7	3.13 9	3.56 9	3.99 1	4.59 18	5.44 18
3.4	1.38 6	1.66 6	1.95 6	2.31 8	2.69 9	3.12 9	3.55 9	3.98 1	4.40 9	4.83 9
3.1	1.35 6	1.63 6	1.93 8	2.31 8	2.69 8	3.07 8	3.45 8	3.83 1	4.21 6	4.59 8
2.9	1.29 6	1.57 6	1.88 7	2.22 7	2.55 7	2.89 8	3.27 8	3.65 8	4.03 9	4.46 9
2.8	1.27 6	1.55 6	1.84 7	2.18 7	2.51 7	2.84 7	3.18 8	3.58 9	4.00 9	4.43 9
2.6	1.19 5	1.43 6	1.72 6	2.01 7	2.34 7	2.67 7	3.01 9	3.44 9	3.86 9	4.29 9
2.4	1.16 5	1.42 6	1.71 6	1.99 7	2.32 7	2.65 7	2.98 7	3.32 9	3.74 9	4.17 9
2.3	1.15 5	1.39 5	1.66 6	1.98 7	2.31 7	2.64 7	2.97 7	3.31 7	3.64 7	3.97 7
2.2	1.12 5	1.36 5	1.64 6	1.93 7	2.26 7	2.59 7	2.92 7	3.26 1	3.59 7	3.92 7
2.1	1.11 5	1.35 5	1.59 5	1.86 6	2.15 7	2.48 7	2.81 7	3.15 1	3.48 7	3.84 8
2.0	1.02 5	1.26 5	1.50 5	1.77 7	2.10 7	2.43 7	2.76 7	3.10 7	3.43 1	3.76 7


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
WELLER CREEK AT DES PLAINES
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
RECURRENCE INTERVAL IN YEARS
2 3 4 5 6 7 8 9 10 20 30 40 50 60 70 80 100
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 154

LOCATION
In SW ¼ SE ¼ sec 4, T42N, R12E, Cook County, at bridge on Ill. 68, 2.0 miles northwest of Northbrook

DRAINAGE AREA
11.5 square miles

ACTUAL FLOW DATA
PERIOD: Aug 1952 thru Sept 1959
CONTINUOUS RECORD: 7 years: water years 1953-59

SYNTHETIC FLOW DATA
PERIOD: 37 years; water years 1916-52
INDEX STATION : DesPlaines River at Riverside
COINCIDENT RECORD: 7 years; water years 1953-59

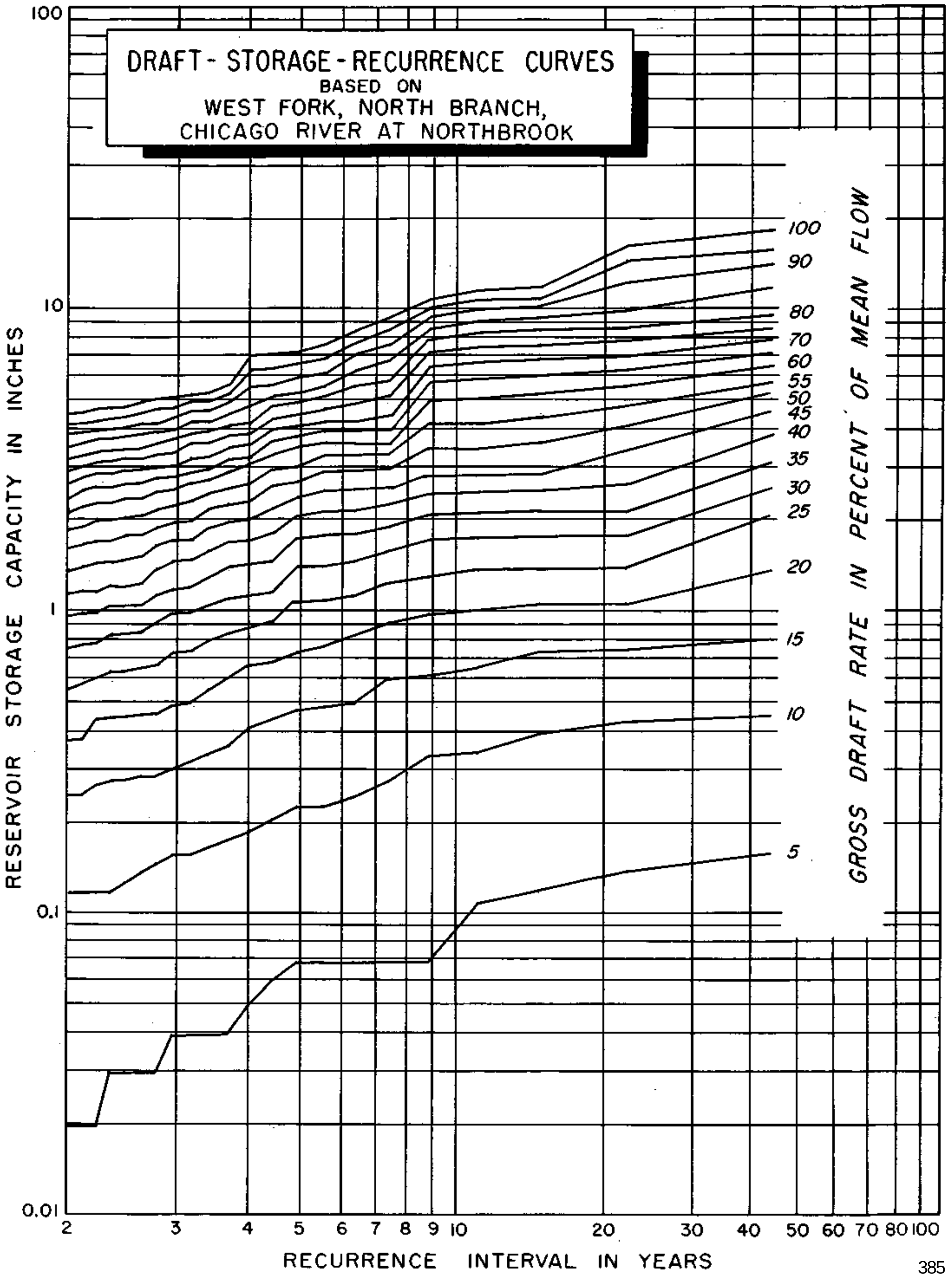
TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.84 inch per month

