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Historic and Naturalized Monthly Streamflow for Selected Sites in the Red River of the North Basin in North Dakota, Minnesota, and South Dakota, 1931-2001

Scientific Investigations Report 2005–5092

U.S. Department of the Interior
U.S. Geological Survey

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By Douglas G. Emerson

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U.S. Department of the Interior
U.S. Geological Survey

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Conversion Factors and Datum

Multiply	By	To obtain
	Length	
foot	0.3048	meter
mile	1.609	kilometer
	Area	
acre	0.4047	hectare
square mile	2.590	square kilometer
	Volume	
acre-foot	1,233	cubic meter
	Flow rate	
cubic foot per second	0.02832	cubic meter per second
	Hydraulic gradient	
foot per mile	0.1894	meter per kilometer

Vertical coordinate information is referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29).

Elevation, as used in this report, refers to distance above the vertical datum.

Historic and Naturalized Monthly Streamflow for Selected Sites in the Red River of the North Basin in North Dakota, Minnesota, and South Dakota, 1931-2001

By Douglas G. Emerson

Abstract

Historic monthly streamflow data were compiled and missing historic and naturalized monthly streamflow data were estimated to develop a database of updated streamflow data for January 1931 through December 2001 (the data-development period) for 35 sites in the Red River of the North Basin. Of the 35 sites, 4 had gaged historic monthly streamflow data for the entire data-development period, 10 had gaged historic monthly streamflow data for part of the data-development period, and 21 had no gaged historic monthly streamflow data. To develop the database, a modified drainage-area ratio method, a maintenance of variance extension type 1 method, and a water-balance method were used to estimate the missing historic monthly streamflow data. Naturalized streamflow for the 35 sites was estimated by eliminating the hydrologic effects of Orwell Dam, Reservation Dam, White Rock Dam, Baldhill Dam, surface-water withdrawals, and return flows.

Introduction

In 1994, under the direction of the Executive Steering Committee, North Dakota Water Management Collaboration Process, the Bureau of Reclamation began a two-phase planning study to investigate and evaluate existing and future municipal, rural, and industrial water-supply needs in the Red River of the North Basin in North Dakota. Phase I, Part A, which was an assessment of those water-supply needs (Bureau of Reclamation, 1998), was completed in April 1998, and Phase I, Part B, which was an assessment of instream flow issues regarding aquatic life and water quality (Bureau of Reclamation, 1999), was completed in August 1999. Streamflow and water-quality databases used in Parts A and B were developed by the U.S. Geological Survey and included data for 1931-84 (Guenthner and others, 1990; Guenthner, 1991).

On December 15, 2000, the Dakota Water Resources Act was passed by the U.S. Congress. The Act authorized the Secretary of the Interior to conduct a comprehensive study of the future water-quantity and -quality needs in the Red River of the North Basin in North Dakota and the possible options to meet those water needs. The Bureau of Reclamation, which was charged with overall administration of the comprehensive study, formed a Technical Team and a Study Review Team to complete differing aspects of the study. The Technical Team was charged with developing plans for the study, performing a technical evaluation, drafting parts of a Needs and Options Report, and performing other day-to-day study activities. The Study Review Team was charged with reviewing draft products and providing input into the study process and products.

To provide needed information for the comprehensive study, the U.S. Geological Survey, in cooperation with the Bureau of Reclamation, developed a database that included updated historic and naturalized monthly streamflow data for 1931-99 for selected sites in the Red River of the North Basin (Emerson and Dressler, 2002). Since that database was developed, additional and refined water-use data (Macek-Rowland and others, 2004) and an evaluation of the drainage-area ratio method used to estimate streamflow in the Red River of the North Basin (Emerson and others, 2005) have become available. Therefore, a study was conducted in cooperation with the Bureau of Reclamation to develop a database that included updated historic and naturalized monthly streamflow data based upon the additional and refined data. Specific objectives of this study were to compile historic monthly streamflow data and to estimate missing historic and naturalized monthly streamflow data for January 1931 through December 2001 (the data-development period) for 35 sites in the Red River of the North Basin (fig. 1). The streamflow database for 1931-2001 supersedes the streamflow database for 1931-84 (Guenthner and others, 1990) and the streamflow database for 1931-99 (Emerson and Dressler, 2002).

Purpose and Scope

This report describes the compilation of historic monthly streamflow data and the estimation of missing historic and

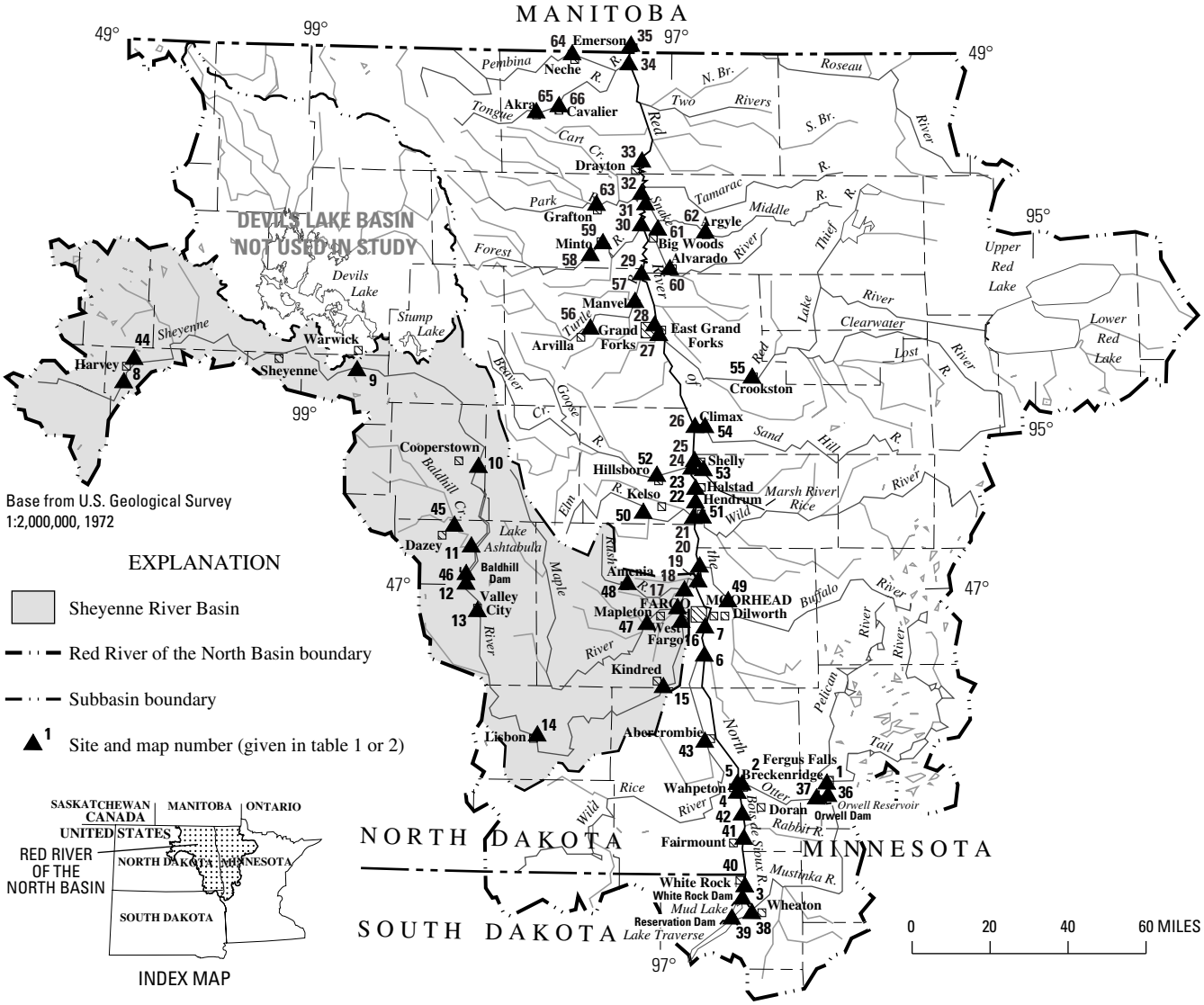

Figure 1. Locations of sites in the Red River of the North Basin for which streamflow data were compiled and/or estimated.

naturalized monthly streamflow data for 35 sites in the Red River of the North Basin. Historic monthly streamflow data, estimated missing historic monthly streamflow data, and estimated naturalized monthly streamflow data for January 1931 through December 2001 are given for the 35 sites (table 1). The sites include streamflow-gaging stations for which some data are available and sites for which no data are available. The methods used to estimate the missing historic and naturalized monthly streamflow data are described in later sections of the report.

Of the 35 sites in the Red River of the North Basin, 4 had gaged historic monthly streamflow data for the entire data-development period, 10 had gaged historic monthly streamflow data for part of the data-development period, and 21 had no gaged historic monthly streamflow data. Therefore, to develop the database for the 35 sites, the missing data for the 31 sites were estimated using gaged historic monthly streamflow data for 28 additional sites in the Red River of the North Basin and data for 3 reservoir sites in the basin. The locations of the sites used to estimate the missing data are shown in figure 1 and a description of the sites used is given in table 2. Other sources of data used in this study are discussed in the "Estimated Naturalized Monthly Streamflow" section of this report. If January 1930 through December 2001 had been chosen as the data-development period, only six sites in the basin would have had no missing data. However, because January 1931 through December 2001 was chosen as the data-development period, 9 sites in the basin (5 of which were not part of the original 35 sites) had no missing data for a period of record that started sometime in 1931 or before and extended through December 2001 (table 2).

Table 1. Sites in the Red River of the North Basin for which historic and naturalized monthly streamflow data were compiled and/or estimated.

[--, no data]

Map number (Figure 1)	Site number	Site name	Drainage area (square miles)	
			Total	Contributing
1	No station number	Otter Tail River above Orwell Dam	1,810	--
2	No station number	Otter Tail River at the mouth	1,960	--
3	No station number	Bois de Sioux River above White Rock Dam	1,160	--
4	No station number	Bois de Sioux River at the mouth	1,965	--
5	05051500	Red River of the North at Wahpeton, N. Dak.	4,010	--
6	No station number	Wild Rice River (N. Dak.) at the mouth	1,665	--
7	05054000	Red River of the North at Fargo, N. Dak.	6,800	--
8	05054500	Sheyenne River above Harvey, N. Dak.	424	154
9	05056000	Sheyenne River near Warwick, N. Dak.	2,070	760
10	05057000	Sheyenne River near Cooperstown, N. Dak.	6,470	1,270
11	No station number	Baldhill Creek at the mouth	397	--
12	05058000	Sheyenne River below Baldhill Dam, N. Dak.	7,470	1,910
13	05058500	Sheyenne River at Valley City, N. Dak.	7,810	2,110
14	05058700	Sheyenne River at Lisbon, N. Dak.	8,190	2,490
15	05059000	Sheyenne River near Kindred, N. Dak.	8,800	3,020
16	05059500	Sheyenne River at West Fargo, N. Dak.	8,870	3,090
17	No station number	Maple River at the mouth	1,489	--
18	No station number	Rush River at the mouth	188	--
19	No station number	Sheyenne River at the mouth	10,780	5,000
20	No station number	Buffalo River at the mouth	1,190	--
21	No station number	Elm River at the mouth	505	--
22	No station number	Wild Rice River (Minn.) at the mouth	1,650	--
23	05064500	Red River of the North at Halstad, Minn.	21,800	--
24	No station number	Goose River at the mouth	1,170	--
25	No station number	Marsh River at the mouth	299	--
26	No station number	Sand Hill River at the mouth	424	--
27	No station number	Red Lake River at the mouth	5,750	--
28	05082500	Red River of the North at Grand Forks, N. Dak.	30,100	--
29	No station number	Turtle River at the mouth	635	--
30	No station number	Forest River at the mouth	913	--
31	No station number	Snake River at the mouth	950	--
32	No station number	Park River at the mouth	1,010	--
33	05092000	Red River of the North at Drayton, N. Dak.	34,800	--
34	No station number	Pembina River at the mouth	3,950	--
35	05102500	Red River of the North at Emerson, Manitoba	40,200	--

Table 2. Description of sites used to estimate missing historic monthly streamflow data.

[--, no data]

Map number (Figure 1)	Site number	Site name	Drainage area (square miles)		Period of record through 2001 (complete months)
			Total	Contrib-uting	
36	05045950	Orwell Reservoir near Fergus Falls, Minn.	1,739	--	March 1953 through December 2001
37	05046000	Otter Tail River below Orwell Dam near Fergus Falls, Minn.	1,740	--	October 1930 through December 2001
38	05049000	Mustinka River above Wheaton, Minn.	834	--	October 1915 through September 1924, October 1930 through September 1958
39	05049700	Lake Traverse near Wheaton, Minn.	--	--	January 1942 through December 2001
40	05050000	Bois de Sioux River near White Rock, S. Dak.	1,160	--	October 1941 through December 2001
41	05050500	Bois de Sioux River near Fairmount, N. Dak.	1,540	--	April 1919 through September 1944
42	05051300	Bois de Sioux River near Doran, Minn.	1,880	--	October 1989 through December 2001
5	05051500	Red River of the North at Wahpeton, N. Dak.	4,010	--	May through October 1942, March 1943 through December 2001
43	05053000	Wild Rice River near Abercrombie, N. Dak.	2,080	1,490	April 1932 through December 2001
7	05054000	Red River of the North at Fargo, N. Dak.	6,800	--	May 1901 through December 2001
8	05054500	Sheyenne River above Harvey, N. Dak.	424	154	October 1955 through December 2001
44	05055000	Sheyenne River near Harvey, N. Dak.	534	174	October 1945 through September 1956
9	05056000	Sheyenne River near Warwick, N. Dak.	2,070	760	October 1949 through December 2001
10	05057000	Sheyenne River near Cooperstown, N. Dak.	6,470	1,270	October 1944 through December 2001
45	05057200	Baldhill Creek near Dazey, N. Dak.	691	351	April 1956 through December 2001
46	05057500	Lake Ashtabula at Baldhill Dam, N. Dak.	7,470	1,910	July 1949 through December 2001
12	05058000	Sheyenne River below Baldhill Dam, N. Dak.	7,470	1,910	October 1949 through December 2001
13	05058500	Sheyenne River at Valley City, N. Dak.	7,810	2,110	April 1919, April through June 1938, August 1938 through September 1975, March through September 1995, March through September 1996
14	05058700	Sheyenne River at Lisbon, N. Dak.	8,190	2,490	October 1956 through December 2001
15	05059000	Sheyenne River near Kindred, N. Dak.	8,800	3,020	August 1949 through December 2001
16	05059500	Sheyenne River at West Fargo, N. Dak.	8,870	3,090	April 1903 through October 1905, March through August 1919, September 1929 through December 2001
47	05060000	Maple River near Mapleton, N. Dak. (and Maple River at Mapleton, N. Dak.)	1,489	1,379	April 1944 through September 1975 March 1995 through December 2001
48	05060500	Rush River at Amenia, N. Dak.	116	--	August 1946 through December 2001
49	05062000	Buffalo River near Dilworth, Minn.	975	--	April 1931 through December 2001

Table 2. Description of sites used to estimate missing historic monthly streamflow data.—Continued

[--, no data]

Map number (Figure 1)	Site number	Site name	Drainage area (square miles)		Period of record through 2001 (complete months)
			Total	Contrib-uting	
50	05062200	Elm River near Kelso, N. Dak.	194	--	October 1955 through September 1963, October 1980 through August 1986 (incomplete winter data for October 1981 through February 1986)
51	05064000	Wild Rice River at Hendrum, Minn.	1,560	--	April 1944 through September 1984, May 1985 through December 2001
23	05064500	Red River of the North at Halstad, Minn.	21,800	--	April 1936 through June 1937, April 1942 through September 1960, June 1961 through December 2001
52	05066500	Goose River at Hillsboro, N. Dak.	1,203	1,093	April 1931 through October 1932, April through June 1933, April 1934 through December 2001
53	05067500	Marsh River near Shelly, Minn.	220	--	March 1944 through September 1983, April 1985 through October 2001 (incomplete winter data for November 1989 through December 2001)
54	05069000	Sand Hill River at Climax, Minn.	420	--	April 1943 through September 1984 (incomplete winter data for December 1944 through February 1946), June 1985 through December 2001
55	05079000	Red Lake River at Crookston, Minn.	5,270	--	May 1901 through December 2001
28	05082500	Red River of the North at Grand Forks, N. Dak.	30,100	--	April 1882 through December 2001
56	05082625	Turtle River at Turtle River State Park near Arvilla, N. Dak.	311	--	October 1992 through December 2001
57	05083000	Turtle River at Manvel, N. Dak.	613	556	October 1945 through September 1970
58	05084500	Forest River near Minto, N. Dak.	604	486	April through October 1932, March through June 1933, April through September 1934, April through June 1935, October 1935 through September 1944
59	05085000	Forest River at Minto, N. Dak.	740	620	April 1944 through December 2001
60	05086000	Snake River at Alvarado, Minn.	309	--	April through September 1945, October 1953 through September 1956
61	05086500	Snake River above Middle River near Big Woods, Minn.	481	--	April through September 1945
62	05087500	Middle River at Argyle, Minn.	255	--	April through September 1945, October 1950 through September 1981, March 1982 through December 2001
63	05090000	Park River at Grafton, N. Dak.	695	--	May 1931 through December 2001

Table 2. Description of sites used to estimate missing historic monthly streamflow data.—Continued

[--, no data]

Map number (Figure 1)	Site number	Site name	Drainage area (square miles)		Period of record through 2001 (complete months)
			Total	Contrib-uting	
33	05092000	Red River of the North at Drayton, N. Dak.	34,800	--	April through October 1936, April through June 1937, April through May 1942, April 1943, April through June 1945, April through June 1946, May through August 1947, May through July 1948, April 1949 through December 2001
64	05100000	Pembina River at Neche, N. Dak.	3,410	--	May 1903 through September 1908, June 1909 through September 1915, April 1919 through December 2001
65	05101000	Tongue River at Akra, N. Dak.	160	--	April through June 1950, October 1951 through December 2001 (no winter data for October 1982 through December 2001)
66	05101500	Tongue River at Cavalier, N. Dak.	167	--	October 1938 through October 1951
35	05102500	Red River of the North at Emerson, Manitoba	40,200	--	May 1912 through December 2001

Although users of the estimated historic monthly streamflow data need to be aware of the anticipated accuracy of the data, an error analysis would be difficult to perform and may lead to confusion. However, because the data for many of the sites were estimated using combined methods, the data should have little bias based on the methodologies. Also, the estimates should be more accurate for sites that have long periods of record than for sites that have short periods of record.

Description of Study Area

The Red River of the North Basin is part of the Hudson Bay drainage system (fig. 1). Parts of South Dakota, North Dakota, and Minnesota in the United States, and parts of Saskatchewan and Manitoba in Canada are drained by the Red River of the North. From its origin at the confluence of the Otter Tail and Bois de Sioux Rivers, the Red River of the North flows northward 394 miles to the United States-Canada border and then flows northward about 155 miles to its outlet into Lake Winnipeg. The study area includes that part of the basin upstream from the international border. The drainage area of the Red River of the North at Emerson, Manitoba, is 40,200 square miles (U.S. Geological Survey, 2002, p. 184).

The Red River of the North flows over lacustrine deposits of glacial Lake Agassiz for its entire length in North Dakota. The slope of the river is extremely flat. The river falls only about 200 feet in its 394-mile course from Wahpeton, N. Dak., to the international border (Miller and Frink, 1984).

Streamflow in the Otter Tail River has been regulated by Orwell Dam since 1953. The reservoir provides 13,100 acre-feet of storage for multiple uses. Numerous other controlled lakes and ponds and several powerplants also affect streamflow in the Otter Tail River.

Lake Traverse and Mud Lake are natural instream lakes near the headwaters of the Bois de Sioux River. In 1942, Reservation Dam on Lake Traverse and White Rock Dam on Mud Lake were completed. The total storage capacity for both lakes at an elevation of 981 feet is 153,700 acre-feet.

The Sheyenne River, a major tributary to the Red River of the North, has a drainage area of about 6,910 square miles (not including the closed Devils Lake Basin). From its headwaters near Harvey, N. Dak., the Sheyenne River flows eastward about 150 miles, southward about 200 miles, and then northeastward about 150 miles to its confluence with the Red River of the North north of Fargo, N. Dak. (Souris-Red-Rainy River Basins Commission, 1972, p. D-50).

The Sheyenne River Basin lies in two distinct physiographic areas. The drift prairie area extends from the headwaters to near Lisbon, N. Dak., and the glacial Lake Agassiz area extends from near Lisbon, N. Dak., to the confluence of the Sheyenne River and the Red River of the North. A hilly delta topography exists from Valley City, N. Dak., to near Kindred, N. Dak. Most of the Sheyenne River Valley from the headwaters to Kindred, N. Dak., is incised into glacial till. The valley from Sheyenne, N. Dak., to Kindred, N. Dak., ranges from about 100 to 200 feet in depth and from 0.2 to 2 miles in width. The Sheyenne River from Kindred, N. Dak., to its confluence with the Red River of the North flows over lacustrine deposits of glacial Lake Agassiz. The average slope of the river is 1.5 feet per mile in the drift prairie and hilly delta areas and about 1 foot per mile in the glacial Lake Agassiz area.

No flow has been recorded at times in the upper reaches of the Sheyenne River. Flow in the lower reaches of the river is regulated partly by releases from Baldhill Dam, which was completed in 1949. Lake Ashtabula, formed by Baldhill Dam, has a storage capacity of 69,100 acre-feet between the invert of the outlet conduit and the normal pool elevation. Lake Ashtabula is operated for flood control (the capacity at a maximum pool elevation of 1,278.5 feet is 157,500 acre-feet), municipal water supply, recreation, and stream-pollution abatement through low-flow augmentation.

Methods Used to Estimate Streamflow

A modified drainage-area ratio method, a maintenance of variance extension type 1 (MOVE.1) method, and a water-balance method were used in this study to estimate streamflow for ungaged sites and for gaged sites that have missing data. The methods are described briefly in the following paragraphs. These and other methods that can be used to estimate streamflow are explained further by Wiche and others (1989).

The drainage-area ratio method (Hirsch, 1979) is based on the assumption that streamflow for a site of interest can be estimated by multiplying the ratio of the drainage area for the site of interest and the drainage area for a nearby gaged site by streamflow for the nearby gaged site. Thus, the drainage-area ratio method is given by

$$\tilde{Y}_i = X_i\left(\frac{A_y}{A_x}\right)^{\alpha} \qquad (1)$$

where

$\tilde{Y}_i$ is the estimated streamflow during month i for the site of interest, in cubic feet per second;

X_i is the streamflow during month i for the gaged site (also referred to as the base station), in cubic feet per second;

A_y is the drainage area for the site of interest, in square miles;

A_x is the drainage area for the gaged site, in square miles; and

α is the exponent of the drainage-area ratio $\left(\frac{A_y}{A_x}\right)$.

The assumption is made that the exponent, α, is 1. That may be the best assumption to make if no streamflow data are available for a site of interest. However, Emerson and others (2005) determined in an evaluation of the drainage-area ratio method used to estimate streamflow in the Red River of the North Basin that the exponent varied seasonally. Therefore, the following equations (the modified drainage-area ratio method) were used to estimate streamflow for this study:

$$\tilde{Y}_i = X_i\left(\frac{A_y}{A_x}\right)^{0.85} \text{ (winter streamflow),} \qquad (2)$$

$$\tilde{Y}_i = X_i\left(\frac{A_y}{A_x}\right)^{0.91} \text{ (spring streamflow), and} \qquad (3)$$

$$\tilde{Y}_i = X_i\left(\frac{A_y}{A_x}\right)^{1.02} \text{ (summer streamflow).} \qquad (4)$$

The MOVE.1 method can be used when streamflow data are available for a site of interest for a period of N_1 years and for a base station for the same N_1 years plus an additional N_2 years. Hirsch (1982) showed that the MOVE.1 method, which is similar to regression methods, reproduces the statistical characteristics of the actual data better than traditional regression methods because the MOVE.1 method reproduces sample estimates of the mean of the variance from the historic data (N_1 years). The MOVE.1 method is given by

$$\tilde{Y}_i = m(y_1) + \left[\frac{s(y_1)}{s(x_1)}\right][x_i - m(x_1)] \qquad (5)$$

where

$m(y_1)$ is the mean of N_1 years of gaged streamflow for the site of interest, in cubic feet per second;

$s(y_1)$ is the standard deviation of N_1 years of gaged streamflow for the site of interest, in cubic feet per second;

$s(x_1)$ is the standard deviation of N_1 years of gaged streamflow for the base station, in cubic feet per second;

x_i is the gaged streamflow during month i for the base station, in cubic feet per second; and

$m(x_1)$ is the mean of N_1 years of gaged streamflow for the base station, in cubic feet per second.

The procedure used to estimate the missing data for this study was developed by Alley and Burns (1983). The Alley and Burns (1983) procedure has the capability of selecting an ordinary least-squares regression method, a regression plus noise method, the MOVE.1 method, or a maintenance of variance extension type 2 (MOVE.2) method to estimate streamflow. The Alley and Burns (1983) procedure selects the best base station from several base stations and also has an option that allows for consideration of both cyclic (monthly) and noncyclic (annual) extension equations for each individual prediction. With the cyclic (monthly) equation, missing data are estimated from streamflow data for the month selected; with the noncyclic (annual) equation, missing data are estimated from all concurrent streamflow data for the period of record. In the Alley and Burns (1983) procedure, missing data for a particular month for a site of interest are estimated using both the cyclic (monthly) equation and the noncyclic (annual) equation, and a standard error of prediction is computed for both estimates. The equation that has the smallest standard error of prediction then is used to estimate the missing data. The procedure developed by Alley and Burns (1983), with the selection of MOVE.1, is referred to hereinafter as the Alley and Burns MOVE.1 method.

Because log-transformed data are superior to linear data for the estimation of streamflow (Hirsch, 1979), the streamflow data used to estimate the missing data for this study were log transformed prior to use in equation 5. Streamflow values of zero were treated as missing values.

The water-balance method is given by an equation that defines outflow as being equal to inflow plus or minus change in storage. The water-balance equation can be solved for the unknown component. For example, the water-balance method can be used to estimate outflow from a reservoir when inflow, precipitation, evaporation, and change in storage are known.

Gaged and Estimated Historic Monthly Streamflow

Gaged and estimated historic monthly streamflow data for the 35 sites for which data were compiled and/or estimated for this study (table 1) are given in supplement 1. Gaged and estimated historic monthly streamflow data for the 28 additional sites that were used to estimate missing data are given in supplement 2. Data for the three reservoir sites that were used (table 2) are not provided in supplement 2 but are available on the U.S. Army Corps of Engineers' web page at http://www.MVP-WC.usace.army.mil. The methods used to compile and/or estimate the historic monthly streamflow data are shown in figure 2. Although both the modified drainage-area ratio method and the Alley and Burns MOVE.1 method could have been used to estimate the missing data for some of the sites, only the method used to estimate the final data is discussed in the following sections.

When the modified drainage-area ratio method was used, the gaged site nearest to the site of interest generally was selected as the base station if data for the gaged site were available for the period for which streamflow was to be estimated. The contributing drainage area (table 2), when available, was used in lieu of the total drainage area in equations 2-4. Contributing drainage area is subjective and will vary between wet and dry years. The large difference between the total and the contributing drainage area for the Sheyenne River sites that are downstream from the Sheyenne River near Warwick is because of the noncontributing drainage area (3,800 square miles) for the closed Devils Lake Basin.

When the Alley and Burns MOVE.1 method was used, the base stations were selected on the basis of the similarity of basin characteristics and the proximity to the site of interest, and the equation (cyclic or noncyclic) that had the smallest standard error of prediction was used to estimate the missing data. Therefore, a combination of base stations could be used for each site of interest. In most cases, the equation that had the smallest standard error of prediction had the largest correlation coefficient. However, in some cases, the correlation coefficient was smaller for the equation that was used than for the other equations. Only the correlation coefficients for the site of interest and the base stations are given in the following sections.

Otter Tail River above Orwell Dam

Streamflow data for the Otter Tail River below Pelican River near Fergus Falls (published as data for the Otter Tail River below Orwell Dam near Fergus Falls after September 1952) were used as the data for the Otter Tail River above Orwell Dam for January 1931 through February 1953. Regulation of streamflow began on March 21, 1953, when Orwell Dam began operating. The water-balance method was used to estimate historic streamflow for the Otter Tail River above Orwell Dam for March 1953 through December 2001. Streamflow for the Otter Tail River below Orwell Dam near Fergus Falls, the change in storage in Orwell Reservoir, and the effects of evaporation and precipitation on the reservoir were used in the water-balance equation.

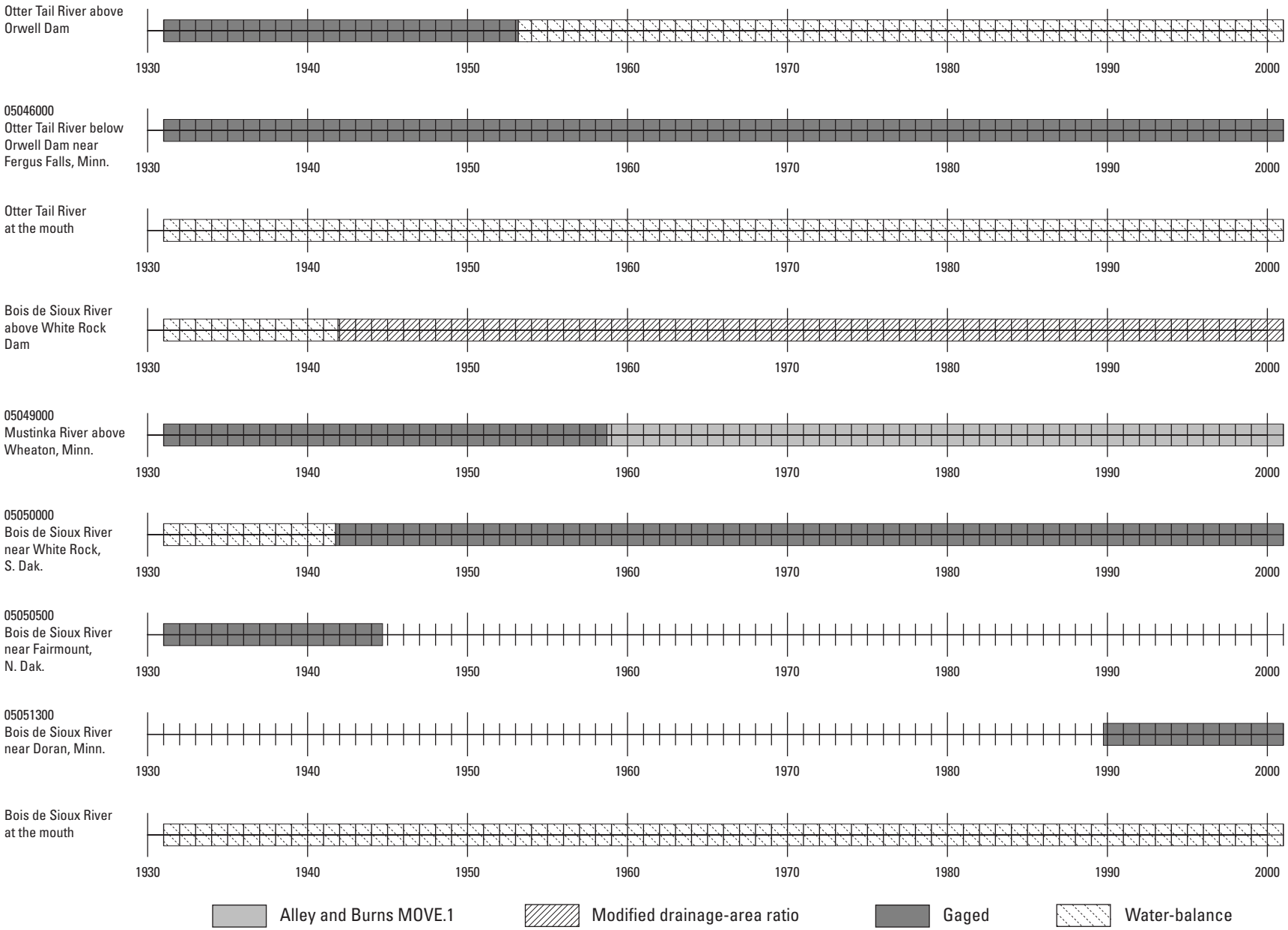

Figure 2. Methods used to compile and/or estimate historic monthly streamflow data.

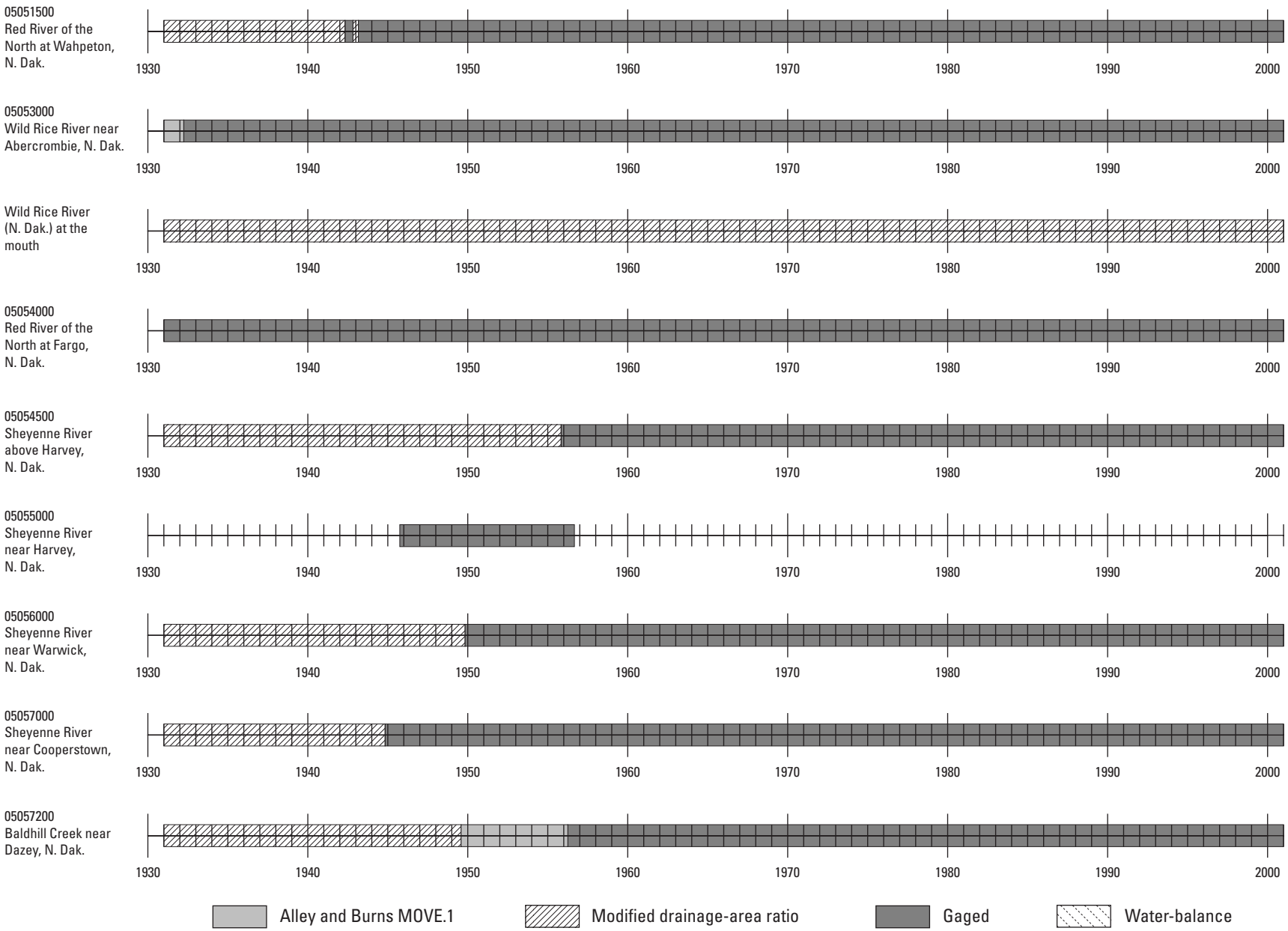

Figure 2. Methods used to compile and/or estimate historic monthly streamflow data--Continued.

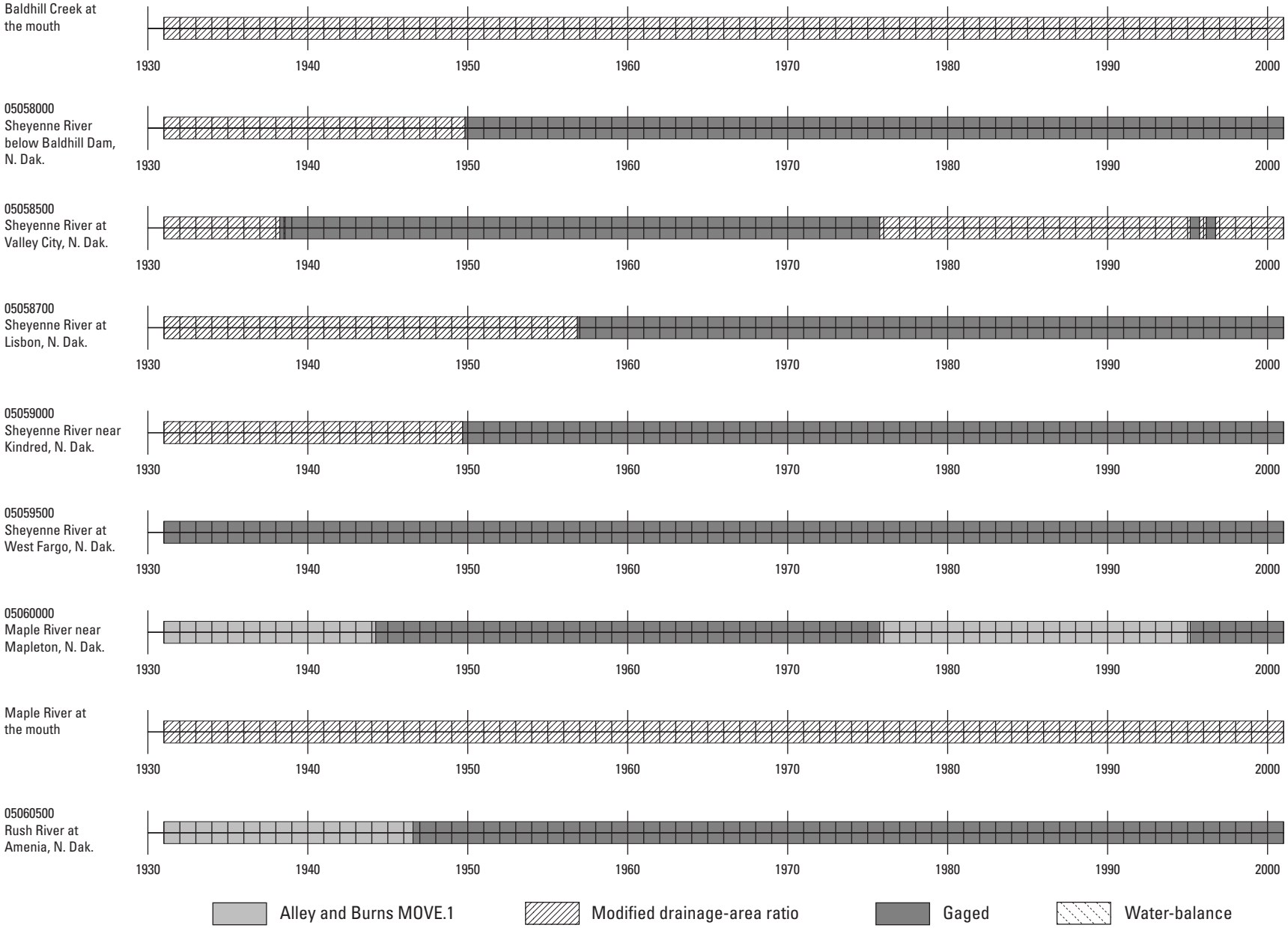

Figure 2. Methods used to compile and/or estimate historic monthly streamflow data--Continued.

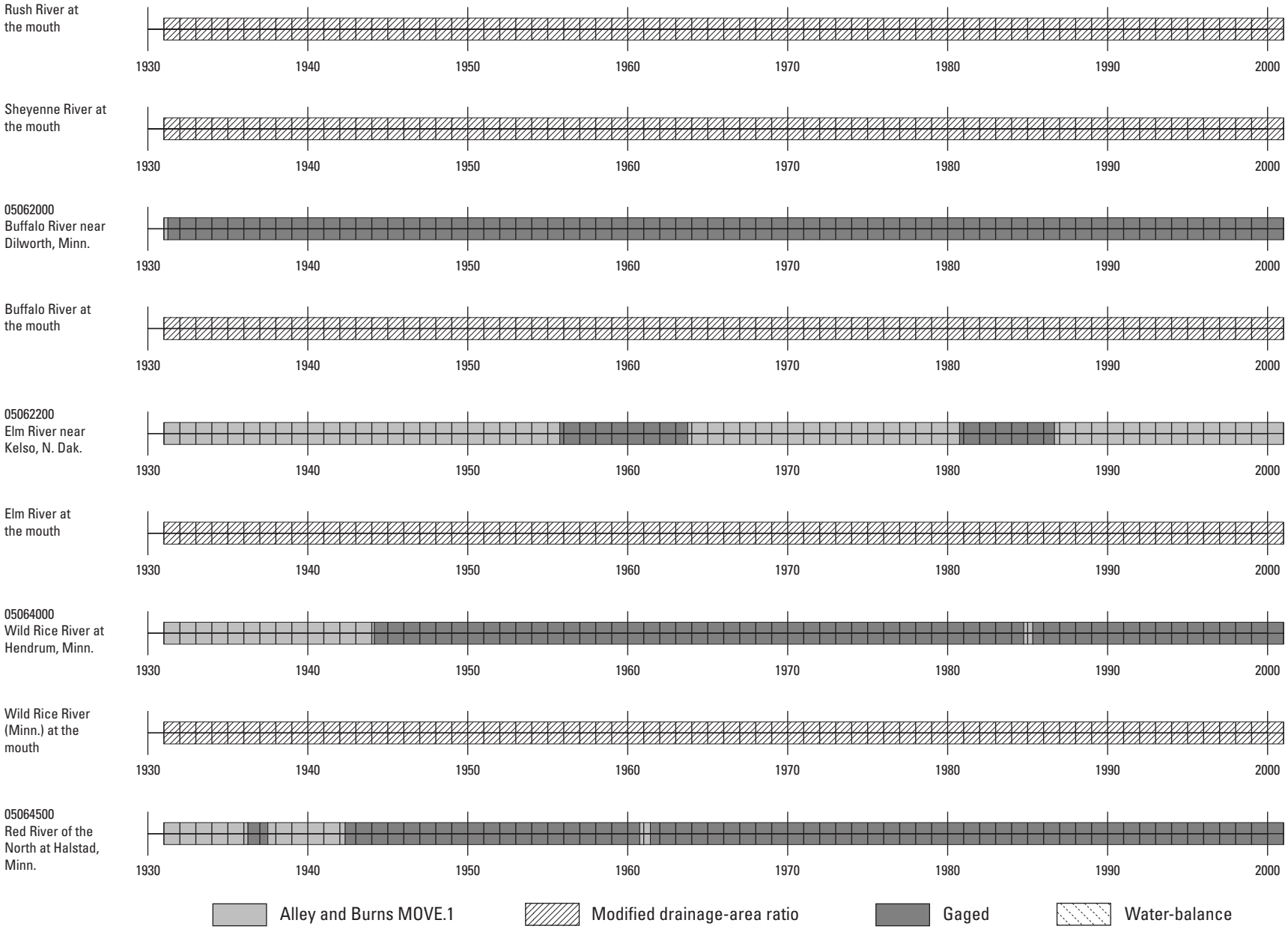

Figure 2. Methods used to compile and/or estimate historic monthly streamflow data--Continued.

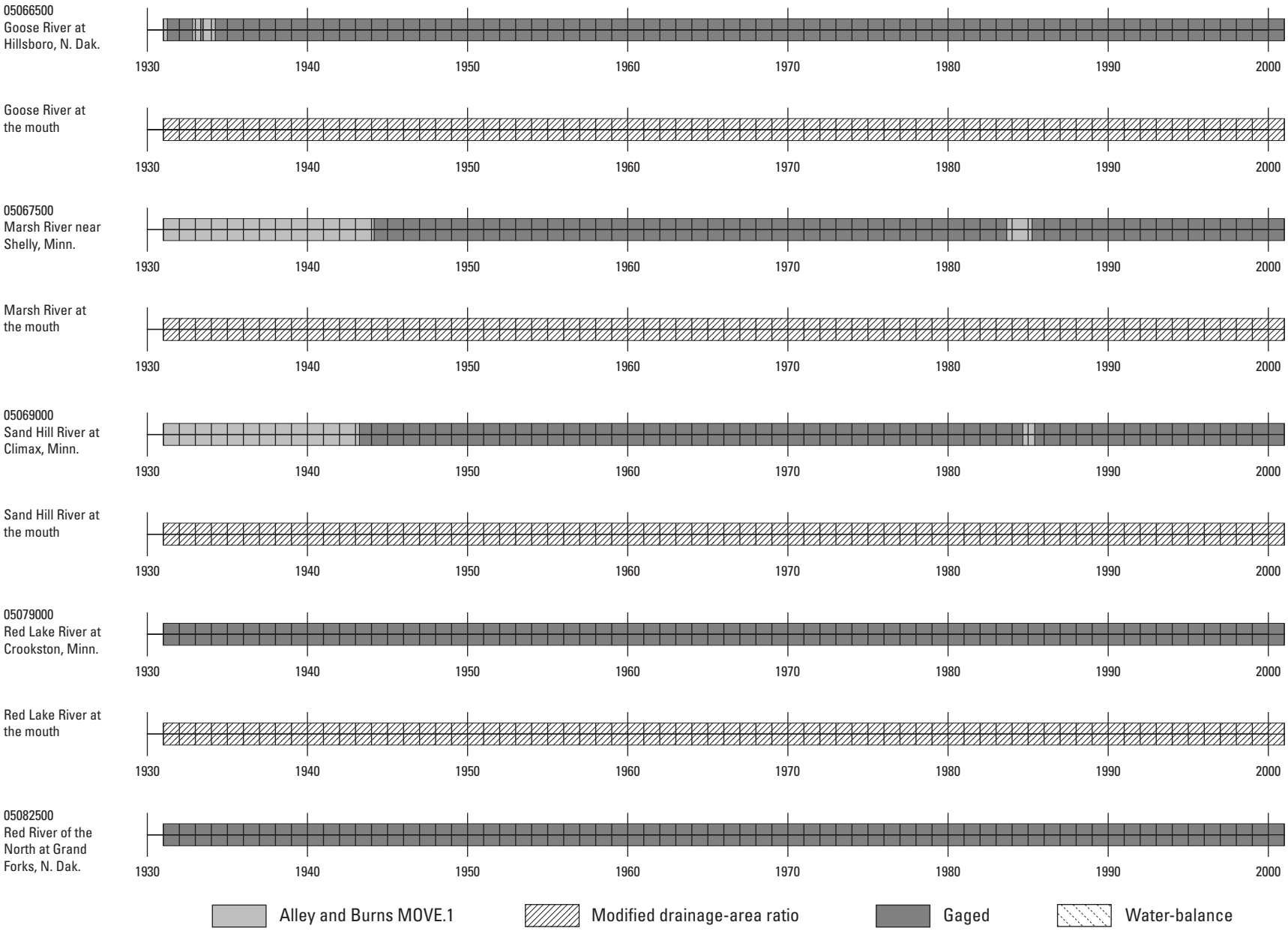

Figure 2. Methods used to compile and/or estimate historic monthly streamflow data--Continued.

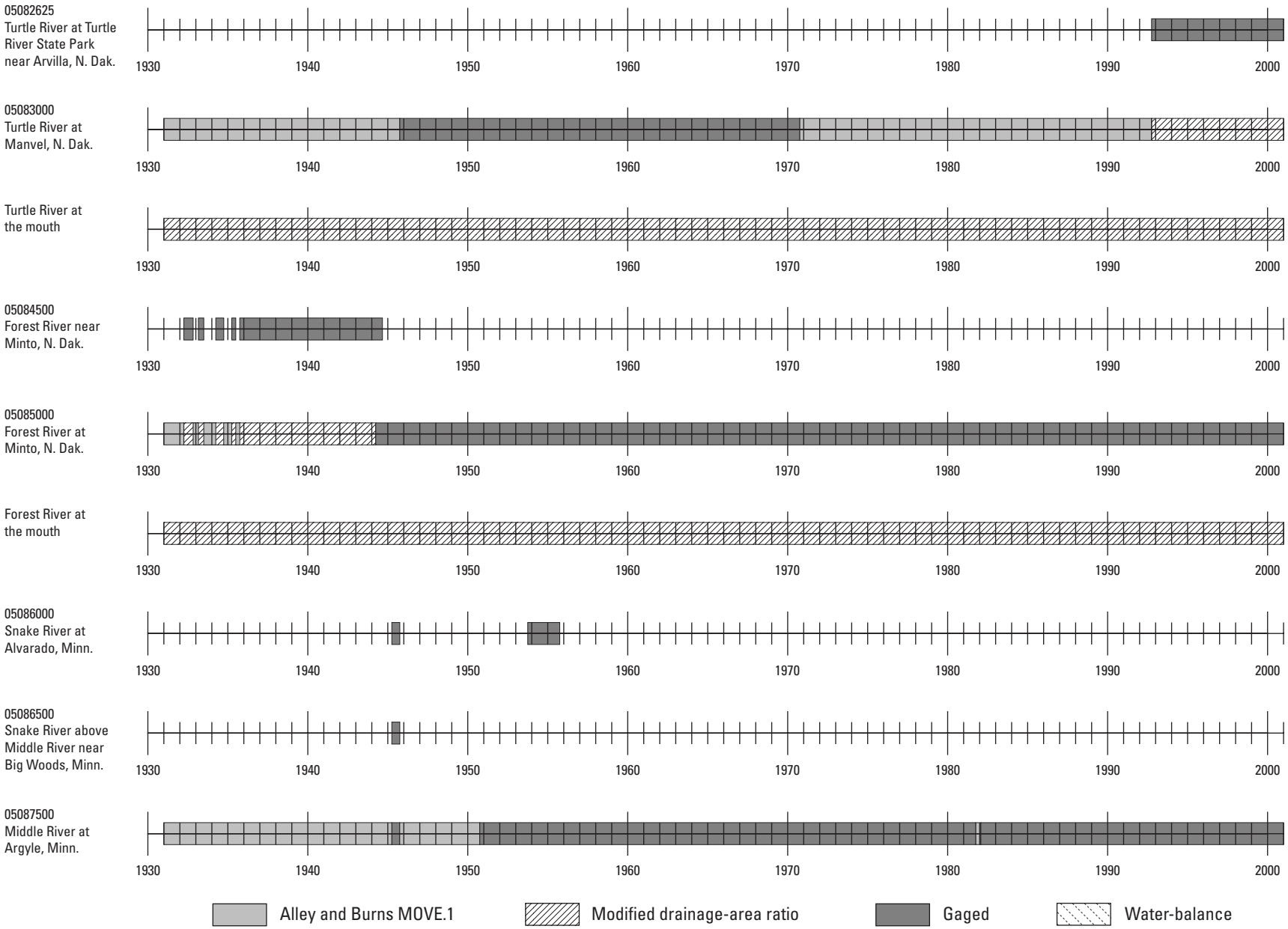

Figure 2. Methods used to compile and/or estimate historic monthly streamflow data--Continued.

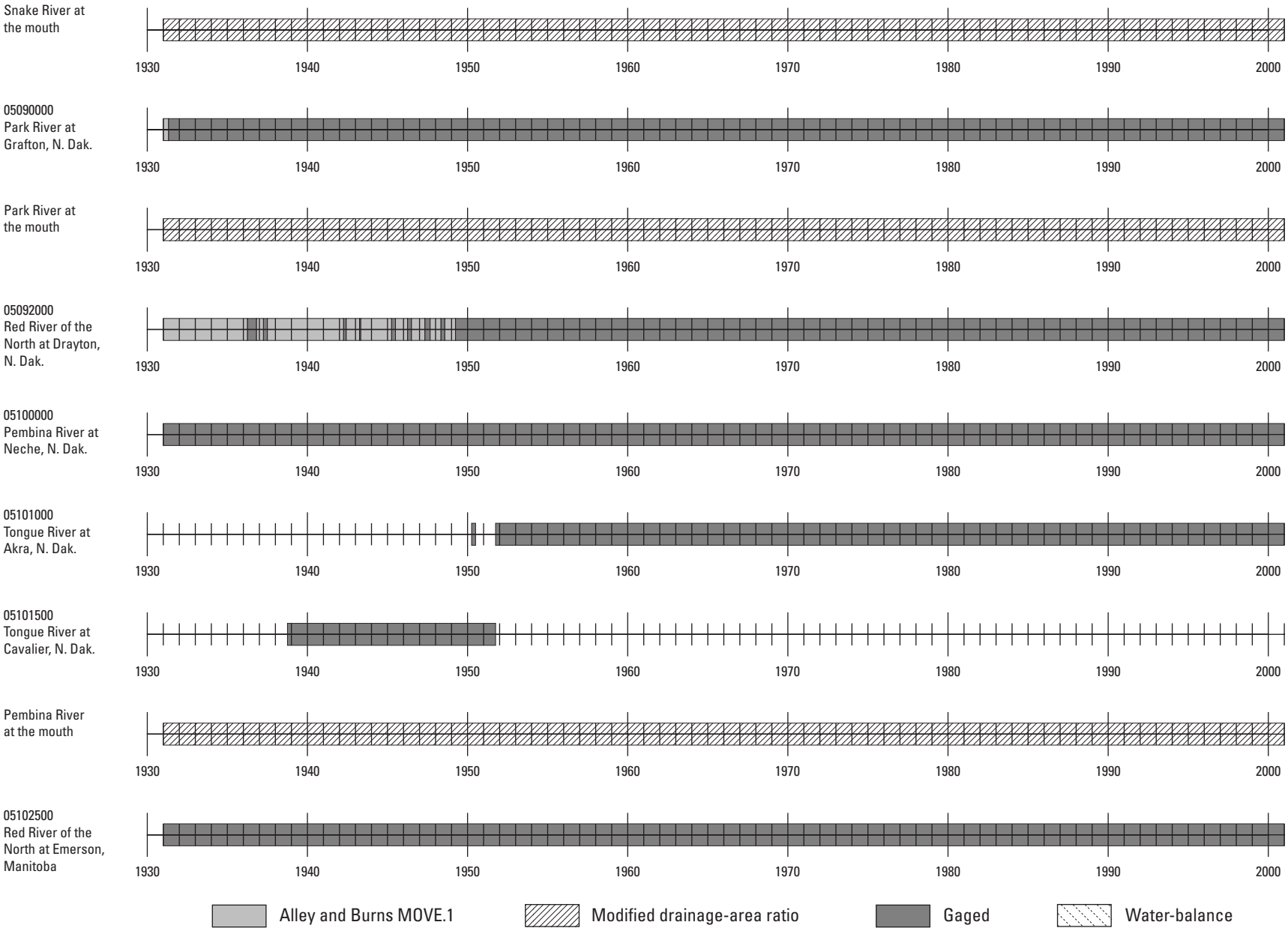

Figure 2. Methods used to compile and/or estimate historic monthly streamflow data--Continued.

Otter Tail River at the Mouth

Streamflow data have not been collected for the Otter Tail River at the mouth. The water-balance method was used to estimate historic streamflow for the Otter Tail River at the mouth by subtracting historic streamflow for the Bois de Sioux River at the mouth from historic streamflow for the Red River of the North at Wahpeton.

Bois de Sioux River above White Rock Dam

Streamflow data have not been collected for the Bois de Sioux River above White Rock Dam (inflows to Lake Traverse). Streamflow data that were estimated by the U.S. Army Corps of Engineers (Kenton E. Spading, written commun., 2000) for the design of White Rock Dam were used to estimate historic streamflow for the Bois de Sioux River above White Rock Dam for January 1931 through December 1941. The modified drainage-area ratio method was used to estimate historic streamflow for the Bois de Sioux River above White Rock Dam for January 1942 through December 2001. The Mustinka River above Wheaton was used as the base station, and 1,160 square miles/834 square miles was used as the drainage-area ratio.

Streamflow data for the Mustinka River above Wheaton are available for October 1915 through September 1924 and October 1930 through September 1958. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Mustinka River above Wheaton for October 1958 through December 2001. The Wild Rice River near Abercombie, the Sheyenne River at West Fargo, and the Buffalo River near Dilworth were selected as potential base stations. The Mustinka River above Wheaton and the base stations had up to 243 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 3.

Bois de Sioux River at the Mouth

Streamflow data have not been collected for the Bois de Sioux River at the mouth. Historic streamflow for the Bois de Sioux River at the mouth was estimated using the following equation:

$$Q_{h-bm} = [Q_{h-rw} - Q_{h-oo} - Q_{h-bw}] \left[\frac{A_{bm} - A_{bw}}{(A_{om} - A_{oo} + A_{bm} - A_{bw})}\right] + Q_{h-bw} \quad (6)$$

where

Q_{h-bm} is the estimated historic streamflow for the Bois de Sioux River at the mouth, in cubic feet per second;

Q_{h-rw} is the historic streamflow for the Red River of the North at Wahpeton, in cubic feet per second;

Q_{h-oo} is the historic streamflow for the Otter Tail River below Orwell Dam near Fergus Falls, in cubic feet per second;

Q_{h-bw} is the historic streamflow for the Bois de Sioux River near White Rock, in cubic feet per second;

A_{bm} is the contributing drainage area for the Bois de Sioux River at the mouth (1,965 square miles);

A_{bw} is the contributing drainage area for the Bois de Sioux River near White Rock (1,160 square miles);

A_{om} is the contributing drainage area for the Otter Tail River at the mouth (1,960 square miles); and

A_{oo} is the contributing drainage area for the Otter Tail River below Orwell Dam near Fergus Falls (1,740 square miles).

Table 3. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Mustinka River above Wheaton, Minnesota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Wild Rice River near Abercombie, N. Dak.	0.70	0.95	0.71	0.92	0.89	0.82	0.38	0.40	0.67	0.48	0.65	0.80	0.78
Sheyenne River at West Fargo, N. Dak.	0.26	0.68	0.43	0.56	0.53	0.67	0.51	0.37	0.39	0.66	0.75	0.30	0.67
Buffalo River near Dilworth, Minn.	0.63	0.31	0.56	0.81	0.80	0.83	0.61	0.35	0.32	0.45	0.55	0.39	0.70

Historic streamflow for the Otter Tail River below Orwell Dam near Fergus Falls and historic streamflow for the Bois de Sioux River near White Rock were subtracted from historic streamflow for the Red River of the North at Wahpeton. The difference then was multiplied by a drainage-area ratio to estimate that part of the streamflow that was attributable to the lower part of the Bois de Sioux River and that part of the streamflow then was added to the streamflow for the Bois de Sioux River near White Rock.

Streamflow data for the Bois de Sioux River near White Rock are available for October 1941 through December 2001. Streamflow data that were estimated by the U.S. Army Corps of Engineers (Kenton E. Spading, written commun., 2000) for the Bois de Sioux River near White Rock were used as the data for January 1931 through September 1941.

Streamflow data for the Bois de Sioux River near Fairmount are available for January 1931 through September 1944, and streamflow data for the Bois de Sioux River near Doran are available for October 1989 through December 2001. For those periods, the streamflows and drainage areas for those stations were used in equation 6 in place of the streamflow and drainage area for the Bois de Sioux River near White Rock. For months that had negative streamflows, historic streamflow for the Bois de Sioux River at the mouth was set equal to historic streamflow for the Bois de Sioux River near Fairmount or Doran.

Red River of the North at Wahpeton, North Dakota

Streamflow data for the Red River of the North at Wahpeton are available for May through October 1942 and March 1943 through December 2001. The modified drainage-area ratio method was used to estimate historic streamflow for the Red River of the North at Wahpeton for January 1931 through April 1942 and November 1942 through February 1943. The sum of the streamflows for the Otter Tail River below Pelican River near Fergus Falls and the Bois de Sioux River near Fairmount was used as the streamflow for the base station, and 4,010 square miles/1,810 plus 1,540 square miles was used as the drainage-area ratio.

Wild Rice River (North Dakota) at the Mouth

Streamflow data have not been collected for the Wild Rice River (North Dakota) at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Wild Rice River (North Dakota) at the mouth for January 1931 through December 2001. The Wild Rice River near Abercrombie was used as the base station, and 1,665 square miles/1,490 square miles was used as the drainage-area ratio.

Streamflow data for the Wild Rice River near Abercrombie are available for April 1932 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Wild Rice River near Abercrombie for January 1931 through March 1932. The Red River of the North at Fargo and the Sheyenne River at West Fargo were selected as potential base stations. The Wild Rice River near Abercrombie and the base stations had up to 645 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 4.

Red River of the North at Fargo, North Dakota

Streamflow data for the Red River of the North at Fargo are available for May 1901 through December 2001. Therefore, no streamflow was estimated for this site.

Sheyenne River above Harvey, North Dakota

Streamflow data for the Sheyenne River above Harvey are available for October 1955 through December 2001. The modified drainage-area ratio method was used to estimate historic streamflow for the Sheyenne River above Harvey for January 1931 through September 1955. For January 1931 through July 1938, the Sheyenne River at West Fargo was used

Table 4. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Wild Rice River near Abercrombie, North Dakota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Red River of the North at Fargo, N. Dak.	0.54	0.29	0.67	0.93	0.86	0.72	0.73	0.55	0.50	0.61	0.59	0.54	0.70
Sheyenne River at West Fargo, N. Dak.	0.45	0.45	0.54	0.80	0.66	0.54	0.71	0.59	0.56	0.57	0.46	0.44	0.70

as the base station, and 154 square miles/3,090 square miles was used as the drainage-area ratio. For August 1938 through September 1945, the Sheyenne River at Valley City was used as the base station, and 154 square miles/2,110 square miles was used as the drainage-area ratio. For October 1945 through September 1955, the Sheyenne River near Harvey was used as the base station, and 154 square miles/174 square miles was used as the drainage-area ratio.

Sheyenne River near Warwick, North Dakota

Streamflow data for the Sheyenne River near Warwick are available for October 1949 through December 2001. The modified drainage-area ratio method was used to estimate historic streamflow for the Sheyenne River near Warwick for January 1931 through September 1949. For January 1931 through September 1944, the Sheyenne River at West Fargo was used as the base station, and 760 square miles/3,090 square miles was used as the drainage-area ratio. For October 1944 through September 1949, the Sheyenne River near Cooperstown was used as the base station, and 760 square miles/1,270 square miles was used as the drainage-area ratio.

Sheyenne River near Cooperstown, North Dakota

Streamflow data for the Sheyenne River near Cooperstown are available for October 1944 through December 2001. The modified drainage-area ratio method was used to estimate historic streamflow for the Sheyenne River near Cooperstown for January 1931 through September 1944. For January 1931 through March 1938 and July 1938, the Sheyenne River at West Fargo was used as the base station, and 1,270 square miles/3,090 square miles was used as the drainage-area ratio. For April through June 1938 and August 1938 through September 1944, the Sheyenne River at Valley City was used as the base station, and 1,270 square miles/2,110 square miles was used as the drainage-area ratio.

Baldhill Creek at the Mouth

Streamflow data have not been collected for Baldhill Creek at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for Baldhill Creek at the mouth for January 1931 through December 2001. Baldhill Creek near Dazey was used as the base station, and 397 square miles/351 square miles was used as the drainage-area ratio.

Streamflow data for Baldhill Creek near Dazey are available for April 1956 through December 2001. The modified drainage-area ratio method was used to estimate historic streamflow for Baldhill Creek near Dazey for January 1931 through July 1949. For January 1931 through March 1938 and July 1938, the Sheyenne River at West Fargo was used as the base station, and 351 square miles/3,090 square miles was used as the drainage-area ratio. For April through June 1938 and August 1938 through September 1944, the Sheyenne River at Valley City was used as the base station, and 351 square miles/2,110 square miles was used as the drainage-area ratio. For October 1944 through July 1949, the Sheyenne River at Valley City and the Sheyenne River near Cooperstown were used as the base stations, and 351 square miles/2,110 square miles and 351 square miles/1,270 square miles were used as the respective drainage-area ratios. For those months, the streamflows estimated from the Sheyenne River at Valley City and the Sheyenne River near Cooperstown were averaged to estimate the historic streamflow for Baldhill Creek near Dazey.

Because streamflow in the Sheyenne River downstream from Baldhill Dam has been regulated since July 30, 1949, when water storage in Lake Ashtabula was begun, the Alley and Burns MOVE.1 method was used to estimate historic streamflow for Baldhill Creek near Dazey for August 1949 through March 1956. The Sheyenne River near Cooperstown was used as the base station. Baldhill Creek near Dazey and the base station had up to 514 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 5.

Table 5. Cyclic (monthly) and noncyclic (annual) correlation coefficients between Baldhill Creek near Dazey, North Dakota, and the base station.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Sheyenne River near Cooperstown, N. Dak.	0.80	0.80	0.83	0.94	0.89	0.81	0.76	0.65	0.72	0.79	0.73	0.82	0.85

Sheyenne River below Baldhill Dam, North Dakota

Streamflow data for the Sheyenne River below Baldhill Dam are available for October 1949, shortly after the completion of Baldhill Dam, through December 2001. The modified drainage-area ratio method was used to estimate historic streamflow for the Sheyenne River below Baldhill Dam for January 1931 through September 1949. For January 1931 through March 1938 and July 1938, the Sheyenne River at West Fargo was used as the base station, and 1,910 square miles/3,090 square miles was used as the drainage-area ratio. For April through June 1938 and August 1938 through September 1949, the Sheyenne River at Valley City was used as the base station, and 1,910 square miles/2,110 square miles was used as the drainage-area ratio.

Sheyenne River at Valley City, North Dakota

Streamflow data for the Sheyenne River at Valley City are available for April 1919, April through June 1938, August 1938 through September 1975, March through September 1995, and March through September 1996. The modified drainage-area ratio method was used to estimate historic streamflow for the Sheyenne River at Valley City for January 1931 through March 1938, July 1938, October 1975 through February 1995, October 1995 through February 1996, and October 1996 through December 2001. For January 1931 through March 1938 and July 1938, the Sheyenne River at West Fargo was used as the base station, and 2,110 square miles/3,090 square miles was used as the drainage-area ratio. For October 1975 through February 1995, October 1995 through February 1996, and October 1996 through December 2001, the Sheyenne River below Baldhill Dam was used as the base station, and 2,110 square miles/1,910 square miles was used as the drainage-area ratio.

Sheyenne River at Lisbon, North Dakota

Streamflow data for the Sheyenne River at Lisbon are available for October 1956 through December 2001. The modified drainage-area ratio method was used to estimate historic streamflow for the Sheyenne River at Lisbon for January 1931 through September 1956. For January 1931 through March 1938, and July 1938, the Sheyenne River at West Fargo was used as the base station, and 2,490 square miles/3,090 square miles was used as the drainage-area ratio. For April through June 1938 and August 1938 through September 1956, the Sheyenne River at Valley City was used as the base station, and 2,490 square miles/2,110 square miles was used as the drainage-area ratio.

Sheyenne River near Kindred, North Dakota

Streamflow data for the Sheyenne River near Kindred are available for August 1949 through December 2001. The modified drainage-area ratio method was used to estimate historic streamflow for the Sheyenne River near Kindred for January 1931 through July 1949. The Sheyenne River at West Fargo was used as the base station, and 3,020 square miles/3,090 square miles was used as the drainage-area ratio.

Sheyenne River at West Fargo, North Dakota

Streamflow data for the Sheyenne River at West Fargo are available for April 1903 through October 1905, March through August 1919, and September 1929 through December 2001. Therefore, no streamflow was estimated for this site.

Maple River at the Mouth

Streamflow data have not been collected for the Maple River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Maple River at the mouth for January 1931 through December 2001. The Maple River near Mapleton was used as the base station, and 1,489 square miles/1,379 square miles was used as the drainage-area ratio.

Streamflow data for the Maple River near Mapleton are available for April 1944 through September 1975 and March 1995 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Maple River near Mapleton for January 1931 through March 1944 and October 1975 through February 1995. The Sheyenne River at West Fargo and the Goose River at Hillsboro were selected as potential base stations. The Maple River near Mapleton and the base stations had up to 386 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 6.

Rush River at the Mouth

Streamflow data have not been collected for the Rush River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Rush River at the mouth for January 1931 through December 2001. The Rush River at Amenia was used as the base station, and 188 square miles/116 square miles was used as the drainage-area ratio.

Streamflow data for the Rush River at Amenia are available for August 1946 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Rush River at Amenia for January 1931 through July 1946. The Sheyenne River at West Fargo, the

Table 6. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Maple River near Mapleton, North Dakota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Sheyenne River at West Fargo, N. Dak.	0.72	0.54	0.71	0.90	0.78	0.64	0.85	0.59	0.66	0.77	0.81	0.78	0.80
Goose River at Hillsboro, N. Dak.	0.55	0.60	0.80	0.91	0.90	0.60	0.62	0.47	0.67	0.79	0.79	0.69	0.81

Buffalo River near Dilworth, and the Goose River at Hillsboro were selected as potential base stations. The Rush River at Amenia and the base stations had up to 417 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 7.

Sheyenne River at the Mouth

Streamflow data have not been collected for the Sheyenne River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Sheyenne River at the mouth for January 1931 through December 2001. The sum of the streamflows for the Sheyenne River at West Fargo, the Maple River at the mouth, and the Rush River at the mouth was used as the streamflow for the base station, and 5,000 square miles/4,767 square miles was used as the drainage-area ratio.

Buffalo River at the Mouth

Streamflow data have not been collected for the Buffalo River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Buffalo River at the mouth for January 1931 through December 2001. The Buffalo River near Dilworth was used as the base station, and 1,190 square miles/975 square miles was used as the drainage-area ratio.

Streamflow data for the Buffalo River near Dilworth are available for April 1931 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Buffalo River near Dilworth for January through March 1931. The Sheyenne River at West Fargo was used as the base station. The Buffalo River near Dilworth and the base station had up to 815 months of concurrent nonzero streamflow data. The cyclic equation was used to estimate historic streamflow for January through February 1931, and the noncyclic equation was used to estimate historic streamflow for March 1931. The cyclic correlation coefficients were 0.79 for January and 0.76 for February. The noncyclic correlation coefficient was 0.82.

Elm River at the Mouth

Streamflow data have not been collected for the Elm River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Elm River at the mouth for January 1931 through December 2001. The Elm River near Kelso was used as the base station, and 505 square miles/194 square miles was used as the drainage-area ratio.

Streamflow data for the Elm River near Kelso are available for October 1955 through September 1963 and October 1980 through August 1986 (incomplete winter data for October 1981 through February 1986). The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Elm River near Kelso for January 1931 through September 1955, October 1963 through September 1980, and September 1986 through December 2001 and to estimate the missing winter data for October 1981 through February 1986. The Sheyenne River at West Fargo, the Buffalo River near Dilworth, and the Goose River at Hillsboro were selected as potential base stations. The Elm River near Kelso and the base stations had up to 59 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 8.

Wild Rice River (Minnesota) at the Mouth

Streamflow data have not been collected for the Wild Rice River (Minnesota) at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Wild Rice River at the mouth for January 1931 through December 2001. The Wild Rice River at Hendrum was used as the base station, and 1,650 square miles/1,560 square miles was used as the drainage-area ratio.

Table 7. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Rush River at Amenia, North Dakota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Sheyenne River at West Fargo, N. Dak.	0.56	0.56	0.65	0.85	0.75	0.59	0.42	0.71	0.49	0.67	0.62	0.78	0.71
Buffalo River near Dilworth, Minn.	0.67	0.64	0.51	0.84	0.75	0.66	0.59	0.49	0.36	0.65	0.68	0.75	0.73
Goose River at Hillsboro, N. Dak.	0.38	0.64	0.63	0.93	0.86	0.58	0.55	0.38	0.27	0.68	0.62	0.75	0.73

Table 8. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Elm River near Kelso, North Dakota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Sheyenne River at West Fargo, N. Dak.	([1])	([1])	0.66	0.83	0.80	0.50	0.95	([1])	([1])	([1])	([1])	([1])	0.70
Buffalo River near Dilworth, Minn.	([1])	([1])	0.74	0.66	0.11	0.12	0.94	([1])	([1])	([1])	([1])	([1])	0.56
Goose River at Hillsboro, N. Dak.	([1])	([1])	0.97	0.96	0.86	0.81	0.85	([1])	([1])	([1])	([1])	([1])	0.87

[1]Less than five concurrent nonzero monthly streamflow values.

Streamflow data for the Wild Rice River at Hendrum are available for April 1944 through September 1984 and May 1985 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Wild Rice River at Hendrum for January 1931 through March 1944 and October 1984 through April 1985. The Sheyenne River at West Fargo and the Buffalo River near Dilworth were selected as potential base stations. The Wild Rice River at Hendrum and the base stations had up to 659 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 9.

Red River of the North at Halstad, Minnesota

Streamflow data for the Red River of the North at Halstad are available for April 1936 through June 1937, April 1942 through September 1960, and June 1961 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Red River of the North at Halstad for January 1931 through March 1936, July 1937 through March 1942, and October 1960 through May 1961. The Red River of the North at Fargo, the Red River of the North at Grand Forks, and the Red River of the North at Emerson were selected as potential base stations. The Red River of the North at Halstad and the base stations had up to 558 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 10.

Goose River at the Mouth

Streamflow data have not been collected for the Goose River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Goose River at the mouth for January 1931 through December 2001. The Goose River at Hillsboro was used as the base station, and 1,170 square miles/1,093 square miles was used as the drainage-area ratio.

Table 9. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Wild Rice River at Hendrum, Minnesota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Sheyenne River at West Fargo, N. Dak.	0.68	0.71	0.73	0.69	0.54	0.58	0.66	0.59	0.57	0.60	0.60	0.65	0.76
Buffalo River near Dilworth, Minn.	0.68	0.69	0.82	0.92	0.91	0.78	0.79	0.79	0.74	0.79	0.83	0.79	0.86

Table 10. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Red River of the North at Halstad, Minnesota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Red River of the North at Fargo, N. Dak.	0.97	0.97	0.43	0.64	0.63	0.71	0.73	0.91	0.89	0.88	0.91	0.94	0.78
Red River of the North at Grand Forks, N. Dak.	0.88	0.86	0.41	0.65	0.56	0.70	0.66	0.90	0.86	0.93	0.91	0.91	0.78
Red River of the North at Emerson, Man.	0.89	0.86	0.38	0.60	0.50	0.64	0.64	0.88	0.85	0.93	0.91	0.92	0.77

Streamflow data for the Goose River at Hillsboro are available for April 1931 through October 1932, April through June 1933, and April 1934 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Goose River at Hillsboro for January through March 1931, November 1932 through March 1933, and July 1933 through March 1934. The Sheyenne River at West Fargo was used as the base station. The Goose River at Hillsboro and the base station had up to 772 months of concurrent nonzero streamflow data. The cyclic correlation coefficients were 0.80 for January, 0.72 for February, 0.75 for March, and 0.79 for December. The noncyclic correlation coefficient was 0.86.

Marsh River at the Mouth

Streamflow data have not been collected for the Marsh River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Marsh River at the mouth for January 1931 through December 2001. The Marsh River near Shelly was used as the base station, and 299 square miles/220 square miles was used as the drainage-area ratio.

Streamflow data for the Marsh River near Shelly are available for March 1944 through September 1983 and April 1985 through October 2001 (incomplete winter data for November 1989 through December 2001). The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Marsh River near Shelly for January 1931 through February 1944 and October 1983 through March 1985 and to estimate the missing winter data for November 1989 through December 2001. The Sheyenne River at West Fargo, the Buffalo River near Dilworth, the Goose River at Hillsboro, and the Park River at Grafton were selected as potential base stations. The Marsh River near Shelly and the base stations had up to 502 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 11.

Sand Hill River at the Mouth

Streamflow data have not been collected for the Sand Hill River at the mouth. The modified drainage-area ratio method

Table 11. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Marsh River near Shelly, Minnesota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Sheyenne River at West Fargo, N. Dak.	-0.26	-0.57	0.63	0.62	0.55	0.49	0.53	0.25	0.16	0.24	0.26	-0.04	0.58
Buffalo River near Dilworth, Minn.	0.77	0.35	0.76	0.84	0.69	0.46	0.55	0.46	0.29	0.33	0.22	-0.08	0.66
Goose River at Hillsboro, N. Dak.	-0.72	0.17	0.78	0.53	0.54	0.36	0.49	0.42	0.22	0.29	0.39	0.10	0.62
Park River at Grafton, N. Dak.	-0.21	-0.31	0.50	0.53	0.46	0.19	0.13	0.31	0.23	0.36	0.26	-0.07	0.54

was used to estimate historic streamflow for the Sand Hill River at the mouth for January 1931 through December 2001. The Sand Hill River at Climax was used as the base station, and 424 square miles/420 square miles was used as the drainage-area ratio.

Streamflow data for the Sand Hill River at Climax are available for April 1943 through September 1984 and June 1985 through December 2001 (incomplete winter data for December 1944 through February 1946). The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Sand Hill River at Climax for January 1931 through March 1943 and October 1984 through May 1985 and to estimate the missing winter data for December 1944 through February 1946. The Sheyenne River at West Fargo, the Buffalo River near Dilworth, the Goose River at Hillsboro, and the Park River at Grafton were selected as potential base stations. The Sand Hill River at Climax and the base stations had up to 661 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 12.

Red Lake River at the Mouth

Streamflow data have not been collected for the Red Lake River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Red Lake River at the mouth for January 1931 through December 2001. The Red Lake River at Crookston was used as the base station, and 5,750 square miles/5,270 square miles was used as the drainage-area ratio.

Red River of the North at Grand Forks, North Dakota

Streamflow data for the Red River of the North at Grand Forks are available for April 1882 through December 2001. Therefore, no streamflow was estimated for this site.

Turtle River at the Mouth

Streamflow data have not been collected for the Turtle River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Turtle River at the mouth for January 1931 through December 2001. The Turtle River at Manvel was used as the base station, and 635 square miles/556 square miles was used as the drainage-area ratio.

Streamflow data for the Turtle River at Manvel are available for October 1945 through September 1970. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Turtle River at Manvel for January 1931 through September 1945 and October 1970 through September 1992. The Goose River at Hillsboro, the Park River at Grafton, and the Pembina River at Neche were selected as potential base stations. The Turtle River at Manvel and the base stations had up to 291 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 13.

The modified drainage-area ratio method was used to estimate historic streamflow for the Turtle River at Manvel for October 1992 through December 2001. The Turtle River at Turtle River State Park near Arvilla was used as the base station, and 556 square miles/311 square miles was used as the drainage-area ratio.

Forest River at the Mouth

Streamflow data have not been collected for the Forest River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Forest River at the mouth for January 1931 through December 2001. The Forest River at Minto was used as the base station, and 913 square miles/620 square miles was used as the drainage-area ratio.

Table 12. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Sand Hill River at Climax, Minnesota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Sheyenne River at West Fargo, N. Dak.	0.67	0.60	0.76	0.75	0.73	0.57	0.69	0.72	0.65	0.65	0.66	0.72	0.81
Buffalo River near Dilworth, Minn.	0.71	0.83	0.85	0.86	0.83	0.54	0.63	0.64	0.63	0.77	0.78	0.80	0.86
Goose River at Hillsboro, N. Dak.	0.67	0.67	0.81	0.85	0.82	0.67	0.62	0.71	0.68	0.74	0.68	0.85	0.83
Park River at Grafton, N. Dak.	0.33	0.36	0.75	0.62	0.71	0.35	0.51	0.54	0.15	0.34	0.30	0.26	0.70

Table 13. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Turtle River at Manvel, North Dakota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Goose River at Hillsboro, N. Dak.	0.65	0.57	0.88	0.97	0.92	0.81	0.77	0.57	0.77	0.73	0.64	0.79	0.85
Park River at Grafton, N. Dak.	0.28	0.24	0.65	0.93	0.87	0.70	0.39	0.55	0.47	0.33	0.46	0.37	0.75
Pembina River at Neche, N. Dak.	0.48	0.17	0.37	0.81	0.64	0.45	0.21	0.55	0.56	0.39	0.41	0.31	0.71

Streamflow data for the Forest River at Minto are available for April 1944 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Forest River at Minto for January 1931 through March 1932, November 1932 through February 1933, July 1933 through March 1934, October 1934 through March 1935, and July through September 1935. The Goose River at Hillsboro, the Park River at Grafton, and the Pembina River at Neche were selected as potential base stations. The Forest River at Minto and the base stations had up to 646 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 14.

The modified drainage-area ratio method was used to estimate historic streamflow for the Forest River at Minto for April through October 1932, March through June 1933, April through September 1934, April through June 1935, and October 1935 through March 1944. The Forest River near Minto was used as the base station, and 620 square miles/486 square miles was used as the drainage-area ratio.

Snake River at the Mouth

Streamflow data have not been collected for the Snake River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Snake River at the mouth for January 1931 through December 2001. For January 1931 through March 1945, October 1945 through September 1953, and October 1956 through December 2001, the Middle River at Argyle was used as the base station, and 950 square miles/255 square miles was used as the drainage-area ratio. For April through September 1945, the sum of the streamflows for the Middle River at Argyle and the Snake River above Middle River near Big Woods was used as the streamflow for the base station, and 950 square miles/736 square miles was used as the drainage-area ratio. For October 1953 through September 1956, the sum of the streamflows for the Middle River at Argyle and the Snake River at Alvarado was used as the streamflow for the base station, and 950 square miles/564 square miles was used as the drainage-area ratio.

Table 14. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Forest River at Minto, North Dakota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Goose River at Hillsboro, N. Dak.	0.51	0.45	0.88	0.90	0.88	0.63	0.71	0.47	0.52	0.56	0.72	0.73	0.77
Park River at Grafton, N. Dak.	0.56	0.46	0.82	0.94	0.88	0.75	0.79	0.69	0.53	0.55	0.42	0.40	0.78
Pembina River at Neche, N. Dak.	0.63	0.61	0.59	0.78	0.76	0.51	0.61	0.64	0.53	0.41	0.65	0.73	0.77

Streamflow data for the Middle River at Argyle are available for April through September 1945, October 1950 through September 1981, and March 1982 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Middle River at Argyle for January 1931 through March 1945, October 1945 through September 1950, and October 1981 through February 1982. The Goose River at Hillsboro, the Sand Hill River at Climax, the Park River at Grafton, and the Pembina River at Neche, were selected as potential base stations. The Middle River at Argyle and the base stations had up to 537 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 15.