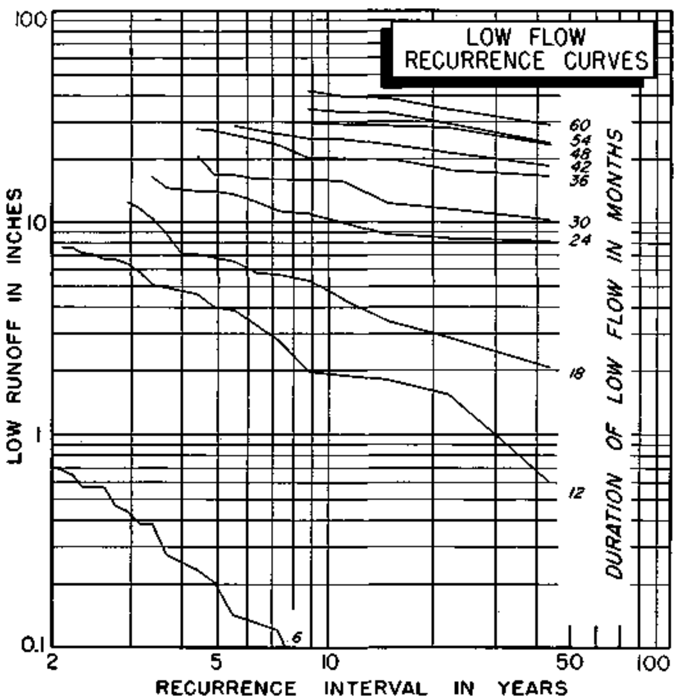
Draft-Storage-Recurrence **Data** for West **Fork,** North Branch, Chicago River at Northbrook

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50
44.0	.16 7	.46 7	.83 14	1.42 14	2.01 14	2.60 14	3.19 16	3.87 16	4.54 16	5.21 16
22.0	.14 7	.44 7	.76 8	1.09 8	1.43 9	1.81 9	2.19 9	2.66 18	3.41 18	4.17 18
14.7	.12 6	.41 8	.75 8	1.08 8	1.42 9	1.80 9	2.18 9	2.55 9	2.93 9	3.66 20
11.0	.11 5	.35 7	.66 8	1.02 9	1.40 9	1.78 9	2.16 9	2.53 9	2.91 9	3.60 18
8.8	.07 3	.34 7	.63 8	.99 9	1.37 9	1.75 9	2.13 9	2.50 9	2.88 9	3.52 18
7.3	.07 3	.28 7	.61 8	.94 8	1.28 8	1.62 8	1.95 8	2.29 8	2.62 8	2.96 8
6.3	.07 3	.25 5	.50 6	.82 8	1.16 8	1.50 8	1.83 8	2.18 9	2.56 9	2.94 9
5.5	.07 3	.23 6	.49 6	.78 7	1.10 8	1.44 8	1.80 9	2.17 9	2.55 9	2.93 9
4.9	.07 3	.23 5	.48 6	.75 8	1.09 8	1.43 8	1.76 8	2.10 8	2.43 8	2.77 8
4.4	.06 3	.21 5	.44 6	.69 6	.94 6	1.19 6	1.48 9	1.85 9	2.23 9	2.61 9
4.0	.05 3	.19 5	.42 6	.67 6	.92 6	1.17 6	1.46 7	1.75 7	2.05 7	2.34 8
3.7	.04 3	.18 4	.36 6	.61 6	.86 6	1.13 7	1.43 7	1.72 7	2.02 7	2.31 7
3.4	.04 3	.17 4	.34 5	.56 6	.81 6	1.06 6	1.33 7	1.62 7	1.92 7	2.21 7
3.1	.04 3	.16 4	.32 4	.50 6	.75 6	1.00 6	1.25 6	1.51 6	1.76 6	2.02 8
2.9	.04 3	.16 3	.31 4	.49 6	.74 6	.99 6	1.24 6	1.50 6	1.75 6	2.00 6
2.8	.03 3	.15 3	.29 4	.46 5	.67 6	.92 6	1.17 6	1.43 6	1.68 6	1.93 6
2.6	.03 2	.14 3	.29 4	.46 4	.65 5	.86 5	1.07 5	1.29 6	1.54 6	1.82 7
2.4	.03 2	.13 3	.28 4	.45 4	.64 5	.85 5	1.06 5	1.27 5	1.51 7	1.80 7
2.3	.03 2	.12 4	.28 4	.45 4	.64 5	.85 5	1.06 5	1.27 5	1.48 6	1.73 7
2.2	.02 2	.12 3	.27 4	.44 4	.61 4	.79 5	1.00 5	1.22 6	1.47 6	1.73 7
2.1	.02 2	.12 3	.25 3	.38 4	.58 5	.79 5	1.00 5	1.21 5	1.44 6	1.69 6
2.0	.02 1	.12 3	.25 3	.38 4	.56 5	.77 5	.98 5	1.19 5	1.40 5	1.64 6

Recurrence interval, years	55	60	65	70	75	80	85	90	95	100
44.0	5.88 16	6.61 18	7.37 18	8.12 18	8.88 18	9.78 54	12.05 54	14.31 54	16.58 54	18.85 54
22.0	4.93 18	5.68 18	6.44 18	7.19 20	8.03 20	8.87 20	10.08 56	12.44 56	14.79 56	17.19 58
14.7	4.50 20	5.34 20	6.18 20	7.02 20	7.86 20	8.70 20	9.54 20	10.38 20	11.22 20	12.06 20
11.0	4.36 18	5.14 20	5.98 20	6.82 20	7.66 20	8.50 20	9.34 20	10.18 20	11.02 20	11.86 20
8.8	4.28 18	5.03 18	5.79 18	6.54 18	7.30 18	8.06 18	8.81 18	9.57 18	10.32 18	11.08 18
7.3	3.33 9	3.73 10	4.15 10	4.61 14	5.26 16	5.93 16	6.84 22	7.76 1	8.69 22	9.61 22
6.3	3.32 9	3.70 9	4.07 9	4.46 10	4.95 16	5.63 18	6.38 18	7.14 18	7.89 1	8.65 18
5.5	3.31 9	3.69 9	4.06 9	4.44 9	4.63 10	5.25 10	5.67 10	6.26 18	7.01 18	7.77 18
4.9	3.11 8	3.48 9	3.85 9	4.23 9	4.61 9	4.99 9	5.40 10	6.04 16	6.71 16	7.38 18
4.4	2.99 9	3.37 9	3.74 9	4.12 9	4.50 9	4.88 9	5.26 9	5.72 18	6.47 1	7.23 18
4.0	2.68 8	3.01 8	3.35 8	3.68 8	4.02 8	4.36 8	4.86 18	5.62 18	6.37 18	7.13 18
3.7	2.60 7	2.90 8	3.24 8	3.57 8	3.91 8	4.25 9	4.63 1	5.00 9	5.38 9	5.76 9
3.4	2.50 7	2.80 7	3.09 7	3.39 7	3.72 8	4.06 8	4.39 8	4.73 8	5.06 8	5.40 9
3.1	2.36 8	2.69 8	3.03 8	3.36 8	3.70 8	4.04 8	4.37 8	4.71 1	5.04 8	5.38 8
2.9	2.27 7	2.57 7	2.86 7	3.16 7	3.47 8	3.81 8	4.14 8	4.48 8	4.81 1	5.19 9
2.8	2.21 7	2.51 7	2.80 7	3.10 7	3.39 7	3.68 7	4.01 9	4.38 9	4.76 9	5.14 9
2.6	2.11 7	2.41 7	2.70 7	3.00 7	3.29 7	3.58 8	3.95 9	4.32 9	4.70 9	5.08 9
2.4	2.09 7	2.39 7	2.68 7	2.98 7	3.27 7	3.56 7	3.86 7	4.16 8	4.49 1	4.83 8
2.3	2.02 7	2.32 7	2.61 7	2.91 7	3.20 7	3.49 7	3.79 7	4.11 8	4.44 8	4.78 8
2.2	2.02 7	2.32 7	2.61 7	2.91 7	3.20 7	3.49 7	3.79 7	4.08 1	4.41 8	4.75 8
2.1	1.94 7	2.24 7	2.53 7	2.83 7	3.12 7	3.41 7	3.71 7	4.00 7	4.30 1	4.63 8
2.0	1.89 6	2.14 6	2.40 6	2.69 7	2.98 7	3.27 8	3.60 8	3.94 8	4.27 1	4.61 8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
WEST FORK, NORTH BRANCH,
CHICAGO RIVER AT NORTHBROOK
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15
10
5



STATION 155

LOCATION
In SW ¼ NE ¼ sec 4, T40N, R12E, Cook County, at bridge on Byron Street, 0.4 mile south of Ill. 72, 2.5 miles southwest of Park Ridge

DRAINAGE AREA
19.6 square miles

ACTUAL FLOW DATA
PERIOD: Aug 1950 thru Sept 1958; gaging discontinued Oct 1, 1958
CONTINUOUS RECORD: 8 years; water years 1951-58

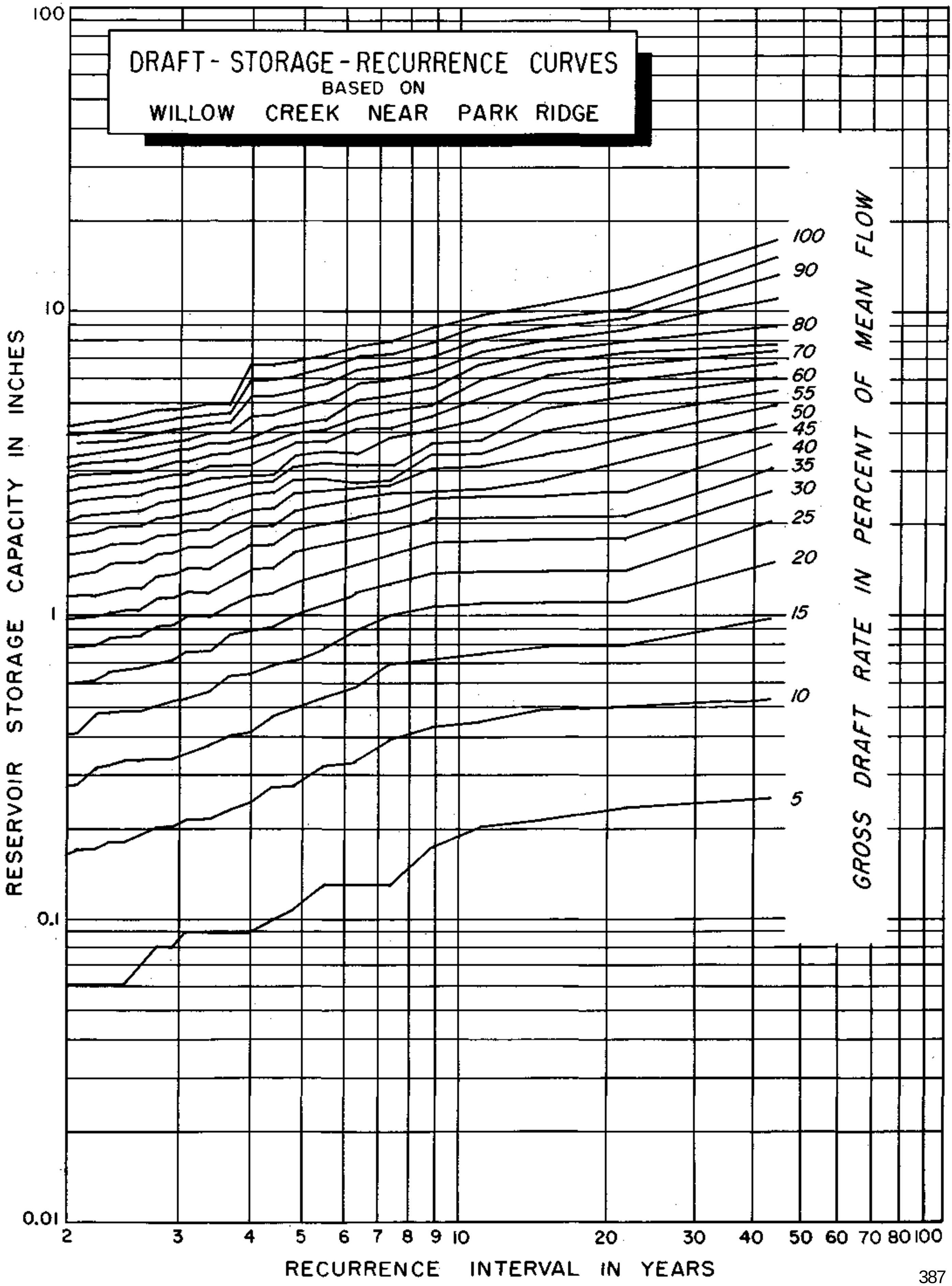
SYNTHETIC FLOW DATA
PERIOD : 36 years; water years 1916-50, 1959
INDEX STATION : DesPlaines River at Riverside
COINCIDENT RECORD: 8 years; water years 1951-58

TOTAL DATA ANALYZED
PERIOD : 44 years; water years 1916-59
MEAN DISCHARGE : 0.76 inch per month