Park River at the Mouth

Streamflow data have not been collected for the Park River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Park River at the mouth for January 1931 through December 2001. The Park River at Grafton was used as the base station, and 1,010 square miles/695 square miles was used as the drainage-area ratio.

Streamflow data for the Park River at Grafton are available for May 1931 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for the Park River at Grafton for January through April 1931. The Sheyenne River at West Fargo and the Pembina River at Neche were selected as potential base stations. The Park River at Grafton and the base stations had up to 721 months of concurrent nonzero streamflow data. The Sheyenne River at West Fargo was used as the base station for January and February 1931, and the Pembina River at Neche was used as the base station for March and April 1931. The noncyclic equation was used to estimate streamflow for January, and the cyclic equation was used to estimate streamflow for February, March, and April. The noncyclic correlation coefficient was 0.74. The cyclic correlation coefficients were 0.45 for February, 0.75 for March, and 0.85 for April.

Red River of the North at Drayton, North Dakota

Streamflow data for the Red River of the North at Drayton are available for April through October 1936, April through June 1937, April through May 1942, April 1943, April through June 1945, April through June 1946, May through August 1947, May through July 1948, and April 1949 through December 2001. The Alley and Burns MOVE.1 method was used to estimate historic streamflow for January 1931 through March 1936, November 1936 through March 1937, July 1937 through March 1942, June 1942 through March 1943, May 1943 through March 1945, July 1945 through March 1946, July 1946 through April 1947, September 1947 through April 1948, and August 1948 through March 1949. The Red River of the North at Grand Forks and the Red River of the North at Emerson were selected as potential base stations. The Red River of the North at Drayton and the base stations had up to 630 months of concurrent nonzero streamflow data. The cyclic and noncyclic correlation coefficients are given in table 16.

Pembina River at the Mouth

Streamflow data have not been collected for the Pembina River at the mouth. The modified drainage-area ratio method was used to estimate historic streamflow for the Pembina River at the mouth for January 1931 through December 2001. For January 1931 through September 1938 and for 98 months during October 1982 through December 2001, the Pembina River at Neche was used as the base station, and 3,950 square miles/3,410 square miles was used as the drainage-area ratio. For October 1938 through September 1982 and for 133 months during October 1982 through December 2001, the sum of the streamflows for the Pembina River at Neche and the Tongue River at the mouth was used as the streamflow for the base

Table 15. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Middle River at Argyle, Minnesota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Goose River at Hillsboro, N. Dak.	0.42	0.32	0.68	0.77	0.71	0.66	0.45	0.44	0.46	0.55	0.59	0.51	0.71
Sand Hill River at Climax, Minn.	0.45	0.45	0.72	0.80	0.79	0.72	0.60	0.53	0.48	0.54	0.54	0.52	0.75
Park River at Grafton, N. Dak.	0.22	0.46	0.75	0.75	0.80	0.49	0.62	0.48	0.48	0.43	0.40	0.16	0.70
Pembina River at Neche, N. Dak.	0.56	0.42	0.58	0.66	0.74	0.44	0.43	0.53	0.52	0.39	0.52	0.48	0.68

Table 16. Cyclic (monthly) and noncyclic (annual) correlation coefficients between the Red River of the North at Drayton, North Dakota, and the base stations.

Base station	Correlation coefficient												
	Cyclic												Noncyclic
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Red River of the North at Grand Forks, N. Dak.	1.00	1.00	0.99	0.98	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99
Red River of the North at Emerson, Man.	1.00	0.99	0.99	0.98	0.99	0.99	0.99	0.99	0.98	0.99	0.99	0.99	0.99

station, and 3,950 square miles/3,889 square miles was used as the drainage-area ratio. The Tongue River at Akra and the Tongue River at Cavalier were used as the base stations to estimate historic streamflow for the Tongue River at the mouth for October 1938 through September 1982 and for the 133 months during October 1982 through December 2001. When streamflow data were available for both the Tongue River at Akra and the Tongue River at Cavalier, the Tongue River at Akra was used as the base station, and 479 square miles/160 square miles was used as the drainage-area ratio.

Red River of the North at Emerson, Manitoba

Streamflow data for the Red River of the North at Emerson are available for May 1912 through December 2001. Therefore, no streamflow was estimated for this site.

Estimated Naturalized Monthly Streamflow

Estimated naturalized monthly streamflow data for the 35 sites for which data were compiled and/or estimated for this study are given in supplement 3. Naturalized streamflow, as used in this report, is the streamflow that would have occurred if the hydrologic effects of Orwell Dam, Reservation Dam, White Rock Dam, Baldhill Dam, surface-water withdrawals, and return flows were eliminated. The hydrologic effects of small ponds and reservoirs constructed during the data-development period (January 1931 through December 2001) were not eliminated.

Surface-water withdrawals include those for irrigation, industrial, and municipal use. Estimated and reported surface-water withdrawals for 1931 through 1978 for river reaches or tributaries in the Red River of the North Basin were obtained from Emerson and Dressler (2002), and estimated and reported surface-water withdrawals and return flows for 1979 through 2001 were obtained from Macek-Rowland and others (2004). The surface-water withdrawals and return flows are discussed in detail by Macek-Rowland and others (2004).

Emerson and Dressler (2002) and Macek-Rowland and others (2004) obtained surface-water withdrawal and return flow data from several sources, including the North Dakota State Water Commission (Craig Odenbach, written commun.,

1986; Chris Bader, written commun., 2001), the Minnesota Department of Natural Resources (Gil Young, written commun., 1987; Sean Hunt, written commun., 2001), the North Dakota Department of Health, and the Minnesota Pollution Control Agency. The North Dakota State Water Commission has recorded surface-water withdrawals reported by water users since 1965. Surface-water withdrawals reported for 1976-2001 are considered by the North Dakota State Water Commission to be the most reliable. The Minnesota Department of Natural Resources has data for 1978-2001 for surface-water withdrawals upstream from Fargo and for 1981-2001 for surface-water withdrawals downstream from Fargo.

Selected Sites on Tributaries to the Red River of the North and on the Red River of the North

Naturalized streamflow for 19 sites on tributaries to the Red River of the North was estimated by adding surface-water withdrawals to and subtracting return flows from gaged and estimated historic streamflow. The following equation was used:

$$Q_{n-sta} = Q_{h-sta} + Q_{w-sta} - Q_{r-sta} \quad (7)$$

where

Q_{n-sta} is the estimated naturalized streamflow for the site of interest, in cubic feet per second;

Q_{h-sta} is the gaged and estimated historic streamflow for the site of interest, in cubic feet per second;

Q_{w-sta} is the total of all surface-water withdrawals upstream from the site of interest, in cubic feet per second; and

Q_{r-sta} is the total of all return flows upstream from the site of interest, in cubic feet per second.

For example, naturalized streamflow for the Otter Tail River above Orwell Dam was estimated as follows:

$$Q_{n-oo} = Q_{h-oo} + Q_{w-oo} - Q_{r-oo} \quad (8)$$

where

Q_{n-oo} is the estimated naturalized streamflow for the Otter Tail River above Orwell Dam, in cubic feet per second;

Q_{h-oo} is the gaged and estimated historic streamflow for the Otter Tail River above Orwell Dam, in cubic feet per second;

Q_{w-oo} is the total of all surface-water withdrawals upstream from the Otter Tail River above Orwell Dam, in cubic feet per second; and

Q_{r-oo} is the total of all return flows upstream from the Otter Tail River above Orwell Dam, in cubic feet per second.

Equation 7 was used to estimate naturalized streamflow for 19 sites: Otter Tail River above Orwell Dam, Bois de Sioux River above White Rock Dam, Wild Rice River (North Dakota) at the mouth, Sheyenne River above Harvey, Baldhill Creek at the mouth, Maple River at the mouth, Rush River at the mouth, Buffalo River at the mouth, Elm River at the mouth, Wild Rice River (Minnesota) at the mouth, Goose River at the mouth, Marsh River at the mouth, Sand Hill River at the mouth, Red Lake River at the mouth, Turtle River at the mouth, Forest River at the mouth, Snake River at the mouth, Park River at the mouth, and Pembina River at the mouth.

Naturalized streamflow for 13 sites was estimated by adding the difference between the naturalized and the gaged and estimated historic streamflow for the site immediately upstream from the site of interest to the gaged and estimated historic streamflow for the site of interest, and then adding the surface-water withdrawals between the site of interest and the site immediately upstream and subtracting the return flows between the site of interest and the site immediately upstream, and then adding the difference between the naturalized and the gaged and estimated historic streamflow for the tributary inflow between the site of interest and the site immediately upstream. The following equation was used:

$$Q_{n-sta} = Q_{h-sta} + (Q_{n-stau} - Q_{h-stau}) + Q_w - Q_r + (Q_{n-t} - Q_{h-t}) \quad (9)$$

where

Q_{n-sta} is the estimated naturalized streamflow for the site of interest, in cubic feet per second;

Q_{h-sta} is the gaged and estimated historic streamflow for the site of interest, in cubic feet per second;

Q_{n-stau} is the estimated naturalized streamflow for the site immediately upstream from the site of interest, in cubic feet per second;

Q_{h-stau} is the gaged and estimated historic streamflow for the site immediately upstream from the site of interest, in cubic feet per second;

Q_w is the total of all surface-water withdrawals between the site of interest and the site immediately upstream, in cubic feet per second;

Q_r is the total of all return flows between the site of interest and the site immediately upstream, in cubic feet per second;

Q_{n-t} is the estimated naturalized streamflow for the tributary inflow between the site of interest and the site immediately upstream, in cubic feet per second; and

Q_{h-t} is the gaged and estimated historic streamflow for the tributary inflow between the site of interest and the site immediately upstream, in cubic feet per second.

For example, naturalized streamflow for the Otter Tail River at the mouth was estimated as follows:

$$Q_{n-om} = Q_{h-om} + Q_{n-oao} - Q_{h-oao} + Q_{w-om} - Q_{r-om} \quad (10)$$

where

Q_{n-om} is the estimated naturalized streamflow for the Otter Tail River at the mouth, in cubic feet per second;

Q_{h-om} is the estimated historic streamflow for the Otter Tail River at the mouth, in cubic feet per second;

Q_{n-oao} is the estimated naturalized streamflow for the Otter Tail River above Orwell Dam, in cubic feet per second;

Q_{h-oao} is the gaged and estimated historic streamflow for the Otter Tail River above Orwell Dam, in cubic feet per second;

Q_{w-om} is the total of all surface-water withdrawals between the Otter Tail River at the mouth and the Otter Tail River above Orwell Dam, in cubic feet per second; and

Q_{r-om} is the total of all return flows between the Otter Tail River at the mouth and the Otter Tail River above Orwell Dam, in cubic feet per second.

Equation 9 was used to estimate naturalized streamflow for 13 sites: Otter Tail River at the mouth, Red River of the North at Fargo, Sheyenne River near Warwick, Sheyenne River near Cooperstown, Sheyenne River at Valley City, Sheyenne River at Lisbon, Sheyenne River near Kindred, Sheyenne River at West Fargo, Sheyenne River at the mouth, Red River of the North at Halstad, Red River of the North at Grand Forks, Red River of the North at Drayton, and Red River of the North at Emerson.

Bois de Sioux River at the Mouth

Naturalized streamflow for the Bois de Sioux River at the mouth for January 1931 through December 1941 was estimated by adding the estimated historic streamflow for the Bois de Sioux River at the mouth to the surface-water withdrawals upstream from that site and then subtracting the return flows upstream from the site. Naturalized streamflow for January 1942 through December 1997, when Reservation and White Rock Dams were in place, was estimated by subtracting the naturalized streamflow for the Otter Tail River at the mouth from the naturalized streamflow for the Red River of the North at Wahpeton. Naturalized streamflow for January 1998 through December 2001 was estimated by adding the estimated historic streamflow for the Bois de Sioux River at the mouth to the naturalized streamflow for the Bois de Sioux River near White Rock, then subtracting the gaged and estimated historic streamflow for the Bois de Sioux River near White Rock, then adding the surface-water withdrawals between the Bois de Sioux River at the mouth and the Bois de Sioux River near White Rock, and then subtracting the return flows between the Bois de Sioux River at the mouth and the Bois de Sioux River near White Rock.

Naturalized streamflow for the Bois de Sioux River near White Rock for January 1931 through December 1997 was estimated by adding the difference between the naturalized streamflow and the estimated historic streamflow for the Bois de Sioux River at the mouth to the gaged and estimated historic streamflow for the Bois de Sioux River near White Rock, then subtracting the surface-water withdrawals between the Bois de Sioux River at the mouth and the Bois de Sioux River near White Rock, and then adding the return flows between the Bois de Sioux River at the mouth and the Bois de Sioux River near White Rock. Naturalized streamflow for the Bois de Sioux near White Rock for January 1998 through December 2001 was estimated using the water-balance method to eliminate the effects of Reservation and White Rock Dams. The effects of the dams were estimated using the following equation:

$$Q_d = S + (E - P)A \quad (11)$$

where

Q_d is the estimated streamflow that resulted from eliminating the effects of the dams, in acre-feet;

S is the monthly change in reservoir storage, in acre-feet;

E is the lake evaporation, in feet;

P is the precipitation falling on the reservoir water-surface area, in feet; and

A is the reservoir water-surface area, in acres.

Reservoir storage was estimated using a monthly regression and inflow; lake evaporation and precipitation were obtained from Vining (2003); and reservoir water-surface areas for Lake Traverse and Mud Lake were obtained from area-capacity curves (U.S. Department of the Army, Corps of Engineers, 1983). Equation 7 was modified to include the effects of the dams and was rewritten as

$$Q_{n-wr} = Q_{h-wr} + Q_w + Q_r - \frac{Q_d}{F} \tag{12}$$

where

Q_{n-wr} is the estimated naturalized streamflow for the Bois de Sioux River near White Rock, in cubic feet per second;

Q_{h-wr} is the gaged and estimated historic streamflow for the Bois de Sioux River near White Rock, in cubic feet per second;

Q_w is the total of all surface-water withdrawals upstream from the Bois de Sioux River near White Rock, in cubic feet per second;

Q_r is the total of all return flows upstream from the Bois de Sioux River near White Rock, in cubic feet per second;

Q_d is the estimated streamflow that resulted from eliminating the effects of Reservation and White Rock Dams, in acre-feet; and

F is the factor used to convert acre-feet to cubic feet per second.

The conversion factor, F, is 61.488 for months that have 31 days, 59.504 for months that have 30 days, 57.521 for when February has 29 days, and 55.537 for when February has 28 days.

Red River of the North at Wahpeton, North Dakota

Naturalized streamflow for the Red River of the North at Wahpeton for January 1931 through December 1941 was estimated by adding the gaged and estimated historic streamflow for the Red River of the North at Wahpeton to the surface-water withdrawals from the Otter Tail River and the Bois de Sioux River, and then subtracting the return flows for the Otter Tail River and the Bois de Sioux River. Naturalized streamflow for January 1942 through December 1997 was estimated by adding the U.S. Army Corps of Engineers' simulated streamflow to the surface-water withdrawals from the Otter Tail River and the Bois de Sioux River and then subtracting the return flows for the Otter Tail River and the Bois de Sioux River. Naturalized streamflow for January 1998 through December 2001 was estimated by adding the naturalized streamflow for the Otter Tail River at the mouth to the naturalized streamflow for the Bois de Sioux River at the mouth.

The U.S. Army Corps of Engineers (Terry Zien, written commun., 2001) used the model, HEC-5 reservoir simulation computer program, to simulate streamflow for the Red River of the North at Wahpeton for January 1942 through December 1997 by eliminating the effects of Orwell Reservoir, Lake Traverse, and Mud Lake. Reservoir operation rules, elevation-storage-outflow relations, and routing parameters were input into the model. Daily streamflows were input using the HEC-DSS database program. Inflows to the reservoir were computed by reverse routing, using outflow and the change in storage in the pools. Local inflows between computation nodes were computed using gaged streamflow for the Red River of the North at Wahpeton. Routing parameters were determined by investigating the traveltimes of gaged floods. The reservoirs were eliminated by routing computed inflows directly to the site. Routing parameters were calibrated by comparing computed results to gaged streamflow for the Red River of the North at Wahpeton for the 1997 flood.

Sheyenne River below Baldhill Dam, North Dakota

Naturalized streamflow for the Sheyenne River below Baldhill Dam was estimated for two time periods--for the period prior to completion of Baldhill Dam (January 1931 through July 1949) and for the period after completion of Baldhill Dam (August 1949 through December 2001). Naturalized streamflow for January 1931 through July 1949 was estimated using equation 9. Naturalized streamflow for August 1949 through December 2001 was estimated by first using the water-balance method to eliminate the effects of Lake Ashtabula and then using equation 9. The effects of Lake Ashtabula were estimated using the following equation:

$$Q_{la} = S + (E - P)A \tag{13}$$

where

Q_{la} is the estimated streamflow that resulted from eliminating the effects of Lake Ashtabula, in acre-feet;

S is the monthly change in reservoir storage, in acre-feet;

E is the lake evaporation, in feet;

A is the reservoir water-surface area, in acres; and

P is the precipitation falling on the reservoir water-surface area, in feet.

The monthly change in reservoir storage was obtained from the U.S. Geological Survey (1959, 1964, 1971-02, 1976), lake evaporation and precipitation were obtained from Vining (2003), and reservoir water-surface area for Lake Ashtabula was obtained from area-capacity curves (U.S. Department of

the Army, Corps of Engineers, 1983). Equation 9 then was modified to include the effects of Lake Ashtabula and was rewritten as

$$Q_{n-bh} = Q_{h-bh} + (Q_{n-co} - Q_{h-co}) + Q_{w-bh} + Q_{r-bh} - \frac{Q_{la}}{F} \quad (14)$$

where

Q_{n-bh} is the estimated naturalized streamflow for the Sheyenne River below Baldhill Dam, in cubic feet per second;

Q_{h-bh} is the gaged and estimated historic streamflow for the Sheyenne River below Baldhill Dam, in cubic feet per second;

Q_{n-co} is the estimated naturalized streamflow for the Sheyenne River near Cooperstown, in cubic feet per second;

Q_{h-co} is the gaged and estimated historic streamflow for the Sheyenne River near Cooperstown, in cubic feet per second;

Q_{w-bh} is the total of all surface-water withdrawals between the Sheyenne River below Baldhill Dam and the Sheyenne River near Cooperstown, in cubic feet per second;

Q_{r-bh} is the total of all return flows between the Sheyenne River below Baldhill Dam and the Sheyenne River near Cooperstown, in cubic feet per second;

Q_{la} is the estimated streamflow that resulted from eliminating the effects of Lake Ashtabula, in acre-feet; and

F is the factor used to convert acre-feet to cubic feet per second.

The conversion factor, F, is 61.488 for months that have 31 days, 59.504 for months that have 30 days, 57.521 for when February has 29 days, and 55.537 for when February has 28 days.

Summary

A study was conducted in cooperation with the Bureau of Reclamation to develop a database that included updated historic and naturalized monthly streamflow data for 35 sites in the Red River of the North Basin. Historic monthly streamflow data were compiled and missing historic and naturalized monthly streamflow data were estimated for the 35 sites for January 1931 through December 2001 (the data-development period). Of the 35 sites, 4 had gaged historic monthly streamflow data for the entire data-development period, 10 had gaged historic monthly streamflow data for part of the data-development period, and 21 had no gaged historic monthly streamflow data. To develop the database, the missing historic monthly streamflow data were estimated using a modified drainage-area ratio method, a maintenance of variance extension type 1 (MOVE.1) method, and a water-balance method.

The water-balance method was used to estimate the missing data for the Otter Tail River above Orwell Dam. Streamflow for the Otter Tail River below Orwell Dam near Fergus Falls, the change in storage in Orwell Reservoir, and the effects of evaporation and precipitation on the reservoir were used in the water-balance equation. The water-balance method also was used to estimate the missing data for the Otter Tail River at the mouth by subtracting historic streamflow for the Bois de Sioux River at the mouth from historic streamflow for the Red River of the North at Wahpeton.

Streamflow data that were estimated by the U.S. Army Corps of Engineers for the design of White Rock Dam were used to estimate the missing data for the Bois de Sioux River above White Rock Dam for part of the data-development period. The modified drainage-area ratio method was used to estimate the missing data for the remainder of the data-development period. The missing data for the Bois de Sioux River at the mouth were estimated by applying a percentage of the flow based on the drainage area of the ungaged flow.

The modified drainage-area ratio method was used to estimate the missing data for the Red River of the North at Wahpeton and for the Wild Rice River (North Dakota) at the mouth. Streamflow data for the Red River of the North at Fargo are available for May 1901 through December 2001.

The modified drainage-area ratio method was used to estimate the missing data for the Sheyenne River above Harvey, the Sheyenne River near Warwick, the Sheyenne River near Cooperstown, Baldhill Creek at the mouth, the Sheyenne River below Baldhill Dam, the Sheyenne River at Valley City, the Sheyenne River at Lisbon, and the Sheyenne River near Kindred. Streamflow data for the Sheyenne River at West Fargo are available for April 1903 through December 2001.

The modified drainage-area ratio method was used to estimate the missing data for the Maple River at the mouth, the Rush River at the mouth, the Sheyenne River at the mouth, the Buffalo River at the mouth, the Elm River at the mouth, and the Wild Rice River (Minnesota) at the mouth.

The MOVE.1 method was used to estimate the missing data for the Red River of the North at Halstad.

The modified drainage-area ratio method was used to estimate the missing data for the Goose River at the mouth, the Marsh River at the mouth, the Sand Hill River at the mouth, and the Red Lake River at the mouth.

Streamflow data for the Red River of the North at Grand Forks are available for April 1882 through December 2001.

The modified drainage-area ratio method was used to estimate the missing data for the Turtle River at the mouth, the Forest River at the mouth, the Snake River at the mouth, and the Park River at the mouth.

The MOVE.1 method was used to estimate the missing data for the Red River of the North at Drayton.

The modified drainage-area ratio method was used to estimate the missing data for the Pembina River at the mouth.

Streamflow data for the Red River of the North at Emerson are available for May 1912 through December 2001.

Naturalized streamflow for the 35 sites was estimated by eliminating the hydrologic effects of Orwell Dam, Reservation Dam, White Rock Dam, Baldhill Dam, surface-water withdrawals, and return flows. Naturalized streamflow for 19 sites, Otter Tail River above Orwell Dam, Bois de Sioux River above White Rock Dam, Wild Rice River (North Dakota) at the mouth, Sheyenne River above Harvey, Baldhill Creek at the mouth, Maple River at the mouth, Rush River at the mouth, Buffalo River at the mouth, Elm River at the mouth, Wild Rice River (Minnesota) at the mouth, Goose River at the mouth, Marsh River at the mouth, Sand Hill River at the mouth, Red Lake River at the mouth, Turtle River at the mouth, Forest River at the mouth, Snake River at the mouth, Park River at the mouth, and Pembina River at the mouth, was estimated by adding surface-water withdrawals to and subtracting return flows from gaged and estimated historic streamflow.

Naturalized streamflow for 13 sites, Otter Tail River at the mouth, Red River of the North at Fargo, Sheyenne River near Warwick, Sheyenne River near Cooperstown, Sheyenne River at Valley City, Sheyenne River at Lisbon, Sheyenne River near Kindred, Sheyenne River at West Fargo, Sheyenne River at the mouth, Red River of the North at Halstad, Red River of the North at Grand Forks, Red River of the North at Drayton, and Red River of the North at Emerson, was estimated by adding the difference between the naturalized and the gaged and estimated historic streamflow for the site immediately upstream from the site of interest to the gaged and estimated historic streamflow for the site of interest, then adding the surface-water withdrawals between the site of interest and the site immediately upstream and subtracting the return flows between the site of interest and the site immediately upstream, and then adding the difference between the naturalized and the gaged and estimated historic streamflow for the tributary inflow between the site of interest and the site immediately upstream.

Naturalized streamflow for the Bois de Sioux River at the mouth was estimated for selected time periods by adding the estimated historic streamflow for the Bois de Sioux River at the mouth to the surface-water withdrawals for that site and then subtracting the return flows for the site, by subtracting the naturalized streamflow for the Otter Tail River at the mouth from the naturalized streamflow for the Red River of the North at Wahpeton, or by adding the estimated historic streamflow for the Bois de Sioux River at the mouth to the naturalized streamflow for the Bois de Sioux River near White Rock, subtracting the gaged and estimated historic streamflow for the Bois de Sioux River near White Rock, adding the surface-water withdrawals between the Bois de Sioux River at the mouth and the Bois de Sioux River near White Rock, and then subtracting the return flows between the Bois de Sioux River at the mouth and the Bois de Sioux River near White Rock.

Naturalized streamflow for the Red River of the North at Wahpeton was estimated for selected time periods by adding the gaged and estimated historic streamflow for the Red River of the North at Wahpeton to the surface-water withdrawals from the Otter Tail River and the Bois de Sioux River and then subtracting the return flows for the Otter Tail River and the Bois de Sioux River, by adding the U.S. Army Corps of Engineers' simulated streamflow to the surface-water withdrawals from the Otter Tail River and the Bois de Sioux River and then subtracting the return flows for the Otter Tail River and the Bois de Sioux River, or by adding the naturalized streamflow for the Otter Tail River at the mouth to the naturalized streamflow for the Bois de Sioux River at the mouth.

Naturalized streamflow for the Sheyenne River below Baldhill Dam was estimated by using the water-balance method to eliminate the hydrologic effects of Lake Ashtabula and then using the monthly change in reservoir storage, lake evaporation, reservoir water-surface area, and precipitation falling on the reservoir water-surface area to estimate streamflow.

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Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Otter Tail River above Orwell Dam												
1931	30.00	65.00	131.80	140.80	159.50	104.40	62.60	32.30	44.40	30.00	28.80	30.00
1932	40.00	45.00	60.00	81.70	50.60	50.30	32.70	27.20	31.40	24.50	35.00	95.00
1933	23.00	25.00	170.00	51.30	37.80	61.80	19.10	14.70	25.80	13.10	17.50	30.30
1934	27.40	26.20	25.80	39.50	18.00	14.20	13.80	11.50	7.99	11.90	13.70	14.10
1935	16.00	10.80	58.80	51.50	51.80	63.50	102.60	22.80	13.90	10.50	17.00	36.00
1936	26.50	24.90	32.50	65.00	41.10	21.90	12.80	19.70	21.60	25.30	23.10	19.50
1937	15.10	15.70	23.50	60.90	58.00	178.20	96.90	72.70	125.00	88.70	37.80	20.30
1938	20.40	36.10	100.80	144.00	272.20	267.20	79.00	24.90	47.70	29.40	26.40	46.40
1939	117.40	118.90	228.20	207.00	180.70	83.30	46.40	18.50	17.00	19.80	22.50	17.60
1940	17.70	32.00	44.70	166.50	308.90	137.00	28.50	19.40	22.30	22.80	51.40	36.10
1941	58.60	105.20	163.50	277.10	302.70	210.50	99.00	39.00	51.50	80.10	102.90	104.60
1942	123.50	97.50	133.10	120.10	383.40	426.80	207.80	164.60	230.70	336.70	362.50	306.20
1943	306.20	240.90	310.10	595.30	656.10	776.30	534.10	432.50	396.70	381.30	339.10	269.20
1944	199.10	157.80	196.90	309.30	362.00	616.00	470.70	350.30	581.30	695.20	667.40	502.90
1945	411.60	369.30	527.80	649.70	735.30	640.90	312.30	158.60	142.90	236.60	270.30	226.30
1946	194.20	146.40	360.10	513.70	569.00	368.40	621.30	610.60	511.40	559.80	547.90	479.10
1947	415.30	341.80	343.20	703.60	900.30	871.80	560.40	238.10	207.30	218.90	207.90	191.80
1948	157.40	129.90	247.50	480.60	647.20	443.80	254.20	213.10	190.40	137.90	115.30	68.10
1949	90.30	107.60	200.60	220.60	224.00	213.90	225.10	178.30	93.50	89.80	88.80	105.80
1950	109.60	143.00	218.00	428.50	869.50	883.70	666.90	325.70	162.40	131.30	98.20	111.10
1951	143.60	199.90	260.50	607.60	635.00	661.50	463.50	332.10	321.70	323.70	353.30	441.40
1952	478.70	484.40	488.70	787.40	822.60	563.80	426.00	446.80	463.40	349.40	242.20	203.10
1953	169.30	212.00	334.00	421.00	558.30	1,262.00	1,246.00	628.93	601.03	531.87	456.75	377.77
1954	304.70	292.47	444.17	620.38	852.15	906.72	521.38	264.55	257.57	230.86	145.28	153.97
1955	127.55	152.02	230.79	473.24	396.04	337.94	480.90	447.27	504.71	461.93	270.60	134.94
1956	177.26	180.86	210.89	636.70	813.43	649.21	291.53	221.28	117.14	80.95	127.36	96.35
1957	73.60	73.58	222.30	421.79	627.14	592.00	549.08	505.57	487.60	446.84	409.86	302.47
1958	227.23	241.01	354.91	381.48	236.42	216.26	354.19	257.52	258.69	173.04	157.09	144.22
1959	165.96	182.38	282.33	303.35	329.66	513.06	412.98	281.55	214.40	195.39	157.59	188.65
1960	203.84	218.86	228.82	510.17	769.02	648.09	403.71	222.72	183.49	147.11	129.56	115.59
1961	144.26	132.54	194.85	281.43	334.70	373.44	202.68	228.30	107.77	75.59	57.52	54.41
1962	58.36	111.90	207.11	433.45	668.76	1,024.54	908.10	639.05	542.43	492.95	361.31	252.15
1963	185.02	174.28	270.72	443.31	441.87	584.99	353.78	246.18	243.04	234.76	150.09	77.97
1964	129.61	143.47	185.36	473.16	767.19	514.42	299.23	219.99	229.11	206.67	183.13	159.45
1965	168.69	144.57	178.01	689.57	939.14	1,129.03	764.89	472.05	440.86	514.63	482.57	502.46

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Otter Tail River above Orwell Dam—Continued												
1966	415.27	332.49	750.84	1,033.80	1,332.41	994.74	564.09	592.05	476.28	470.79	469.69	398.90
1967	360.56	337.50	464.10	779.36	1,039.04	960.90	639.46	337.50	202.99	176.59	143.24	92.62
1968	88.65	135.54	250.83	396.33	593.78	578.15	464.96	328.48	246.37	242.21	241.94	223.99
1969	224.67	349.55	445.93	874.01	1,075.11	813.78	461.93	270.22	119.57	108.92	92.63	132.59
1970	147.30	166.87	219.59	391.83	674.94	714.28	475.16	213.32	97.90	103.06	114.41	105.45
1971	120.38	148.87	247.47	452.60	344.74	299.85	412.72	225.95	244.17	230.74	417.94	544.15
1972	501.06	463.78	683.58	771.35	1,098.82	1,024.57	666.16	572.23	494.13	413.45	364.90	316.33
1973	334.64	338.32	493.97	438.33	372.77	288.21	230.81	183.98	208.71	374.78	573.22	566.34
1974	468.41	439.70	464.72	606.47	1,013.93	1,174.62	672.03	430.40	325.51	268.51	194.52	152.94
1975	169.70	245.09	389.01	737.46	1,008.93	1,074.94	836.37	552.24	413.63	322.42	256.77	207.06
1976	216.63	283.67	406.20	514.42	325.37	198.50	133.58	27.84	21.44	20.67	13.20	14.75
1977	12.73	16.33	66.45	103.93	72.48	71.21	60.87	57.30	111.25	179.18	247.76	337.54
1978	355.75	318.20	510.04	752.59	769.01	491.22	407.76	233.46	158.16	88.55	90.29	76.17
1979	71.61	109.51	260.30	749.96	939.90	936.22	776.97	698.18	547.74	347.35	359.45	325.23
1980	321.19	360.22	476.10	642.19	472.36	336.95	174.55	127.48	112.37	92.15	81.97	68.99
1981	95.40	135.55	179.08	217.67	168.77	144.12	122.94	205.88	136.45	128.25	166.86	205.26
1982	184.61	245.53	411.11	617.04	739.01	715.37	532.03	368.78	249.61	264.01	253.60	259.28
1983	248.08	260.05	338.21	371.50	318.81	257.44	365.18	409.64	404.96	299.66	241.80	216.69
1984	245.40	325.64	498.51	580.44	573.43	669.48	426.11	250.05	149.35	198.53	222.52	239.13
1985	243.60	256.22	439.39	606.31	928.08	1,255.11	1,108.93	1,033.21	894.32	839.66	782.76	643.90
1986	573.88	533.55	708.40	1,033.95	1,457.55	1,355.77	896.57	608.94	698.08	765.04	767.58	704.20
1987	590.53	543.37	637.26	669.02	523.65	447.59	283.18	224.05	180.89	120.64	127.17	154.18
1988	161.50	165.86	296.49	348.39	354.00	212.36	94.14	60.38	66.60	69.39	81.24	70.72
1989	102.62	142.42	277.18	706.07	623.61	567.44	309.77	136.78	162.71	128.94	101.51	88.88
1990	129.89	154.82	324.21	439.26	517.56	531.14	390.79	236.83	166.26	129.63	97.92	87.70
1991	98.93	153.64	251.84	381.64	690.67	717.89	672.34	438.69	332.97	222.43	171.51	171.04
1992	202.24	249.09	366.16	442.34	441.43	374.44	351.49	299.02	259.62	196.35	202.37	201.10
1993	223.69	280.82	414.11	624.40	684.27	959.09	1,031.99	958.13	1,021.14	970.11	780.14	647.11
1994	556.19	636.82	721.37	828.79	997.33	716.83	567.51	412.51	286.34	316.81	303.17	413.46
1995	406.26	413.90	631.82	862.10	892.87	624.82	508.69	319.75	261.28	359.01	436.70	412.46
1996	365.84	396.27	500.65	771.93	1,163.95	1,013.29	587.60	345.88	220.74	206.04	294.80	405.11
1997	503.77	460.32	519.63	1,349.75	1,365.30	1,062.38	848.05	722.46	575.34	523.66	528.77	564.38
1998	515.05	581.55	699.15	822.36	791.08	742.89	1,111.69	840.58	552.98	540.28	740.86	737.45
1999	735.92	743.99	789.51	1,082.22	1,257.00	1,189.85	871.20	707.58	762.07	716.69	592.76	464.16
2000	459.11	490.72	694.06	841.30	795.89	791.01	824.43	607.97	428.71	367.39	632.97	659.98
2001	686.31	605.23	631.49	1,145.04	1,436.47	1,405.86	1,012.01	628.29	467.57	411.00	383.34	467.25

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Otter Tail River at the mouth												
1931	33.63	72.88	149.09	159.27	183.45	120.07	72.00	37.15	51.07	34.50	32.29	33.63
1932	44.85	50.45	67.87	92.42	58.20	57.85	37.61	31.28	36.11	28.18	39.24	106.51
1933	25.79	28.03	192.30	58.03	43.48	71.08	21.97	16.91	29.67	15.07	19.62	33.97
1934	30.72	29.37	29.18	44.68	20.70	16.33	15.87	13.23	9.19	13.69	15.36	15.81
1935	17.94	12.11	66.51	58.26	59.58	73.03	118.00	26.22	15.99	12.08	19.06	40.36
1936	29.71	27.92	36.76	73.57	47.27	25.19	14.72	22.66	24.84	29.10	25.90	21.86
1937	16.93	17.60	26.58	69.46	67.44	204.95	111.45	83.61	143.77	102.02	42.38	22.76
1938	22.87	40.47	114.02	162.89	313.07	307.32	90.86	28.64	54.86	33.81	29.60	52.02
1939	131.62	133.31	259.85	235.94	207.86	95.86	53.39	21.28	19.55	22.77	25.23	19.73
1940	19.84	35.88	50.56	188.34	355.28	157.57	32.78	22.31	25.65	26.22	57.63	40.47
1941	65.70	117.95	185.01	313.62	348.17	243.02	114.14	44.98	59.52	92.31	115.45	117.29
1942	138.46	109.31	151.03	137.43	550.01	582.71	229.76	171.15	229.54	353.57	406.82	343.30
1943	343.30	270.09	320.19	913.01	685.05	884.29	600.22	464.79	397.23	390.18	325.49	273.11
1944	196.00	152.00	191.71	367.51	461.23	832.88	687.34	366.33	589.73	707.43	673.92	504.48
1945	405.30	370.73	683.19	673.48	748.68	654.41	299.13	142.99	139.55	221.29	258.97	221.23
1946	189.70	127.50	455.78	529.06	571.38	349.40	633.64	603.73	498.98	567.34	553.38	478.89
1947	411.50	342.33	373.37	933.70	929.91	911.80	575.60	222.66	205.92	189.54	196.74	184.66
1948	148.69	115.20	241.27	577.31	648.43	447.54	251.10	209.98	164.20	130.18	115.67	54.58
1949	69.80	85.70	205.44	259.66	215.88	215.65	321.39	181.68	90.59	91.31	90.80	94.98
1950	87.90	132.40	267.26	623.95	1,020.13	883.52	699.04	330.54	168.96	133.51	99.43	110.00
1951	144.75	146.88	237.72	918.79	670.11	677.08	476.63	334.15	322.79	329.53	357.39	449.54
1952	484.27	492.78	413.40	1,252.41	833.91	573.90	439.18	401.88	443.14	349.79	235.32	189.13
1953	166.50	192.70	375.07	445.65	585.51	1,338.80	1,254.98	763.62	516.31	386.05	461.71	445.90
1954	376.80	320.40	499.02	626.71	847.04	931.95	525.42	191.34	229.76	118.63	136.65	198.62
1955	233.49	186.40	244.92	438.29	328.54	303.09	472.02	441.71	447.38	375.79	305.26	183.90
1956	238.18	198.73	240.43	684.52	808.00	662.13	240.49	208.33	111.38	69.28	45.10	65.57
1957	106.00	113.04	312.68	475.34	647.83	625.44	595.49	500.09	436.18	349.02	400.61	381.66
1958	286.21	272.49	410.15	392.93	218.20	140.66	337.24	226.25	178.61	142.58	160.00	158.48
1959	243.48	236.03	294.34	331.75	341.79	525.37	448.42	209.57	162.20	151.89	147.00	201.60
1960	233.50	249.00	257.76	571.98	787.64	708.28	430.54	173.44	111.60	98.76	124.80	139.30
1961	155.60	170.98	249.15	282.21	354.21	388.93	187.99	78.86	77.14	101.00	102.90	75.00
1962	82.43	95.54	237.77	535.85	714.82	1,222.37	1,111.27	793.88	452.34	397.19	353.01	318.04
1963	291.25	203.26	305.74	462.05	448.46	660.38	369.72	142.39	155.65	218.22	177.65	147.14
1964	150.55	156.69	157.31	517.20	819.61	567.70	286.47	78.63	123.80	223.23	212.72	232.08
1965	197.90	178.22	216.33	740.69	982.13	1,218.04	772.58	405.70	402.42	552.08	481.78	481.10

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Otter Tail River at the mouth—Continued												
1966	487.00	423.43	822.50	1,060.94	1,289.24	1,169.02	576.68	520.23	349.25	425.10	453.38	403.90
1967	391.10	363.40	458.83	896.27	1,060.72	929.68	717.47	226.44	114.15	192.46	176.27	161.05
1968	136.68	141.70	274.50	399.55	563.01	576.22	427.41	226.94	161.36	285.71	309.15	257.50
1969	219.44	380.26	475.48	1,260.80	1,146.24	917.29	421.40	201.47	60.66	107.38	128.09	135.60
1970	158.20	179.20	234.24	435.61	695.52	737.21	444.74	112.10	26.40	89.60	170.05	147.41
1971	130.60	132.80	297.67	476.80	345.29	290.78	371.63	153.83	165.46	238.75	487.91	602.81
1972	570.47	473.54	661.01	917.77	1,040.41	1,194.68	717.75	497.75	426.80	436.14	361.20	390.02
1973	347.68	356.38	547.37	441.45	367.21	278.20	151.16	121.62	114.25	372.28	528.90	494.00
1974	445.50	468.04	495.96	622.28	986.30	1,111.23	672.72	339.79	247.25	282.39	269.07	177.80
1975	187.80	249.80	341.80	772.16	976.48	1,061.04	983.82	573.30	362.53	313.01	308.44	247.00
1976	246.30	313.06	500.55	534.60	319.47	158.08	109.40	53.50	1.95	5.72	7.40	6.60
1977	8.81	18.00	41.62	65.81	15.90	62.70	61.07	51.08	132.78	206.63	305.25	363.47
1978	394.60	328.60	598.57	1,182.72	848.78	555.90	548.40	144.41	93.93	139.33	110.61	105.74
1979	99.36	102.80	301.99	1,148.00	987.07	950.58	824.48	706.22	560.20	358.35	355.92	326.14
1980	366.08	395.63	530.58	628.60	513.49	374.75	168.66	107.66	33.33	63.76	112.07	108.79
1981	101.65	136.74	211.63	209.31	172.97	140.88	150.23	168.56	52.00	140.12	182.90	197.60
1982	231.40	253.30	448.82	692.86	757.40	721.57	513.98	281.67	173.57	323.97	336.63	304.52
1983	290.85	276.35	394.89	386.84	322.27	212.44	298.09	351.40	345.80	312.90	273.20	233.50
1984	265.70	346.34	541.52	741.98	632.65	836.90	494.45	248.87	128.30	209.74	204.69	275.12
1985	267.73	279.59	581.81	596.01	943.83	1,142.90	1,125.43	1,081.19	907.49	794.47	764.33	696.33
1986	618.44	564.51	782.63	1,300.79	1,551.52	1,415.54	896.19	615.55	835.54	797.71	785.67	709.19
1987	574.67	608.78	711.53	615.10	529.00	472.70	331.39	170.98	177.25	132.03	132.16	137.93
1988	151.49	236.92	363.80	354.95	360.06	206.09	77.41	80.39	70.50	68.01	59.20	51.60
1989	71.80	159.10	393.73	1,079.05	604.27	603.27	306.79	139.22	163.85	131.57	126.26	107.77
1990	120.32	161.68	411.17	415.07	506.02	525.75	387.12	234.10	156.60	114.37	80.83	85.95
1991	81.82	97.05	261.20	399.49	678.84	674.61	583.27	432.90	373.06	210.81	164.08	134.71
1992	178.01	223.10	464.24	448.15	417.72	383.58	355.85	315.95	277.30	183.02	192.27	196.84
1993	183.96	235.47	542.33	821.16	713.02	1,059.78	1,201.84	1,022.60	938.16	997.37	815.32	346.40
1994	552.95	566.24	1,340.40	969.61	1,066.60	784.68	600.42	439.29	282.81	353.81	300.22	416.92
1995	377.88	431.24	800.04	1,042.54	960.29	729.94	628.78	313.93	265.01	409.44	423.62	444.11
1996	450.48	453.38	918.96	1,029.10	1,118.00	1,092.76	585.64	344.85	209.43	218.83	295.04	388.90
1997	447.48	567.59	598.34	2,338.04	1,437.56	1,095.76	944.52	748.14	572.14	571.05	520.81	540.29
1998	414.50	676.35	645.83	893.33	917.45	702.57	1,159.24	903.98	531.80	598.37	650.85	743.78
1999	622.66	630.83	864.84	1,142.68	1,192.24	1,347.44	1,096.88	678.78	827.11	722.35	562.42	445.38
2000	410.47	476.32	872.68	827.24	857.36	939.85	847.08	625.21	428.46	338.94	524.06	666.60
2001	655.86	603.98	779.24	1,204.24	1,134.52	1,519.04	1,146.88	594.00	462.55	421.08	391.69	450.04

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Bois de Sioux River above White Rock Dam												
1931	0.00	0.00	2.93	1.76	0.81	4.62	1.79	2.60	5.54	0.00	0.00	0.00
1932	0.00	0.00	6.99	33.77	3.58	1.18	0.00	0.00	0.00	0.00	0.00	0.00
1933	0.00	0.72	18.70	7.22	5.53	3.02	0.00	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.00	2.69	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1935	0.00	1.26	55.77	7.22	13.82	18.14	20.97	0.65	0.00	0.00	0.00	0.00
1936	0.00	0.00	55.68	23.66	4.94	0.30	0.00	0.00	0.00	0.00	0.00	19.67
1937	0.00	0.00	83.18	222.52	28.34	5.63	16.26	1.25	0.00	0.00	0.00	0.00
1938	0.00	55.22	100.25	12.44	25.80	51.90	65.70	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	407.55	29.72	2.99	5.07	2.36	0.18	0.00	0.00	0.00	0.00
1940	0.00	0.00	21.83	130.96	13.53	0.08	0.00	0.00	0.00	0.00	0.00	0.00
1941	0.00	0.00	109.90	72.61	5.24	54.26	0.68	22.64	68.70	30.70	23.60	4.15
1942	0.00	0.00	10.15	32.68	799.52	733.71	35.99	18.90	54.05	20.30	18.40	1.69
1943	0.00	0.00	58.06	1,003.27	113.84	372.46	123.92	62.03	17.22	6.22	9.68	3.18
1944	0.00	0.00	7.24	61.17	189.03	700.11	84.57	10.00	6.05	3.99	7.73	2.75
1945	0.00	0.00	260.61	103.70	33.61	73.65	5.57	0.88	0.00	0.13	0.36	0.00
1946	0.00	0.00	587.38	170.14	21.14	4.87	88.77	3.09	2.60	15.12	9.41	2.29
1947	0.13	0.37	144.48	1,320.59	260.44	148.42	24.36	0.78	0.00	0.00	0.61	0.41
1948	0.00	0.00	338.92	781.82	74.49	17.22	25.34	5.21	0.27	0.15	0.49	0.06
1949	0.00	0.00	98.17	59.82	3.99	9.55	602.09	22.40	2.10	3.71	5.18	0.57
1950	0.00	0.00	92.50	672.45	659.50	104.18	358.45	20.72	1.46	3.39	1.95	0.24
1951	0.01	0.52	0.09	908.75	163.82	115.80	61.19	7.35	2.74	6.58	9.02	4.69
1952	2.69	1.68	1.86	2,385.97	315.05	70.43	96.61	11.16	6.55	0.36	0.57	1.44
1953	0.98	1.09	207.95	98.71	58.95	129.94	49.99	1.88	0.00	0.01	0.98	0.30
1954	0.00	0.00	23.09	58.87	36.83	127.56	12.83	8.21	8.02	3.98	4.69	1.07
1955	0.05	0.00	22.55	82.37	4.89	25.62	96.19	5.21	0.80	0.25	0.01	0.00
1956	0.00	0.00	0.08	193.09	99.00	56.29	9.55	105.44	6.30	0.67	3.83	1.97
1957	0.13	0.00	45.50	228.20	138.34	309.45	48.31	28.56	35.01	29.26	54.67	5.92
1958	0.97	14.56	140.43	167.44	29.40	10.08	5.61	2.17	3.08	7.27	0.62	4.12
1959	0.19	1.03	13.17	4.15	2.44	588.52	4.77	14.66	8.14	7.52	0.07	3.35
1960	3.22	1.47	22.35	205.14	54.51	59.37	3.50	0.11	5.52	2.23	0.74	1.23
1961	0.21	2.99	22.98	5.50	9.41	9.76	1.15	1.13	0.81	2.04	0.15	0.68
1962	0.04	0.99	0.68	750.68	872.68	948.70	1,793.35	340.91	18.76	7.41	7.27	2.10
1963	0.21	2.77	45.96	76.60	39.58	949.99	22.95	2.55	0.15	4.19	0.69	1.22
1964	0.19	1.88	17.99	142.90	97.09	53.03	16.98	1.65	0.84	3.50	8.19	0.64
1965	0.16	3.28	0.86	864.57	100.45	260.87	86.16	25.71	4.34	14.32	4.43	2.41

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Bois de Sioux River above White Rock Dam—Continued												
1966	1.60	0.29	889.46	353.57	113.57	41.21	65.05	202.11	25.71	9.35	14.38	3.16
1967	2.16	1.52	203.10	342.62	217.47	416.20	255.33	32.49	0.73	0.01	1.30	1.34
1968	0.48	0.04	21.08	48.11	52.14	43.46	6.27	2.38	3.51	8.93	7.00	2.87
1969	0.66	0.42	0.42	4,426.64	401.78	14.86	66.66	34.66	1.53	0.08	0.07	1.77
1970	1.96	2.41	19.80	130.98	51.93	230.29	46.47	0.10	0.29	1.26	1.77	0.99
1971	0.07	2.91	110.40	31.65	10.67	12.81	79.67	0.64	9.34	3.53	16.16	4.13
1972	3.23	1.36	542.75	290.88	584.07	68.20	55.84	18.31	0.49	2.35	3.23	1.96
1973	2.28	1.64	106.94	18.62	9.51	4.69	11.24	0.01	0.15	6.95	4.17	1.91
1974	0.42	0.30	69.03	143.55	62.73	131.27	0.14	0.06	2.59	3.16	1.97	2.10
1975	0.34	4.13	0.27	980.30	151.56	2,585.83	1,161.80	44.64	3.67	10.75	12.26	2.73
1976	3.34	204.91	260.23	170.97	24.91	2.00	0.04	0.85	0.03	0.24	0.01	0.23
1977	0.03	0.24	8.52	15.12	4.45	4.90	3.81	0.20	12.76	27.67	8.49	3.15
1978	3.95	7.43	611.76	1,257.64	157.64	13.71	236.24	50.58	29.98	5.98	4.26	1.87
1979	0.82	0.87	0.77	2,605.36	414.34	55.50	70.08	48.85	2.79	0.18	7.31	2.56
1980	2.00	1.52	122.98	292.65	23.68	4.10	1.15	4.10	0.35	0.60	0.57	1.17
1981	0.52	12.63	10.76	10.29	2.42	7.91	9.09	1.46	0.00	16.82	454.44	3.03
1982	0.09	0.79	51.99	384.71	24.18	11.19	30.19	1.30	0.97	9.41	4.85	2.97
1983	1.03	1.28	112.24	28.52	5.39	21.10	20.09	1.06	8.51	0.49	0.16	0.17
1984	0.07	371.11	586.16	524.56	65.33	1,253.76	4.48	1.33	0.00	21.30	9.37	3.11
1985	2.01	1.35	209.19	22.90	19.91	1,539.59	10.38	0.07	4.13	0.28	0.04	1.89
1986	2.25	2.85	435.19	1,071.08	814.63	742.98	24.83	17.77	170.62	78.29	28.24	5.75
1987	7.64	30.58	170.46	105.01	41.07	15.78	9.03	0.28	0.01	2.77	63.86	3.93
1988	0.54	13.97	31.22	7.97	1.13	3.07	4.84	1.39	0.63	0.91	0.34	1.39
1989	0.38	1.91	4.17	2,417.40	71.55	11.40	2.51	1.30	0.39	0.01	5.63	1.13
1990	0.36	0.56	9.56	10.29	7.03	69.14	0.03	1.41	0.38	1.58	0.12	1.89
1991	0.12	0.86	8.60	1.54	26.14	45.62	75.74	5.17	11.05	0.04	0.01	0.28
1992	0.08	1.09	33.42	35.90	21.94	122.81	113.75	28.87	2.65	0.03	2.44	0.95
1993	0.73	7.16	255.07	910.52	121.71	254.00	922.25	480.87	107.63	33.03	15.59	5.72
1994	15.65	56.66	618.26	877.20	269.54	50.25	761.90	44.53	13.99	25.05	21.67	5.15
1995	8.10	34.71	1,168.96	845.26	474.41	21.62	666.22	69.11	23.17	126.58	38.18	5.43
1996	6.69	8.58	288.17	1,127.21	1,160.15	191.26	54.87	12.31	0.52	5.70	15.03	3.22
1997	1.27	1.23	1.27	8,588.82	902.62	424.24	191.52	78.61	46.04	56.60	20.12	5.82
1998	11.64	210.66	653.89	1,100.07	1,548.14	1,980.46	1,146.97	254.19	104.68	156.43	113.61	19.65
1999	75.22	549.97	656.59	599.64	475.64	321.25	162.17	167.59	456.04	153.51	82.16	9.06
2000	28.03	805.40	411.69	238.41	233.09	196.63	303.44	53.38	3.96	8.68	13.79	2.46
2001	1.46	2.61	2.71	4,300.83	619.80	918.06	117.86	20.42	3.05	12.50	13.70	4.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Bois de Sioux River at the mouth												
1931	7.02	15.22	33.41	35.70	46.28	30.29	18.16	9.37	12.88	8.70	6.74	7.02
1932	9.37	10.54	15.21	20.71	14.68	14.59	9.49	7.89	9.11	7.11	8.20	22.24
1933	5.39	5.85	43.10	13.01	10.97	17.93	5.54	4.27	7.49	3.80	4.10	7.09
1934	6.42	6.13	6.54	10.01	5.22	4.12	4.00	3.34	2.32	3.45	3.21	3.30
1935	3.75	2.53	14.91	13.06	15.03	18.42	29.77	6.62	4.03	3.05	3.98	8.43
1936	6.20	5.83	8.24	16.87	11.92	6.35	3.71	5.72	6.27	7.34	5.41	4.57
1937	3.54	3.68	5.96	20.87	23.15	51.70	28.11	21.09	36.27	25.74	8.85	4.75
1938	4.78	8.45	25.55	36.51	78.97	77.52	22.92	7.22	13.84	8.53	6.18	10.86
1939	27.49	27.84	74.27	69.53	52.66	24.59	13.66	5.37	4.93	5.74	5.27	4.12
1940	4.14	7.49	11.33	42.21	89.62	39.75	8.27	5.63	6.47	6.62	12.04	8.45
1941	13.72	24.63	42.08	71.88	88.04	68.97	31.08	12.40	17.39	24.83	24.97	24.61
1942	28.92	22.83	38.19	45.49	470.99	695.29	704.44	220.65	246.76	38.33	88.97	71.69
1943	71.69	56.41	91.81	1,238.99	983.95	933.71	468.78	97.21	5.77	24.82	5.51	8.89
1944	0.00	0.00	3.29	273.49	499.77	1,124.12	692.66	52.67	25.27	46.17	24.38	5.72
1945	0.00	5.07	566.81	459.52	88.82	261.89	5.87	3.21	1.15	3.11	1.13	0.27
1946	0.00	0.00	367.32	584.94	33.12	13.10	82.46	4.17	2.32	29.86	29.92	3.71
1947	1.70	2.67	113.13	1,087.30	697.09	575.20	507.40	9.04	1.08	6.76	8.36	1.84
1948	0.01	0.00	14.83	701.69	754.57	97.76	4.40	7.12	15.00	0.62	2.03	0.22
1949	0.00	0.00	36.86	146.74	2.02	9.05	406.31	16.52	1.51	6.49	8.50	0.02
1950	0.00	0.00	179.24	716.05	551.87	574.48	826.96	344.96	42.64	12.69	24.87	16.10
1951	10.45	1.02	3.88	1,289.21	944.89	385.92	116.17	36.75	8.81	25.17	27.51	51.76
1952	40.23	42.42	55.00	1,908.59	1,042.09	980.10	307.02	7.52	0.36	1.81	0.48	0.07
1953	0.00	0.00	174.53	97.25	170.49	330.20	92.02	92.68	48.59	1.85	1.19	7.80
1954	0.00	29.80	62.88	50.29	4.66	109.05	15.18	9.26	5.04	5.67	0.85	0.08
1955	12.01	0.00	21.58	104.81	1.66	2.81	37.68	3.69	0.72	0.41	0.04	0.00
1956	9.52	16.77	19.27	162.78	4.00	37.27	0.31	64.47	7.32	1.52	4.60	0.13
1957	0.00	0.86	135.52	196.76	283.07	441.56	195.01	21.51	25.42	26.08	60.29	3.84
1958	30.29	12.91	74.35	263.17	41.50	0.84	25.46	1.45	0.79	0.12	0.00	14.12
1959	16.22	8.97	21.16	38.35	84.01	38.63	65.88	4.23	0.00	0.71	0.00	0.00
1960	0.00	0.00	85.74	329.62	81.46	88.62	36.06	7.36	0.00	0.04	0.00	11.00
1961	0.00	9.52	50.85	8.59	34.79	36.77	2.11	0.05	1.86	7.10	0.00	0.00
1962	1.87	6.86	13.53	492.15	1,214.18	1,452.63	1,644.73	1,189.12	294.06	36.81	7.69	8.46
1963	21.05	29.64	91.86	145.45	60.94	930.62	111.18	14.71	3.55	2.58	1.15	0.76
1964	0.46	4.81	25.09	259.30	159.29	32.60	5.73	0.87	1.30	1.17	0.98	3.93
1965	0.00	6.08	9.67	1,048.31	507.87	1,307.96	457.42	9.30	19.88	172.12	63.92	28.90

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Bois de Sioux River at the mouth—Continued												
1966	13.00	20.47	828.50	431.06	786.76	501.98	51.82	2.47	1.15	23.80	4.02	0.00
1967	0.00	0.00	200.67	491.73	178.28	252.32	165.03	0.77	0.45	0.34	0.03	16.85
1968	0.62	0.00	34.40	15.25	7.59	7.88	0.69	0.06	0.04	9.69	2.35	0.40
1969	0.06	21.84	50.62	3,175.20	1,459.76	399.71	49.30	3.33	3.74	1.82	0.31	0.00
1970	0.00	0.00	20.16	193.49	60.38	78.69	15.06	0.00	0.00	0.00	0.15	0.09
1971	0.00	0.00	126.73	70.40	23.21	51.52	94.27	11.97	2.44	0.45	3.59	38.29
1972	25.23	1.46	633.99	816.23	500.59	352.32	115.75	126.25	24.50	0.06	0.60	0.68
1973	4.02	3.12	244.03	106.35	3.19	23.20	0.04	0.28	0.05	0.02	0.00	0.00
1974	0.00	24.26	53.04	57.32	17.70	3.77	23.58	9.51	0.15	0.02	5.93	0.00
1975	0.00	0.00	0.00	485.84	254.52	221.96	803.18	12.00	0.47	1.49	0.26	21.70
1976	0.00	47.24	461.05	190.90	10.13	0.02	0.00	0.00	0.23	0.00	0.00	0.00
1977	0.00	0.00	42.68	72.19	6.60	27.30	4.53	2.42	16.32	20.87	24.25	1.33
1978	0.00	0.00	761.43	1,929.28	849.22	650.10	933.60	133.39	11.07	2.37	7.29	8.46
1979	4.74	0.00	22.51	2,097.00	989.93	812.42	398.52	118.88	40.70	59.85	8.08	12.76
1980	38.72	22.27	188.82	307.30	54.91	162.35	19.74	19.04	1.47	1.24	0.33	0.11
1981	1.95	16.26	15.37	1.99	10.93	67.32	36.57	57.04	0.00	2.18	0.00	0.00
1982	0.00	0.00	153.58	486.14	131.40	9.83	42.92	17.83	5.93	86.63	25.97	48.78
1983	36.25	48.75	146.51	47.36	1.93	0.36	36.91	0.00	0.00	0.00	0.00	0.00
1984	0.00	3.86	617.48	1,021.02	351.35	1,132.10	374.25	109.03	9.60	230.86	296.61	91.98
1985	0.67	31.71	611.19	358.49	355.17	619.10	31.57	22.81	31.41	8.43	5.17	55.17
1986	59.26	98.69	896.37	1,606.21	1,533.48	1,069.46	767.81	167.25	598.46	449.29	166.53	111.11
1987	38.93	78.32	246.97	110.00	55.50	19.90	33.51	17.22	9.85	13.27	13.04	4.57
1988	0.31	20.98	165.00	68.45	16.04	15.31	8.19	7.41	0.00	0.09	2.60	0.00
1989	0.00	0.00	184.37	1,923.95	505.73	125.03	11.11	12.78	55.45	25.83	4.64	3.53
1990	3.78	6.22	70.83	7.53	7.18	2.55	5.08	0.00	0.00	0.03	1.97	0.65
1991	0.08	0.15	69.70	60.31	73.16	350.39	913.73	99.20	429.14	78.59	1.02	2.39
1992	1.69	4.10	112.66	45.25	6.98	67.22	45.55	115.55	7.30	0.09	5.13	1.86
1993	2.24	3.53	379.77	1,264.84	381.98	526.22	1,585.16	1,473.40	1,209.84	601.63	26.78	8.40
1994	5.75	7.86	626.60	1,639.39	1,299.40	558.32	1,043.58	202.01	9.49	87.69	7.08	8.28
1995	5.22	12.86	1,828.96	1,576.46	1,458.71	792.06	226.42	4.37	4.99	347.06	460.38	37.19
1996	44.12	47.22	974.04	1,710.90	1,260.00	283.24	9.36	1.65	0.37	0.67	8.06	9.20
1997	15.12	153.61	343.56	6,378.96	1,906.44	681.24	99.48	17.16	9.76	18.15	8.89	4.51
1998	2.00	191.85	672.17	417.67	394.55	428.43	404.76	10.02	13.30	69.83	54.05	223.32
1999	5.44	6.67	462.16	207.32	245.76	727.56	183.12	471.22	246.89	13.65	0.58	0.62
2000	2.53	29.68	471.32	85.76	171.64	33.15	256.92	8.79	4.54	8.06	2.94	1.40
2001	0.14	0.02	418.76	4,520.76	1,803.48	1,461.96	1,156.12	128.00	3.45	17.52	30.11	129.96

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (May through October 1942 and March 1943 through December 2001) and estimated (January 1931 through April 1942 and November 1942 through February 1943) historic streamflow, in cubic feet per second, for the Red River of the North at Wahpeton, N. Dak.												
1931	40.66	88.09	182.50	194.97	229.72	150.36	90.16	46.52	63.95	43.21	39.03	40.66
1932	54.21	60.99	83.08	113.13	72.88	72.45	47.10	39.18	45.22	35.29	47.44	128.75
1933	31.17	33.88	235.40	71.04	54.44	89.01	27.51	21.17	37.16	18.87	23.72	41.07
1934	37.14	35.51	35.73	54.70	25.92	20.45	19.88	16.56	11.51	17.14	18.57	19.11
1935	21.68	14.64	81.42	71.31	74.61	91.46	147.77	32.84	20.02	15.12	23.04	48.79
1936	35.92	33.75	45.00	90.43	59.20	31.54	18.44	28.37	31.11	36.44	31.31	26.43
1937	20.47	21.28	32.54	90.32	90.59	256.66	139.56	104.71	180.03	127.75	51.23	27.51
1938	27.65	48.93	139.58	199.40	392.04	384.84	113.78	35.86	68.70	42.34	35.78	62.89
1939	159.11	161.15	334.13	305.46	260.52	120.45	67.04	26.65	24.48	28.52	30.49	23.85
1940	23.99	43.37	61.90	230.55	444.90	197.32	41.05	27.94	32.12	32.84	69.66	48.93
1941	79.42	142.58	227.09	385.50	436.21	311.99	145.22	57.38	76.91	117.14	140.42	141.90
1942	167.38	132.14	189.22	182.92	1,021.00	1,278.00	934.20	391.80	476.30	391.90	495.80	414.99
1943	414.99	326.49	412.00	2,152.00	1,669.00	1,818.00	1,069.00	562.00	403.00	415.00	331.00	282.00
1944	196.00	152.00	195.00	641.00	961.00	1,957.00	1,380.00	419.00	615.00	753.60	698.30	510.20
1945	405.30	375.80	1,250.00	1,133.00	837.50	916.30	305.00	146.20	140.70	224.40	260.10	221.50
1946	189.70	127.50	823.10	1,114.00	604.50	362.50	716.10	607.90	501.30	597.20	583.30	482.60
1947	413.20	345.00	486.50	2,021.00	1,627.00	1,487.00	1,083.00	231.70	207.00	196.30	205.10	186.50
1948	148.70	115.20	256.10	1,279.00	1,403.00	545.30	255.50	217.10	179.20	130.80	117.70	54.80
1949	69.80	85.70	242.30	406.40	217.90	224.70	727.70	198.20	92.10	97.80	99.30	95.00
1950	87.90	132.40	446.50	1,340.00	1,572.00	1,458.00	1,526.00	675.50	211.60	146.20	124.30	126.10
1951	155.20	147.90	241.60	2,208.00	1,615.00	1,063.00	592.80	370.90	331.60	354.70	384.90	501.30
1952	524.50	535.20	468.40	3,161.00	1,876.00	1,554.00	746.20	409.40	443.50	351.60	235.80	189.20
1953	166.50	192.70	549.60	542.90	756.00	1,669.00	1,347.00	856.30	564.90	387.90	462.90	453.70
1954	376.80	350.20	561.90	677.00	851.70	1,041.00	540.60	200.60	234.80	124.30	137.50	198.70
1955	245.50	186.40	266.50	543.10	330.20	305.90	509.70	445.40	448.10	376.20	305.30	183.90
1956	247.70	215.50	259.70	847.30	812.00	699.40	240.80	272.80	118.70	70.80	49.70	65.70
1957	106.00	113.90	448.20	672.10	930.90	1,067.00	790.50	521.60	461.60	375.10	460.90	385.50
1958	316.50	285.40	484.50	656.10	259.70	141.50	362.70	227.70	179.40	142.70	160.00	172.60
1959	259.70	245.00	315.50	370.10	425.80	564.00	514.30	213.80	162.20	152.60	147.00	201.60
1960	233.50	249.00	343.50	901.60	869.10	796.90	466.60	180.80	111.60	98.80	124.80	150.30
1961	155.60	180.50	300.00	290.80	389.00	425.70	190.10	78.90	79.00	108.10	102.90	75.00
1962	84.30	102.40	251.30	1,028.00	1,929.00	2,675.00	2,756.00	1,983.00	746.40	434.00	360.70	326.50
1963	312.30	232.90	397.60	607.50	509.40	1,591.00	480.90	157.10	159.20	220.80	178.80	147.90
1964	151.00	161.50	182.40	776.50	978.90	600.30	292.20	79.50	125.10	224.40	213.70	236.00
1965	197.90	184.30	226.00	1,789.00	1,490.00	2,526.00	1,230.00	415.00	422.30	724.20	545.70	510.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (May through October 1942 and March 1943 through December 2001) and estimated (January 1931 through April 1942 and November 1942 through February 1943) historic streamflow, in cubic feet per second, for the Red River of the North at Wahpeton, N. Dak.—Continued												
1966	500.00	443.90	1,651.00	1,492.00	2,076.00	1,671.00	628.50	522.70	350.40	448.90	457.40	403.90
1967	391.10	363.40	659.50	1,388.00	1,239.00	1,182.00	882.50	227.20	114.60	192.80	176.30	177.90
1968	137.30	141.70	308.90	414.80	570.60	584.10	428.10	227.00	161.40	295.40	311.50	257.90
1969	219.50	402.10	526.10	4,436.00	2,606.00	1,317.00	470.70	204.80	64.40	109.20	128.40	135.60
1970	158.20	179.20	254.40	629.10	755.90	815.90	459.80	112.10	26.40	89.60	170.20	147.50
1971	130.60	132.80	424.40	547.20	368.50	342.30	465.90	165.80	167.90	239.20	491.50	641.10
1972	595.70	475.00	1,295.00	1,734.00	1,541.00	1,547.00	833.50	624.00	451.30	436.20	361.80	390.70
1973	351.70	359.50	791.40	547.80	370.40	301.40	151.20	121.90	114.30	372.30	528.90	494.00
1974	445.50	492.30	549.00	679.60	1,004.00	1,115.00	696.30	349.30	247.40	282.40	275.00	177.80
1975	187.80	249.80	341.80	1,258.00	1,231.00	1,283.00	1,787.00	585.30	363.00	314.50	308.70	268.70
1976	246.30	360.30	961.60	725.50	329.60	158.10	109.40	53.50	2.18	5.72	7.40	6.60
1977	8.81	18.00	84.30	138.00	22.50	90.00	65.60	53.50	149.10	227.50	329.50	364.80
1978	394.60	328.60	1,360.00	3,112.00	1,698.00	1,206.00	1,482.00	277.80	105.00	141.70	117.90	114.20
1979	104.10	102.80	324.50	3,245.00	1,977.00	1,763.00	1,223.00	825.10	600.90	418.20	364.00	338.90
1980	404.80	417.90	719.40	935.90	568.40	537.10	188.40	126.70	34.80	65.00	112.40	108.90
1981	103.60	153.00	227.00	211.30	183.90	208.20	186.80	225.60	52.00	142.30	182.90	197.60
1982	231.40	253.30	602.40	1,179.00	888.80	731.40	556.90	299.50	179.50	410.60	362.60	353.30
1983	327.10	325.10	541.40	434.20	324.20	212.80	335.00	351.40	345.80	312.90	273.20	233.50
1984	265.70	350.20	1,159.00	1,763.00	984.00	1,969.00	868.70	357.90	137.90	440.60	501.30	367.10
1985	268.40	311.30	1,193.00	954.50	1,299.00	1,762.00	1,157.00	1,104.00	938.90	802.90	769.50	751.50
1986	677.70	663.20	1,679.00	2,907.00	3,085.00	2,485.00	1,664.00	782.80	1,434.00	1,247.00	952.20	820.30
1987	613.60	687.10	958.50	725.10	584.50	492.60	364.90	188.20	187.10	145.30	145.20	142.50
1988	151.80	257.90	528.80	423.40	376.10	221.40	85.60	87.80	70.50	68.10	61.80	51.60
1989	71.80	159.10	578.10	3,003.00	1,110.00	728.30	317.90	152.00	219.30	157.40	130.90	111.30
1990	124.10	167.90	482.00	422.60	513.20	528.30	392.20	234.10	156.60	114.40	82.80	86.60
1991	81.90	97.20	330.90	459.80	752.00	1,025.00	1,497.00	532.10	802.20	289.40	165.10	137.10
1992	179.70	227.20	576.90	493.40	424.70	450.80	401.40	431.50	284.60	183.10	197.40	198.70
1993	186.20	239.00	922.10	2,086.00	1,095.00	1,586.00	2,787.00	2,496.00	2,148.00	1,599.00	842.10	354.80
1994	558.70	574.10	1,967.00	2,609.00	2,366.00	1,343.00	1,644.00	641.30	292.30	441.50	307.30	425.20
1995	383.10	444.10	2,629.00	2,619.00	2,419.00	1,522.00	855.20	318.30	270.00	756.50	884.00	481.30
1996	494.60	500.60	1,893.00	2,740.00	2,378.00	1,376.00	595.00	346.50	209.80	219.50	303.10	398.10
1997	462.60	721.20	941.90	8,717.00	3,344.00	1,777.00	1,044.00	765.30	581.90	589.20	529.70	544.80
1998	416.50	868.20	1,318.00	1,311.00	1,312.00	1,131.00	1,564.00	914.00	545.10	668.20	704.90	967.10
1999	628.10	637.50	1,327.00	1,350.00	1,438.00	2,075.00	1,280.00	1,150.00	1,074.00	736.00	563.00	446.00
2000	413.00	506.00	1,344.00	913.00	1,029.00	973.00	1,104.00	634.00	433.00	347.00	527.00	668.00
2001	656.00	604.00	1,198.00	5,725.00	2,938.00	2,981.00	2,303.00	722.00	466.00	438.60	421.80	580.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Wild Rice River (N. Dak.) at the mouth												
1931	0.01	0.31	1.74	9.33	5.41	2.70	0.26	0.01	0.08	0.02	0.02	0.40
1932	0.08	0.02	1.95	14.82	6.49	3.65	0.79	0.00	0.00	0.00	0.00	0.00
1933	0.00	0.47	36.72	16.26	8.37	2.04	0.00	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.35	4.10	0.12	1.51	0.40	0.00	0.00	0.00	0.00	0.00
1935	0.00	0.00	168.88	22.12	14.22	47.24	22.39	5.60	1.12	0.00	0.00	0.00
1936	0.00	0.00	88.92	61.49	14.55	0.40	0.00	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	129.95	95.27	23.40	20.15	4.35	2.24	0.00	0.00	0.00
1938	0.00	0.00	95.22	13.93	37.28	10.44	0.40	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	246.62	50.65	3.59	26.20	26.20	2.07	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	79.18	21.72	2.68	0.00	0.00	0.00	0.00	0.00	0.00
1941	0.00	0.00	87.48	70.23	21.16	87.32	13.66	5.04	11.15	8.18	6.20	3.49
1942	0.08	0.00	16.59	73.43	169.49	335.39	84.97	50.49	112.06	124.15	66.36	21.09
1943	7.35	2.01	257.24	1,954.18	195.01	791.36	395.73	57.65	25.30	8.08	12.74	6.32
1944	0.56	0.41	22.89	163.68	188.74	272.48	518.88	150.35	96.39	21.94	35.60	14.06
1945	0.98	1.37	1,112.57	456.20	145.98	176.21	17.69	4.69	2.45	2.33	2.88	0.76
1946	0.00	0.00	594.44	224.06	30.23	9.19	34.26	2.83	0.13	5.90	7.57	2.30
1947	1.06	0.27	58.39	792.84	177.32	83.40	24.74	0.68	0.00	0.00	0.00	0.00
1948	0.00	0.00	4.18	240.21	21.94	7.04	6.25	8.02	0.07	0.00	0.00	0.00
1949	0.00	0.00	36.05	166.22	27.99	7.98	106.35	14.89	0.00	0.00	0.00	0.00
1950	0.00	0.00	195.31	899.01	664.74	64.37	8.56	1.94	0.00	0.00	0.00	0.00
1951	0.00	0.00	16.15	645.31	45.90	30.34	22.17	0.51	1.07	1.78	4.64	10.10
1952	1.31	0.77	0.55	2,601.15	312.45	25.08	32.91	5.24	0.42	0.00	0.53	1.32
1953	0.80	1.09	105.51	43.91	305.06	360.14	53.18	7.00	0.22	0.00	0.00	0.07
1954	0.05	0.30	48.88	45.79	35.60	74.00	54.29	0.53	1.72	0.30	0.28	1.07
1955	0.21	0.03	25.55	117.67	3.73	1.44	2.16	18.92	0.02	0.00	0.00	0.00
1956	0.00	0.00	0.00	216.43	40.08	3.29	0.00	4.03	0.00	0.00	0.00	0.00
1957	0.00	0.00	50.87	105.84	64.93	90.45	53.18	24.18	89.33	35.60	29.66	11.43
1958	3.03	3.58	41.47	176.51	82.95	18.02	28.88	0.09	0.03	0.00	0.00	0.00
1959	0.00	0.00	13.16	7.41	3.28	25.97	4.53	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	22.67	228.71	60.45	5.68	3.29	0.10	0.00	0.00	0.00	0.00
1961	0.00	0.00	23.34	9.49	11.64	1.15	0.00	0.00	0.00	0.00	0.00	0.00
1962	0.00	0.00	0.00	715.32	814.75	1,039.99	2,000.50	363.38	18.47	7.11	8.39	3.16
1963	0.19	0.00	47.56	96.22	44.78	507.57	22.73	2.37	0.13	0.00	0.00	0.00
1964	0.00	0.00	18.14	166.44	103.89	32.02	16.68	1.52	0.75	0.00	0.00	0.00
1965	0.00	0.00	0.00	809.87	107.25	122.58	88.44	25.52	4.11	13.99	4.71	4.06

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Wild Rice River (N. Dak.) at the mouth—Continued												
1966	1.54	0.25	998.10	369.05	120.34	71.20	66.27	212.36	25.52	9.03	18.68	6.76
1967	2.08	0.81	218.86	358.99	221.32	538.47	270.02	32.46	0.65	0.01	1.12	1.34
1968	0.45	0.05	21.34	63.92	57.99	29.11	5.99	2.22	3.30	8.62	8.03	5.66
1969	0.61	0.33	0.38	3,402.95	393.61	85.53	67.95	34.70	1.40	0.07	0.05	2.27
1970	1.88	1.13	20.02	154.17	57.76	198.93	46.91	0.08	0.00	0.00	0.00	0.00
1971	0.00	0.00	117.01	44.24	13.10	19.37	81.61	0.58	9.02	3.31	21.42	11.10
1972	3.15	0.75	600.85	310.88	559.07	163.67	56.65	18.02	0.43	0.00	3.24	2.75
1973	2.20	0.86	113.25	27.76	11.75	9.83	10.91	0.01	0.13	6.65	4.37	2.61
1974	0.39	0.26	72.22	167.11	68.96	19.81	0.12	0.05	0.00	0.00	0.00	0.00
1975	0.00	0.00	0.24	904.43	157.73	423.27	1,280.68	45.00	3.45	10.42	15.49	5.11
1976	3.25	27.03	282.34	194.87	28.99	0.81	0.04	0.00	0.00	0.00	0.00	0.00
1977	0.00	0.00	8.42	23.11	5.77	3.73	3.59	0.17	12.43	27.54	10.06	6.68
1978	3.87	2.53	679.48	1,125.84	163.67	44.56	249.31	51.16	29.89	5.71	4.49	2.53
1979	0.77	0.55	0.71	2,135.55	405.14	46.79	71.53	49.37	2.60	0.15	8.45	4.52
1980	1.92	0.81	130.72	312.54	27.65	62.13	1.05	3.87	0.30	0.54	0.53	1.05
1981	0.48	3.69	10.69	16.48	3.26	10.31	8.77	1.33	0.00	0.00	0.00	0.00
1982	0.00	0.00	53.97	397.47	28.21	2.68	30.11	1.20	0.00	9.09	5.22	5.99
1983	0.98	0.72	119.00	40.37	6.91	0.10	19.81	0.97	8.21	0.44	0.14	0.03
1984	0.06	41.31	650.29	522.00	71.65	141.05	4.24	1.22	0.00	21.05	11.32	6.53
1985	1.93	0.75	225.61	33.29	23.51	222.44	10.05	0.06	3.91	0.25	0.04	2.57
1986	2.18	1.27	478.87	977.64	763.82	75.68	24.63	17.46	178.44	80.15	41.20	20.65
1987	7.62	6.94	182.81	126.96	46.35	12.87	8.71	0.25	0.01	0.00	0.00	0.00
1988	0.00	0.00	31.96	13.16	1.60	0.10	4.59	1.28	0.00	0.00	0.00	0.00
1989	0.00	0.00	4.05	1,999.52	78.03	41.87	2.34	1.20	0.34	0.01	0.00	0.00
1990	0.00	0.00	9.48	16.48	8.86	1.01	0.03	0.00	0.00	0.00	0.00	0.00
1991	0.00	0.00	8.50	3.11	30.34	14.22	77.47	4.91	10.71	0.04	0.01	0.07
1992	0.07	0.64	34.28	49.44	25.75	255.46	117.66	28.77	2.46	0.02	2.33	0.71
1993	0.00	2.46	276.59	847.59	128.40	170.94	1,010.21	517.42	111.16	33.02	20.54	20.43
1994	15.93	10.79	686.89	820.27	270.69	38.40	830.20	44.89	13.66	24.85	30.21	16.81
1995	8.11	7.60	1,321.59	793.95	459.99	160.64	723.29	70.53	22.95	131.31	58.67	18.57
1996	6.66	2.80	313.53	1,022.54	1,064.17	377.26	55.64	11.98	0.46	5.43	19.67	6.98
1997	1.21	0.70	1.19	6,093.68	840.95	210.91	200.95	80.49	46.46	57.43	27.69	21.20
1998	11.76	230.38	727.59	1,000.87	1,394.87	705.60	1,263.89	268.79	108.03	163.22	122.17	206.21
1999	79.98	54.71	730.69	587.14	461.11	307.07	169.38	175.20	489.99	160.08	87.56	48.34
2000	29.00	71.85	452.33	261.00	236.21	141.05	322.41	54.07	3.74	8.37	17.80	4.23
2001	1.38	1.20	2.60	3,317.80	591.08	182.47	122.02	20.15	2.85	12.18	17.65	10.47

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Red River of the North at Fargo, N. Dak.												
1931	21.10	39.30	128.00	190.40	167.60	132.00	64.80	20.80	15.60	26.60	28.00	21.60
1932	36.10	47.30	134.90	231.80	55.60	33.20	7.73	0.00	8.78	14.10	6.74	1.93
1933	0.00	0.18	129.30	206.80	73.60	51.10	15.30	1.59	0.08	4.72	2.49	13.30
1934	14.00	20.50	43.00	102.10	8.12	3.31	0.00	0.00	0.00	0.00	0.59	0.57
1935	0.00	11.70	386.30	151.50	112.60	86.70	183.70	32.50	8.45	4.88	1.91	0.59
1936	13.90	5.81	161.30	428.00	86.70	2.87	0.00	0.00	0.00	0.00	0.00	4.23
1937	4.40	0.97	26.80	444.60	252.70	183.40	107.50	55.70	139.30	89.00	59.00	0.00
1938	5.34	14.90	236.40	163.60	425.70	330.10	98.90	18.50	57.70	29.00	19.10	21.80
1939	93.90	98.10	739.30	705.60	213.00	130.40	85.40	12.00	0.00	9.85	17.40	14.00
1940	1.08	8.57	40.10	446.60	384.40	185.50	15.10	3.20	0.00	5.71	35.00	37.70
1941	42.70	87.00	252.40	644.30	324.40	485.30	130.00	25.30	81.50	93.10	125.10	98.20
1942	112.10	109.80	190.00	325.60	1,299.00	1,665.00	988.80	469.90	608.20	530.40	431.70	314.10
1943	318.90	272.00	463.60	6,164.00	1,860.00	2,803.00	1,765.00	770.80	428.20	400.90	371.20	290.50
1944	202.20	163.20	255.30	868.20	1,196.00	2,128.00	2,013.00	689.30	769.80	745.10	730.10	510.20
1945	430.90	389.20	2,814.00	1,671.00	999.30	1,107.00	375.40	155.00	134.40	218.30	248.20	219.40
1946	186.80	112.80	1,550.00	1,348.00	639.80	420.40	705.60	598.90	503.80	578.30	535.20	490.40
1947	413.80	338.80	513.20	3,537.00	1,881.00	1,612.00	1,149.00	247.40	201.70	217.10	204.60	183.00
1948	140.20	103.30	215.70	1,806.00	1,619.00	625.40	273.70	217.80	172.10	141.40	103.70	63.30
1949	65.30	86.30	180.90	717.80	251.20	224.50	871.90	229.80	88.40	78.70	80.50	95.60
1950	88.30	133.60	527.20	3,669.00	3,320.00	1,768.00	1,521.00	768.40	213.70	145.10	96.70	116.80
1951	153.40	153.20	255.50	3,233.00	1,712.00	1,114.00	632.70	388.10	341.20	349.00	338.20	511.50
1952	528.90	535.00	533.40	7,256.00	2,149.00	1,609.00	1,270.00	426.40	445.30	324.10	248.60	185.70
1953	138.00	183.20	685.90	691.50	1,253.00	3,281.00	1,539.00	899.40	568.50	373.80	477.20	412.30
1954	357.20	344.00	631.40	863.00	943.90	1,190.00	721.10	233.50	240.50	154.00	143.40	171.00
1955	221.90	186.60	276.60	862.60	375.40	322.10	705.30	456.40	454.70	402.40	299.00	174.30
1956	238.40	219.60	250.80	1,410.00	834.30	830.90	287.90	265.90	113.90	62.30	44.00	59.00
1957	87.20	104.50	458.80	902.00	961.70	1,112.00	898.60	574.20	627.30	450.70	468.00	418.90
1958	323.10	306.60	574.10	849.50	379.10	164.10	794.10	227.30	173.50	147.90	152.50	160.70
1959	245.10	242.60	364.20	407.50	427.80	687.40	617.50	216.00	164.80	144.30	124.40	206.50
1960	208.00	228.10	308.90	1,493.00	955.10	834.80	528.70	179.10	108.00	79.40	130.20	127.20
1961	141.20	169.40	422.30	321.80	428.40	425.20	177.20	81.50	52.60	102.40	103.90	72.00
1962	76.10	85.40	203.10	2,617.00	3,352.00	5,122.00	5,692.00	2,691.00	844.50	515.40	424.50	302.60
1963	288.80	189.40	420.50	777.60	629.80	2,396.00	529.30	190.50	149.00	210.60	173.30	150.10
1964	138.80	169.80	193.80	1,182.00	1,142.00	734.80	385.10	93.90	118.10	236.50	207.20	209.80
1965	193.70	184.60	207.20	3,740.00	1,648.00	2,787.00	1,515.00	536.00	507.50	825.00	566.80	512.10