Draft-Storage-Recurrence Data for Willow Creek near Park Ridge

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow: 5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.25	.53	.97	1.50	2.03	2.56	3.12	3.72	4.33	4.54	5.55	6.16	6.81	7.50	8.18	9.06	11.11	13.17	15.22	17.27
	7	8	14	14	14	14	16	16	16	16	16	16	18	18	18	54	54	54	54	56
22.0	.23	.56	.80	1.11	1.44	1.73	2.12	2.57	3.26	3.94	4.62	5.31	5.99	6.68	7.36	8.04	8.80	9.56	10.32	12.08
	7	8	8	8	9	9	9	18	18	18	18	18	18	18	18	20	20	20	20	58
14.7	.21	.49	.79	1.10	1.44	1.78	2.12	2.47	2.81	3.40	4.08	4.77	5.45	6.14	6.82	7.50	8.19	8.87	9.56	10.51
	6	8	8	9	9	9	9	9	9	18	18	18	18	18	18	18	18	18	18	30
11.0	.20	.45	.75	1.09	1.43	1.77	2.11	2.46	2.80	3.14	3.48	3.85	4.49	5.20	5.96	6.72	7.48	8.24	9.00	9.76
	6	8	9	9	9	9	9	9	9	9	9	10	18	20	20	20	20	20	20	20
8.8	.17	.43	.72	1.06	1.40	1.74	2.08	2.43	2.77	3.11	3.45	3.79	4.16	4.54	4.92	5.61	6.37	7.18	8.01	8.85
	7	7	9	9	9	9	9	9	9	9	9	9	10	10	10	20	20	22	22	22
7.3	.13	.39	.69	1.00	1.30	1.60	1.91	2.21	2.52	2.82	3.14	3.48	3.83	4.17	4.68	5.29	5.95	6.63	7.32	8.03
	7	8	8	8	8	8	8	8	8	8	9	9	9	9	16	16	18	1	18	22
6.3	.13	.33	.58	.69	1.19	1.49	1.60	2.10	2.44	2.78	3.12	3.46	3.81	4.15	4.52	5.10	5.79	6.47	7.16	7.84
	5	6	8	8	8	8	8	9	9	9	9	9	9	9	10	18	18	18	1	18
5.5	.13	.32	.54	.79	1.09	1.39	1.70	2.00	2.31	2.61	2.91	3.22	3.52	3.83	4.13	4.44	5.11	5.79	6.48	7.16
	5	6	6	8	8	8	8	8	8	8	8	8	8	8	8	10	18	18	1	18
4.9	.11	.27	.48	.71	.99	1.29	1.60	1.90	2.21	2.51	2.81	3.12	3.42	3.73	4.03	4.37	4.78	5.46	6.15	6.83
	4	5	6	6	8	8	8	8	8	8	8	6	8	8	9	9	18	18	18	18
4.4	.10	.27	.46	.68	.91	1.18	1.44	1.71	1.97	2.24	2.53	2.84	3.14	3.45	3.79	4.17	4.58	5.26	5.95	6.63
	4	5	5	6	7	7	7	7	7	7	8	8	8	8	10	10	18	18	18	18
4.0	.09	.24	.41	.64	.90	1.17	1.43	1.70	1.96	2.23	2.50	2.76	3.03	3.34	3.64	3.94	4.54	5.22	5.91	6.59
	4	4	6	6	7	7	7	7	7	7	7	7	8	8	8	8	18	18	18	18
3.7	.09	.22	.40	.63	.86	1.09	1.32	1.56	1.82	2.09	2.36	2.62	2.89	3.15	3.45	3.75	4.06	4.36	4.67	4.98
	3	4	6	6	6	6	6	7	7	7	7	7	7	8	8	1	8	8	8	9
3.4	.09	.21	.37	.56	.76	.99	1.22	1.44	1.67	1.92	2.22	2.53	2.83	3.14	3.44	3.74	4.05	4.35	4.66	4.98
	3	4	5	5	6	6	6	6	6	8	8	8	8	8	8	8	8	1	8	9
3.1	.09	.21	.37	.53	.76	.99	1.22	1.44	1.67	1.90	2.15	2.41	2.68	2.94	3.24	3.54	3.85	4.17	4.51	4.85
	3	4	4	6	6	6	6	6	6	6	7	7	7	8	8	8	8	9	1	9
2.9	.08	.20	.34	.52	.71	.93	1.16	1.38	1.61	1.84	2.11	2.37	2.64	2.94	3.24	3.54	3.85	4.15	4.46	4.76
	3	3	4	5	5	6	6	6	6	7	7	7	7	8	8	8	8	8	1	9
2.8	.08	.20	.34	.50	.69	.91	1.14	1.36	1.59	1.82	2.08	2.34	2.61	2.87	3.14	3.41	3.71	4.06	4.40	4.74
	3	3	4	5	5	6	6	6	6	6	7	7	7	7	7	7	9	9	9	9
2.6	.07	.19	.33	.48	.67	.86	1.05	1.26	1.49	1.72	1.96	2.22	2.49	2.75	3.02	3.30	3.62	3.97	4.31	4.65
	3	3	4	5	5	5	5	6	6	6	7	7	7	7	7	8	9	9	9	9
2.4	.06	.18	.33	.48	.66	.85	1.04	1.26	1.49	1.72	1.95	2.18	2.44	2.70	2.97	3.24	3.54	3.86	4.20	4.54
	3	3	4	4	5	5	6	5	6	6	6	6	7	7	7	7	8	9	1	9
2.3	.06	.18	.32	.47	.65	.84	1.03	1.25	1.48	1.71	1.94	2.17	2.44	2.70	2.97	3.24	3.50	3.79	4.10	4.40
	3	3	4	4	5	5	6	6	6	6	6	7	7	7	7	7	7	8	8	8
2.2	.06	.17	.31	.46	.61	.79	.98	1.17	1.40	1.63	1.88	2.14	2.41	2.67	2.94	3.21	3.47	3.75	4.06	4.36
	2	3	4	4	4	5	5	6	6	6	7	7	7	7	7	7	1	8	8	8
2.1	.06	.17	.28	.41	.60	.79	.98	1.17	1.37	1.60	1.84	2.10	2.37	2.63	2.90	3.17	3.43	3.70	3.97	4.27
	2	3	3	5	5	5	5	5	6	6	7	7	7	7	7	7	1	7	8	8
2.0	.06	.16	.27	.40	.59	.78	.97	1.16	1.35	1.57	1.80	2.03	2.29	2.55	2.82	3.09	3.35	3.63	3.94	4.24
	2	3	3	5	5	5	5	5	5	6	6	6	7	7	7	7	7	1	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
WILLOW CREEK NEAR PARK RIDGE
RESERVOIR STORAGE CAPACITY IN INCHES
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
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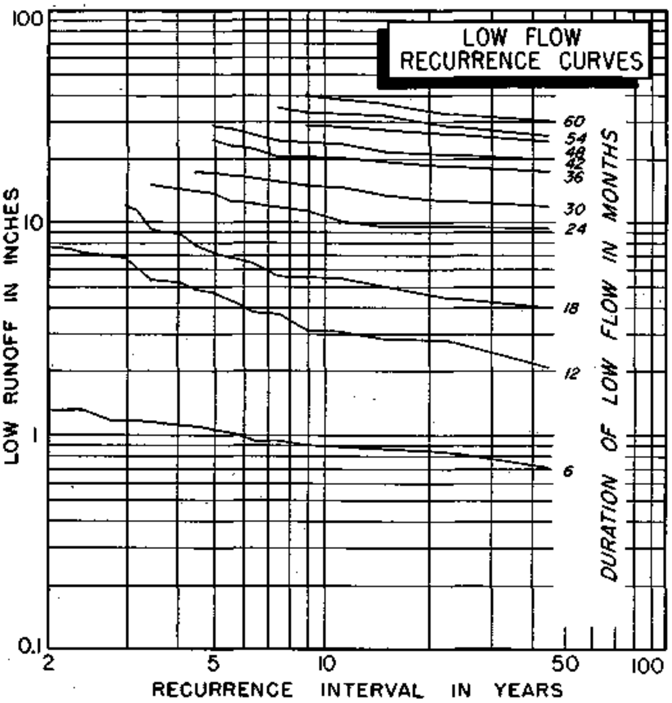
LITTLE CALUMET RIVER AT HARVEY