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Red River of the North at Fargo, N. Dak.—Continued												
1966	491.30	490.00	3,756.00	2,269.00	2,312.00	1,810.00	794.30	899.90	410.00	468.00	476.10	459.60
1967	427.90	384.30	902.60	2,248.00	1,556.00	2,081.00	1,218.00	259.10	85.60	171.60	161.10	165.50
1968	134.60	135.40	373.70	502.50	674.60	639.80	435.10	222.80	156.80	291.20	288.20	247.90
1969	232.40	317.90	480.90	9,924.00	3,574.00	1,483.00	629.80	209.20	49.20	86.00	120.10	111.60
1970	154.30	174.00	250.00	1,027.00	838.50	1,207.00	510.50	109.50	14.10	61.30	162.30	124.00
1971	137.70	125.20	565.80	663.10	377.50	368.70	706.40	141.00	246.20	263.30	606.80	568.60
1972	554.00	408.30	2,469.00	2,255.00	2,020.00	1,787.00	939.60	695.20	434.20	438.50	359.70	393.80
1973	383.80	440.60	978.10	541.20	338.00	283.20	155.00	115.50	120.20	388.70	569.50	557.10
1974	481.00	519.30	731.60	1,313.00	1,060.00	1,108.00	707.60	355.30	225.00	296.20	259.50	184.90
1975	188.10	267.70	388.80	3,201.00	1,463.00	2,430.00	5,378.00	708.00	433.90	358.50	350.10	216.00
1976	230.30	290.00	1,002.00	1,040.00	340.70	166.90	91.30	35.00	12.30	3.77	12.00	11.70
1977	14.80	19.00	85.20	193.90	77.10	91.10	74.80	18.50	177.70	333.10	311.10	382.10
1978	405.60	327.70	1,293.00	6,926.00	1,756.00	1,239.00	1,553.00	364.20	113.80	154.60	108.90	100.50
1979	97.90	93.00	266.00	6,768.00	2,576.00	1,938.00	1,461.00	1,012.00	634.90	412.60	358.30	308.40
1980	377.60	385.90	676.20	1,796.00	586.90	580.90	160.70	124.50	31.50	55.40	99.80	98.20
1981	85.80	139.70	245.10	253.90	346.30	231.50	222.00	272.30	44.50	131.20	185.20	190.30
1982	225.30	241.80	724.80	2,407.00	927.10	814.60	622.30	313.90	189.90	479.50	362.20	332.60
1983	294.60	300.80	702.20	632.30	394.90	227.50	578.40	304.00	362.40	310.70	284.20	233.20
1984	252.10	349.80	1,618.00	3,347.00	1,171.00	2,110.00	1,026.00	381.50	176.60	521.00	502.20	334.70
1985	252.80	331.30	1,468.00	1,102.00	1,341.00	2,175.00	1,348.00	1,148.00	1,049.00	828.10	718.20	785.50
1986	739.70	661.80	1,912.00	5,669.00	4,589.00	2,580.00	2,010.00	911.40	1,707.00	1,435.00	893.30	800.20
1987	706.90	778.10	1,415.00	926.60	668.10	507.30	365.00	153.10	152.70	143.30	141.50	134.60
1988	143.70	244.20	605.40	512.10	392.40	218.10	63.00	69.10	65.50	56.30	48.60	30.90
1989	46.90	139.20	291.50	6,367.00	1,145.00	866.10	319.80	156.10	227.20	186.50	126.20	100.90
1990	93.70	147.50	323.80	495.90	546.60	594.00	399.10	226.60	175.40	132.10	81.80	72.40
1991	72.60	86.40	334.30	567.90	927.50	1,116.00	1,662.00	587.50	750.00	338.70	165.60	147.10
1992	193.50	268.90	735.70	499.50	458.20	895.10	493.30	499.50	335.70	211.80	225.10	196.20
1993	209.70	284.80	776.20	3,993.00	1,328.00	1,909.00	4,119.00	3,293.00	2,280.00	1,741.00	738.30	466.10
1994	603.20	697.50	2,754.00	5,016.00	2,852.00	1,577.00	2,600.00	853.80	315.50	513.10	270.70	398.50
1995	400.70	440.70	4,722.00	4,390.00	3,002.00	1,888.00	1,731.00	462.20	280.40	923.80	926.10	502.70
1996	471.00	523.90	2,361.00	4,851.00	3,888.00	1,908.00	745.10	387.10	209.80	275.10	265.30	345.80
1997	461.90	680.70	957.70	17,920.00	5,365.00	2,408.00	1,432.00	842.10	640.40	672.70	580.50	635.50
1998	508.70	1,353.00	3,301.00	2,626.00	3,718.00	2,253.00	3,857.00	1,304.00	690.10	973.50	938.70	1,261.00
1999	701.90	699.70	2,458.00	2,329.00	2,238.00	2,530.00	1,594.00	1,427.00	1,770.00	1,005.00	740.00	497.00
2000	444.00	489.00	2,304.00	1,405.00	1,420.00	1,794.00	1,655.00	774.00	560.00	412.00	837.00	753.00
2001	715.00	680.00	1,213.00	10,540.00	4,165.00	3,361.00	2,477.00	969.00	584.00	559.20	590.50	759.80

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1955 through December 2001) and estimated (January 1931 through September 1955) historic streamflow, in cubic feet per second, for the Sheyenne River above Harvey, N. Dak.												
1931	1.00	4.01	8.02	14.94	3.98	5.53	1.47	1.02	0.86	0.97	3.10	2.70
1932	2.00	1.63	14.65	36.08	6.78	6.04	2.80	1.43	0.99	1.00	2.70	1.65
1933	1.25	1.23	27.21	26.29	8.33	3.21	1.86	0.83	0.57	0.56	1.35	1.05
1934	0.78	1.07	4.26	13.14	2.65	1.19	0.69	0.45	0.42	0.81	1.27	0.77
1935	0.71	1.20	7.78	11.69	5.01	4.38	5.10	6.43	1.61	1.25	1.42	1.53
1936	1.26	1.15	3.48	20.20	9.42	2.59	1.07	0.35	0.39	0.47	0.97	0.59
1937	0.61	0.43	2.40	12.79	4.79	4.86	1.73	1.05	1.00	0.64	1.29	0.89
1938	0.94	1.01	6.13	7.61	3.33	1.86	0.91	0.60	0.01	0.02	0.02	0.02
1939	0.03	0.04	6.25	10.53	1.46	1.01	0.11	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	15.89	4.30	0.59	0.02	0.12	0.00	0.00	0.00	0.00
1941	0.00	0.00	6.28	88.05	8.11	9.14	4.14	1.25	3.08	3.60	4.21	2.34
1942	0.44	0.56	2.47	68.09	16.56	11.29	3.86	3.43	3.16	1.73	2.58	1.17
1943	1.03	2.16	43.42	83.52	12.95	28.20	9.08	2.75	0.55	0.25	2.03	1.30
1944	0.42	0.49	1.44	10.07	5.13	11.15	4.34	5.16	6.93	1.48	5.91	3.35
1945	1.12	1.34	41.39	15.52	6.32	5.50	1.84	1.79	0.84	0.00	0.26	0.36
1946	0.09	0.00	20.76	6.41	1.02	0.17	1.99	0.01	0.00	0.00	0.05	0.03
1947	0.00	0.00	21.39	13.96	3.41	6.29	6.01	0.32	0.15	0.51	0.61	0.56
1948	0.10	0.00	0.18	187.90	25.87	2.86	1.05	0.21	0.00	0.00	0.00	0.00
1949	0.00	0.00	0.26	147.64	6.80	6.03	1.02	0.00	0.00	0.00	0.00	0.00
1950	0.00	0.00	3.06	289.91	177.45	27.10	4.36	0.24	0.11	0.72	1.34	1.32
1951	1.60	0.72	1.93	111.85	19.86	34.96	3.97	0.90	2.50	1.00	1.10	1.39
1952	0.00	0.00	5.28	102.01	9.36	2.82	5.78	0.03	0.00	0.00	0.00	0.00
1953	0.00	0.00	6.18	6.84	11.04	7.64	2.75	0.00	0.00	0.00	0.00	0.07
1954	0.05	8.05	4.65	7.55	2.83	76.10	23.84	4.79	5.05	2.94	2.40	1.60
1955	0.19	0.00	16.20	28.99	9.62	12.18	2.01	0.07	0.00	1.41	1.05	0.26
1956	0.11	0.00	11.27	76.59	17.22	20.22	2.82	0.46	0.53	1.32	2.77	0.38
1957	0.15	0.00	5.39	4.25	4.27	2.39	1.58	1.05	2.11	2.56	2.46	1.10
1958	0.64	3.57	7.15	4.97	2.38	2.07	6.94	0.10	0.44	1.07	1.50	0.10
1959	0.00	0.00	6.50	2.99	2.58	1.13	0.41	0.00	0.19	5.95	0.98	0.90
1960	0.32	0.00	30.60	5.76	6.69	3.40	0.18	0.92	0.74	0.55	0.71	0.17
1961	0.04	0.19	1.80	3.09	1.64	0.30	0.07	0.03	0.56	0.47	0.81	0.09
1962	0.00	0.00	14.20	3.21	6.54	5.56	5.78	0.76	0.68	1.10	1.53	0.80
1963	0.05	0.00	2.87	3.79	4.37	6.73	1.58	0.98	0.31	0.85	0.98	0.22
1964	0.01	0.03	0.08	10.00	3.42	8.30	2.55	0.95	1.76	1.40	1.61	0.10
1965	0.00	0.00	3.38	26.70	5.49	1.82	4.02	0.99	2.55	2.25	1.53	1.69

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1955 through December 2001) and estimated (January 1931 through September 1955) historic streamflow, in cubic feet per second, for the Sheyenne River above Harvey, N. Dak.—Continued												
1966	0.00	0.00	61.40	4.89	3.43	3.01	9.32	1.07	0.46	1.06	1.73	0.16
1967	0.00	0.00	36.20	28.90	28.70	2.49	0.56	0.00	0.17	1.31	1.58	0.52
1968	0.01	0.05	10.30	4.07	5.75	1.65	1.11	2.01	2.02	1.54	1.94	0.44
1969	0.00	0.00	0.00	101.00	15.20	2.52	3.04	1.33	0.92	1.25	1.32	1.24
1970	0.34	0.20	0.63	19.80	14.80	7.41	3.81	1.64	1.39	1.80	2.15	0.79
1971	0.16	0.20	6.14	90.50	14.30	54.00	9.01	1.84	1.34	4.18	2.49	0.91
1972	0.00	0.00	61.20	25.80	13.90	3.09	1.09	0.81	0.71	1.57	2.32	0.74
1973	2.32	5.86	6.15	5.11	2.25	1.81	0.78	0.72	1.09	2.53	1.39	0.17
1974	0.00	0.90	15.60	22.40	54.40	17.50	0.76	0.37	0.94	1.38	1.92	1.05
1975	0.18	0.43	13.20	72.50	50.20	14.60	18.70	1.04	1.75	2.10	1.92	0.74
1976	0.42	2.04	71.10	49.80	8.64	1.78	0.42	0.07	0.06	0.99	0.26	0.13
1977	0.00	0.00	3.73	2.66	1.59	0.87	1.02	0.80	4.79	2.89	1.32	0.31
1978	0.25	0.34	34.80	15.90	7.76	3.71	2.94	0.33	0.60	1.21	1.26	1.02
1979	0.30	0.37	0.69	74.30	41.70	9.32	13.60	4.67	1.08	1.31	1.83	1.43
1980	0.94	0.50	9.27	19.10	3.55	2.15	1.29	6.64	3.90	5.22	5.92	2.55
1981	0.00	12.90	36.90	13.90	7.02	17.10	5.22	1.61	3.57	2.06	1.86	1.43
1982	0.15	19.10	123.00	98.70	25.80	17.60	43.40	5.35	0.73	11.80	10.40	6.27
1983	4.10	26.80	111.00	54.70	28.60	8.43	3.48	1.60	1.66	1.45	2.48	0.88
1984	3.19	6.68	44.80	93.40	62.10	18.10	3.34	3.24	4.29	4.37	3.36	0.66
1985	0.00	7.61	24.80	25.20	9.96	4.22	5.70	25.60	4.39	11.20	2.89	0.68
1986	0.56	3.45	81.40	45.90	24.90	6.07	2.81	1.73	2.53	3.69	2.54	1.09
1987	1.29	3.01	48.50	41.80	13.20	10.40	41.00	5.71	2.24	1.83	1.46	0.67
1988	0.01	0.77	9.09	3.79	2.35	1.63	0.93	1.32	0.73	0.50	1.32	0.74
1989	0.00	0.00	13.50	10.50	2.04	1.84	1.06	1.22	1.84	2.05	3.18	1.34
1990	1.13	1.08	2.25	2.90	2.83	5.06	6.29	0.92	1.48	0.43	0.63	1.03
1991	1.05	1.61	3.33	2.13	2.65	1.12	1.03	1.08	2.46	2.91	3.11	0.41
1992	0.48	3.75	11.50	3.05	2.15	1.40	1.51	0.76	1.68	1.52	2.36	1.40
1993	0.13	0.45	27.20	7.69	4.84	12.70	58.90	22.50	4.68	3.16	3.05	1.05
1994	0.32	0.14	54.80	34.20	9.24	10.90	4.19	1.84	2.57	34.50	39.00	21.20
1995	3.11	0.64	145.80	108.90	116.70	27.30	14.80	4.34	1.99	2.58	3.35	0.03
1996	0.00	0.00	36.00	165.80	51.00	15.80	6.75	4.18	1.86	2.98	3.79	3.35
1997	3.10	2.82	43.70	324.40	88.30	18.40	14.70	3.25	1.16	2.88	4.97	5.37
1998	3.10	13.20	95.90	77.10	18.10	7.33	5.53	0.92	3.03	2.65	10.60	8.22
1999	6.37	4.88	82.80	107.50	112.30	37.70	19.10	59.40	48.40	17.40	12.60	9.88
2000	6.73	18.50	39.30	20.80	26.80	77.30	67.40	23.50	16.30	8.62	18.30	7.07
2001	2.88	2.43	207.00	133.00	37.70	50.50	46.50	10.90	3.02	3.95	4.34	1.55

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1949 through December 2001) and estimated (January 1931 through September 1949) historic streamflow, in cubic feet per second, for the Sheyenne River near Warwick, N. Dak.												
1931	3.89	15.54	34.19	63.69	20.24	28.08	7.46	5.19	4.38	4.95	12.02	10.47
1932	7.74	6.31	62.46	153.81	34.42	30.67	14.23	7.27	5.05	5.07	10.47	6.38
1933	4.86	4.77	115.99	112.06	42.29	16.31	9.42	4.23	2.87	2.85	5.22	4.07
1934	3.04	4.13	18.17	56.01	13.44	6.03	3.52	2.31	2.14	4.09	4.92	2.98
1935	2.76	4.65	33.18	49.82	25.43	22.27	25.91	32.65	8.18	6.34	5.50	5.92
1936	4.89	4.46	14.82	86.10	47.86	13.16	5.43	1.78	2.00	2.36	3.76	2.27
1937	2.36	1.66	10.21	54.51	24.35	24.69	8.78	5.31	5.09	3.23	5.01	3.43
1938	3.64	3.92	26.15	32.46	16.94	9.42	4.62	9.83	4.02	2.85	4.61	3.64
1939	3.46	3.07	29.31	72.23	14.76	13.30	6.39	2.70	2.17	2.97	5.22	4.61
1940	1.93	1.73	1.89	58.64	29.04	10.55	3.54	2.63	2.07	2.58	4.80	3.92
1941	3.83	3.83	9.01	289.70	55.11	52.31	27.05	11.53	12.68	17.63	19.86	15.57
1942	7.35	6.86	12.95	185.40	97.04	71.35	26.29	18.47	26.12	15.38	17.21	11.08
1943	10.08	11.08	75.13	462.18	88.77	183.92	65.01	31.57	15.05	9.78	18.00	12.75
1944	8.32	9.65	10.88	62.01	62.55	59.97	43.63	39.44	44.35	11.84	32.30	16.15
1945	5.17	6.46	253.03	80.17	46.29	38.83	11.72	5.07	6.04	5.53	8.27	5.46
1946	6.10	2.40	231.74	186.02	31.31	14.26	36.64	20.12	7.69	13.79	11.76	6.21
1947	5.00	2.88	95.20	260.55	39.48	38.12	17.34	8.58	3.18	11.07	10.08	7.82
1948	6.85	3.49	4.24	1,114.85	366.38	41.02	27.70	15.74	1.63	3.71	10.08	7.36
1949	3.62	3.00	13.90	715.26	82.86	43.86	32.97	14.56	1.69	7.90	8.87	4.05
1950	1.50	1.50	12.30	1,421.00	854.00	98.80	30.00	8.23	6.08	12.00	11.10	8.23
1951	10.60	6.68	21.70	440.00	90.50	70.10	21.50	2.68	11.60	7.77	8.87	6.74
1952	2.03	3.24	6.23	284.00	43.40	6.13	44.90	3.55	1.37	1.16	7.97	2.61
1953	2.35	2.57	13.30	38.50	60.30	61.20	64.40	3.06	2.07	1.55	2.83	3.45
1954	3.61	34.80	79.00	64.10	30.90	326.00	170.00	48.30	38.30	33.50	18.50	9.06
1955	3.14	2.43	40.40	333.00	65.40	77.50	23.60	4.48	2.11	2.62	2.37	2.07
1956	1.51	1.88	2.19	631.00	100.00	189.00	19.00	3.93	9.56	6.05	23.80	6.84
1957	2.62	1.30	43.30	51.30	36.40	21.10	24.50	25.80	63.00	31.10	18.10	10.10
1958	9.23	8.21	38.70	62.10	20.90	16.00	61.50	4.84	1.42	3.05	5.23	4.63
1959	3.20	2.49	48.60	35.20	23.90	8.92	2.57	1.11	0.80	8.11	11.00	4.18
1960	2.81	1.82	21.70	392.00	97.40	63.40	12.60	4.46	1.04	1.53	1.28	0.76
1961	0.72	0.96	23.20	31.50	13.70	1.75	1.45	0.09	0.71	1.56	2.38	2.10
1962	1.56	1.30	23.10	123.00	59.40	84.40	22.70	15.80	6.60	6.10	6.30	4.62
1963	2.14	1.52	17.10	32.00	22.40	23.00	6.95	3.57	1.71	1.17	1.86	1.05
1964	1.07	1.26	1.46	88.60	32.80	58.20	24.00	5.39	11.70	16.30	8.65	5.90
1965	2.04	3.06	12.30	271.00	38.70	17.00	123.00	57.20	24.20	43.00	12.90	9.60

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1949 through December 2001) and estimated (January 1931 through September 1949) historic streamflow, in cubic feet per second, for the Sheyenne River near Warwick, N. Dak.—Continued												
1966	3.27	2.20	650.00	136.00	88.80	28.40	51.10	18.40	6.66	9.65	6.52	4.13
1967	3.64	4.74	197.00	212.00	140.00	29.50	10.40	1.43	1.57	3.26	3.84	2.53
1968	2.25	2.54	91.30	26.90	31.40	13.10	5.65	5.87	12.60	6.81	4.83	3.83
1969	2.58	2.17	2.37	1,022.00	85.00	26.70	24.20	24.00	5.85	3.01	4.66	4.86
1970	3.64	3.57	14.60	179.00	108.00	58.70	13.40	27.60	4.80	3.84	8.10	4.27
1971	3.18	2.10	4.61	675.00	66.60	164.00	79.60	6.85	18.30	32.40	24.20	9.09
1972	4.11	3.09	326.00	151.00	78.10	34.30	2.88	1.96	1.92	3.77	8.83	3.42
1973	2.39	1.88	72.90	25.50	20.10	6.66	1.56	1.88	3.25	8.02	4.85	4.24
1974	2.25	2.48	15.30	464.00	489.00	89.10	9.75	0.90	0.89	3.73	11.80	5.70
1975	5.95	5.75	51.60	561.00	369.00	67.50	45.40	6.38	8.07	7.12	10.80	5.98
1976	5.21	11.00	297.00	280.00	64.50	18.50	3.58	1.23	1.55	1.97	2.19	2.68
1977	3.32	3.43	15.40	15.80	12.50	2.24	1.07	1.18	1.70	3.29	3.89	4.66
1978	4.37	2.38	30.50	348.00	21.50	15.30	13.90	12.20	2.51	2.74	8.97	4.39
1979	7.09	4.76	5.79	701.00	289.00	56.20	117.00	52.00	8.30	8.11	12.70	7.22
1980	4.66	4.41	26.30	176.00	21.70	36.00	5.57	21.60	42.00	41.70	50.30	19.60
1981	12.30	154.00	165.00	71.60	53.70	135.00	40.50	19.70	28.00	25.10	20.60	15.10
1982	5.85	3.91	154.00	609.00	134.00	92.10	159.00	42.20	11.00	73.20	33.90	29.60
1983	26.30	55.90	793.00	309.00	105.00	45.20	21.40	5.46	8.40	26.70	18.80	6.97
1984	4.30	26.60	248.00	267.00	190.00	44.30	4.24	2.48	1.93	8.53	8.64	5.91
1985	3.65	4.09	249.90	39.80	29.40	29.00	7.01	80.30	44.60	43.50	26.50	12.60
1986	8.45	7.79	423.40	250.70	132.80	14.50	22.30	32.30	28.30	18.50	18.70	19.30
1987	13.10	16.10	215.70	545.10	52.80	18.70	142.00	60.20	16.90	18.30	17.80	15.60
1988	5.71	7.99	65.20	49.00	24.70	11.50	0.69	0.77	2.65	2.50	4.02	3.62
1989	3.88	3.50	4.44	186.50	23.10	4.74	0.36	0.40	0.76	1.26	3.59	1.50
1990	0.47	0.75	5.44	24.90	10.40	26.70	8.57	3.64	2.12	2.38	11.10	3.77
1991	1.64	2.64	10.50	17.00	34.50	23.80	31.90	14.60	22.10	14.00	13.40	9.10
1992	7.33	13.70	346.10	39.00	22.30	4.85	1.71	0.56	0.84	1.32	3.08	4.08
1993	3.00	2.96	82.50	182.10	49.60	20.70	299.20	423.40	37.80	12.70	13.70	14.30
1994	10.70	9.85	339.90	198.80	78.90	163.20	53.30	10.40	11.50	49.90	65.50	42.80
1995	22.50	15.70	696.40	479.60	282.90	91.40	88.80	53.50	12.10	14.30	11.70	9.05
1996	8.83	7.58	143.60	1,165.00	302.40	103.50	56.00	33.20	13.30	16.40	13.50	9.06
1997	7.72	6.86	35.00	1,794.00	414.00	61.70	104.20	34.70	18.40	20.30	16.20	12.90
1998	9.33	58.60	406.00	354.60	71.70	44.40	21.70	6.28	7.20	10.60	13.70	18.90
1999	9.97	11.10	205.10	1,106.00	518.30	190.90	181.90	196.60	125.40	66.60	52.00	27.60
2000	16.70	24.90	111.00	110.00	106.00	321.00	441.00	148.00	154.00	136.00	233.00	93.40
2001	55.20	45.40	122.00	1,106.00	277.00	258.00	205.00	135.00	52.10	35.74	64.73	32.45

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1944 through December 2001) and estimated (January 1931 through September 1944) historic streamflow, in cubic feet per second, for the Sheyenne River near Cooperstown, N. Dak.												
1931	6.01	24.05	54.54	101.60	34.16	47.40	12.60	8.76	7.39	8.36	18.60	16.20
1932	11.98	9.77	99.65	245.37	58.10	51.76	24.02	12.27	8.52	8.56	16.20	9.86
1933	7.51	7.37	185.04	178.76	71.38	27.54	15.91	7.15	4.85	4.80	8.08	6.29
1934	4.70	6.39	28.99	89.36	22.69	10.17	5.94	3.89	3.61	6.90	7.61	4.61
1935	4.27	7.19	52.94	79.48	42.92	37.59	43.73	55.11	13.81	10.70	8.50	9.16
1936	7.56	6.90	23.64	137.36	80.79	22.21	9.17	3.01	3.38	3.99	5.82	3.51
1937	3.65	2.57	16.30	86.96	41.10	41.67	14.82	8.96	8.60	5.45	7.75	5.31
1938	5.64	6.06	41.72	28.55	15.85	5.02	7.79	5.15	0.08	0.13	0.14	0.10
1939	0.16	0.21	42.66	71.84	12.57	8.70	0.98	0.02	0.01	0.03	0.00	0.00
1940	0.00	0.00	0.00	108.38	36.95	5.07	0.19	1.03	0.04	0.03	0.00	0.01
1941	0.00	0.00	42.85	600.52	69.72	78.66	35.64	10.73	26.46	30.93	25.27	14.03
1942	2.62	3.39	16.82	464.41	142.43	97.14	33.19	29.50	27.17	14.90	15.53	7.02
1943	6.21	12.99	296.16	569.64	111.44	242.54	78.07	23.66	4.77	2.17	12.21	7.80
1944	2.51	2.94	9.83	68.68	44.16	95.94	37.30	44.40	59.59	20.00	50.00	25.00
1945	8.00	10.00	404.00	128.00	78.20	65.60	19.80	8.57	10.20	9.35	12.80	8.46
1946	9.44	3.71	370.00	297.00	52.90	24.10	61.90	34.00	13.00	23.30	18.20	9.61
1947	7.74	4.46	152.00	416.00	66.70	64.40	29.30	14.50	5.38	18.70	15.60	12.10
1948	10.60	5.41	6.77	1,780.00	619.00	69.30	46.80	26.60	2.76	6.26	15.60	11.40
1949	5.61	4.64	22.20	1,142.00	140.00	74.10	55.70	24.60	2.85	23.80	23.70	16.80
1950	12.90	8.61	53.70	2,293.00	1,953.00	273.00	80.40	24.60	25.40	29.00	23.90	23.20
1951	20.80	17.90	83.60	650.00	173.00	91.40	35.00	11.20	31.80	18.10	16.40	15.70
1952	11.60	10.60	44.30	447.00	80.00	32.00	85.60	12.10	6.26	3.64	11.30	7.47
1953	6.23	7.71	18.30	62.80	73.30	123.00	132.00	8.74	2.38	4.19	9.25	8.77
1954	7.68	48.20	122.00	117.00	51.30	313.00	213.00	65.50	47.30	46.00	34.50	17.80
1955	8.58	7.84	27.60	439.00	96.50	171.00	45.90	6.45	0.86	3.49	6.60	5.53
1956	4.66	4.00	4.81	678.00	243.00	280.00	51.30	12.90	18.30	13.20	37.80	15.00
1957	9.87	7.43	75.40	109.00	75.10	45.30	47.30	36.70	155.00	86.70	61.80	31.50
1958	17.80	15.80	48.10	127.00	45.90	38.00	108.00	12.80	2.35	3.48	9.91	6.41
1959	3.30	1.48	36.90	130.00	42.10	24.30	10.40	0.85	0.00	8.50	8.35	6.57
1960	5.08	3.74	52.80	616.10	101.40	121.40	31.80	8.20	4.24	2.85	8.96	5.89
1961	3.63	0.61	51.30	79.00	37.30	6.66	3.84	0.68	0.70	3.77	3.35	4.70
1962	4.09	2.36	24.70	360.50	108.20	189.20	49.10	26.40	11.90	9.02	19.50	11.50
1963	4.00	0.00	32.80	94.60	39.00	30.00	28.10	2.67	2.67	0.83	3.64	3.43
1964	1.94	1.22	2.14	161.80	62.40	236.70	101.30	27.70	40.90	43.90	25.30	10.70
1965	9.12	7.49	10.00	925.50	146.50	99.60	91.10	153.40	55.00	95.80	41.80	21.90

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1944 through December 2001) and estimated (January 1931 through September 1944) historic streamflow, in cubic feet per second, for the Sheyenne River near Cooperstown, N. Dak.—Continued												
1966	14.00	7.65	1,022.00	385.30	236.20	154.50	188.40	107.90	27.80	28.40	18.10	16.60
1967	11.20	11.80	236.90	891.10	313.60	95.30	39.00	8.02	5.21	13.00	14.70	9.82
1968	8.75	7.53	169.20	125.90	78.90	81.30	23.90	14.60	24.60	15.50	17.70	14.70
1969	8.77	8.43	7.84	1,867.00	263.70	97.60	88.20	38.90	32.20	27.40	26.70	22.50
1970	15.60	11.70	32.30	520.70	265.40	184.70	39.00	39.30	19.20	16.30	22.70	15.00
1971	9.53	8.86	43.80	992.30	170.00	219.20	159.20	25.90	32.50	51.50	52.40	23.90
1972	10.10	7.06	462.00	478.50	266.60	130.70	21.40	15.50	7.79	14.60	21.20	17.60
1973	11.80	8.80	142.80	73.50	48.10	31.10	6.37	1.85	17.30	42.10	17.80	13.30
1974	7.75	5.84	10.30	1,111.00	659.90	435.20	41.90	16.70	5.29	14.80	35.00	15.50
1975	12.30	14.00	104.40	715.00	670.00	168.30	95.30	17.90	11.00	21.60	21.30	15.70
1976	11.70	12.10	196.30	596.40	115.90	39.00	16.70	3.05	0.87	1.38	2.83	3.14
1977	3.10	3.47	21.90	59.20	39.10	11.20	9.30	0.78	3.32	11.30	12.20	9.15
1978	8.52	5.03	91.30	707.90	93.80	50.60	21.50	21.50	30.80	4.58	9.15	8.18
1979	6.81	6.50	6.06	1,322.00	949.10	127.50	187.00	69.20	21.50	11.70	23.70	15.50
1980	11.20	10.50	43.30	283.50	57.40	53.40	15.10	8.06	50.60	48.10	61.10	23.80
1981	15.50	74.70	303.50	127.80	73.70	149.40	87.30	29.70	26.10	40.60	32.60	21.10
1982	8.84	4.61	104.50	875.50	214.50	165.90	195.40	61.50	17.00	114.20	65.00	61.00
1983	28.90	26.90	1,094.00	542.20	176.50	161.50	120.90	115.00	97.50	49.30	46.40	37.10
1984	25.50	16.60	354.50	770.90	328.30	115.00	40.90	8.95	0.97	17.20	18.50	12.10
1985	5.05	5.51	299.50	128.70	105.10	80.20	18.30	17.40	56.90	54.20	71.00	24.10
1986	20.20	10.70	500.90	421.10	298.70	49.00	71.60	42.10	24.30	39.70	29.20	30.20
1987	22.90	28.00	247.90	1,603.00	141.40	93.90	229.40	213.60	53.20	52.30	52.80	43.00
1988	16.50	17.60	154.60	183.00	72.30	29.30	24.30	8.41	1.82	3.57	12.70	7.26
1989	2.63	7.59	11.20	305.40	68.20	37.80	8.06	1.87	7.11	4.38	11.10	4.05
1990	6.16	5.79	7.83	69.50	38.40	76.80	40.70	13.50	6.44	2.56	11.50	6.92
1991	3.21	8.66	22.50	42.40	61.80	30.00	45.40	10.40	15.00	25.50	22.90	16.90
1992	12.90	19.60	516.90	96.50	64.00	39.10	80.80	15.30	8.56	8.95	19.40	11.90
1993	8.86	9.36	43.30	397.50	125.60	73.60	640.20	1,033.00	220.40	79.20	50.10	41.20
1994	31.40	31.20	426.10	686.10	179.30	318.70	314.80	108.10	321.00	391.60	254.70	118.90
1995	68.20	64.40	1,381.00	1,244.00	533.50	222.80	205.30	118.10	51.30	69.70	70.70	32.90
1996	34.00	33.00	116.30	2,623.00	578.60	252.60	203.50	107.80	35.60	69.80	46.30	37.50
1997	31.30	26.40	41.10	2,390.00	1,153.00	202.20	213.20	101.60	47.10	48.20	49.10	42.20
1998	30.90	112.30	329.10	740.80	209.50	119.20	76.50	25.90	17.60	53.80	46.20	38.30
1999	20.90	22.10	190.90	1,940.00	820.60	480.30	409.20	262.90	224.70	119.00	85.70	43.70
2000	31.40	45.80	180.00	154.00	146.00	873.00	722.00	251.00	287.00	177.00	375.00	144.00
2001	66.20	50.80	126.00	1,892.00	574.00	417.00	310.00	365.00	68.10	69.81	117.80	55.61

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for Baldhill Creek at the mouth												
1931	2.24	8.98	18.99	35.38	10.47	14.53	3.86	2.69	2.26	2.56	6.94	6.05
1932	4.47	3.65	34.70	85.44	17.81	15.87	7.36	3.76	2.61	2.62	6.05	3.68
1933	2.81	2.75	64.43	62.25	21.88	8.44	4.88	2.19	1.49	1.47	3.02	2.35
1934	1.75	2.38	10.09	31.12	6.96	3.12	1.82	1.19	1.11	2.12	2.84	1.72
1935	1.60	2.68	18.43	27.67	13.16	11.52	13.40	16.89	4.23	3.28	3.17	3.42
1936	2.82	2.58	8.23	47.83	24.76	6.81	2.81	0.92	1.04	1.22	2.17	1.31
1937	1.36	0.96	5.67	30.28	12.60	12.77	4.54	2.75	2.64	1.67	2.89	1.98
1938	2.10	2.26	14.53	9.89	4.83	1.53	2.39	1.57	0.02	0.04	0.05	0.04
1939	0.06	0.08	14.78	24.88	3.83	2.65	0.30	0.01	0.00	0.01	0.00	0.00
1940	0.00	0.00	0.00	37.54	11.26	1.54	0.06	0.31	0.01	0.01	0.00	0.00
1941	0.00	0.00	14.84	207.99	21.24	23.97	10.86	3.27	8.06	9.42	9.39	5.21
1942	0.97	1.26	5.83	160.85	43.40	29.60	10.11	8.99	8.28	4.54	5.77	2.61
1943	2.31	4.83	102.58	197.30	33.95	73.90	23.79	7.21	1.45	0.66	4.54	2.90
1944	0.93	1.09	3.40	23.79	13.45	29.23	11.37	13.53	18.16	4.98	15.89	8.39
1945	2.74	3.35	118.91	40.52	20.20	17.21	5.43	3.65	2.65	2.20	4.14	2.75
1946	2.97	1.30	109.09	93.05	14.43	7.02	13.63	9.42	3.83	6.78	6.36	3.17
1947	3.28	1.87	51.55	140.85	18.08	18.46	7.69	3.37	0.96	5.02	4.76	4.05
1948	2.96	1.61	4.67	535.16	181.54	19.48	12.08	7.73	1.37	1.03	6.05	3.42
1949	1.80	1.73	12.65	334.77	38.42	20.65	17.57	3.17	0.27	4.77	3.99	2.29
1950	1.04	0.94	7.61	629.55	407.83	41.11	12.20	3.17	3.29	5.59	4.02	3.40
1951	2.48	2.17	12.58	107.85	20.70	10.65	4.74	1.29	4.25	3.84	2.79	2.10
1952	0.87	1.19	6.11	63.71	7.99	2.90	13.11	1.42	0.67	1.08	1.93	0.84
1953	0.28	0.83	2.24	4.08	7.18	15.40	21.52	0.98	0.23	1.20	1.59	1.03
1954	0.41	6.67	19.33	9.72	4.63	48.78	36.98	9.66	6.68	8.06	5.75	2.45
1955	0.50	0.84	3.57	62.16	10.07	23.16	6.45	0.69	0.07	1.04	1.14	0.59
1956	0.17	0.39	0.49	131.99	13.72	12.02	3.68	1.98	2.09	1.67	5.06	1.94
1957	0.76	0.00	8.78	10.74	10.12	6.03	9.80	6.55	66.33	33.79	22.76	8.24
1958	2.11	2.42	5.19	14.09	8.10	9.75	13.38	2.44	1.45	2.00	2.42	0.17
1959	0.00	0.00	8.80	7.80	7.76	6.59	3.76	1.70	1.42	2.95	0.42	0.68
1960	0.02	0.00	36.02	94.96	8.30	8.13	2.10	2.62	2.39	1.98	1.85	0.22
1961	0.15	0.04	10.97	8.36	6.11	1.03	0.99	1.02	2.20	1.88	1.57	0.64
1962	0.11	0.11	28.63	52.35	16.21	20.41	16.10	2.87	3.24	3.14	4.79	2.33
1963	0.10	0.00	2.71	11.15	6.41	4.44	2.01	1.13	1.13	1.10	1.39	0.81
1964	0.25	0.22	0.66	15.21	6.80	19.95	13.38	5.19	5.14	5.01	3.18	1.08
1965	0.48	0.46	2.48	277.73	22.11	10.03	13.38	7.71	9.00	10.95	6.25	3.40

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for Baldhill Creek at the mouth—Continued												
1966	0.27	0.10	183.22	32.10	29.82	25.85	22.34	6.77	3.25	4.07	3.71	2.15
1967	1.35	0.92	108.05	111.63	46.26	20.07	8.28	4.04	1.64	3.64	2.42	1.64
1968	0.62	0.61	22.37	15.88	19.61	35.83	12.59	5.53	4.58	4.66	5.44	3.63
1969	0.30	0.68	2.38	509.94	32.31	23.36	13.27	1.98	3.97	5.54	6.12	4.65
1970	1.99	2.22	14.21	48.88	29.93	57.37	12.36	6.95	7.78	6.43	7.57	2.91
1971	0.35	1.00	35.79	97.98	15.31	25.06	10.28	1.94	3.13	5.71	7.84	3.32
1972	1.53	0.21	74.05	89.26	38.21	15.42	2.91	3.13	2.20	3.12	3.12	2.11
1973	0.90	1.89	26.17	8.08	6.72	3.23	0.70	1.07	3.37	4.14	3.28	1.90
1974	0.44	0.81	2.68	260.51	42.40	18.71	2.53	2.17	1.63	2.88	4.26	3.36
1975	1.72	0.75	10.63	165.77	43.65	23.70	40.48	3.07	3.20	3.66	3.82	2.10
1976	1.13	4.06	85.90	37.69	8.61	2.73	1.33	0.10	0.15	1.42	2.22	0.80
1977	0.09	0.46	6.42	7.62	3.53	1.77	1.85	0.97	3.73	3.99	5.46	3.70
1978	0.81	0.20	66.89	93.62	13.61	3.80	0.93	0.92	0.84	2.01	1.89	0.85
1979	0.16	0.11	1.45	731.19	92.97	10.83	3.15	2.21	1.04	1.50	2.20	2.09
1980	1.03	0.49	17.23	33.00	3.05	2.09	0.27	2.25	1.27	1.98	1.85	1.14
1981	0.89	2.58	3.26	2.73	1.94	2.53	0.50	0.64	0.57	2.43	2.59	1.23
1982	0.53	1.79	75.50	83.89	11.79	7.35	5.17	1.08	0.69	14.85	5.13	6.00
1983	2.69	5.97	195.74	42.50	14.29	19.84	19.73	4.04	4.41	4.06	4.53	2.02
1984	2.12	4.75	160.29	67.56	26.87	6.11	0.72	0.09	0.11	1.92	2.82	1.95
1985	0.62	2.08	26.29	3.62	4.01	9.89	2.68	1.36	2.73	5.51	3.39	1.99
1986	2.59	1.92	54.36	34.79	42.40	5.36	6.42	5.24	5.88	7.97	5.04	4.83
1987	3.39	5.58	301.45	295.74	21.88	10.44	14.17	3.40	4.34	7.02	6.24	3.78
1988	1.17	1.87	46.31	28.52	11.03	2.20	0.40	0.76	0.62	1.07	2.42	1.80
1989	0.89	0.49	8.42	65.43	6.97	1.96	0.02	2.23	5.00	1.44	2.95	0.65
1990	0.00	0.07	3.20	13.76	2.36	13.95	8.29	0.30	0.57	1.08	1.23	0.88
1991	0.00	0.08	2.64	3.53	8.27	2.88	0.91	0.15	0.37	0.54	1.12	1.13
1992	1.67	5.12	88.03	7.94	2.93	2.43	3.03	0.74	2.04	2.02	2.32	0.97
1993	0.06	1.32	85.12	81.88	21.09	13.83	309.86	151.13	59.52	17.35	12.10	8.03
1994	5.97	5.37	219.12	140.26	40.14	56.01	58.39	16.55	45.46	120.64	54.07	17.88
1995	8.12	7.13	531.87	377.40	162.47	53.86	93.88	62.36	39.46	25.40	20.10	9.57
1996	7.04	6.00	119.24	752.55	152.04	60.09	51.59	32.65	9.85	10.00	8.23	6.35
1997	5.45	5.91	22.48	1,163.28	249.21	44.10	31.75	6.25	7.17	10.98	10.41	6.75
1998	3.64	37.97	142.61	116.66	36.62	9.24	8.87	3.82	3.25	8.82	9.90	8.72
1999	3.73	4.13	277.85	457.82	207.37	204.42	72.90	25.96	20.64	13.95	9.12	4.47
2000	1.75	16.10	27.07	32.66	28.23	104.08	72.45	29.14	16.67	13.95	60.96	14.43
2001	5.83	3.73	58.61	259.50	74.04	48.98	21.43	41.50	14.29	79.15	130.79	61.74

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1949 through December 2001) and estimated (January 1931 through September 1949) historic streamflow, in cubic feet per second, for the Sheyenne River below Baldhill Dam, N. Dak.												
1931	8.50	34.01	79.06	147.27	51.78	71.86	19.10	13.28	11.20	12.67	26.30	22.92
1932	16.94	13.82	144.43	355.66	88.08	78.47	36.42	18.61	12.91	12.98	22.92	13.95
1933	10.63	10.43	268.21	259.11	108.22	41.74	24.12	10.83	7.35	7.28	11.43	8.90
1934	6.64	9.03	42.01	129.52	34.40	15.42	9.00	5.90	5.48	10.47	10.76	6.52
1935	6.04	10.16	76.73	115.20	65.06	56.98	66.29	83.55	20.93	16.22	12.02	12.95
1936	10.69	9.76	34.27	199.09	122.48	33.66	13.89	4.57	5.12	6.05	8.24	4.97
1937	5.16	3.63	23.62	126.04	62.31	63.17	22.46	13.59	13.04	8.26	10.96	7.51
1938	7.97	8.57	60.47	41.37	24.03	7.61	11.81	7.80	0.12	0.20	0.19	0.15
1939	0.23	0.30	61.82	104.10	19.06	13.19	1.49	0.03	0.01	0.05	0.00	0.00
1940	0.00	0.00	0.00	157.06	56.00	7.68	0.29	1.55	0.05	0.05	0.00	0.02
1941	0.00	0.00	62.10	870.25	105.67	119.22	54.01	16.26	40.10	46.88	35.74	19.84
1942	3.70	4.80	24.38	673.00	215.86	147.22	50.31	44.71	41.19	22.58	21.96	9.92
1943	8.78	18.37	429.19	825.50	168.90	367.60	118.32	35.86	7.23	3.29	17.27	11.02
1944	3.55	4.16	14.25	99.54	66.93	145.41	56.54	67.29	90.32	19.24	50.25	28.48
1945	9.55	11.39	409.10	153.41	82.37	71.71	23.93	23.30	10.93	7.69	13.41	8.96
1946	9.28	4.65	376.22	347.92	63.31	33.33	41.73	42.09	18.33	32.06	22.69	10.56
1947	14.06	7.91	210.94	575.30	78.67	85.98	32.06	11.56	1.44	21.59	14.15	13.69
1948	7.52	4.57	29.22	1,896.65	867.07	88.69	49.22	36.58	9.48	0.71	23.98	9.92
1949	5.74	6.61	73.69	1,145.11	169.80	93.03	90.32	2.74	1.11	2.50	25.00	18.30
1950	10.60	10.20	50.00	1,730.00	2,960.00	1,154.00	246.00	68.20	3.50	13.10	26.50	27.30
1951	25.70	23.60	39.60	547.00	320.00	89.80	46.90	23.70	28.90	50.00	15.00	14.90
1952	24.60	29.00	14.70	2.63	13.60	14.30	13.00	21.60	16.60	13.60	10.80	14.80
1953	24.10	23.70	8.26	2.07	12.70	77.40	124.00	8.68	13.40	19.30	19.90	41.30
1954	60.30	56.30	80.70	132.00	36.40	166.00	215.00	30.90	49.50	39.40	102.00	103.00
1955	84.30	32.00	7.81	248.00	64.00	238.00	224.00	12.60	0.81	1.92	5.27	7.64
1956	3.64	7.66	63.30	374.00	355.00	275.00	51.90	12.90	3.89	7.75	33.90	53.60
1957	57.40	68.40	44.80	17.90	36.90	63.30	39.70	34.10	272.00	98.80	120.00	82.30
1958	80.10	68.10	67.60	41.30	17.90	5.88	75.80	14.30	15.90	18.00	33.40	43.10
1959	42.10	34.90	26.50	8.95	6.86	7.90	7.28	8.53	9.40	10.10	17.30	28.00
1960	24.20	22.30	16.80	669.00	77.20	153.00	26.30	14.30	14.40	13.40	36.40	46.90
1961	45.20	38.80	18.90	10.90	13.50	13.60	14.10	13.70	12.40	14.30	14.50	15.00
1962	15.00	14.80	67.90	300.00	137.00	219.00	89.00	26.10	14.70	16.30	40.80	50.90
1963	48.80	46.00	30.90	10.10	12.30	12.00	7.93	8.35	8.66	8.94	25.30	36.50
1964	25.40	17.80	11.40	10.10	9.50	212.00	136.00	13.50	30.20	26.70	51.30	50.30
1965	55.70	50.60	147.00	1,224.00	216.00	94.10	188.00	126.00	67.50	110.00	105.00	111.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1949 through December 2001) and estimated (January 1931 through September 1949) historic streamflow, in cubic feet per second, for the Sheyenne River below Baldhill Dam, N. Dak.—Continued												
1966	104.00	65.60	1,067.00	623.00	278.00	184.00	172.00	209.00	63.80	17.50	49.80	77.80
1967	72.10	151.00	165.00	972.00	474.00	49.10	31.60	18.90	17.10	14.50	27.10	42.70
1968	43.50	46.80	42.20	143.00	130.00	225.00	28.30	17.10	18.30	23.10	54.20	51.90
1969	69.10	200.00	166.00	1,936.00	313.00	91.30	127.00	13.70	14.10	18.30	37.40	48.60
1970	53.20	87.60	146.00	420.00	330.00	333.00	32.50	15.20	13.20	11.30	21.50	40.40
1971	40.50	104.00	215.00	686.00	158.00	223.00	183.00	25.20	24.50	46.40	128.00	156.00
1972	125.00	48.10	193.00	795.00	335.00	219.00	18.20	16.80	18.60	13.40	44.10	49.00
1973	55.20	62.70	61.50	31.50	15.50	15.20	9.83	17.80	14.70	20.00	43.40	37.50
1974	70.40	180.00	219.00	921.00	684.00	508.00	17.00	16.30	13.40	10.90	32.20	52.10
1975	55.50	56.40	68.30	668.00	830.00	227.00	119.00	56.30	18.60	29.20	52.00	69.50
1976	78.10	68.30	64.30	493.00	107.00	18.00	17.70	24.10	36.10	32.20	23.30	16.70
1977	14.60	9.20	9.94	9.27	9.07	8.53	8.63	6.72	8.09	11.00	32.70	45.20
1978	63.00	104.00	144.00	703.00	129.00	41.80	19.20	20.30	39.10	66.60	51.30	36.20
1979	30.80	56.40	173.00	1,796.00	1,346.00	157.00	146.00	52.70	27.80	93.80	156.00	4.32
1980	10.40	10.90	83.10	153.00	9.32	19.40	17.40	10.10	152.00	127.00	94.90	23.50
1981	9.10	9.61	98.20	137.00	70.20	136.00	84.60	25.70	43.00	153.00	135.00	8.61
1982	7.93	32.30	174.00	892.00	233.00	177.00	227.00	56.90	14.20	145.00	238.00	114.00
1983	120.00	76.40	1,236.00	659.00	203.00	219.00	117.00	41.30	77.00	106.00	140.00	134.00
1984	78.30	64.00	257.00	912.00	351.00	114.00	33.50	37.10	41.00	103.00	48.50	51.10
1985	28.10	11.70	96.40	142.20	117.50	77.60	23.30	44.00	23.80	31.60	98.60	142.90
1986	140.40	197.90	166.50	391.20	307.20	51.10	66.50	60.90	28.20	15.20	111.40	190.90
1987	124.10	78.20	969.60	1,268.00	155.80	109.50	215.40	215.60	66.80	89.70	96.40	110.00
1988	117.90	112.40	58.20	17.70	52.00	30.60	18.40	25.40	12.00	13.30	23.80	35.50
1989	45.80	56.20	107.40	198.30	19.80	25.40	21.70	24.90	20.00	33.00	23.10	22.10
1990	13.30	12.20	14.80	10.00	7.35	10.10	13.30	44.90	57.20	5.72	9.21	8.24
1991	7.78	8.54	7.96	7.93	11.70	14.90	26.70	29.00	15.80	12.20	26.00	55.80
1992	45.70	18.40	448.50	86.20	40.00	32.30	60.50	30.90	29.70	15.20	9.36	44.50
1993	76.30	93.90	214.90	263.70	193.30	131.40	1,272.00	1,555.00	353.10	118.60	152.90	127.60
1994	98.00	181.60	427.70	718.70	163.00	404.90	538.50	192.10	576.80	621.90	290.80	230.80
1995	181.60	167.20	1,567.00	1,998.00	797.90	285.90	246.80	292.50	188.30	70.50	75.90	104.70
1996	124.80	300.10	336.90	2,969.00	953.20	294.50	248.10	107.90	19.60	32.10	131.80	187.50
1997	168.10	172.70	187.10	3,329.00	1,540.00	192.20	224.60	82.10	45.60	54.50	131.30	115.90
1998	66.70	147.60	490.60	560.90	174.80	150.20	62.20	26.00	38.00	23.70	258.10	89.50
1999	108.30	193.00	772.90	1,942.00	1,141.00	691.60	509.50	336.20	256.30	129.00	152.00	244.00
2000	151.00	41.70	59.90	194.00	192.00	1,028.00	765.00	175.00	243.00	261.00	587.00	375.00
2001	227.00	221.00	288.00	1,724.00	692.00	489.00	351.00	378.00	61.60	141.10	239.30	253.70

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through June 1938, August 1938 through September 1975, March through September 1995, and March through September 1996) and estimated (January 1931 through March 1938, July 1938, October 1975 through February 1995, October 1995 through February 1996, and October 1996 through December 2001) historic streamflow, in cubic feet per second, for the Sheyenne River at Valley City, N. Dak.												
1931	9.26	37.03	86.59	161.30	57.34	79.58	21.15	14.71	12.40	14.03	28.64	24.95
1932	18.44	15.04	158.19	389.54	97.54	86.90	40.33	20.61	14.30	14.37	24.95	15.19
1933	11.57	11.35	293.76	283.80	119.84	46.23	26.71	12.00	8.13	8.07	12.44	9.69
1934	7.23	9.84	46.02	141.86	38.09	17.08	9.96	6.53	6.07	11.59	11.72	7.09
1935	6.58	11.07	84.04	126.17	72.05	63.10	73.41	92.52	23.18	17.96	13.09	14.10
1936	11.64	10.63	37.53	218.06	135.63	37.28	15.39	5.06	5.67	6.70	8.97	5.41
1937	5.62	3.96	25.87	138.05	69.00	69.95	24.88	15.05	14.44	9.15	11.93	8.17
1938	8.68	9.33	66.23	45.30	26.60	8.43	13.08	8.64	0.13	0.22	0.21	0.16
1939	0.25	0.33	67.70	114.00	21.10	14.60	1.65	0.03	0.01	0.05	0.00	0.00
1940	0.00	0.00	0.00	172.00	62.00	8.50	0.32	1.72	0.06	0.05	0.00	0.02
1941	0.00	0.00	68.00	953.00	117.00	132.00	59.80	18.00	44.40	51.90	38.90	21.60
1942	4.03	5.22	26.70	737.00	239.00	163.00	55.70	49.50	45.60	25.00	23.90	10.80
1943	9.56	20.00	470.00	904.00	187.00	407.00	131.00	39.70	8.00	3.64	18.80	12.00
1944	3.86	4.53	15.60	109.00	74.10	161.00	62.60	74.50	100.00	21.30	54.70	31.00
1945	10.40	12.40	448.00	168.00	91.20	79.40	26.50	25.80	12.10	8.51	14.60	9.75
1946	10.10	5.06	412.00	381.00	70.10	36.90	46.20	46.60	20.30	35.50	24.70	11.50
1947	15.30	8.61	231.00	630.00	87.10	95.20	35.50	12.80	1.59	23.90	15.40	14.90
1948	8.19	4.98	32.00	2,077.00	960.00	98.20	54.50	40.50	10.50	0.79	26.10	10.80
1949	6.25	7.20	80.70	1,254.00	188.00	103.00	100.00	3.03	1.23	3.02	27.50	21.90
1950	11.00	9.16	77.10	1,746.00	2,975.00	1,231.00	254.00	66.40	2.29	13.20	30.70	26.60
1951	25.90	24.00	73.20	556.00	325.00	95.30	47.20	22.30	27.50	51.30	14.50	14.70
1952	23.40	28.80	49.20	32.40	19.30	22.00	21.10	24.20	21.10	15.10	11.90	13.70
1953	23.10	36.30	18.20	3.19	22.20	112.00	133.00	9.22	12.30	19.30	20.10	38.80
1954	58.60	62.60	78.10	138.00	40.60	175.00	234.00	33.60	50.80	41.70	99.90	98.50
1955	84.30	33.40	23.30	253.00	69.30	256.00	230.00	17.10	2.29	1.29	2.19	6.27
1956	2.66	7.17	67.00	357.00	366.00	287.00	54.10	14.50	2.61	7.19	38.00	52.50
1957	54.70	63.40	45.40	17.00	33.90	64.80	46.50	43.50	289.00	103.00	125.00	83.80
1958	77.80	73.10	66.10	50.10	20.90	8.49	76.30	13.20	14.50	17.00	28.40	39.80
1959	38.90	33.70	29.00	9.97	9.77	29.90	14.10	9.84	9.93	12.40	16.10	26.40
1960	21.40	20.10	75.30	696.00	82.00	160.00	26.00	20.70	15.80	12.60	27.80	45.10
1961	43.30	36.50	31.10	13.70	13.10	14.30	15.20	11.70	15.90	15.90	13.70	13.50
1962	13.80	13.80	123.00	316.00	148.00	245.00	172.00	36.30	20.60	18.70	40.20	50.70
1963	50.20	48.70	37.20	13.40	13.20	18.80	10.20	7.94	11.00	6.65	22.70	34.00
1964	23.50	15.80	10.00	25.50	11.90	200.00	138.00	16.40	28.10	29.40	50.70	50.50
1965	53.90	48.10	150.00	1,411.00	226.00	109.00	208.00	145.00	78.30	116.00	104.00	104.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through June 1938, August 1938 through September 1975, March through September 1995, and March through September 1996) and estimated (January 1931 through March 1938, July 1938, October 1975 through February 1995, October 1995 through February 1996, and October 1996 through December 2001) historic streamflow, in cubic feet per second, for the Sheyenne River at Valley City, N. Dak.—Continued												
1966	102.00	76.30	1,229.00	708.00	307.00	205.00	168.00	215.00	67.30	16.80	43.90	75.90
1967	68.10	154.00	207.00	1,012.00	512.00	56.80	27.70	17.50	17.80	16.40	24.30	41.90
1968	40.50	42.10	65.50	158.00	145.00	266.00	31.70	17.40	19.00	20.70	59.90	51.60
1969	63.10	208.00	186.00	2,091.00	334.00	97.50	156.00	16.90	18.10	13.60	38.50	47.50
1970	53.50	85.00	143.00	473.00	319.00	359.00	33.30	14.20	11.30	13.90	24.00	39.40
1971	37.30	120.00	263.00	691.00	168.00	234.00	192.00	25.90	25.20	49.30	132.00	155.00
1972	119.00	45.20	269.00	876.00	320.00	191.00	25.10	20.50	22.60	19.20	45.70	50.20
1973	55.30	64.00	103.00	36.90	16.90	14.70	10.50	18.90	19.10	18.00	31.00	34.50
1974	63.40	199.00	245.00	1,008.00	727.00	508.00	18.30	18.10	13.00	12.70	36.50	54.20
1975	54.50	58.60	72.60	759.50	915.10	254.80	167.50	57.90	20.30	34.57	59.86	80.00
1976	89.90	78.62	74.75	573.14	126.68	21.31	20.96	28.53	42.74	38.12	26.82	19.22
1977	16.81	10.59	11.56	10.78	10.74	10.10	10.22	7.96	9.58	13.02	37.64	52.03
1978	72.52	119.71	167.41	817.27	152.72	49.49	22.73	24.03	46.29	78.85	59.05	41.67
1979	35.45	64.92	201.12	2,087.94	1,593.55	185.87	172.85	62.39	32.91	111.05	179.57	4.97
1980	11.97	12.55	96.61	177.87	11.03	22.97	20.60	11.96	179.95	150.36	109.24	27.05
1981	10.47	11.06	114.16	159.27	83.11	161.01	100.16	30.43	50.91	181.14	155.39	9.91
1982	9.13	37.18	202.28	1,037.00	275.85	209.55	268.75	67.36	16.81	171.67	273.95	131.22
1983	138.13	87.94	1,436.92	766.12	240.33	259.28	138.52	48.90	91.16	125.49	161.15	154.24
1984	90.13	73.67	298.78	1,060.25	415.55	134.97	39.66	43.92	48.54	121.94	55.83	58.82
1985	32.35	13.47	112.07	165.32	139.11	91.87	27.59	52.09	28.18	37.41	113.50	164.49
1986	161.61	227.80	193.57	454.79	363.70	60.50	78.73	72.10	33.39	18.00	128.23	219.74
1987	142.85	90.01	1,127.21	1,474.12	184.45	129.64	255.01	255.25	79.09	106.20	110.96	126.62
1988	135.71	129.38	67.66	20.58	61.56	36.23	21.78	30.07	14.21	15.75	27.40	40.86
1989	52.72	64.69	124.86	230.53	23.44	30.07	25.69	29.48	23.68	39.07	26.59	25.44
1990	15.31	14.04	17.21	11.63	8.70	11.96	15.75	53.16	67.72	6.77	10.60	9.48
1991	8.96	9.83	9.25	9.22	13.85	17.64	31.61	34.33	18.71	14.44	29.93	64.23
1992	52.60	21.18	521.40	100.21	47.36	38.24	71.63	36.58	35.16	18.00	10.77	51.22
1993	87.83	108.09	249.83	306.57	228.85	155.57	1,505.94	1,840.98	418.04	140.41	176.00	146.88
1994	112.80	209.03	497.22	835.53	192.98	479.37	637.54	227.43	682.88	736.28	334.73	265.67
1995	209.03	192.46	1,771.00	2,214.00	866.40	280.10	246.10	290.80	196.00	83.47	87.37	120.52
1996	143.65	345.43	520.00	2,982.00	1,116.00	299.00	249.50	111.00	27.70	38.00	151.71	215.82
1997	193.49	198.79	217.51	3,870.14	1,823.23	227.55	265.91	97.20	53.99	64.52	151.13	133.41
1998	76.78	169.90	570.35	652.08	206.95	177.82	73.64	30.78	44.99	28.06	297.09	103.02
1999	124.66	222.16	898.54	2,257.68	1,350.84	818.79	603.20	398.03	303.44	152.72	174.96	280.86
2000	173.81	48.00	69.64	225.54	227.31	1,217.06	905.69	207.18	287.69	309.00	675.68	431.65
2001	261.29	254.39	334.82	2,004.24	819.27	578.93	415.55	447.52	72.93	167.05	275.45	292.03

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1956 through December 2001) and estimated (January 1931 through September 1956) historic streamflow, in cubic feet per second, for the Sheyenne River at Lisbon, N. Dak.												
1931	10.66	42.62	100.67	187.53	67.89	94.22	25.04	17.42	14.69	16.61	32.97	28.72
1932	21.23	17.32	183.92	452.89	115.48	102.88	47.75	24.40	16.93	17.01	28.72	17.48
1933	13.32	13.07	341.54	329.95	141.89	54.73	31.62	14.20	9.63	9.55	14.32	11.16
1934	8.33	11.32	53.50	164.93	45.10	20.22	11.80	7.74	7.18	13.72	13.49	8.17
1935	7.58	12.74	97.71	146.69	85.31	74.72	86.91	109.55	27.45	21.27	15.07	16.23
1936	13.40	12.24	43.64	253.52	160.59	44.14	18.22	5.99	6.72	7.93	10.32	6.23
1937	6.47	4.55	30.08	160.50	81.70	82.82	29.45	17.82	17.09	10.83	13.74	9.41
1938	9.99	10.74	77.00	52.66	31.49	9.98	15.49	10.23	0.15	0.26	0.24	0.18
1939	0.29	0.38	78.70	132.53	24.98	17.29	1.95	0.04	0.01	0.06	0.00	0.00
1940	0.00	0.00	0.00	199.96	73.40	10.06	0.38	2.04	0.07	0.06	0.00	0.02
1941	0.00	0.00	79.05	1,107.91	138.52	156.28	70.80	21.31	52.57	61.45	44.78	24.86
1942	4.64	6.01	31.04	856.80	282.96	192.98	65.94	58.60	53.99	29.60	27.51	12.43
1943	11.00	23.02	546.40	1,050.95	221.39	481.85	155.09	47.00	9.47	4.31	21.64	13.81
1944	4.44	5.21	18.14	126.72	87.73	190.61	74.11	88.20	118.39	25.22	62.96	35.68
1945	11.97	14.27	520.82	195.31	107.97	94.00	31.37	30.55	14.33	10.08	16.81	11.22
1946	11.63	5.82	478.97	442.93	82.99	43.69	54.70	55.17	24.03	42.03	28.43	13.24
1947	17.61	9.91	268.55	732.41	103.12	112.71	42.03	15.15	1.88	28.30	17.73	17.15
1948	9.43	5.73	37.20	2,414.62	1,136.56	116.26	64.52	47.95	12.43	0.94	30.04	12.43
1949	7.19	8.29	93.82	1,457.84	222.58	121.94	118.39	3.59	1.46	3.58	31.65	25.21
1950	12.66	10.54	89.63	2,029.82	3,522.14	1,457.40	300.71	78.61	2.71	15.63	35.34	30.62
1951	29.81	27.63	85.10	646.38	384.77	112.83	55.88	26.40	32.56	60.73	16.69	16.92
1952	26.94	33.15	57.20	37.67	22.85	26.05	24.98	28.65	24.98	17.88	13.70	15.77
1953	26.59	41.78	21.16	3.71	26.28	132.60	157.46	10.92	14.56	22.85	23.14	44.66
1954	67.45	72.06	90.80	160.43	48.07	207.18	277.04	39.78	60.14	49.37	114.99	113.38
1955	97.03	38.45	27.09	294.13	82.05	303.08	272.30	20.25	2.71	1.53	2.52	7.22
1956	3.06	8.25	77.89	415.03	433.31	339.78	64.05	17.17	3.09	7.66	34.50	49.10
1957	50.60	49.80	68.20	43.10	39.90	65.20	51.50	49.30	323.10	109.40	133.90	80.90
1958	70.70	95.60	116.00	98.80	38.40	27.60	72.30	17.20	12.90	21.10	31.50	36.50
1959	36.00	33.50	48.40	33.20	17.50	40.10	27.70	10.70	5.25	16.00	12.70	26.00
1960	19.50	21.90	175.30	838.40	100.00	171.80	35.70	21.00	13.90	15.30	26.10	46.10
1961	43.00	39.40	108.30	29.00	22.10	14.80	8.60	6.54	18.70	21.10	18.50	13.00
1962	13.20	14.80	246.60	469.40	210.60	277.40	657.00	91.60	39.90	31.30	54.60	58.20
1963	49.50	52.00	68.10	63.80	34.90	41.50	17.40	13.10	12.20	11.70	25.90	36.60
1964	25.80	26.20	19.80	78.90	30.40	159.20	203.40	22.90	33.70	26.50	53.90	50.80
1965	46.90	42.10	125.90	1,634.00	306.90	163.20	210.60	185.00	66.80	120.50	97.90	105.80

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1956 through December 2001) and estimated (January 1931 through September 1956) historic streamflow, in cubic feet per second, for the Sheyenne River at Lisbon, N. Dak.—Continued												
1966	103.70	76.80	1,304.00	991.40	358.90	217.90	149.00	219.60	71.90	35.70	44.50	73.50
1967	67.60	129.60	345.10	958.90	634.20	103.50	33.50	17.70	16.10	18.30	29.10	42.60
1968	37.40	41.30	128.10	168.30	163.50	329.20	47.70	17.50	21.80	22.40	53.90	50.10
1969	41.70	202.30	220.20	2,548.00	442.90	140.40	213.30	21.50	25.90	22.10	47.50	58.50
1970	65.50	100.90	231.10	523.10	401.70	446.50	68.20	17.70	17.20	16.50	29.70	42.20
1971	39.60	79.10	356.50	732.50	222.40	244.30	228.80	30.40	22.40	56.60	106.60	158.60
1972	138.20	78.60	363.50	927.80	289.40	235.50	39.80	24.90	19.20	23.90	42.30	48.50
1973	53.50	70.40	165.00	62.20	27.20	21.70	6.07	11.60	25.00	22.40	32.80	34.70
1974	63.70	177.90	283.80	1,006.00	685.70	555.40	20.10	16.60	10.10	14.50	38.70	53.20
1975	54.80	56.20	81.60	736.60	970.50	512.90	700.20	95.30	27.10	38.10	62.70	92.70
1976	93.70	107.00	169.30	601.50	172.30	51.60	21.30	10.70	29.90	43.60	30.50	19.80
1977	19.70	17.00	51.90	36.90	67.70	19.70	18.50	7.44	24.60	23.90	40.60	48.30
1978	55.30	98.80	426.80	806.50	180.50	79.20	42.20	22.20	61.50	57.70	54.60	24.50
1979	31.10	56.50	225.00	1,788.00	1,989.00	207.40	151.70	74.30	37.90	73.70	180.40	22.70
1980	15.90	15.90	209.40	246.90	18.90	34.80	28.40	15.80	158.90	126.20	113.90	39.30
1981	15.80	29.10	83.60	152.70	65.20	113.10	127.40	29.10	26.40	140.60	167.60	18.20
1982	14.00	15.60	189.90	1,244.00	297.50	171.30	184.60	72.70	13.70	134.90	195.10	122.50
1983	126.90	76.40	1,214.00	788.50	208.70	267.90	218.40	20.90	88.60	106.90	137.30	136.30
1984	109.40	76.00	415.70	1,092.00	382.00	109.80	35.00	16.40	32.50	95.50	56.50	53.20
1985	40.70	29.00	158.00	171.60	141.70	81.40	22.20	40.20	25.10	36.20	100.20	143.00
1986	139.90	193.70	354.30	509.80	490.00	81.80	72.40	90.20	34.00	35.30	98.80	190.20
1987	132.10	74.40	1,328.00	1,624.00	200.80	148.80	127.90	262.90	61.80	89.80	102.40	112.70
1988	118.30	139.40	145.60	38.00	54.10	34.60	6.52	18.20	13.50	14.90	28.20	34.00
1989	36.30	46.30	207.50	380.50	31.80	46.10	19.30	27.10	27.10	32.50	27.40	17.50
1990	21.50	16.80	30.90	28.70	18.60	60.30	20.80	23.90	55.80	16.80	12.20	8.69
1991	8.15	10.70	34.30	20.30	51.20	39.20	56.90	27.50	23.10	15.90	24.20	60.60
1992	70.10	63.60	585.10	134.40	70.60	56.10	97.10	46.10	52.20	25.40	23.10	31.00
1993	80.00	102.50	325.10	444.20	158.30	249.40	1,424.00	1,945.00	377.90	150.30	147.30	190.70
1994	125.70	202.10	565.50	988.30	304.40	354.80	624.40	276.00	560.80	715.90	453.90	289.80
1995	203.90	166.80	1,525.00	2,540.00	907.60	326.60	273.80	275.60	205.10	92.80	70.60	108.90
1996	151.50	412.80	729.20	2,848.00	1,439.00	393.80	232.90	156.80	33.80	45.80	140.40	211.80
1997	190.30	195.70	250.60	4,181.00	2,394.00	439.10	378.20	129.10	79.40	87.30	169.60	177.70
1998	113.60	204.30	869.00	913.50	308.70	275.50	169.70	56.00	44.10	88.10	312.60	116.30
1999	98.80	129.60	931.60	2,324.00	1,461.00	749.50	490.30	281.90	344.60	188.00	212.00	240.00
2000	182.00	116.00	161.00	221.00	218.00	970.00	819.00	219.00	311.00	240.00	480.00	393.00
2001	217.00	245.00	205.00	1,991.00	707.00	382.00	387.00	391.00	86.50	113.00	186.30	227.50

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (August 1949 through December 2001) and estimated (January 1931 through July 1949) historic streamflow, in cubic feet per second, for the Sheyenne River near Kindred, N. Dak.												
1931	12.55	50.20	119.93	223.42	82.62	114.65	30.47	21.19	17.87	20.21	38.82	33.82
1932	25.00	20.39	219.11	539.55	140.52	125.19	58.10	29.69	20.61	20.70	33.82	20.59
1933	15.69	15.39	406.89	393.09	172.65	66.60	38.48	17.28	11.72	11.62	16.86	13.14
1934	9.80	13.33	63.74	196.50	54.88	24.61	14.36	9.41	8.74	16.70	15.88	9.62
1935	8.92	15.00	116.41	174.76	103.81	90.92	105.76	133.30	33.40	25.88	17.75	19.12
1936	15.78	14.41	51.99	302.04	195.41	53.71	22.17	7.29	8.17	9.65	12.16	7.33
1937	7.62	5.36	35.83	191.21	99.41	100.78	35.84	21.68	20.80	13.18	16.18	11.08
1938	11.77	12.65	91.74	113.86	69.14	38.48	18.85	40.14	16.41	11.62	14.90	11.77
1939	11.18	9.90	102.80	253.38	60.25	54.30	26.07	11.04	8.85	12.11	16.86	14.90
1940	6.25	5.59	6.62	205.70	118.55	43.07	14.45	10.74	8.46	10.55	15.49	12.65
1941	12.35	12.35	31.62	1,016.25	225.00	213.57	110.45	47.07	51.76	71.97	64.12	50.30
1942	23.73	22.16	45.43	650.38	396.18	291.30	107.32	75.39	106.64	62.79	55.59	35.79
1943	32.55	35.79	263.56	1,621.30	362.40	750.87	265.43	128.90	61.42	39.94	58.14	41.18
1944	26.86	31.18	38.18	217.54	255.37	244.82	178.12	161.03	181.05	76.95	90.69	59.51
1945	43.63	46.08	541.32	446.74	183.98	156.35	77.05	61.72	36.82	36.23	37.06	25.98
1946	28.24	24.80	325.53	673.10	147.85	112.21	86.52	72.46	41.02	74.71	57.06	40.88
1947	37.26	39.61	70.00	1,249.27	232.91	225.78	111.42	56.44	31.44	33.30	63.53	46.57
1948	31.67	29.41	38.77	1,419.62	1,589.82	265.82	146.38	100.97	53.22	33.69	51.47	38.14
1949	27.35	21.86	116.21	1,132.76	506.92	189.45	135.25	93.40	32.00	34.80	39.70	44.20
1950	29.70	28.90	200.60	1,575.00	3,053.00	1,938.00	401.40	174.40	57.40	51.00	64.10	47.60
1951	50.00	50.00	87.30	682.70	530.50	184.40	127.00	59.00	71.20	61.50	86.70	47.40
1952	45.50	59.00	62.10	787.40	116.80	73.40	75.90	38.90	41.20	42.80	43.50	35.50
1953	34.70	45.60	128.30	99.30	138.90	288.70	267.80	59.90	33.00	40.60	47.70	52.90
1954	67.10	111.40	132.70	222.70	100.80	112.90	336.60	73.40	69.40	67.40	108.70	107.70
1955	80.80	49.30	71.00	350.80	107.30	272.30	291.70	110.70	26.10	29.90	22.70	17.60
1956	19.70	21.70	35.10	255.40	611.90	298.80	98.30	49.30	26.00	24.60	47.60	59.20
1957	55.60	57.70	112.80	116.90	88.40	98.80	93.90	74.10	324.70	129.10	170.70	115.70
1958	96.50	89.00	209.10	176.80	84.70	73.70	104.60	43.70	30.50	38.30	42.80	38.80
1959	41.10	33.80	66.00	97.40	53.70	59.30	62.10	33.10	25.10	36.00	30.60	41.90
1960	38.00	36.10	69.00	1,060.00	181.70	212.60	84.70	36.50	41.30	34.70	47.10	58.50
1961	61.90	61.20	143.50	78.90	73.00	48.40	30.00	25.20	30.50	41.90	33.10	24.90
1962	25.20	31.00	145.80	728.50	306.40	394.50	1,065.00	274.10	111.80	88.70	95.50	101.80
1963	66.00	58.00	121.00	209.10	117.10	134.00	56.70	45.60	38.10	37.10	46.20	45.70
1964	30.50	43.20	51.20	165.50	86.80	124.80	276.50	49.50	55.50	53.30	76.90	58.70
1965	60.60	62.00	76.90	1,508.00	475.10	270.20	202.20	261.20	99.30	186.30	126.80	138.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (August 1949 through December 2001) and estimated (January 1931 through July 1949) historic streamflow, in cubic feet per second, for the Sheyenne River near Kindred, N. Dak.—Continued												
1966	113.10	100.90	1,121.00	1,328.00	463.70	301.10	192.20	274.10	103.60	66.10	49.90	87.60
1967	91.50	87.50	420.30	915.80	743.90	224.20	81.20	38.40	34.70	38.30	38.10	48.00
1968	53.90	50.00	161.40	247.40	236.00	340.30	99.90	43.40	41.50	46.00	70.70	60.80
1969	63.00	179.50	262.90	2,464.00	965.10	232.60	306.40	75.40	57.00	55.70	61.40	67.90
1970	62.30	87.70	217.60	592.30	422.10	520.30	166.40	51.50	41.50	41.30	55.90	48.30
1971	57.40	62.50	393.50	662.70	424.70	304.90	316.10	64.30	66.90	99.10	135.80	164.50
1972	165.20	108.80	446.60	963.00	468.30	364.80	121.50	75.00	54.40	62.60	69.60	55.90
1973	58.90	94.30	308.60	156.00	72.50	58.00	32.30	30.70	44.60	50.90	50.40	50.10
1974	49.90	123.60	309.80	937.70	845.30	680.10	73.30	54.20	34.80	42.40	58.10	57.50
1975	71.90	67.20	97.40	762.10	1,191.00	634.20	1,466.00	190.80	113.70	102.30	115.20	114.90
1976	115.90	221.40	315.40	625.30	281.90	97.60	60.00	35.00	36.90	38.40	45.20	41.20
1977	38.00	41.60	109.70	103.70	102.20	56.90	39.90	22.50	40.90	57.60	60.00	58.60
1978	52.90	100.80	415.70	879.60	275.30	144.20	94.90	42.10	123.50	81.50	86.80	49.40
1979	44.60	51.20	148.60	1,817.00	2,306.00	355.80	218.00	153.40	81.30	78.80	231.50	65.80
1980	42.60	42.70	193.40	380.80	61.50	88.30	59.80	44.90	142.70	132.30	140.70	69.00
1981	36.90	49.40	120.30	210.70	105.40	133.10	178.20	57.70	35.70	160.10	193.80	38.60
1982	27.20	31.50	144.80	1,255.00	371.30	240.00	190.00	111.10	32.90	134.70	182.10	164.50
1983	138.60	86.00	1,165.00	931.40	287.00	266.60	311.90	45.20	103.70	102.30	148.80	152.90
1984	138.20	96.30	397.90	1,203.00	456.30	207.70	84.60	29.50	54.90	115.00	85.80	64.80
1985	58.50	38.20	212.70	224.60	206.80	143.60	62.70	51.50	59.70	58.20	76.60	142.50
1986	163.40	187.50	512.20	647.10	689.20	167.20	113.40	132.60	90.50	86.50	105.70	205.50
1987	170.10	115.90	1,256.00	1,796.00	303.60	226.10	93.60	313.70	85.70	110.70	120.70	127.40
1988	125.00	140.20	277.40	113.80	68.80	52.80	26.70	17.50	29.40	34.40	37.10	33.60
1989	37.60	54.80	174.70	711.90	86.00	74.70	38.00	35.50	42.70	54.20	55.30	33.30
1990	24.90	32.80	91.80	107.00	53.60	95.30	40.60	26.60	55.50	47.20	31.70	18.50
1991	17.50	26.60	65.50	71.70	85.80	69.10	65.10	30.10	45.70	31.00	32.50	51.90
1992	59.70	61.50	545.60	201.20	84.00	90.20	124.10	73.80	83.20	54.60	48.80	31.90
1993	73.70	106.80	253.40	681.90	221.30	316.60	1,250.00	2,231.00	483.20	224.50	180.10	246.60
1994	164.80	214.50	614.40	1,203.00	460.30	374.30	759.80	252.70	467.30	692.60	588.50	338.80
1995	204.80	196.90	1,182.00	2,964.00	1,197.00	511.00	426.60	331.10	275.20	181.60	143.90	119.00
1996	126.40	316.90	965.00	2,799.00	2,171.00	684.40	296.40	268.80	89.40	91.00	169.70	226.80
1997	188.40	204.20	210.00	3,957.00	2,907.00	533.70	453.00	179.50	113.90	140.50	188.60	186.10
1998	158.90	198.60	1,134.00	1,065.00	606.20	569.00	454.60	123.80	119.80	171.90	389.30	225.40
1999	146.60	167.00	1,040.00	2,448.00	1,631.00	886.80	604.40	352.60	528.10	288.00	287.00	242.00
2000	223.00	120.00	371.00	348.00	328.00	842.00	1,090.00	312.00	435.00	261.00	523.00	400.00
2001	242.00	287.00	399.00	2,347.00	825.00	479.00	426.00	431.00	115.00	105.30	202.20	276.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Sheyenne River at West Fargo, N. Dak.												
1931	12.80	51.20	122.50	228.20	84.60	117.40	31.20	21.70	18.30	20.70	39.60	34.50
1932	25.50	20.80	223.80	551.10	143.90	128.20	59.50	30.40	21.10	21.20	34.50	21.00
1933	16.00	15.70	415.60	401.50	176.80	68.20	39.40	17.70	12.00	11.90	17.20	13.40
1934	10.00	13.60	65.10	200.70	56.20	25.20	14.70	9.64	8.95	17.10	16.20	9.81
1935	9.10	15.30	118.90	178.50	106.30	93.10	108.30	136.50	34.20	26.50	18.10	19.50
1936	16.10	14.70	53.10	308.50	200.10	55.00	22.70	7.46	8.37	9.88	12.40	7.48
1937	7.77	5.47	36.60	195.30	101.80	103.20	36.70	22.20	21.30	13.50	16.50	11.30
1938	12.00	12.90	93.70	116.30	70.80	39.40	19.30	41.10	16.80	11.90	15.20	12.00
1939	11.40	10.10	105.00	258.80	61.70	55.60	26.70	11.30	9.06	12.40	17.20	15.20
1940	6.37	5.70	6.76	210.10	121.40	44.10	14.80	11.00	8.66	10.80	15.80	12.90
1941	12.60	12.60	32.30	1,038.00	230.40	218.70	113.10	48.20	53.00	73.70	65.40	51.30
1942	24.20	22.60	46.40	664.30	405.70	298.30	109.90	77.20	109.20	64.30	56.70	36.50
1943	33.20	36.50	269.20	1,656.00	371.10	768.90	271.80	132.00	62.90	40.90	59.30	42.00
1944	27.40	31.80	39.00	222.20	261.50	250.70	182.40	164.90	185.40	78.80	92.50	60.70
1945	44.50	47.00	552.90	456.30	188.40	160.10	78.90	63.20	37.70	37.10	37.80	26.50
1946	28.80	25.30	332.50	687.50	151.40	114.90	88.60	74.20	42.00	76.50	58.20	41.70
1947	38.00	40.40	71.50	1,276.00	238.50	231.20	114.10	57.80	32.20	34.10	64.80	47.50
1948	32.30	30.00	39.60	1,450.00	1,628.00	272.20	149.90	103.40	54.50	34.50	52.50	38.90
1949	27.90	22.30	118.70	1,157.00	519.10	194.00	138.50	85.60	27.30	33.30	42.30	45.10
1950	29.40	27.50	130.70	1,542.00	2,654.00	1,785.00	444.00	189.00	61.90	52.60	65.10	54.40
1951	50.00	50.00	67.70	708.90	553.50	191.80	132.50	61.80	68.80	62.80	92.30	55.20
1952	45.50	57.90	68.00	970.50	124.80	74.80	223.80	43.50	40.10	43.60	47.00	35.20
1953	33.50	43.00	129.30	108.10	157.50	474.80	285.90	65.60	34.20	42.60	54.70	58.80
1954	72.90	111.70	143.90	240.10	116.80	100.30	341.60	81.40	71.30	64.30	98.80	92.90
1955	81.00	50.60	58.10	376.30	110.40	281.50	294.90	134.40	31.70	38.00	24.60	19.40
1956	18.90	18.30	34.00	271.70	617.40	304.70	123.70	53.50	28.70	27.10	43.40	55.80
1957	40.00	42.10	120.00	143.40	96.70	114.90	103.80	80.50	290.30	136.80	171.30	130.60
1958	110.60	95.40	200.90	194.50	97.60	78.40	131.30	58.70	39.10	38.40	44.70	41.20
1959	41.90	36.00	73.80	121.20	54.00	92.90	77.80	33.30	33.50	35.60	27.90	42.70
1960	40.20	43.40	58.40	1,072.00	191.10	206.90	85.30	35.70	46.20	32.80	46.50	59.80
1961	69.10	63.40	148.20	95.00	83.30	47.60	32.50	23.70	30.20	44.70	32.80	25.30
1962	24.40	35.30	65.40	773.20	318.20	419.20	1,097.00	273.90	103.30	80.20	90.60	97.00
1963	68.40	60.90	108.00	232.00	124.30	126.30	60.40	46.80	37.90	35.80	45.80	46.30
1964	31.70	49.50	55.60	197.90	97.50	106.80	281.20	56.30	57.90	51.50	78.60	59.30
1965	64.80	66.60	75.30	1,409.00	583.50	282.00	180.60	276.60	100.70	194.00	142.30	141.60

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Sheyenne River at West Fargo, N. Dak.—Continued												
1966	118.20	100.40	887.20	1,485.00	523.40	329.80	216.60	276.70	107.70	76.60	51.40	90.40
1967	95.60	94.70	343.90	992.30	797.40	272.50	101.00	53.30	45.10	35.50	42.00	52.60
1968	55.60	57.80	162.70	273.50	220.60	343.40	115.30	46.90	47.30	49.80	71.00	65.20
1969	67.20	174.80	284.50	1,789.00	1,124.00	282.10	324.10	90.50	60.70	63.90	62.50	62.30
1970	69.40	86.60	197.30	632.00	504.60	598.30	204.70	58.30	40.60	39.50	56.30	49.80
1971	55.60	62.60	358.40	630.80	520.80	313.40	330.00	68.20	68.70	86.10	131.30	168.00
1972	152.00	108.50	409.50	1,017.00	512.90	443.20	114.00	83.20	54.80	57.30	60.60	55.90
1973	59.10	93.90	267.70	154.90	74.60	61.40	34.40	32.30	48.10	57.20	51.80	59.50
1974	41.70	123.10	313.30	944.50	860.50	747.00	103.80	63.50	43.10	40.10	57.60	55.60
1975	69.30	75.40	114.50	734.70	1,175.00	589.50	1,358.00	214.10	107.90	103.00	115.10	111.00
1976	107.70	210.70	329.70	658.40	331.00	108.20	61.40	29.70	7.43	27.60	18.90	9.15
1977	8.40	16.40	83.70	110.70	117.60	40.20	41.40	22.10	36.70	60.20	58.60	59.70
1978	46.40	92.00	425.30	1,102.00	315.20	144.20	104.00	47.50	121.70	79.50	81.90	46.70
1979	43.30	50.30	120.10	1,591.00	2,066.00	403.30	208.90	164.50	83.30	72.60	240.80	68.20
1980	45.40	50.10	147.20	437.50	65.90	90.10	64.80	43.80	138.70	135.10	146.40	74.10
1981	38.00	46.00	111.70	230.50	112.30	140.80	186.50	61.80	35.50	162.10	188.70	39.50
1982	24.20	31.20	134.80	1,267.00	388.40	250.90	191.30	117.10	37.10	157.60	233.90	186.40
1983	147.40	91.20	1,067.00	1,085.00	299.70	312.10	420.00	60.10	96.50	124.60	195.50	141.20
1984	141.00	113.20	275.20	1,385.00	549.70	263.00	94.20	29.10	47.40	105.80	93.80	77.20
1985	72.40	51.00	191.60	274.80	226.70	142.00	62.30	51.20	68.30	64.40	73.60	144.50
1986	161.10	167.10	486.40	719.70	776.20	190.20	139.20	153.60	115.80	103.50	106.70	227.20
1987	175.90	117.00	1,123.00	1,757.00	361.80	251.60	82.80	355.00	97.30	118.60	123.00	136.20
1988	130.20	44.50	278.70	152.10	91.40	65.40	26.80	21.10	27.40	34.50	39.30	31.50
1989	42.50	49.90	112.40	744.40	98.90	86.70	41.00	37.70	53.00	58.10	72.40	31.10
1990	22.30	25.90	69.00	91.20	54.20	80.70	43.00	22.10	51.40	56.40	31.50	22.40
1991	24.10	32.50	68.50	65.20	64.30	53.10	63.80	27.30	34.20	18.50	27.70	57.70
1992	69.90	69.20	505.90	223.20	110.20	104.90	106.20	56.50	59.70	56.00	53.90	34.60
1993	69.90	101.90	247.50	781.90	258.50	342.90	1,272.00	2,218.00	532.30	245.50	160.10	225.20
1994	166.10	222.70	691.60	1,376.00	479.50	386.10	1,058.00	310.60	495.10	713.50	673.70	359.20
1995	237.60	200.10	1,184.00	2,922.00	1,216.00	561.50	439.40	347.10	291.50	224.20	172.20	131.10
1996	131.10	287.10	891.30	2,371.00	2,222.00	646.60	304.30	340.10	123.10	125.30	227.00	327.60
1997	266.90	285.00	312.70	3,312.00	3,235.00	617.10	523.10	244.80	152.20	164.00	196.10	193.20
1998	169.10	199.10	1,176.00	1,058.00	673.60	647.70	595.10	143.70	103.90	227.20	445.00	279.80
1999	154.70	170.80	1,184.00	2,591.00	1,765.00	1,032.00	606.50	368.00	608.60	276.00	282.00	265.00
2000	240.00	139.00	484.00	377.00	363.00	1,050.00	1,373.00	397.00	573.00	279.00	687.00	468.00
2001	276.00	320.00	459.00	2,586.00	1,120.00	642.00	546.00	514.00	140.00	112.00	212.20	287.30

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Maple River at the mouth												
1931	0.01	1.58	10.23	30.37	5.28	11.58	0.76	1.07	0.24	0.43	3.58	1.13
1932	0.09	19.80	333.85	217.86	33.16	13.41	2.82	0.21	0.28	0.75	2.93	0.47
1933	0.02	0.13	139.22	104.59	21.01	4.68	1.22	0.16	0.08	0.04	1.07	0.21
1934	0.01	0.10	2.65	36.75	3.21	2.69	0.16	1.18	2.37	1.00	0.98	0.12
1935	0.00	0.21	77.00	35.64	24.86	7.87	9.52	0.79	0.29	0.43	1.15	0.41
1936	0.02	0.14	0.78	177.76	18.23	3.28	0.40	0.06	0.06	0.15	0.66	0.07
1937	0.00	0.14	0.36	50.21	10.31	9.35	1.06	3.27	1.67	0.15	1.00	0.15
1938	0.01	0.06	36.53	24.14	7.62	1.88	0.29	1.01	0.15	0.04	0.90	0.17
1939	0.01	0.05	111.96	41.11	1.86	3.33	0.55	0.06	0.04	0.04	1.07	0.27
1940	0.00	0.01	0.02	148.81	12.22	2.27	0.16	4.19	0.01	0.03	0.95	0.19
1941	0.01	0.07	24.78	437.44	18.11	32.66	10.39	1.02	2.15	8.34	7.39	2.31
1942	0.07	0.28	8.64	232.85	88.11	54.75	9.81	3.10	2.33	1.30	6.01	1.25
1943	0.17	0.22	258.75	119.03	39.52	265.07	61.60	1.77	0.34	0.34	6.41	1.61
1944	0.10	0.07	1.67	63.39	60.90	25.09	13.95	13.95	10.76	5.47	15.48	5.17
1945	0.35	0.00	99.96	92.67	27.26	17.85	3.89	3.65	0.51	1.43	2.51	0.85
1946	0.11	0.03	124.20	74.86	9.54	10.14	4.77	0.05	0.14	6.45	5.85	1.37
1947	0.14	0.00	108.01	1,014.20	64.14	382.04	19.36	1.10	4.37	2.57	6.92	5.99
1948	2.75	0.35	6.79	555.04	55.49	21.09	14.93	9.89	1.68	0.75	6.62	1.87
1949	0.04	0.00	9.61	224.27	16.66	8.73	7.85	0.25	0.00	0.51	2.91	1.07
1950	0.04	0.00	92.35	993.93	670.20	82.96	70.52	6.99	2.66	4.64	3.79	1.45
1951	0.76	0.21	7.90	251.08	17.41	12.55	12.33	6.51	11.68	4.99	6.51	6.75
1952	1.55	0.38	0.26	971.62	27.80	7.21	52.68	0.60	0.01	0.00	1.87	2.12
1953	1.52	1.57	26.81	22.52	95.73	775.01	68.58	55.27	1.93	0.86	6.30	5.52
1954	2.65	3.81	41.19	39.79	15.25	7.05	13.95	2.77	3.41	0.85	3.60	3.26
1955	1.58	0.27	0.20	126.45	6.81	14.49	68.36	10.24	0.30	0.67	2.12	0.67
1956	0.02	0.00	0.00	122.38	29.53	14.71	3.14	0.53	0.26	0.02	7.92	2.02
1957	0.53	0.16	7.62	29.07	14.60	58.73	14.93	16.44	27.58	11.14	20.71	7.83
1958	2.51	0.63	34.11	80.23	18.28	16.98	45.86	3.34	5.53	2.06	2.63	0.33
1959	0.00	0.00	10.94	14.91	9.03	122.44	22.72	1.19	0.00	0.83	1.96	1.17
1960	0.88	0.43	75.40	386.33	17.09	6.30	2.17	0.00	0.00	0.00	0.00	0.00
1961	0.00	0.00	32.28	19.31	18.71	1.85	0.00	0.00	4.31	24.66	3.61	2.19
1962	0.47	0.18	0.98	743.70	229.96	184.32	823.04	289.02	71.17	32.99	30.32	13.02
1963	0.82	0.00	16.62	171.29	35.91	37.75	13.63	7.21	6.09	3.41	5.47	1.13
1964	0.11	0.11	6.30	118.84	42.29	53.22	18.50	9.36	4.33	4.33	7.14	1.47
1965	1.28	0.60	0.32	1,232.35	100.05	45.86	69.88	62.95	43.37	41.54	22.63	11.64

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Maple River at the mouth—Continued												
1966	3.28	1.16	1,115.45	489.83	161.71	46.84	24.45	22.82	9.36	6.85	6.43	2.01
1967	0.87	0.91	84.41	406.49	182.48	31.15	7.08	1.32	0.70	3.21	5.61	2.63
1968	0.29	0.18	49.98	65.96	33.32	125.69	44.56	12.76	6.67	5.79	7.38	3.21
1969	0.05	0.00	0.00	1,831.91	163.87	38.51	403.89	38.40	23.80	16.98	14.20	7.58
1970	4.04	2.27	44.30	560.19	463.49	516.93	35.59	7.63	29.64	9.74	13.13	2.25
1971	0.52	0.00	221.48	139.22	29.75	41.97	59.17	6.27	29.96	53.11	38.65	11.96
1972	3.81	2.07	512.68	291.63	405.41	117.25	45.11	56.35	31.26	7.76	15.37	7.15
1973	4.59	5.18	431.70	85.70	25.64	8.75	1.13	2.09	13.74	9.91	8.15	4.07
1974	0.24	0.06	0.35	598.27	185.72	53.22	14.60	17.31	7.72	2.72	16.76	4.84
1975	1.24	0.00	1.01	1,399.67	354.35	373.71	2,568.95	54.41	29.42	1.42	16.73	9.17
1976	3.94	4.47	285.24	210.84	28.32	10.11	3.01	0.04	0.02	0.49	1.23	0.11
1977	0.00	0.21	1.89	20.80	13.03	1.95	1.35	0.10	1.63	5.88	6.30	3.02
1978	0.41	1.70	374.70	765.07	85.46	16.31	8.77	1.06	4.92	1.47	10.23	1.94
1979	0.34	1.69	2.69	2,054.17	388.41	90.48	36.11	14.81	2.79	5.98	10.28	3.83
1980	0.38	4.17	59.69	198.67	13.09	7.45	3.35	1.20	1.89	1.11	23.68	4.45
1981	0.23	4.29	9.29	63.44	10.30	15.68	28.69	7.60	2.36	6.76	34.18	1.44
1982	0.07	3.66	89.66	660.25	71.49	41.05	30.20	1.31	0.30	83.60	46.63	23.17
1983	9.17	7.36	531.45	211.51	64.24	59.04	148.99	29.97	47.37	35.68	35.98	14.09
1984	8.14	6.43	510.35	348.59	89.97	44.39	7.17	0.03	1.36	8.12	12.44	4.78
1985	1.36	2.01	430.58	77.33	47.36	15.90	3.10	18.98	0.63	5.62	8.77	14.69
1986	11.65	4.73	494.10	239.86	214.59	25.87	15.85	6.90	4.43	19.57	14.99	33.01
1987	14.75	6.18	1,248.39	823.04	151.28	41.23	5.52	189.78	53.99	20.91	18.41	13.22
1988	6.57	13.37	436.80	226.15	43.99	4.37	0.56	0.61	0.40	1.05	3.53	0.96
1989	0.32	3.63	5.87	640.32	58.75	6.99	1.33	1.06	1.17	0.81	8.55	0.94
1990	0.05	0.96	2.17	27.19	13.98	6.21	1.46	3.75	1.61	3.94	2.57	0.52
1991	0.07	2.50	6.60	27.08	87.24	44.11	3.26	0.41	0.67	0.15	2.14	2.84
1992	1.23	0.15	337.43	33.02	16.12	9.61	9.15	13.43	18.12	8.85	5.58	1.14
1993	1.23	4.73	185.26	205.31	49.44	69.06	1,411.83	670.44	241.34	73.25	26.96	32.50
1994	12.65	16.51	721.30	227.95	166.68	84.15	971.46	270.02	409.25	563.31	67.39	74.90
1995	33.15	17.04	1,020.53	743.17	325.04	49.97	244.56	51.60	55.81	55.27	16.12	7.44
1996	3.43	1.46	538.20	1,499.42	392.10	96.16	20.23	14.28	42.18	14.17	17.83	7.59
1997	2.23	0.62	3.29	3,170.44	646.40	179.77	303.08	32.13	41.75	36.78	24.13	24.45
1998	13.35	307.90	1,475.82	526.62	408.65	238.51	236.13	40.13	15.90	104.38	85.19	133.24
1999	22.10	19.64	1,018.60	1,228.06	1,119.52	101.89	93.89	44.02	433.86	58.30	40.68	23.70
2000	14.31	47.94	465.48	151.23	62.84	937.80	403.46	20.98	86.10	29.75	273.31	27.65
2001	16.01	14.52	194.13	1,945.60	327.74	241.21	85.02	61.65	56.79	26.45	36.16	17.19

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Rush River at the mouth												
1931	0.00	0.17	9.44	9.23	2.16	1.49	0.05	0.02	0.02	0.05	0.06	0.05
1932	0.03	1.98	24.99	36.29	5.16	0.36	0.02	0.02	0.02	0.05	0.02	0.02
1933	0.00	0.00	67.96	22.43	5.24	0.21	0.02	0.02	0.02	0.07	0.06	0.05
1934	0.03	0.06	3.40	7.56	1.31	0.08	0.00	0.00	0.02	0.10	0.02	0.02
1935	0.02	0.06	8.99	4.67	3.85	0.64	0.47	0.65	0.02	0.08	0.02	0.02
1936	0.00	0.00	2.44	28.82	2.80	0.11	0.02	0.00	0.00	0.02	0.02	0.00
1937	0.02	0.00	1.33	2.22	1.57	0.75	0.05	0.08	0.07	0.03	0.02	0.00
1938	0.00	0.00	6.12	0.92	1.16	2.36	0.08	0.05	0.02	0.02	0.02	0.02
1939	0.02	0.00	7.36	5.49	0.28	0.13	0.02	0.00	0.00	0.00	0.02	0.00
1940	0.00	0.00	0.09	23.56	1.87	0.13	0.02	0.03	0.02	0.02	0.05	0.02
1941	0.02	0.03	11.67	79.93	2.78	1.26	0.03	0.07	0.10	0.18	0.12	0.11
1942	0.00	0.00	5.65	39.13	13.91	12.73	0.38	0.18	7.35	1.69	1.04	0.05
1943	0.03	0.02	33.69	18.30	6.17	50.79	19.87	0.61	0.51	0.23	0.35	0.06
1944	0.02	0.03	1.49	9.70	3.26	19.76	75.55	1.03	90.82	5.65	6.91	0.15
1945	0.08	0.06	107.82	5.94	3.55	5.50	0.28	0.11	0.75	0.70	0.24	0.09
1946	0.05	0.02	47.40	7.61	3.16	2.42	23.65	0.00	0.00	0.50	1.28	0.25
1947	0.00	0.00	47.65	270.68	12.82	63.51	2.50	0.00	0.00	0.07	0.15	0.20
1948	0.15	0.00	0.00	214.03	9.00	2.46	0.83	0.19	0.00	0.00	0.28	0.05
1949	0.00	0.00	23.59	63.01	4.22	1.78	3.24	0.16	0.00	0.00	0.06	0.00
1950	0.00	0.00	38.34	316.15	133.07	27.99	4.26	0.04	0.00	0.24	0.23	0.00
1951	0.00	0.00	46.25	43.77	3.60	5.01	1.03	0.00	0.43	0.02	1.11	0.42
1952	0.00	0.00	0.00	118.11	2.75	0.14	1.85	0.01	0.00	0.00	0.00	0.00
1953	0.00	0.00	8.23	3.46	9.26	80.04	13.26	1.49	0.00	0.00	0.00	0.00
1954	0.00	0.24	9.27	14.11	3.42	2.88	0.06	0.00	0.00	0.00	0.00	0.00
1955	0.00	0.00	9.51	17.85	0.19	2.26	0.00	2.83	0.00	0.00	0.00	0.00
1956	0.00	0.00	0.00	40.04	4.57	14.42	0.11	0.00	0.00	0.00	0.00	0.00
1957	0.00	0.00	5.85	2.67	3.55	27.17	10.88	4.32	2.83	1.47	4.15	0.09
1958	0.00	1.78	2.93	5.28	3.06	5.06	15.91	0.00	0.00	0.00	0.00	0.00
1959	0.00	0.00	25.30	2.24	2.01	7.37	0.31	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	42.68	76.05	4.24	1.56	18.82	0.01	0.00	0.00	0.00	0.00
1961	0.00	0.00	11.70	4.56	3.52	0.25	0.00	0.00	0.00	6.94	0.19	0.00
1962	0.00	0.00	17.54	144.81	27.50	13.21	63.18	4.52	2.46	0.83	3.97	1.87
1963	0.00	0.00	3.72	15.83	5.60	6.33	0.04	0.00	0.00	0.00	0.00	0.00
1964	0.00	0.00	0.00	33.83	7.99	16.69	0.70	0.05	0.17	0.19	1.00	0.15
1965	0.00	0.00	0.00	169.02	24.88	7.35	9.79	0.17	0.97	6.87	1.76	0.52

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Rush River at the mouth—Continued												
1966	0.00	0.00	91.42	74.81	23.08	7.53	3.99	3.54	0.30	0.02	0.02	0.00
1967	0.00	0.00	29.49	78.07	16.09	4.48	1.92	0.00	0.00	0.00	0.00	0.00
1968	0.00	0.00	15.83	15.13	10.98	50.58	2.98	0.00	0.00	0.15	0.71	0.26
1969	0.00	0.00	0.00	369.70	13.78	8.90	37.15	1.12	0.55	1.22	2.52	0.49
1970	0.05	0.01	50.13	174.76	39.77	51.23	2.50	0.06	0.77	0.40	1.64	0.18
1971	0.00	0.00	31.82	28.56	11.39	4.30	0.78	0.00	0.00	0.97	3.24	0.53
1972	0.02	0.00	32.44	59.91	22.75	3.03	1.82	0.52	0.03	0.40	1.48	0.06
1973	0.00	0.00	52.46	4.69	2.28	0.32	0.00	0.07	12.90	4.30	2.50	0.34
1974	0.00	0.00	0.00	211.85	42.06	17.84	6.25	0.74	0.01	0.00	2.19	0.12
1975	0.00	0.00	0.16	444.35	71.69	65.80	64.65	0.14	0.00	0.12	0.47	0.06
1976	0.00	3.33	54.94	21.26	2.39	0.04	0.00	0.00	0.00	0.00	0.00	0.00
1977	0.00	0.00	3.65	4.66	3.85	0.64	0.00	0.00	0.00	2.18	0.13	0.00
1978	0.00	0.00	126.96	67.51	12.03	7.87	0.64	0.11	0.14	0.00	0.00	0.00
1979	0.00	0.00	0.00	592.72	32.73	14.63	1.92	0.11	0.00	0.01	0.22	0.27
1980	0.00	0.00	17.23	24.83	1.43	0.49	0.00	0.80	0.88	0.00	0.18	0.07
1981	0.00	0.55	2.69	1.74	4.81	5.55	0.27	0.00	0.00	0.00	0.00	0.00
1982	0.00	0.00	5.51	219.15	28.97	2.72	0.00	0.00	0.00	18.66	5.28	1.54
1983	0.00	0.54	55.56	28.40	11.21	59.41	17.35	0.03	0.00	0.00	0.00	0.00
1984	0.00	0.00	210.30	81.48	7.84	35.35	1.90	0.00	0.00	0.00	0.00	0.00
1985	0.00	0.00	19.71	7.25	18.17	11.59	2.91	0.00	0.00	0.00	0.00	0.00
1986	0.00	0.00	62.39	142.48	100.50	1.62	66.62	4.53	2.21	2.80	2.52	1.25
1987	0.68	2.70	157.38	27.47	43.05	11.46	9.46	1.56	0.11	0.00	0.82	0.85
1988	0.09	0.09	6.81	10.72	1.67	0.01	0.00	0.00	0.00	0.00	0.00	0.00
1989	0.00	0.00	26.07	131.46	3.83	1.93	0.00	0.00	9.61	0.12	0.00	0.00
1990	0.00	0.00	1.45	6.88	5.30	34.54	11.34	0.01	0.00	0.00	0.00	0.00
1991	0.00	0.00	5.85	2.30	17.51	2.49	10.52	0.23	0.00	0.00	0.00	0.00
1992	0.00	0.00	35.70	6.33	2.19	9.12	32.90	0.02	0.00	0.00	0.00	0.00
1993	0.00	0.00	59.44	45.47	11.92	12.26	274.97	36.50	1.38	3.19	3.15	0.00
1994	0.00	0.00	104.61	25.76	12.86	6.09	95.75	36.17	65.63	82.98	12.97	6.45
1995	2.44	1.10	248.33	107.71	62.03	3.08	26.52	7.81	6.40	20.13	11.58	2.62
1996	1.47	1.37	78.38	308.39	105.41	13.14	3.16	2.37	77.42	5.04	11.01	5.38
1997	4.28	3.32	58.67	823.51	59.09	127.83	89.20	1.96	5.88	9.76	6.17	4.28
1998	1.60	126.95	196.33	26.85	64.98	201.97	94.44	1.57	0.28	24.88	13.31	18.85
1999	3.26	3.50	310.25	185.31	90.02	5.06	10.95	3.62	8.02	2.72	1.78	1.28
2000	0.45	4.09	31.04	16.14	9.84	151.07	14.50	1.80	1.08	2.82	33.32	1.43
2001	1.43	1.28	14.20	304.20	71.36	7.10	4.12	10.30	2.60	1.92	3.96	3.07

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Sheyenne River at the mouth												
1931	13.34	55.14	148.49	279.72	96.64	137.00	33.61	23.93	19.48	22.24	45.03	37.16
1932	26.68	44.35	608.56	841.07	191.33	149.07	65.46	32.15	22.47	23.10	38.99	22.38
1933	16.69	16.49	650.49	552.04	213.20	76.75	42.67	18.77	12.70	12.61	19.09	14.23
1934	10.46	14.33	74.31	255.90	63.76	29.37	15.61	11.36	11.90	19.10	17.91	10.36
1935	9.49	16.22	214.00	228.55	141.75	106.69	124.21	144.84	36.23	28.37	20.07	20.75
1936	16.79	15.45	58.83	538.00	232.18	61.31	24.27	7.90	8.86	10.55	13.62	7.87
1937	8.11	5.84	40.00	258.75	119.36	118.96	39.70	26.83	24.18	14.37	18.25	11.92
1938	12.51	13.50	142.41	147.65	83.56	45.82	20.66	44.26	17.82	12.56	16.78	12.69
1939	11.90	10.57	234.30	318.99	67.03	62.02	28.63	11.93	9.56	13.07	19.04	16.11
1940	6.63	5.95	7.18	399.48	142.26	48.83	15.73	15.98	9.12	11.39	17.49	13.65
1941	13.15	13.23	71.81	1,624.57	263.86	265.25	129.70	51.75	58.01	86.33	75.93	55.94
1942	25.28	23.83	63.39	977.93	533.11	384.08	126.09	84.51	124.82	70.65	66.40	39.36
1943	34.79	38.26	586.64	1,873.12	437.64	1,139.00	370.94	141.10	66.93	43.54	68.79	45.48
1944	28.65	33.23	44.04	308.43	341.94	310.33	285.50	188.88	301.34	94.42	119.65	68.76
1945	46.79	49.01	794.53	579.60	230.17	192.62	87.23	70.31	40.91	41.19	42.23	28.58
1946	30.15	26.40	526.53	804.23	172.30	133.83	122.87	77.96	44.24	87.62	68.04	45.12
1947	39.72	42.08	237.26	2,674.82	331.23	710.59	142.76	61.85	38.40	38.58	74.85	55.91
1948	36.67	31.61	48.45	2,317.80	1,777.12	310.54	173.94	119.15	58.99	37.01	61.86	42.51
1949	29.10	23.23	158.66	1,508.54	566.98	214.74	157.07	90.31	28.67	35.50	47.15	48.08
1950	30.67	28.64	273.01	2,978.98	3,630.14	1,990.76	544.72	205.83	67.79	60.36	71.98	58.17
1951	52.86	52.30	127.28	1,048.41	603.24	219.82	153.15	71.73	84.96	71.19	104.06	64.95
1952	49.00	60.70	71.30	2,151.90	163.12	86.26	292.24	46.31	42.11	45.78	50.90	38.87
1953	36.47	46.42	171.65	140.05	275.62	1,396.35	386.12	128.49	37.93	45.64	63.53	66.99
1954	78.68	120.56	203.00	307.08	142.25	115.75	373.39	88.38	78.44	68.41	106.65	100.15
1955	86.01	52.98	70.83	543.76	123.28	313.17	381.43	154.85	33.60	40.60	27.83	20.91
1956	19.70	19.06	35.51	453.44	684.07	350.52	133.30	56.73	30.41	28.48	53.45	60.22
1957	42.21	44.01	139.40	182.93	120.60	210.85	136.09	106.33	336.75	156.89	204.30	144.27
1958	117.80	101.86	248.53	292.46	124.89	105.46	202.73	65.14	46.86	42.48	49.29	43.25
1959	43.64	37.49	114.93	144.50	68.30	233.85	105.87	36.21	35.18	38.26	31.10	45.70
1960	42.78	45.65	184.33	1,602.65	223.05	225.49	111.61	37.50	48.51	34.44	48.43	62.28
1961	71.97	66.03	200.74	124.16	110.81	52.19	34.13	24.89	36.23	80.12	38.12	28.63
1962	25.90	36.96	87.65	1,735.64	604.44	647.56	2,082.38	595.81	185.78	119.73	130.07	116.54
1963	72.09	63.43	134.06	437.76	174.10	178.90	77.77	56.72	46.19	41.17	53.39	49.40
1964	33.13	51.67	64.65	366.17	155.17	185.55	315.42	68.99	65.52	58.82	90.34	63.45
1965	68.82	69.99	78.99	2,935.41	743.86	351.97	273.28	356.71	152.29	254.53	173.62	160.14

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Sheyenne River at the mouth—Continued												
1966	126.52	105.78	2,187.23	2,140.84	743.60	403.37	257.29	318.21	123.23	87.65	60.24	96.24
1967	100.48	99.58	478.17	1,542.57	1,045.77	323.54	115.50	57.35	48.09	40.65	49.58	57.52
1968	58.20	60.38	238.68	370.37	278.14	545.65	170.99	62.65	56.67	58.53	82.37	71.53
1969	70.04	182.05	297.16	4,168.16	1,366.74	345.99	803.41	136.52	89.30	86.21	82.50	73.29
1970	76.54	92.57	304.71	1,427.77	1,058.26	1,224.78	254.93	69.29	74.56	52.12	74.02	54.40
1971	58.45	65.20	638.91	834.11	590.04	377.66	409.45	78.20	103.60	147.19	180.38	187.98
1972	162.30	115.16	997.09	1,429.42	988.12	591.66	168.97	147.08	90.40	68.73	80.66	65.74
1973	66.33	103.19	785.31	256.20	107.64	74.00	37.30	36.18	78.47	74.98	65.04	66.56
1974	43.68	128.27	327.61	1,832.69	1,142.70	858.96	130.89	85.62	53.38	44.96	79.72	63.07
1975	73.47	78.53	120.82	2,693.46	1,681.10	1,080.47	4,191.20	282.08	144.19	109.76	137.79	125.22
1976	116.27	227.57	699.69	930.13	379.79	124.28	67.63	31.23	7.82	29.49	20.96	9.64
1977	8.75	17.30	93.21	142.21	141.21	44.92	44.89	23.31	40.25	71.67	67.73	65.32
1978	48.75	97.59	968.20	2,020.66	433.33	176.80	119.08	51.11	133.10	85.02	95.95	50.66
1979	45.45	54.14	128.26	4,426.45	2,611.52	533.84	259.27	188.39	90.40	82.52	261.73	75.30
1980	47.68	56.53	234.09	690.41	84.43	102.94	71.56	48.09	148.54	143.03	177.33	81.88
1981	39.82	52.96	129.18	308.84	133.78	170.14	226.23	72.87	39.75	177.30	232.13	42.64
1982	25.28	36.31	240.21	2,241.90	513.30	309.40	232.58	124.33	39.27	272.85	297.67	219.87
1983	163.07	103.21	1,727.60	1,383.86	393.91	452.08	615.66	94.61	151.06	168.30	241.08	161.74
1984	155.32	124.59	1,040.16	1,895.83	679.89	359.88	108.43	30.59	51.20	119.62	110.65	85.39
1985	76.82	55.21	670.46	375.37	306.84	177.96	71.73	73.69	72.37	73.53	85.78	165.80
1986	179.92	178.96	1,089.29	1,151.07	1,145.86	228.57	232.75	173.29	128.57	132.16	129.36	272.31
1987	199.27	131.10	2,641.28	2,723.53	583.94	319.51	102.67	573.65	158.97	146.48	148.13	156.50
1988	142.54	60.36	754.46	406.28	143.91	73.27	28.73	22.79	29.19	37.33	44.61	33.81
1989	44.60	55.75	150.76	1,583.64	169.55	100.40	44.45	40.70	66.96	61.99	84.31	33.37
1990	23.28	27.98	75.85	130.84	77.15	127.52	58.59	27.16	55.66	63.35	35.49	23.87
1991	25.18	36.45	84.55	98.79	177.50	104.68	81.46	29.33	36.61	19.58	31.07	63.05
1992	74.08	72.23	918.14	274.24	134.94	129.80	155.66	73.45	81.71	68.09	61.95	37.23
1993	74.08	111.05	514.10	1,078.63	335.85	445.44	3,106.75	3,071.19	813.78	338.04	198.10	268.39
1994	186.17	249.13	1,585.02	1,702.22	692.00	500.16	2,231.48	647.63	1,018.48	1,427.79	785.35	458.84
1995	284.53	227.30	2,561.99	3,940.75	1,683.23	645.28	746.01	426.83	371.40	314.59	208.20	147.02
1996	141.65	301.97	1,574.97	4,364.74	2,855.50	793.70	344.07	374.59	254.84	151.74	266.45	354.71
1997	284.76	300.93	391.33	7,631.02	4,137.53	970.94	961.16	292.84	209.82	221.06	235.79	231.14
1998	191.68	660.25	2,974.88	1,683.17	1,204.60	1,142.59	971.95	194.68	126.09	374.28	566.06	449.81
1999	187.53	201.99	2,624.65	4,182.55	3,123.28	1,195.90	746.91	436.42	1,103.00	353.87	337.92	302.02
2000	265.33	198.95	1,024.15	568.59	457.47	2,245.83	1,880.52	440.78	693.19	327.14	1,034.86	517.71
2001	305.62	349.74	697.02	5,050.96	1,595.07	934.83	666.90	615.25	209.36	147.39	262.79	320.33

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Buffalo River at the mouth												
1931	6.30	19.94	82.36	40.18	33.34	32.00	21.33	15.57	7.58	16.30	21.33	16.59
1932	12.80	13.63	65.00	147.51	63.01	38.74	8.16	3.49	7.02	15.57	11.46	6.97
1933	5.47	5.21	108.53	143.07	74.66	29.42	11.05	8.91	9.54	18.76	20.86	17.77
1934	13.03	17.77	45.57	169.45	34.94	18.51	5.01	1.78	7.02	23.78	12.56	11.42
1935	10.85	17.77	148.47	92.10	73.92	52.59	49.28	19.49	10.62	20.59	11.84	7.45
1936	3.52	1.19	77.95	694.49	120.50	21.58	2.73	0.00	0.97	7.83	10.36	7.11
1937	7.11	5.92	3.60	164.06	128.23	57.49	17.29	21.09	18.14	13.98	12.68	5.63
1938	5.14	6.47	126.76	61.40	302.92	104.69	20.96	8.58	8.86	9.19	13.39	9.44
1939	6.87	4.94	259.04	324.04	39.47	23.05	9.61	2.13	2.15	6.72	12.44	9.67
1940	1.03	0.90	2.71	274.39	78.58	22.07	7.67	13.61	7.09	11.02	17.66	11.23
1941	11.19	11.66	73.87	420.46	57.25	75.39	15.08	9.07	23.41	31.26	28.32	13.27
1942	2.65	1.85	34.90	104.46	362.62	255.84	43.89	38.49	187.19	91.70	68.73	25.12
1943	12.68	9.62	88.98	1,388.74	287.10	532.03	303.41	133.99	51.24	34.94	43.49	18.37
1944	10.25	11.57	28.06	257.00	282.08	322.90	580.21	870.38	634.40	164.76	152.39	75.60
1945	25.60	18.84	1,032.92	698.93	302.06	164.15	38.13	27.21	62.15	60.19	36.73	24.41
1946	15.52	11.28	529.35	275.59	123.81	106.53	330.25	65.09	39.47	93.66	78.21	49.06
1947	35.67	25.48	153.14	1,264.01	328.41	336.02	82.99	22.56	24.52	33.22	30.45	26.78
1948	20.14	19.20	53.25	741.26	121.00	76.13	42.54	28.93	17.90	16.67	20.86	16.59
1949	12.92	11.66	21.83	258.20	133.01	45.11	124.30	67.55	20.84	30.52	34.25	25.48
1950	11.32	7.32	242.85	1,891.22	1,044.70	205.34	65.09	19.74	15.57	24.15	20.50	18.49
1951	16.00	16.35	23.03	959.88	176.90	212.45	63.26	40.33	47.44	70.12	52.73	45.74
1952	32.35	31.64	34.54	1,539.84	147.23	40.09	622.63	284.28	112.41	43.89	47.52	27.37
1953	18.60	20.62	242.61	353.78	305.86	1,171.70	162.92	252.53	65.58	36.41	36.85	30.93
1954	26.19	37.80	118.61	429.33	322.78	174.93	55.78	24.89	31.63	47.81	38.63	22.04
1955	15.40	15.76	17.39	441.09	109.47	121.98	571.39	533.63	68.53	55.04	36.26	24.77
1956	19.91	23.82	29.98	1,240.03	271.41	120.38	31.87	29.05	17.29	24.15	46.10	21.33
1957	16.47	16.83	224.74	415.06	177.88	257.56	242.85	79.93	411.90	228.26	189.24	60.91
1958	37.45	31.52	72.79	138.99	95.37	171.01	800.63	65.95	97.83	62.64	100.72	46.21
1959	20.03	16.12	139.71	254.60	210.12	476.87	476.13	107.27	66.44	63.75	47.99	41.47
1960	40.64	31.88	74.71	1,003.90	437.03	154.46	126.27	51.49	54.18	33.59	36.62	24.53
1961	20.74	19.55	171.01	195.12	303.04	63.62	23.78	11.06	19.86	32.12	26.19	17.89
1962	11.72	13.51	17.99	807.82	1,110.90	2,620.94	690.66	188.05	80.30	68.77	80.70	41.95
1963	11.38	7.38	113.57	278.71	194.30	603.38	36.53	86.55	124.80	46.83	40.41	24.41
1964	19.91	21.45	53.37	1,024.28	427.96	146.13	53.33	22.56	35.55	42.66	41.00	17.30
1965	18.72	19.43	20.39	1,669.36	379.04	319.71	95.13	49.40	68.40	135.71	86.74	77.38

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Buffalo River at the mouth—Continued												
1966	43.25	34.48	1,568.62	765.84	497.10	129.09	101.14	227.65	60.19	70.98	51.31	40.17
1967	43.01	47.28	233.97	1,020.93	344.11	402.21	103.10	25.13	19.61	24.89	23.46	22.51
1968	12.44	12.21	110.81	202.79	158.63	132.52	92.55	27.46	39.96	70.00	63.16	32.47
1969	20.50	17.77	21.47	2,282.18	239.78	78.21	120.63	38.86	21.09	43.15	48.11	29.98
1970	22.63	21.80	51.33	527.07	316.89	300.71	63.01	11.16	11.57	24.89	40.88	21.92
1971	14.81	16.35	100.26	306.17	103.46	72.70	142.33	25.99	149.56	227.52	361.89	114.94
1972	41.36	36.02	856.75	746.78	514.38	165.37	54.92	57.13	36.16	34.57	50.48	29.62
1973	18.60	18.60	146.55	117.05	81.89	44.38	28.07	28.81	161.45	225.81	97.76	66.83
1974	36.14	38.63	62.36	927.98	558.51	228.14	84.59	67.42	36.41	40.45	55.22	32.47
1975	23.94	22.51	32.38	1,140.61	483.49	986.96	3,449.64	96.72	38.49	58.84	69.56	39.34
1976	29.98	33.77	233.26	367.69	81.52	29.18	12.38	2.13	3.11	10.32	14.81	10.02
1977	10.45	11.10	49.65	107.09	43.15	45.36	35.18	6.72	44.99	118.42	80.46	79.27
1978	60.67	36.38	465.91	2,379.32	229.85	75.15	44.50	16.43	11.67	15.69	22.87	21.45
1979	16.95	15.40	21.47	1,601.00	395.96	149.44	230.34	65.83	20.72	22.92	71.22	39.93
1980	25.60	28.20	81.19	595.43	71.59	41.56	15.81	12.75	36.53	42.17	43.84	28.79
1981	20.74	34.36	73.87	100.02	186.46	57.37	49.53	75.39	45.97	97.34	85.67	39.34
1982	15.76	17.06	285.30	856.87	186.58	68.04	95.50	33.10	21.70	161.57	69.68	53.21
1983	30.10	31.52	243.09	174.73	127.25	92.92	989.17	130.43	73.31	95.13	84.13	54.51
1984	34.13	72.40	741.02	641.48	154.58	691.52	67.67	16.30	13.24	184.99	83.42	49.18
1985	30.81	24.53	411.58	209.63	789.47	764.95	180.08	118.91	172.48	140.00	93.61	68.97
1986	55.34	52.49	697.01	1,635.78	1,114.21	534.73	186.83	71.10	246.16	165.86	137.58	94.92
1987	63.40	66.12	664.39	274.15	189.28	80.54	43.15	44.01	33.10	37.76	54.27	45.15
1988	27.61	26.66	315.76	329.68	99.17	36.04	10.03	16.30	17.29	21.09	28.32	26.07
1989	24.88	23.34	59.84	1,629.79	165.13	68.65	21.09	21.58	114.99	44.50	38.16	23.34
1990	24.17	27.97	127.12	260.72	173.83	166.48	45.60	13.48	13.36	28.07	54.98	30.69
1991	17.42	22.63	99.30	165.86	319.34	135.71	184.01	24.03	20.96	31.26	41.47	39.22
1992	36.50	45.27	205.19	126.16	92.31	220.78	186.46	40.45	64.11	40.09	66.24	42.54
1993	30.22	31.99	150.27	758.65	183.27	315.54	1,832.70	1,116.17	194.55	101.87	86.98	79.16
1994	63.40	59.37	756.49	643.16	359.06	142.33	190.50	81.15	60.80	146.62	129.99	72.52
1995	54.51	57.23	818.13	551.42	342.76	94.03	253.27	55.53	40.94	245.18	140.89	72.52
1996	45.03	41.47	183.13	1,282.00	883.62	274.48	63.87	39.60	32.36	66.57	130.70	66.60
1997	43.37	40.41	40.18	4,091.86	553.36	406.01	565.75	126.39	131.66	239.29	204.88	162.58
1998	101.55	337.60	941.77	669.42	1,402.41	865.72	1,806.96	116.34	72.70	341.90	303.35	284.28
1999	86.98	108.66	541.70	907.72	782.61	354.16	320.45	174.93	593.70	212.08	145.75	106.77
2000	82.24	120.87	863.46	465.31	258.66	1,350.93	627.65	95.13	230.47	198.59	681.36	168.27
2001	117.31	104.99	103.26	3,311.14	766.18	593.33	161.82	72.57	63.99	125.04	181.30	149.31

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Elm River at the mouth												
1931	0.00	0.09	1.17	0.62	0.05	0.08	0.35	0.00	0.00	0.00	0.00	0.00
1932	0.00	1.22	146.62	60.97	1.62	0.61	1.06	0.00	0.00	0.00	0.02	0.00
1933	0.00	0.00	44.14	11.01	0.53	0.16	0.50	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.19	0.96	0.03	0.03	0.08	0.00	0.03	0.00	0.00	0.00
1935	0.00	0.00	7.00	0.88	0.80	21.76	2.97	0.00	0.00	0.00	0.00	0.00
1936	0.00	0.00	0.00	37.95	0.37	0.03	0.19	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	0.19	0.08	0.37	0.45	0.05	0.03	0.00	0.00	0.00
1938	0.00	0.00	1.48	0.02	0.13	0.00	0.40	0.05	0.00	0.00	0.00	0.00
1939	0.00	0.00	15.21	1.24	0.00	0.32	0.27	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	25.08	0.13	0.03	0.08	0.11	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.67	309.88	0.37	11.62	3.21	0.00	0.03	0.16	0.09	0.02
1942	0.00	0.00	0.07	71.22	18.41	3.34	3.05	0.05	0.03	0.00	0.00	0.00
1943	0.00	0.00	86.41	14.90	2.52	24.36	14.86	0.03	0.00	0.00	0.00	0.00
1944	0.00	0.00	0.00	4.04	0.53	1.59	7.40	4.99	0.61	0.03	0.59	0.11
1945	0.00	0.00	15.02	1.46	0.66	1.09	1.72	0.00	0.00	0.03	0.00	0.00
1946	0.00	0.00	81.80	2.44	0.48	0.35	21.31	0.00	0.00	0.00	0.00	0.00
1947	0.00	0.00	24.05	175.61	3.45	8.52	3.26	0.03	0.00	0.00	0.02	0.00
1948	0.00	0.00	0.00	4,460.22	70.60	1.91	5.25	0.40	0.00	0.00	0.05	0.00
1949	0.00	0.00	0.00	308.63	3.37	68.19	4.59	0.61	0.00	0.05	0.16	0.09
1950	0.02	0.02	2.60	6,295.86	9,667.72	50.36	34.97	0.56	0.21	0.16	0.23	0.18
1951	0.14	0.11	12.92	91.42	1.62	0.77	4.25	0.00	0.08	0.03	0.07	0.02
1952	0.07	0.02	0.19	119.01	0.21	0.00	10.59	0.35	0.00	0.00	0.02	0.02
1953	0.02	0.02	0.93	0.41	1.78	50.84	16.24	0.03	0.03	0.00	0.02	0.05
1954	0.02	0.81	4.56	3.49	0.74	5.52	22.13	0.00	0.00	0.00	0.00	0.00
1955	0.00	0.00	0.00	48.79	0.16	11.73	17.14	0.03	0.00	0.00	0.00	0.00
1956	0.00	0.00	0.00	24.36	5.52	5.49	0.00	0.00	0.00	0.00	0.00	0.00
1957	0.00	0.00	0.65	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1958	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1959	0.00	0.00	1.70	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	12.32	111.77	0.41	0.03	0.00	0.00	0.00	0.00	0.00	0.00
1961	0.00	0.00	4.47	0.51	0.14	0.00	0.00	0.00	0.00	0.74	0.00	0.00
1962	0.00	0.00	0.00	218.53	30.25	23.72	99.76	3.79	13.77	2.95	1.33	1.13
1963	0.06	0.00	4.11	21.09	2.44	1.29	0.00	0.00	0.00	0.00	0.00	0.00
1964	0.02	0.07	0.00	22.93	0.66	190.08	15.76	0.13	0.27	2.44	0.20	0.05
1965	0.05	0.02	0.00	3,466.42	98.17	14.75	7.27	1.94	4.35	7.99	2.21	0.95

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Elm River at the mouth—Continued												
1966	0.38	0.16	3,391.95	257.19	89.44	22.74	10.00	48.42	1.25	0.37	0.36	0.07
1967	0.09	0.07	159.85	1,102.11	385.76	27.57	2.65	0.03	0.00	0.03	0.05	0.05
1968	0.07	0.02	23.09	2.51	2.79	354.48	3.32	1.33	0.64	0.24	0.45	0.23
1969	0.07	0.05	0.02	3,259.97	55.88	19.05	20.19	0.82	3.42	2.60	0.77	0.68
1970	0.36	0.41	0.17	1,772.42	385.68	176.95	9.05	0.29	0.32	0.05	0.59	0.20
1971	0.05	0.09	9.15	276.27	11.41	14.59	20.83	0.19	0.08	3.10	5.89	0.81
1972	0.20	0.09	390.77	704.23	200.03	27.22	3.26	0.19	0.03	0.00	0.16	0.07
1973	0.05	0.14	150.51	2.34	0.66	0.58	0.40	0.03	0.08	0.40	0.25	0.09
1974	0.00	0.05	0.00	1,422.09	304.84	89.52	2.76	5.47	0.16	0.03	0.14	0.20
1975	0.18	0.14	0.81	1,039.20	213.93	23.38	245.93	0.03	0.03	0.00	0.09	0.05
1976	0.07	0.09	105.78	56.51	1.09	0.19	1.11	0.00	0.00	0.03	0.00	0.00
1977	0.00	0.00	0.00	0.26	0.16	0.11	0.56	0.00	0.03	0.08	0.52	0.16
1978	0.07	0.02	186.28	1,141.16	17.06	4.01	2.79	0.00	0.13	0.00	0.00	0.02
1979	0.02	0.02	0.00	11,417.84	418.45	15.50	9.39	0.85	0.05	0.08	0.16	0.25
1980	0.09	0.09	4.13	49.17	0.16	0.03	1.22	0.00	0.03	0.00	0.00	0.00
1981	0.00	0.02	0.02	0.03	0.00	0.00	0.00	0.00	0.00	0.11	0.20	0.41
1982	0.09	0.07	11.27	573.42	38.47	6.24	7.51	0.00	0.00	12.15	1.31	1.47
1983	0.27	0.23	312.86	163.12	23.96	295.58	54.39	10.61	6.31	2.44	1.96	0.74
1984	0.25	0.18	350.36	130.40	22.00	249.67	1.42	0.00	0.08	0.16	0.07	0.00
1985	0.00	0.02	120.13	27.94	7.14	2.79	0.00	0.86	0.00	0.08	0.09	0.11
1986	0.14	0.11	203.48	233.09	65.01	7.40	8.09	0.42	0.11	0.77	0.72	1.01
1987	0.52	0.16	2,261.13	1,353.04	70.39	30.14	1.86	69.17	7.93	0.88	1.85	1.53
1988	0.50	0.63	256.02	66.54	3.29	0.69	0.27	0.00	0.00	0.00	0.02	0.05
1989	0.07	0.07	0.02	753.50	6.74	1.54	0.56	0.00	0.00	0.00	0.00	0.00
1990	0.00	0.00	0.00	0.48	0.19	0.29	0.58	0.08	0.11	0.13	0.00	0.00
1991	0.00	0.05	0.05	0.48	17.96	7.30	9.21	0.00	0.03	0.00	0.02	0.00
1992	0.00	0.00	149.89	0.74	0.27	0.45	2.89	0.72	1.22	0.19	0.86	0.29
1993	0.07	0.11	43.20	53.09	4.38	7.46	219.40	608.66	104.65	9.47	3.70	2.77
1994	1.62	0.90	724.67	67.78	89.55	55.32	9.68	126.99	260.00	447.18	79.26	16.12
1995	2.91	0.95	4,225.83	1,223.70	611.08	31.76	34.33	22.13	13.11	25.05	9.20	1.53
1996	1.17	0.47	8.55	5,247.53	519.51	49.59	18.10	0.96	0.29	2.26	1.38	0.63
1997	0.52	0.83	1.41	16,327.12	338.72	57.20	46.57	16.11	1.94	2.28	1.80	0.59
1998	0.11	103.89	1,011.07	118.17	24.94	25.87	58.29	0.53	0.08	3.34	3.61	4.53
1999	0.92	0.56	2,075.06	3,010.21	3,549.38	487.67	60.26	9.71	20.46	3.87	7.69	4.06
2000	2.48	25.87	23.83	2,128.61	12.84	38.58	53.60	20.17	0.90	15.02	185.23	59.26
2001	12.36	19.17	59.25	10,035.27	325.00	178.25	50.17	92.12	1.94	1.01	5.66	13.94

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Wild Rice River (Minn.) at the mouth												
1931	2.19	21.31	120.04	64.06	56.98	54.09	21.81	14.73	6.01	15.60	15.27	11.05
1932	11.93	12.89	89.18	234.86	112.96	66.16	6.60	2.29	5.47	14.73	5.61	2.29
1933	4.14	3.90	168.83	227.79	135.57	49.52	9.61	7.36	8.01	18.58	14.74	12.53
1934	12.20	17.95	57.32	269.75	59.92	30.40	3.59	0.99	5.47	24.97	6.51	5.61
1935	9.71	17.95	249.39	146.73	134.13	91.28	61.86	19.49	9.15	20.88	5.92	2.58
1936	2.39	0.62	111.81	1,103.65	226.84	35.73	1.68	2.20	0.47	6.26	4.77	2.37
1937	5.74	4.57	2.43	261.17	242.51	100.26	16.79	21.49	17.83	12.88	6.61	1.55
1938	3.83	5.10	204.84	97.86	611.17	188.44	21.34	7.02	7.31	7.65	7.22	3.97
1939	5.50	3.65	498.71	515.42	68.32	38.29	8.08	1.24	1.25	5.18	6.41	4.14
1940	0.51	0.44	1.71	436.53	143.23	36.57	6.11	12.46	5.53	9.59	11.27	5.44
1941	10.08	10.62	104.58	668.58	101.89	133.36	14.16	7.52	24.49	35.09	24.12	7.36
1942	1.68	1.07	41.12	166.38	741.59	482.80	53.54	45.47	325.85	134.01	100.59	23.48
1943	11.79	8.36	131.85	2,205.04	576.93	1,043.64	594.50	214.89	64.94	40.31	48.13	13.29
1944	9.04	10.51	31.34	319.37	531.29	700.34	1,188.42	1,016.83	807.42	316.70	238.77	145.30
1945	79.73	66.51	1,133.70	1,527.39	710.51	257.91	105.50	99.46	157.61	238.64	148.45	75.11
1946	36.93	24.02	783.90	927.91	451.00	280.37	213.22	31.99	37.92	202.84	118.23	73.75
1947	57.18	48.99	185.90	1,883.18	702.03	778.61	103.80	14.41	6.34	14.09	10.17	6.97
1948	4.29	3.57	3.41	881.49	165.76	40.99	19.49	4.16	0.19	0.46	3.48	1.82
1949	0.84	0.42	0.49	238.85	104.86	215.76	453.65	290.75	58.68	43.64	46.16	32.94
1950	14.06	13.22	89.05	1,829.50	1,730.72	511.06	273.48	7.94	4.83	6.56	4.98	3.73
1951	3.18	2.95	8.59	840.96	208.34	76.05	9.34	8.22	17.58	17.58	26.44	159.57
1952	104.07	87.18	85.05	1,304.23	313.63	9.69	289.05	155.70	61.54	33.58	44.80	50.88
1953	38.71	38.40	208.00	526.74	465.83	940.35	592.62	250.29	94.59	52.32	54.87	61.69
1954	64.52	76.37	134.74	765.48	631.07	345.93	125.62	35.69	30.82	44.91	52.87	31.37
1955	22.98	32.52	34.74	640.96	299.75	276.77	148.60	181.23	15.57	24.47	19.93	15.32
1956	14.27	19.30	24.74	1,236.86	442.43	238.11	43.74	24.36	20.34	17.90	45.85	19.41
1957	15.11	15.11	169.69	449.90	341.48	350.91	386.71	115.03	367.01	225.18	220.94	82.04
1958	51.51	45.11	115.48	181.79	106.98	170.53	235.14	46.29	39.61	37.92	74.38	46.06
1959	23.39	20.35	124.95	317.48	318.92	284.18	224.76	93.63	40.14	56.98	57.91	49.10
1960	58.96	49.20	100.42	943.80	431.09	453.86	224.55	107.61	176.99	103.06	85.61	59.80
1961	41.96	37.98	219.06	320.21	635.94	193.83	57.62	26.27	36.86	48.19	42.80	28.43
1962	27.28	23.60	35.05	649.27	1,009.73	1,881.13	830.94	217.24	120.96	89.18	99.77	54.87
1963	10.91	6.00	118.00	499.27	390.84	850.21	137.27	58.26	66.20	29.55	33.47	20.35
1964	20.46	25.39	29.90	1,240.02	674.71	511.80	185.78	54.02	43.53	96.07	68.40	30.21
1965	31.16	32.94	24.63	2,377.93	795.03	774.80	257.17	72.77	80.39	178.05	99.14	123.69

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Wild Rice River (Minn.) at the mouth—Continued												
1966	89.70	58.85	1,563.18	2,052.66	1,045.53	305.05	131.87	232.28	110.37	84.21	71.02	57.70
1967	64.41	72.28	324.95	1,652.65	681.38	552.69	267.66	46.39	18.22	27.22	25.28	51.72
1968	33.89	22.87	218.85	407.48	336.82	256.85	198.81	71.81	92.26	143.73	111.31	65.15
1969	58.64	64.73	74.84	2,608.45	576.84	322.63	177.52	54.12	39.72	160.04	178.87	114.56
1970	71.65	56.65	61.90	1,505.28	1,134.40	1,401.31	223.60	39.61	25.21	37.50	82.46	47.84
1971	36.51	39.45	205.69	836.43	351.76	171.17	79.97	38.24	128.27	788.04	822.28	168.06
1972	95.68	73.44	1,042.12	1,831.60	948.30	347.84	160.89	125.94	66.20	80.50	82.88	39.66
1973	41.54	45.32	428.53	257.69	216.71	150.83	86.85	87.91	872.46	677.04	304.55	151.17
1974	84.87	84.45	91.90	2,468.45	1,731.78	581.71	188.54	132.29	45.65	70.44	165.34	72.70
1975	64.62	68.82	104.63	2,268.45	1,224.43	932.62	3,321.63	226.56	86.96	74.04	120.75	71.65
1976	67.04	77.32	493.37	873.80	206.75	87.07	43.64	8.59	0.76	8.13	10.81	1.13
1977	0.10	0.23	30.32	176.21	59.42	38.87	13.45	1.13	27.01	88.44	119.70	157.99
1978	85.29	54.03	151.58	3,432.68	431.94	175.72	77.43	67.15	97.87	52.32	41.44	33.68
1979	31.26	30.63	64.32	3,221.09	1,201.13	442.95	638.69	84.21	48.93	43.22	126.10	63.57
1980	48.89	50.57	74.74	708.64	162.90	49.57	12.60	6.40	13.03	28.28	30.63	16.16
1981	9.38	12.90	55.16	111.05	189.07	153.48	187.37	156.76	178.69	304.73	222.41	103.23
1982	65.46	62.95	230.74	1,723.18	648.76	232.60	119.48	41.31	20.23	281.11	174.57	69.97
1983	49.20	48.68	759.59	377.16	185.68	447.40	821.62	178.58	106.45	184.51	166.60	96.83
1984	67.56	129.98	832.75	931.17	261.09	1,645.99	125.83	24.36	15.36	321.07	137.42	79.53
1985	35.61	26.81	887.61	333.61	2,196.77	1,265.74	802.02	523.98	328.24	272.32	195.55	134.07
1986	126.84	107.01	632.11	2,490.56	1,706.36	523.35	219.36	93.10	131.55	197.43	197.44	134.28
1987	85.50	79.21	909.49	457.58	492.21	289.37	409.48	248.70	104.65	124.88	106.48	96.83
1988	69.24	62.42	491.90	755.06	218.94	58.04	17.16	23.73	32.73	33.58	54.13	52.45
1989	52.87	57.07	75.79	2,512.66	523.35	278.89	64.61	14.30	115.88	44.27	58.96	18.15
1990	16.89	20.56	147.27	514.11	322.42	296.79	76.16	13.03	4.12	12.18	21.61	18.04
1991	17.83	28.33	154.00	245.37	581.29	143.52	149.98	27.43	24.15	25.74	36.93	38.29
1992	38.61	40.91	518.43	216.42	239.80	119.27	633.29	276.87	325.91	93.84	107.85	80.26
1993	74.49	77.95	258.11	1,121.07	369.76	447.51	1,700.01	1,941.50	378.03	141.40	120.12	109.21
1994	88.65	81.09	361.58	1,174.75	738.05	764.42	886.44	253.68	444.76	674.92	494.86	228.07
1995	129.25	121.59	1,445.28	903.91	910.06	237.47	1,037.59	324.85	150.30	357.90	217.16	148.87
1996	156.00	156.63	152.11	3,249.52	2,180.88	536.59	150.41	67.58	44.38	68.11	305.50	153.69
1997	138.38	22.87	136.63	5,384.28	1,217.01	697.80	1,680.94	313.31	165.34	332.59	315.78	248.32
1998	196.70	804.76	1,437.91	846.43	2,263.50	1,867.36	1,859.94	202.41	84.21	267.02	315.36	264.79
1999	161.46	146.35	1,323.17	2,164.24	2,035.77	984.84	1,068.73	690.49	1,407.67	424.74	319.97	251.78
2000	174.15	180.44	1,030.54	662.11	373.90	2,655.40	1,035.89	228.79	309.28	428.97	1,369.06	409.15
2001	257.03	219.26	233.69	4,840.06	1,546.42	936.33	289.16	374.95	162.06	246.79	397.61	230.80

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1936 through June 1937, April 1942 through September 1960, and June 1961 through December 2001) and estimated (January 1931 through March 1936, July 1937 through March 1942, and October 1960 through May 1961) historic streamflow, in cubic feet per second, for the Red River of the North at Halstad, Minn.												
1931	41.75	73.20	241.31	556.68	366.32	257.90	139.88	49.55	20.76	40.63	101.51	67.51
1932	68.82	86.69	639.15	2,035.95	535.24	209.82	78.49	20.42	14.77	12.07	60.08	42.68
1933	13.02	0.53	495.33	1,159.05	452.29	224.10	33.68	14.07	10.38	10.53	42.96	45.38
1934	28.50	40.42	209.82	788.30	230.91	78.39	67.27	10.13	6.65	13.75	39.91	20.97
1935	9.10	24.23	478.69	778.46	500.74	263.60	391.02	75.48	70.07	37.56	45.14	29.13
1936	28.31	12.79	27.29	2,899.00	803.00	194.00	58.30	8.67	11.80	10.50	10.10	17.76
1937	9.71	2.50	17.43	1,156.00	883.00	517.00	230.48	125.47	339.52	125.80	108.60	35.22
1938	11.62	30.21	719.74	485.60	2,382.82	1,053.99	212.28	44.36	80.15	83.40	97.50	68.02
1939	167.53	168.68	229.01	1,613.76	530.95	360.54	183.67	29.49	87.32	128.98	165.55	47.33
1940	2.63	18.24	109.04	2,117.17	1,081.59	505.74	134.45	8.48	64.70	95.66	169.64	106.54
1941	80.46	151.18	225.52	3,655.56	1,190.08	2,504.21	278.01	59.60	724.10	784.24	502.87	233.37
1942	197.55	186.95	908.36	1,738.00	2,957.00	2,595.00	2,057.49	937.91	1,456.34	687.12	485.00	604.82
1943	522.67	427.81	577.45	12,280.01	3,210.00	5,930.00	3,134.00	1,280.00	730.93	597.71	531.71	567.34
1944	342.05	268.41	328.30	1,800.00	2,362.00	3,417.00	4,136.00	3,003.00	2,624.00	1,115.80	1,005.73	899.87
1945	691.64	593.27	5,866.85	5,144.00	2,300.00	1,657.00	791.40	329.46	595.31	770.03	549.04	450.81
1946	317.74	191.61	4,046.65	3,783.00	1,412.00	879.00	1,474.90	1,179.06	524.49	792.09	643.48	871.17
1947	666.06	522.74	760.30	11,890.00	3,104.00	3,454.00	1,484.00	362.00	622.75	722.64	598.28	388.57
1948	243.27	176.83	561.66	8,100.00	3,479.00	1,190.00	558.00	454.10	384.85	251.00	281.89	162.87
1949	119.47	150.07	353.88	3,233.00	1,161.00	738.00	1,557.00	712.00	728.97	469.47	531.71	228.30
1950	158.21	223.61	571.01	12,500.00	11,529.99	4,555.00	2,459.00	1,491.52	1,032.51	1,282.71	870.04	269.00
1951	264.52	253.36	1,305.52	6,387.00	2,634.00	1,663.00	1,324.47	783.09	639.16	584.74	573.07	901.75
1952	836.96	793.14	1,119.11	12,830.00	2,926.00	1,789.00	2,826.00	855.79	559.34	375.69	356.67	393.26
1953	239.71	298.27	1,081.00	1,761.00	2,000.00	7,684.00	2,834.00	1,572.00	539.75	372.39	430.93	755.78
1954	580.86	530.06	904.12	2,568.00	1,988.00	1,820.00	1,323.00	484.92	293.81	268.91	327.62	367.57
1955	372.96	303.32	356.19	2,368.00	886.00	960.00	1,646.00	1,205.00	332.74	320.18	251.60	373.37
1956	398.70	351.92	276.16	4,179.00	2,189.00	1,563.00	541.00	383.00	650.76	203.87	366.51	153.75
1957	156.37	178.70	865.43	1,827.00	1,592.00	2,136.00	1,762.00	887.00	2,082.59	1,550.44	1,201.69	765.68
1958	529.07	477.21	1,094.51	1,446.00	757.00	615.00	2,039.00	435.00	363.00	161.06	224.11	349.34
1959	409.12	385.41	493.19	1,184.00	925.00	1,901.00	1,466.00	464.00	324.00	204.67	215.86	428.98
1960	351.17	364.33	285.02	5,288.00	2,125.00	1,682.00	1,032.00	386.00	403.00	137.42	227.54	288.46
1961	244.88	277.70	941.12	871.23	1,177.26	753.00	313.00	197.00	186.00	297.00	228.00	146.00
1962	138.00	164.00	249.00	6,308.00	5,339.00	10,310.00	9,378.00	3,866.00	1,325.00	823.00	773.00	553.00
1963	396.00	303.00	688.00	2,189.00	1,323.00	3,918.00	930.00	444.00	392.00	328.00	319.00	247.00
1964	225.00	226.00	303.00	3,930.00	2,449.00	1,734.00	973.00	259.00	239.00	379.00	384.00	262.00
1965	285.00	267.00	299.00	12,200.00	3,581.00	4,137.00	2,195.00	1,035.00	751.00	1,359.00	878.00	831.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1936 through June 1937, April 1942 through September 1960, and June 1961 through December 2001) and estimated (January 1931 through March 1936, July 1937 through March 1942, and October 1960 through May 1961) historic streamflow, in cubic feet per second, for the Red River of the North at Halstad, Minn.—Continued												
1966	745.00	737.00	9,429.00	9,535.00	4,607.00	2,656.00	1,377.00	1,643.00	767.00	686.00	713.00	644.00
1967	612.00	519.00	1,519.00	7,193.00	3,674.00	3,241.00	1,731.00	441.00	170.00	278.00	292.00	291.00
1968	254.00	235.00	938.00	1,492.00	1,448.00	1,671.00	977.00	401.00	323.00	511.00	545.00	466.00
1969	332.00	529.00	919.00	20,080.01	6,715.00	2,364.00	2,080.00	558.00	219.00	380.00	473.00	335.00
1970	337.00	363.00	575.00	5,844.00	3,365.00	5,016.00	1,183.00	267.00	180.00	188.00	409.00	253.00
1971	211.00	226.00	1,556.00	3,085.00	1,481.00	937.00	1,327.00	345.00	680.00	1,602.00	1,771.00	1,164.00
1972	963.00	828.00	5,949.00	7,169.00	4,400.00	3,332.00	1,476.00	1,109.00	671.00	632.00	613.00	446.00
1973	435.00	579.00	2,919.00	1,382.00	803.00	608.00	314.00	265.00	1,285.00	1,386.00	1,000.00	948.00
1974	771.00	731.00	1,305.00	7,270.00	5,017.00	3,013.00	1,438.00	821.00	373.00	487.00	606.00	386.00
1975	329.00	445.00	724.00	11,250.00	6,195.00	4,583.00	20,060.00	1,494.00	758.00	682.00	761.00	484.00
1976	500.00	616.00	2,582.00	3,786.00	1,181.00	430.00	241.00	87.80	38.40	61.50	92.30	51.20
1977	32.10	45.90	331.00	733.00	449.00	242.00	251.00	59.50	221.00	646.00	593.00	731.00
1978	706.00	480.00	1,629.00	16,740.00	2,950.00	1,964.00	2,019.00	599.00	320.00	302.00	284.00	258.00
1979	178.00	174.00	461.00	17,349.99	8,994.00	2,812.00	2,487.00	1,400.00	847.00	635.00	814.00	518.00
1980	499.00	453.00	774.00	3,881.00	980.00	776.00	289.00	230.00	260.00	266.00	367.00	224.00
1981	140.00	203.00	618.00	705.00	923.00	568.00	678.00	541.00	291.00	617.00	756.00	483.00
1982	311.00	356.00	1,174.00	9,299.00	2,322.00	1,366.00	1,050.00	506.00	282.00	1,209.00	915.00	682.00
1983	411.00	315.00	3,674.00	2,924.00	1,057.00	1,607.00	3,442.00	777.00	743.00	737.00	777.00	601.00
1984	506.00	594.00	4,192.00	9,233.00	2,173.00	5,361.00	1,501.00	571.00	286.00	1,350.00	1,228.00	818.00
1985	680.00	502.00	3,164.00	2,198.00	5,095.00	4,250.00	2,395.00	1,813.00	1,604.00	1,341.00	1,144.00	1,056.00
1986	950.60	940.10	4,642.00	11,720.00	8,639.00	4,218.00	2,855.00	1,324.00	2,035.00	2,188.00	1,420.00	1,253.00
1987	1,023.00	1,052.00	4,975.00	4,333.00	2,044.00	1,420.00	1,444.00	899.00	465.90	414.80	477.20	461.60
1988	319.90	484.60	2,615.00	2,146.00	801.20	449.00	153.30	154.20	171.60	163.70	216.40	201.60
1989	150.40	249.20	560.40	14,270.01	2,259.00	1,535.00	544.90	281.30	885.80	304.90	284.80	129.90
1990	118.40	160.10	324.70	1,249.00	1,112.00	1,462.00	635.50	268.60	256.00	204.80	204.90	140.20
1991	94.40	168.00	638.10	1,142.00	2,042.00	1,604.00	2,283.00	688.40	861.60	440.20	325.30	313.20
1992	316.00	349.00	2,447.00	1,119.00	951.40	1,600.00	1,892.00	904.70	802.60	393.60	375.70	411.50
1993	407.40	479.30	1,354.00	8,045.00	2,123.00	3,107.00	10,960.00	11,700.00	3,360.00	1,950.00	1,404.00	1,129.00
1994	894.10	911.30	4,221.00	8,797.00	4,675.00	2,950.00	5,993.00	1,819.00	2,146.00	2,875.00	1,843.00	1,004.00
1995	881.00	885.00	9,444.00	12,200.00	6,045.00	2,957.00	4,364.00	1,348.00	842.00	1,866.00	1,586.00	1,179.00
1996	796.80	792.20	3,524.00	14,079.99	9,748.00	3,761.00	1,268.00	854.80	477.50	478.40	831.10	726.10
1997	794.80	1,270.00	1,923.00	38,459.98	15,569.99	4,747.00	4,953.00	1,622.00	1,180.00	1,502.00	1,182.00	1,135.00
1998	930.00	1,952.00	8,801.00	6,062.00	8,454.00	5,675.00	8,468.00	1,766.00	1,030.00	1,915.00	1,512.00	1,486.00
1999	923.20	805.40	6,848.00	10,080.00	8,217.00	4,530.00	3,526.00	2,496.00	4,705.00	1,788.00	1,435.00	1,282.00
2000	923.00	966.00	5,947.00	3,370.00	2,865.00	10,480.00	6,580.00	1,745.00	2,099.00	1,606.00	5,707.00	2,413.00
2001	1,240.00	1,129.00	1,897.00	28,480.00	11,790.00	7,226.00	4,280.00	2,431.00	1,199.00	1,200.00	1,624.00	1,357.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Goose River at the mouth												
1931	0.14	1.68	12.01	28.50	3.81	4.54	1.36	1.43	0.35	0.32	0.21	0.21
1932	0.21	21.18	289.49	253.75	29.36	13.50	1.05	0.32	0.42	0.56	0.94	0.36
1933	0.21	0.17	139.72	112.41	17.68	6.44	1.24	0.25	0.12	0.11	0.23	0.15
1934	0.08	0.13	3.37	35.20	2.20	2.95	1.33	1.55	2.97	0.75	0.21	0.21
1935	0.21	0.32	74.45	34.03	21.32	92.14	12.86	1.07	0.43	0.32	0.42	0.21
1936	0.21	0.21	1.06	202.49	15.11	2.97	0.62	0.11	0.11	0.11	0.11	0.11
1937	0.11	0.21	0.53	16.38	8.03	10.34	2.60	4.00	2.14	0.11	0.11	0.11
1938	0.11	0.11	37.33	6.92	5.73	1.45	0.01	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	105.29	39.88	1.20	9.66	0.13	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	166.23	9.70	1.75	0.00	5.03	0.01	0.00	0.00	0.00
1941	0.00	0.00	26.06	550.04	15.00	65.79	7.43	1.35	2.71	6.49	5.55	2.47
1942	0.08	0.00	9.84	273.21	86.89	33.64	6.48	3.80	2.91	0.98	0.87	0.79
1943	0.47	0.34	228.65	129.75	35.68	97.93	23.04	2.27	0.49	0.25	0.43	0.31
1944	0.18	0.13	2.15	69.66	17.79	22.71	6.13	41.79	13.61	3.08	14.30	5.93
1945	0.70	0.68	104.76	43.07	19.50	18.32	6.41	1.39	1.17	1.78	0.56	0.54
1946	0.50	0.59	223.12	54.88	17.14	9.76	9.48	0.58	0.90	1.46	1.55	0.71
1947	0.23	0.15	129.22	419.77	41.04	55.72	9.83	2.08	0.95	0.82	2.32	1.55
1948	0.48	0.11	0.57	1,956.85	158.57	24.86	16.71	10.61	1.02	0.48	4.00	1.71
1949	0.49	0.27	1.21	548.98	40.61	170.25	19.93	13.39	1.19	3.46	7.00	5.25
1950	2.85	2.51	47.96	2,305.68	2,437.55	144.65	62.04	12.86	7.69	6.51	8.35	7.79
1951	6.64	6.15	97.95	307.67	29.36	15.43	3.87	1.69	4.60	2.83	4.69	1.97
1952	0.00	1.95	15.10	348.83	12.00	1.53	140.79	9.78	1.51	1.16	2.17	2.89
1953	1.99	2.03	30.20	23.18	30.64	145.40	108.86	2.33	3.06	0.82	2.60	3.14
1954	2.70	17.05	61.47	65.09	20.68	44.14	5.03	0.75	0.38	0.21	0.28	0.31
1955	0.60	0.74	1.04	228.23	6.80	66.11	6.06	2.76	0.17	0.21	0.51	0.67
1956	0.62	0.53	0.75	299.59	59.36	61.39	6.48	1.07	1.04	0.41	1.93	1.51
1957	1.05	0.78	19.46	18.93	8.44	11.25	5.68	0.11	56.79	17.68	15.68	4.45
1958	1.02	0.86	1.67	16.80	5.22	3.38	31.07	3.77	0.49	0.34	0.05	0.00
1959	0.00	0.00	35.73	39.56	7.18	7.30	0.52	1.43	0.31	0.36	0.71	0.96
1960	0.93	0.85	76.36	463.16	16.07	13.61	10.93	4.43	1.73	0.28	1.11	1.04
1961	0.81	0.87	57.85	28.61	21.00	3.72	0.17	0.09	0.43	2.63	0.73	0.64
1962	0.60	0.55	0.90	733.82	191.79	156.54	51.43	11.79	131.57	17.68	15.25	9.64
1963	2.46	0.31	31.16	94.65	19.71	11.25	12.64	2.23	0.38	0.92	0.59	0.12
1964	0.00	0.00	1.62	159.31	19.82	295.29	31.82	5.69	8.86	28.50	7.86	3.94
1965	3.18	1.95	1.47	1,735.64	183.75	74.79	72.75	25.07	38.79	53.79	29.13	18.54

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Goose River at the mouth—Continued												
1966	11.44	7.27	1,176.24	503.36	176.25	94.39	126.75	141.65	19.93	10.24	11.12	4.73
1967	5.04	4.13	300.87	1,006.08	431.90	104.68	18.32	2.34	1.11	2.10	3.96	3.57
1968	4.47	2.52	126.88	55.52	37.39	412.72	57.32	20.57	13.71	8.06	12.50	8.35
1969	4.21	3.77	6.16	1,685.65	142.82	85.82	78.86	15.96	34.07	29.46	16.42	15.36
1970	10.91	11.55	14.14	1,261.32	338.90	284.15	41.36	9.19	9.53	3.81	14.19	7.99
1971	3.78	5.25	83.91	520.80	70.18	74.36	66.43	7.10	4.36	32.36	49.25	17.05
1972	7.83	5.22	448.37	812.94	252.65	103.93	12.11	7.28	2.90	1.17	7.15	4.19
1973	3.89	6.32	292.89	53.71	19.82	13.07	3.88	1.91	4.73	10.60	9.17	5.05
1974	1.41	3.24	2.60	1,135.82	305.04	197.04	40.50	43.82	6.49	1.75	6.24	7.89
1975	7.32	6.55	28.40	978.32	260.36	95.79	62.79	3.04	2.38	1.07	4.97	3.79
1976	4.09	5.35	250.24	244.71	24.64	6.93	1.22	0.07	0.00	0.00	0.00	0.25
1977	0.32	0.31	2.40	18.72	10.41	5.42	4.48	0.16	2.10	4.55	13.45	7.02
1978	4.30	2.18	322.14	1,022.88	84.00	37.18	10.64	1.41	5.83	1.11	1.08	1.72
1979	1.80	2.17	3.34	3,060.77	451.19	76.82	47.47	16.18	3.45	4.63	7.14	8.95
1980	5.32	5.01	58.81	229.08	10.46	2.84	0.47	1.59	2.41	0.84	2.57	2.54
1981	2.29	5.14	10.51	7.03	8.01	15.43	8.19	8.73	2.96	5.24	8.30	11.65
1982	5.54	4.44	85.72	868.56	68.89	20.46	20.14	1.71	0.44	67.39	21.93	23.30
1983	9.49	8.47	445.18	245.56	61.18	138.86	67.18	31.07	47.47	28.39	27.22	16.21
1984	8.92	7.48	428.81	427.53	88.93	122.68	4.44	0.06	0.00	6.32	4.77	0.71
1985	0.88	2.54	366.38	80.40	43.61	14.68	0.62	20.36	0.87	4.35	5.48	5.88
1986	6.44	5.62	416.15	282.36	233.47	44.68	50.04	7.98	5.29	15.43	15.99	19.07
1987	13.45	7.21	981.51	1,109.24	158.36	109.82	570.55	171.54	53.57	16.50	26.48	23.83
1988	13.13	14.72	371.27	264.49	40.18	14.46	4.84	0.84	0.58	0.79	2.65	3.98
1989	4.85	4.41	6.87	839.53	55.39	22.29	3.38	1.41	1.54	0.61	0.52	0.20
1990	0.89	1.28	2.73	25.21	11.25	9.27	14.89	4.54	0.00	0.00	0.01	0.00
1991	0.29	3.11	7.66	25.10	85.93	51.22	9.55	0.59	0.00	0.02	2.13	1.66
1992	0.40	0.22	292.36	31.27	13.18	11.46	115.72	14.79	19.50	6.89	17.48	9.69
1993	4.18	5.62	167.82	237.59	45.75	51.86	781.19	551.80	214.29	58.93	38.34	32.94
1994	24.57	17.90	590.67	266.83	176.36	152.15	456.65	237.75	349.40	467.58	199.13	84.63
1995	33.68	18.43	1,297.48	1,057.44	552.97	112.93	329.36	93.00	70.18	99.43	62.60	23.83
1996	20.65	12.71	81.46	2,114.25	506.80	143.47	95.14	17.14	9.30	27.32	22.56	14.93
1997	13.24	17.26	36.37	3,628.68	402.76	154.93	497.80	78.43	25.07	27.43	26.16	14.19
1998	5.74	230.27	685.32	347.66	99.54	101.14	82.29	12.64	4.89	33.64	37.92	42.79
1999	18.32	14.09	944.60	1,622.91	1,422.88	489.87	327.86	59.79	89.14	36.43	56.88	40.36
2000	30.93	109.10	128.68	75.72	85.50	1,022.16	654.66	98.25	20.57	65.36	496.76	73.51
2001	49.89	42.47	354.15	1,376.17	458.58	125.36	70.29	88.50	16.61	26.68	106.56	33.11

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Marsh River at the mouth												
1931	0.01	0.14	7.46	26.53	5.29	6.69	0.08	0.07	0.04	0.15	0.27	0.16
1932	0.09	0.10	196.92	9.53	1.79	8.12	0.04	0.00	0.03	0.14	0.08	0.03
1933	0.01	0.01	12.36	8.96	2.60	2.00	0.07	0.04	0.05	0.21	0.26	0.18
1934	0.09	0.18	2.00	12.61	0.49	0.40	0.01	0.00	0.03	0.33	0.09	0.08
1935	0.06	0.18	40.69	3.68	2.54	3.99	1.55	0.22	0.05	0.25	0.08	0.03
1936	0.00	0.00	0.29	218.42	7.49	1.24	0.00	0.01	0.00	0.03	0.06	0.03
1937	0.03	0.01	0.13	11.82	8.60	5.02	0.18	0.26	0.19	0.11	0.09	0.01
1938	0.01	0.03	18.26	1.63	57.42	9.75	0.26	0.04	0.04	0.04	0.10	0.05
1939	0.03	0.01	60.85	46.77	0.64	1.27	0.05	0.00	0.00	0.03	0.09	0.05
1940	0.00	0.00	0.00	33.42	2.91	0.77	0.03	0.11	0.03	0.07	0.18	0.06
1941	0.06	0.08	12.02	79.19	1.45	26.58	0.12	0.04	0.33	0.59	0.49	0.10
1942	0.00	0.00	3.87	4.75	85.42	52.96	1.22	0.92	25.62	5.72	3.18	0.38
1943	0.09	0.05	149.74	886.61	51.00	433.25	70.73	12.69	1.68	0.75	1.21	0.19
1944	0.05	0.08	0.19	110.12	59.48	155.06	448.22	224.11	196.63	25.98	15.32	4.62
1945	1.07	0.45	577.98	832.06	252.28	30.63	9.90	3.57	2.50	1.76	1.06	0.11
1946	0.00	0.00	480.55	370.42	83.00	17.78	17.50	0.08	0.62	5.46	2.18	0.66
1947	0.00	0.00	29.08	1,682.90	580.17	830.67	177.62	90.11	76.57	99.82	72.42	61.65
1948	45.95	32.58	38.21	867.63	363.45	139.74	103.92	55.52	16.00	14.77	25.70	23.10
1949	23.62	19.34	23.93	286.48	271.15	562.67	800.18	495.94	101.46	82.73	96.43	76.06
1950	35.30	30.89	68.61	2,031.91	3,578.39	1,408.38	1,121.37	182.68	69.46	161.90	111.23	100.07
1951	83.71	80.60	141.45	1,573.17	976.84	411.71	140.15	83.00	167.50	177.48	132.12	17.00
1952	16.09	14.02	19.57	516.50	171.19	123.47	276.07	74.25	5.20	1.78	1.14	0.88
1953	0.23	0.17	68.88	61.47	52.64	137.42	163.13	9.04	2.24	0.05	0.29	0.96
1954	0.27	0.06	8.78	179.00	82.32	30.63	3.02	0.15	0.00	0.00	0.07	0.14
1955	0.00	0.00	0.64	91.88	12.84	20.37	24.07	15.31	0.00	0.00	0.00	0.00
1956	0.00	0.00	0.01	419.34	51.28	32.27	1.39	0.05	0.12	0.00	0.00	0.00
1957	0.00	0.00	53.54	46.93	14.08	56.88	23.52	1.24	7.07	4.12	9.12	1.23
1958	0.00	0.44	1.76	5.46	1.85	4.10	21.19	0.35	0.00	0.00	0.00	0.00
1959	0.00	0.01	24.19	26.31	9.23	6.78	1.74	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	31.33	143.97	14.49	17.23	11.31	0.38	4.74	0.00	0.15	0.00
1961	0.00	0.00	47.06	17.05	34.18	4.14	0.00	0.00	0.02	0.53	0.00	0.00
1962	0.00	0.00	0.34	129.42	271.42	474.61	361.39	11.96	2.05	0.94	2.08	0.93
1963	0.20	0.00	27.23	44.55	15.86	44.71	0.61	0.00	0.00	0.00	0.00	0.00
1964	0.00	0.00	0.00	136.69	31.72	25.43	4.46	0.08	0.23	0.11	0.16	0.00
1965	0.00	0.00	0.00	757.90	35.41	40.61	28.71	4.96	5.14	36.78	7.05	3.53