STATION 163

LOCATION

In W ½ NW ¼ sec 9, T36N, R14E, Cook County, at Illinois Central Railroad bridge, 800 feet north of 147th Street in Harvey

DRAINAGE AREA

570 square miles, approximately

ACTUAL FLOW DATA

PERIOD: Oct 1916 thru Sept 1925

CONTINUOUS RECORD: 9 years; water years 1917-25

SYNTHETIC FLOW DATA

PERIOD: 35 years; water years 1916, 1926-59

INDEX STATION: DesPlaines River at Riverside

COINCIDENT RECORD: 9 years; water years 1917-25

TOTAL DATA ANALYZED

PERIOD : 44 years; water years 1916-59

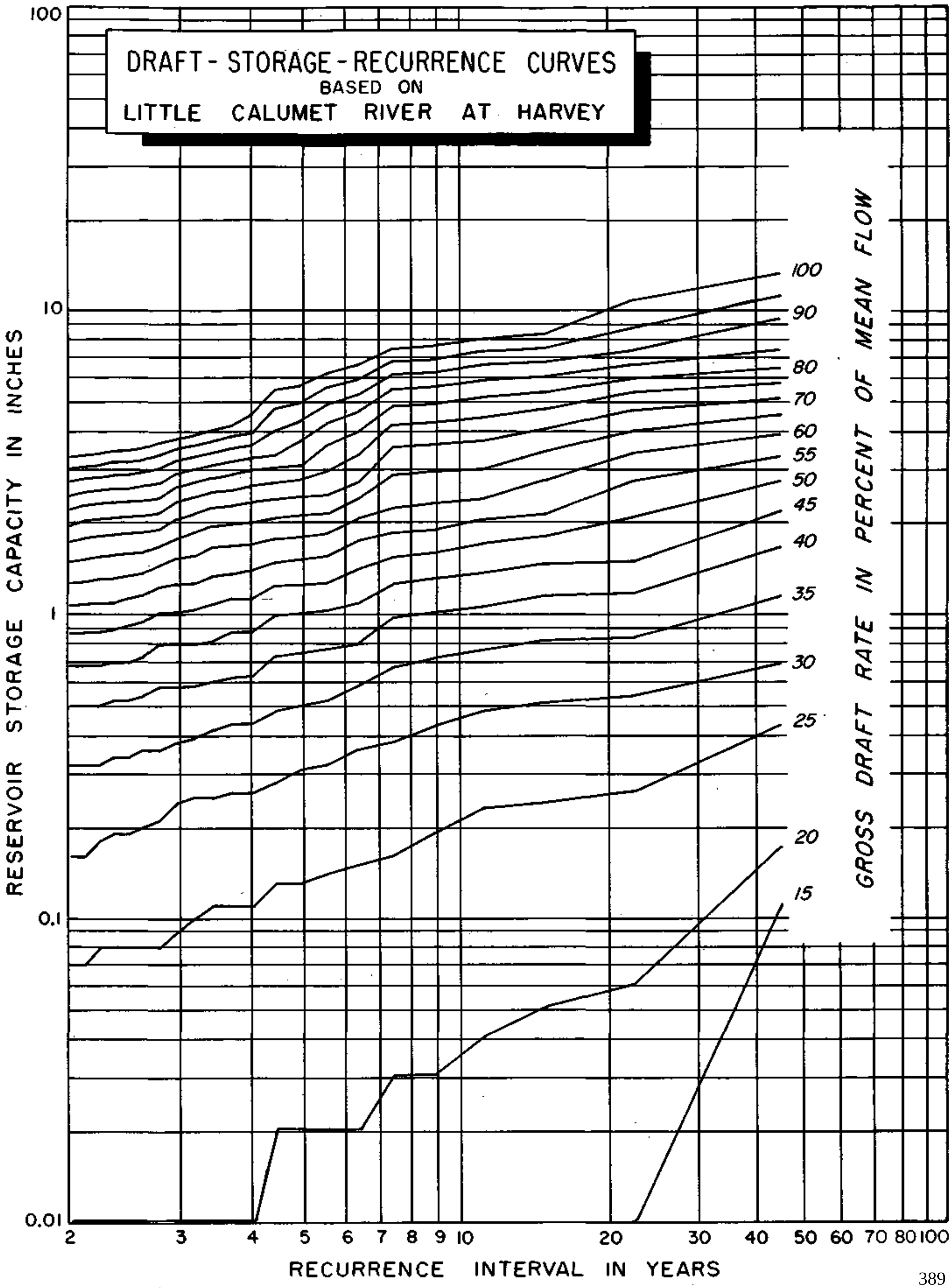
MEAN DISCHARGE : 0.73 inch per month

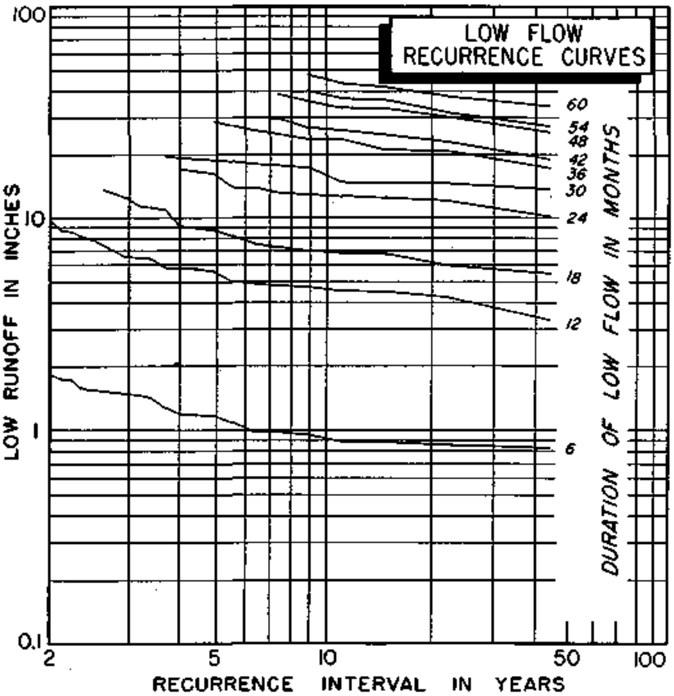
Draft-Storage-Recurrence Data for Little Calumet River at Harvey

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals

(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.04	.07	.11	.17	.43	.69	1.15	1.66	2.17	2.75	3.33	3.92	4.50	5.15	5.81	6.46	7.43	9.40	11.37	13.36
	1	1	1	7	7	8	14	14	16	16	16	16	16	16	18	18	54	54	54	56
22.0	.00	.00	.01	.06	.26	.54	.84	1.17	1.50	2.05	2.75	3.40	4.06	4.72	5.38	6.03	6.69	7.41	8.77	10.87
	1	1	1	3	6	8	9	9	9	18	18	18	18	18	18	18	18	20	56	58
14.7	.00	.00	.00	.05	.24	.51	.82	1.15	1.48	1.81	2.13	2.78	3.44	4.10	4.76	5.41	6.09	6.82	7.55	8.42
	1	1	1	2	7	8	9	9	9	9	18	18	18	18	18	18	20	20	20	42
11.0	.00	.00	.00	.04	.23	.46	.76	1.06	1.38	1.71	2.05	2.41	3.01	3.74	4.47	5.20	5.93	6.66	7.39	8.12
	1	1	1	1	7	7	8	8	9	9	10	10	20	20	20	20	20	20	20	20
8.8	.00	.00	.00	.03	.19	.43	.72	1.02	1.31	1.60	1.90	2.33	2.99	3.65	4.31	4.96	5.62	6.28	6.93	7.66
	1	1	1	1	6	8	8	8	8	8	10	18	18	18	18	18	18	18	20	20
7.3	.00	.00	.00	.03	.16	.38	.67	.97	1.26	1.55	1.85	2.24	2.90	3.56	4.22	4.87	5.53	6.19	6.84	7.50
	1	1	1	1	5	8	8	8	8	8	9	18	18	18	18	18	18	18	18	18
6.3	.00	.00	.00	.02	.15	.36	.58	.80	1.09	1.42	1.74	2.07	2.40	2.73	3.35	4.00	4.66	5.32	5.97	6.64
	1	1	1	3	6	6	6	6	9	9	9	9	9	9	18	18	18	18	18	22
5.5	.00	.00	.00	.02	.14	.32	.52	.77	1.03	1.29	1.56	1.85	2.15	2.47	2.99	3.64	4.30	4.96	5.61	6.27