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Marsh River at the mouth—Continued												
1966	0.20	0.09	514.78	385.36	68.92	13.66	3.25	2.32	3.17	0.29	0.04	0.00
1967	0.00	0.00	79.45	189.84	41.16	13.56	1.60	0.00	0.00	0.00	0.00	0.00
1968	0.00	0.00	26.31	15.60	7.41	21.47	1.45	0.00	0.00	0.00	0.00	0.00
1969	0.00	0.00	0.00	804.43	42.94	33.77	58.52	4.36	3.20	3.90	2.97	1.00
1970	0.23	0.22	1.94	463.23	79.31	188.15	3.19	0.06	0.19	0.35	0.73	0.03
1971	0.00	0.00	61.74	133.12	7.37	3.77	0.63	0.00	0.00	83.00	78.13	5.93
1972	0.65	0.00	420.26	424.76	72.33	6.44	7.19	3.32	0.80	1.14	0.00	0.36
1973	0.13	0.10	111.18	13.62	5.76	1.01	0.00	0.00	35.00	41.98	6.98	1.83
1974	0.38	0.23	0.22	1,024.81	204.97	28.30	1.71	5.31	0.11	0.32	8.24	0.77
1975	0.31	0.16	0.17	730.80	117.59	23.25	314.63	1.22	0.01	0.00	1.12	0.01
1976	0.00	0.01	90.03	93.86	3.34	5.55	0.02	0.00	0.00	0.00	0.00	0.00
1977	0.00	0.00	3.69	13.48	1.86	0.77	0.00	0.00	0.01	0.69	0.23	0.03
1978	0.03	0.03	20.49	894.07	13.61	1.36	0.02	0.01	0.00	0.00	0.00	0.00
1979	0.00	0.00	0.00	1,182.92	59.75	18.32	73.02	1.96	0.12	0.00	0.81	0.09
1980	0.02	0.00	8.92	140.00	1.18	0.00	0.00	0.05	0.00	0.00	0.00	0.00
1981	0.00	1.77	1.72	0.10	65.22	5.36	1.61	0.27	6.34	17.37	6.90	2.00
1982	0.13	0.30	93.60	445.91	33.91	3.91	1.61	0.17	0.00	16.41	9.68	6.54
1983	1.73	1.03	452.65	90.95	5.93	337.88	76.16	28.03	25.30	6.17	4.85	1.95
1984	0.73	3.54	310.76	186.03	12.99	40.04	3.02	0.15	0.10	25.00	4.78	1.57
1985	0.58	0.36	258.87	18.90	406.93	15.31	12.48	11.13	5.24	6.30	2.36	0.74
1986	0.58	0.52	217.07	425.55	185.28	26.39	25.16	5.73	0.75	0.44	1.35	1.56
1987	0.44	0.35	272.60	27.63	45.40	8.09	354.97	17.23	1.97	1.02	0.92	0.81
1988	0.26	0.21	108.27	65.70	2.13	0.14	0.00	3.99	7.77	0.13	0.09	0.00
1989	0.00	0.00	0.64	804.57	17.09	6.29	0.10	0.00	0.00	6.06	0.92	0.32
1990	0.35	0.48	0.87	37.15	4.88	41.98	7.04	0.00	0.00	0.00	1.99	0.58
1991	0.18	0.31	12.16	6.52	98.45	37.47	3.88	0.17	0.00	0.00	1.10	0.97
1992	0.84	1.32	84.21	8.39	3.73	23.79	39.24	28.17	29.95	4.58	2.93	1.16
1993	0.56	0.64	104.56	175.83	7.15	6.41	137.01	50.46	0.66	7.12	5.20	4.27
1994	2.67	2.34	450.76	145.16	44.17	127.03	170.37	2.50	125.66	71.92	29.98	3.56
1995	1.95	2.17	539.24	102.19	114.17	16.13	229.31	6.00	1.16	24.34	14.37	3.56
1996	1.31	1.10	45.17	851.63	305.61	15.59	3.87	0.25	0.03	0.18	12.27	2.97
1997	1.21	1.04	17.71	1,730.49	110.89	404.06	341.84	3.66	1.82	36.92	31.58	19.42
1998	7.22	90.26	177.15	94.39	394.62	246.26	64.13	0.70	0.66	34.32	72.08	62.88
1999	5.20	8.32	777.53	248.80	130.17	13.17	55.79	3.43	70.15	33.31	15.43	8.02
2000	4.63	10.41	11.04	33.84	10.15	393.80	72.20	4.58	0.96	8.49	395.19	20.87
2001	9.77	7.74	248.87	909.53	38.01	13.66	1.27	15.45	3.38	2.12	14.82	16.24

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Sand Hill River at the mouth												
1931	3.57	9.26	34.85	58.94	19.68	14.15	9.71	7.23	7.96	7.92	9.67	5.06
1932	5.75	6.35	27.93	51.30	61.77	16.91	3.97	9.43	8.55	7.59	5.55	3.36
1933	2.39	2.50	45.02	49.51	25.19	13.09	5.25	4.30	4.59	9.04	9.48	7.91
1934	5.86	8.23	20.06	60.28	11.15	8.51	2.52	0.96	19.68	11.31	6.02	5.06
1935	4.85	8.23	60.27	29.67	24.93	22.49	21.16	38.61	8.64	9.87	5.71	5.06
1936	4.27	0.60	33.08	310.83	42.12	9.81	1.43	4.67	4.79	3.96	5.06	3.84
1937	3.14	2.82	1.89	58.05	45.02	24.44	7.98	9.60	17.13	6.85	6.07	3.84
1938	2.24	3.08	52.02	18.52	113.25	42.70	9.55	12.52	4.28	4.62	6.37	4.43
1939	3.03	2.37	101.21	128.10	12.72	10.43	4.62	1.14	1.14	3.42	5.97	4.53
1940	2.08	0.45	1.45	105.57	26.62	10.01	3.75	6.38	3.48	5.48	8.17	5.19
1941	5.00	5.47	31.46	173.42	42.40	31.45	7.02	14.54	18.94	14.64	12.47	13.35
1942	5.86	0.91	15.65	34.34	137.36	98.13	19.00	22.61	19.53	40.44	27.59	8.49
1943	5.70	4.53	37.42	310.20	118.70	236.89	66.88	33.74	19.70	18.59	17.25	5.91
1944	4.57	5.42	12.78	64.38	59.30	58.89	98.70	126.58	73.34	46.67	46.90	26.32
1945	11.77	8.71	182.65	297.58	146.48	98.19	42.13	30.81	45.86	58.19	34.69	7.32
1946	7.02	5.29	146.62	227.25	75.36	42.83	32.63	13.03	18.89	36.17	24.61	13.72
1947	12.81	13.11	24.22	693.05	193.86	372.36	66.07	30.61	19.60	19.50	18.76	11.40
1948	8.81	6.50	5.86	515.65	76.67	35.05	34.14	22.53	12.83	12.63	17.04	13.61
1949	9.16	9.03	14.63	173.46	61.02	198.61	69.91	29.19	13.03	24.24	27.73	18.15
1950	11.09	7.06	9.99	825.95	1,167.79	116.58	183.15	43.54	18.59	32.83	21.99	16.14
1951	14.12	12.10	10.90	432.60	132.84	45.06	20.51	18.59	25.86	21.32	20.88	14.12
1952	12.10	11.09	15.14	223.92	47.28	21.72	53.44	18.79	14.75	18.99	20.88	13.41
1953	7.97	10.89	69.02	100.10	66.57	81.12	50.21	28.89	16.47	12.63	13.61	10.99
1954	5.34	6.49	20.28	145.41	57.58	82.43	29.60	11.01	8.07	10.91	13.01	8.39
1955	6.87	7.42	7.49	151.57	31.82	34.75	15.76	12.53	6.56	10.51	8.71	6.18
1956	5.27	5.46	7.49	319.58	106.37	60.71	16.16	11.62	11.62	13.74	20.57	10.49
1957	8.59	7.60	49.04	121.39	41.52	119.81	131.83	23.84	52.53	31.72	43.37	17.55
1958	14.02	12.51	22.40	30.98	23.94	25.86	63.54	18.08	11.42	13.03	17.65	7.30
1959	4.85	3.87	37.24	79.32	68.90	27.78	16.67	14.45	7.97	18.89	11.90	12.30
1960	12.10	9.86	16.45	163.57	39.70	47.48	42.02	16.26	14.65	11.92	16.34	8.45
1961	6.77	7.34	64.88	53.28	42.13	13.44	10.30	6.36	9.93	17.38	12.61	6.64
1962	2.04	3.58	6.27	256.01	234.87	295.58	301.04	60.71	47.28	36.37	32.68	17.55
1963	9.33	4.98	37.74	95.26	47.68	58.09	33.74	12.22	10.71	10.91	8.96	5.15
1964	6.66	9.67	11.91	228.26	89.71	48.79	68.79	17.78	34.85	25.05	19.77	11.60
1965	10.89	8.41	10.70	925.04	136.88	127.29	55.46	25.66	31.01	72.33	32.57	32.98

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Sand Hill River at the mouth—Continued												
1966	18.25	16.34	388.10	943.10	193.66	68.39	25.46	27.98	22.12	19.09	12.40	10.59
1967	12.61	14.42	90.82	344.00	103.44	73.74	26.77	12.83	12.22	13.54	13.01	13.11
1968	10.29	8.03	101.72	68.52	37.98	272.05	48.99	15.15	12.32	21.21	19.56	12.71
1969	4.74	5.69	7.57	675.09	131.02	104.25	50.51	20.61	25.05	30.81	19.87	16.44
1970	13.11	11.19	12.82	758.13	243.66	166.99	37.88	16.97	13.44	25.26	30.66	11.40
1971	11.70	12.61	43.69	348.24	61.93	36.87	17.48	10.61	33.54	225.78	211.08	49.11
1972	26.02	19.26	321.40	723.12	171.23	49.70	29.30	33.74	17.58	22.73	32.98	12.81
1973	11.09	12.30	230.17	51.56	37.88	22.73	12.32	12.73	81.12	95.97	45.99	23.50
1974	18.86	18.15	19.17	717.97	303.46	88.39	19.60	24.85	18.79	18.69	34.19	17.14
1975	12.00	13.82	23.71	762.98	223.05	49.40	184.16	35.66	18.79	23.13	27.33	19.36
1976	16.04	15.23	84.56	319.68	41.72	33.64	19.70	10.81	7.41	9.53	10.29	8.99
1977	7.93	8.25	19.07	52.07	32.93	41.01	11.01	7.03	15.56	21.32	26.52	28.14
1978	18.46	13.31	37.54	954.60	64.05	54.05	21.82	15.46	17.38	13.74	14.93	13.41
1979	12.20	13.01	17.36	876.80	162.14	71.83	167.69	45.66	17.98	18.18	28.34	24.20
1980	19.36	21.48	43.29	282.55	33.84	11.62	9.04	10.30	11.21	15.56	15.43	9.64
1981	8.12	12.30	33.10	25.53	51.22	39.20	24.55	17.27	34.85	60.11	35.70	22.49
1982	12.20	10.29	50.35	350.66	145.87	36.06	42.83	12.83	10.30	82.63	27.73	27.13
1983	19.36	19.16	336.94	183.05	55.26	230.43	114.35	49.90	72.73	70.92	50.32	36.21
1984	27.03	47.20	203.33	339.86	56.07	601.88	45.06	17.17	11.92	78.44	32.82	8.17
1985	14.25	11.26	155.78	77.20	316.54	170.02	183.15	258.81	94.86	89.00	47.40	38.42
1986	30.36	23.09	219.38	584.67	271.85	70.21	83.75	27.07	21.42	24.24	28.34	22.59
1987	17.35	16.24	186.88	80.83	111.22	60.71	139.71	105.26	28.08	26.77	27.43	24.71
1988	20.47	16.54	127.55	211.00	37.48	36.77	13.94	9.98	14.14	13.33	17.14	15.13
1989	13.92	11.30	14.33	783.66	80.51	41.22	28.69	12.32	14.55	15.05	14.62	7.14
1990	8.65	11.40	60.24	89.41	39.70	59.50	16.97	8.13	7.81	10.09	12.20	10.39
1991	6.32	10.99	51.46	49.34	98.09	31.11	31.52	9.88	10.20	13.03	10.79	10.09
1992	10.59	14.22	80.93	54.39	36.67	20.61	28.59	53.84	85.77	22.22	27.43	23.80
1993	14.32	12.20	39.76	341.58	46.67	51.32	227.19	430.45	41.62	22.93	21.78	25.41
1994	17.55	14.12	52.98	223.72	106.37	176.79	379.33	64.35	124.86	137.08	90.36	38.22
1995	23.40	22.19	459.44	231.49	158.40	41.22	330.13	45.46	27.58	136.88	55.77	36.61
1996	31.77	28.94	31.38	1,177.62	374.58	91.52	33.64	20.20	17.88	23.34	36.91	27.83
1997	24.20	22.09	24.42	1,582.26	178.00	187.80	482.88	62.83	40.81	71.83	49.11	42.86
1998	32.27	184.45	425.33	155.10	454.09	281.04	227.60	45.36	23.44	83.75	54.96	58.49
1999	30.25	35.40	615.95	971.46	379.94	161.83	105.87	135.37	377.41	119.20	67.37	46.09
2000	33.89	37.11	94.15	107.97	74.75	257.60	188.91	47.58	33.44	54.85	286.41	49.01
2001	37.11	33.48	62.26	823.42	160.62	86.88	39.40	42.83	46.67	33.10	56.98	26.03

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Red Lake River at the mouth												
1931	127.17	160.23	285.23	391.53	252.68	245.90	84.81	33.33	23.06	37.27	107.36	76.35
1932	56.96	60.84	237.60	1,403.98	347.32	88.53	40.66	20.87	13.99	13.33	33.27	29.29
1933	24.77	31.66	117.12	659.23	177.60	134.10	40.11	16.83	14.54	9.61	12.71	21.54
1934	16.80	19.92	141.59	542.54	167.87	87.87	48.31	13.44	9.69	11.48	25.41	22.51
1935	17.34	22.83	369.45	562.78	309.95	173.77	98.69	35.08	61.97	34.21	33.71	31.12
1936	34.24	26.92	26.95	1,478.67	513.88	99.78	28.63	14.43	11.37	8.77	10.88	5.75
1937	21.32	19.17	28.36	437.00	782.74	418.04	769.62	1,268.86	631.26	182.84	99.28	38.66
1938	63.53	86.90	670.71	317.38	3,637.18	1,137.71	380.00	118.91	155.52	169.73	142.79	165.19
1939	169.17	152.91	217.15	714.11	451.37	338.80	197.16	101.53	257.49	314.65	286.76	259.84
1940	168.96	187.15	201.34	2,182.28	1,098.37	526.56	236.61	163.50	156.39	234.86	262.53	196.31
1941	225.49	228.07	213.14	2,865.33	806.89	2,771.60	553.77	333.55	974.87	1,187.98	765.63	581.39
1942	482.53	514.62	1,689.75	3,151.10	3,091.82	892.25	313.99	373.23	1,394.54	631.81	382.28	336.94
1943	391.11	363.86	572.63	4,293.12	2,480.89	3,769.42	1,547.55	1,017.16	1,039.90	945.47	735.91	538.20
1944	445.27	483.07	534.64	1,438.62	1,343.18	2,495.10	1,621.87	2,084.16	1,675.42	1,393.45	1,668.02	1,278.21
1945	764.23	753.79	3,686.93	5,631.07	3,170.51	1,521.32	940.77	626.01	1,059.24	1,189.08	793.95	646.43
1946	613.15	583.75	3,918.58	4,185.96	1,907.11	1,107.11	835.09	382.84	507.65	821.75	635.44	568.25
1947	534.65	489.21	686.83	4,613.54	3,615.32	6,089.65	2,701.65	1,028.64	1,238.26	1,346.46	960.86	1,054.23
1948	983.05	686.92	731.54	7,092.42	3,725.70	1,170.50	1,043.39	720.55	619.57	438.14	431.71	356.97
1949	378.62	380.77	515.69	2,800.38	1,372.69	3,203.30	1,326.78	2,161.76	1,377.06	934.21	932.87	646.10
1950	715.56	705.76	858.95	6,235.09	16,710.47	5,138.83	3,936.63	1,825.15	2,045.91	2,570.51	1,914.62	1,898.47
1951	1,790.78	1,576.49	1,765.53	6,032.67	4,661.23	2,127.88	1,328.97	571.37	797.05	745.80	738.07	1,129.60
1952	1,227.60	1,302.98	1,275.16	3,502.91	2,122.42	1,865.58	2,542.09	938.58	655.30	454.32	400.48	386.91
1953	395.63	404.57	910.37	963.63	1,128.97	1,368.31	1,133.34	494.43	429.29	389.18	369.03	353.63
1954	316.27	326.07	446.52	2,013.42	1,426.24	1,321.32	736.40	474.10	391.81	379.46	438.70	419.21
1955	346.31	363.33	395.65	2,806.87	772.24	1,221.86	532.24	295.74	282.52	285.90	192.22	203.74
1956	243.47	248.43	249.08	3,689.10	2,720.23	926.34	955.74	329.18	1,412.03	393.88	658.70	382.49
1957	248.86	127.50	724.51	2,717.03	1,390.17	3,056.85	3,642.64	1,502.74	2,391.27	2,508.21	1,944.77	842.84
1958	890.55	835.63	1,083.56	1,061.91	530.39	659.68	1,674.33	398.04	113.44	106.45	126.74	80.22
1959	79.58	90.24	323.01	1,644.29	749.18	525.80	347.32	199.56	140.88	240.22	227.64	216.34
1960	198.78	190.17	206.75	2,468.06	826.12	1,030.28	459.78	77.05	93.01	126.34	186.94	77.10
1961	69.46	73.55	438.95	715.95	622.52	101.53	98.03	57.60	201.97	237.16	153.56	74.84
1962	85.07	88.30	111.50	3,083.99	5,158.50	7,874.36	4,148.66	2,081.98	1,894.00	1,657.93	1,475.27	1,011.48
1963	1,058.75	949.88	1,367.17	3,455.28	2,266.68	2,427.34	1,360.66	712.68	873.45	1,177.06	644.60	490.93
1964	586.02	552.53	391.43	1,993.93	1,428.42	2,737.72	1,264.49	824.59	507.65	1,088.75	883.12	661.40
1965	670.12	683.36	687.92	7,924.85	4,174.89	4,225.16	1,981.43	868.97	1,245.91	2,629.52	1,474.19	1,312.67

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Red Lake River at the mouth—Continued												
1966	1,169.45	1,119.91	1,823.98	11,106.26	5,742.11	2,620.78	1,518.04	1,918.04	1,626.24	1,312.58	1,240.52	1,193.14
1967	1,133.91	1,161.91	1,579.34	7,396.60	5,191.28	2,753.02	1,447.00	915.74	911.15	590.93	420.40	370.43
1968	336.62	280.52	1,311.97	910.69	436.18	2,350.83	3,951.93	2,029.52	1,438.26	1,038.80	1,243.75	1,346.05
1969	1,340.67	1,335.28	1,320.63	8,486.66	3,990.19	2,212.03	1,289.62	1,025.47	1,342.08	1,953.02	1,435.43	1,146.83
1970	1,199.60	1,115.61	1,124.70	6,056.48	4,251.39	4,438.28	1,677.60	888.86	1,055.09	1,019.13	1,015.57	850.70
1971	831.75	926.62	1,064.30	3,242.03	1,560.66	1,278.70	865.91	717.71	615.41	3,099.47	3,415.74	1,136.07
1972	971.74	992.52	2,478.88	5,855.14	3,252.48	1,749.74	1,026.34	1,286.35	1,396.73	1,217.49	733.22	708.78
1973	650.09	653.43	1,834.81	600.45	673.12	445.25	266.78	542.08	2,394.55	2,514.77	1,420.35	1,061.55
1974	999.74	1,085.45	1,085.73	7,421.49	6,289.65	3,010.95	1,771.59	2,212.03	1,591.27	1,726.79	1,538.80	985.42
1975	1,070.59	976.48	1,011.25	6,564.17	5,133.36	2,742.09	7,487.47	1,954.11	1,909.30	2,148.65	1,727.25	1,175.91
1976	1,439.73	1,333.13	1,734.14	3,690.18	1,464.49	1,255.74	1,000.55	1,082.63	731.48	305.58	197.92	209.77
1977	190.17	194.91	299.41	464.49	400.00	245.47	419.78	209.07	492.79	686.89	721.48	788.14
1978	671.84	669.90	750.38	8,128.35	1,965.04	1,408.75	1,486.35	909.73	667.00	670.06	560.28	542.62
1979	527.65	545.10	602.51	8,311.29	4,906.04	2,855.75	2,537.72	1,716.95	1,274.32	1,243.72	1,008.46	1,293.28
1980	1,168.37	1,117.76	1,158.26	2,877.24	883.83	702.41	420.66	453.66	416.72	203.50	193.72	148.82
1981	135.47	161.74	256.87	250.92	258.80	969.95	1,474.32	954.21	1,481.98	1,932.25	1,217.91	1,039.69
1982	1,058.10	984.55	1,074.80	4,914.47	3,777.07	1,871.05	2,193.45	1,480.88	1,084.49	2,396.73	1,656.18	1,405.28
1983	1,170.52	1,030.32	2,788.47	2,580.64	1,650.28	2,855.75	2,156.30	1,943.18	1,613.12	1,513.67	1,352.51	1,100.53
1984	1,041.41	1,118.84	1,934.39	2,666.15	1,274.32	3,822.97	1,471.05	898.04	625.14	878.04	978.42	1,109.14
1985	1,078.99	1,013.74	2,291.61	2,056.72	2,981.44	3,215.32	3,292.91	4,227.35	2,947.56	2,640.45	1,512.96	1,128.53
1986	1,069.19	1,027.20	2,538.42	6,086.79	4,738.82	1,942.09	1,421.87	1,185.80	1,290.72	931.48	713.08	868.47
1987	776.40	747.97	2,077.28	952.91	1,426.24	796.18	915.31	734.21	482.30	247.65	214.94	183.92
1988	172.29	172.29	548.49	1,532.79	257.27	205.14	161.64	183.72	211.15	150.71	138.16	150.11
1989	195.23	164.00	165.30	3,838.48	958.26	587.43	368.75	182.62	170.60	126.45	104.02	83.99
1990	103.38	111.24	269.43	449.77	241.86	490.60	196.50	151.48	90.60	104.48	125.56	111.99
1991	101.55	98.85	199.72	256.22	386.56	275.30	694.54	237.82	488.20	186.45	156.25	157.65
1992	157.00	156.90	1,084.65	1,494.91	1,004.60	265.14	570.17	611.15	1,369.41	582.41	281.92	640.07
1993	624.46	639.00	970.88	2,855.59	1,080.55	1,616.40	2,680.89	3,099.47	2,638.27	1,339.90	778.77	785.45
1994	712.33	646.32	1,405.06	1,235.11	1,348.64	1,983.62	4,781.45	1,276.51	1,448.10	1,775.97	1,570.03	1,171.60
1995	953.22	939.54	4,608.12	2,853.42	2,450.29	934.32	1,951.92	1,161.75	1,031.48	1,673.23	1,365.43	1,284.67
1996	1,119.91	1,216.83	1,335.78	8,979.18	7,714.80	3,350.84	2,368.32	1,763.94	1,154.10	1,406.57	1,797.25	1,563.57
1997	1,242.67	1,108.07	1,225.37	12,849.06	4,207.67	3,566.14	5,919.16	1,698.37	1,468.86	1,902.74	1,738.02	1,507.58
1998	1,027.20	1,914.62	3,064.51	2,062.13	3,809.86	3,253.57	3,002.20	1,266.67	1,085.58	1,551.92	1,260.98	1,147.91
1999	774.68	726.87	2,399.86	8,660.94	5,981.45	3,709.31	2,525.70	2,582.53	5,910.41	2,402.20	2,121.37	1,358.97
2000	1,142.53	1,113.45	2,370.63	2,288.37	1,572.69	2,685.26	2,373.78	997.82	912.57	1,181.43	3,898.16	1,318.05
2001	1,084.38	1,019.77	1,135.52	7,958.40	3,908.22	3,113.68	1,902.74	3,542.10	1,597.82	1,358.48	2,058.92	1,658.33

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Red River of the North at Grand Forks, N. Dak.												
1931	161.30	273.40	477.00	1,092.00	612.30	492.30	276.80	136.30	59.50	110.90	198.60	132.60
1932	159.70	207.30	1,173.00	3,933.00	919.50	401.10	177.60	58.60	43.40	36.00	82.70	57.40
1933	38.60	33.60	926.90	2,254.00	767.60	428.20	116.50	41.50	31.30	31.70	79.00	52.50
1934	39.00	40.70	419.20	1,540.00	373.30	150.90	153.30	30.60	20.70	40.60	73.00	40.70
1935	27.70	31.80	898.10	1,521.00	856.10	503.10	666.20	404.40	183.80	103.10	83.30	70.60
1936	58.60	54.30	63.70	4,829.00	1,482.00	274.30	88.80	32.10	20.30	12.10	30.50	17.80
1937	18.80	2.87	42.10	1,485.00	1,636.00	922.00	767.00	1,333.00	793.80	316.20	213.50	55.90
1938	61.30	89.50	1,309.00	954.10	4,560.00	1,992.00	697.30	189.70	208.20	216.00	190.20	199.40
1939	237.10	228.60	454.50	3,126.00	911.60	686.60	387.60	118.20	225.40	323.60	335.50	282.30
1940	161.30	170.00	229.00	4,088.00	1,955.00	960.80	296.70	212.10	170.70	245.30	344.40	281.90
1941	334.20	357.90	448.10	7,013.00	2,166.00	4,704.00	986.30	756.00	1,602.00	1,725.00	1,104.00	879.70
1942	545.50	573.20	1,623.00	5,343.00	6,695.00	3,599.00	1,650.00	1,032.00	3,062.00	1,526.00	1,062.00	733.90
1943	772.60	680.40	1,068.00	18,310.00	5,760.00	10,390.00	4,972.00	2,282.00	1,616.00	1,341.00	1,172.00	921.00
1944	696.80	651.70	633.90	3,311.00	3,351.00	5,425.00	5,899.00	5,030.00	4,167.00	2,392.00	2,321.00	1,668.00
1945	1,377.00	1,373.00	9,093.00	12,190.00	5,862.00	3,161.00	1,627.00	1,017.00	1,336.00	1,696.00	1,213.00	951.90
1946	863.20	767.30	6,452.00	9,541.00	3,466.00	2,046.00	2,239.00	1,227.00	1,188.00	1,741.00	1,438.00	1,112.00
1947	1,075.00	838.90	1,377.00	19,620.00	7,486.00	10,320.00	4,287.00	1,413.00	1,393.00	1,599.00	1,330.00	1,255.00
1948	1,106.00	913.10	1,041.00	19,800.00	7,817.00	2,502.00	1,694.00	1,157.00	891.60	599.90	593.60	463.20
1949	417.10	443.90	679.40	6,780.00	2,657.00	4,843.00	3,306.00	3,065.00	1,612.00	1,072.00	1,172.00	1,038.00
1950	781.00	731.40	1,057.00	24,100.00	36,510.00	11,080.00	7,761.00	3,029.00	2,226.00	2,722.00	1,987.00	2,037.00
1951	1,929.00	1,821.00	2,269.00	14,380.00	8,193.00	4,087.00	2,249.00	1,113.00	1,427.00	1,314.00	1,270.00	1,850.00
1952	1,747.00	1,869.00	1,968.00	16,630.00	5,318.00	3,493.00	5,622.00	1,838.00	1,261.00	871.90	763.90	672.30
1953	575.50	606.80	1,906.00	3,152.00	3,071.00	8,945.00	4,526.00	2,036.00	1,220.00	864.80	935.60	846.70
1954	812.90	852.90	1,616.00	4,809.00	3,516.00	3,287.00	2,090.00	868.20	694.20	639.50	697.40	680.60
1955	725.20	666.40	683.50	5,598.00	1,708.00	2,237.00	2,153.00	1,576.00	779.10	751.80	525.50	376.10
1956	433.90	470.30	540.30	8,927.00	5,054.00	2,755.00	1,407.00	699.10	1,451.00	494.70	786.50	515.50
1957	416.10	428.90	1,552.00	4,416.00	3,084.00	4,251.00	5,760.00	2,471.00	4,266.00	3,245.00	2,809.00	1,511.00
1958	1,327.00	1,272.00	1,928.00	2,606.00	1,357.00	1,282.00	3,647.00	824.40	443.60	397.60	464.20	324.50
1959	375.80	374.60	923.20	2,995.00	1,605.00	2,432.00	1,850.00	645.90	474.50	496.50	445.90	433.70
1960	499.80	481.40	556.30	8,764.00	3,115.00	2,599.00	1,775.00	480.80	560.50	343.20	471.80	317.10
1961	297.10	325.70	1,677.00	1,700.00	2,141.00	894.00	400.90	218.10	334.60	575.80	383.00	220.50
1962	199.00	217.10	313.50	10,640.00	9,754.00	19,340.00	13,970.00	5,887.00	3,231.00	2,334.00	2,113.00	1,583.00
1963	1,305.00	1,104.00	1,962.00	5,767.00	3,343.00	6,245.00	2,459.00	1,114.00	1,195.00	1,386.00	930.00	801.90
1964	763.10	736.00	705.50	6,295.00	4,039.00	4,550.00	2,318.00	992.70	703.30	1,533.00	1,262.00	872.40
1965	945.60	909.80	930.20	24,480.00	8,110.00	8,261.00	4,315.00	1,955.00	1,879.00	3,870.00	2,337.00	2,153.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Red River of the North at Grand Forks, N. Dak.—Continued												
1966	1,892.00	1,812.00	10,250.00	25,360.00	10,870.00	5,228.00	2,956.00	3,495.00	2,308.00	1,906.00	1,798.00	1,789.00
1967	1,703.00	1,602.00	2,708.00	16,920.00	9,270.00	5,987.00	3,153.00	1,178.00	861.70	773.50	704.00	718.50
1968	591.90	540.00	1,877.00	2,541.00	1,880.00	4,580.00	4,193.00	2,155.00	1,550.00	1,465.00	1,657.00	1,608.00
1969	1,495.00	1,512.00	2,111.00	28,690.00	12,070.00	4,518.00	3,246.00	1,503.00	1,432.00	1,953.00	1,816.00	1,479.00
1970	1,411.00	1,536.00	1,676.00	14,150.00	8,235.00	9,791.00	2,897.00	1,091.00	1,159.00	1,131.00	1,415.00	1,134.00
1971	1,100.00	1,154.00	2,423.00	7,096.00	3,035.00	2,175.00	2,124.00	1,028.00	1,235.00	4,290.00	5,218.00	3,073.00
1972	1,827.00	1,480.00	8,595.00	15,700.00	7,597.00	5,197.00	2,276.00	2,267.00	1,905.00	1,800.00	1,409.00	1,163.00
1973	1,124.00	1,162.00	5,467.00	1,959.00	1,356.00	1,029.00	559.80	736.70	3,067.00	3,737.00	2,421.00	1,945.00
1974	1,701.00	1,658.00	2,048.00	16,670.00	13,150.00	5,928.00	2,860.00	2,699.00	1,793.00	1,939.00	1,972.00	1,240.00
1975	1,301.00	1,434.00	1,740.00	18,740.00	14,640.00	6,173.00	25,270.00	3,004.00	2,228.00	2,345.00	2,315.00	1,772.00
1976	1,705.00	1,699.00	3,704.00	9,237.00	2,515.00	1,556.00	1,106.00	976.30	700.20	406.60	300.30	196.10
1977	215.00	215.40	493.50	1,336.00	834.40	549.20	592.40	227.30	593.90	1,223.00	1,084.00	1,360.00
1978	1,285.00	1,113.00	2,504.00	30,180.00	4,977.00	3,151.00	3,065.00	1,405.00	972.60	879.70	803.50	761.20
1979	683.50	683.00	962.30	31,480.00	18,330.00	5,958.00	5,773.00	3,300.00	1,941.00	1,652.00	1,832.00	1,522.00
1980	1,341.00	1,404.00	1,853.00	8,707.00	1,848.00	1,451.00	669.40	456.10	767.40	424.10	436.40	353.40
1981	292.40	386.20	936.50	978.90	1,352.00	1,270.00	2,415.00	1,468.00	1,804.00	2,473.00	1,820.00	1,129.00
1982	1,136.00	1,071.00	2,380.00	17,400.00	6,015.00	3,353.00	3,200.00	1,898.00	1,268.00	3,687.00	2,347.00	1,909.00
1983	1,600.00	1,473.00	7,695.00	7,047.00	2,994.00	5,036.00	6,028.00	2,614.00	2,486.00	2,153.00	2,021.00	1,935.00
1984	1,679.00	1,813.00	5,607.00	15,460.00	3,846.00	11,530.00	3,062.00	1,482.00	954.80	2,227.00	2,018.00	1,444.00
1985	1,388.00	1,357.00	5,792.00	4,898.00	9,056.00	7,508.00	6,016.00	6,473.00	4,702.00	3,966.00	2,427.00	2,026.00
1986	1,889.00	1,828.00	6,540.00	19,580.00	14,630.00	6,191.00	4,369.00	2,407.00	3,175.00	3,335.00	2,010.00	2,047.00
1987	1,715.00	1,790.00	8,049.00	7,556.00	3,460.00	2,481.00	3,323.00	1,914.00	1,015.00	644.80	658.60	619.60
1988	452.70	520.00	2,939.00	4,320.00	1,096.00	641.80	295.70	312.70	373.10	312.50	341.40	259.50
1989	278.30	357.90	507.40	21,850.00	3,328.00	2,047.00	862.00	443.50	944.50	500.40	442.60	248.20
1990	189.90	258.20	1,067.00	2,476.00	1,502.00	2,078.00	946.10	452.50	356.70	350.80	316.20	218.00
1991	195.00	304.00	764.30	1,587.00	2,821.00	2,008.00	3,027.00	1,035.00	1,352.00	672.20	494.50	468.70
1992	519.00	524.20	4,219.00	2,692.00	1,975.00	1,982.00	2,691.00	1,441.00	2,118.00	1,042.00	756.70	879.50
1993	809.50	1,090.00	2,192.00	13,760.00	3,398.00	4,493.00	12,220.00	17,050.00	6,251.00	3,537.00	1,930.00	2,016.00
1994	1,570.00	1,519.00	6,458.00	12,460.00	6,496.00	5,752.00	12,930.00	3,590.00	3,910.00	5,127.00	3,575.00	2,456.00
1995	1,819.00	1,785.00	15,370.00	18,530.00	10,110.00	4,175.00	7,299.00	2,665.00	2,120.00	3,628.00	2,781.00	2,225.00
1996	2,030.00	1,922.00	5,037.00	28,330.00	20,570.00	7,563.00	3,750.00	2,657.00	1,677.00	1,715.00	2,098.00	2,176.00
1997	1,873.00	1,874.00	2,250.00	56,210.00	24,940.00	8,483.00	13,680.00	3,264.00	2,411.00	3,108.00	2,741.00	2,639.00
1998	1,891.00	3,520.00	13,930.00	8,980.00	13,090.00	9,073.00	12,620.00	2,972.00	2,054.00	3,481.00	3,246.00	3,571.00
1999	1,722.00	1,656.00	11,740.00	25,690.00	16,450.00	9,802.00	6,602.00	5,348.00	11,340.00	4,457.00	3,767.00	2,565.00
2000	2,021.00	1,865.00	8,005.00	5,409.00	4,094.00	11,430.00	10,460.00	2,862.00	2,795.00	2,646.00	9,971.00	3,832.00
2001	2,656.00	2,504.00	3,279.00	37,540.00	14,690.00	9,235.00	5,637.00	5,554.00	2,645.00	2,158.00	3,440.00	2,468.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Turtle River at the mouth												
1931	0.87	0.87	6.65	34.16	6.14	7.75	3.26	2.59	0.47	1.49	2.03	0.32
1932	0.29	19.97	221.56	208.88	29.94	16.71	2.79	1.04	0.55	2.19	8.44	0.34
1933	0.00	0.00	57.56	106.43	20.19	9.90	4.05	2.02	4.21	6.30	6.20	1.29
1934	0.58	0.47	28.43	40.69	4.00	5.70	3.22	2.73	3.32	2.66	2.03	0.32
1935	0.29	0.43	63.64	39.56	23.36	64.81	13.08	2.19	0.56	1.49	2.85	0.32
1936	0.29	0.29	1.29	173.27	17.87	5.74	2.00	1.61	0.16	0.70	1.44	0.17
1937	0.16	0.29	0.68	21.59	10.94	13.84	4.88	4.80	2.46	0.70	1.44	0.17
1938	0.16	0.16	33.75	10.58	8.42	3.46	0.19	0.01	0.00	0.00	0.00	0.00
1939	0.00	0.00	87.50	45.11	2.50	13.20	0.76	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	147.15	12.66	3.95	2.00	5.51	0.02	0.00	0.00	0.00
1941	0.00	0.00	24.26	396.43	17.77	51.09	9.32	2.51	3.06	11.71	10.00	3.09
1942	0.11	0.13	9.92	222.06	69.56	31.83	8.56	4.66	3.26	3.19	4.04	1.09
1943	0.60	0.45	178.39	119.85	34.83	67.65	18.74	3.42	0.63	1.25	2.88	0.47
1944	0.26	0.18	2.45	71.60	20.29	24.13	8.28	19.59	13.47	7.01	15.86	6.91
1945	0.87	0.85	87.09	48.08	21.79	20.73	8.51	2.55	1.41	2.37	2.03	0.41
1946	0.11	0.11	158.55	39.95	9.01	5.82	54.96	0.33	6.55	13.05	4.90	2.13
1947	0.21	0.11	82.71	217.90	23.59	67.33	9.49	9.84	1.74	7.33	7.89	2.80
1948	0.13	0.11	0.11	1,313.50	78.32	100.99	24.16	11.45	2.51	1.49	5.17	0.53
1949	0.15	0.11	0.11	434.00	32.86	38.93	9.62	3.49	0.47	7.63	7.53	7.69
1950	0.11	0.00	0.00	2,242.20	1,667.17	55.99	48.44	10.21	22.44	19.12	15.34	5.06
1951	5.71	2.24	46.49	238.10	27.60	16.15	4.52	13.74	47.52	8.55	9.18	6.18
1952	0.83	0.11	2.02	188.56	16.95	8.02	46.95	4.24	0.80	0.94	10.34	4.18
1953	1.29	0.90	20.42	30.69	30.11	102.71	48.66	4.66	1.19	2.99	3.48	2.63
1954	0.31	1.37	30.02	51.12	18.89	23.36	12.94	2.36	1.79	3.63	7.33	3.06
1955	1.21	0.75	0.06	253.90	21.64	126.07	12.02	4.16	0.79	4.16	4.18	0.74
1956	0.39	0.53	0.76	364.60	71.68	49.01	8.02	2.47	5.15	1.10	9.40	4.05
1957	3.24	0.72	51.01	45.81	18.55	15.92	1.88	8.08	246.53	42.82	27.88	8.27
1958	2.53	4.71	13.77	26.18	16.26	15.92	22.44	1.25	0.36	1.66	5.72	1.43
1959	0.02	0.00	43.33	67.14	18.89	12.82	8.95	3.31	0.21	11.07	6.50	3.69
1960	2.72	2.05	42.09	484.66	27.94	20.27	8.13	2.31	1.40	0.72	4.48	0.68
1961	0.88	0.62	40.62	29.23	16.72	3.93	1.32	0.76	1.34	6.78	3.57	1.44
1962	0.00	0.00	0.00	405.45	152.40	194.43	23.59	3.97	5.36	5.12	11.87	3.93
1963	0.54	0.00	24.26	51.91	15.92	14.31	11.56	3.71	0.74	1.27	0.72	0.11
1964	0.00	0.00	0.08	167.35	23.02	308.13	23.82	8.71	16.15	14.20	8.23	3.78
1965	1.33	1.66	2.36	629.33	98.36	83.36	22.21	7.43	37.44	56.22	18.70	11.42

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Turtle River at the mouth—Continued												
1966	5.42	1.86	540.75	445.84	169.58	39.73	52.10	25.31	9.23	10.19	9.24	6.33
1967	4.51	5.42	108.78	604.05	218.70	36.76	7.57	2.58	0.95	5.11	6.82	4.15
1968	2.18	1.94	113.75	56.65	23.13	61.95	66.30	15.11	15.46	10.10	13.99	9.12
1969	1.99	0.20	0.09	712.83	36.18	43.40	18.32	4.89	12.48	16.03	12.43	8.69
1970	4.75	0.94	2.16	702.45	180.46	65.04	17.18	14.77	12.37	8.13	15.81	9.07
1971	4.10	5.55	71.04	378.89	58.92	55.71	36.05	6.78	4.73	35.32	28.99	18.18
1972	8.00	5.52	331.16	547.88	159.38	70.55	12.60	6.87	3.26	3.61	11.31	5.03
1973	4.21	6.58	223.95	57.73	22.06	16.33	6.24	3.08	5.10	16.40	12.77	5.96
1974	1.66	3.56	2.91	722.73	184.51	110.81	26.55	8.04	6.82	4.75	10.58	8.97
1975	7.52	6.80	26.26	638.68	163.14	66.61	34.82	4.08	2.71	3.40	9.47	4.58
1976	4.41	5.64	193.81	202.70	26.13	10.44	3.06	5.10	2.03	3.72	4.27	0.37
1977	0.43	0.41	2.72	24.11	13.39	8.78	6.81	1.56	2.42	9.18	15.39	8.06
1978	4.61	2.47	244.42	662.68	67.75	34.16	11.63	2.58	6.18	3.49	4.50	2.22
1979	2.07	2.46	3.68	1,642.59	250.08	57.00	29.29	11.10	3.81	9.29	11.30	10.06
1980	5.61	5.32	51.25	191.91	13.43	5.56	1.69	2.76	2.75	2.87	6.87	3.18
1981	2.59	5.44	10.54	10.72	10.92	18.36	9.89	7.67	3.31	10.11	12.17	12.82
1982	5.82	4.76	72.43	578.74	58.09	22.41	17.26	2.90	0.58	58.48	19.54	24.20
1983	9.55	8.61	329.00	203.29	52.96	86.55	36.30	16.41	42.42	32.29	21.71	17.34
1984	9.02	7.68	317.86	321.76	70.82	79.32	6.78	4.89	0.54	11.50	9.28	0.99
1985	1.07	2.84	275.09	80.64	40.72	17.73	2.02	4.90	1.08	8.90	9.93	6.85
1986	6.69	5.91	309.22	228.20	149.90	38.89	30.26	7.27	5.66	21.23	16.75	20.13
1987	13.17	7.42	680.12	708.69	110.87	73.35	136.03	3.92	47.40	22.24	21.42	24.71
1988	12.87	14.30	278.45	216.19	38.21	17.54	7.16	1.88	0.73	2.75	6.96	4.79
1989	5.16	4.72	7.13	562.67	49.03	23.81	5.73	2.58	1.82	2.30	3.16	0.31
1990	1.09	1.52	3.06	30.85	14.21	12.81	14.31	5.19	0.02	0.00	0.37	0.01
1991	0.39	3.44	7.88	30.75	68.95	42.81	10.88	5.76	4.49	0.24	6.26	2.15
1992	0.52	0.30	223.58	36.88	16.08	14.89	50.78	10.51	18.73	11.33	14.14	10.26
1993	7.28	8.42	81.38	112.78	25.89	28.58	189.93	174.81	154.72	30.45	25.50	20.18
1994	15.87	18.71	357.69	197.23	61.52	78.50	60.07	30.86	108.33	144.99	59.62	28.07
1995	24.03	18.90	478.71	349.27	163.22	48.88	71.25	33.76	20.92	26.93	21.65	20.36
1996	19.63	17.70	22.02	658.13	157.00	65.87	66.07	21.13	11.85	18.58	26.42	13.63
1997	14.11	20.91	113.55	1,005.10	191.80	37.49	348.39	68.56	29.20	24.44	24.40	22.01
1998	14.77	59.26	239.35	184.78	42.25	35.21	52.40	11.33	5.80	18.56	31.92	24.40
1999	17.69	19.63	267.89	412.45	397.89	131.11	96.31	136.91	56.13	33.14	27.33	21.10
2000	16.62	14.86	32.17	35.04	35.00	1,911.77	168.81	38.94	32.31	22.58	106.95	33.39
2001	24.77	23.85	149.17	333.18	101.49	37.90	26.51	28.38	18.04	23.05	28.86	24.44

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Forest River at the mouth												
1931	2.70	2.29	12.31	42.73	26.85	12.69	8.92	2.98	1.32	4.04	3.52	0.90
1932	0.15	9.16	35.92	161.95	55.77	21.51	9.63	0.74	0.30	7.77	5.30	2.67
1933	0.00	0.00	88.08	273.47	45.68	20.37	6.22	3.04	5.08	11.64	9.99	5.16
1934	1.99	0.78	35.92	69.97	20.18	9.56	1.66	0.00	0.00	5.70	3.52	0.90
1935	0.22	0.65	99.26	71.56	27.41	16.60	13.00	5.00	2.97	0.38	0.00	0.00
1936	0.00	0.00	0.00	190.01	34.07	15.86	2.66	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	25.22	19.41	12.26	0.97	0.21	0.00	0.00	0.00	0.00
1938	0.00	0.00	42.80	19.53	17.25	4.59	2.66	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	36.58	67.48	13.19	3.06	24.93	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	74.05	21.32	5.92	0.00	25.13	0.42	0.00	0.00	0.00
1941	0.00	0.00	0.00	619.75	41.30	42.07	14.26	6.74	17.30	61.29	19.15	10.00
1942	0.55	0.00	225.52	630.40	74.04	27.60	14.01	28.93	8.93	5.54	5.98	3.27
1943	2.17	1.90	253.94	175.09	44.92	365.46	346.42	38.64	18.27	5.22	8.70	7.83
1944	1.18	0.05	0.44	164.26	41.88	48.73	18.08	6.72	13.10	3.62	20.43	15.57
1945	3.54	2.28	127.46	67.29	29.84	22.56	8.30	4.31	1.47	3.15	3.84	1.46
1946	0.70	0.27	220.35	60.03	15.74	13.21	7.96	0.00	4.42	7.53	8.10	3.81
1947	0.69	0.03	128.03	137.56	25.53	23.01	29.10	7.97	5.42	5.80	8.48	7.27
1948	4.80	1.05	0.25	1,691.40	157.80	60.12	27.76	14.12	7.04	6.01	9.74	5.11
1949	1.58	0.70	0.85	686.38	55.67	25.83	16.63	4.90	0.97	8.33	9.69	6.95
1950	0.97	0.97	1.13	2,237.66	2,248.95	80.31	42.01	11.95	13.26	12.48	12.84	6.37
1951	5.07	6.25	44.38	282.66	40.67	23.01	9.62	13.84	12.50	9.47	9.33	5.70
1952	1.53	0.95	5.08	136.56	24.35	11.24	43.20	7.94	4.47	3.28	5.82	2.74
1953	0.80	0.11	4.24	31.15	24.49	76.30	14.99	3.18	0.40	2.67	6.35	3.36
1954	0.39	0.32	35.14	56.62	27.17	65.02	14.84	16.48	9.55	10.41	9.13	5.56
1955	1.82	0.71	0.05	414.10	32.81	137.16	16.63	4.23	2.51	7.66	7.38	2.72
1956	0.73	0.66	0.83	727.34	130.48	309.95	39.64	16.33	20.78	14.79	21.96	8.95
1957	6.21	2.13	67.00	36.70	30.28	22.12	9.57	11.55	84.02	19.00	19.74	9.52
1958	3.64	1.17	8.54	35.42	24.20	60.71	19.00	5.64	3.07	11.47	9.08	0.99
1959	0.37	0.14	15.36	152.50	27.31	16.33	8.48	3.19	0.65	8.27	6.35	5.16
1960	2.60	1.37	29.30	861.92	45.57	22.56	6.87	2.82	1.39	2.40	5.71	1.03
1961	0.88	0.00	33.29	34.71	17.22	7.69	8.37	0.76	0.00	3.68	4.66	1.47
1962	0.26	0.00	0.00	566.74	93.82	395.61	29.99	17.52	12.19	19.59	21.96	6.77
1963	1.31	0.00	60.03	49.08	28.06	33.70	39.34	5.54	1.18	4.68	7.44	1.57
1964	0.21	0.13	0.37	197.31	41.56	395.76	74.97	17.96	15.44	18.70	14.04	6.94
1965	5.27	3.85	4.04	684.95	93.52	106.73	34.74	17.07	23.75	38.30	21.96	16.12

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Forest River at the mouth—Continued												
1966	6.89	2.97	623.36	506.14	339.20	85.06	54.18	26.13	14.67	16.18	15.01	11.33
1967	4.92	3.45	176.25	510.41	312.77	58.49	25.83	13.21	8.48	7.07	14.32	7.74
1968	2.81	2.15	94.60	65.44	31.62	27.76	24.64	17.52	15.59	13.23	15.15	7.80
1969	1.14	0.57	0.65	741.85	79.12	29.99	18.26	6.98	7.63	9.65	11.02	8.33
1970	7.48	3.14	1.13	682.11	207.08	62.20	59.08	16.92	9.69	13.57	15.01	6.12
1971	1.25	1.32	10.60	728.77	88.33	45.13	99.61	31.17	17.22	18.26	20.29	7.84
1972	1.11	0.36	383.80	506.85	106.73	46.32	14.84	6.69	6.56	11.99	10.87	2.84
1973	0.56	0.73	84.64	56.76	28.06	42.16	9.13	2.18	6.62	17.37	6.12	4.29
1974	3.54	0.82	1.30	940.01	721.00	261.71	40.82	29.10	11.28	19.74	20.57	11.76
1975	8.14	5.11	7.75	405.71	241.08	42.90	161.06	13.78	9.71	16.48	13.26	5.21
1976	5.00	5.75	153.78	551.38	51.36	25.98	12.62	4.31	2.27	2.08	3.04	0.68
1977	0.00	0.00	15.65	46.80	26.27	16.18	10.08	4.66	6.18	13.42	7.09	1.79
1978	1.33	0.23	105.98	704.73	83.72	90.85	39.19	12.13	12.83	8.13	4.27	2.95
1979	2.78	1.88	1.42	1,691.40	538.86	94.41	94.11	17.96	25.53	12.08	11.47	6.05
1980	1.45	1.85	11.61	99.86	18.70	10.88	2.78	1.96	4.42	7.93	14.45	11.38
1981	5.70	24.04	47.37	55.19	22.56	31.92	18.26	7.17	22.71	30.43	16.26	11.61
1982	2.14	0.42	47.80	468.30	93.52	89.07	350.03	143.10	20.63	87.73	32.80	18.62
1983	13.43	17.37	337.00	280.67	77.93	48.39	27.76	11.76	25.38	13.58	20.85	4.91
1984	1.09	6.23	75.82	126.61	39.64	38.60	14.73	4.65	5.60	5.85	5.00	2.17
1985	0.17	0.00	249.51	90.62	46.32	39.34	7.79	9.03	12.66	27.46	29.60	11.95
1986	8.85	7.07	270.28	160.89	127.96	24.05	89.22	31.17	18.56	29.84	15.15	12.11
1987	13.41	10.16	173.98	1,207.17	121.58	42.46	40.53	22.27	11.40	17.96	15.43	15.84
1988	8.78	0.94	56.90	140.40	104.95	44.53	7.02	3.13	0.38	7.72	4.45	1.53
1989	1.58	1.53	1.42	128.88	45.87	12.97	3.44	0.22	0.02	1.75	2.40	0.40
1990	0.00	0.00	0.85	37.70	16.63	12.29	4.08	0.03	0.00	0.00	1.35	1.16
1991	0.00	0.00	4.08	32.72	20.78	6.25	21.52	9.56	18.26	17.07	14.32	12.05
1992	9.92	8.31	265.59	86.35	35.63	22.27	10.09	5.18	0.94	4.02	7.48	5.02
1993	2.20	3.81	18.64	138.84	35.18	32.36	196.84	486.31	102.43	30.73	23.91	15.43
1994	8.60	6.34	217.79	234.29	77.93	128.11	96.19	20.34	22.12	19.15	14.73	12.59
1995	9.23	8.38	557.78	438.71	213.32	91.89	112.97	29.99	16.63	20.34	19.46	17.93
1996	11.86	5.48	164.87	1,142.02	567.06	139.39	46.46	22.71	10.36	14.30	13.88	8.62
1997	4.43	3.98	3.97	1,479.44	478.14	86.99	517.33	107.03	42.31	31.03	33.08	29.05
1998	21.96	69.77	351.65	343.69	52.85	55.22	55.22	17.37	10.47	21.38	18.62	14.59
1999	13.90	14.45	374.55	681.82	300.16	117.27	77.19	48.10	30.43	27.17	21.68	18.49
2000	16.26	15.43	33.57	25.32	21.67	97.08	37.26	14.50	11.82	20.93	45.03	24.60
2001	17.79	15.98	80.23	396.89	97.38	53.44	35.63	39.49	12.72	19.71	21.08	16.94

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Snake River at the mouth												
1931	2.14	1.96	48.84	47.39	45.13	7.08	4.21	0.88	0.46	0.46	0.09	0.37
1932	0.03	0.98	25.61	427.32	77.02	25.47	1.22	0.15	0.19	4.28	5.20	0.31
1933	0.00	0.00	64.40	826.05	79.05	10.67	2.22	0.92	6.65	12.62	4.31	2.08
1934	1.44	1.38	25.61	209.61	8.22	4.25	0.08	1.03	0.38	0.42	0.09	0.06
1935	0.03	0.06	107.38	182.40	22.41	244.79	8.38	2.22	0.23	0.15	0.24	0.21
1936	0.18	0.00	0.30	505.85	43.37	4.28	0.15	0.04	0.04	0.04	0.03	0.46
1937	0.18	0.03	0.13	236.31	74.96	18.62	19.24	4.97	1.57	0.04	0.03	0.03
1938	0.00	0.00	84.95	23.16	21.72	1.84	19.08	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	15.45	78.46	7.84	17.17	0.57	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	115.82	15.68	2.29	0.61	1.22	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.79	1,092.34	62.87	164.60	6.27	1.03	119.93	123.22	5.87	1.19
1942	1.07	0.28	180.48	1,536.04	204.90	74.69	14.23	13.84	13.50	1.22	0.58	2.05
1943	1.93	1.59	369.34	398.73	105.74	1,206.25	65.13	13.73	4.05	3.56	2.39	18.29
1944	2.17	1.04	0.70	280.62	26.12	75.95	157.83	277.87	80.35	28.76	19.21	6.27
1945	11.87	16.94	574.21	731.76	168.17	52.29	49.57	29.08	39.19	47.46	11.74	7.25
1946	2.63	2.69	342.60	188.33	34.72	40.35	12.73	1.57	3.67	16.10	1.19	1.44
1947	0.55	0.31	8.67	398.13	35.49	2,962.55	63.37	11.01	4.02	3.94	1.96	0.95
1948	4.07	1.59	0.99	2,801.88	718.20	27.08	14.11	5.47	1.53	1.45	3.91	1.41
1949	3.70	3.70	0.66	1,383.45	177.56	849.83	72.05	9.90	1.57	6.50	7.86	2.69
1950	2.60	2.08	0.40	3,107.58	6,373.61	294.89	643.70	24.55	3.56	42.07	23.82	15.63
1951	9.82	8.41	13.77	1,114.87	275.35	27.46	5.85	11.59	105.17	44.33	15.08	11.04
1952	3.15	5.90	11.32	587.39	74.96	13.39	23.06	1.51	0.00	0.13	1.54	0.16
1953	0.00	0.00	51.95	109.87	84.13	64.63	13.19	0.94	0.00	0.00	0.00	0.00
1954	0.00	0.00	0.00	83.23	67.73	86.27	10.65	0.32	0.00	0.09	0.22	0.15
1955	0.04	0.00	0.00	113.60	40.67	233.81	15.01	0.63	0.00	0.75	0.01	0.20
1956	0.07	0.00	0.00	212.58	224.28	45.77	531.93	20.08	12.46	2.32	102.14	16.82
1957	5.93	4.77	131.71	227.01	160.62	247.43	335.01	14.42	624.89	155.27	71.87	22.66
1958	7.65	5.20	12.44	40.37	20.35	18.55	713.99	20.19	0.59	1.04	1.68	1.97
1959	0.61	0.00	5.33	691.63	114.35	60.04	38.13	16.67	9.29	47.80	31.80	13.18
1960	6.42	3.39	5.56	1,016.26	190.83	188.15	39.77	3.39	0.85	1.21	1.29	1.76
1961	1.00	0.59	76.11	90.34	41.30	2.96	0.00	0.00	5.62	31.47	8.96	2.82
1962	1.15	0.39	0.00	810.43	1,143.08	1,842.92	167.89	28.07	29.06	10.06	12.81	10.64
1963	1.24	0.00	61.88	624.12	159.47	117.02	26.31	17.86	0.55	0.05	0.54	0.10
1964	0.00	0.00	0.00	244.22	170.56	1,170.61	154.50	107.84	32.24	103.26	39.45	12.05
1965	7.83	3.58	4.53	1,910.41	607.29	390.46	352.60	19.20	30.44	246.67	66.06	26.12

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Snake River at the mouth—Continued												
1966	12.39	5.87	307.76	2,472.31	886.85	125.05	409.96	92.55	18.13	19.31	5.90	2.79
1967	1.99	1.62	51.62	1,563.60	903.29	80.31	18.78	0.60	0.00	2.05	4.98	1.83
1968	0.00	0.40	86.04	63.54	15.45	889.91	783.98	107.46	106.70	89.11	39.76	16.54
1969	2.75	5.05	9.83	1,828.67	241.69	180.12	43.98	4.51	0.83	0.67	1.29	1.47
1970	1.09	0.11	0.00	1,001.37	1,263.16	2,523.25	97.14	10.52	3.34	7.92	13.82	6.94
1971	4.74	4.40	20.42	536.09	106.31	46.27	12.96	1.00	0.34	2.69	23.46	8.62
1972	1.10	0.18	68.17	700.89	137.67	66.54	8.49	0.07	0.09	0.02	0.53	0.01
1973	0.00	0.00	115.16	21.25	12.62	1.40	0.00	0.09	0.30	7.30	7.43	0.14
1974	0.32	0.17	0.00	1,410.39	733.11	172.09	11.51	1.89	1.34	1.33	1.87	2.00
1975	2.43	1.16	4.10	742.92	481.09	175.92	2,629.95	42.07	5.89	4.47	13.21	5.20
1976	5.17	5.50	69.82	625.77	62.34	12.58	4.97	0.27	0.00	0.00	0.00	0.00
1977	0.00	0.00	2.47	34.09	16.75	12.43	0.85	1.22	0.28	0.30	13.64	12.35
1978	3.79	2.54	44.34	1,585.78	446.29	187.01	234.43	27.19	4.09	1.51	4.80	3.79
1979	2.66	1.88	4.70	2,022.59	484.92	182.42	47.04	6.16	2.55	1.13	4.98	4.07
1980	3.88	3.18	6.62	372.62	25.70	3.03	0.07	0.53	2.27	1.16	0.23	0.16
1981	0.04	1.55	18.23	17.80	8.11	32.12	81.46	0.17	2.96	51.09	9.72	4.37
1982	0.31	4.07	30.97	940.15	391.22	61.95	200.01	44.74	1.89	359.86	73.40	48.32
1983	14.22	10.15	718.43	515.24	216.84	234.43	75.34	3.82	1.20	15.95	21.10	12.20
1984	5.02	3.21	190.94	373.28	85.66	346.86	11.82	0.56	0.05	0.98	1.46	1.04
1985	0.43	0.43	227.34	275.33	160.24	969.45	284.91	112.82	137.29	200.77	28.72	11.80
1986	11.35	10.09	412.99	1,040.09	708.26	131.56	10.67	2.08	0.71	1.83	2.54	1.83
1987	1.83	1.83	391.15	387.51	74.96	34.65	6.00	1.30	0.09	0.25	1.50	0.94
1988	0.27	0.18	1.16	189.62	45.89	102.87	3.27	0.03	0.04	0.00	0.00	0.06
1989	0.03	0.04	0.07	764.76	108.61	107.46	11.28	0.33	0.01	0.00	0.05	0.00
1990	0.00	0.00	31.83	44.01	10.48	17.94	8.60	0.07	0.00	0.00	0.00	0.00
1991	0.00	0.04	0.28	0.65	17.71	13.96	155.27	12.93	1.35	1.21	4.71	6.79
1992	2.58	1.35	283.27	340.19	146.47	19.89	46.66	1.93	2.60	4.70	1.42	3.82
1993	2.31	2.11	29.82	398.43	61.57	197.33	374.40	1,011.52	1,041.73	55.07	32.72	18.01
1994	8.17	3.43	158.51	176.38	117.41	41.68	556.81	93.31	529.66	209.57	329.36	67.89
1995	26.82	11.38	1,108.59	452.70	414.55	46.27	358.72	43.98	38.63	36.02	15.60	11.87
1996	7.52	4.31	4.90	1,902.14	3,425.78	55.07	40.92	13.12	4.40	12.81	29.85	14.13
1997	8.41	7.16	8.21	3,195.38	579.38	66.54	907.50	15.87	11.59	276.88	96.33	38.53
1998	14.37	91.74	845.17	439.46	410.34	719.73	761.41	17.67	12.66	196.57	84.10	62.08
1999	6.18	8.44	275.33	2,956.78	1,182.85	2,003.15	642.10	494.48	683.78	123.52	48.01	19.54
2000	10.95	213.46	301.80	426.89	131.17	967.54	231.37	90.25	25.09	154.50	1,636.10	59.63
2001	19.66	17.10	88.03	2,200.63	550.70	241.69	31.67	386.25	14.57	12.08	86.20	20.23

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Park River at the mouth												
1931	0.03	0.58	39.10	186.92	18.30	4.45	1.44	0.28	0.15	0.15	0.55	0.14
1932	0.00	2.75	21.07	259.92	31.77	8.17	0.39	0.00	0.00	1.46	1.10	0.00
1933	0.00	0.00	56.20	578.00	32.65	17.86	0.73	0.29	0.00	0.00	0.00	0.00
1934	0.00	0.07	21.07	109.59	3.16	0.60	0.02	0.00	0.12	0.00	0.00	0.00
1935	0.00	0.00	96.80	92.59	8.89	5.72	2.93	0.73	0.00	0.00	0.00	0.00
1936	0.00	0.00	0.00	318.92	17.57	19.03	0.05	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	126.73	30.89	5.40	6.95	1.71	0.00	0.00	0.00	0.00
1938	0.00	0.00	75.45	7.59	8.61	0.51	6.90	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	12.32	33.30	3.00	4.14	0.18	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	53.39	6.15	0.55	0.20	0.40	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.53	811.08	25.76	17.57	2.17	0.34	46.55	47.87	11.54	4.29
1942	0.00	0.00	168.17	1,226.24	87.25	24.01	5.09	4.95	4.82	0.40	1.00	0.06
1943	0.13	0.15	360.23	238.98	44.06	296.15	220.46	18.59	0.37	0.02	1.03	0.97
1944	0.01	0.00	0.46	156.09	10.41	12.18	3.54	16.69	11.43	1.22	20.06	9.60
1945	0.36	0.31	576.03	188.69	83.00	46.11	10.75	1.24	0.89	0.24	0.29	0.19
1946	0.14	0.17	332.55	96.24	13.97	7.22	1.86	0.19	0.55	0.56	0.26	0.05
1947	0.00	0.00	6.66	238.56	14.27	30.45	90.76	18.59	5.48	1.87	3.45	3.31
1948	0.67	0.16	0.65	2,541.56	318.40	55.34	66.17	44.65	3.41	0.71	1.42	0.53
1949	0.31	0.27	0.44	1,080.13	75.24	16.83	3.34	1.68	0.09	0.57	0.26	0.14
1950	0.14	0.14	0.24	2,881.56	3,031.73	95.15	31.03	18.88	1.84	3.19	2.21	2.90
1951	1.51	0.78	17.00	465.18	49.48	9.41	1.03	4.36	60.46	49.92	1.83	0.79
1952	0.13	0.00	0.28	65.89	12.06	0.58	0.33	0.00	32.35	0.00	0.04	1.11
1953	0.28	0.00	3.12	11.37	7.70	14.79	1.68	0.07	0.29	0.10	0.95	0.24
1954	0.02	2.05	8.29	22.62	19.91	191.62	27.81	8.84	7.13	7.13	5.39	1.61
1955	0.27	0.27	1.12	625.63	67.92	112.43	15.37	1.90	17.27	0.64	0.00	0.00
1956	0.00	0.00	16.72	1,424.62	654.07	240.52	28.69	4.95	10.98	10.58	11.18	4.25
1957	2.17	7.49	80.78	67.44	33.38	15.22	2.75	6.82	221.34	10.10	9.84	5.95
1958	2.32	1.87	5.10	25.29	5.80	3.92	4.17	0.11	0.00	1.84	0.00	0.26
1959	0.55	0.00	0.93	341.40	39.53	8.56	4.80	0.05	0.01	0.00	0.10	0.09
1960	0.06	0.02	1.46	1,323.47	50.07	16.54	1.54	0.04	0.62	0.77	0.00	0.00
1961	0.00	0.00	4.45	17.70	3.41	0.00	0.09	0.08	0.06	0.03	1.18	0.39
1962	0.12	4.01	14.33	1,006.79	151.22	340.80	27.23	16.10	0.17	0.36	0.66	0.11
1963	0.00	0.33	42.57	36.11	12.79	154.15	25.18	12.93	0.00	0.61	0.03	0.00
1964	0.10	1.02	1.02	311.34	85.35	843.06	93.98	3.85	1.70	9.79	2.73	0.55
1965	0.15	2.03	8.19	1,254.06	238.18	124.72	32.21	14.54	55.34	67.49	21.57	13.35

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Park River at the mouth—Continued												
1966	2.87	0.27	418.11	895.66	645.58	124.29	199.09	48.75	2.97	1.35	1.68	2.58
1967	1.55	1.83	155.25	894.53	750.98	34.11	2.90	0.12	0.00	0.05	0.18	0.07
1968	0.03	2.31	117.17	65.19	74.51	33.96	13.76	0.39	0.16	0.24	0.10	0.16
1969	0.11	3.13	11.27	1,207.56	44.80	21.23	10.42	0.61	3.29	0.64	0.12	3.39
1970	0.37	0.17	0.84	890.32	304.05	56.65	21.96	0.43	0.01	0.02	4.40	1.08
1971	0.01	0.87	23.88	1,230.88	84.03	110.96	109.35	7.26	0.05	7.82	9.16	0.59
1972	0.00	5.30	450.85	586.43	83.74	13.99	0.32	0.04	2.80	0.06	0.10	4.46
1973	0.99	0.43	88.09	39.62	18.15	13.83	0.56	1.34	0.83	8.01	7.57	10.18
1974	2.20	2.50	11.94	1,514.54	1,006.72	147.41	8.17	6.65	1.12	0.31	5.52	11.92
1975	6.99	4.52	5.10	345.48	213.58	22.54	116.53	0.73	0.40	1.17	10.11	9.58
1976	7.10	6.25	47.49	762.05	39.09	119.60	5.40	0.59	0.55	0.34	2.34	2.91
1977	3.01	2.75	8.51	12.41	7.11	2.25	0.19	0.13	0.08	0.31	3.31	3.43
1978	3.30	1.99	27.82	1,214.72	144.78	32.79	6.75	0.51	2.96	0.27	7.19	5.66
1979	1.26	1.06	3.33	2,037.18	417.21	68.80	79.34	9.08	6.53	0.46	7.65	5.88
1980	3.35	1.81	3.22	129.82	18.01	35.87	0.98	2.94	57.97	59.00	43.00	19.37
1981	7.45	62.78	158.06	152.02	41.43	74.22	86.52	13.89	15.66	12.82	10.30	8.64
1982	7.40	4.64	40.74	698.96	163.22	143.46	372.27	56.51	2.15	102.33	30.36	23.90
1983	19.10	14.29	561.42	449.44	85.35	108.47	29.86	0.95	0.20	1.89	6.80	1.34
1984	0.65	2.35	51.56	109.02	30.89	25.03	3.29	1.86	0.09	4.04	10.54	2.24
1985	0.00	0.16	306.00	96.24	30.89	19.62	3.31	37.04	3.21	14.93	9.88	1.74
1986	11.33	15.39	320.47	274.25	156.49	26.64	81.10	33.96	12.22	1.13	0.67	0.49
1987	0.47	2.72	136.70	1,388.51	69.54	20.93	13.75	6.73	0.12	0.11	0.12	0.26
1988	0.16	1.01	5.41	59.85	11.55	8.08	1.43	0.27	0.00	0.06	0.06	0.02
1989	0.00	0.00	3.26	45.66	15.96	2.27	0.43	0.04	0.00	0.01	0.59	0.13
1990	0.02	0.00	0.50	13.49	6.47	2.43	0.00	0.00	0.00	0.00	0.00	0.00
1991	0.00	0.00	0.00	0.00	7.48	2.46	23.42	3.28	1.65	1.82	6.17	12.32
1992	13.88	6.51	502.55	305.72	52.85	34.11	8.15	6.37	0.30	0.00	0.02	0.32
1993	0.14	14.84	29.08	128.97	86.96	39.38	583.22	832.37	106.57	39.96	18.96	14.43
1994	9.04	8.04	279.59	311.20	160.30	52.99	31.03	3.07	0.19	0.45	9.82	3.71
1995	1.13	1.10	919.12	608.34	175.38	43.48	62.95	34.26	7.22	0.73	0.05	0.08
1996	0.25	9.00	13.04	1,506.11	724.19	105.40	15.08	10.10	0.58	21.37	4.29	2.65
1997	2.93	3.15	13.07	2,520.49	587.17	63.39	645.43	30.30	5.21	14.79	16.21	13.63
1998	8.74	33.11	711.47	972.23	141.27	185.48	149.46	6.75	3.40	1.08	7.01	7.47
1999	3.50	3.75	219.31	855.76	338.89	121.80	37.92	19.47	4.25	1.49	4.09	3.56
2000	3.08	3.41	11.35	8.36	8.99	52.11	33.96	3.94	0.91	0.07	15.80	8.60
2001	6.70	5.45	47.21	1,004.54	253.25	103.79	21.52	38.35	0.02	0.54	7.05	6.42

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (intermittently April 1936 through July 1948 and continuously April 1949 through December 2001) and estimated (January 1931 through March 1936 and missing data for November 1936 through March 1949) historic streamflow, in cubic feet per second, for the Red River of the North at Drayton, N. Dak.												
1931	157.52	271.28	492.19	1,164.16	638.05	576.97	336.18	154.88	64.30	120.56	215.29	137.93
1932	155.93	206.07	1,254.05	4,410.11	973.64	512.41	218.16	66.87	46.92	39.68	90.29	59.72
1933	36.58	33.81	981.79	2,472.58	807.04	895.42	144.65	47.44	33.85	35.00	86.29	54.62
1934	36.97	40.90	430.35	1,664.17	381.48	172.12	189.02	35.03	22.40	44.69	79.78	42.34
1935	26.07	32.01	950.10	1,642.83	903.96	383.56	791.20	457.01	198.33	112.18	90.94	73.45
1936	56.03	54.46	60.71	5,768.00	1,826.00	398.90	117.80	50.10	27.40	13.80	33.57	18.52
1937	17.55	2.94	39.48	1,729.00	1,952.00	968.40	907.65	1,497.40	854.95	339.32	231.31	58.15
1938	58.66	89.47	1,405.51	1,011.75	5,143.08	2,247.97	827.17	215.20	224.63	232.88	206.26	207.41
1939	233.42	227.10	468.08	3,473.63	964.95	575.75	466.73	134.41	243.16	347.16	362.15	293.63
1940	157.52	169.22	229.56	4,590.91	2,132.59	918.91	359.72	240.47	184.22	264.06	371.68	293.22
1941	331.39	354.50	461.23	8,045.07	2,372.32	4,585.54	1,159.70	851.67	1,723.84	1,812.71	1,180.20	914.89
1942	546.49	565.98	1,757.49	11,400.00	7,003.00	3,636.46	1,914.79	1,160.78	3,292.12	1,606.02	1,135.66	763.27
1943	779.66	671.07	1,137.58	20,640.00	6,556.61	10,763.80	5,609.86	2,556.52	1,738.88	1,413.57	1,252.28	957.83
1944	701.65	642.95	661.46	3,687.55	3,733.87	6,023.03	6,626.84	5,612.72	4,478.38	2,503.49	2,466.24	1,734.59
1945	1,406.51	1,347.89	10,538.52	15,870.00	6,780.00	3,504.00	1,888.78	1,143.99	1,437.95	1,782.60	1,295.73	989.97
1946	873.12	756.18	7,377.23	12,430.00	3,687.00	2,132.00	2,578.17	1,378.91	1,278.85	1,829.31	1,533.95	1,156.45
1947	1,092.36	826.25	1,481.48	23,438.78	10,360.00	11,140.00	5,267.00	1,762.00	1,499.22	1,681.87	1,419.64	1,305.14
1948	1,124.53	898.83	1,107.70	23,662.34	12,700.00	3,096.00	2,067.00	1,300.62	960.14	638.68	637.79	481.76
1949	415.51	439.05	710.88	11,440.00	2,977.00	5,460.00	3,425.00	3,265.00	1,737.00	1,125.00	1,283.00	1,069.00
1950	798.00	729.60	979.00	31,120.00	58,890.00	15,360.00	8,463.00	3,325.00	2,300.00	2,954.00	1,987.00	2,013.00
1951	1,974.00	1,830.00	2,281.00	17,170.00	9,022.00	4,466.00	2,441.00	1,245.00	1,711.00	1,360.00	1,285.00	1,742.00
1952	1,639.00	1,876.00	1,989.00	16,590.00	6,534.00	3,559.00	5,676.00	2,121.00	1,322.00	906.50	812.30	695.50
1953	599.70	619.30	1,669.00	3,643.00	3,068.00	8,839.00	5,236.00	2,229.00	1,320.00	864.00	928.20	894.20
1954	809.70	845.40	1,597.00	5,472.00	3,862.00	3,693.00	2,237.00	981.30	691.50	658.30	730.70	683.20
1955	722.60	652.50	661.00	7,273.00	2,084.00	3,016.00	2,271.00	1,684.00	862.70	849.20	607.20	431.00
1956	423.50	451.00	523.90	10,930.00	8,233.00	3,963.00	2,503.00	908.00	1,616.00	599.20	1,080.00	562.90
1957	441.00	426.80	1,320.00	4,856.00	3,728.00	3,833.00	6,863.00	2,614.00	5,392.00	3,625.00	3,324.00	1,632.00
1958	1,356.00	1,286.00	1,894.00	2,986.00	1,527.00	1,476.00	3,990.00	976.90	479.90	416.10	498.10	362.30
1959	368.40	382.90	775.80	5,005.00	1,769.00	2,587.00	2,132.00	776.50	547.80	547.50	550.20	465.20
1960	572.90	563.40	544.80	13,490.00	3,778.00	2,807.00	2,151.00	563.70	684.00	345.20	489.70	356.50
1961	337.10	336.40	1,667.00	2,097.00	2,375.00	1,060.00	472.00	260.60	368.20	663.30	422.50	241.10
1962	200.50	203.00	279.50	14,090.00	9,922.00	23,420.00	14,970.00	6,987.00	3,390.00	2,379.00	2,114.00	1,602.00
1963	1,343.00	1,120.00	1,743.00	6,430.00	3,511.00	6,511.00	2,850.00	1,172.00	1,197.00	1,435.00	1,025.00	787.70
1964	774.20	763.60	694.80	7,567.00	4,700.00	7,483.00	3,227.00	1,301.00	694.70	1,770.00	1,313.00	843.30
1965	884.80	872.90	987.40	25,310.00	13,030.00	9,178.00	5,034.00	2,042.00	1,915.00	4,098.00	2,497.00	2,258.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (intermittently April 1936 through July 1948 and continuously April 1949 through December 2001) and estimated (January 1931 through March 1936 and missing data for November 1936 through March 1949) historic streamflow, in cubic feet per second, for the Red River of the North at Drayton, N. Dak.—Continued												
1966	2,065.00	1,826.00	7,663.00	38,390.00	14,400.00	5,895.00	3,581.00	3,512.00	2,431.00	1,847.00	1,729.00	1,576.00
1967	1,710.00	1,550.00	2,213.00	22,710.00	14,520.00	5,993.00	3,278.00	1,315.00	876.20	840.50	724.70	659.30
1968	524.50	535.50	1,713.00	3,531.00	2,185.00	5,594.00	5,739.00	2,570.00	1,899.00	1,600.00	1,865.00	1,660.00
1969	1,525.00	1,576.00	2,153.00	27,480.00	18,730.00	5,060.00	3,548.00	1,666.00	1,471.00	1,968.00	1,924.00	1,726.00
1970	1,381.00	1,401.00	1,544.00	17,340.00	13,940.00	12,470.00	3,727.00	1,131.00	1,201.00	1,105.00	1,357.00	1,096.00
1971	1,065.00	1,131.00	2,640.00	11,130.00	3,480.00	2,429.00	2,471.00	1,135.00	1,413.00	4,463.00	5,653.00	3,072.00
1972	1,861.00	1,449.00	7,256.00	22,230.00	9,171.00	6,079.00	2,395.00	2,439.00	2,079.00	1,775.00	1,473.00	1,149.00
1973	1,126.00	1,197.00	6,106.00	2,450.00	1,575.00	1,200.00	578.70	801.90	3,008.00	4,412.00	2,707.00	2,014.00
1974	1,744.00	1,672.00	2,016.00	18,950.00	18,260.00	7,633.00	3,297.00	3,232.00	1,967.00	1,951.00	2,079.00	1,284.00
1975	1,329.00	1,435.00	1,686.00	16,280.00	22,890.00	5,971.00	28,240.00	4,003.00	2,479.00	2,364.00	2,573.00	1,724.00
1976	1,630.00	1,729.00	3,298.00	13,300.00	3,016.00	1,914.00	1,359.00	1,163.00	712.80	375.10	276.60	149.30
1977	197.40	201.40	428.50	1,794.00	938.10	676.40	638.60	243.30	521.00	1,287.00	1,121.00	1,449.00
1978	1,343.00	1,124.00	2,171.00	36,740.00	7,427.00	3,798.00	3,710.00	1,537.00	1,074.00	986.10	813.60	797.10
1979	725.20	723.20	879.70	29,260.00	32,090.00	6,653.00	6,268.00	3,341.00	2,097.00	1,661.00	1,800.00	1,491.00
1980	1,388.00	1,463.00	1,654.00	10,040.00	2,072.00	1,532.00	758.10	488.80	846.20	556.10	650.70	411.00
1981	304.20	339.60	1,233.00	1,275.00	1,365.00	1,311.00	2,765.00	1,509.00	1,897.00	2,571.00	1,903.00	1,186.00
1982	1,112.00	1,041.00	1,946.00	23,650.00	7,805.00	3,705.00	4,246.00	2,292.00	1,263.00	4,272.00	2,457.00	2,114.00
1983	1,607.00	1,471.00	9,329.00	10,940.00	3,388.00	5,122.00	6,550.00	2,886.00	2,941.00	2,195.00	1,978.00	1,805.00
1984	1,581.00	1,582.00	4,443.00	19,240.00	4,246.00	11,920.00	3,331.00	1,442.00	975.30	2,208.00	2,152.00	1,540.00
1985	1,326.00	1,323.00	6,441.00	5,751.00	9,248.00	8,252.00	6,962.00	7,247.00	4,909.00	3,845.00	2,428.00	2,313.00
1986	1,977.00	1,681.00	5,311.00	21,640.00	16,860.00	6,437.00	4,764.00	2,715.00	2,993.00	3,496.00	2,037.00	2,339.00
1987	1,845.00	1,673.00	7,776.00	15,170.00	3,427.00	2,984.00	2,865.00	2,502.00	1,096.00	763.60	767.40	695.90
1988	461.50	513.10	2,419.00	6,250.00	1,427.00	946.40	347.70	274.50	328.70	350.00	332.20	271.00
1989	269.50	356.40	424.80	23,900.00	4,576.00	2,292.00	1,145.00	451.50	1,048.00	474.40	450.90	285.20
1990	174.40	251.80	1,117.00	2,848.00	1,513.00	1,989.00	1,109.00	434.70	364.40	316.60	336.50	245.30
1991	187.00	289.60	680.20	1,894.00	2,746.00	2,056.00	3,179.00	1,104.00	1,405.00	792.40	593.90	521.70
1992	520.70	500.40	4,887.00	4,205.00	2,657.00	2,176.00	2,984.00	1,556.00	2,557.00	1,142.00	729.20	821.00
1993	813.00	998.00	1,572.00	15,000.00	3,915.00	4,585.00	10,760.00	21,580.00	7,912.00	3,800.00	2,029.00	1,858.00
1994	1,539.00	1,488.00	7,433.00	15,550.00	6,835.00	6,070.00	13,920.00	3,986.00	4,211.00	5,194.00	4,005.00	2,721.00
1995	1,966.00	1,770.00	15,720.00	25,360.00	11,240.00	4,526.00	7,816.00	2,736.00	2,259.00	3,335.00	2,924.00	2,183.00
1996	2,052.00	1,978.00	4,981.00	30,880.00	31,420.00	10,930.00	4,052.00	2,951.00	1,766.00	1,735.00	2,319.00	2,363.00
1997	1,973.00	1,854.00	2,373.00	54,710.00	37,500.00	9,020.00	14,980.00	3,654.00	2,723.00	3,439.00	3,109.00	3,137.00
1998	2,255.00	2,598.00	16,290.00	12,190.00	13,340.00	9,383.00	15,510.00	3,437.00	2,187.00	3,491.00	3,396.00	4,168.00
1999	1,919.00	1,886.00	8,126.00	39,400.00	20,050.00	12,310.00	8,111.00	6,319.00	12,140.00	4,577.00	3,775.00	3,113.00
2000	2,103.00	1,824.00	8,462.00	5,931.00	4,362.00	12,150.00	14,070.00	3,087.00	2,787.00	2,645.00	11,840.00	3,997.00
2001	2,679.00	2,559.00	3,389.00	36,860.00	24,180.00	10,420.00	6,013.00	6,753.00	2,846.00	2,475.00	3,723.00	2,728.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Pembina River at the mouth												
1931	8.16	7.48	51.66	529.01	119.45	25.94	12.56	2.41	0.45	0.74	5.57	1.18
1932	0.15	3.91	16.11	483.30	215.99	82.81	24.54	7.10	2.14	8.76	9.09	3.07
1933	0.00	0.00	20.46	823.62	644.94	371.96	86.65	31.64	33.61	54.90	27.30	10.87
1934	5.37	5.45	85.94	392.33	178.54	78.74	23.15	1.59	0.12	1.95	1.21	0.10
1935	0.00	0.00	14.40	164.68	74.67	125.85	72.58	27.33	17.33	16.28	5.68	2.48
1936	0.64	0.04	0.00	778.60	498.28	228.55	66.30	24.08	29.43	16.40	8.02	4.00
1937	0.63	0.00	0.00	128.11	87.00	76.18	16.63	14.54	0.47	0.95	0.41	0.19
1938	0.00	0.00	205.02	115.42	91.07	42.57	14.54	0.06	0.00	0.00	0.00	0.00
1939	0.00	0.00	1.28	62.64	20.54	14.79	0.87	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	195.41	52.18	10.36	0.78	7.64	0.02	0.00	0.02	0.00
1941	0.00	0.00	0.00	1,395.35	419.35	230.04	66.87	28.78	186.81	166.36	65.09	34.15
1942	7.33	1.85	116.23	2,635.32	1,170.47	423.95	141.19	163.95	108.81	58.99	41.29	10.95
1943	8.25	6.33	314.82	734.95	394.94	612.17	322.18	215.34	185.62	127.42	77.97	43.37
1944	8.80	3.70	3.79	449.91	239.47	291.52	596.70	854.20	540.51	217.35	349.31	131.25
1945	52.54	57.20	1,239.59	1,255.30	898.31	535.78	312.10	154.99	110.60	78.16	45.64	28.08
1946	12.97	12.31	818.03	770.35	330.36	133.56	76.94	33.86	27.78	41.32	30.03	9.80
1947	1.86	1.22	2.33	835.40	336.85	309.93	116.45	137.76	72.19	69.53	38.43	23.13
1948	19.88	7.01	7.40	1,666.23	1,094.71	465.19	376.04	222.93	125.22	76.65	53.94	23.36
1949	14.21	12.41	15.56	2,928.84	1,661.59	693.76	284.39	148.59	74.54	72.80	51.75	21.27
1950	9.79	7.77	11.11	2,301.59	4,142.44	1,366.22	650.44	423.63	237.30	170.00	98.72	43.57
1951	35.90	27.82	110.41	1,137.32	579.12	292.71	128.03	80.19	56.95	40.38	23.15	12.72
1952	4.53	3.59	13.88	416.42	226.09	130.95	75.51	22.62	6.41	7.53	8.40	1.55
1953	1.52	0.71	6.53	99.22	106.04	208.38	99.78	79.48	20.17	17.02	16.19	6.89
1954	2.71	3.13	28.81	195.05	139.46	556.97	710.65	417.36	231.83	163.48	89.59	33.32
1955	13.81	20.44	18.23	1,993.96	924.74	658.74	417.11	117.13	64.00	108.29	36.64	22.50
1956	17.71	19.56	23.06	2,006.83	2,950.39	997.29	426.59	200.07	178.68	119.58	104.73	35.46
1957	23.33	11.65	230.48	357.84	272.27	178.16	84.38	103.07	182.47	187.21	102.11	70.93
1958	41.27	27.51	50.45	251.42	147.39	51.72	69.43	8.76	5.31	13.83	9.56	4.71
1959	5.55	4.89	16.01	782.79	231.95	166.89	48.69	21.39	18.60	43.96	70.42	110.34
1960	73.69	45.47	28.43	2,400.73	1,391.25	507.69	213.55	99.23	47.83	32.51	27.75	8.60
1961	7.95	4.12	87.52	297.62	197.80	59.91	15.27	3.94	4.56	5.89	9.59	6.12
1962	3.70	1.60	2.40	1,037.33	637.78	509.11	182.72	115.31	124.51	92.61	64.88	26.29
1963	31.16	15.13	106.63	230.94	224.68	482.52	227.58	155.43	98.34	65.36	32.13	23.55
1964	8.51	6.95	3.37	562.56	444.59	451.50	129.66	64.03	92.45	103.71	50.04	21.00
1965	15.95	10.44	18.16	1,465.75	1,046.27	574.12	217.53	94.30	126.12	130.24	72.83	59.64