	1	1	1	1	4	5	7	7	7	7	8	8	8	9	18	18	18	18	18	18
4.9	.00	.00	.00	.02	.13	.31	.50	.75	1.01	1.27	1.52	1.80	2.13	2.46	2.79	3.12	3.72	4.38	5.03	5.69
	1	1	1	1	4	5	7	7	7	7	7	9	9	9	9	9	18	18	18	18
4.4	.00	.00	.00	.02	.13	.28	.46	.73	.99	1.25	1.50	1.78	2.08	2.40	2.73	3.06	3.38	4.06	4.79	5.52
	1	1	1	1	4	4	7	7	7	7	7	8	8	9	9	9	9	20	20	20
4.0	.00	.00	.00	.01	.11	.26	.44	.63	.88	1.14	1.42	1.71	2.02	2.35	2.68	3.01	3.33	3.66	3.99	4.60
	1	1	1	2	4	5	5	6	7	7	8	8	9	9	9	9	9	9	9	22
3.7	.00	.00	.00	.01	.11	.26	.44	.62	.88	1.14	1.40	1.69	1.99	2.28	2.57	2.90	3.22	3.55	3.88	4.21
	1	1	1	2	3	5	5	7	7	7	8	8	8	8	9	9	9	9	9	9
3.4	.00	.00	.00	.01	.11	.25	.42	.60	.82	1.09	1.38	1.67	1.97	2.26	2.55	2.84	3.13	3.43	3.74	4.07
	1	1	1	2	3	4	5	6	6	8	8	8	8	8	8	8	8	8	9	9
3.1	.00	.00	.00	.01	.10	.25	.39	.58	.80	1.04	1.29	1.57	1.87	2.16	2.45	2.74	3.03	3.33	3.62	3.91
	1	1	1	2	4	4	4	6	6	7	7	8	5	8	8	6	8	8	8	8
2.9	.00	.00	.00	.01	.09	.24	.38	.58	.80	1.02	1.27	1.53	1.78	2.06	2.35	2.64	2.93	3.23	3.52	3.81
	1	1	1	1	4	4	4	6	6	7	7	7	7	8	8	8	8	8	8	8
2.8	.00	.00	.00	.01	.08	.21	.36	.58	.80	1.02	1.24	1.46	1.68	1.92	2.17	2.43	2.72	3.05	3.38	3.71
	1	1	1	1	3	4	6	6	6	6	6	6	6	7	7	8	9	9	9	9
2.6	.00	.00	.00	.01	.08	.20	.36	.54	.73	.95	1.17	1.39	1.61	1.87	2.12	2.36	2.66	2.96	3.25	3.55
	1	1	1	1	3	4	5	5	6	6	6	6	7	7	7	7	8	8	8	9
2.4	.00	.00	.00	.01	.08	.19	.34	.52	.70	.92	1.14	1.36	1.60	1.86	2.11	2.37	2.62	2.91	3.20	3.49
	1	1	1	1	3	3	5	5	6	6	6	6	7	7	7	7	7	8	8	8
2.3	.00	.00	.00	.01	.08	.19	.34	.52	.70	.89	1.10	1.33	1.58	1.84	2.09	2.35	2.60	2.90	3.19	3.48
	1	1	1	1	3	3	5	5	5	5	6	7	7	7	7	7	8	8	8	8
2.2	.00	.00	.00	.01	.08	.18	.32	.50	.68	.88	1.10	1.32	1.56	1.82	2.07	2.33	2.58	2.84	3.12	3.41
	1	1	1	1	2	3	5	5	5	6	6	6	7	7	7	7	7	7	8	8
2.1	.00	.00	.00	.01	.07	.16	.32	.50	.68	.87	1.08	1.31	1.53	1.79	2.04	2.30	2.55	2.81	3.08	3.37
	1	1	1	1	2	3	5	5	5	6	6	6	7	7	7	7	7	7	8	8
2.0	.00	.00	.00	.01	.07	.16	.32	.50	.68	.87	1.06	1.30	1.52	1.74	1.97	2.23	2.48	2.76	3.05	3.34
	1	1	1	1	2	3	5	5	5	5	6	6	6	6	7	7	7	8	8	8


DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
LITTLE CALUMET RIVER AT HARVEY
RESERVOIR STORAGE CAPACITY IN INCHES
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
RECURRENCE INTERVAL IN YEARS
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
100
90
80
70
60
55
50
45
40
35
30
25
20
15



STATION 183

LOCATION
In NE ¼ SE ¼ sec 10, T35N, R10E, Will County, at Benton Street Bridge in Joliet

DRAINAGE AREA
19.7 square miles

ACTUAL FLOW DATA
PERIOD : Aug 1925 thru Oct 1933; gaging discontinued Nov 1,1933
CONTINUOUS RECORD: 8 years; water years 1926-33

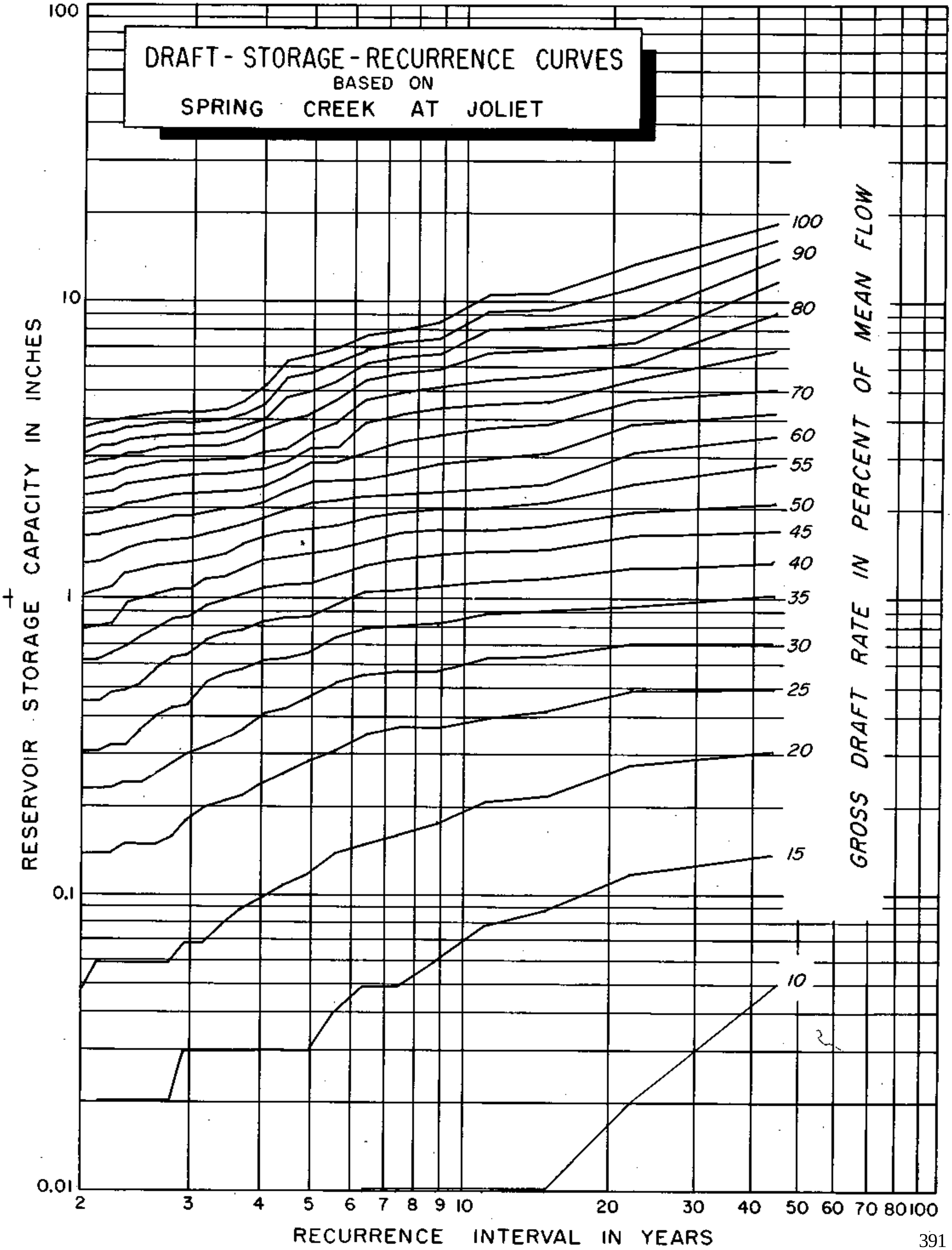
SYNTHETIC FLOW DATA
PERIOD: 36 years; water years 1916-25, 1934-59
INDEX STATION : Kankakee River at Momence
COINCIDENT RECORD: 8 years; water years 1926-33

TOTAL DATA ANALYZED
PERIOD: 44 years; water years 1916-59
MEAN DISCHARGE : 0.86 inch per month

Draft-Storage-Recurrence Data for Spring Creek at Joliet

Reservoir storage capacity in inches required to meet draft rates at various recurrence intervals
(Duration of critical drawdown period in months shown below each capacity value)

Recurrence interval, years	Gross draft rate in percent of mean flow																			
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
44.0	.00	.02	.14	.31	.50	.71	1.03	1.37	1.72	2.15	2.87	3.65	4.42	5.20	7.00	9.41	11.82	14.22	16.63	19.04
	1	2	4	4	5	6	8	8	8	15	18	16	18	18	56	56	56	56	56	56
22.0	.00	.02	.12	.28	.50	.71	.95	1.29	1.64	1.98	2.47	3.18	3.95	4.73	5.50	6.27	7.39	9.04	11.36	13.68
	1	1	3	5	5	5	8	8	8	8	16	18	18	18	18	18	32	54	54	54
14.7	.00	.01	.09	.22	.42	.65	.91	1.19	1.49	1.79	2.13	2.48	3.18	3.96	4.73	5.69	6.98	8.27	9.55	10.85
	1	1	3	4	5	6	6	7	7	8	8	8	18	18	18	30	30	30	30	30
11.0	.00	.01	.08	.21	.40	.64	.90	1.15	1.44	1.74	2.04	2.38	3.04	3.82	4.59	5.53	6.82	8.11	9.40	10.69
	1	1	3	4	5	6	6	6	7	7	7	9	18	18	18	30	30	30	30	30
8.8	.00	.01	.06	.18	.37	.58	.83	1.12	1.42	1.72	2.02	2.32	2.90	3.68	4.45	5.22	6.00	6.77	7.55	8.71
	1	1	2	4	5	5	5	7	7	7	7	8	18	18	18	18	18	18	18	42
7.3	.00	.01	.05	.16	.37	.58	.81	1.07	1.37	1.67	1.97	2.27	2.68	3.45	4.23	5.00	5.78	6.55	7.33	8.10
	1	1	2	4	5	5	6	7	7	7	7	7	18	18	18	18	18	18	18	18
6.3	.00	.01	.05	.15	.33	.56	.80	1.05	1.31	1.57	1.87	2.22	2.56	3.15	3.93	4.70	5.48	6.25	7.03	7.80
	1	1	1	3	5	5	6	6	6	6	8	8	8	18	18	18	18	18	1	18
5.5	.00	.00	.04	.14	.31	.52	.74	.95	1.21	1.47	1.79	2.14	2.51	2.90	3.29	3.92	4.70	5.47	6.25	7.02
	1	1	1	3	5	5	5	6	6	6	8	8	9	9	9	18	18	18	18	18
4.9	.00	.00	.03	.12	.29	.46	.56	.87	1.13	1.43	1.73	2.10	2.49	2.88	3.27	3.35	4.25	5.02	5.80	6.57
	1	1	2	4	4	4	5	6	7	7	7	9	9	9	9	9	18	18	1	18
4.4	.00	.00	.03	.11	.26	.43	.63	.87	1.13	1.39	1.69	1.99	2.29	2.59	2.92	3.26	4.03	4.80	5.58	6.35
	1	1	1	3	4	4	5	6	6	7	7	7	7	7	8	8	1	18	18	18
4.0	.00	.00	.03	.10	.24	.41	.62	.84	1.10	1.36	1.62	1.88	2.13	2.41	2.75	3.13	3.77	4.54	5.32	6.09
	1	1	1	3	4	4	5	5	6	6	6	6	6	8	9	9	18	1	18	18
3.7	.00	.00	.03	.09	.22	.36	.58	.79	1.01	1.27	1.53	1.79	2.04	2.34	2.71	3.09	3.48	3.87	4.25	4.66
	1	1	1	3	3	5	5	5	6	6	6	6	7	7	9	9	9	9	9	20
3.4	.00	.00	.03	.08	.21	.34	.55	.77	.99	1.20	1.42	1.71	2.01	2.31	2.65	2.99	3.34	3.68	4.04	4.43
	1	1	1	3	3	5	5	5	5	5	5	7	7	8	8	8	8	1	9	9
3.1	.00	.00	.03	.07	.20	.32	.52	.73	.95	1.16	1.36	1.67	1.97	2.29	2.63	2.97	3.32	3.66	4.01	4.35
	1	1	1	3	3	3	5	5	5	5	5	7	7	8	8	8	8	1	8	8
2.9	.00	.00	.03	.07	.18	.30	.44	.65	.87	1.08	1.34	1.60	1.91	2.28	2.60	2.94	3.29	3.63	3.98	4.32
	1	1	1	2	3	3	5	5	5	6	6	6	8	8	8	8	8	8	1	6
2.8	.00	.00	.02	.06	.16	.28	.43	.64	.86	1.07	1.32	1.58	1.90	2.25	2.59	2.93	3.28	3.62	3.97	4.31
	1	1	1	2	3	3	5	5	5	5	6	6	8	8	8	8	8	8	8	8
2.6	.00	.00	.02	.05	.15	.26	.40	.58	.79	1.05	1.31	1.57	1.86	2.21	2.55	2.89	3.24	3.58	3.93	4.27
	1	1	1	2	2	3	4	4	6	6	6	6	8	8	8	8	8	8	1	8
2.4	.00	.00	.02	.05	.15	.24	.36	.51	.75	1.01	1.27	1.53	1.78	2.12	2.46	2.80	3.15	3.49	3.84	4.18
	1	1	1	2	2	2	3	4	5	6	6	6	7	8	8	8	8	1	8	8
2.3	.00	.00	.02	.06	.15	.24	.34	.49	.70	.96	1.22	1.48	1.76	2.08	2.42	2.76	3.11	3.45	3.80	4.14
	1	1	1	2	2	2	3	4	6	5	6	6	7	8	8	8	8	8	8	8
2.2	.00	.00	.02	.06	.14	.23	.33	.48	.55	.82	1.10	1.40	1.70	2.00	2.31	2.62	2.97	3.31	3.65	4.00
	1	1	1	1	2	2	3	4	4	5	7	7	7	7	7	8	8	8	8	5
2.1	.00	.00	.02	.06	.14	.23	.31	.45	.62	.80	1.06	1.35	1.65	1.95	2.25	2.60	2.95	3.29	3.64	3.98
	1	1	1	1	2	2	3	4	4	5	6	7	7	7	8	8	8	8	8	8
2.0	.00	.00	.01	.05	.14	.23	.31	.45	.62	.79	1.03	1.33	1.63	1.93	2.24	2.54	2.84	3.14	3.49	3.83
	1	1	1	2	2	2	2	4	4	4	7	7	7	7	7	7	7	8	8	8



DRAFT - STORAGE - RECURRENCE CURVES
BASED ON
SPRING CREEK AT JOLIET
RESERVOIR STORAGE CAPACITY IN INCHES
GROSS DRAFT RATE IN PERCENT OF MEAN FLOW
RECURRENCE INTERVAL IN YEARS
100
10
1
0.1
0.01
2
3
4
5
6
7
8
9
10
20
30
40
50
60
70
80
100
90
55
45
35
25
15

INDEX TO GAGING STATIONS