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Pembina River at the mouth—Continued												
1966	35.05	24.45	512.38	2,136.71	1,428.23	437.23	343.41	140.65	56.38	50.30	50.00	19.65
1967	16.06	15.93	123.59	1,372.69	1,590.08	329.03	115.96	41.74	23.50	26.01	31.95	32.60
1968	18.39	15.01	212.83	280.26	265.38	120.60	88.89	165.48	364.79	406.33	216.92	80.41
1969	29.64	25.60	41.29	3,897.41	1,950.48	665.24	393.87	190.13	124.92	84.55	73.10	49.26
1970	34.11	31.83	27.16	2,229.82	2,944.21	1,633.54	843.18	340.88	192.93	144.44	115.37	57.94
1971	33.51	19.42	21.51	3,129.44	1,665.55	735.74	396.59	277.26	163.26	113.93	102.51	44.06
1972	23.10	19.93	541.44	1,652.36	976.55	379.09	218.60	188.68	122.03	93.94	45.67	16.67
1973	11.68	12.52	191.09	140.48	98.69	64.67	75.45	66.59	65.76	71.34	48.08	32.33
1974	21.79	14.52	43.24	3,751.55	5,392.58	1,890.92	547.17	155.07	102.65	78.61	63.29	39.27
1975	25.89	19.05	18.43	452.93	1,326.78	685.41	277.80	112.83	59.22	49.26	30.02	13.97
1976	23.65	26.94	44.16	3,196.49	1,490.62	606.50	261.38	92.81	46.91	32.25	20.64	7.58
1977	6.65	6.60	35.04	81.30	94.56	63.17	43.06	10.81	32.39	40.59	32.26	32.61
1978	12.45	23.78	37.77	1,752.85	623.27	208.60	69.48	50.07	51.25	34.23	17.75	8.50
1979	8.04	24.82	57.67	2,707.44	3,910.22	953.62	349.82	94.34	125.84	62.69	41.75	25.99
1980	18.74	15.94	25.92	310.09	90.75	39.77	13.69	41.61	101.13	114.96	83.68	18.97
1981	13.23	73.58	193.09	354.08	201.34	127.74	48.19	34.95	48.67	48.34	35.40	10.75
1982	4.32	2.17	68.84	883.43	771.97	615.15	311.80	154.77	86.37	94.56	32.62	23.45
1983	14.50	6.14	325.07	1,237.91	521.50	303.41	85.21	28.13	21.67	28.38	21.52	2.71
1984	0.61	0.00	33.32	211.08	195.67	164.91	57.88	9.90	12.49	8.42	5.04	2.56
1985	0.07	0.00	713.33	998.22	309.35	173.04	175.85	172.62	101.82	65.72	47.69	20.16
1986	17.22	9.53	806.21	1,284.43	995.70	422.34	253.04	169.58	127.43	57.57	19.71	13.82
1987	15.41	19.60	158.19	2,768.29	956.50	292.28	125.86	65.26	70.96	76.53	40.89	20.73
1988	4.79	2.46	59.55	186.83	75.96	18.24	4.73	1.09	0.86	0.47	3.02	3.47
1989	0.21	0.00	42.66	220.02	119.91	72.79	16.02	5.39	0.30	0.00	4.81	0.00
1990	0.00	0.00	5.10	337.95	145.32	207.16	67.04	10.71	4.58	0.05	1.30	0.11
1991	0.02	0.00	11.40	77.17	107.36	204.64	283.52	120.38	29.26	14.07	12.69	9.61
1992	9.26	9.13	539.15	2,649.78	952.24	258.29	118.38	40.20	34.46	10.62	14.61	8.33
1993	5.37	3.92	89.40	680.16	397.83	283.27	993.03	1,408.70	739.54	371.03	212.51	119.06
1994	52.79	41.01	511.79	1,360.00	591.35	247.86	195.74	146.75	203.81	748.46	550.65	295.21
1995	135.94	74.54	1,562.84	4,867.93	3,356.88	1,340.07	541.77	910.87	377.53	181.33	90.06	51.54
1996	26.17	14.84	107.83	3,899.98	3,276.40	1,017.60	522.26	338.32	209.74	152.60	88.02	45.54
1997	44.75	42.03	82.67	5,350.81	5,760.12	1,049.10	2,206.71	472.13	192.68	148.18	82.35	61.62
1998	37.27	38.74	844.77	5,540.32	1,708.72	683.74	529.34	302.86	165.14	106.77	65.93	55.05
1999	28.32	27.87	414.18	1,588.40	1,828.15	1,975.61	818.00	257.01	138.19	82.46	52.79	37.16
2000	32.85	35.46	175.39	154.84	119.90	118.11	61.71	62.77	50.18	32.33	32.74	21.64
2001	19.14	14.61	56.49	3,593.28	1,922.84	707.53	345.39	261.41	127.76	55.49	40.34	31.87

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Red River of the North at Emerson, Manitoba												
1931	176.00	199.60	959.60	3,385.00	881.00	660.10	356.40	157.50	81.00	84.80	220.50	187.00
1932	166.50	138.00	1,364.00	7,809.00	1,925.00	586.00	256.10	62.50	40.00	46.10	121.40	89.00
1933	54.00	49.40	861.90	5,839.00	1,548.00	1,026.00	253.40	73.10	45.90	48.80	84.80	46.30
1934	54.30	32.60	491.80	2,178.00	662.60	196.10	138.20	46.60	23.80	47.10	77.20	41.70
1935	14.10	27.00	749.00	3,325.00	1,173.00	438.20	1,082.00	514.10	268.70	116.80	77.80	59.20
1936	56.80	54.00	58.20	6,739.00	2,602.00	583.30	120.60	79.30	66.80	28.60	23.80	33.40
1937	7.05	1.21	2.25	2,025.00	2,886.00	1,059.00	830.40	1,565.00	818.30	401.70	280.80	72.50
1938	53.30	75.90	1,453.00	1,282.00	4,870.00	2,584.00	854.80	217.50	193.40	199.80	207.20	181.90
1939	197.60	255.40	259.90	3,718.00	1,193.00	658.70	565.80	187.50	230.30	357.00	384.50	278.00
1940	135.30	148.20	224.20	5,085.00	2,232.00	1,053.00	357.20	255.10	186.80	236.10	392.40	296.00
1941	312.00	348.00	361.70	13,650.00	3,120.00	5,284.00	1,426.00	755.40	1,853.00	3,065.00	1,389.00	887.50
1942	565.10	635.10	1,962.00	16,530.00	8,966.00	4,187.00	1,809.00	1,254.00	3,110.00	1,643.00	1,135.00	775.00
1943	797.70	699.70	1,207.00	23,130.00	7,258.00	12,440.00	6,497.00	2,584.00	1,818.00	1,473.00	1,432.00	926.10
1944	662.60	736.10	767.80	4,349.00	3,776.00	6,947.00	6,806.00	6,003.00	5,909.00	2,906.00	4,026.00	2,733.00
1945	1,294.00	1,365.00	9,121.00	20,150.00	8,646.00	4,043.00	2,187.00	1,309.00	1,776.00	1,975.00	1,398.00	988.10
1946	944.90	790.90	5,738.00	14,640.00	4,119.00	2,223.00	2,442.00	1,273.00	1,167.00	1,661.00	1,617.00	1,169.00
1947	1,031.00	897.20	1,057.00	17,830.00	11,940.00	12,050.00	5,785.00	2,029.00	1,571.00	1,865.00	1,653.00	1,346.00
1948	1,084.00	844.60	851.00	24,890.00	20,050.00	3,858.00	3,139.00	1,661.00	1,009.00	673.70	711.90	556.50
1949	449.00	453.90	596.50	14,720.00	5,092.00	6,070.00	3,414.00	3,289.00	1,806.00	1,146.00	1,387.00	1,066.00
1950	827.30	747.90	926.80	26,540.00	72,820.00	22,300.00	10,110.00	3,805.00	2,617.00	3,330.00	2,073.00	2,160.00
1951	2,053.00	1,800.00	2,287.00	19,650.00	10,860.00	4,941.00	2,742.00	1,461.00	1,955.00	1,581.00	1,413.00	1,906.00
1952	1,788.00	1,914.00	2,009.00	17,150.00	7,663.00	3,815.00	5,878.00	2,285.00	1,376.00	945.30	863.90	697.90
1953	609.60	610.60	1,365.00	4,064.00	3,151.00	8,890.00	5,531.00	2,301.00	1,317.00	892.90	961.20	935.60
1954	834.40	847.30	1,376.00	5,823.00	4,230.00	4,283.00	2,958.00	1,436.00	895.40	816.10	828.90	717.80
1955	731.70	652.10	653.50	10,600.00	3,226.00	4,286.00	2,741.00	1,815.00	941.90	941.90	604.10	449.80
1956	431.50	455.40	509.30	12,750.00	14,560.00	5,427.00	4,092.00	1,156.00	2,028.00	682.20	1,325.00	613.70
1957	442.70	407.60	1,445.00	5,882.00	4,537.00	4,202.00	9,284.00	2,880.00	6,388.00	3,776.00	3,381.00	1,714.00
1958	1,383.00	1,305.00	1,867.00	3,330.00	1,648.00	1,424.00	4,055.00	1,005.00	458.90	430.00	488.60	358.10
1959	348.20	342.60	632.70	6,049.00	2,110.00	2,747.00	2,067.00	758.60	543.90	563.70	587.60	627.50
1960	617.80	556.60	471.00	16,530.00	5,206.00	3,110.00	2,283.00	589.40	619.20	341.90	555.30	379.20
1961	344.70	292.70	1,721.00	2,592.00	2,400.00	1,111.00	441.40	274.50	266.70	593.90	410.80	262.50
1962	197.80	199.90	225.10	14,750.00	12,010.00	25,430.00	16,060.00	7,212.00	3,368.00	2,450.00	2,177.00	1,636.00
1963	1,246.00	1,074.00	1,515.00	7,847.00	3,739.00	7,490.00	3,049.00	1,315.00	1,213.00	1,395.00	966.30	696.80
1964	767.10	754.50	685.70	8,474.00	5,455.00	9,511.00	3,625.00	1,321.00	671.80	1,701.00	1,390.00	910.00
1965	909.80	890.40	950.20	24,980.00	18,580.00	10,030.00	5,632.00	2,345.00	2,096.00	4,417.00	3,337.00	2,760.00

Supplement 1. Gaged and estimated historic monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Red River of the North at Emerson, Manitoba—Continued												
1966	1,879.00	1,648.00	5,841.00	45,820.00	20,250.00	7,007.00	4,752.00	3,785.00	2,894.00	1,992.00	2,132.00	1,824.00
1967	1,632.00	1,478.00	2,086.00	25,420.00	20,000.00	6,548.00	3,588.00	1,487.00	951.10	905.80	963.30	672.90
1968	491.50	493.40	1,434.00	4,883.00	2,502.00	6,037.00	6,866.00	3,292.00	2,994.00	2,204.00	2,143.00	1,956.00
1969	1,696.00	1,613.00	2,173.00	29,160.00	27,410.00	6,454.00	4,023.00	2,076.00	1,656.00	2,084.00	2,043.00	1,571.00
1970	1,454.00	1,411.00	1,578.00	19,180.00	22,960.00	16,950.00	5,515.00	1,614.00	1,400.00	1,282.00	1,667.00	1,094.00
1971	1,033.00	998.70	1,960.00	14,470.00	5,486.00	3,252.00	2,909.00	1,462.00	1,499.00	4,021.00	5,163.00	2,681.00
1972	1,963.00	1,598.00	6,832.00	23,910.00	10,890.00	6,367.00	2,482.00	2,479.00	2,058.00	1,834.00	1,709.00	1,153.00
1973	1,112.00	1,116.00	5,817.00	2,707.00	1,716.00	1,311.00	622.00	779.50	2,567.00	4,152.00	2,613.00	2,079.00
1974	1,713.00	1,688.00	2,022.00	19,340.00	29,660.00	10,760.00	3,744.00	3,262.00	2,051.00	1,937.00	2,141.00	1,358.00
1975	1,314.00	1,412.00	1,651.00	12,950.00	27,310.00	6,923.00	28,020.00	4,713.00	2,560.00	2,429.00	2,409.00	1,564.00
1976	1,523.00	1,643.00	2,794.00	17,430.00	4,398.00	2,375.00	1,554.00	1,119.00	728.10	387.30	313.70	176.90
1977	180.40	189.80	400.20	2,101.00	1,202.00	861.50	636.00	260.70	533.70	1,423.00	1,126.00	1,293.00
1978	1,226.00	987.40	1,737.00	36,030.00	10,240.00	3,870.00	3,615.00	1,730.00	1,118.00	957.70	872.40	646.80
1979	562.30	578.90	774.60	26,080.00	49,220.00	8,093.00	6,432.00	3,371.00	2,227.00	1,750.00	1,955.00	1,526.00
1980	1,351.00	1,331.00	1,479.00	10,140.00	2,399.00	1,630.00	860.90	484.50	837.00	550.60	656.90	358.60
1981	292.10	296.40	1,471.00	1,807.00	1,386.00	1,582.00	2,737.00	1,517.00	1,808.00	2,402.00	1,963.00	1,104.00
1982	1,151.00	1,055.00	1,754.00	22,080.00	8,865.00	4,261.00	4,090.00	2,465.00	1,346.00	4,332.00	2,535.00	1,935.00
1983	1,614.00	1,378.00	9,361.00	12,530.00	3,948.00	4,835.00	6,393.00	2,500.00	2,794.00	2,138.00	2,107.00	1,723.00
1984	1,380.00	1,274.00	2,896.00	19,140.00	4,253.00	11,580.00	3,399.00	1,531.00	959.10	1,850.00	1,862.00	1,444.00
1985	1,207.00	1,154.00	6,461.00	7,385.00	9,120.00	7,935.00	7,374.00	7,342.00	5,858.00	4,533.00	2,808.00	2,098.00
1986	2,014.00	1,812.00	6,091.00	26,820.00	22,310.00	7,367.00	5,014.00	2,845.00	2,917.00	3,596.00	2,084.00	1,983.00
1987	1,804.00	1,616.00	6,895.00	22,500.00	4,242.00	3,682.00	3,109.00	2,612.00	1,109.00	831.10	838.20	702.90
1988	471.30	510.20	2,258.00	6,623.00	1,444.00	1,088.00	463.50	281.70	332.30	337.30	309.90	256.60
1989	262.90	379.80	396.80	21,480.00	6,886.00	2,692.00	1,138.00	430.90	1,045.00	451.30	375.10	258.00
1990	172.50	261.10	1,147.00	3,531.00	1,661.00	2,178.00	1,191.00	464.80	365.80	298.60	314.60	232.10
1991	177.10	245.60	594.40	2,097.00	2,821.00	2,306.00	3,971.00	1,295.00	1,578.00	861.30	888.00	572.40
1992	552.00	553.00	7,055.00	10,130.00	4,510.00	2,509.00	2,976.00	1,276.00	2,617.00	1,213.00	852.00	930.80
1993	858.40	1,016.00	1,310.00	15,000.00	4,136.00	4,630.00	10,530.00	27,000.00	10,010.00	4,231.00	2,786.00	2,048.00
1994	1,495.00	1,503.00	5,415.00	17,570.00	7,549.00	6,099.00	13,320.00	4,416.00	4,772.00	6,015.00	5,033.00	2,945.00
1995	1,958.00	1,781.00	15,340.00	33,550.00	14,280.00	6,050.00	8,323.00	3,792.00	2,719.00	3,458.00	3,215.00	2,285.00
1996	1,889.00	1,795.00	3,777.00	28,910.00	41,370.00	14,870.00	4,721.00	3,101.00	1,786.00	1,891.00	2,381.00	2,185.00
1997	1,974.00	2,087.00	2,307.00	48,890.00	54,650.00	10,810.00	18,890.00	4,297.00	2,952.00	3,906.00	3,427.00	2,738.00
1998	1,924.00	2,446.00	20,490.00	19,250.00	14,410.00	10,370.00	16,250.00	3,501.00	2,352.00	3,620.00	3,465.00	4,257.00
1999	2,224.00	2,090.00	7,487.00	44,810.00	21,520.00	14,820.00	9,604.00	6,259.00	11,480.00	4,723.00	3,862.00	3,201.00
2000	2,179.00	1,735.00	8,456.00	6,111.00	4,420.00	11,620.00	16,270.00	3,518.00	3,420.00	2,707.00	13,780.00	4,066.00
2001	2,684.00	2,459.00	3,736.00	39,540.00	30,410.00	11,490.00	7,125.00	9,089.00	2,740.00	2,312.00	3,793.00	2,198.00

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Otter Tail River below Orwell Dam near Fergus Falls, Minn.												
1931	30.00	65.00	131.80	140.80	159.50	104.40	62.60	32.30	44.40	30.00	28.80	30.00
1932	40.00	45.00	60.00	81.70	50.60	50.30	32.70	27.20	31.40	24.50	35.00	95.00
1933	23.00	25.00	170.00	51.30	37.80	61.80	19.10	14.70	25.80	13.10	17.50	30.30
1934	27.40	26.20	25.80	39.50	18.00	14.20	13.80	11.50	7.99	11.90	13.70	14.10
1935	16.00	10.80	58.80	51.50	51.80	63.50	102.60	22.80	13.90	10.50	17.00	36.00
1936	26.50	24.90	32.50	65.00	41.10	21.90	12.80	19.70	21.60	25.30	23.10	19.50
1937	15.10	15.70	23.50	60.90	58.00	178.20	96.90	72.70	125.00	88.70	37.80	20.30
1938	20.40	36.10	100.80	144.00	272.20	267.20	79.00	24.90	47.70	29.40	26.40	46.40
1939	117.40	118.90	228.20	207.00	180.70	83.30	46.40	18.50	17.00	19.80	22.50	17.60
1940	17.70	32.00	44.70	166.50	308.90	137.00	28.50	19.40	22.30	22.80	51.40	36.10
1941	58.60	105.20	163.50	277.10	302.70	210.50	99.00	39.00	51.50	80.10	102.90	104.60
1942	123.50	97.50	133.10	120.10	383.40	426.80	207.80	164.60	230.70	336.70	362.50	306.20
1943	306.20	240.90	310.10	595.30	656.10	776.30	534.10	432.50	396.70	381.30	339.10	269.20
1944	199.10	157.80	196.90	309.30	362.00	616.00	470.70	350.30	581.30	695.20	667.40	502.90
1945	411.60	369.30	527.80	649.70	735.30	640.90	312.30	158.60	142.90	236.60	270.30	226.30
1946	194.20	146.40	360.10	513.70	569.00	368.40	621.30	610.60	511.40	559.80	547.90	479.10
1947	415.30	341.80	343.20	703.60	900.30	871.80	560.40	238.10	207.30	218.90	207.90	191.80
1948	157.40	129.90	247.50	480.60	647.20	443.80	254.20	213.10	190.40	137.90	115.30	68.10
1949	90.30	107.60	200.60	220.60	224.00	213.90	225.10	178.30	93.50	89.80	88.80	105.80
1950	109.60	143.00	218.00	428.50	869.50	883.70	666.90	325.70	162.40	131.30	98.20	111.10
1951	143.60	199.90	260.50	607.60	635.00	661.50	463.50	332.10	321.70	323.70	353.30	441.40
1952	478.70	484.40	488.70	787.40	822.60	563.80	426.00	446.80	463.40	349.40	242.20	203.10
1953	169.30	212.00	334.00	421.00	558.30	1,262.00	1,246.00	746.90	507.00	395.50	465.60	443.70
1954	400.00	312.00	482.10	614.10	855.60	903.10	521.70	189.10	229.00	117.40	146.00	211.50
1955	230.10	190.20	240.00	410.40	355.10	319.30	466.50	465.70	501.80	389.70	321.60	185.00
1956	235.50	194.00	235.00	642.30	807.80	652.00	247.00	191.80	109.40	68.90	44.00	69.20
1957	111.00	112.80	274.80	426.70	634.30	592.40	578.40	498.20	436.00	351.20	394.60	381.80
1958	281.50	271.90	401.00	381.60	218.20	142.60	331.90	225.90	195.60	153.00	163.10	154.50
1959	238.90	233.50	288.80	321.10	318.50	515.70	430.90	208.40	172.10	151.70	173.20	217.60
1960	236.00	254.30	234.10	484.40	785.20	702.60	425.90	171.40	115.80	102.80	130.90	136.20
1961	161.50	168.30	235.20	281.30	346.20	378.80	187.40	95.00	80.60	99.00	110.40	88.70
1962	81.90	93.60	234.00	433.00	488.70	1,035.00	939.30	777.20	442.70	399.70	366.00	317.20
1963	286.30	197.20	284.80	450.50	443.20	555.40	359.60	140.60	155.70	217.90	180.80	174.10
1964	171.80	155.40	150.30	474.50	801.50	564.40	296.90	78.50	128.90	228.10	215.50	231.10
1965	216.90	176.50	213.60	565.50	961.10	1,156.00	730.60	419.60	398.30	520.40	487.50	518.60

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Otter Tail River below Orwell Dam near Fergus Falls, Minn.—Continued												
1966	489.00	432.60	605.40	1,033.00	1,273.00	1,149.00	564.40	521.40	411.60	467.00	506.20	475.80
1967	416.10	367.50	406.10	820.70	1,040.00	865.90	727.30	243.60	118.00	201.50	184.10	156.30
1968	136.50	147.90	264.80	397.40	598.10	575.00	431.40	233.60	167.30	283.10	308.70	275.90
1969	247.90	374.10	461.20	738.10	1,104.00	910.10	413.30	200.60	59.60	112.60	150.80	149.70
1970	193.90	214.80	229.00	385.10	679.70	716.50	440.50	122.10	28.80	89.70	184.40	174.70
1971	150.00	166.50	262.60	458.30	340.10	295.80	351.70	151.70	166.30	247.60	487.60	592.50
1972	563.80	473.20	510.40	865.50	969.90	1,181.00	692.30	491.90	425.00	438.20	391.10	397.10
1973	359.20	357.80	517.80	433.40	371.30	274.30	156.80	130.50	136.90	380.60	634.30	641.10
1974	506.50	461.20	483.50	608.40	984.00	1,156.00	666.10	337.20	252.60	298.80	267.40	187.00
1975	200.50	269.00	412.60	642.60	956.50	1,023.00	846.30	597.00	369.00	334.10	320.90	240.90
1976	247.50	305.80	432.90	518.50	317.80	171.00	110.40	57.30	9.17	9.15	8.42	8.10
1977	19.80	22.40	30.40	45.80	14.10	55.00	59.80	50.40	128.20	200.80	298.70	363.10
1978	402.50	356.60	384.90	814.40	812.00	519.20	402.30	137.30	96.00	139.60	109.10	103.90
1979	98.20	132.40	295.90	620.90	972.40	917.60	804.00	701.80	551.00	343.50	355.70	325.10
1980	357.80	392.70	488.80	548.50	505.20	346.50	166.70	102.80	40.90	70.20	119.00	113.80
1981	101.10	132.20	207.40	213.20	170.30	124.80	142.20	152.50	58.80	139.50	220.70	246.90
1982	239.70	256.00	406.60	612.30	748.40	719.80	503.40	276.70	171.90	299.60	330.90	297.30
1983	281.20	262.60	354.30	374.20	329.50	235.80	287.70	365.50	353.70	329.80	292.40	257.80
1984	275.40	345.80	369.10	656.20	621.50	637.80	468.20	247.40	125.80	173.20	193.80	265.40
1985	267.60	270.70	473.50	590.80	901.50	1,087.00	1,139.00	1,080.00	904.10	817.00	830.60	681.80
1986	603.00	538.60	545.40	1,051.00	1,427.00	1,425.00	883.50	611.00	684.20	777.10	772.40	706.20
1987	580.10	605.30	652.90	602.10	521.30	467.70	322.20	166.20	174.50	134.60	130.90	147.90
1988	169.80	231.00	320.00	347.40	356.90	201.90	75.10	78.30	74.00	68.00	58.50	54.90
1989	92.90	175.40	342.10	653.20	600.20	593.30	305.10	137.50	168.40	117.10	136.30	120.50
1990	111.10	145.70	294.60	428.10	517.90	551.60	385.30	236.80	163.20	128.60	92.90	88.90
1991	93.20	158.80	256.30	383.00	699.00	709.60	679.10	429.30	354.70	200.30	175.60	167.50
1992	205.80	248.80	369.20	443.90	431.90	381.20	351.10	291.40	265.50	189.90	211.20	200.50
1993	221.00	281.40	419.50	621.00	684.80	979.50	923.70	1,055.00	1,026.00	972.60	798.40	619.10
1994	556.30	646.90	724.30	816.90	1,009.00	706.70	565.50	408.40	279.40	322.20	300.70	413.00
1995	410.40	414.20	615.00	894.80	891.60	619.20	509.40	310.70	259.40	363.00	435.50	414.30
1996	366.10	401.90	546.00	738.80	1,100.00	1,069.00	573.90	348.00	223.30	222.30	281.90	399.20
1997	521.50	532.60	571.20	1,199.00	1,403.00	1,054.00	848.90	724.30	565.60	526.80	511.00	578.90
1998	507.50	581.60	699.40	837.60	874.90	662.90	1,111.00	883.70	497.80	546.60	725.80	740.40
1999	736.60	742.40	784.70	1,093.00	1,162.00	1,220.00	1,022.00	624.20	763.10	714.00	584.00	459.00
2000	463.00	472.00	715.00	842.00	794.00	905.00	819.00	605.00	417.00	319.00	564.00	666.00
2001	689.00	604.00	731.00	1,084.00	1,267.00	1,442.00	1,090.00	612.00	467.00	411.00	377.00	463.00

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through September 1958) and estimated (October 1958 through December 2001) historic streamflow, in cubic feet per second, for the Mustinka River above Wheaton, Minn.												
1931	0.00	0.00	2.60	1.33	0.64	3.51	1.36	1.95	4.17	0.00	0.00	0.00
1932	0.00	0.26	4.10	25.70	2.68	0.89	0.07	0.00	0.00	0.00	0.00	0.00
1933	0.00	0.68	14.30	5.54	4.28	2.30	0.03	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.04	2.07	0.13	0.09	0.00	0.00	0.00	0.00	0.00	0.00
1935	0.00	0.10	42.60	5.47	10.50	13.90	16.00	0.44	0.00	0.00	0.00	0.00
1936	0.00	0.00	55.90	22.00	5.08	0.61	0.00	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	13.00	172.00	66.30	6.48	15.50	2.46	0.10	0.00	0.00	0.00
1938	0.00	0.54	46.90	5.65	12.40	12.20	49.70	0.19	13.90	0.00	0.00	0.00
1939	0.03	0.00	214.00	28.10	3.82	4.61	3.73	0.45	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.84	104.00	11.10	0.42	0.00	0.00	0.00	0.00	0.00	0.00
1941	0.00	0.00	35.60	55.70	4.65	28.00	1.94	11.80	32.20	9.11	3.83	4.11
1942	0.00	0.00	7.52	24.20	571.00	524.00	25.70	13.50	38.60	14.50	13.90	1.28
1943	0.00	0.00	43.00	743.00	81.30	266.00	88.50	44.30	12.30	4.44	7.31	2.40
1944	0.00	0.00	5.36	45.30	135.00	500.00	60.40	7.14	4.32	2.85	5.84	2.08
1945	0.00	0.00	193.00	76.80	24.00	52.60	3.98	0.63	0.00	0.09	0.27	0.00
1946	0.00	0.00	435.00	126.00	15.10	3.48	63.40	2.21	1.86	10.80	7.11	1.73
1947	0.10	0.28	107.00	978.00	186.00	106.00	17.40	0.56	0.00	0.00	0.46	0.31
1948	0.00	0.00	251.00	579.00	53.20	12.30	18.10	3.72	0.19	0.11	0.37	0.05
1949	0.00	0.00	72.70	44.30	2.85	6.82	430.00	16.00	1.50	2.65	3.91	0.43
1950	0.00	0.00	68.50	498.00	471.00	74.40	256.00	14.80	1.04	2.42	1.47	0.18
1951	0.01	0.39	0.07	673.00	117.00	82.70	43.70	5.25	1.96	4.70	6.81	3.54
1952	2.03	1.27	1.38	1,767.00	225.00	50.30	69.00	7.97	4.68	0.26	0.43	1.09
1953	0.74	0.82	154.00	73.10	42.10	92.80	35.70	1.34	0.00	0.01	0.74	0.23
1954	0.00	0.00	17.10	43.60	26.30	91.10	9.16	5.86	5.73	2.84	3.54	0.81
1955	0.04	0.00	16.70	61.00	3.49	18.30	68.70	3.72	0.57	0.18	0.01	0.00
1956	0.00	0.00	0.06	143.00	70.70	40.20	6.82	75.30	4.50	0.48	2.89	1.49
1957	0.10	0.00	33.70	169.00	98.80	221.00	34.50	20.40	25.00	20.90	41.30	4.47
1958	0.73	11.00	104.00	124.00	21.00	7.20	4.01	1.55	2.20	5.19	0.47	3.11
1959	0.14	0.78	9.75	3.07	1.74	420.31	3.41	10.47	5.81	5.37	0.05	2.53
1960	2.43	1.11	16.55	151.92	38.93	42.40	2.50	0.08	3.94	1.59	0.56	0.93
1961	0.16	2.26	17.02	4.07	6.72	6.97	0.82	0.81	0.58	1.46	0.11	0.51
1962	0.03	0.75	0.50	555.94	623.25	677.54	1,280.77	243.47	13.40	5.29	5.49	1.59
1963	0.16	2.09	34.04	56.73	28.27	678.46	16.39	1.82	0.11	2.99	0.52	0.92
1964	0.14	1.42	13.32	105.83	69.34	37.87	12.13	1.18	0.60	2.50	6.19	0.48
1965	0.12	2.48	0.64	640.28	71.74	186.31	61.53	18.36	3.10	10.23	3.35	1.82

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through September 1958) and estimated (October 1958 through December 2001) historic streamflow, in cubic feet per second, for the Mustinka River above Wheaton, Minn.—Continued												
1966	1.21	0.22	658.72	261.85	81.11	29.43	46.46	144.34	18.36	6.68	10.86	2.39
1967	1.63	1.15	150.41	253.74	155.31	297.24	182.35	23.20	0.52	0.01	0.98	1.01
1968	0.36	0.03	15.61	35.63	37.24	31.04	4.48	1.70	2.51	6.38	5.29	2.17
1969	0.50	0.32	0.31	3,278.28	286.94	10.61	47.61	24.75	1.09	0.06	0.05	1.34
1970	1.48	1.82	14.66	97.00	37.09	164.47	33.19	0.07	0.21	0.90	1.34	0.75
1971	0.05	2.20	81.76	23.44	7.62	9.15	56.90	0.46	6.67	2.52	12.21	3.12
1972	2.44	1.03	401.95	215.42	417.13	48.71	39.88	13.08	0.35	1.68	2.44	1.48
1973	1.72	1.24	79.20	13.79	6.79	3.35	8.03	0.01	0.11	4.96	3.15	1.44
1974	0.32	0.23	51.12	106.31	44.80	93.75	0.10	0.04	1.85	2.26	1.49	1.59
1975	0.26	3.12	0.20	725.99	108.24	1,846.74	829.73	31.88	2.62	7.68	9.26	2.06
1976	2.52	154.79	192.72	126.62	17.79	1.43	0.03	0.61	0.02	0.17	0.01	0.17
1977	0.02	0.18	6.31	11.20	3.18	3.50	2.72	0.14	9.11	19.76	6.41	2.38
1978	2.98	5.61	453.06	931.38	112.58	9.79	168.72	36.12	21.41	4.27	3.22	1.41
1979	0.62	0.66	0.57	1,929.48	295.91	39.64	50.05	34.89	1.99	0.13	5.52	1.93
1980	1.51	1.15	91.08	216.73	16.91	2.93	0.82	2.93	0.25	0.43	0.43	0.88
1981	0.39	9.54	7.97	7.62	1.73	5.65	6.49	1.04	0.00	12.01	343.28	2.29
1982	0.07	0.60	38.50	284.91	17.27	7.99	21.56	0.93	0.69	6.72	3.66	2.24
1983	0.78	0.97	83.12	21.12	3.85	15.07	14.35	0.76	6.08	0.35	0.12	0.13
1984	0.05	280.33	434.10	388.48	46.66	895.41	3.20	0.95	0.00	15.21	7.08	2.35
1985	1.52	1.02	154.92	16.96	14.22	1,099.54	7.41	0.05	2.95	0.20	0.03	1.43
1986	1.70	2.15	322.29	793.22	581.79	530.62	17.73	12.69	121.85	55.91	21.33	4.34
1987	5.77	23.10	126.24	77.77	29.33	11.27	6.45	0.20	0.01	1.98	48.24	2.97
1988	0.41	10.55	23.12	5.90	0.81	2.19	3.46	0.99	0.45	0.65	0.26	1.05
1989	0.29	1.44	3.09	1,790.28	51.10	8.14	1.79	0.93	0.28	0.01	4.25	0.85
1990	0.27	0.42	7.08	7.62	5.02	49.38	0.02	1.01	0.27	1.13	0.09	1.43
1991	0.09	0.65	6.37	1.14	18.67	32.58	54.09	3.69	7.89	0.03	0.01	0.21
1992	0.06	0.82	24.75	26.59	15.67	87.71	81.24	20.62	1.89	0.02	1.84	0.72
1993	0.55	5.41	188.90	674.31	86.92	181.40	658.65	343.43	76.87	23.59	11.78	4.32
1994	11.82	42.80	457.87	649.64	192.50	35.89	544.13	31.80	9.99	17.89	16.37	3.89
1995	6.12	26.22	865.71	625.98	338.81	15.44	475.80	49.36	16.55	90.40	28.84	4.10
1996	5.05	6.48	213.41	834.79	828.55	136.59	39.19	8.79	0.37	4.07	11.35	2.43
1997	0.96	0.93	0.94	6,360.71	644.63	302.98	136.78	56.14	32.88	40.42	15.20	4.40
1998	8.79	159.13	484.26	814.69	1,105.65	1,414.40	819.14	181.54	74.76	111.72	85.82	14.84
1999	56.82	415.44	486.26	444.08	339.69	229.43	115.82	119.69	325.69	109.63	62.06	6.84
2000	21.17	608.39	304.89	176.56	166.47	140.43	216.71	38.12	2.83	6.20	10.42	1.86
2001	1.10	1.97	2.01	3,185.11	442.65	655.66	84.17	14.58	2.18	8.93	10.35	3.02

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1941 through December 2001) and estimated (January 1931 through September 1941) historic streamflow, in cubic feet per second, for the Bois de Sioux River near White Rock, S. Dak.												
1931	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1932	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1933	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1935	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1936	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1938	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.00	0.00	0.00	3.33	6.99	3.93	1.66	0.24	0.00	0.00
1942	0.00	0.00	0.00	0.00	2.52	147.90	623.30	197.70	243.80	45.70	0.15	0.00
1943	0.00	0.00	5.97	325.30	935.30	680.70	324.30	35.90	6.85	7.56	11.00	1.38
1944	0.00	0.00	3.66	157.00	252.80	598.10	225.00	15.80	4.80	2.82	1.26	0.10
1945	0.00	0.00	15.90	375.20	41.40	214.00	5.87	3.21	1.15	3.11	1.13	0.27
1946	0.00	0.00	28.10	530.50	24.70	13.10	38.70	4.17	2.32	3.12	10.50	4.44
1947	1.70	0.81	6.16	271.50	592.10	433.40	453.50	9.04	5.98	6.76	8.36	1.84
1948	0.01	0.00	36.90	358.80	750.20	84.50	15.40	18.20	15.00	0.62	0.70	0.22
1949	0.00	0.00	19.70	8.26	2.02	2.84	64.90	4.53	1.51	1.15	1.41	0.02
1950	0.00	0.00	4.60	23.10	17.80	575.10	713.00	327.80	19.40	4.87	20.50	20.00
1951	6.38	1.02	3.88	185.90	820.40	330.70	69.60	29.50	4.94	4.49	13.00	22.90
1952	20.50	12.70	55.00	259.90	1,002.00	944.30	260.30	7.52	0.36	0.43	0.48	0.07
1953	0.00	0.00	28.90	9.86	74.00	57.90	60.20	33.40	15.60	1.85	1.19	0.00
1954	0.00	0.00	2.89	5.56	4.66	6.75	2.00	1.33	2.36	1.31	0.85	0.08
1955	0.00	0.00	4.12	5.91	1.66	2.81	18.10	3.69	0.72	0.41	0.04	0.00
1956	0.00	0.00	0.01	13.10	3.29	1.35	0.31	5.85	0.28	0.16	0.70	0.13
1957	0.00	0.00	1.20	24.30	235.10	324.40	134.40	14.80	24.80	33.80	39.00	4.32
1958	13.60	10.80	41.90	223.00	41.50	7.74	6.51	0.21	0.79	0.12	0.00	0.00
1959	0.00	0.00	1.50	0.60	1.45	4.36	3.75	0.09	0.00	0.02	0.00	0.00
1960	0.00	0.00	1.87	19.10	72.80	68.50	19.60	0.13	0.00	0.04	0.00	0.00
1961	0.00	0.00	1.40	5.37	6.38	0.84	0.00	0.05	1.86	0.00	0.00	0.00
1962	0.00	0.00	0.14	127.50	412.50	788.30	1,035.00	1,130.00	259.90	45.70	7.69	5.48
1963	3.52	8.16	17.60	104.50	42.30	558.40	75.30	8.38	3.73	1.46	1.15	0.76
1964	0.46	0.22	0.25	107.90	95.10	20.90	5.73	0.40	1.30	1.17	0.98	0.47
1965	0.00	0.00	0.00	427.20	433.30	1,088.00	308.60	9.30	5.26	59.80	84.20	28.90

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1941 through December 2001) and estimated (January 1931 through September 1941) historic streamflow, in cubic feet per second, for the Bois de Sioux River near White Rock, S. Dak.—Continued												
1966	20.10	53.00	58.80	332.00	729.20	431.00	8.30	6.64	1.15	23.80	4.02	0.00
1967	0.00	0.00	13.70	223.80	104.80	26.20	199.90	0.77	0.45	0.34	0.03	0.00
1968	0.00	0.00	0.02	7.61	7.59	3.55	0.69	0.06	0.04	0.45	0.76	0.40
1969	0.06	0.00	0.00	1,322.00	1,310.00	374.20	20.60	0.23	0.00	1.82	0.31	0.00
1970	0.00	0.00	1.56	14.40	4.30	5.27	0.04	0.00	0.00	0.00	0.15	0.09
1971	0.00	0.00	2.40	4.80	4.80	69.30	23.60	4.40	5.42	0.45	2.50	1.74
1972	1.58	0.27	100.00	630.90	250.60	303.80	25.50	105.50	18.10	0.06	0.60	0.68
1973	4.02	8.15	139.20	77.80	17.70	9.37	0.04	0.28	0.05	0.02	0.00	0.00
1974	0.00	0.00	8.86	8.11	9.56	3.77	0.12	0.35	0.15	0.02	0.00	0.00
1975	0.00	0.00	0.00	26.50	183.70	87.10	315.60	12.00	23.40	1.49	0.26	0.08
1976	0.00	21.50	221.20	133.80	4.21	0.02	0.00	0.00	0.23	0.00	0.00	0.00
1977	0.00	0.00	2.89	1.24	0.23	0.01	0.02	0.01	0.09	0.21	1.02	0.01
1978	0.00	0.00	3.88	623.40	718.80	520.00	415.60	108.20	18.40	3.34	1.93	1.92
1979	0.64	0.00	0.92	228.20	937.90	695.50	325.90	103.20	8.08	7.20	7.28	9.09
1980	9.35	11.90	40.70	23.30	25.50	62.20	12.80	1.83	1.47	1.24	0.33	0.11
1981	0.00	0.17	0.39	1.99	1.46	10.30	8.08	0.10	0.00	0.00	0.00	0.00
1982	0.00	0.00	3.89	200.50	99.50	3.57	5.43	0.19	0.02	0.21	5.64	23.20
1983	2.03	0.00	2.61	2.54	1.93	0.36	0.07	0.00	0.00	0.00	0.00	0.00
1984	0.00	1.94	6.19	716.90	311.80	426.20	281.20	103.80	0.72	101.30	258.00	57.50
1985	0.20	0.20	227.20	340.00	205.10	420.90	79.70	18.60	19.40	8.43	5.17	3.66
1986	4.54	6.84	55.30	720.60	1,092.00	1,103.00	722.80	151.10	61.90	376.20	119.50	100.50
1987	58.20	66.00	39.10	63.90	28.20	2.19	0.92	0.27	0.11	22.40	8.57	4.57
1988	0.31	0.01	9.70	41.70	4.82	0.45	0.00	0.01	0.00	0.05	0.12	0.00
1989	0.00	0.00	1.34	414.10	491.30	89.70	5.13	6.69	71.60	10.10	11.50	6.57
1990	0.00	0.00	21.90	6.98	11.00	8.24	2.12	0.08	1.06	1.63	1.65	0.59
1991	41.00	0.48	5.11	10.40	14.50	108.00	505.00	71.80	38.40	58.50	0.83	0.78
1992	0.65	1.38	8.93	10.40	2.93	6.64	22.40	92.40	0.24	0.08	3.80	4.68
1993	4.82	4.19	75.50	602.70	244.40	240.40	711.40	1,182.00	1,062.00	534.60	20.90	6.57
1994	6.61	7.25	199.00	1,088.00	1,105.00	489.70	689.00	139.50	7.22	70.00	6.94	5.55
1995	4.62	5.74	208.50	1,277.00	1,236.00	667.30	100.60	6.52	7.64	271.80	307.30	25.30
1996	8.67	16.30	628.40	841.60	723.20	187.40	5.81	4.17	0.48	1.91	4.90	13.20
1997	42.40	148.30	326.00	3,814.00	1,445.00	611.90	53.10	5.51	1.00	4.57	7.72	3.52
1998	0.67	83.90	500.40	232.10	255.50	116.90	202.90	2.74	0.70	12.00	14.10	207.30
1999	5.24	6.42	321.10	139.80	208.80	368.50	118.80	201.40	164.70	8.34	5.74	3.99
2000	2.87	16.00	272.00	56.80	106.00	8.51	233.00	0.55	0.11	1.12	7.14	1.95
2001	1.27	2.28	362.00	2,306.00	1,323.00	1,046.00	919.00	101.00	3.98	9.64	14.35	113.30

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through September 1944) historic streamflow, in cubic feet per second, for the Bois de Sioux River near Fairmount, N. Dak.												
1931	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1932	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1933	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1935	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1936	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	4.33	4.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1938	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	13.10	13.60	0.18	0.33	0.15	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.50	1.30	0.17	6.12	1.83	0.84	1.90	1.23	0.71	0.10
1942	0.00	0.00	3.55	12.00	149.00	394.00	662.00	208.00	249.00	5.74	3.32	0.00
1943	0.00	0.00	72.30	625.00	928.00	725.00	341.00	34.80	4.75	7.66	5.51	1.33
1944	0.00	0.00	3.29	161.00	308.00	705.00	274.00	21.70	8.99	--	--	--
1945	--	--	--	--	--	--	--	--	--	--	--	--
1946	--	--	--	--	--	--	--	--	--	--	--	--
1947	--	--	--	--	--	--	--	--	--	--	--	--
1948	--	--	--	--	--	--	--	--	--	--	--	--
1949	--	--	--	--	--	--	--	--	--	--	--	--
1950	--	--	--	--	--	--	--	--	--	--	--	--
1951	--	--	--	--	--	--	--	--	--	--	--	--
1952	--	--	--	--	--	--	--	--	--	--	--	--
1953	--	--	--	--	--	--	--	--	--	--	--	--
1954	--	--	--	--	--	--	--	--	--	--	--	--
1955	--	--	--	--	--	--	--	--	--	--	--	--
1956	--	--	--	--	--	--	--	--	--	--	--	--
1957	--	--	--	--	--	--	--	--	--	--	--	--
1958	--	--	--	--	--	--	--	--	--	--	--	--
1959	--	--	--	--	--	--	--	--	--	--	--	--
1960	--	--	--	--	--	--	--	--	--	--	--	--
1961	--	--	--	--	--	--	--	--	--	--	--	--
1962	--	--	--	--	--	--	--	--	--	--	--	--
1963	--	--	--	--	--	--	--	--	--	--	--	--
1964	--	--	--	--	--	--	--	--	--	--	--	--
1965	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through September 1944) historic streamflow, in cubic feet per second, for the Bois de Sioux River near Fairmount, N. Dak.—Continued												
1966	--	--	--	--	--	--	--	--	--	--	--	--
1967	--	--	--	--	--	--	--	--	--	--	--	--
1968	--	--	--	--	--	--	--	--	--	--	--	--
1969	--	--	--	--	--	--	--	--	--	--	--	--
1970	--	--	--	--	--	--	--	--	--	--	--	--
1971	--	--	--	--	--	--	--	--	--	--	--	--
1972	--	--	--	--	--	--	--	--	--	--	--	--
1973	--	--	--	--	--	--	--	--	--	--	--	--
1974	--	--	--	--	--	--	--	--	--	--	--	--
1975	--	--	--	--	--	--	--	--	--	--	--	--
1976	--	--	--	--	--	--	--	--	--	--	--	--
1977	--	--	--	--	--	--	--	--	--	--	--	--
1978	--	--	--	--	--	--	--	--	--	--	--	--
1979	--	--	--	--	--	--	--	--	--	--	--	--
1980	--	--	--	--	--	--	--	--	--	--	--	--
1981	--	--	--	--	--	--	--	--	--	--	--	--
1982	--	--	--	--	--	--	--	--	--	--	--	--
1983	--	--	--	--	--	--	--	--	--	--	--	--
1984	--	--	--	--	--	--	--	--	--	--	--	--
1985	--	--	--	--	--	--	--	--	--	--	--	--
1986	--	--	--	--	--	--	--	--	--	--	--	--
1987	--	--	--	--	--	--	--	--	--	--	--	--
1988	--	--	--	--	--	--	--	--	--	--	--	--
1989	--	--	--	--	--	--	--	--	--	--	--	--
1990	--	--	--	--	--	--	--	--	--	--	--	--
1991	--	--	--	--	--	--	--	--	--	--	--	--
1992	--	--	--	--	--	--	--	--	--	--	--	--
1993	--	--	--	--	--	--	--	--	--	--	--	--
1994	--	--	--	--	--	--	--	--	--	--	--	--
1995	--	--	--	--	--	--	--	--	--	--	--	--
1996	--	--	--	--	--	--	--	--	--	--	--	--
1997	--	--	--	--	--	--	--	--	--	--	--	--
1998	--	--	--	--	--	--	--	--	--	--	--	--
1999	--	--	--	--	--	--	--	--	--	--	--	--
2000	--	--	--	--	--	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1989 through December 2001) historic streamflow, in cubic feet per second, for the Bois de Sioux River near Doran, Minn.												
1931	--	--	--	--	--	--	--	--	--	--	--	--
1932	--	--	--	--	--	--	--	--	--	--	--	--
1933	--	--	--	--	--	--	--	--	--	--	--	--
1934	--	--	--	--	--	--	--	--	--	--	--	--
1935	--	--	--	--	--	--	--	--	--	--	--	--
1936	--	--	--	--	--	--	--	--	--	--	--	--
1937	--	--	--	--	--	--	--	--	--	--	--	--
1938	--	--	--	--	--	--	--	--	--	--	--	--
1939	--	--	--	--	--	--	--	--	--	--	--	--
1940	--	--	--	--	--	--	--	--	--	--	--	--
1941	--	--	--	--	--	--	--	--	--	--	--	--
1942	--	--	--	--	--	--	--	--	--	--	--	--
1943	--	--	--	--	--	--	--	--	--	--	--	--
1944	--	--	--	--	--	--	--	--	--	--	--	--
1945	--	--	--	--	--	--	--	--	--	--	--	--
1946	--	--	--	--	--	--	--	--	--	--	--	--
1947	--	--	--	--	--	--	--	--	--	--	--	--
1948	--	--	--	--	--	--	--	--	--	--	--	--
1949	--	--	--	--	--	--	--	--	--	--	--	--
1950	--	--	--	--	--	--	--	--	--	--	--	--
1951	--	--	--	--	--	--	--	--	--	--	--	--
1952	--	--	--	--	--	--	--	--	--	--	--	--
1953	--	--	--	--	--	--	--	--	--	--	--	--
1954	--	--	--	--	--	--	--	--	--	--	--	--
1955	--	--	--	--	--	--	--	--	--	--	--	--
1956	--	--	--	--	--	--	--	--	--	--	--	--
1957	--	--	--	--	--	--	--	--	--	--	--	--
1958	--	--	--	--	--	--	--	--	--	--	--	--
1959	--	--	--	--	--	--	--	--	--	--	--	--
1960	--	--	--	--	--	--	--	--	--	--	--	--
1961	--	--	--	--	--	--	--	--	--	--	--	--
1962	--	--	--	--	--	--	--	--	--	--	--	--
1963	--	--	--	--	--	--	--	--	--	--	--	--
1964	--	--	--	--	--	--	--	--	--	--	--	--
1965	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1989 through December 2001) historic streamflow, in cubic feet per second, for the Bois de Sioux River near Doran, Minn.—Continued												
1966	--	--	--	--	--	--	--	--	--	--	--	--
1967	--	--	--	--	--	--	--	--	--	--	--	--
1968	--	--	--	--	--	--	--	--	--	--	--	--
1969	--	--	--	--	--	--	--	--	--	--	--	--
1970	--	--	--	--	--	--	--	--	--	--	--	--
1971	--	--	--	--	--	--	--	--	--	--	--	--
1972	--	--	--	--	--	--	--	--	--	--	--	--
1973	--	--	--	--	--	--	--	--	--	--	--	--
1974	--	--	--	--	--	--	--	--	--	--	--	--
1975	--	--	--	--	--	--	--	--	--	--	--	--
1976	--	--	--	--	--	--	--	--	--	--	--	--
1977	--	--	--	--	--	--	--	--	--	--	--	--
1978	--	--	--	--	--	--	--	--	--	--	--	--
1979	--	--	--	--	--	--	--	--	--	--	--	--
1980	--	--	--	--	--	--	--	--	--	--	--	--
1981	--	--	--	--	--	--	--	--	--	--	--	--
1982	--	--	--	--	--	--	--	--	--	--	--	--
1983	--	--	--	--	--	--	--	--	--	--	--	--
1984	--	--	--	--	--	--	--	--	--	--	--	--
1985	--	--	--	--	--	--	--	--	--	--	--	--
1986	--	--	--	--	--	--	--	--	--	--	--	--
1987	--	--	--	--	--	--	--	--	--	--	--	--
1988	--	--	--	--	--	--	--	--	--	--	--	--
1989	--	--	--	--	--	--	--	--	--	20.20	8.54	8.48
1990	0.19	0.00	25.50	12.60	11.80	12.60	4.37	0.00	0.00	0.03	1.97	0.65
1991	0.08	0.15	67.80	53.90	81.00	364.00	951.00	97.80	422.00	74.50	5.50	2.39
1992	1.69	4.10	75.70	43.60	12.50	66.30	43.70	106.00	2.71	0.09	5.13	3.29
1993	2.24	3.53	332.00	1,187.00	371.00	495.00	1,477.00	1,486.00	1,244.00	592.00	20.20	8.40
1994	7.05	7.86	387.00	1,580.00	1,277.00	528.00	1,030.00	190.00	8.17	75.40	7.26	6.76
1995	5.22	6.23	1,757.00	1,519.00	1,432.00	749.00	180.00	3.11	2.81	329.00	465.00	25.60
1996	11.30	27.20	829.00	1,598.00	1,253.00	274.00	4.79	2.87	0.37	0.67	2.95	13.20
1997	43.90	140.00	333.00	5,936.00	1,893.00	665.00	62.30	7.89	7.22	0.94	5.07	4.51
1998	2.00	155.00	693.00	396.00	378.00	413.00	386.00	2.13	0.07	49.70	83.20	222.00
1999	5.44	6.67	431.00	188.00	234.00	678.00	154.00	450.00	222.00	10.40	8.97	5.92
2000	2.53	28.00	410.00	91.50	147.00	19.60	246.00	0.93	0.09	0.31	2.94	1.16
2001	0.14	0.03	400.00	4,474.00	1,855.00	1,432.00	1,134.00	135.00	5.18	13.60	24.40	135.00

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1932 through December 2001) and estimated (January 1931 through March 1932) historic streamflow, in cubic feet per second, for the Wild Rice River near Abercrombie, N. Dak.												
1931	0.01	0.28	1.57	8.44	4.83	2.41	0.23	0.01	0.07	0.02	0.02	0.36
1932	0.07	0.02	1.76	13.40	5.80	3.26	0.71	0.00	0.00	0.00	0.00	0.00
1933	0.00	0.43	33.20	14.70	7.48	1.82	0.00	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.32	3.71	0.11	1.35	0.36	0.00	0.00	0.00	0.00	0.00
1935	0.00	0.00	152.70	20.00	12.70	42.20	20.00	5.00	1.00	0.00	0.00	0.00
1936	0.00	0.00	80.40	55.60	13.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	117.50	85.10	20.90	18.00	3.89	2.00	0.00	0.00	0.00
1938	0.00	0.00	86.10	12.60	33.30	9.33	0.36	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	223.00	45.80	3.21	23.40	23.40	1.85	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	71.60	19.40	2.39	0.00	0.00	0.00	0.00	0.00	0.00
1941	0.00	0.00	79.10	63.50	18.90	78.00	12.20	4.50	9.96	7.31	5.64	3.18
1942	0.07	0.00	15.00	66.40	151.40	299.60	75.90	45.10	100.10	110.90	60.40	19.20
1943	6.69	1.83	232.60	1,767.00	174.20	706.90	353.50	51.50	22.60	7.22	11.60	5.75
1944	0.51	0.37	20.70	148.00	168.60	243.40	463.50	134.30	86.10	19.60	32.40	12.80
1945	0.89	1.25	1,006.00	412.50	130.40	157.40	15.80	4.19	2.19	2.08	2.62	0.69
1946	0.00	0.00	537.50	202.60	27.00	8.21	30.60	2.53	0.12	5.27	6.89	2.09
1947	0.96	0.24	52.80	716.90	158.40	74.50	22.10	0.61	0.00	0.00	0.00	0.00
1948	0.00	0.00	3.78	217.20	19.60	6.29	5.58	7.16	0.06	0.00	0.00	0.00
1949	0.00	0.00	32.60	150.30	25.00	7.13	95.00	13.30	0.00	0.00	0.00	0.00
1950	0.00	0.00	176.60	812.90	593.80	57.50	7.65	1.73	0.00	0.00	0.00	0.00
1951	0.00	0.00	14.60	583.50	41.00	27.10	19.80	0.46	0.96	1.59	4.22	9.19
1952	1.19	0.70	0.50	2,352.00	279.10	22.40	29.40	4.68	0.37	0.00	0.48	1.20
1953	0.73	0.99	95.40	39.70	272.50	321.70	47.50	6.25	0.20	0.00	0.00	0.07
1954	0.05	0.27	44.20	41.40	31.80	66.10	48.50	0.47	1.54	0.27	0.26	0.98
1955	0.19	0.03	23.10	106.40	3.33	1.29	1.93	16.90	0.02	0.00	0.00	0.00
1956	0.00	0.00	0.00	195.70	35.80	2.94	0.00	3.60	0.00	0.00	0.00	0.00
1957	0.00	0.00	46.00	95.70	58.00	80.80	47.50	21.60	79.80	31.80	27.00	10.40
1958	2.76	3.26	37.50	159.60	74.10	16.10	25.80	0.08	0.03	0.00	0.00	0.00
1959	0.00	0.00	11.90	6.70	2.93	23.20	4.05	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	20.50	206.80	54.00	5.07	2.94	0.09	0.00	0.00	0.00	0.00
1961	0.00	0.00	21.10	8.58	10.40	1.03	0.00	0.00	0.00	0.00	0.00	0.00
1962	0.00	0.00	0.00	646.80	727.80	929.00	1,787.00	324.60	16.50	6.35	7.64	2.88
1963	0.17	0.00	43.00	87.00	40.00	453.40	20.30	2.12	0.12	0.00	0.00	0.00
1964	0.00	0.00	16.40	150.50	92.80	28.60	14.90	1.36	0.67	0.00	0.00	0.00
1965	0.00	0.00	0.00	732.30	95.80	109.50	79.00	22.80	3.67	12.50	4.29	3.70

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1932 through December 2001) and estimated (January 1931 through March 1932) historic streamflow, in cubic feet per second, for the Wild Rice River near Abercrombie, N. Dak.—Continued												
1966	1.40	0.23	902.50	333.70	107.50	63.60	59.20	189.70	22.80	8.07	17.00	6.15
1967	1.89	0.74	197.90	324.60	197.70	481.00	241.20	29.00	0.58	0.01	1.02	1.22
1968	0.41	0.05	19.30	57.80	51.80	26.00	5.35	1.98	2.95	7.70	7.31	5.15
1969	0.56	0.30	0.34	3,077.00	351.60	76.40	60.70	31.00	1.25	0.06	0.05	2.07
1970	1.71	1.03	18.10	139.40	51.60	177.70	41.90	0.07	0.00	0.00	0.00	0.00
1971	0.00	0.00	105.80	40.00	11.70	17.30	72.90	0.52	8.06	2.96	19.50	10.10
1972	2.87	0.69	543.30	281.10	499.40	146.20	50.60	16.10	0.39	0.00	2.95	2.50
1973	2.00	0.78	102.40	25.10	10.50	8.78	9.75	0.01	0.12	5.94	3.98	2.38
1974	0.35	0.23	65.30	151.10	61.60	17.70	0.10	0.05	0.00	0.00	0.00	0.00
1975	0.00	0.00	0.22	817.80	140.90	378.10	1,144.00	40.20	3.08	9.31	14.10	4.65
1976	2.96	24.60	255.30	176.20	25.90	0.73	0.03	0.00	0.00	0.00	0.00	0.00
1977	0.00	0.00	7.61	20.90	5.15	3.33	3.21	0.15	11.10	24.60	9.16	6.08
1978	3.52	2.30	614.40	1,018.00	146.20	39.80	222.70	45.70	26.70	5.10	4.09	2.30
1979	0.70	0.50	0.64	1,931.00	361.90	41.80	63.90	44.10	2.32	0.14	7.69	4.11
1980	1.75	0.74	118.20	282.60	24.70	55.50	0.94	3.46	0.27	0.48	0.48	0.96
1981	0.44	3.36	9.67	14.90	2.91	9.21	7.83	1.19	0.00	0.00	0.00	0.00
1982	0.00	0.00	48.80	359.40	25.20	2.39	26.90	1.07	0.00	8.12	4.75	5.45
1983	0.89	0.66	107.60	36.50	6.17	0.09	17.70	0.86	7.33	0.39	0.13	0.03
1984	0.05	37.60	588.00	472.00	64.00	126.00	3.79	1.09	0.00	18.80	10.30	5.94
1985	1.76	0.68	204.00	30.10	21.00	198.70	8.98	0.05	3.49	0.23	0.03	2.34
1986	1.98	1.16	433.00	884.00	682.30	67.60	22.00	15.60	159.40	71.60	37.50	18.80
1987	6.94	6.32	165.30	114.80	41.40	11.50	7.78	0.22	0.01	0.00	0.00	0.00
1988	0.00	0.00	28.90	11.90	1.43	0.09	4.10	1.14	0.00	0.00	0.00	0.00
1989	0.00	0.00	3.66	1,808.00	69.70	37.40	2.09	1.07	0.31	0.01	0.00	0.00
1990	0.00	0.00	8.57	14.90	7.91	0.91	0.02	0.00	0.00	0.00	0.00	0.00
1991	0.00	0.00	7.69	2.81	27.10	12.70	69.20	4.39	9.57	0.04	0.01	0.06
1992	0.07	0.58	31.00	44.70	23.00	228.20	105.10	25.70	2.20	0.02	2.12	0.64
1993	0.00	2.24	250.10	766.40	114.70	152.70	902.40	462.20	99.30	29.50	18.70	18.60
1994	14.50	9.82	621.10	741.70	241.80	34.30	741.60	40.10	12.20	22.20	27.50	15.30
1995	7.38	6.92	1,195.00	717.90	410.90	143.50	646.10	63.00	20.50	117.30	53.40	16.90
1996	6.06	2.55	283.50	924.60	950.60	337.00	49.70	10.70	0.41	4.85	17.90	6.35
1997	1.10	0.64	1.08	5,510.00	751.20	188.40	179.50	71.90	41.50	51.30	25.20	19.30
1998	10.70	209.70	657.90	905.00	1,246.00	630.30	1,129.00	240.10	96.50	145.80	111.20	187.70
1999	72.80	49.80	660.70	530.90	411.90	274.30	151.30	156.50	437.70	143.00	79.70	44.00
2000	26.40	65.40	409.00	236.00	211.00	126.00	288.00	48.30	3.34	7.48	16.20	3.85
2001	1.26	1.09	2.35	3,000.00	528.00	163.00	109.00	18.00	2.55	10.88	16.07	9.53

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1945 through September 1956) historic streamflow, in cubic feet per second, for the Sheyenne River near Harvey, N. Dak.												
1931	--	--	--	--	--	--	--	--	--	--	--	--
1932	--	--	--	--	--	--	--	--	--	--	--	--
1933	--	--	--	--	--	--	--	--	--	--	--	--
1934	--	--	--	--	--	--	--	--	--	--	--	--
1935	--	--	--	--	--	--	--	--	--	--	--	--
1936	--	--	--	--	--	--	--	--	--	--	--	--
1937	--	--	--	--	--	--	--	--	--	--	--	--
1938	--	--	--	--	--	--	--	--	--	--	--	--
1939	--	--	--	--	--	--	--	--	--	--	--	--
1940	--	--	--	--	--	--	--	--	--	--	--	--
1941	--	--	--	--	--	--	--	--	--	--	--	--
1942	--	--	--	--	--	--	--	--	--	--	--	--
1943	--	--	--	--	--	--	--	--	--	--	--	--
1944	--	--	--	--	--	--	--	--	--	--	--	--
1945	--	--	--	--	--	--	--	--	--	0.00	0.29	0.40
1946	0.10	0.00	23.20	7.16	1.15	0.19	2.25	0.01	0.00	0.00	0.05	0.03
1947	0.00	0.00	23.90	15.60	3.86	7.12	6.81	0.36	0.17	0.58	0.68	0.62
1948	0.11	0.00	0.20	210.00	29.30	3.24	1.19	0.24	0.00	0.00	0.00	0.00
1949	0.00	0.00	0.29	165.00	7.70	6.83	1.15	0.00	0.00	0.00	0.00	0.00
1950	0.00	0.00	3.42	324.00	201.00	30.70	4.94	0.27	0.12	0.81	1.49	1.46
1951	1.77	0.80	2.16	125.00	22.50	39.60	4.50	1.02	2.83	1.13	1.22	1.54
1952	0.00	0.00	5.90	114.00	10.60	3.19	6.55	0.03	0.00	0.00	0.00	0.00
1953	0.00	0.00	6.91	7.64	12.50	8.65	3.11	0.00	0.00	0.00	0.00	0.08
1954	0.05	8.93	5.20	8.44	3.21	86.20	27.00	5.42	5.72	3.33	2.66	1.77
1955	0.21	0.00	18.10	32.40	10.90	13.80	2.28	0.08	0.00	0.00	0.00	0.00
1956	0.00	0.00	12.60	85.60	19.50	22.90	3.19	0.52	0.60	--	--	--
1957			--	--	--	--	--	--	--	--	--	--
1958	--	--	--	--	--	--	--	--	--	--	--	--
1959	--	--	--	--	--	--	--	--	--	--	--	--
1960	--	--	--	--	--	--	--	--	--	--	--	--
1961	--	--	--	--	--	--	--	--	--	--	--	--
1962	--	--	--	--	--	--	--	--	--	--	--	--
1963	--	--	--	--	--	--	--	--	--	--	--	--
1964	--	--	--	--	--	--	--	--	--	--	--	--
1965	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1945 through September 1956) historic streamflow, in cubic feet per second, for the Sheyenne River near Harvey, N. Dak.—Continued												
1966	--	--	--	--	--	--	--	--	--	--	--	--
1967	--	--	--	--	--	--	--	--	--	--	--	--
1968	--	--	--	--	--	--	--	--	--	--	--	--
1969	--	--	--	--	--	--	--	--	--	--	--	--
1970	--	--	--	--	--	--	--	--	--	--	--	--
1971	--	--	--	--	--	--	--	--	--	--	--	--
1972	--	--	--	--	--	--	--	--	--	--	--	--
1973	--	--	--	--	--	--	--	--	--	--	--	--
1974	--	--	--	--	--	--	--	--	--	--	--	--
1975	--	--	--	--	--	--	--	--	--	--	--	--
1976	--	--	--	--	--	--	--	--	--	--	--	--
1977	--	--	--	--	--	--	--	--	--	--	--	--
1978	--	--	--	--	--	--	--	--	--	--	--	--
1979	--	--	--	--	--	--	--	--	--	--	--	--
1980	--	--	--	--	--	--	--	--	--	--	--	--
1981	--	--	--	--	--	--	--	--	--	--	--	--
1982	--	--	--	--	--	--	--	--	--	--	--	--
1983	--	--	--	--	--	--	--	--	--	--	--	--
1984	--	--	--	--	--	--	--	--	--	--	--	--
1985	--	--	--	--	--	--	--	--	--	--	--	--
1986	--	--	--	--	--	--	--	--	--	--	--	--
1987	--	--	--	--	--	--	--	--	--	--	--	--
1988	--	--	--	--	--	--	--	--	--	--	--	--
1989	--	--	--	--	--	--	--	--	--	--	--	--
1990	--	--	--	--	--	--	--	--	--	--	--	--
1991	--	--	--	--	--	--	--	--	--	--	--	--
1992	--	--	--	--	--	--	--	--	--	--	--	--
1993	--	--	--	--	--	--	--	--	--	--	--	--
1994	--	--	--	--	--	--	--	--	--	--	--	--
1995	--	--	--	--	--	--	--	--	--	--	--	--
1996	--	--	--	--	--	--	--	--	--	--	--	--
1997	--	--	--	--	--	--	--	--	--	--	--	--
1998	--	--	--	--	--	--	--	--	--	--	--	--
1999	--	--	--	--	--	--	--	--	--	--	--	--
2000	--	--	--	--	--	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1956 through December 2001) and estimated (January 1931 through March 1956) historic streamflow, in cubic feet per second, for Baldhill Creek near Dazey, N. Dak.												
1931	2.02	8.08	16.98	31.63	9.23	12.81	3.41	2.37	2.00	2.26	6.25	5.45
1932	4.03	3.28	31.02	76.39	15.71	13.99	6.49	3.32	2.30	2.31	5.45	3.32
1933	2.53	2.48	57.60	55.65	19.30	7.44	4.30	1.93	1.31	1.30	2.72	2.12
1934	1.58	2.15	9.02	27.82	6.13	2.75	1.60	1.05	0.98	1.87	2.56	1.55
1935	1.44	2.42	16.48	24.74	11.60	10.16	11.82	14.90	3.73	2.89	2.86	3.08
1936	2.54	2.32	7.36	42.76	21.84	6.00	2.48	0.81	0.91	1.08	1.96	1.18
1937	1.23	0.86	5.07	27.07	11.11	11.26	4.01	2.42	2.33	1.47	2.61	1.78
1938	1.89	2.04	12.99	8.84	4.26	1.35	2.11	1.38	0.02	0.04	0.05	0.03
1939	0.05	0.07	13.21	22.24	3.38	2.34	0.26	0.00	0.00	0.01	0.00	0.00
1940	0.00	0.00	0.00	33.56	9.93	1.36	0.05	0.28	0.01	0.01	0.00	0.00
1941	0.00	0.00	13.27	185.95	18.74	21.14	9.58	2.88	7.11	8.31	8.45	4.69
1942	0.88	1.13	5.21	143.80	38.27	26.10	8.92	7.93	7.30	4.00	5.19	2.35
1943	2.08	4.35	91.71	176.39	29.95	65.18	20.98	6.36	1.28	0.58	4.09	2.61
1944	0.84	0.98	3.04	21.27	11.87	25.78	10.03	11.93	16.01	4.40	14.31	7.55
1945	2.47	3.02	106.31	36.22	17.82	15.18	4.78	3.22	2.34	1.94	3.73	2.48
1946	2.68	1.17	97.53	83.19	12.73	6.20	12.02	8.30	3.37	5.98	5.73	2.86
1947	2.96	1.68	46.09	125.92	15.94	16.28	6.78	2.98	0.85	4.43	4.28	3.64
1948	2.66	1.45	4.17	478.45	160.12	17.18	10.66	6.82	1.21	0.91	5.45	3.08
1949	1.62	1.56	11.31	299.29	33.88	18.21	15.50	2.80	0.24	4.21	3.59	2.06
1950	0.94	0.85	6.80	562.83	359.71	36.26	10.76	2.80	2.90	4.93	3.62	3.06
1951	2.23	1.95	11.25	96.42	18.26	9.39	4.18	1.14	3.75	3.39	2.51	1.89
1952	0.78	1.07	5.46	56.96	7.05	2.56	11.56	1.25	0.59	0.95	1.74	0.76
1953	0.25	0.75	2.00	3.65	6.33	13.58	18.98	0.86	0.20	1.06	1.43	0.93
1954	0.37	6.01	17.28	8.69	4.08	43.02	32.62	8.52	5.89	7.11	5.18	2.21
1955	0.45	0.76	3.19	55.57	8.88	20.43	5.69	0.61	0.06	0.92	1.03	0.53
1956	0.15	0.35	0.44	118.00	12.10	10.60	3.25	1.75	1.84	1.47	4.56	1.75
1957	0.68	0.00	7.85	9.60	8.93	5.32	8.64	5.78	58.50	29.80	20.50	7.42
1958	1.90	2.18	4.64	12.60	7.14	8.60	11.80	2.15	1.28	1.76	2.18	0.16
1959	0.00	0.00	7.87	6.97	6.84	5.81	3.32	1.50	1.25	2.60	0.38	0.61
1960	0.02	0.00	32.20	84.90	7.32	7.17	1.85	2.31	2.11	1.75	1.67	0.20
1961	0.14	0.04	9.81	7.47	5.39	0.91	0.87	0.90	1.94	1.66	1.41	0.57
1962	0.10	0.10	25.60	46.80	14.30	18.00	14.20	2.53	2.86	2.77	4.31	2.10
1963	0.09	0.00	2.42	9.97	5.65	3.92	1.77	1.00	1.00	0.97	1.25	0.73
1964	0.22	0.20	0.59	13.60	6.00	17.60	11.80	4.58	4.53	4.42	2.86	0.97
1965	0.43	0.41	2.22	248.30	19.50	8.85	11.80	6.80	7.94	9.66	5.63	3.06

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1956 through December 2001) and estimated (January 1931 through March 1956) historic streamflow, in cubic feet per second, for Baldhill Creek near Dazey, N. Dak.—Continued												
1966	0.24	0.09	163.80	28.70	26.30	22.80	19.70	5.97	2.87	3.59	3.34	1.94
1967	1.22	0.83	96.60	99.80	40.80	17.70	7.30	3.56	1.45	3.21	2.18	1.48
1968	0.56	0.55	20.00	14.20	17.30	31.60	11.10	4.88	4.04	4.11	4.90	3.27
1969	0.27	0.61	2.13	455.90	28.50	20.60	11.70	1.75	3.50	4.89	5.51	4.19
1970	1.79	2.00	12.70	43.70	26.40	50.60	10.90	6.13	6.86	5.67	6.82	2.62
1971	0.32	0.90	32.00	87.60	13.50	22.10	9.07	1.71	2.76	5.04	7.06	2.99
1972	1.38	0.19	66.20	79.80	33.70	13.60	2.57	2.76	1.94	2.75	2.81	1.90
1973	0.81	1.70	23.40	7.22	5.93	2.85	0.62	0.95	2.97	3.65	2.95	1.71
1974	0.39	0.73	2.40	232.90	37.40	16.50	2.23	1.91	1.44	2.54	3.84	3.03
1975	1.55	0.67	9.50	148.20	38.50	20.90	35.70	2.71	2.82	3.23	3.44	1.89
1976	1.02	3.66	76.80	33.70	7.59	2.41	1.17	0.09	0.13	1.25	2.00	0.72
1977	0.08	0.41	5.74	6.81	3.11	1.56	1.63	0.85	3.29	3.52	4.92	3.33
1978	0.73	0.18	59.80	83.70	12.00	3.35	0.82	0.81	0.74	1.77	1.70	0.76
1979	0.14	0.10	1.30	653.70	82.00	9.55	2.78	1.95	0.92	1.32	1.98	1.88
1980	0.93	0.45	15.40	29.50	2.69	1.84	0.24	1.98	1.12	1.75	1.67	1.03
1981	0.80	2.32	2.91	2.44	1.71	2.23	0.44	0.57	0.50	2.14	2.33	1.11
1982	0.48	1.61	67.50	75.00	10.40	6.48	4.56	0.95	0.61	13.10	4.62	5.40
1983	2.42	5.38	175.00	38.00	12.60	17.50	17.40	3.56	3.89	3.58	4.08	1.82
1984	1.91	4.28	143.30	60.40	23.70	5.39	0.64	0.08	0.09	1.69	2.54	1.76
1985	0.56	1.87	23.50	3.24	3.54	8.72	2.36	1.20	2.41	4.86	3.05	1.79
1986	2.33	1.73	48.60	31.10	37.40	4.73	5.66	4.62	5.19	7.03	4.54	4.35
1987	3.05	5.03	269.50	264.40	19.30	9.21	12.50	3.00	3.83	6.19	5.62	3.40
1988	1.05	1.68	41.40	25.50	9.73	1.94	0.35	0.67	0.55	0.94	2.18	1.62
1989	0.81	0.45	7.53	58.50	6.15	1.73	0.02	1.97	4.41	1.27	2.66	0.58
1990	0.00	0.06	2.86	12.30	2.08	12.30	7.31	0.27	0.50	0.96	1.11	0.79
1991	0.00	0.07	2.36	3.16	7.29	2.54	0.80	0.13	0.33	0.47	1.01	1.02
1992	1.50	4.61	78.70	7.10	2.58	2.14	2.67	0.65	1.80	1.78	2.09	0.88
1993	0.06	1.19	76.10	73.20	18.60	12.20	273.30	133.30	52.50	15.30	10.90	7.23
1994	5.38	4.84	195.90	125.40	35.40	49.40	51.50	14.60	40.10	106.40	48.70	16.10
1995	7.31	6.42	475.50	337.40	143.30	47.50	82.80	55.00	34.80	22.40	18.10	8.62
1996	6.34	5.40	106.60	672.80	134.10	53.00	45.50	28.80	8.69	8.82	7.41	5.72
1997	4.91	5.32	20.10	1,040.00	219.80	38.90	28.00	5.51	6.32	9.68	9.38	6.08
1998	3.28	34.20	127.50	104.30	32.30	8.15	7.82	3.37	2.87	7.78	8.92	7.85
1999	3.36	3.72	248.40	409.30	182.90	180.30	64.30	22.90	18.20	12.30	8.21	4.03
2000	1.58	14.50	24.20	29.20	24.90	91.80	63.90	25.70	14.70	12.30	54.90	13.00
2001	5.25	3.36	52.40	232.00	65.30	43.20	18.90	36.60	12.60	69.81	117.80	55.61

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1944 through September 1975 and March 1995 through December 2001) and estimated (January 1931 through March 1944 and October 1975 through February 1995) historic streamflow, in cubic feet per second, for the Maple River near Mapleton, N. Dak., and the Maple River at Mapleton, N. Dak.												
1931	0.01	1.48	9.54	28.32	4.88	10.71	0.70	0.99	0.22	0.40	3.35	1.06
1932	0.08	18.55	311.27	203.12	30.66	12.40	2.61	0.19	0.26	0.69	2.74	0.44
1933	0.02	0.12	129.80	97.52	19.42	4.33	1.13	0.15	0.07	0.04	1.00	0.20
1934	0.01	0.09	2.47	34.26	2.97	2.49	0.15	1.09	2.19	0.92	0.92	0.11
1935	0.00	0.20	71.79	33.23	22.98	7.28	8.80	0.73	0.27	0.40	1.08	0.38
1936	0.02	0.13	0.73	165.74	16.85	3.03	0.37	0.06	0.06	0.14	0.62	0.07
1937	0.00	0.13	0.34	46.81	9.53	8.64	0.98	3.02	1.54	0.14	0.94	0.14
1938	0.01	0.06	34.06	22.51	7.04	1.74	0.27	0.93	0.14	0.04	0.84	0.16
1939	0.01	0.05	104.39	38.33	1.72	3.08	0.51	0.06	0.04	0.04	1.00	0.25
1940	0.00	0.01	0.02	138.74	11.30	2.10	0.15	3.87	0.01	0.03	0.89	0.18
1941	0.01	0.07	23.10	407.85	16.74	30.19	9.61	0.94	1.99	7.71	6.92	2.16
1942	0.07	0.26	8.06	217.10	81.46	50.62	9.07	2.87	2.15	1.20	5.63	1.17
1943	0.16	0.21	241.25	110.98	36.54	245.06	56.95	1.64	0.31	0.31	6.00	1.51
1944	0.09	0.07	1.56	59.10	56.30	23.20	12.90	12.90	9.95	5.06	14.50	4.84
1945	0.33	0.00	93.20	86.40	25.20	16.50	3.60	3.37	0.47	1.32	2.35	0.79
1946	0.10	0.03	115.80	69.80	8.82	9.37	4.41	0.04	0.13	5.96	5.48	1.28
1947	0.13	0.00	100.70	945.60	59.30	353.20	17.90	1.02	4.04	2.38	6.48	5.61
1948	2.58	0.32	6.33	517.50	51.30	19.50	13.80	9.14	1.55	0.69	6.20	1.75
1949	0.04	0.00	8.96	209.10	15.40	8.07	7.26	0.23	0.00	0.47	2.73	1.00
1950	0.04	0.00	86.10	926.70	619.60	76.70	65.20	6.46	2.46	4.29	3.55	1.36
1951	0.71	0.20	7.37	234.10	16.10	11.60	11.40	6.02	10.80	4.61	6.10	6.32
1952	1.45	0.36	0.24	905.90	25.70	6.67	48.70	0.55	0.01	0.00	1.75	1.99
1953	1.42	1.47	25.00	21.00	88.50	716.50	63.40	51.10	1.78	0.80	5.90	5.17
1954	2.48	3.57	38.40	37.10	14.10	6.52	12.90	2.56	3.15	0.79	3.37	3.05
1955	1.48	0.25	0.18	117.90	6.30	13.40	63.20	9.47	0.28	0.62	1.99	0.63
1956	0.02	0.00	0.00	114.10	27.30	13.60	2.90	0.49	0.24	0.02	7.42	1.89
1957	0.50	0.15	7.10	27.10	13.50	54.30	13.80	15.20	25.50	10.30	19.40	7.33
1958	2.35	0.59	31.80	74.80	16.90	15.70	42.40	3.09	5.11	1.90	2.46	0.31
1959	0.00	0.00	10.20	13.90	8.35	113.20	21.00	1.10	0.00	0.77	1.84	1.10
1960	0.82	0.40	70.30	360.20	15.80	5.82	2.01	0.00	0.00	0.00	0.00	0.00
1961	0.00	0.00	30.10	18.00	17.30	1.71	0.00	0.00	3.98	22.80	3.38	2.05
1962	0.44	0.17	0.91	693.40	212.60	170.40	760.90	267.20	65.80	30.50	28.40	12.20
1963	0.77	0.00	15.50	159.70	33.20	34.90	12.60	6.67	5.63	3.15	5.12	1.06
1964	0.10	0.10	5.87	110.80	39.10	49.20	17.10	8.65	4.00	4.00	6.69	1.38
1965	1.20	0.56	0.30	1,149.00	92.50	42.40	64.60	58.20	40.10	38.40	21.20	10.90

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1944 through September 1975 and March 1995 through December 2001) and estimated (January 1931 through March 1944 and October 1975 through February 1995) historic streamflow, in cubic feet per second, for the Maple River near Mapleton, N. Dak., and the Maple River at Mapleton, N. Dak.—Continued												
1966	3.07	1.09	1,040.00	456.70	149.50	43.30	22.60	21.10	8.65	6.33	6.02	1.88
1967	0.82	0.85	78.70	379.00	168.70	28.80	6.55	1.22	0.65	2.97	5.25	2.46
1968	0.27	0.17	46.60	61.50	30.80	116.20	41.20	11.80	6.17	5.35	6.91	3.01
1969	0.05	0.00	0.00	1,708.00	151.50	35.60	373.40	35.50	22.00	15.70	13.30	7.10
1970	3.78	2.13	41.30	522.30	428.50	477.90	32.90	7.05	27.40	9.00	12.30	2.11
1971	0.49	0.00	206.50	129.80	27.50	38.80	54.70	5.80	27.70	49.10	36.20	11.20
1972	3.57	1.94	478.00	271.90	374.80	108.40	41.70	52.10	28.90	7.17	14.40	6.70
1973	4.30	4.85	402.50	79.90	23.70	8.09	1.04	1.93	12.70	9.16	7.63	3.81
1974	0.23	0.05	0.33	557.80	171.70	49.20	13.50	16.00	7.14	2.51	15.70	4.53
1975	1.16	0.00	0.94	1,305.00	327.60	345.50	2,375.00	50.30	27.20	1.31	15.67	8.59
1976	3.69	4.19	265.95	196.58	26.18	9.35	2.78	0.04	0.02	0.45	1.15	0.10
1977	0.00	0.20	1.76	19.39	12.05	1.80	1.25	0.09	1.51	5.44	5.90	2.83
1978	0.38	1.59	349.36	713.32	79.01	15.08	8.11	0.98	4.55	1.36	9.58	1.82
1979	0.32	1.58	2.51	1,915.23	359.09	83.65	33.38	13.69	2.58	5.53	9.63	3.59
1980	0.36	3.91	55.65	185.23	12.10	6.89	3.10	1.11	1.75	1.03	22.18	4.17
1981	0.22	4.02	8.66	59.15	9.52	14.50	26.52	7.03	2.18	6.25	32.02	1.35
1982	0.07	3.43	83.60	615.59	66.09	37.95	27.92	1.21	0.28	77.29	43.68	21.70
1983	8.59	6.89	495.50	197.20	59.39	54.58	137.74	27.71	43.79	32.99	33.70	13.20
1984	7.62	6.02	475.83	325.01	83.18	41.04	6.63	0.03	1.26	7.51	11.65	4.48
1985	1.27	1.88	401.46	72.10	43.78	14.70	2.87	17.55	0.58	5.20	8.21	13.76
1986	10.91	4.43	460.68	223.64	198.39	23.92	14.65	6.38	4.10	18.09	14.04	30.92
1987	13.82	5.79	1,163.95	767.37	139.86	38.12	5.10	175.45	49.91	19.33	17.24	12.38
1988	6.15	12.52	407.26	210.85	40.67	4.04	0.52	0.56	0.37	0.97	3.31	0.90
1989	0.30	3.40	5.47	597.01	54.31	6.46	1.23	0.98	1.08	0.75	8.01	0.88
1990	0.05	0.90	2.02	25.35	12.92	5.74	1.35	3.47	1.49	3.64	2.41	0.49
1991	0.07	2.34	6.15	25.25	80.65	40.78	3.01	0.38	0.62	0.14	2.00	2.66
1992	1.15	0.14	314.61	30.79	14.90	8.88	8.46	12.42	16.75	8.18	5.23	1.07
1993	1.15	4.43	172.73	191.42	45.71	63.85	1,305.24	619.82	223.12	67.72	25.25	30.44
1994	11.85	15.46	672.51	212.53	154.10	77.80	898.12	249.63	378.35	520.78	63.12	70.16
1995	31.05	15.96	951.50	692.90	300.50	46.20	226.10	47.70	51.60	51.10	15.10	6.97
1996	3.21	1.37	501.80	1,398.00	362.50	88.90	18.70	13.20	39.00	13.10	16.70	7.11
1997	2.09	0.58	3.07	2,956.00	597.60	166.20	280.20	29.70	38.60	34.00	22.60	22.90
1998	12.50	288.40	1,376.00	491.00	377.80	220.50	218.30	37.10	14.70	96.50	79.80	124.80
1999	20.70	18.40	949.70	1,145.00	1,035.00	94.20	86.80	40.70	401.10	53.90	38.10	22.20
2000	13.40	44.90	434.00	141.00	58.10	867.00	373.00	19.40	79.60	27.50	256.00	25.90
2001	15.00	13.60	181.00	1,814.00	303.00	223.00	78.60	57.00	52.50	24.45	33.87	16.10

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (August 1946 through December 2001) and estimated (January 1931 through July 1946) historic streamflow, in cubic feet per second, for the Rush River at Amenia, N. Dak.												
1931	0.00	0.11	6.08	5.95	1.32	0.91	0.03	0.01	0.01	0.03	0.04	0.03
1932	0.02	1.31	16.10	23.38	3.15	0.22	0.01	0.01	0.01	0.03	0.01	0.01
1933	0.00	0.00	43.79	14.45	3.20	0.13	0.01	0.01	0.01	0.04	0.04	0.03
1934	0.02	0.04	2.19	4.87	0.80	0.05	0.00	0.00	0.01	0.06	0.01	0.01
1935	0.01	0.04	5.79	3.01	2.35	0.39	0.29	0.40	0.01	0.05	0.01	0.01
1936	0.00	0.00	1.57	18.57	1.71	0.07	0.01	0.00	0.00	0.01	0.01	0.00
1937	0.01	0.00	0.86	1.43	0.96	0.46	0.03	0.05	0.04	0.02	0.01	0.00
1938	0.00	0.00	3.94	0.59	0.71	1.44	0.05	0.03	0.01	0.01	0.01	0.01
1939	0.01	0.00	4.74	3.54	0.17	0.08	0.01	0.00	0.00	0.00	0.01	0.00
1940	0.00	0.00	0.06	15.18	1.14	0.08	0.01	0.02	0.01	0.01	0.03	0.01
1941	0.01	0.02	7.52	51.50	1.70	0.77	0.02	0.04	0.06	0.11	0.08	0.07
1942	0.00	0.00	3.64	25.21	8.50	7.78	0.23	0.11	4.49	1.03	0.69	0.03
1943	0.02	0.01	21.71	11.79	3.77	31.03	12.14	0.37	0.31	0.14	0.23	0.04
1944	0.01	0.02	0.96	6.25	1.99	12.07	46.16	0.63	55.49	3.45	4.58	0.10
1945	0.05	0.04	69.47	3.83	2.17	3.36	0.17	0.07	0.46	0.43	0.16	0.06
1946	0.03	0.01	30.54	4.90	1.93	1.48	14.45	0.00	0.00	0.30	0.85	0.17
1947	0.00	0.00	30.70	174.40	7.83	38.80	1.53	0.00	0.00	0.04	0.10	0.13
1948	0.10	0.00	0.00	137.90	5.50	1.50	0.51	0.11	0.00	0.00	0.18	0.03
1949	0.00	0.00	15.20	40.60	2.58	1.09	1.98	0.10	0.00	0.00	0.04	0.00
1950	0.00	0.00	24.70	203.70	81.30	17.10	2.60	0.03	0.00	0.15	0.15	0.00
1951	0.00	0.00	29.80	28.20	2.20	3.06	0.63	0.00	0.26	0.01	0.73	0.28
1952	0.00	0.00	0.00	76.10	1.68	0.08	1.13	0.01	0.00	0.00	0.00	0.00
1953	0.00	0.00	5.30	2.23	5.66	48.90	8.10	0.91	0.00	0.00	0.00	0.00
1954	0.00	0.16	5.97	9.09	2.09	1.76	0.04	0.00	0.00	0.00	0.00	0.00
1955	0.00	0.00	6.13	11.50	0.12	1.38	0.00	1.73	0.00	0.00	0.00	0.00
1956	0.00	0.00	0.00	25.80	2.79	8.81	0.07	0.00	0.00	0.00	0.00	0.00
1957	0.00	0.00	3.77	1.72	2.17	16.60	6.65	2.64	1.73	0.90	2.75	0.06
1958	0.00	1.18	1.89	3.40	1.87	3.09	9.72	0.00	0.00	0.00	0.00	0.00
1959	0.00	0.00	16.30	1.44	1.23	4.50	0.19	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	27.50	49.00	2.59	0.95	11.50	0.01	0.00	0.00	0.00	0.00
1961	0.00	0.00	7.54	2.94	2.15	0.15	0.00	0.00	0.00	4.24	0.13	0.00
1962	0.00	0.00	11.30	93.30	16.80	8.07	38.60	2.76	1.50	0.51	2.63	1.24
1963	0.00	0.00	2.40	10.20	3.42	3.87	0.02	0.00	0.00	0.00	0.00	0.00
1964	0.00	0.00	0.00	21.80	4.88	10.20	0.43	0.03	0.10	0.12	0.66	0.10
1965	0.00	0.00	0.00	108.90	15.20	4.49	5.98	0.10	0.59	4.20	1.17	0.35

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (August 1946 through December 2001) and estimated (January 1931 through July 1946) historic streamflow, in cubic feet per second, for the Rush River at Amenia, N. Dak.—Continued												
1966	0.00	0.00	58.90	48.20	14.10	4.60	2.44	2.16	0.19	0.02	0.01	0.00
1967	0.00	0.00	19.00	50.30	9.83	2.74	1.17	0.00	0.00	0.00	0.00	0.00
1968	0.00	0.00	10.20	9.75	6.71	30.90	1.82	0.00	0.00	0.09	0.47	0.18
1969	0.00	0.00	0.00	238.20	8.42	5.44	22.70	0.68	0.34	0.74	1.67	0.32
1970	0.03	0.01	32.30	112.60	24.30	31.30	1.53	0.04	0.47	0.24	1.09	0.12
1971	0.00	0.00	20.50	18.40	6.96	2.63	0.48	0.00	0.00	0.59	2.15	0.35
1972	0.02	0.00	20.90	38.60	13.90	1.85	1.11	0.32	0.02	0.24	0.98	0.04
1973	0.00	0.00	33.80	3.02	1.39	0.20	0.00	0.04	7.88	2.63	1.66	0.23
1974	0.00	0.00	0.00	136.50	25.70	10.90	3.82	0.45	0.01	0.00	1.45	0.08
1975	0.00	0.00	0.11	286.30	43.80	40.20	39.50	0.08	0.00	0.07	0.31	0.04
1976	0.00	2.21	35.40	13.70	1.46	0.03	0.00	0.00	0.00	0.00	0.00	0.00
1977	0.00	0.00	2.35	3.00	2.35	0.39	0.00	0.00	0.00	1.33	0.09	0.00
1978	0.00	0.00	81.80	43.50	7.35	4.81	0.39	0.07	0.08	0.00	0.00	0.00
1979	0.00	0.00	0.00	381.90	20.00	8.94	1.17	0.07	0.00	0.00	0.14	0.18
1980	0.00	0.00	11.10	16.00	0.87	0.30	0.00	0.49	0.54	0.00	0.12	0.05
1981	0.00	0.37	1.73	1.12	2.94	3.39	0.16	0.00	0.00	0.00	0.00	0.00
1982	0.00	0.00	3.55	141.20	17.70	1.66	0.00	0.00	0.00	11.40	3.50	1.02
1983	0.00	0.36	35.80	18.30	6.85	36.30	10.60	0.02	0.00	0.00	0.00	0.00
1984	0.00	0.00	135.50	52.50	4.79	21.60	1.16	0.00	0.00	0.00	0.00	0.00
1985	0.00	0.00	12.70	4.67	11.10	7.08	1.78	0.00	0.00	0.00	0.00	0.00
1986	0.00	0.00	40.20	91.80	61.40	0.99	40.70	2.77	1.35	1.71	1.67	0.83
1987	0.45	1.79	101.40	17.70	26.30	7.00	5.78	0.95	0.07	0.00	0.55	0.56
1988	0.06	0.06	4.39	6.91	1.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00
1989	0.00	0.00	16.80	84.70	2.34	1.18	0.00	0.00	5.87	0.08	0.00	0.00
1990	0.00	0.00	0.94	4.43	3.24	21.10	6.93	0.01	0.00	0.00	0.00	0.00
1991	0.00	0.00	3.77	1.48	10.70	1.52	6.43	0.14	0.00	0.00	0.00	0.00
1992	0.00	0.00	23.00	4.08	1.34	5.57	20.10	0.01	0.00	0.00	0.00	0.00
1993	0.00	0.00	38.30	29.30	7.28	7.49	168.00	22.30	0.85	1.95	2.09	0.00
1994	0.00	0.00	67.40	16.60	7.86	3.72	58.50	22.10	40.10	50.70	8.60	4.28
1995	1.62	0.73	160.00	69.40	37.90	1.88	16.20	4.77	3.91	12.30	7.68	1.74
1996	0.98	0.91	50.50	198.70	64.40	8.03	1.93	1.45	47.30	3.08	7.30	3.57
1997	2.84	2.20	37.80	530.60	36.10	78.10	54.50	1.20	3.59	5.96	4.09	2.84
1998	1.06	84.20	126.50	17.30	39.70	123.40	57.70	0.96	0.17	15.20	8.83	12.50
1999	2.16	2.32	199.90	119.40	55.00	3.09	6.69	2.21	4.90	1.66	1.18	0.85
2000	0.30	2.71	20.00	10.40	6.01	92.30	8.86	1.10	0.66	1.72	22.10	0.95
2001	0.95	0.85	9.15	196.00	43.60	4.34	2.52	6.29	1.59	1.18	2.63	2.04

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1931 through December 2001) and estimated (January through March 1931) historic streamflow, in cubic feet per second, for the Buffalo River near Dilworth, Minn.												
1931	5.32	16.83	68.68	33.50	27.20	26.10	17.40	12.70	6.18	13.30	18.00	14.00
1932	10.80	11.50	54.20	123.00	51.40	31.60	6.66	2.85	5.73	12.70	9.67	5.88
1933	4.62	4.40	90.50	119.30	60.90	24.00	9.01	7.27	7.78	15.30	17.60	15.00
1934	11.00	15.00	38.00	141.30	28.50	15.10	4.09	1.45	5.73	19.40	10.60	9.64
1935	9.16	15.00	123.80	76.80	60.30	42.90	40.20	15.90	8.66	16.80	9.99	6.29
1936	2.97	1.00	65.00	579.10	98.30	17.60	2.23	0.00	0.79	6.39	8.74	6.00
1937	6.00	5.00	3.00	136.80	104.60	46.90	14.10	17.20	14.80	11.40	10.70	4.75
1938	4.34	5.46	105.70	51.20	247.10	85.40	17.10	7.00	7.23	7.50	11.30	7.97
1939	5.80	4.17	216.00	270.20	32.20	18.80	7.84	1.74	1.75	5.48	10.50	8.16
1940	0.87	0.76	2.26	228.80	64.10	18.00	6.26	11.10	5.78	8.99	14.90	9.48
1941	9.44	9.84	61.60	350.60	46.70	61.50	12.30	7.40	19.10	25.50	23.90	11.20
1942	2.24	1.56	29.10	87.10	295.80	208.70	35.80	31.40	152.70	74.80	58.00	21.20
1943	10.70	8.12	74.20	1,158.00	234.20	434.00	247.50	109.30	41.80	28.50	36.70	15.50
1944	8.65	9.76	23.40	214.30	230.10	263.40	473.30	710.00	517.50	134.40	128.60	63.80
1945	21.60	15.90	861.30	582.80	246.40	133.90	31.10	22.20	50.70	49.10	31.00	20.60
1946	13.10	9.52	441.40	229.80	101.00	86.90	269.40	53.10	32.20	76.40	66.00	41.40
1947	30.10	21.50	127.70	1,054.00	267.90	274.10	67.70	18.40	20.00	27.10	25.70	22.60
1948	17.00	16.20	44.40	618.10	98.70	62.10	34.70	23.60	14.60	13.60	17.60	14.00
1949	10.90	9.84	18.20	215.30	108.50	36.80	101.40	55.10	17.00	24.90	28.90	21.50
1950	9.55	6.18	202.50	1,577.00	852.20	167.50	53.10	16.10	12.70	19.70	17.30	15.60
1951	13.50	13.80	19.20	800.40	144.30	173.30	51.60	32.90	38.70	57.20	44.50	38.60
1952	27.30	26.70	28.80	1,284.00	120.10	32.70	507.90	231.90	91.70	35.80	40.10	23.10
1953	15.70	17.40	202.30	295.00	249.50	955.80	132.90	206.00	53.50	29.70	31.10	26.10
1954	22.10	31.90	98.90	358.00	263.30	142.70	45.50	20.30	25.80	39.00	32.60	18.60
1955	13.00	13.30	14.50	367.80	89.30	99.50	466.10	435.30	55.90	44.90	30.60	20.90
1956	16.80	20.10	25.00	1,034.00	221.40	98.20	26.00	23.70	14.10	19.70	38.90	18.00
1957	13.90	14.20	187.40	346.10	145.10	210.10	198.10	65.20	336.00	186.20	159.70	51.40
1958	31.60	26.60	60.70	115.90	77.80	139.50	653.10	53.80	79.80	51.10	85.00	39.00
1959	16.90	13.60	116.50	212.30	171.40	389.00	388.40	87.50	54.20	52.00	40.50	35.00
1960	34.30	26.90	62.30	837.10	356.50	126.00	103.00	42.00	44.20	27.40	30.90	20.70
1961	17.50	16.50	142.60	162.70	247.20	51.90	19.40	9.02	16.20	26.20	22.10	15.10
1962	9.89	11.40	15.00	673.60	906.20	2,138.00	563.40	153.40	65.50	56.10	68.10	35.40
1963	9.60	6.23	94.70	232.40	158.50	492.20	29.80	70.60	101.80	38.20	34.10	20.60
1964	16.80	18.10	44.50	854.10	349.10	119.20	43.50	18.40	29.00	34.80	34.60	14.60
1965	15.80	16.40	17.00	1,392.00	309.20	260.80	77.60	40.30	55.80	110.70	73.20	65.30

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1931 through December 2001) and estimated (January through March 1931) historic streamflow, in cubic feet per second, for the Buffalo River near Dilworth, Minn.—Continued												
1966	36.50	29.10	1,308.00	638.60	405.50	105.30	82.50	185.70	49.10	57.90	43.30	33.90
1967	36.30	39.90	195.10	851.30	280.70	328.10	84.10	20.50	16.00	20.30	19.80	19.00
1968	10.50	10.30	92.40	169.10	129.40	108.10	75.50	22.40	32.60	57.10	53.30	27.40
1969	17.30	15.00	17.90	1,903.00	195.60	63.80	98.40	31.70	17.20	35.20	40.60	25.30
1970	19.10	18.40	42.80	439.50	258.50	245.30	51.40	9.10	9.44	20.30	34.50	18.50
1971	12.50	13.80	83.60	255.30	84.40	59.30	116.10	21.20	122.00	185.60	305.40	97.00
1972	34.90	30.40	714.40	622.70	419.60	134.90	44.80	46.60	29.50	28.20	42.60	25.00
1973	15.70	15.70	122.20	97.60	66.80	36.20	22.90	23.50	131.70	184.20	82.50	56.40
1974	30.50	32.60	52.00	773.80	455.60	186.10	69.00	55.00	29.70	33.00	46.60	27.40
1975	20.20	19.00	27.00	951.10	394.40	805.10	2,814.00	78.90	31.40	48.00	58.70	33.20
1976	25.30	28.50	194.50	306.60	66.50	23.80	10.10	1.74	2.54	8.42	12.50	8.46
1977	8.82	9.37	41.40	89.30	35.20	37.00	28.70	5.48	36.70	96.60	67.90	66.90
1978	51.20	30.70	388.50	1,984.00	187.50	61.30	36.30	13.40	9.52	12.80	19.30	18.10
1979	14.30	13.00	17.90	1,335.00	323.00	121.90	187.90	53.70	16.90	18.70	60.10	33.70
1980	21.60	23.80	67.70	496.50	58.40	33.90	12.90	10.40	29.80	34.40	37.00	24.30
1981	17.50	29.00	61.60	83.40	152.10	46.80	40.40	61.50	37.50	79.40	72.30	33.20
1982	13.30	14.40	237.90	714.50	152.20	55.50	77.90	27.00	17.70	131.80	58.80	44.90
1983	25.40	26.60	202.70	145.70	103.80	75.80	806.90	106.40	59.80	77.60	71.00	46.00
1984	28.80	61.10	617.90	534.90	126.10	564.10	55.20	13.30	10.80	150.90	70.40	41.50
1985	26.00	20.70	343.20	174.80	644.00	624.00	146.90	97.00	140.70	114.20	79.00	58.20
1986	46.70	44.30	581.20	1,364.00	908.90	436.20	152.40	58.00	200.80	135.30	116.10	80.10
1987	53.50	55.80	554.00	228.60	154.40	65.70	35.20	35.90	27.00	30.80	45.80	38.10
1988	23.30	22.50	263.30	274.90	80.90	29.40	8.18	13.30	14.10	17.20	23.90	22.00
1989	21.00	19.70	49.90	1,359.00	134.70	56.00	17.20	17.60	93.80	36.30	32.20	19.70
1990	20.40	23.60	106.00	217.40	141.80	135.80	37.20	11.00	10.90	22.90	46.40	25.90
1991	14.70	19.10	82.80	138.30	260.50	110.70	150.10	19.60	17.10	25.50	35.00	33.10
1992	30.80	38.20	171.10	105.20	75.30	180.10	152.10	33.00	52.30	32.70	55.90	35.90
1993	25.50	27.00	125.30	632.60	149.50	257.40	1,495.00	910.50	158.70	83.10	73.40	66.80
1994	53.50	50.10	630.80	536.30	292.90	116.10	155.40	66.20	49.60	119.60	109.70	61.20
1995	46.00	48.30	682.20	459.80	279.60	76.70	206.60	45.30	33.40	200.00	118.90	61.20
1996	38.00	35.00	152.70	1,069.00	720.80	223.90	52.10	32.30	26.40	54.30	110.30	56.20
1997	36.60	34.10	33.50	3,412.00	451.40	331.20	461.50	103.10	107.40	195.20	172.90	137.20
1998	85.70	284.90	785.30	558.20	1,144.00	706.20	1,474.00	94.90	59.30	278.90	256.00	239.90
1999	73.40	91.70	451.70	756.90	638.40	288.90	261.40	142.70	484.30	173.00	123.00	90.10
2000	69.40	102.00	720.00	388.00	211.00	1,102.00	512.00	77.60	188.00	162.00	575.00	142.00
2001	99.00	88.60	86.10	2,761.00	625.00	484.00	132.00	59.20	52.20	102.00	153.00	126.00

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1955 through September 1963 and October 1980 through August 1986; incomplete winter data for October 1981 through February 1986) and estimated (January 1931 through September 1955, October 1963 through September 1980, September 1986 through December 2001, and missing winter data for October 1981 through February 1986) historic streamflow, in cubic feet per second, for the Elm River near Kelso, N. Dak.												
1931	0.00	0.04	0.49	0.26	0.02	0.03	0.13	0.00	0.00	0.00	0.00	0.00
1932	0.00	0.54	61.39	25.53	0.61	0.23	0.40	0.00	0.00	0.00	0.01	0.00
1933	0.00	0.00	18.48	4.61	0.20	0.06	0.19	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.08	0.40	0.01	0.01	0.03	0.00	0.01	0.00	0.00	0.00
1935	0.00	0.00	2.93	0.37	0.30	8.20	1.12	0.00	0.00	0.00	0.00	0.00
1936	0.00	0.00	0.00	15.89	0.14	0.01	0.07	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	0.08	0.03	0.14	0.17	0.02	0.01	0.00	0.00	0.00
1938	0.00	0.00	0.62	0.01	0.05	0.00	0.15	0.02	0.00	0.00	0.00	0.00
1939	0.00	0.00	6.37	0.52	0.00	0.12	0.10	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	10.50	0.05	0.01	0.03	0.04	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.28	129.75	0.14	4.38	1.21	0.00	0.01	0.06	0.04	0.01
1942	0.00	0.00	0.03	29.82	6.94	1.26	1.15	0.02	0.01	0.00	0.00	0.00
1943	0.00	0.00	36.18	6.24	0.95	9.18	5.60	0.01	0.00	0.00	0.00	0.00
1944	0.00	0.00	0.00	1.69	0.20	0.60	2.79	1.88	0.23	0.01	0.26	0.05
1945	0.00	0.00	6.29	0.61	0.25	0.41	0.65	0.00	0.00	0.01	0.00	0.00
1946	0.00	0.00	34.25	1.02	0.18	0.13	8.03	0.00	0.00	0.00	0.00	0.00
1947	0.00	0.00	10.07	73.53	1.30	3.21	1.23	0.01	0.00	0.00	0.01	0.00
1948	0.00	0.00	0.00	1,867.56	26.61	0.72	1.98	0.15	0.00	0.00	0.02	0.00
1949	0.00	0.00	0.00	129.23	1.27	25.70	1.73	0.23	0.00	0.02	0.07	0.04
1950	0.01	0.01	1.09	2,636.17	3,643.68	18.98	13.18	0.21	0.08	0.06	0.10	0.08
1951	0.06	0.05	5.41	38.28	0.61	0.29	1.60	0.00	0.03	0.01	0.03	0.01
1952	0.03	0.01	0.08	49.83	0.08	0.00	3.99	0.13	0.00	0.00	0.01	0.01
1953	0.01	0.01	0.39	0.17	0.67	19.16	6.12	0.01	0.01	0.00	0.01	0.02
1954	0.01	0.36	1.91	1.46	0.28	2.08	8.34	0.00	0.00	0.00	0.00	0.00
1955	0.00	0.00	0.00	20.43	0.06	4.42	6.46	0.01	0.00	0.00	0.00	0.00
1956	0.00	0.00	0.00	10.20	2.08	2.07	0.00	0.00	0.00	0.00	0.00	0.00
1957	0.00	0.00	0.27	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1958	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1959	0.00	0.00	0.71	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	5.16	46.80	0.16	0.01	0.00	0.00	0.00	0.00	0.00	0.00
1961	0.00	0.00	1.87	0.21	0.05	0.00	0.00	0.00	0.00	0.28	0.00	0.00
1962	0.00	0.00	0.00	91.50	11.40	8.94	37.60	1.43	5.19	1.11	0.59	0.50
1963	0.03	0.00	1.72	8.83	0.92	0.49	0.00	0.00	0.00	0.00	0.00	0.00
1964	0.01	0.03	0.00	9.60	0.25	71.64	5.94	0.05	0.10	0.92	0.09	0.02
1965	0.02	0.01	0.00	1,451.44	37.00	5.56	2.74	0.73	1.64	3.01	0.98	0.42

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1955 through September 1963 and October 1980 through August 1986; incomplete winter data for October 1981 through February 1986) and estimated (January 1931 through September 1955, October 1963 through September 1980, September 1986 through December 2001, and missing winter data for October 1981 through February 1986) historic streamflow, in cubic feet per second, for the Elm River near Kelso, N. Dak.—Continued												
1966	0.17	0.07	1,420.26	107.69	33.71	8.57	3.77	18.25	0.47	0.14	0.16	0.03
1967	0.04	0.03	66.93	461.47	145.39	10.39	1.00	0.01	0.00	0.01	0.02	0.02
1968	0.03	0.01	9.67	1.05	1.05	133.60	1.25	0.50	0.24	0.09	0.20	0.10
1969	0.03	0.02	0.01	1,365.00	21.06	7.18	7.61	0.31	1.29	0.98	0.34	0.30
1970	0.16	0.18	0.07	742.14	145.36	66.69	3.41	0.11	0.12	0.02	0.26	0.09
1971	0.02	0.04	3.83	115.68	4.30	5.50	7.85	0.07	0.03	1.17	2.61	0.36
1972	0.09	0.04	163.62	294.87	75.39	10.26	1.23	0.07	0.01	0.00	0.07	0.03
1973	0.02	0.06	63.02	0.98	0.25	0.22	0.15	0.01	0.03	0.15	0.11	0.04
1974	0.00	0.02	0.00	595.45	114.89	33.74	1.04	2.06	0.06	0.01	0.06	0.09
1975	0.08	0.06	0.34	435.13	80.63	8.81	92.69	0.01	0.01	0.00	0.04	0.02
1976	0.03	0.04	44.29	23.66	0.41	0.07	0.42	0.00	0.00	0.01	0.00	0.00
1977	0.00	0.00	0.00	0.11	0.06	0.04	0.21	0.00	0.01	0.03	0.23	0.07
1978	0.03	0.01	78.00	477.82	6.43	1.51	1.05	0.00	0.05	0.00	0.00	0.01
1979	0.01	0.01	0.00	4,780.82	157.71	5.84	3.54	0.32	0.02	0.03	0.07	0.11
1980	0.04	0.04	1.73	20.59	0.06	0.01	0.46	0.00	0.01	0.00	0.00	0.00
1981	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.09	0.18
1982	0.04	0.03	4.72	240.10	14.50	2.35	2.83	0.00	0.00	4.58	0.58	0.65
1983	0.12	0.10	131.00	68.30	9.03	111.40	20.50	4.00	2.38	0.92	0.87	0.33
1984	0.11	0.08	146.70	54.60	8.29	94.10	0.54	0.00	0.03	0.06	0.03	0.00
1985	0.00	0.01	50.30	11.70	2.69	1.05	0.00	0.32	0.00	0.03	0.04	0.05
1986	0.06	0.05	85.20	97.60	24.50	2.79	3.05	0.16	0.04	0.29	0.32	0.45
1987	0.23	0.07	946.77	566.54	26.53	11.36	0.70	26.07	2.99	0.33	0.82	0.68
1988	0.22	0.28	107.20	27.86	1.24	0.26	0.10	0.00	0.00	0.00	0.01	0.02
1989	0.03	0.03	0.01	315.50	2.54	0.58	0.21	0.00	0.00	0.00	0.00	0.00
1990	0.00	0.00	0.00	0.20	0.07	0.11	0.22	0.03	0.04	0.05	0.00	0.00
1991	0.00	0.02	0.02	0.20	6.77	2.75	3.47	0.00	0.01	0.00	0.01	0.00
1992	0.00	0.00	62.76	0.31	0.10	0.17	1.09	0.27	0.46	0.07	0.38	0.13
1993	0.03	0.05	18.09	22.23	1.65	2.81	82.69	229.40	39.44	3.57	1.64	1.23
1994	0.72	0.40	303.43	28.38	33.75	20.85	3.65	47.86	97.99	168.54	35.15	7.15
1995	1.29	0.42	1,769.42	512.38	230.31	11.97	12.94	8.34	4.94	9.44	4.08	0.68
1996	0.52	0.21	3.58	2,197.22	195.80	18.69	6.82	0.36	0.11	0.85	0.61	0.28
1997	0.23	0.37	0.59	6,836.41	127.66	21.56	17.55	6.07	0.73	0.86	0.80	0.26
1998	0.05	46.07	423.35	49.48	9.40	9.75	21.97	0.20	0.03	1.26	1.60	2.01
1999	0.41	0.25	868.86	1,260.42	1,337.73	183.80	22.71	3.66	7.71	1.46	3.41	1.80
2000	1.10	11.47	9.98	891.28	4.84	14.54	20.20	7.60	0.34	5.66	82.14	26.28
2001	5.48	8.50	24.81	4,201.92	122.49	67.18	18.91	34.72	0.73	0.38	2.51	6.18

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1944 through September 1984 and May 1985 through December 2001) and estimated (January 1931 through March 1944 and October 1984 through April 1985) historic streamflow, in cubic feet per second, for the Wild Rice River at Hendrum, Minn.												
1931	2.09	20.31	114.04	60.86	53.80	51.07	20.59	13.91	5.67	14.73	14.56	10.53
1932	11.37	12.29	84.72	223.11	106.65	62.46	6.23	2.16	5.16	13.91	5.35	2.18
1933	3.95	3.72	160.39	216.40	127.99	46.75	9.07	6.95	7.56	17.54	14.05	11.94
1934	11.63	17.11	54.45	256.26	56.57	28.70	3.39	0.93	5.16	23.57	6.21	5.35
1935	9.26	17.11	236.92	139.39	126.63	86.18	58.40	18.40	8.64	19.71	5.64	2.46
1936	2.28	0.59	106.22	1,048.45	214.16	33.73	1.59	2.08	0.44	5.91	4.55	2.26
1937	5.47	4.36	2.31	248.11	228.96	94.66	15.85	20.29	16.83	12.16	6.30	1.48
1938	3.65	4.86	194.60	92.97	577.01	177.91	20.15	6.63	6.90	7.22	6.88	3.78
1939	5.24	3.48	473.77	489.64	64.50	36.15	7.63	1.17	1.18	4.89	6.11	3.95
1940	0.49	0.42	1.62	414.70	135.23	34.53	5.77	11.76	5.22	9.05	10.74	5.19
1941	9.61	10.12	99.35	635.14	96.20	125.91	13.37	7.10	23.12	33.13	22.99	7.02
1942	1.60	1.02	39.06	158.06	700.15	455.82	50.55	42.93	307.64	126.52	95.88	22.38
1943	11.24	7.97	125.26	2094.76	544.69	985.32	561.28	202.88	61.31	38.06	45.88	12.67
1944	8.62	10.02	29.77	303.40	501.60	661.20	1,122.00	960.00	762.30	299.00	227.60	138.50
1945	76.00	63.40	1,077.00	1,451.00	670.80	243.50	99.60	93.90	148.80	225.30	141.50	71.60
1946	35.20	22.90	744.70	881.50	425.80	264.70	201.30	30.20	35.80	191.50	112.70	70.30
1947	54.50	46.70	176.60	1,789.00	662.80	735.10	98.00	13.60	5.99	13.30	9.69	6.64
1948	4.09	3.40	3.24	837.40	156.50	38.70	18.40	3.93	0.18	0.44	3.32	1.73
1949	0.80	0.40	0.46	226.90	99.00	203.70	428.30	274.50	55.40	41.20	44.00	31.40
1950	13.40	12.60	84.60	1,738.00	1,634.00	482.50	258.20	7.50	4.56	6.19	4.75	3.56
1951	3.03	2.81	8.16	798.90	196.70	71.80	8.82	7.76	16.60	16.60	25.20	152.10
1952	99.20	83.10	80.80	1,239.00	296.10	9.15	272.90	147.00	58.10	31.70	42.70	48.50
1953	36.90	36.60	197.60	500.40	439.80	887.80	559.50	236.30	89.30	49.40	52.30	58.80
1954	61.50	72.80	128.00	727.20	595.80	326.60	118.60	33.70	29.10	42.40	50.40	29.90
1955	21.90	31.00	33.00	608.90	283.00	261.30	140.30	171.10	14.70	23.10	19.00	14.60
1956	13.60	18.40	23.50	1,175.00	417.70	224.80	41.30	23.00	19.20	16.90	43.70	18.50
1957	14.40	14.40	161.20	427.40	322.40	331.30	365.10	108.60	346.50	212.60	210.60	78.20
1958	49.10	43.00	109.70	172.70	101.00	161.00	222.00	43.70	37.40	35.80	70.90	43.90
1959	22.30	19.40	118.70	301.60	301.10	268.30	212.20	88.40	37.90	53.80	55.20	46.80
1960	56.20	46.90	95.40	896.60	407.00	428.50	212.00	101.60	167.10	97.30	81.60	57.00
1961	40.00	36.20	208.10	304.20	600.40	183.00	54.40	24.80	34.80	45.50	40.80	27.10
1962	26.00	22.50	33.30	616.80	953.30	1,776.00	784.50	205.10	114.20	84.20	95.10	52.30
1963	10.40	5.72	112.10	474.30	369.00	802.70	129.60	55.00	62.50	27.90	31.90	19.40
1964	19.50	24.20	28.40	1,178.00	637.00	483.20	175.40	51.00	41.10	90.70	65.20	28.80
1965	29.70	31.40	23.40	2,259.00	750.60	731.50	242.80	68.70	75.90	168.10	94.50	117.90

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1944 through September 1984 and May 1985 through December 2001) and estimated (January 1931 through March 1944 and October 1984 through April 1985) historic streamflow, in cubic feet per second, for the Wild Rice River at Hendrum, Minn.—Continued												
1966	85.50	56.10	1,485.00	1,950.00	987.10	288.00	124.50	219.30	104.20	79.50	67.70	55.00
1967	61.40	68.90	308.70	1,570.00	643.30	521.80	252.70	43.80	17.20	25.70	24.10	49.30
1968	32.30	21.80	207.90	387.10	318.00	242.50	187.70	67.80	87.10	135.70	106.10	62.10
1969	55.90	61.70	71.10	2,478.00	544.60	304.60	167.60	51.10	37.50	151.10	170.50	109.20
1970	68.30	54.00	58.80	1,430.00	1,071.00	1,323.00	211.10	37.40	23.80	35.40	78.60	45.60
1971	34.80	37.60	195.40	794.60	332.10	161.60	75.50	36.10	121.10	744.00	783.80	160.20
1972	91.20	70.00	990.00	1,740.00	895.30	328.40	151.90	118.90	62.50	76.00	79.00	37.80
1973	39.60	43.20	407.10	244.80	204.60	142.40	82.00	83.00	823.70	639.20	290.30	144.10
1974	80.90	80.50	87.30	2,345.00	1,635.00	549.20	178.00	124.90	43.10	66.50	157.60	69.30
1975	61.60	65.60	99.40	2,155.00	1,156.00	880.50	3,136.00	213.90	82.10	69.90	115.10	68.30
1976	63.90	73.70	468.70	830.10	195.20	82.20	41.20	8.11	0.72	7.68	10.30	1.08
1977	0.09	0.22	28.80	167.40	56.10	36.70	12.70	1.07	25.50	83.50	114.10	150.60
1978	81.30	51.50	144.00	3,261.00	407.80	165.90	73.10	63.40	92.40	49.40	39.50	32.10
1979	29.80	29.20	61.10	3,060.00	1,134.00	418.20	603.00	79.50	46.20	40.80	120.20	60.60
1980	46.60	48.20	71.00	673.20	153.80	46.80	11.90	6.04	12.30	26.70	29.20	15.40
1981	8.94	12.30	52.40	105.50	178.50	144.90	176.90	148.00	168.70	287.70	212.00	98.40
1982	62.40	60.00	219.20	1,637.00	612.50	219.60	112.80	39.00	19.10	265.40	166.40	66.70
1983	46.90	46.40	721.60	358.30	175.30	422.40	775.70	168.60	100.50	174.20	158.80	92.30
1984	64.40	123.90	791.10	884.60	246.50	1,554.00	118.80	23.00	14.50	303.13	130.99	75.81
1985	33.94	25.56	843.22	316.93	2,074.00	1,195.00	757.20	494.70	309.90	257.10	186.40	127.80
1986	120.90	102.00	600.50	2,366.00	1,611.00	494.10	207.10	87.90	124.20	186.40	188.20	128.00
1987	81.50	75.50	864.00	434.70	464.70	273.20	386.60	234.80	98.80	117.90	101.50	92.30
1988	66.00	59.50	467.30	717.30	206.70	54.80	16.20	22.40	30.90	31.70	51.60	50.00
1989	50.40	54.40	72.00	2,387.00	494.10	263.30	61.00	13.50	109.40	41.80	56.20	17.30
1990	16.10	19.60	139.90	488.40	304.40	280.20	71.90	12.30	3.89	11.50	20.60	17.20
1991	17.00	27.00	146.30	233.10	548.80	135.50	141.60	25.90	22.80	24.30	35.20	36.50
1992	36.80	39.00	492.50	205.60	226.40	112.60	597.90	261.40	307.70	88.60	102.80	76.50
1993	71.00	74.30	245.20	1,065.00	349.10	422.50	1,605.00	1,833.00	356.90	133.50	114.50	104.10
1994	84.50	77.30	343.50	1,116.00	696.80	721.70	836.90	239.50	419.90	637.20	471.70	217.40
1995	123.20	115.90	1,373.00	858.70	859.20	224.20	979.60	306.70	141.90	337.90	207.00	141.90
1996	148.70	149.30	144.50	3,087.00	2,059.00	506.60	142.00	63.80	41.90	64.30	291.20	146.50
1997	131.90	21.80	129.80	5,115.00	1,149.00	658.80	1,587.00	295.80	156.10	314.00	301.00	236.70
1998	187.50	767.10	1,366.00	804.10	2,137.00	1,763.00	1,756.00	191.10	79.50	252.10	300.60	252.40
1999	153.90	139.50	1,257.00	2,056.00	1,922.00	929.80	1,009.00	651.90	1,329.00	401.00	305.00	240.00
2000	166.00	172.00	979.00	629.00	353.00	2,507.00	978.00	216.00	292.00	405.00	1,305.00	390.00
2001	245.00	209.00	222.00	4,598.00	1,460.00	884.00	273.00	354.00	153.00	233.00	379.00	220.00

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1931 through October 1932, April through June 1933, and April 1934 through December 2001) and estimated (January through March 1931, November 1932 through March 1933, and July 1933 through March 1934) historic streamflow, in cubic feet per second, for the Goose River at Hillsboro, N. Dak.												
1931	0.13	1.59	11.29	26.80	3.56	4.24	1.27	1.33	0.33	0.30	0.20	0.20
1932	0.20	20.00	272.20	238.60	27.40	12.60	0.98	0.29	0.39	0.53	0.89	0.34
1933	0.20	0.16	131.38	105.70	16.50	6.01	1.16	0.23	0.11	0.10	0.22	0.14
1934	0.08	0.12	3.17	33.10	2.05	2.75	1.24	1.45	2.77	0.70	0.20	0.20
1935	0.20	0.30	70.00	32.00	19.90	86.00	12.00	1.00	0.40	0.30	0.40	0.20
1936	0.20	0.20	1.00	190.40	14.10	2.77	0.58	0.10	0.10	0.10	0.10	0.10
1937	0.10	0.20	0.50	15.40	7.49	9.65	2.43	3.73	2.00	0.10	0.10	0.10
1938	0.10	0.10	35.10	6.51	5.35	1.35	0.01	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	99.00	37.50	1.12	9.02	0.12	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	156.30	9.05	1.63	0.00	4.69	0.01	0.00	0.00	0.00
1941	0.00	0.00	24.50	517.20	14.00	61.40	6.93	1.26	2.53	6.06	5.24	2.33
1942	0.07	0.00	9.25	256.90	81.10	31.40	6.05	3.55	2.72	0.92	0.82	0.74
1943	0.45	0.32	215.00	122.00	33.30	91.40	21.50	2.12	0.46	0.23	0.41	0.30
1944	0.17	0.12	2.02	65.50	16.60	21.20	5.72	39.00	12.70	2.87	13.50	5.60
1945	0.66	0.64	98.50	40.50	18.20	17.10	5.98	1.30	1.09	1.66	0.53	0.51
1946	0.47	0.56	209.80	51.60	16.00	9.11	8.85	0.54	0.84	1.36	1.46	0.67
1947	0.22	0.14	121.50	394.70	38.30	52.00	9.17	1.94	0.89	0.77	2.19	1.46
1948	0.45	0.10	0.53	1,840.00	148.00	23.20	15.60	9.90	0.95	0.45	3.78	1.61
1949	0.46	0.26	1.14	516.20	37.90	158.90	18.60	12.50	1.11	3.23	6.61	4.96
1950	2.69	2.37	45.10	2,168.00	2,275.00	135.00	57.90	12.00	7.18	6.08	7.88	7.35
1951	6.27	5.81	92.10	289.30	27.40	14.40	3.61	1.58	4.29	2.64	4.43	1.86
1952	0.00	1.84	14.20	328.00	11.20	1.43	131.40	9.13	1.41	1.08	2.05	2.73
1953	1.88	1.92	28.40	21.80	28.60	135.70	101.60	2.17	2.86	0.77	2.45	2.96
1954	2.55	16.10	57.80	61.20	19.30	41.20	4.69	0.70	0.35	0.20	0.26	0.30
1955	0.57	0.70	0.98	214.60	6.35	61.70	5.66	2.58	0.16	0.20	0.48	0.64
1956	0.58	0.50	0.71	281.70	55.40	57.30	6.05	0.99	0.97	0.38	1.82	1.43
1957	0.99	0.74	18.30	17.80	7.88	10.50	5.30	0.11	53.00	16.50	14.80	4.20
1958	0.96	0.81	1.57	15.80	4.87	3.15	29.00	3.52	0.46	0.32	0.05	0.00
1959	0.00	0.00	33.60	37.20	6.70	6.81	0.48	1.33	0.29	0.34	0.67	0.91
1960	0.88	0.80	71.80	435.50	15.00	12.70	10.20	4.13	1.61	0.26	1.05	0.98
1961	0.77	0.82	54.40	26.90	19.60	3.47	0.16	0.08	0.40	2.45	0.69	0.61
1962	0.57	0.52	0.85	690.00	179.00	146.10	48.00	11.00	122.80	16.50	14.40	9.10
1963	2.32	0.30	29.30	89.00	18.40	10.50	11.80	2.08	0.35	0.86	0.56	0.12
1964	0.00	0.00	1.52	149.80	18.50	275.60	29.70	5.31	8.27	26.60	7.42	3.72
1965	3.00	1.84	1.38	1,632.00	171.50	69.80	67.90	23.40	36.20	50.20	27.50	17.50

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1931 through October 1932, April through June 1933, and April 1934 through December 2001) and estimated (January through March 1931, November 1932 through March 1933, and July 1933 through March 1934) historic streamflow, in cubic feet per second, for the Goose River at Hillsboro, N. Dak.—Continued												
1966	10.80	6.86	1,106.00	473.30	164.50	88.10	118.30	132.20	18.60	9.56	10.50	4.47
1967	4.76	3.90	282.90	946.00	403.10	97.70	17.10	2.18	1.04	1.96	3.74	3.37
1968	4.22	2.38	119.30	52.20	34.90	385.20	53.50	19.20	12.80	7.52	11.80	7.88
1969	3.97	3.56	5.79	1,585.00	133.30	80.10	73.60	14.90	31.80	27.50	15.50	14.50
1970	10.30	10.90	13.30	1,186.00	316.30	265.20	38.60	8.58	8.89	3.56	13.40	7.54
1971	3.57	4.96	78.90	489.70	65.50	69.40	62.00	6.63	4.07	30.20	46.50	16.10
1972	7.39	4.93	421.60	764.40	235.80	97.00	11.30	6.79	2.71	1.09	6.75	3.96
1973	3.67	5.97	275.40	50.50	18.50	12.20	3.62	1.78	4.41	9.89	8.66	4.77
1974	1.33	3.06	2.44	1,068.00	284.70	183.90	37.80	40.90	6.06	1.63	5.89	7.45
1975	6.91	6.18	26.70	919.90	243.00	89.40	58.60	2.84	2.22	1.00	4.69	3.58
1976	3.86	5.05	235.30	230.10	23.00	6.47	1.14	0.06	0.00	0.00	0.00	0.23
1977	0.30	0.30	2.26	17.60	9.72	5.06	4.18	0.15	1.96	4.25	12.70	6.63
1978	4.06	2.06	302.90	961.80	78.40	34.70	9.93	1.32	5.44	1.04	1.02	1.62
1979	1.70	2.05	3.14	2,878.00	421.10	71.70	44.30	15.10	3.22	4.32	6.74	8.45
1980	5.02	4.73	55.30	215.40	9.76	2.65	0.44	1.48	2.25	0.78	2.43	2.40
1981	2.16	4.85	9.88	6.61	7.48	14.40	7.64	8.15	2.76	4.89	7.84	11.00
1982	5.23	4.19	80.60	816.70	64.30	19.10	18.80	1.60	0.42	62.90	20.70	22.00
1983	8.96	8.00	418.60	230.90	57.10	129.60	62.70	29.00	44.30	26.50	25.70	15.30
1984	8.42	7.06	403.20	402.00	83.00	114.50	4.14	0.06	0.00	5.90	4.50	0.67
1985	0.83	2.40	344.50	75.60	40.70	13.70	0.58	19.00	0.81	4.06	5.17	5.55
1986	6.08	5.31	391.30	265.50	217.90	41.70	46.70	7.45	4.94	14.40	15.10	18.00
1987	12.70	6.81	922.90	1,043.00	147.80	102.50	532.50	160.10	50.00	15.40	25.00	22.50
1988	12.40	13.90	349.10	248.70	37.50	13.50	4.52	0.78	0.54	0.74	2.50	3.76
1989	4.58	4.16	6.46	789.40	51.70	20.80	3.15	1.32	1.44	0.57	0.49	0.19
1990	0.84	1.21	2.57	23.70	10.50	8.65	13.90	4.24	0.00	0.00	0.01	0.00
1991	0.28	2.94	7.20	23.60	80.20	47.80	8.91	0.55	0.00	0.02	2.01	1.57
1992	0.37	0.21	274.90	29.40	12.30	10.70	108.00	13.80	18.20	6.43	16.50	9.15
1993	3.95	5.31	157.80	223.40	42.70	48.40	729.10	515.00	200.00	55.00	36.20	31.10
1994	23.20	16.90	555.40	250.90	164.60	142.00	426.20	221.90	326.10	436.40	188.00	79.90
1995	31.80	17.40	1,220.00	994.30	516.10	105.40	307.40	86.80	65.50	92.80	59.10	22.50
1996	19.50	12.00	76.60	1,988.00	473.00	133.90	88.80	16.00	8.68	25.50	21.30	14.10
1997	12.50	16.30	34.20	3,412.00	375.90	144.60	464.60	73.20	23.40	25.60	24.70	13.40
1998	5.42	217.40	644.40	326.90	92.90	94.40	76.80	11.80	4.56	31.40	35.80	40.40
1999	17.30	13.30	888.20	1,526.00	1,328.00	457.20	306.00	55.80	83.20	34.00	53.70	38.10
2000	29.20	103.00	121.00	71.20	79.80	954.00	611.00	91.70	19.20	61.00	469.00	69.40
2001	47.10	40.10	333.00	1,294.00	428.00	117.00	65.60	82.60	15.50	24.90	100.60	31.26

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (March 1944 through September 1983 and April 1985 through October 2001; incomplete winter data for November 1989 through December 2001) and estimated (January 1931 through February 1944, October 1983 through March 1985, and missing winter data for November 1989 through December 2001) historic streamflow, in cubic feet per second, for the Marsh River near Shelly, Minn.												
1931	0.01	0.11	5.64	20.07	3.87	4.89	0.06	0.05	0.03	0.11	0.21	0.12
1932	0.07	0.08	148.96	7.21	1.31	5.94	0.03	0.00	0.02	0.10	0.06	0.02
1933	0.01	0.01	9.35	6.78	1.90	1.46	0.05	0.03	0.04	0.15	0.20	0.14
1934	0.07	0.14	1.51	9.54	0.36	0.29	0.01	0.00	0.02	0.24	0.07	0.06
1935	0.05	0.14	30.78	2.78	1.86	2.92	1.13	0.16	0.04	0.18	0.06	0.02
1936	0.00	0.00	0.22	165.22	5.48	0.91	0.00	0.01	0.00	0.02	0.05	0.02
1937	0.02	0.01	0.10	8.94	6.29	3.67	0.13	0.19	0.14	0.08	0.07	0.01
1938	0.01	0.02	13.81	1.23	41.99	7.13	0.19	0.03	0.03	0.03	0.08	0.04
1939	0.02	0.01	46.03	35.38	0.47	0.93	0.04	0.00	0.00	0.02	0.07	0.04
1940	0.00	0.00	0.00	25.28	2.13	0.56	0.02	0.08	0.02	0.05	0.14	0.05
1941	0.05	0.06	9.09	59.90	1.06	19.44	0.09	0.03	0.24	0.43	0.38	0.08
1942	0.00	0.00	2.93	3.59	62.47	38.73	0.89	0.67	18.74	4.18	2.45	0.29
1943	0.07	0.04	113.27	670.66	37.30	316.85	51.73	9.28	1.23	0.55	0.93	0.15
1944	0.04	0.06	0.14	83.30	43.50	113.40	327.80	163.90	143.80	19.00	11.80	3.56
1945	0.82	0.35	437.20	629.40	184.50	22.40	7.24	2.61	1.83	1.29	0.82	0.08
1946	0.00	0.00	363.50	280.20	60.70	13.00	12.80	0.06	0.45	3.99	1.68	0.51
1947	0.00	0.00	22.00	1,273.00	424.30	607.50	129.90	65.90	56.00	73.00	55.80	47.50
1948	35.40	25.10	28.90	656.30	265.80	102.20	76.00	40.60	11.70	10.80	19.80	17.80
1949	18.20	14.90	18.10	216.70	198.30	411.50	585.20	362.70	74.20	60.50	74.30	58.60
1950	27.20	23.80	51.90	1,537.00	2,617.00	1,030.00	820.10	133.60	50.80	118.40	85.70	77.10
1951	64.50	62.10	107.00	1,190.00	714.40	301.10	102.50	60.70	122.50	129.80	101.80	13.10
1952	12.40	10.80	14.80	390.70	125.20	90.30	201.90	54.30	3.80	1.30	0.88	0.68
1953	0.17	0.13	52.10	46.50	38.50	100.50	119.30	6.61	1.64	0.04	0.23	0.74
1954	0.21	0.05	6.64	135.40	60.20	22.40	2.21	0.11	0.00	0.00	0.05	0.11
1955	0.00	0.00	0.48	69.50	9.39	14.90	17.60	11.20	0.00	0.00	0.00	0.00
1956	0.00	0.00	0.01	317.20	37.50	23.60	1.02	0.04	0.09	0.00	0.00	0.00
1957	0.00	0.00	40.50	35.50	10.30	41.60	17.20	0.91	5.17	3.01	7.03	0.95
1958	0.00	0.34	1.33	4.13	1.35	3.00	15.50	0.26	0.00	0.00	0.00	0.00
1959	0.00	0.01	18.30	19.90	6.75	4.96	1.27	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	23.70	108.90	10.60	12.60	8.27	0.28	3.47	0.00	0.12	0.00
1961	0.00	0.00	35.60	12.90	25.00	3.03	0.00	0.00	0.01	0.39	0.00	0.00
1962	0.00	0.00	0.26	97.90	198.50	347.10	264.30	8.75	1.50	0.69	1.60	0.71
1963	0.16	0.00	20.60	33.70	11.60	32.70	0.45	0.00	0.00	0.00	0.00	0.00
1964	0.00	0.00	0.00	103.40	23.20	18.60	3.26	0.06	0.17	0.08	0.12	0.00
1965	0.00	0.00	0.00	573.30	25.90	29.70	21.00	3.63	3.76	26.90	5.43	2.72

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (March 1944 through September 1983 and April 1985 through October 2001; incomplete winter data for November 1989 through December 2001) and estimated (January 1931 through February 1944, October 1983 through March 1985, and missing winter data for November 1989 through December 2001) historic streamflow, in cubic feet per second, for the Marsh River near Shelly, Minn.—Continued												
1966	0.15	0.07	389.40	291.50	50.40	9.99	2.38	1.70	2.32	0.21	0.03	0.00
1967	0.00	0.00	60.10	143.60	30.10	9.92	1.17	0.00	0.00	0.00	0.00	0.00
1968	0.00	0.00	19.90	11.80	5.42	15.70	1.06	0.00	0.00	0.00	0.00	0.00
1969	0.00	0.00	0.00	608.50	31.40	24.70	42.80	3.19	2.34	2.85	2.29	0.77
1970	0.18	0.17	1.47	350.40	58.00	137.60	2.33	0.05	0.14	0.26	0.56	0.02
1971	0.00	0.00	46.70	100.70	5.39	2.76	0.46	0.00	0.00	60.70	60.20	4.57
1972	0.50	0.00	317.90	321.30	52.90	4.71	5.26	2.43	0.59	0.84	0.00	0.28
1973	0.10	0.08	84.10	10.30	4.21	0.74	0.00	0.00	25.60	30.70	5.38	1.41
1974	0.29	0.17	0.17	775.20	149.90	20.70	1.25	3.88	0.08	0.23	6.35	0.59
1975	0.24	0.12	0.13	552.80	86.00	17.00	230.10	0.89	0.01	0.00	0.87	0.01
1976	0.00	0.00	68.10	71.00	2.44	4.06	0.01	0.00	0.00	0.00	0.00	0.00
1977	0.00	0.00	2.79	10.20	1.36	0.57	0.00	0.00	0.00	0.50	0.18	0.02
1978	0.02	0.02	15.50	676.30	9.95	1.00	0.02	0.00	0.00	0.00	0.00	0.00
1979	0.00	0.00	0.00	894.80	43.70	13.40	53.40	1.43	0.09	0.00	0.63	0.07
1980	0.02	0.00	6.75	105.90	0.87	0.00	0.00	0.03	0.00	0.00	0.00	0.00
1981	0.00	1.36	1.30	0.08	47.70	3.92	1.18	0.20	4.64	12.70	5.32	1.54
1982	0.10	0.23	70.80	337.30	24.80	2.86	1.18	0.12	0.00	12.00	7.46	5.04
1983	1.33	0.79	342.40	68.80	4.34	247.10	55.70	20.50	18.50	4.51	3.74	1.50
1984	0.56	2.73	235.07	140.72	9.50	29.28	2.21	0.11	0.07	18.28	3.68	1.21
1985	0.45	0.28	195.82	14.30	297.60	11.20	9.13	8.14	3.83	4.61	1.82	0.57
1986	0.45	0.40	164.20	321.90	135.50	19.30	18.40	4.19	0.55	0.32	1.04	1.20
1987	0.34	0.27	206.20	20.90	33.20	5.92	259.60	12.60	1.44	0.75	0.71	0.63
1988	0.20	0.16	81.90	49.70	1.56	0.10	0.00	2.92	5.68	0.10	0.07	0.00
1989	0.00	0.00	0.48	608.60	12.50	4.60	0.08	0.00	0.00	4.43	0.71	0.25
1990	0.27	0.37	0.66	28.10	3.57	30.70	5.15	0.00	0.00	0.00	1.53	0.45
1991	0.14	0.24	9.20	4.93	72.00	27.40	2.84	0.13	0.00	0.00	0.85	0.75
1992	0.65	1.02	63.70	6.35	2.73	17.40	28.70	20.60	21.90	3.35	2.26	0.89
1993	0.43	0.49	79.09	133.00	5.23	4.69	100.20	36.90	0.48	5.21	4.01	3.29
1994	2.06	1.80	340.97	109.80	32.30	92.90	124.60	1.83	91.90	52.60	23.10	2.74
1995	1.50	1.67	407.90	77.30	83.50	11.80	167.70	4.39	0.85	17.80	11.07	2.74
1996	1.01	0.85	34.17	644.20	223.50	11.40	2.83	0.18	0.02	0.14	9.45	2.29
1997	0.93	0.80	13.40	1,309.00	81.10	295.50	250.00	2.68	1.33	27.00	24.33	14.96
1998	5.56	69.54	134.00	71.40	288.60	180.10	46.90	0.51	0.48	25.10	55.54	48.45
1999	4.01	6.41	588.15	188.20	95.20	9.63	40.80	2.51	51.30	24.36	11.89	6.18
2000	3.57	8.02	8.35	25.60	7.42	288.00	52.80	3.35	0.70	6.21	304.49	16.08
2001	7.53	5.96	188.25	688.00	27.80	9.99	0.93	11.30	2.47	1.55	11.42	12.51

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1943 through September 1984 and June 1985 through December 2001; incomplete winter data for December 1944 through February 1946) and estimated (January 1931 through March 1943, October 1984 through May 1985, and missing winter data for December 1944 through February 1946) historic streamflow, in cubic feet per second, for the Sand Hill River at Climax, Minn.												
1931	3.54	9.18	34.54	58.41	19.48	14.01	9.61	7.16	7.88	7.84	9.59	5.02
1932	5.70	6.30	27.68	50.84	61.15	16.74	3.93	9.33	8.46	7.51	5.50	3.33
1933	2.37	2.48	44.61	49.06	24.94	12.96	5.20	4.26	4.54	8.95	9.40	7.84
1934	5.81	8.16	19.88	59.74	11.04	8.42	2.49	0.95	19.48	11.20	5.97	5.02
1935	4.81	8.16	59.73	29.40	24.68	22.26	20.95	38.22	8.55	9.77	5.66	5.02
1936	4.23	0.59	32.78	308.03	41.69	9.71	1.42	4.62	4.74	3.92	5.02	3.81
1937	3.11	2.80	1.87	57.53	44.57	24.19	7.90	9.50	16.96	6.78	6.02	3.81
1938	2.22	3.05	51.55	18.35	112.11	42.27	9.45	12.39	4.24	4.57	6.32	4.39
1939	3.00	2.35	100.30	126.95	12.59	10.32	4.57	1.13	1.13	3.39	5.92	4.49
1940	2.06	0.45	1.44	104.62	26.35	9.91	3.71	6.32	3.44	5.42	8.10	5.15
1941	4.96	5.42	31.18	171.86	41.97	31.13	6.95	14.39	18.75	14.49	12.36	13.24
1942	5.81	0.90	15.51	34.03	135.97	97.14	18.81	22.38	19.33	40.03	27.36	8.42
1943	5.65	4.49	37.08	307.40	117.50	234.50	66.20	33.40	19.50	18.40	17.10	5.86
1944	4.53	5.37	12.66	63.80	58.70	58.30	97.70	125.30	72.60	46.20	46.50	26.10
1945	11.67	8.64	181.00	294.90	145.00	97.20	41.70	30.50	45.40	57.60	34.40	7.26
1946	6.96	5.25	145.30	225.20	74.60	42.40	32.30	12.90	18.70	35.80	24.40	13.60
1947	12.70	13.00	24.00	686.80	191.90	368.60	65.40	30.30	19.40	19.30	18.60	11.30
1948	8.74	6.45	5.81	511.00	75.90	34.70	33.80	22.30	12.70	12.50	16.90	13.50
1949	9.08	8.95	14.50	171.90	60.40	196.60	69.20	28.90	12.90	24.00	27.50	18.00
1950	11.00	7.00	9.90	818.50	1,156.00	115.40	181.30	43.10	18.40	32.50	21.80	16.00
1951	14.00	12.00	10.80	428.70	131.50	44.60	20.30	18.40	25.60	21.10	20.70	14.00
1952	12.00	11.00	15.00	221.90	46.80	21.50	52.90	18.60	14.60	18.80	20.70	13.30
1953	7.90	10.80	68.40	99.20	65.90	80.30	49.70	28.60	16.30	12.50	13.50	10.90
1954	5.29	6.44	20.10	144.10	57.00	81.60	29.30	10.90	7.99	10.80	12.90	8.32
1955	6.81	7.36	7.42	150.20	31.50	34.40	15.60	12.40	6.49	10.40	8.64	6.13
1956	5.23	5.41	7.42	316.70	105.30	60.10	16.00	11.50	11.50	13.60	20.40	10.40
1957	8.52	7.54	48.60	120.30	41.10	118.60	130.50	23.60	52.00	31.40	43.00	17.40
1958	13.90	12.40	22.20	30.70	23.70	25.60	62.90	17.90	11.30	12.90	17.50	7.24
1959	4.81	3.84	36.90	78.60	68.20	27.50	16.50	14.30	7.89	18.70	11.80	12.20
1960	12.00	9.78	16.30	162.10	39.30	47.00	41.60	16.10	14.50	11.80	16.20	8.38
1961	6.71	7.28	64.30	52.80	41.70	13.30	10.20	6.30	9.83	17.20	12.50	6.58
1962	2.02	3.55	6.21	253.70	232.50	292.60	298.00	60.10	46.80	36.00	32.40	17.40
1963	9.25	4.94	37.40	94.40	47.20	57.50	33.40	12.10	10.60	10.80	8.88	5.11
1964	6.60	9.59	11.80	226.20	88.80	48.30	68.10	17.60	34.50	24.80	19.60	11.50
1965	10.80	8.34	10.60	916.70	135.50	126.00	54.90	25.40	30.70	71.60	32.30	32.70

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1943 through September 1984 and June 1985 through December 2001; incomplete winter data for December 1944 through February 1946) and estimated (January 1931 through March 1943, October 1984 through May 1985, and missing winter data for December 1944 through February 1946) historic streamflow, in cubic feet per second, for the Sand Hill River at Climax, Minn.—Continued												
1966	18.10	16.20	384.60	934.60	191.70	67.70	25.20	27.70	21.90	18.90	12.30	10.50
1967	12.50	14.30	90.00	340.90	102.40	73.00	26.50	12.70	12.10	13.40	12.90	13.00
1968	10.20	7.96	100.80	67.90	37.60	269.30	48.50	15.00	12.20	21.00	19.40	12.60
1969	4.70	5.64	7.50	669.00	129.70	103.20	50.00	20.40	24.80	30.50	19.70	16.30
1970	13.00	11.10	12.70	751.30	241.20	165.30	37.50	16.80	13.30	25.00	30.40	11.30
1971	11.60	12.50	43.30	345.10	61.30	36.50	17.30	10.50	33.20	223.50	209.30	48.70
1972	25.80	19.10	318.50	716.60	169.50	49.20	29.00	33.40	17.40	22.50	32.70	12.70
1973	11.00	12.20	228.10	51.10	37.50	22.50	12.20	12.60	80.30	95.00	45.60	23.30
1974	18.70	18.00	19.00	711.50	300.40	87.50	19.40	24.60	18.60	18.50	33.90	17.00
1975	11.90	13.70	23.50	756.10	220.80	48.90	182.30	35.30	18.60	22.90	27.10	19.20
1976	15.90	15.10	83.80	316.80	41.30	33.30	19.50	10.70	7.34	9.43	10.20	8.91
1977	7.86	8.18	18.90	51.60	32.60	40.60	10.90	6.96	15.40	21.10	26.30	27.90
1978	18.30	13.20	37.20	946.00	63.40	53.50	21.60	15.30	17.20	13.60	14.80	13.30
1979	12.10	12.90	17.20	868.90	160.50	71.10	166.00	45.20	17.80	18.00	28.10	24.00
1980	19.20	21.30	42.90	280.00	33.50	11.50	8.95	10.20	11.10	15.40	15.30	9.56
1981	8.05	12.20	32.80	25.30	50.70	38.80	24.30	17.10	34.50	59.50	35.40	22.30
1982	12.10	10.20	49.90	347.50	144.40	35.70	42.40	12.70	10.20	81.80	27.50	26.90
1983	19.20	19.00	333.90	181.40	54.70	228.10	113.20	49.40	72.00	70.20	49.90	35.90
1984	26.80	46.80	201.50	336.80	55.50	595.80	44.60	17.00	11.80	77.65	32.54	8.10
1985	14.13	11.17	154.38	76.50	313.34	168.30	181.30	256.20	93.90	88.10	47.00	38.10
1986	30.10	22.90	217.40	579.40	269.10	69.50	82.90	26.80	21.20	24.00	28.10	22.40
1987	17.20	16.10	185.20	80.10	110.10	60.10	138.30	104.20	27.80	26.50	27.20	24.50
1988	20.30	16.40	126.40	209.10	37.10	36.40	13.80	9.88	14.00	13.20	17.00	15.00
1989	13.80	11.20	14.20	776.60	79.70	40.80	28.40	12.20	14.40	14.90	14.50	7.08
1990	8.58	11.30	59.70	88.60	39.30	58.90	16.80	8.05	7.73	9.99	12.10	10.30
1991	6.27	10.90	51.00	48.90	97.10	30.80	31.20	9.78	10.10	12.90	10.70	10.00
1992	10.50	14.10	80.20	53.90	36.30	20.40	28.30	53.30	84.90	22.00	27.20	23.60
1993	14.20	12.10	39.40	338.50	46.20	50.80	224.90	426.10	41.20	22.70	21.60	25.20
1994	17.40	14.00	52.50	221.70	105.30	175.00	375.50	63.70	123.60	135.70	89.60	37.90
1995	23.20	22.00	455.30	229.40	156.80	40.80	326.80	45.00	27.30	135.50	55.30	36.30
1996	31.50	28.70	31.10	1,167.00	370.80	90.60	33.30	20.00	17.70	23.10	36.60	27.60
1997	24.00	21.90	24.20	1,568.00	176.20	185.90	478.00	62.20	40.40	71.10	48.70	42.50
1998	32.00	182.90	421.50	153.70	449.50	278.20	225.30	44.90	23.20	82.90	54.50	58.00
1999	30.00	35.10	610.40	962.70	376.10	160.20	104.80	134.00	373.60	118.00	66.80	45.70
2000	33.60	36.80	93.30	107.00	74.00	255.00	187.00	47.10	33.10	54.30	284.00	48.60
2001	36.80	33.20	61.70	816.00	159.00	86.00	39.00	42.40	46.20	32.77	56.50	25.81

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Red Lake River at Crookston, Minn.												
1931	118.10	148.80	263.50	361.70	231.20	225.00	77.60	30.50	21.10	34.10	99.70	70.90
1932	52.90	56.50	219.50	1,297.00	317.80	81.00	37.20	19.10	12.80	12.20	30.90	27.20
1933	23.00	29.40	108.20	609.00	162.50	122.70	36.70	15.40	13.30	8.79	11.80	20.00
1934	15.60	18.50	130.80	501.20	153.60	80.40	44.20	12.30	8.87	10.50	23.60	20.90
1935	16.10	21.20	341.30	519.90	283.60	159.00	90.30	32.10	56.70	31.30	31.30	28.90
1936	31.80	25.00	24.90	1,366.00	470.20	91.30	26.20	13.20	10.40	8.02	10.10	5.34
1937	19.80	17.80	26.20	403.70	716.20	382.50	704.20	1,161.00	577.60	167.30	92.20	35.90
1938	59.00	80.70	619.60	293.20	3,328.00	1,041.00	347.70	108.80	142.30	155.30	132.60	153.40
1939	157.10	142.00	200.60	659.70	413.00	310.00	180.40	92.90	235.60	287.90	266.30	241.30
1940	156.90	173.80	186.00	2,016.00	1,005.00	481.80	216.50	149.60	143.10	214.90	243.80	182.30
1941	209.40	211.80	196.90	2,647.00	738.30	2,536.00	506.70	305.20	892.00	1,087.00	711.00	539.90
1942	448.10	477.90	1,561.00	2,911.00	2,829.00	816.40	287.30	341.50	1,276.00	578.10	355.00	312.90
1943	363.20	337.90	529.00	3,966.00	2,270.00	3,449.00	1,416.00	930.70	951.50	865.10	683.40	499.80
1944	413.50	448.60	493.90	1,329.00	1,229.00	2,283.00	1,484.00	1,907.00	1,533.00	1,275.00	1,549.00	1,187.00
1945	709.70	700.00	3,406.00	5,202.00	2,901.00	1,392.00	860.80	572.80	969.20	1,088.00	737.30	600.30
1946	569.40	542.10	3,620.00	3,867.00	1,745.00	1,013.00	764.10	350.30	464.50	751.90	590.10	527.70
1947	496.50	454.30	634.50	4,262.00	3,308.00	5,572.00	2,472.00	941.20	1,133.00	1,232.00	892.30	979.00
1948	912.90	637.90	675.80	6,552.00	3,409.00	1,071.00	954.70	659.30	566.90	400.90	400.90	331.50
1949	351.60	353.60	476.40	2,587.00	1,256.00	2,931.00	1,214.00	1,978.00	1,260.00	854.80	866.30	600.00
1950	664.50	655.40	793.50	5,760.00	15,290.00	4,702.00	3,602.00	1,670.00	1,872.00	2,352.00	1,778.00	1,763.00
1951	1,663.00	1,464.00	1,631.00	5,573.00	4,265.00	1,947.00	1,216.00	522.80	729.30	682.40	685.40	1,049.00
1952	1,140.00	1,210.00	1,178.00	3,236.00	1,942.00	1,707.00	2,326.00	858.80	599.60	415.70	371.90	359.30
1953	367.40	375.70	841.00	890.20	1,033.00	1,252.00	1,037.00	452.40	392.80	356.10	342.70	328.40
1954	293.70	302.80	412.50	1,860.00	1,305.00	1,209.00	673.80	433.80	358.50	347.20	407.40	389.30
1955	321.60	337.40	365.50	2,593.00	706.60	1,118.00	487.00	270.60	258.50	261.60	178.50	189.20
1956	226.10	230.70	230.10	3,408.00	2,489.00	847.60	874.50	301.20	1,292.00	360.40	611.70	355.20
1957	231.10	118.40	669.30	2,510.00	1,272.00	2,797.00	3,333.00	1,375.00	2,188.00	2,295.00	1,806.00	782.70
1958	827.00	776.00	1,001.00	981.00	485.30	603.60	1,532.00	364.20	103.80	97.40	117.70	74.50
1959	73.90	83.80	298.40	1,519.00	685.50	481.10	317.80	182.60	128.90	219.80	211.40	200.90
1960	184.60	176.60	191.00	2,280.00	755.90	942.70	420.70	70.50	85.10	115.60	173.60	71.60
1961	64.50	68.30	405.50	661.40	569.60	92.90	89.70	52.70	184.80	217.00	142.60	69.50
1962	79.00	82.00	103.00	2,849.00	4,720.00	7,205.00	3,796.00	1,905.00	1,733.00	1,517.00	1,370.00	939.30
1963	983.20	882.10	1,263.00	3,192.00	2,074.00	2,221.00	1,245.00	652.10	799.20	1,077.00	598.60	455.90
1964	544.20	513.10	361.60	1,842.00	1,307.00	2,505.00	1,157.00	754.50	464.50	996.20	820.10	614.20
1965	622.30	634.60	635.50	7,321.00	3,820.00	3,866.00	1,813.00	795.10	1,140.00	2,406.00	1,369.00	1,219.00

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Red Lake River at Crookston, Minn.—Continued												
1966	1,086.00	1,040.00	1,685.00	10,260.00	5,254.00	2,398.00	1,389.00	1,755.00	1,488.00	1,201.00	1,152.00	1,108.00
1967	1,053.00	1,079.00	1,459.00	6,833.00	4,750.00	2,519.00	1,324.00	837.90	833.70	540.70	390.40	344.00
1968	312.60	260.50	1,212.00	841.30	399.10	2,151.00	3,616.00	1,857.00	1,316.00	950.50	1,155.00	1,250.00
1969	1,245.00	1,240.00	1,220.00	7,840.00	3,651.00	2,024.00	1,180.00	938.30	1,228.00	1,787.00	1,333.00	1,065.00
1970	1,114.00	1,036.00	1,039.00	5,595.00	3,890.00	4,061.00	1,535.00	813.30	965.40	932.50	943.10	790.00
1971	772.40	860.50	983.20	2,995.00	1,428.00	1,170.00	792.30	656.70	563.10	2,836.00	3,172.00	1,055.00
1972	902.40	921.70	2,290.00	5,409.00	2,976.00	1,601.00	939.10	1,177.00	1,278.00	1,114.00	680.90	658.20
1973	603.70	606.80	1,695.00	554.70	615.90	407.40	244.10	496.00	2,191.00	2,301.00	1,319.00	985.80
1974	928.40	1,008.00	1,003.00	6,856.00	5,755.00	2,755.00	1,621.00	2,024.00	1,456.00	1,580.00	1,429.00	915.10
1975	994.20	906.80	934.20	6,064.00	4,697.00	2,509.00	6,851.00	1,788.00	1,747.00	1,966.00	1,604.00	1,092.00
1976	1,337.00	1,238.00	1,602.00	3,409.00	1,340.00	1,149.00	915.50	990.60	669.30	279.60	183.80	194.80
1977	176.60	181.00	276.60	429.10	366.00	224.60	384.10	191.30	450.90	628.50	670.00	731.90
1978	623.90	622.10	693.20	7,509.00	1,798.00	1,289.00	1,360.00	832.40	610.30	613.10	520.30	503.90
1979	490.00	506.20	556.60	7,678.00	4,489.00	2,613.00	2,322.00	1,571.00	1,166.00	1,138.00	936.50	1,201.00
1980	1,085.00	1,038.00	1,070.00	2,658.00	808.70	642.70	384.90	415.10	381.30	186.20	179.90	138.20
1981	125.80	150.20	237.30	231.80	236.80	887.50	1,349.00	873.10	1,356.00	1,768.00	1,131.00	965.50
1982	982.60	914.30	992.90	4,540.00	3,456.00	1,712.00	2,007.00	1,355.00	992.30	2,193.00	1,538.00	1,305.00
1983	1,087.00	956.80	2,576.00	2,384.00	1,510.00	2,613.00	1,973.00	1,778.00	1,476.00	1,385.00	1,256.00	1,022.00
1984	967.10	1,039.00	1,787.00	2,463.00	1,166.00	3,498.00	1,346.00	821.70	572.00	803.40	908.60	1,030.00
1985	1,002.00	941.40	2,117.00	1,900.00	2,728.00	2,942.00	3,013.00	3,868.00	2,697.00	2,416.00	1,405.00	1,048.00
1986	992.90	953.90	2,345.00	5,623.00	4,336.00	1,777.00	1,301.00	1,085.00	1,181.00	852.30	662.20	806.50
1987	721.00	694.60	1,919.00	880.30	1,305.00	728.50	837.50	671.80	441.30	226.60	199.60	170.80
1988	160.00	160.00	506.70	1,416.00	235.40	187.70	147.90	168.10	193.20	137.90	128.30	139.40
1989	181.30	152.30	152.70	3,546.00	876.80	537.50	337.40	167.10	156.10	115.70	96.60	78.00
1990	96.00	103.30	248.90	415.50	221.30	448.90	179.80	138.60	82.90	95.60	116.60	104.00
1991	94.30	91.80	184.50	236.70	353.70	251.90	635.50	217.60	446.70	170.60	145.10	146.40
1992	145.80	145.70	1,002.00	1,381.00	919.20	242.60	521.70	559.20	1,253.00	532.90	261.80	594.40
1993	579.90	593.40	896.90	2,638.00	988.70	1,479.00	2,453.00	2,836.00	2,414.00	1,226.00	723.20	729.40
1994	661.50	600.20	1,298.00	1,141.00	1,234.00	1,815.00	4,375.00	1,168.00	1,325.00	1,625.00	1,458.00	1,088.00
1995	885.20	872.50	4,257.00	2,636.00	2,242.00	854.90	1,786.00	1,063.00	943.80	1,531.00	1,268.00	1,193.00
1996	1,040.00	1,130.00	1,234.00	8,295.00	7,059.00	3,066.00	2,167.00	1,614.00	1,056.00	1,287.00	1,669.00	1,452.00
1997	1,154.00	1,029.00	1,132.00	11,870.00	3,850.00	3,263.00	5,416.00	1,554.00	1,344.00	1,741.00	1,614.00	1,400.00
1998	953.90	1,778.00	2,831.00	1,905.00	3,486.00	2,977.00	2,747.00	1,159.00	993.30	1,420.00	1,171.00	1,066.00
1999	719.40	675.00	2,217.00	8,001.00	5,473.00	3,394.00	2,311.00	2,363.00	5,408.00	2,198.00	1,970.00	1,262.00
2000	1,061.00	1,034.00	2,190.00	2,114.00	1,439.00	2,457.00	2,172.00	913.00	835.00	1,081.00	3,620.00	1,224.00
2001	1,007.00	947.00	1,049.00	7,352.00	3,576.00	2,849.00	1,741.00	3,241.00	1,462.00	1,243.00	1,912.00	1,540.00

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1992 through December 2001) historic streamflow, in cubic feet per second, for the Turtle River at Turtle River State Park near Arvilla, N. Dak.												
1931	--	--	--	--	--	--	--	--	--	--	--	--
1932	--	--	--	--	--	--	--	--	--	--	--	--
1933	--	--	--	--	--	--	--	--	--	--	--	--
1934	--	--	--	--	--	--	--	--	--	--	--	--
1935	--	--	--	--	--	--	--	--	--	--	--	--
1936	--	--	--	--	--	--	--	--	--	--	--	--
1937	--	--	--	--	--	--	--	--	--	--	--	--
1938	--	--	--	--	--	--	--	--	--	--	--	--
1939	--	--	--	--	--	--	--	--	--	--	--	--
1940	--	--	--	--	--	--	--	--	--	--	--	--
1941	--	--	--	--	--	--	--	--	--	--	--	--
1942	--	--	--	--	--	--	--	--	--	--	--	--
1943	--	--	--	--	--	--	--	--	--	--	--	--
1944	--	--	--	--	--	--	--	--	--	--	--	--
1945	--	--	--	--	--	--	--	--	--	--	--	--
1946	--	--	--	--	--	--	--	--	--	--	--	--
1947	--	--	--	--	--	--	--	--	--	--	--	--
1948	--	--	--	--	--	--	--	--	--	--	--	--
1949	--	--	--	--	--	--	--	--	--	--	--	--
1950	--	--	--	--	--	--	--	--	--	--	--	--
1951	--	--	--	--	--	--	--	--	--	--	--	--
1952	--	--	--	--	--	--	--	--	--	--	--	--
1953	--	--	--	--	--	--	--	--	--	--	--	--
1954	--	--	--	--	--	--	--	--	--	--	--	--
1955	--	--	--	--	--	--	--	--	--	--	--	--
1956	--	--	--	--	--	--	--	--	--	--	--	--
1957	--	--	--	--	--	--	--	--	--	--	--	--
1958	--	--	--	--	--	--	--	--	--	--	--	--
1959	--	--	--	--	--	--	--	--	--	--	--	--
1960	--	--	--	--	--	--	--	--	--	--	--	--
1961	--	--	--	--	--	--	--	--	--	--	--	--
1962	--	--	--	--	--	--	--	--	--	--	--	--
1963	--	--	--	--	--	--	--	--	--	--	--	--
1964	--	--	--	--	--	--	--	--	--	--	--	--
1965	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1992 through December 2001) historic streamflow, in cubic feet per second, for the Turtle River at Turtle River State Park near Arvilla, N. Dak.—Continued												
1966	--	--	--	--	--	--	--	--	--	--	--	--
1967	--	--	--	--	--	--	--	--	--	--	--	--
1968	--	--	--	--	--	--	--	--	--	--	--	--
1969	--	--	--	--	--	--	--	--	--	--	--	--
1970	--	--	--	--	--	--	--	--	--	--	--	--
1971	--	--	--	--	--	--	--	--	--	--	--	--
1972	--	--	--	--	--	--	--	--	--	--	--	--
1973	--	--	--	--	--	--	--	--	--	--	--	--
1974	--	--	--	--	--	--	--	--	--	--	--	--
1975	--	--	--	--	--	--	--	--	--	--	--	--
1976	--	--	--	--	--	--	--	--	--	--	--	--
1977	--	--	--	--	--	--	--	--	--	--	--	--
1978	--	--	--	--	--	--	--	--	--	--	--	--
1979	--	--	--	--	--	--	--	--	--	--	--	--
1980	--	--	--	--	--	--	--	--	--	--	--	--
1981	--	--	--	--	--	--	--	--	--	--	--	--
1982	--	--	--	--	--	--	--	--	--	--	--	--
1983	--	--	--	--	--	--	--	--	--	--	--	--
1984	--	--	--	--	--	--	--	--	--	--	--	--
1985	--	--	--	--	--	--	--	--	--	--	--	--
1986	--	--	--	--	--	--	--	--	--	--	--	--
1987	--	--	--	--	--	--	--	--	--	--	--	--
1988	--	--	--	--	--	--	--	--	--	--	--	--
1989	--	--	--	--	--	--	--	--	--	--	--	--
1990	--	--	--	--	--	--	--	--	--	--	--	--
1991	--	--	--	--	--	--	--	--	--	--	--	--
1992	--	--	--	--	--	--	--	--	--	5.47	7.71	5.59
1993	3.97	4.59	42.50	58.90	12.50	13.80	91.70	84.40	74.70	14.70	13.90	11.00
1994	8.65	10.20	186.80	103.00	29.70	37.90	29.00	14.90	52.30	70.00	32.50	15.30
1995	13.10	10.30	250.00	182.40	78.80	23.60	34.40	16.30	10.10	13.00	11.80	11.10
1996	10.70	9.65	11.50	343.70	75.80	31.80	31.90	10.20	5.72	8.97	14.40	7.43
1997	7.69	11.40	59.30	524.90	92.60	18.10	168.20	33.10	14.10	11.80	13.30	12.00
1998	8.05	32.30	125.00	96.50	20.40	17.00	25.30	5.47	2.80	8.96	17.40	13.30
1999	9.64	10.70	139.90	215.40	192.10	63.30	46.50	66.10	27.10	16.00	14.90	11.50
2000	9.06	8.10	16.80	18.30	16.90	923.00	81.50	18.80	15.60	10.90	58.30	18.20
2001	13.50	13.00	77.90	174.00	49.00	18.30	12.80	13.70	8.71	11.13	15.73	13.32

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1945 through September 1970) and estimated (January 1931 through September 1945 and October 1970 through December 2001) historic streamflow, in cubic feet per second, for the Turtle River at Manvel, N. Dak.												
1931	0.78	0.78	5.89	30.27	5.36	6.77	2.85	2.26	0.41	1.30	1.81	0.29
1932	0.26	17.84	196.34	185.11	26.15	14.59	2.44	0.91	0.48	1.91	7.54	0.30
1933	0.00	0.00	51.01	94.32	17.63	8.65	3.54	1.76	3.68	5.50	5.54	1.15
1934	0.52	0.42	25.19	36.06	3.49	4.98	2.81	2.38	2.90	2.32	1.81	0.29
1935	0.26	0.38	56.40	35.06	20.40	56.60	11.42	1.91	0.49	1.30	2.55	0.29
1936	0.26	0.26	1.14	153.55	15.61	5.01	1.75	1.41	0.14	0.61	1.29	0.15
1937	0.14	0.26	0.60	19.13	9.55	12.09	4.26	4.19	2.15	0.61	1.29	0.15
1938	0.14	0.14	29.91	9.38	7.35	3.02	0.17	0.01	0.00	0.00	0.00	0.00
1939	0.00	0.00	77.54	39.98	2.18	11.53	0.66	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	130.40	11.06	3.45	1.75	4.81	0.02	0.00	0.00	0.00
1941	0.00	0.00	21.50	351.31	15.52	44.62	8.14	2.19	2.67	10.23	8.93	2.76
1942	0.10	0.12	8.79	196.79	60.75	27.80	7.48	4.07	2.85	2.79	3.61	0.97
1943	0.54	0.40	158.09	106.21	30.42	59.08	16.37	2.99	0.55	1.09	2.57	0.42
1944	0.23	0.16	2.17	63.45	17.72	21.07	7.23	17.11	11.76	6.12	14.17	6.17
1945	0.78	0.76	77.18	42.61	19.03	18.10	7.43	2.23	1.23	2.07	1.81	0.37
1946	0.10	0.10	140.50	35.40	7.87	5.08	48.00	0.29	5.72	11.40	4.38	1.90
1947	0.19	0.10	73.30	193.10	20.60	58.80	8.29	8.59	1.52	6.40	7.05	2.50
1948	0.12	0.10	0.10	1,164.00	68.40	88.20	21.10	10.00	2.19	1.30	4.62	0.47
1949	0.13	0.10	0.10	384.60	28.70	34.00	8.40	3.05	0.41	6.66	6.73	6.87
1950	0.10	0.00	0.00	1,987.00	1,456.00	48.90	42.30	8.92	19.60	16.70	13.70	4.52
1951	5.10	2.00	41.20	211.00	24.10	14.10	3.95	12.00	41.50	7.47	8.20	5.52
1952	0.74	0.10	1.79	167.10	14.80	7.00	41.00	3.70	0.70	0.82	9.24	3.73
1953	1.15	0.80	18.10	27.20	26.30	89.70	42.50	4.07	1.04	2.61	3.11	2.35
1954	0.28	1.22	26.60	45.30	16.50	20.40	11.30	2.06	1.56	3.17	6.55	2.73
1955	1.08	0.67	0.05	225.00	18.90	110.10	10.50	3.63	0.69	3.63	3.73	0.66
1956	0.35	0.47	0.67	323.10	62.60	42.80	7.00	2.16	4.50	0.96	8.40	3.62
1957	2.89	0.64	45.20	40.60	16.20	13.90	1.64	7.06	215.30	37.40	24.90	7.39
1958	2.26	4.21	12.20	23.20	14.20	13.90	19.60	1.09	0.31	1.45	5.11	1.28
1959	0.02	0.00	38.40	59.50	16.50	11.20	7.82	2.89	0.18	9.67	5.81	3.30
1960	2.43	1.83	37.30	429.50	24.40	17.70	7.10	2.02	1.22	0.63	4.00	0.61
1961	0.79	0.55	36.00	25.90	14.60	3.43	1.15	0.66	1.17	5.92	3.19	1.29
1962	0.00	0.00	0.00	359.30	133.10	169.80	20.60	3.47	4.68	4.47	10.60	3.51
1963	0.48	0.00	21.50	46.00	13.90	12.50	10.10	3.24	0.65	1.11	0.64	0.10
1964	0.00	0.00	0.07	148.30	20.10	269.10	20.80	7.61	14.10	12.40	7.35	3.38
1965	1.19	1.48	2.09	557.70	85.90	72.80	19.40	6.49	32.70	49.10	16.70	10.20

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1945 through September 1970) and estimated (January 1931 through September 1945 and October 1970 through December 2001) historic streamflow, in cubic feet per second, for the Turtle River at Manvel, N. Dak.—Continued												
1966	4.84	1.66	479.20	395.10	148.10	34.70	45.50	22.10	8.06	8.90	8.25	5.65
1967	4.03	4.84	96.40	535.30	191.00	32.10	6.61	2.25	0.83	4.46	6.09	3.71
1968	1.95	1.73	100.80	50.20	20.20	54.10	57.90	13.20	13.50	8.82	12.50	8.15
1969	1.78	0.18	0.08	631.70	31.60	37.90	16.00	4.27	10.90	14.00	11.10	7.76
1970	4.24	0.84	1.91	622.50	157.60	56.80	15.00	12.90	10.80	7.10	14.12	8.10
1971	3.66	4.96	62.95	335.77	51.46	48.65	31.48	5.92	4.13	30.85	25.90	16.24
1972	7.15	4.93	293.47	485.52	139.19	61.61	11.00	6.00	2.85	3.15	10.10	4.49
1973	3.76	5.88	198.46	51.16	19.27	14.26	5.45	2.69	4.45	14.32	11.41	5.32
1974	1.48	3.18	2.58	640.47	161.14	96.77	23.19	7.02	5.96	4.15	9.45	8.01
1975	6.72	6.07	23.27	565.99	142.48	58.17	30.41	3.56	2.37	2.97	8.46	4.09
1976	3.94	5.04	171.75	179.63	22.82	9.12	2.67	4.45	1.77	3.25	3.81	0.33
1977	0.38	0.37	2.41	21.37	11.69	7.67	5.95	1.36	2.11	8.02	13.75	7.20
1978	4.12	2.21	216.60	587.26	59.17	29.83	10.16	2.25	5.40	3.05	4.02	1.98
1979	1.85	2.20	3.26	1,455.64	218.40	49.78	25.58	9.69	3.33	8.11	10.09	8.99
1980	5.01	4.75	45.42	170.07	11.73	4.86	1.48	2.41	2.40	2.51	6.14	2.84
1981	2.31	4.86	9.34	9.50	9.54	16.03	8.64	6.70	2.89	8.83	10.87	11.45
1982	5.20	4.25	64.19	512.87	50.73	19.57	15.07	2.53	0.51	51.07	17.45	21.62
1983	8.53	7.69	291.55	180.15	46.25	75.59	31.70	14.33	37.05	28.20	19.39	15.49
1984	8.06	6.86	281.68	285.14	61.85	69.27	5.92	4.27	0.47	10.04	8.29	0.88
1985	0.96	2.54	243.78	71.46	35.56	15.48	1.76	4.28	0.94	7.77	8.87	6.12
1986	5.98	5.28	274.03	202.23	130.91	33.96	26.43	6.35	4.94	18.54	14.96	17.98
1987	11.76	6.63	602.71	628.03	96.83	64.06	118.80	3.42	41.40	19.42	19.13	22.07
1988	11.50	12.77	246.76	191.58	33.37	15.32	6.25	1.64	0.64	2.40	6.22	4.28
1989	4.61	4.22	6.32	498.63	42.82	20.79	5.00	2.25	1.59	2.01	2.82	0.28
1990	0.97	1.36	2.71	27.34	12.41	11.19	12.50	4.53	0.02	0.00	0.33	0.01
1991	0.35	3.07	6.98	27.25	60.22	37.39	9.50	5.03	3.92	0.21	5.59	1.92
1992	0.46	0.27	198.13	32.68	14.04	13.00	44.35	9.18	16.36	9.89	12.63	9.16
1993	6.51	7.52	72.12	99.95	22.61	24.96	165.88	152.67	135.13	26.59	22.78	18.03
1994	14.18	16.72	316.98	174.78	53.72	68.56	52.46	26.95	94.61	126.62	53.26	25.07
1995	21.47	16.88	424.22	309.51	142.54	42.69	62.23	29.49	18.27	23.52	19.34	18.19
1996	17.53	15.81	19.51	583.22	137.11	57.52	57.70	18.45	10.35	16.23	23.60	12.18
1997	12.60	18.68	100.63	890.70	167.50	32.74	304.26	59.87	25.51	21.35	21.80	19.67
1998	13.19	52.93	212.11	163.75	36.90	30.75	45.77	9.89	5.07	16.21	28.51	21.80
1999	15.80	17.53	237.40	365.51	347.49	114.50	84.11	119.57	49.02	28.94	24.42	18.85
2000	14.85	13.27	28.51	31.05	30.57	1,669.62	147.43	34.01	28.22	19.72	95.54	29.83
2001	22.12	21.30	132.19	295.26	88.64	33.10	23.15	24.78	15.76	20.13	25.78	21.83

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through October 1932, March through June 1933, April through September 1934, April through June 1935, and October 1935 through September 1944) historic streamflow, in cubic feet per second, for the Forest River near Minto, N. Dak.												
1931	--	--	--	--	--	--	--	--	--	--	--	--
1932	--	--	--	91.20	29.30	11.30	5.06	0.39	0.16	4.08	--	--
1933	--	--	49.60	154.00	24.00	10.70	--	--	--	--	--	--
1934	--	--	--	39.40	10.60	5.02	0.87	0.00	0.00	--	--	--
1935	--	--	--	40.30	14.40	8.72	--	--	--	0.20	0.00	0.00
1936	0.00	0.00	0.00	107.00	17.90	8.33	1.40	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	14.20	10.20	6.44	0.51	0.11	0.00	0.00	0.00	0.00
1938	0.00	0.00	24.10	11.00	9.06	2.41	1.40	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	20.60	38.00	6.93	1.61	13.10	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	41.70	11.20	3.11	0.00	13.20	0.22	0.00	0.00	0.00
1941	0.00	0.00	0.00	349.00	21.70	22.10	7.49	3.54	9.09	32.20	11.20	5.85
1942	0.32	0.00	127.00	355.00	38.90	14.50	7.36	15.20	4.69	2.91	3.50	1.91
1943	1.27	1.11	143.00	98.60	23.60	192.00	182.00	20.30	9.60	2.74	5.09	4.58
1944	0.69	0.03	0.25	92.50	22.00	25.60	9.50	3.53	6.88	--	--	--
1945	--	--	--	--	--	--	--	--	--	--	--	--
1946	--	--	--	--	--	--	--	--	--	--	--	--
1947	--	--	--	--	--	--	--	--	--	--	--	--
1948	--	--	--	--	--	--	--	--	--	--	--	--
1949	--	--	--	--	--	--	--	--	--	--	--	--
1950	--	--	--	--	--	--	--	--	--	--	--	--
1951	--	--	--	--	--	--	--	--	--	--	--	--
1952	--	--	--	--	--	--	--	--	--	--	--	--
1953	--	--	--	--	--	--	--	--	--	--	--	--
1954	--	--	--	--	--	--	--	--	--	--	--	--
1955	--	--	--	--	--	--	--	--	--	--	--	--
1956	--	--	--	--	--	--	--	--	--	--	--	--
1957	--	--	--	--	--	--	--	--	--	--	--	--
1958	--	--	--	--	--	--	--	--	--	--	--	--
1959	--	--	--	--	--	--	--	--	--	--	--	--
1960	--	--	--	--	--	--	--	--	--	--	--	--
1961	--	--	--	--	--	--	--	--	--	--	--	--
1962	--	--	--	--	--	--	--	--	--	--	--	--
1963	--	--	--	--	--	--	--	--	--	--	--	--
1964	--	--	--	--	--	--	--	--	--	--	--	--
1965	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through October 1932, March through June 1933, April through September 1934, April through June 1935, and October 1935 through September 1944) historic streamflow, in cubic feet per second, for the Forest River near Minto, N. Dak.—Continued												
1966	--	--	--	--	--	--	--	--	--	--	--	--
1967	--	--	--	--	--	--	--	--	--	--	--	--
1968	--	--	--	--	--	--	--	--	--	--	--	--
1969	--	--	--	--	--	--	--	--	--	--	--	--
1970	--	--	--	--	--	--	--	--	--	--	--	--
1971	--	--	--	--	--	--	--	--	--	--	--	--
1972	--	--	--	--	--	--	--	--	--	--	--	--
1973	--	--	--	--	--	--	--	--	--	--	--	--
1974	--	--	--	--	--	--	--	--	--	--	--	--
1975	--	--	--	--	--	--	--	--	--	--	--	--
1976	--	--	--	--	--	--	--	--	--	--	--	--
1977	--	--	--	--	--	--	--	--	--	--	--	--
1978	--	--	--	--	--	--	--	--	--	--	--	--
1979	--	--	--	--	--	--	--	--	--	--	--	--
1980	--	--	--	--	--	--	--	--	--	--	--	--
1981	--	--	--	--	--	--	--	--	--	--	--	--
1982	--	--	--	--	--	--	--	--	--	--	--	--
1983	--	--	--	--	--	--	--	--	--	--	--	--
1984	--	--	--	--	--	--	--	--	--	--	--	--
1985	--	--	--	--	--	--	--	--	--	--	--	--
1986	--	--	--	--	--	--	--	--	--	--	--	--
1987	--	--	--	--	--	--	--	--	--	--	--	--
1988	--	--	--	--	--	--	--	--	--	--	--	--
1989	--	--	--	--	--	--	--	--	--	--	--	--
1990	--	--	--	--	--	--	--	--	--	--	--	--
1991	--	--	--	--	--	--	--	--	--	--	--	--
1992	--	--	--	--	--	--	--	--	--	--	--	--
1993	--	--	--	--	--	--	--	--	--	--	--	--
1994	--	--	--	--	--	--	--	--	--	--	--	--
1995	--	--	--	--	--	--	--	--	--	--	--	--
1996	--	--	--	--	--	--	--	--	--	--	--	--
1997	--	--	--	--	--	--	--	--	--	--	--	--
1998	--	--	--	--	--	--	--	--	--	--	--	--
1999	--	--	--	--	--	--	--	--	--	--	--	--
2000	--	--	--	--	--	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1944 through December 2001) and estimated (January 1931 through March 1944) historic streamflow, in cubic feet per second, for the Forest River at Minto, N. Dak.												
1931	1.94	1.65	8.65	30.04	18.09	8.55	6.01	2.01	0.89	2.72	2.53	0.65
1932	0.11	6.59	25.25	113.85	37.57	14.49	6.49	0.50	0.21	5.23	3.81	1.92
1933	0.00	0.00	61.92	192.24	30.77	13.72	4.19	2.05	3.42	7.84	7.19	3.71
1934	1.43	0.56	25.25	49.18	13.59	6.44	1.12	0.00	0.00	3.84	2.53	0.65
1935	0.16	0.47	69.78	50.31	18.46	11.18	8.76	3.37	2.00	0.26	0.00	0.00
1936	0.00	0.00	0.00	133.57	22.95	10.68	1.80	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	17.73	13.08	8.26	0.65	0.14	0.00	0.00	0.00	0.00
1938	0.00	0.00	30.08	13.73	11.62	3.09	1.80	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	25.72	47.44	8.89	2.06	16.80	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	52.05	14.36	3.99	0.00	16.93	0.28	0.00	0.00	0.00
1941	0.00	0.00	0.00	435.66	27.82	28.34	9.60	4.54	11.66	41.29	13.78	7.20
1942	0.39	0.00	158.54	443.15	49.88	18.59	9.44	19.49	6.01	3.73	4.31	2.35
1943	1.56	1.37	178.51	123.08	30.26	246.19	233.37	26.03	12.31	3.51	6.26	5.63
1944	0.85	0.04	0.31	115.47	28.21	32.83	12.18	4.53	8.82	2.44	14.70	11.20
1945	2.55	1.64	89.60	47.30	20.10	15.20	5.59	2.90	0.99	2.12	2.76	1.05
1946	0.50	0.20	154.90	42.20	10.60	8.90	5.36	0.00	2.98	5.07	5.83	2.74
1947	0.50	0.02	90.00	96.70	17.20	15.50	19.60	5.37	3.65	3.91	6.10	5.23
1948	3.45	0.76	0.18	1,189.00	106.30	40.50	18.70	9.51	4.74	4.05	7.01	3.68
1949	1.14	0.50	0.59	482.50	37.50	17.40	11.20	3.30	0.65	5.61	6.97	5.00
1950	0.70	0.70	0.80	1,573.00	1,515.00	54.10	28.30	8.05	8.93	8.41	9.24	4.58
1951	3.65	4.50	31.20	198.70	27.40	15.50	6.48	9.32	8.42	6.38	6.71	4.10
1952	1.10	0.69	3.57	96.00	16.40	7.57	29.10	5.35	3.01	2.21	4.19	1.97
1953	0.57	0.08	2.98	21.90	16.50	51.40	10.10	2.14	0.27	1.80	4.57	2.42
1954	0.28	0.23	24.70	39.80	18.30	43.80	10.00	11.10	6.43	7.01	6.57	4.00
1955	1.31	0.51	0.03	291.10	22.10	92.40	11.20	2.85	1.69	5.16	5.31	1.96
1956	0.53	0.48	0.58	511.30	87.90	208.80	26.70	11.00	14.00	9.96	15.80	6.44
1957	4.47	1.53	47.10	25.80	20.40	14.90	6.45	7.78	56.60	12.80	14.20	6.85
1958	2.62	0.84	6.00	24.90	16.30	40.90	12.80	3.80	2.07	7.73	6.53	0.71
1959	0.27	0.10	10.80	107.20	18.40	11.00	5.71	2.15	0.44	5.57	4.57	3.71
1960	1.87	0.99	20.60	605.90	30.70	15.20	4.63	1.90	0.94	1.62	4.11	0.74
1961	0.64	0.00	23.40	24.40	11.60	5.18	5.64	0.51	0.00	2.48	3.35	1.06
1962	0.19	0.00	0.00	398.40	63.20	266.50	20.20	11.80	8.21	13.20	15.80	4.87
1963	0.95	0.00	42.20	34.50	18.90	22.70	26.50	3.73	0.80	3.15	5.35	1.13
1964	0.15	0.09	0.26	138.70	28.00	266.60	50.50	12.10	10.40	12.60	10.10	4.99
1965	3.79	2.77	2.84	481.50	63.00	71.90	23.40	11.50	16.00	25.80	15.80	11.60

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April 1944 through December 2001) and estimated (January 1931 through March 1944) historic streamflow, in cubic feet per second, for the Forest River at Minto, N. Dak.—Continued												
1966	4.96	2.14	438.20	355.80	228.50	57.30	36.50	17.60	9.88	10.90	10.80	8.15
1967	3.54	2.48	123.90	358.80	210.70	39.40	17.40	8.90	5.71	4.76	10.30	5.57
1968	2.02	1.55	66.50	46.00	21.30	18.70	16.60	11.80	10.50	8.91	10.90	5.61
1969	0.82	0.41	0.46	521.50	53.30	20.20	12.30	4.70	5.14	6.50	7.93	5.99
1970	5.38	2.26	0.79	479.50	139.50	41.90	39.80	11.40	6.53	9.14	10.80	4.40
1971	0.90	0.95	7.45	512.30	59.50	30.40	67.10	21.00	11.60	12.30	14.60	5.64
1972	0.80	0.26	269.80	356.30	71.90	31.20	10.00	4.51	4.42	8.08	7.82	2.04
1973	0.40	0.53	59.50	39.90	18.90	28.40	6.15	1.47	4.46	11.70	4.40	3.09
1974	2.55	0.59	0.91	660.80	485.70	176.30	27.50	19.60	7.60	13.30	14.80	8.46
1975	5.86	3.68	5.45	285.20	162.40	28.90	108.50	9.28	6.54	11.10	9.54	3.75
1976	3.60	4.14	108.10	387.60	34.60	17.50	8.50	2.90	1.53	1.40	2.19	0.49
1977	0.00	0.00	11.00	32.90	17.70	10.90	6.79	3.14	4.16	9.04	5.10	1.29
1978	0.96	0.17	74.50	495.40	56.40	61.20	26.40	8.17	8.64	5.48	3.07	2.12
1979	2.00	1.35	1.00	1,189.00	363.00	63.60	63.40	12.10	17.20	8.14	8.25	4.35
1980	1.04	1.33	8.16	70.20	12.60	7.33	1.87	1.32	2.98	5.34	10.40	8.19
1981	4.10	17.30	33.30	38.80	15.20	21.50	12.30	4.83	15.30	20.50	11.70	8.35
1982	1.54	0.30	33.60	329.20	63.00	60.00	235.80	96.40	13.90	59.10	23.60	13.40
1983	9.66	12.50	236.90	197.30	52.50	32.60	18.70	7.92	17.10	9.15	15.00	3.53
1984	0.78	4.48	53.30	89.00	26.70	26.00	9.92	3.13	3.77	3.94	3.60	1.56
1985	0.12	0.00	175.40	63.70	31.20	26.50	5.25	6.08	8.53	18.50	21.30	8.60
1986	6.37	5.09	190.00	113.10	86.20	16.20	60.10	21.00	12.50	20.10	10.90	8.71
1987	9.65	7.31	122.30	848.60	81.90	28.60	27.30	15.00	7.68	12.10	11.10	11.40
1988	6.32	0.67	40.00	98.70	70.70	30.00	4.73	2.11	0.25	5.20	3.20	1.10
1989	1.14	1.10	1.00	90.60	30.90	8.74	2.32	0.15	0.01	1.18	1.73	0.29
1990	0.00	0.00	0.60	26.50	11.20	8.28	2.75	0.02	0.00	0.00	0.97	0.83
1991	0.00	0.00	2.87	23.00	14.00	4.21	14.50	6.44	12.30	11.50	10.30	8.67
1992	7.14	5.98	186.70	60.70	24.00	15.00	6.80	3.49	0.64	2.71	5.38	3.61
1993	1.58	2.74	13.10	97.60	23.70	21.80	132.60	327.60	69.00	20.70	17.20	11.10
1994	6.19	4.56	153.10	164.70	52.50	86.30	64.80	13.70	14.90	12.90	10.60	9.06
1995	6.64	6.03	392.10	308.40	143.70	61.90	76.10	20.20	11.20	13.70	14.00	12.90
1996	8.53	3.94	115.90	802.80	382.00	93.90	31.30	15.30	6.98	9.63	9.99	6.20
1997	3.19	2.86	2.79	1,040.00	322.10	58.60	348.50	72.10	28.50	20.90	23.80	20.90
1998	15.80	50.20	247.20	241.60	35.60	37.20	37.20	11.70	7.05	14.40	13.40	10.50
1999	10.00	10.40	263.30	479.30	202.20	79.00	52.00	32.40	20.50	18.30	15.60	13.30
2000	11.70	11.10	23.60	17.80	14.60	65.40	25.10	9.77	7.96	14.10	32.40	17.70
2001	12.80	11.50	56.40	279.00	65.60	36.00	24.00	26.60	8.57	13.28	15.17	12.19

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through September 1945 and October 1953 through September 1956) historic streamflow, in cubic feet per second, for the Snake River at Alvarado, Minn.												
1931	--	--	--	--	--	--	--	--	--	--	--	--
1932	--	--	--	--	--	--	--	--	--	--	--	--
1933	--	--	--	--	--	--	--	--	--	--	--	--
1934	--	--	--	--	--	--	--	--	--	--	--	--
1935	--	--	--	--	--	--	--	--	--	--	--	--
1936	--	--	--	--	--	--	--	--	--	--	--	--
1937	--	--	--	--	--	--	--	--	--	--	--	--
1938	--	--	--	--	--	--	--	--	--	--	--	--
1939	--	--	--	--	--	--	--	--	--	--	--	--
1940	--	--	--	--	--	--	--	--	--	--	--	--
1941	--	--	--	--	--	--	--	--	--	--	--	--
1942	--	--	--	--	--	--	--	--	--	--	--	--
1943	--	--	--	--	--	--	--	--	--	--	--	--
1944	--	--	--	--	--	--	--	--	--	--	--	--
1945	--	--	--	191.00	57.30	13.30	35.90	13.10	10.20	--	--	--
1946	--	--	--	--	--	--	--	--	--	--	--	--
1947	--	--	--	--	--	--	--	--	--	--	--	--
1948	--	--	--	--	--	--	--	--	--	--	--	--
1949	--	--	--	--	--	--	--	--	--	--	--	--
1950	--	--	--	--	--	--	--	--	--	--	--	--
1951	--	--	--	--	--	--	--	--	--	--	--	--
1952	--	--	--	--	--	--	--	--	--	--	--	--
1953	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00
1954	0.00	0.00	0.00	13.30	6.71	4.32	0.47	0.00	0.00	0.00	0.00	0.00
1955	0.00	0.00	0.00	49.20	4.83	32.20	1.63	0.04	0.00	0.00	0.00	0.00
1956	0.00	0.00	0.00	35.00	64.50	13.80	18.40	2.20	1.60	--	--	--
1957	--	--	--	--	--	--	--	--	--	--	--	--
1958	--	--	--	--	--	--	--	--	--	--	--	--
1959	--	--	--	--	--	--	--	--	--	--	--	--
1960	--	--	--	--	--	--	--	--	--	--	--	--
1961	--	--	--	--	--	--	--	--	--	--	--	--
1962	--	--	--	--	--	--	--	--	--	--	--	--
1963	--	--	--	--	--	--	--	--	--	--	--	--
1964	--	--	--	--	--	--	--	--	--	--	--	--
1965	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through September 1945 and October 1953 through September 1956) historic streamflow, in cubic feet per second, for the Snake River at Alvarado, Minn.—Continued												
1966	--	--	--	--	--	--	--	--	--	--	--	--
1967	--	--	--	--	--	--	--	--	--	--	--	--
1968	--	--	--	--	--	--	--	--	--	--	--	--
1969	--	--	--	--	--	--	--	--	--	--	--	--
1970	--	--	--	--	--	--	--	--	--	--	--	--
1971	--	--	--	--	--	--	--	--	--	--	--	--
1972	--	--	--	--	--	--	--	--	--	--	--	--
1973	--	--	--	--	--	--	--	--	--	--	--	--
1974	--	--	--	--	--	--	--	--	--	--	--	--
1975	--	--	--	--	--	--	--	--	--	--	--	--
1976	--	--	--	--	--	--	--	--	--	--	--	--
1977	--	--	--	--	--	--	--	--	--	--	--	--
1978	--	--	--	--	--	--	--	--	--	--	--	--
1979	--	--	--	--	--	--	--	--	--	--	--	--
1980	--	--	--	--	--	--	--	--	--	--	--	--
1981	--	--	--	--	--	--	--	--	--	--	--	--
1982	--	--	--	--	--	--	--	--	--	--	--	--
1983	--	--	--	--	--	--	--	--	--	--	--	--
1984	--	--	--	--	--	--	--	--	--	--	--	--
1985	--	--	--	--	--	--	--	--	--	--	--	--
1986	--	--	--	--	--	--	--	--	--	--	--	--
1987	--	--	--	--	--	--	--	--	--	--	--	--
1988	--	--	--	--	--	--	--	--	--	--	--	--
1989	--	--	--	--	--	--	--	--	--	--	--	--
1990	--	--	--	--	--	--	--	--	--	--	--	--
1991	--	--	--	--	--	--	--	--	--	--	--	--
1992	--	--	--	--	--	--	--	--	--	--	--	--
1993	--	--	--	--	--	--	--	--	--	--	--	--
1994	--	--	--	--	--	--	--	--	--	--	--	--
1995	--	--	--	--	--	--	--	--	--	--	--	--
1996	--	--	--	--	--	--	--	--	--	--	--	--
1997	--	--	--	--	--	--	--	--	--	--	--	--
1998	--	--	--	--	--	--	--	--	--	--	--	--
1999	--	--	--	--	--	--	--	--	--	--	--	--
2000	--	--	--	--	--	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through September 1945) historic streamflow, in cubic feet per second, for the Snake River above Middle River near Big Woods, Minn.												
1931	--	--	--	--	--	--	--	--	--	--	--	--
1932	--	--	--	--	--	--	--	--	--	--	--	--
1933	--	--	--	--	--	--	--	--	--	--	--	--
1934	--	--	--	--	--	--	--	--	--	--	--	--
1935	--	--	--	--	--	--	--	--	--	--	--	--
1936	--	--	--	--	--	--	--	--	--	--	--	--
1937	--	--	--	--	--	--	--	--	--	--	--	--
1938	--	--	--	--	--	--	--	--	--	--	--	--
1939	--	--	--	--	--	--	--	--	--	--	--	--
1940	--	--	--	--	--	--	--	--	--	--	--	--
1941	--	--	--	--	--	--	--	--	--	--	--	--
1942	--	--	--	--	--	--	--	--	--	--	--	--
1943	--	--	--	--	--	--	--	--	--	--	--	--
1944	--	--	--	--	--	--	--	--	--	--	--	--
1945	--	--	--	291.00	55.90	13.80	23.20	17.60	10.70	--	--	--
1946	--	--	--	--	--	--	--	--	--	--	--	--
1947	--	--	--	--	--	--	--	--	--	--	--	--
1948	--	--	--	--	--	--	--	--	--	--	--	--
1949	--	--	--	--	--	--	--	--	--	--	--	--
1950	--	--	--	--	--	--	--	--	--	--	--	--
1951	--	--	--	--	--	--	--	--	--	--	--	--
1952	--	--	--	--	--	--	--	--	--	--	--	--
1953	--	--	--	--	--	--	--	--	--	--	--	--
1954	--	--	--	--	--	--	--	--	--	--	--	--
1955	--	--	--	--	--	--	--	--	--	--	--	--
1956	--	--	--	--	--	--	--	--	--	--	--	--
1957	--	--	--	--	--	--	--	--	--	--	--	--
1958	--	--	--	--	--	--	--	--	--	--	--	--
1959	--	--	--	--	--	--	--	--	--	--	--	--
1960	--	--	--	--	--	--	--	--	--	--	--	--
1961	--	--	--	--	--	--	--	--	--	--	--	--
1962	--	--	--	--	--	--	--	--	--	--	--	--
1963	--	--	--	--	--	--	--	--	--	--	--	--
1964	--	--	--	--	--	--	--	--	--	--	--	--
1965	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through September 1945) historic streamflow, in cubic feet per second, for the Snake River above Middle River near Big Woods, Minn.—Continued												
1966	--	--	--	--	--	--	--	--	--	--	--	--
1967	--	--	--	--	--	--	--	--	--	--	--	--
1968	--	--	--	--	--	--	--	--	--	--	--	--
1969	--	--	--	--	--	--	--	--	--	--	--	--
1970	--	--	--	--	--	--	--	--	--	--	--	--
1971	--	--	--	--	--	--	--	--	--	--	--	--
1972	--	--	--	--	--	--	--	--	--	--	--	--
1973	--	--	--	--	--	--	--	--	--	--	--	--
1974	--	--	--	--	--	--	--	--	--	--	--	--
1975	--	--	--	--	--	--	--	--	--	--	--	--
1976	--	--	--	--	--	--	--	--	--	--	--	--
1977	--	--	--	--	--	--	--	--	--	--	--	--
1978	--	--	--	--	--	--	--	--	--	--	--	--
1979	--	--	--	--	--	--	--	--	--	--	--	--
1980	--	--	--	--	--	--	--	--	--	--	--	--
1981	--	--	--	--	--	--	--	--	--	--	--	--
1982	--	--	--	--	--	--	--	--	--	--	--	--
1983	--	--	--	--	--	--	--	--	--	--	--	--
1984	--	--	--	--	--	--	--	--	--	--	--	--
1985	--	--	--	--	--	--	--	--	--	--	--	--
1986	--	--	--	--	--	--	--	--	--	--	--	--
1987	--	--	--	--	--	--	--	--	--	--	--	--
1988	--	--	--	--	--	--	--	--	--	--	--	--
1989	--	--	--	--	--	--	--	--	--	--	--	--
1990	--	--	--	--	--	--	--	--	--	--	--	--
1991	--	--	--	--	--	--	--	--	--	--	--	--
1992	--	--	--	--	--	--	--	--	--	--	--	--
1993	--	--	--	--	--	--	--	--	--	--	--	--
1994	--	--	--	--	--	--	--	--	--	--	--	--
1995	--	--	--	--	--	--	--	--	--	--	--	--
1996	--	--	--	--	--	--	--	--	--	--	--	--
1997	--	--	--	--	--	--	--	--	--	--	--	--
1998	--	--	--	--	--	--	--	--	--	--	--	--
1999	--	--	--	--	--	--	--	--	--	--	--	--
2000	--	--	--	--	--	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through September 1945, October 1950 through September 1981, and March 1982 through December 2001) and estimated (January 1931 through March 1945, October 1945 through September 1950, and October 1981 through February 1982) historic streamflow, in cubic feet per second, for the Middle River at Argyle, Minn.												
1931	0.70	0.64	14.76	14.32	11.80	1.85	1.10	0.23	0.12	0.12	0.03	0.12
1932	0.01	0.32	7.74	129.13	20.14	6.66	0.32	0.04	0.05	1.12	1.70	0.10
1933	0.00	0.00	19.46	249.62	20.67	2.79	0.58	0.24	1.74	3.30	1.41	0.68
1934	0.47	0.45	7.74	63.34	2.15	1.11	0.02	0.27	0.10	0.11	0.03	0.02
1935	0.01	0.02	32.45	55.12	5.86	64.01	2.19	0.58	0.06	0.04	0.08	0.07
1936	0.06	0.00	0.09	152.86	11.34	1.12	0.04	0.01	0.01	0.01	0.01	0.15
1937	0.06	0.01	0.04	71.41	19.60	4.87	5.03	1.30	0.41	0.01	0.01	0.01
1938	0.00	0.00	25.67	7.00	5.68	0.48	4.99	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	4.67	23.71	2.05	4.49	0.15	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	35.00	4.10	0.60	0.16	0.32	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.24	330.09	16.44	43.04	1.64	0.27	31.36	32.22	1.92	0.39
1942	0.35	0.09	54.54	464.17	53.58	19.53	3.72	3.62	3.53	0.32	0.19	0.67
1943	0.63	0.52	111.61	120.49	27.65	315.42	17.03	3.59	1.06	0.93	0.78	5.98
1944	0.71	0.34	0.21	84.80	6.83	19.86	41.27	72.66	21.01	7.52	6.28	2.05
1945	3.88	5.54	173.52	289.00	73.70	26.50	15.00	4.81	19.50	12.41	3.84	2.37
1946	0.86	0.88	103.53	56.91	9.08	10.55	3.33	0.41	0.96	4.21	0.39	0.47
1947	0.18	0.10	2.62	120.31	9.28	774.67	16.57	2.88	1.05	1.03	0.64	0.31
1948	1.33	0.52	0.30	846.69	187.80	7.08	3.69	1.43	0.40	0.38	1.28	0.46
1949	1.21	1.21	0.20	418.06	46.43	222.22	18.84	2.59	0.41	1.70	2.57	0.88
1950	0.85	0.68	0.12	939.07	1,666.62	77.11	168.32	6.42	0.93	11.00	7.79	5.11
1951	3.21	2.75	4.16	336.90	72.00	7.18	1.53	3.03	27.50	11.90	4.93	3.61
1952	1.03	1.93	3.42	177.50	19.60	3.50	6.03	0.39	0.00	0.04	0.50	0.05
1953	0.00	0.00	15.70	33.20	22.00	16.90	3.45	0.25	0.00	0.00	0.00	0.00
1954	0.00	0.00	0.00	51.80	39.80	50.70	6.26	0.19	0.00	0.05	0.14	0.09
1955	0.03	0.00	0.00	70.70	23.90	137.40	8.82	0.37	0.00	0.44	0.01	0.13
1956	0.05	0.00	0.00	132.30	131.80	26.90	312.60	11.80	7.32	1.79	33.40	5.50
1957	1.94	1.56	39.80	68.60	42.00	64.70	87.60	3.77	163.40	40.60	23.50	7.41
1958	2.50	1.70	3.76	12.20	5.32	4.85	186.70	5.28	0.15	0.27	0.55	0.65
1959	0.20	0.00	1.61	209.00	29.90	15.70	9.97	4.36	2.43	12.50	10.40	4.31
1960	2.10	1.11	1.68	307.10	49.90	49.20	10.40	0.89	0.22	0.32	0.42	0.57
1961	0.33	0.19	23.00	27.30	10.80	0.77	0.00	0.00	1.47	8.23	2.93	0.92
1962	0.38	0.13	0.00	244.90	298.90	481.90	43.90	7.34	7.60	2.63	4.19	3.48
1963	0.41	0.00	18.70	188.60	41.70	30.60	6.88	4.67	0.14	0.01	0.18	0.03
1964	0.00	0.00	0.00	73.80	44.60	306.10	40.40	28.20	8.43	27.00	12.90	3.94
1965	2.56	1.17	1.37	577.30	158.80	102.10	92.20	5.02	7.96	64.50	21.60	8.54

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through September 1945, October 1950 through September 1981, and March 1982 through December 2001) and estimated (January 1931 through March 1945, October 1945 through September 1950, and October 1981 through February 1982) historic streamflow, in cubic feet per second, for the Middle River at Argyle, Minn.—Continued												
1966	4.05	1.92	93.00	747.10	231.90	32.70	107.20	24.20	4.74	5.05	1.93	0.91
1967	0.65	0.53	15.60	472.50	236.20	21.00	4.91	0.16	0.00	0.54	1.63	0.60
1968	0.00	0.13	26.00	19.20	4.04	232.70	205.00	28.10	27.90	23.30	13.00	5.41
1969	0.90	1.65	2.97	552.60	63.20	47.10	11.50	1.18	0.22	0.17	0.42	0.48
1970	0.36	0.04	0.00	302.60	330.30	659.80	25.40	2.75	0.87	2.07	4.52	2.27
1971	1.55	1.44	6.17	162.00	27.80	12.10	3.39	0.26	0.09	0.70	7.67	2.82
1972	0.36	0.06	20.60	211.80	36.00	17.40	2.22	0.02	0.02	0.01	0.17	0.00
1973	0.00	0.00	34.80	6.42	3.30	0.37	0.00	0.02	0.08	1.91	2.43	0.05
1974	0.11	0.06	0.00	426.20	191.70	45.00	3.01	0.49	0.35	0.35	0.61	0.65
1975	0.80	0.38	1.24	224.50	125.80	46.00	687.70	11.00	1.54	1.17	4.32	1.70
1976	1.69	1.80	21.10	189.10	16.30	3.29	1.30	0.07	0.00	0.00	0.00	0.00
1977	0.00	0.00	0.75	10.30	4.38	3.25	0.22	0.32	0.07	0.08	4.46	4.04
1978	1.24	0.83	13.40	479.20	116.70	48.90	61.30	7.11	1.07	0.40	1.57	1.24
1979	0.87	0.62	1.42	611.20	126.80	47.70	12.30	1.61	0.67	0.30	1.63	1.33
1980	1.27	1.04	2.00	112.60	6.72	0.79	0.02	0.14	0.59	0.30	0.08	0.05
1981	0.01	0.51	5.51	5.38	2.12	8.40	21.30	0.04	0.77	13.36	3.18	1.43
1982	0.10	1.33	9.36	284.10	102.30	16.20	52.30	11.70	0.50	94.10	24.00	15.80
1983	4.65	3.32	217.10	155.70	56.70	61.30	19.70	1.00	0.31	4.17	6.90	3.99
1984	1.64	1.05	57.70	112.80	22.40	90.70	3.09	0.15	0.01	0.26	0.48	0.34
1985	0.14	0.14	68.70	83.20	41.90	253.50	74.50	29.50	35.90	52.50	9.39	3.86
1986	3.71	3.30	124.80	314.30	185.20	34.40	2.79	0.54	0.19	0.48	0.83	0.60
1987	0.60	0.60	118.20	117.10	19.60	9.06	1.57	0.34	0.02	0.07	0.49	0.31
1988	0.09	0.06	0.35	57.30	12.00	26.90	0.86	0.01	0.01	0.00	0.00	0.02
1989	0.01	0.01	0.02	231.10	28.40	28.10	2.95	0.09	0.00	0.00	0.02	0.00
1990	0.00	0.00	9.62	13.30	2.74	4.69	2.25	0.02	0.00	0.00	0.00	0.00
1991	0.00	0.01	0.08	0.20	4.63	3.65	40.60	3.38	0.35	0.32	1.54	2.22
1992	0.84	0.44	85.60	102.80	38.30	5.20	12.20	0.51	0.68	1.23	0.47	1.25
1993	0.75	0.69	9.01	120.40	16.10	51.60	97.90	264.50	272.40	14.40	10.70	5.89
1994	2.67	1.12	47.90	53.30	30.70	10.90	145.60	24.40	138.50	54.80	107.70	22.20
1995	8.77	3.72	335.00	136.80	108.40	12.10	93.80	11.50	10.10	9.42	5.10	3.88
1996	2.46	1.41	1.48	574.80	895.80	14.40	10.70	3.43	1.15	3.35	9.76	4.62
1997	2.75	2.34	2.48	965.60	151.50	17.40	237.30	4.15	3.03	72.40	31.50	12.60
1998	4.70	30.00	255.40	132.80	107.30	188.20	199.10	4.62	3.31	51.40	27.50	20.30
1999	2.02	2.76	83.20	893.50	309.30	523.80	167.90	129.30	178.80	32.30	15.70	6.39
2000	3.58	69.80	91.20	129.00	34.30	253.00	60.50	23.60	6.56	40.40	535.00	19.50
2001	6.43	5.59	26.60	665.00	144.00	63.20	8.28	101.00	3.81	3.16	24.20	5.68

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (May 1931 through December 2001) and estimated (January through April 1931) historic streamflow, in cubic feet per second, for the Park River at Grafton, N. Dak.												
1931	0.02	0.42	27.83	133.04	12.50	3.04	0.98	0.19	0.10	0.10	0.40	0.10
1932	0.00	2.00	15.00	185.00	21.70	5.58	0.27	0.00	0.00	1.00	0.80	0.00
1933	0.00	0.00	40.00	411.40	22.30	12.20	0.50	0.20	0.00	0.00	0.00	0.00
1934	0.00	0.05	15.00	78.00	2.16	0.41	0.01	0.00	0.08	0.00	0.00	0.00
1935	0.00	0.00	68.90	65.90	6.07	3.91	2.00	0.50	0.00	0.00	0.00	0.00
1936	0.00	0.00	0.00	227.00	12.00	13.00	0.04	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	90.20	21.10	3.69	4.75	1.17	0.00	0.00	0.00	0.00
1938	0.00	0.00	53.70	5.40	5.88	0.35	4.71	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	8.77	23.70	2.05	2.83	0.12	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	38.00	4.20	0.38	0.14	0.27	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.38	577.30	17.60	12.00	1.48	0.23	31.80	32.70	8.40	3.12
1942	0.00	0.00	119.70	872.80	59.60	16.40	3.48	3.38	3.29	0.27	0.73	0.05
1943	0.10	0.11	256.40	170.10	30.10	202.30	150.60	12.70	0.25	0.02	0.75	0.71
1944	0.01	0.00	0.33	111.10	7.11	8.32	2.42	11.40	7.81	0.84	14.60	6.99
1945	0.27	0.23	410.00	134.30	56.70	31.50	7.34	0.85	0.61	0.16	0.21	0.14
1946	0.10	0.13	236.70	68.50	9.54	4.93	1.27	0.13	0.37	0.38	0.19	0.04
1947	0.00	0.00	4.74	169.80	9.75	20.80	62.00	12.70	3.74	1.28	2.51	2.41
1948	0.48	0.12	0.47	1,809.00	217.50	37.80	45.20	30.50	2.33	0.48	1.03	0.38
1949	0.23	0.20	0.31	768.80	51.40	11.50	2.28	1.15	0.06	0.39	0.19	0.10
1950	0.10	0.10	0.17	2,051.00	2,071.00	65.00	21.20	12.90	1.26	2.18	1.61	2.11
1951	1.10	0.57	12.10	331.10	33.80	6.43	0.71	2.98	41.30	34.10	1.33	0.57
1952	0.10	0.00	0.20	46.90	8.24	0.39	0.23	0.00	22.10	0.00	0.03	0.81
1953	0.21	0.00	2.22	8.09	5.26	10.10	1.15	0.05	0.20	0.07	0.69	0.17
1954	0.02	1.49	5.90	16.10	13.60	130.90	19.00	6.04	4.87	4.87	3.92	1.17
1955	0.20	0.20	0.80	445.30	46.40	76.80	10.50	1.30	11.80	0.44	0.00	0.00
1956	0.00	0.00	11.90	1,014.00	446.80	164.30	19.60	3.38	7.50	7.23	8.14	3.09
1957	1.58	5.45	57.50	48.00	22.80	10.40	1.88	4.66	151.20	6.90	7.16	4.33
1958	1.69	1.36	3.63	18.00	3.96	2.68	2.85	0.08	0.00	1.26	0.00	0.19
1959	0.40	0.00	0.66	243.00	27.00	5.85	3.28	0.03	0.01	0.00	0.07	0.07
1960	0.05	0.01	1.04	942.00	34.20	11.30	1.05	0.03	0.42	0.53	0.00	0.00
1961	0.00	0.00	3.17	12.60	2.33	0.00	0.06	0.05	0.04	0.02	0.86	0.29
1962	0.08	2.92	10.20	716.60	103.30	232.80	18.60	11.00	0.12	0.25	0.48	0.08
1963	0.00	0.24	30.30	25.70	8.74	105.30	17.20	8.83	0.00	0.42	0.02	0.00
1964	0.07	0.75	0.73	221.60	58.30	575.90	64.20	2.63	1.16	6.69	1.99	0.40
1965	0.11	1.48	5.83	892.60	162.70	85.20	22.00	9.93	37.80	46.10	15.70	9.72

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (May 1931 through December 2001) and estimated (January through April 1931) historic streamflow, in cubic feet per second, for the Park River at Grafton, N. Dak.—Continued												
1966	2.09	0.19	297.60	637.50	441.00	84.90	136.00	33.30	2.03	0.92	1.22	1.88
1967	1.13	1.33	110.50	636.70	513.00	23.30	1.98	0.09	0.00	0.03	0.13	0.05
1968	0.02	1.68	83.40	46.40	50.90	23.20	9.40	0.26	0.11	0.16	0.08	0.12
1969	0.08	2.28	8.02	859.50	30.60	14.50	7.12	0.42	2.25	0.44	0.09	2.47
1970	0.27	0.13	0.60	633.70	207.70	38.70	15.00	0.29	0.01	0.01	3.20	0.79
1971	0.01	0.63	17.00	876.10	57.40	75.80	74.70	4.96	0.03	5.34	6.67	0.43
1972	0.00	3.86	320.90	417.40	57.20	9.56	0.22	0.02	1.91	0.04	0.08	3.25
1973	0.72	0.31	62.70	28.20	12.40	9.45	0.38	0.92	0.57	5.47	5.51	7.41
1974	1.60	1.82	8.50	1,078.00	687.70	100.70	5.58	4.54	0.76	0.21	4.02	8.68
1975	5.09	3.29	3.63	245.90	145.90	15.40	79.60	0.50	0.27	0.80	7.36	6.97
1976	5.17	4.55	33.80	542.40	26.70	81.70	3.69	0.40	0.38	0.23	1.70	2.12
1977	2.19	2.00	6.06	8.83	4.86	1.54	0.13	0.09	0.06	0.21	2.41	2.50
1978	2.40	1.45	19.80	864.60	98.90	22.40	4.61	0.35	2.02	0.18	5.23	4.12
1979	0.92	0.77	2.37	1,450.00	285.00	47.00	54.20	6.20	4.46	0.31	5.57	4.28
1980	2.44	1.32	2.29	92.40	12.30	24.50	0.67	2.01	39.60	40.30	31.30	14.10
1981	5.42	45.70	112.50	108.20	28.30	50.70	59.10	9.49	10.70	8.76	7.50	6.29
1982	5.39	3.38	29.00	497.50	111.50	98.00	254.30	38.60	1.47	69.90	22.10	17.40
1983	13.90	10.40	399.60	319.90	58.30	74.10	20.40	0.65	0.13	1.29	4.95	0.97
1984	0.47	1.71	36.70	77.60	21.10	17.10	2.25	1.27	0.06	2.76	7.67	1.63
1985	0.00	0.11	217.80	68.50	21.10	13.40	2.26	25.30	2.19	10.20	7.19	1.27
1986	8.25	11.20	228.10	195.20	106.90	18.20	55.40	23.20	8.35	0.77	0.48	0.35
1987	0.34	1.98	97.30	988.30	47.50	14.30	9.39	4.60	0.08	0.07	0.09	0.19
1988	0.12	0.74	3.85	42.60	7.89	5.52	0.98	0.18	0.00	0.04	0.04	0.01
1989	0.00	0.00	2.32	32.50	10.90	1.55	0.29	0.03	0.00	0.01	0.43	0.09
1990	0.02	0.00	0.36	9.60	4.42	1.66	0.00	0.00	0.00	0.00	0.00	0.00
1991	0.00	0.00	0.00	0.00	5.11	1.68	16.00	2.24	1.13	1.24	4.49	8.97
1992	10.10	4.74	357.70	217.60	36.10	23.30	5.57	4.35	0.21	0.00	0.01	0.23
1993	0.11	10.80	20.70	91.80	59.40	26.90	398.40	568.60	72.80	27.30	13.80	10.50
1994	6.58	5.85	199.00	221.50	109.50	36.20	21.20	2.10	0.13	0.31	7.15	2.70
1995	0.82	0.80	654.20	433.00	119.80	29.70	43.00	23.40	4.93	0.50	0.04	0.06
1996	0.18	6.55	9.28	1,072.00	494.70	72.00	10.30	6.90	0.39	14.60	3.12	1.93
1997	2.13	2.29	9.30	1,794.00	401.10	43.30	440.90	20.70	3.56	10.10	11.80	9.92
1998	6.36	24.10	506.40	692.00	96.50	126.70	102.10	4.61	2.32	0.74	5.10	5.44
1999	2.55	2.73	156.10	609.10	231.50	83.20	25.90	13.30	2.90	1.02	2.98	2.59
2000	2.24	2.48	8.08	5.95	6.14	35.60	23.20	2.69	0.62	0.05	11.50	6.26
2001	4.88	3.97	33.60	715.00	173.00	70.90	14.70	26.20	0.01	0.37	5.13	4.67

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Pembina River at Neche, N. Dak.												
1931	7.20	6.60	45.20	462.90	102.70	22.30	10.80	2.07	0.39	0.64	4.92	1.04
1932	0.13	3.45	14.10	422.90	185.70	71.20	21.10	6.10	1.84	7.53	8.02	2.71
1933	0.00	0.00	17.90	720.70	554.50	319.80	74.50	27.20	28.90	47.20	24.10	9.60
1934	4.74	4.81	75.20	343.30	153.50	67.70	19.90	1.37	0.10	1.68	1.07	0.08
1935	0.00	0.00	12.60	144.10	64.20	108.20	62.40	23.50	14.90	14.00	5.01	2.19
1936	0.57	0.04	0.00	681.30	428.40	196.50	57.00	20.70	25.30	14.10	7.08	3.53
1937	0.56	0.00	0.00	112.10	74.80	65.50	14.30	12.50	0.40	0.81	0.36	0.17
1938	0.00	0.00	179.40	101.00	78.30	36.60	12.50	0.05	0.00	0.00	0.00	0.00
1939	0.00	0.00	0.00	24.70	11.80	10.80	0.60	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	94.00	35.50	6.56	0.00	7.06	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.00	995.80	384.50	174.50	61.70	28.10	134.60	121.80	51.80	26.30
1942	3.53	1.09	45.70	1,900.00	977.10	365.00	129.20	100.10	68.40	50.60	33.90	9.51
1943	6.51	5.45	155.10	500.60	301.90	314.70	226.50	206.90	180.90	122.90	72.00	39.70
1944	7.37	3.65	3.74	273.90	203.70	255.20	563.80	810.90	463.00	203.20	233.70	105.00
1945	42.90	49.50	740.80	1,080.00	759.40	439.30	257.00	142.40	96.40	66.80	35.60	21.70
1946	8.98	8.96	568.40	674.00	290.20	113.40	67.50	32.00	20.30	29.50	22.80	7.39
1947	1.76	1.20	1.03	609.00	291.90	199.80	87.90	122.40	65.00	53.50	28.10	15.40
1948	14.10	5.48	5.03	930.20	888.50	412.90	312.00	197.00	117.20	66.60	45.70	20.60
1949	12.80	12.00	11.50	2,428.00	1,569.00	656.90	272.50	142.40	69.10	56.60	41.70	17.80
1950	8.81	7.04	9.58	1,804.00	2,887.00	1,211.00	598.40	408.30	222.50	151.80	87.80	37.40
1951	31.50	25.00	38.40	844.50	512.70	265.60	120.20	67.30	48.60	28.90	15.70	7.29
1952	1.29	1.00	1.28	283.50	204.40	123.00	70.50	20.60	4.52	3.58	6.05	1.36
1953	0.22	0.10	0.93	71.10	46.50	157.60	90.80	64.00	14.70	8.82	9.57	3.65
1954	1.06	0.32	9.25	94.60	80.60	389.80	686.60	401.20	205.70	143.90	76.50	28.00
1955	10.50	16.10	13.60	1,511.00	854.50	579.30	303.60	109.10	57.00	53.30	25.00	14.50
1956	8.84	8.55	12.10	1,180.00	2,264.00	881.20	377.20	182.50	139.70	100.00	63.20	20.00
1957	15.70	7.68	118.40	275.40	202.10	134.90	63.90	77.60	116.50	165.20	86.70	61.50
1958	35.10	21.10	24.20	205.50	125.50	38.80	31.90	5.19	2.31	5.34	3.82	0.33
1959	0.15	0.10	0.75	500.30	166.40	140.00	39.80	18.00	10.80	31.90	61.70	100.30
1960	66.00	39.70	23.00	1,833.00	1,252.00	480.50	203.30	94.30	44.00	26.60	19.40	5.28
1961	4.36	1.96	49.10	268.40	182.60	56.70	13.60	2.42	3.64	4.23	3.09	0.96
1962	0.40	0.13	1.03	672.80	377.50	296.50	114.60	83.10	99.80	62.20	31.50	22.10
1963	18.40	1.67	91.10	196.70	192.00	268.50	171.90	127.10	74.30	45.40	22.00	6.60
1964	3.29	3.22	2.74	328.80	328.50	203.40	73.10	49.60	57.30	43.90	22.70	6.98
1965	4.41	3.72	2.76	862.60	701.70	453.50	181.60	74.70	94.50	85.00	51.00	34.10

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (January 1931 through December 2001) historic streamflow, in cubic feet per second, for the Pembina River at Neche, N. Dak.—Continued												
1966	21.50	16.40	139.10	1,547.00	964.90	389.50	241.80	113.30	44.70	25.90	15.80	7.27
1967	8.10	8.40	26.60	921.70	1,010.00	317.90	105.10	38.40	13.30	22.10	19.20	6.26
1968	2.60	1.80	155.80	204.90	143.60	70.00	43.70	138.40	342.80	377.80	191.10	56.40
1969	23.30	17.00	23.50	3,146.00	1,805.00	621.50	364.10	183.50	121.20	80.80	58.40	29.30
1970	17.40	15.20	11.80	1,613.00	2,313.00	1,465.00	809.90	322.40	180.10	118.40	77.50	24.40
1971	14.60	13.80	16.10	2,398.00	1,517.00	581.00	343.70	266.20	157.30	104.60	69.90	34.50
1972	17.30	10.90	395.60	1,330.00	891.70	356.60	198.90	178.00	110.80	74.90	35.20	8.47
1973	2.81	2.70	90.70	101.30	71.00	51.30	63.50	61.60	62.00	60.80	38.50	20.80
1974	10.60	6.20	11.70	3,028.00	4,618.00	1,777.00	529.90	149.60	99.00	64.80	38.80	21.60
1975	11.90	7.29	8.21	361.80	1,221.00	664.70	264.10	100.80	50.10	44.00	28.20	12.00
1976	13.20	15.00	30.70	2,766.00	1,450.00	502.50	251.70	85.20	41.20	28.00	14.70	2.53
1977	2.19	2.30	15.30	69.20	80.00	49.00	18.90	5.74	25.50	29.10	10.90	6.01
1978	3.01	0.43	0.06	1,170.00	519.00	194.60	68.10	46.80	49.80	24.90	11.70	5.06
1979	3.74	3.28	4.76	1,991.00	3,284.00	867.00	288.50	80.40	62.00	45.80	27.50	13.20
1980	6.45	5.03	5.83	205.00	84.30	36.60	11.20	11.50	12.90	21.00	24.90	5.81
1981	1.37	25.10	112.20	220.70	137.20	65.70	28.20	14.10	6.27	13.90	11.10	3.65
1982	0.99	0.02	33.40	605.20	644.50	520.80	261.50	133.80	61.20	81.30	28.80	20.70
1983	12.80	5.42	172.30	917.70	456.20	274.60	73.10	22.90	12.60	24.40	19.00	2.39
1984	0.53	0.00	25.60	148.10	164.00	138.30	32.90	6.99	2.31	7.24	4.45	2.26
1985	0.07	0.00	494.50	832.00	264.60	136.60	136.30	81.40	45.10	56.50	42.10	17.80
1986	15.20	8.41	571.40	927.20	771.60	382.50	179.20	133.50	65.40	49.50	17.40	12.20
1987	13.60	17.30	48.50	1,997.00	878.40	264.30	113.80	61.70	64.80	65.80	36.10	18.30
1988	4.23	2.17	44.40	145.90	53.90	16.50	3.27	0.44	0.10	0.40	2.67	3.06
1989	0.18	0.00	0.00	177.80	102.80	56.20	12.90	0.59	0.00	0.00	4.25	0.00
1990	0.00	0.00	0.82	316.10	122.30	185.10	60.00	6.16	0.19	0.04	1.15	0.10
1991	0.02	0.00	9.25	74.90	73.50	148.10	260.30	99.20	17.50	12.10	11.20	8.48
1992	8.17	8.06	438.10	2,554.00	889.20	230.70	90.40	29.00	11.90	9.13	12.90	7.35
1993	4.74	3.46	31.70	540.20	293.20	206.50	648.70	946.30	648.40	319.00	187.60	105.10
1994	46.60	36.20	395.40	1,146.00	543.60	234.30	176.80	114.80	187.10	643.50	486.10	260.60
1995	120.00	65.80	1,216.00	4,382.00	3,183.00	1,291.00	478.90	881.80	345.70	155.90	79.50	45.50
1996	23.10	13.10	14.60	3,164.00	2,784.00	917.10	419.00	308.10	184.00	131.20	77.70	40.20
1997	39.50	37.10	38.90	4,412.00	4,770.00	968.90	1,509.00	431.80	164.00	127.40	72.70	54.40
1998	32.90	34.20	579.30	4,713.00	1,576.00	624.10	495.90	281.90	137.70	91.80	58.20	48.60
1999	25.00	24.60	295.40	1,175.00	1,617.00	1,894.00	766.30	232.50	111.30	70.90	46.60	32.80
2000	29.00	31.30	149.00	130.00	88.10	74.90	52.30	48.20	39.40	27.80	28.90	19.10
2001	16.90	12.90	15.80	2,907.00	1,742.00	627.00	310.00	226.00	106.00	47.71	35.61	28.13

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through June 1950, October 1951 through December 2001; no winter data October 1982 through December 2001) historic streamflow, in cubic feet per second, for the Tongue River at Akra, N. Dak.												
1931	--	--	--	--	--	--	--	--	--	--	--	--
1932	--	--	--	--	--	--	--	--	--	--	--	--
1933	--	--	--	--	--	--	--	--	--	--	--	--
1934	--	--	--	--	--	--	--	--	--	--	--	--
1935	--	--	--	--	--	--	--	--	--	--	--	--
1936	--	--	--	--	--	--	--	--	--	--	--	--
1937	--	--	--	--	--	--	--	--	--	--	--	--
1938	--	--	--	--	--	--	--	--	--	--	--	--
1939	--	--	--	--	--	--	--	--	--	--	--	--
1940	--	--	--	--	--	--	--	--	--	--	--	--
1941	--	--	--	--	--	--	--	--	--	--	--	--
1942	--	--	--	--	--	--	--	--	--	--	--	--
1943	--	--	--	--	--	--	--	--	--	--	--	--
1944	--	--	--	--	--	--	--	--	--	--	--	--
1945	--	--	--	--	--	--	--	--	--	--	--	--
1946	--	--	--	--	--	--	--	--	--	--	--	--
1947	--	--	--	--	--	--	--	--	--	--	--	--
1948	--	--	--	--	--	--	--	--	--	--	--	--
1949	--	--	--	--	--	--	--	--	--	--	--	--
1950	--	--	--	450.90	586.90	40.70	--	--	--	--	--	--
1951	--	--	--	--	--	--	--	--	--	3.54	2.81	2.07
1952	1.25	1.00	4.57	46.80	5.90	1.91	1.24	0.54	0.58	1.25	0.88	0.06
1953	0.51	0.24	2.03	9.84	18.90	15.50	2.41	4.64	1.68	2.59	2.52	1.24
1954	0.60	1.09	7.06	36.00	18.50	51.70	4.13	3.09	7.32	5.54	4.68	1.92
1955	1.23	1.60	1.61	167.50	18.10	22.50	34.90	2.01	1.95	17.40	4.39	3.03
1956	3.40	4.23	3.92	294.20	208.80	32.70	13.90	4.69	11.80	5.77	15.80	5.90
1957	2.88	1.50	40.10	28.50	21.50	13.20	6.25	7.78	20.60	6.21	5.53	3.34
1958	2.21	2.38	9.41	15.60	6.38	3.95	11.90	1.12	0.95	2.70	2.21	1.70
1959	2.10	1.86	5.54	100.00	20.20	7.91	2.65	0.99	2.45	3.71	3.06	3.37
1960	2.64	2.03	1.85	196.60	38.20	6.22	2.23	1.09	1.00	1.76	3.14	1.26
1961	1.37	0.83	13.70	9.20	3.93	0.73	0.46	0.48	0.28	0.51	2.51	2.00
1962	1.28	0.57	0.49	128.90	81.70	66.80	21.30	9.92	7.42	9.45	12.80	1.51
1963	4.86	5.22	5.16	11.40	9.50	67.40	17.00	8.44	7.34	6.18	3.82	6.55
1964	2.01	1.43	0.22	83.20	35.60	78.70	17.80	4.38	11.00	19.00	10.50	5.41
1965	4.46	2.59	5.58	214.60	107.10	36.40	10.60	5.91	9.67	14.10	8.21	9.74

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (April through June 1950, October 1951 through December 2001; no winter data October 1982 through December 2001) historic streamflow, in cubic feet per second, for the Tongue River at Akra, N. Dak.—Continued												
1966	5.15	3.04	134.90	206.10	143.90	13.30	31.40	8.20	3.52	7.71	13.20	4.77
1967	3.05	2.88	35.10	159.00	181.20	1.91	2.94	0.87	3.21	1.14	4.85	10.20
1968	6.12	5.12	19.90	26.30	38.40	15.90	14.30	7.98	5.27	7.19	9.02	9.03
1969	2.34	3.25	6.34	256.40	37.30	10.80	7.66	1.17	0.56	0.78	5.40	7.60
1970	6.40	6.38	5.52	215.60	190.80	46.50	6.45	4.25	3.18	7.75	14.30	12.90
1971	7.27	2.11	1.88	253.10	39.80	46.70	15.20	2.16	1.09	2.45	12.30	3.53
1972	2.16	3.45	50.90	110.10	22.60	5.36	5.29	2.50	3.03	5.73	3.88	3.14
1973	3.43	3.80	36.00	13.70	8.53	4.03	3.51	1.28	0.88	3.07	3.52	4.37
1974	4.29	3.20	11.40	246.90	224.80	27.30	2.77	0.97	0.65	4.10	9.31	6.75
1975	5.37	4.53	3.67	31.20	27.60	3.17	3.02	3.34	2.67	1.46	0.56	0.70
1976	3.99	4.56	4.73	141.80	5.45	30.80	1.79	2.00	1.62	1.22	2.23	1.95
1977	1.72	1.66	7.09	4.03	4.26	4.30	7.67	1.60	2.08	3.54	8.24	10.30
1978	3.65	9.07	13.70	205.60	30.80	3.48	0.09	0.80	0.21	2.87	2.29	1.31
1979	1.65	8.35	19.20	249.80	184.10	23.30	18.20	4.06	20.20	5.19	5.39	4.90
1980	4.74	4.21	7.27	37.10	1.63	0.83	0.74	9.62	28.30	30.10	22.70	5.08
1981	4.60	18.70	28.80	47.30	19.90	19.60	6.28	6.63	13.60	11.00	9.38	2.74
1982	1.29	0.83	12.70	97.90	37.60	27.60	14.80	6.04	7.77	--	--	--
1983	--	--	54.60	111.50	18.60	7.82	3.51	1.56	2.85	--	--	--
1984	--	--	2.67	22.10	9.32	7.83	7.86	0.90	3.26	--	--	--
1985	--	--	76.90	56.00	13.00	11.00	12.00	28.90	18.00	--	--	--
1986	--	--	82.30	124.90	68.00	10.80	22.80	10.90	19.60	--	--	--
1987	--	--	39.60	269.70	20.50	7.61	3.28	0.82	1.64	--	--	--
1988	--	--	5.27	14.10	6.81	0.47	0.45	0.21	0.24	--	--	--
1989	--	--	15.50	14.40	4.96	5.04	0.94	1.54	0.10	--	--	--
1990	--	--	1.55	6.27	6.76	6.12	1.95	1.43	1.41	--	--	--
1991	--	--	0.73	0.43	10.50	17.40	6.10	6.29	3.69	--	--	--
1992	--	--	34.40	21.30	15.60	7.66	8.52	3.45	7.19	--	--	--
1993	--	--	20.80	48.00	32.10	23.60	107.30	143.70	25.90	--	--	--
1994	--	--	40.20	71.70	12.50	3.13	5.16	9.67	4.39	--	--	--
1995	--	--	119.60	153.40	39.20	9.00	17.70	4.72	8.42	--	--	--
1996	--	--	33.80	250.70	143.70	27.50	31.00	8.10	7.31	--	--	--
1997	--	--	15.70	317.80	293.30	20.70	216.40	10.70	8.36	--	--	--
1998	--	--	93.40	275.70	34.40	15.90	8.15	5.26	8.10	--	--	--
1999	--	--	41.60	144.00	59.40	16.30	12.60	6.66	8.06	--	--	--
2000	--	--	8.80	8.34	9.76	13.50	2.75	4.43	3.26	--	--	--
2001	--	--	14.70	234.00	49.00	22.60	9.75	10.20	6.44	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1938 through September 1951) historic streamflow, in cubic feet per second, for the Tongue River at Cavalier, N. Dak.												
1931	--	--	--	--	--	--	--	--	--	--	--	--
1932	--	--	--	--	--	--	--	--	--	--	--	--
1933	--	--	--	--	--	--	--	--	--	--	--	--
1934	--	--	--	--	--	--	--	--	--	--	--	--
1935	--	--	--	--	--	--	--	--	--	--	--	--
1936	--	--	--	--	--	--	--	--	--	--	--	--
1937	--	--	--	--	--	--	--	--	--	--	--	--
1938	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00
1939	0.00	0.00	0.48	14.20	2.87	1.28	0.09	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	37.80	5.41	1.24	0.26	0.16	0.01	0.00	0.01	0.00
1941	0.00	0.00	0.00	145.50	9.60	17.70	1.40	0.07	16.80	14.30	5.07	3.02
1942	1.51	0.30	26.40	267.40	59.60	17.80	3.32	20.90	13.20	2.54	2.79	0.53
1943	0.66	0.32	59.50	85.80	29.60	98.20	30.90	1.70	0.59	0.84	2.01	1.26
1944	0.54	0.00	0.00	65.00	10.90	10.80	7.96	10.10	23.50	3.64	45.30	10.00
1945	3.65	2.83	184.40	60.30	42.50	30.00	17.10	3.45	4.24	3.45	3.85	2.45
1946	1.56	1.30	91.20	32.70	11.90	6.15	2.80	0.45	2.40	3.81	2.79	0.93
1947	0.03	0.00	0.48	82.20	13.50	35.90	9.11	4.49	2.06	5.09	4.01	3.03
1948	2.25	0.59	0.87	273.00	64.40	15.30	19.80	7.63	2.05	3.01	3.07	1.00
1949	0.50	0.10	1.47	175.90	22.50	8.78	2.50	1.30	1.45	5.13	3.82	1.30
1950	0.35	0.25	0.53	178.10	405.90	45.50	14.20	2.91	3.75	5.28	3.92	2.28
1951	1.60	1.00	27.00	106.00	19.50	7.65	1.97	3.96	2.54	--	--	--
1952	--	--	--	--	--	--	--	--	--	--	--	--
1953	--	--	--	--	--	--	--	--	--	--	--	--
1954	--	--	--	--	--	--	--	--	--	--	--	--
1955	--	--	--	--	--	--	--	--	--	--	--	--
1956	--	--	--	--	--	--	--	--	--	--	--	--
1957	--	--	--	--	--	--	--	--	--	--	--	--
1958	--	--	--	--	--	--	--	--	--	--	--	--
1959	--	--	--	--	--	--	--	--	--	--	--	--
1960	--	--	--	--	--	--	--	--	--	--	--	--
1961	--	--	--	--	--	--	--	--	--	--	--	--
1962	--	--	--	--	--	--	--	--	--	--	--	--
1963	--	--	--	--	--	--	--	--	--	--	--	--
1964	--	--	--	--	--	--	--	--	--	--	--	--
1965	--	--	--	--	--	--	--	--	--	--	--	--

Supplement 2. Gaged and estimated historic monthly streamflow for 28 additional sites in the Red River of the North Basin, 1931-2001.—Continued

[--, no data]

Year	January	February	March	April	May	June	July	August	September	October	November	December
Gaged (October 1938 through September 1951) historic streamflow, in cubic feet per second, for the Tongue River at Cavalier, N. Dak.—Continued												
1966	--	--	--	--	--	--	--	--	--	--	--	--
1967	--	--	--	--	--	--	--	--	--	--	--	--
1968	--	--	--	--	--	--	--	--	--	--	--	--
1969	--	--	--	--	--	--	--	--	--	--	--	--
1970	--	--	--	--	--	--	--	--	--	--	--	--
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Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Otter Tail River above Orwell Dam												
1931	30.00	65.00	131.80	140.80	159.50	104.40	62.60	32.30	44.40	30.00	28.80	30.00
1932	40.00	45.00	60.00	81.70	50.60	50.30	32.70	27.20	31.40	24.50	35.00	95.00
1933	23.00	25.00	170.00	51.30	37.80	61.80	19.10	14.70	25.80	13.10	17.50	30.30
1934	27.40	26.20	25.80	39.50	18.00	14.20	13.80	11.50	7.99	11.90	13.70	14.10
1935	16.00	10.80	58.80	51.50	51.80	63.50	102.60	22.80	13.90	10.50	17.00	36.00
1936	26.50	24.90	32.50	65.00	41.10	21.90	12.80	19.70	21.60	25.30	23.10	19.50
1937	15.10	15.70	23.50	60.90	58.00	178.20	96.90	72.70	125.00	88.70	37.80	20.30
1938	20.40	36.10	100.80	144.00	272.20	267.20	79.00	24.90	47.70	29.40	26.40	46.40
1939	117.40	118.90	228.20	207.00	180.70	83.30	46.40	18.50	17.00	19.80	22.50	17.60
1940	17.70	32.00	44.70	166.50	308.90	137.00	28.50	19.40	22.30	22.80	51.40	36.10
1941	58.60	105.20	163.50	277.10	302.70	210.50	99.00	39.00	51.50	80.10	102.90	104.60
1942	123.50	97.50	133.10	120.10	383.40	426.80	207.80	164.60	230.70	336.70	362.50	306.20
1943	306.20	240.90	310.10	595.30	656.10	776.30	534.10	432.50	396.70	381.30	339.10	269.20
1944	199.10	157.80	196.90	309.30	362.00	616.00	470.70	350.30	581.30	695.20	667.40	502.90
1945	411.60	369.30	527.80	649.70	735.30	640.90	312.30	158.60	142.90	236.60	270.30	226.30
1946	194.20	146.40	360.10	513.70	569.00	368.40	621.30	610.60	511.40	559.80	547.90	479.10
1947	415.30	341.80	343.20	703.60	900.30	871.80	560.40	238.10	207.30	218.90	207.90	191.80
1948	157.40	129.90	247.50	480.60	647.20	443.80	254.20	213.10	190.40	137.90	115.30	68.10
1949	90.30	107.60	200.60	220.60	224.00	213.90	225.10	178.30	93.50	89.80	88.80	105.80
1950	109.60	143.00	218.00	428.50	869.50	883.70	666.90	325.70	162.40	131.30	98.20	111.10
1951	143.60	199.90	260.50	607.60	635.00	661.50	463.50	332.10	321.70	323.70	353.30	441.40
1952	478.70	484.40	488.70	787.40	822.60	563.80	426.00	446.80	463.40	349.40	242.20	203.10
1953	169.30	212.00	334.00	421.00	558.30	1,262.00	1,246.00	628.93	601.03	531.87	456.75	377.77
1954	304.70	292.47	444.17	620.38	852.15	906.72	521.38	264.55	257.57	230.86	145.28	153.97
1955	127.55	152.02	230.79	473.24	396.04	337.94	480.90	447.27	504.71	461.93	270.60	134.94
1956	177.26	180.86	210.89	636.70	813.43	649.21	291.53	221.28	117.14	80.95	127.36	96.35
1957	73.60	73.58	222.30	421.79	627.14	592.00	549.08	505.57	487.60	446.84	409.86	302.47
1958	227.23	241.01	354.91	381.48	236.42	216.26	354.19	257.52	258.69	173.04	157.09	144.22
1959	165.96	182.38	282.33	303.35	329.66	513.06	412.98	281.55	214.40	195.39	157.59	188.65
1960	203.84	218.86	228.82	510.17	769.02	648.09	403.71	222.72	183.49	147.11	129.56	115.59
1961	144.26	132.54	194.85	281.43	334.70	373.44	202.68	228.30	107.77	75.59	57.52	54.41
1962	58.56	112.10	207.31	433.65	669.26	1,025.54	910.10	641.05	543.43	493.45	361.51	252.35
1963	185.22	174.48	270.92	443.51	442.37	585.99	355.78	248.18	244.04	235.26	150.29	78.17
1964	129.81	143.67	185.56	473.36	767.69	515.42	301.23	221.99	230.11	207.17	183.33	159.65
1965	168.89	144.77	178.21	689.77	939.64	1,130.03	766.89	474.05	441.86	515.13	482.77	502.66

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Otter Tail River above Orwell Dam—Continued												
1966	415.47	332.69	751.04	1,034.00	1,332.91	995.74	566.09	594.05	477.28	471.29	469.89	399.10
1967	360.76	337.70	464.30	779.56	1,039.54	961.90	641.46	339.50	203.99	177.09	143.44	92.82
1968	88.85	135.74	251.03	396.53	594.28	579.15	466.96	330.48	247.37	242.71	242.14	224.19
1969	224.87	349.75	446.13	874.21	1,075.61	814.78	463.93	272.22	120.57	109.42	92.83	132.79
1970	147.50	167.07	219.79	392.03	675.44	715.28	477.16	215.32	98.90	103.56	114.61	105.65
1971	120.78	149.27	247.87	453.00	345.74	301.85	416.72	229.95	246.17	231.74	418.34	544.55
1972	501.46	464.18	683.98	771.75	1,099.82	1,026.57	670.16	576.23	496.13	414.45	365.30	316.73
1973	335.04	338.72	494.37	438.73	373.77	290.21	234.81	187.98	210.71	375.78	573.62	566.74
1974	468.81	440.10	465.12	606.87	1,014.93	1,176.62	676.03	434.40	327.51	269.51	194.92	153.34
1975	170.10	245.49	389.41	737.86	1,009.93	1,076.94	840.37	556.24	415.63	323.42	257.17	207.46
1976	217.03	284.07	406.60	514.82	326.37	200.50	137.58	31.84	23.44	21.67	13.60	15.15
1977	13.13	16.73	66.85	104.33	73.48	73.21	64.87	61.30	113.25	180.18	248.16	337.94
1978	356.31	318.74	510.64	753.15	770.85	494.18	412.73	238.76	160.71	89.80	90.69	76.64
1979	71.61	109.51	260.30	749.98	940.08	936.80	778.66	700.79	548.18	347.38	359.45	325.23
1980	321.89	360.95	476.84	643.00	474.38	339.44	178.89	129.84	113.31	92.69	82.51	69.57
1981	96.08	136.25	179.78	218.95	171.48	145.77	127.15	207.64	137.57	128.83	167.07	205.48
1982	184.90	245.82	411.39	617.47	739.57	716.24	534.96	370.86	250.17	264.29	253.86	259.56
1983	248.34	260.31	338.43	371.81	319.39	258.64	368.52	411.99	405.27	299.79	241.81	216.96
1984	245.57	325.80	498.68	580.71	574.44	670.22	429.68	253.00	149.76	198.71	222.66	239.28
1985	246.04	258.54	441.68	608.72	930.88	1,258.02	1,113.15	1,036.39	897.03	842.11	785.18	646.42
1986	573.89	533.56	708.42	1,034.05	1,457.79	1,356.27	898.32	610.31	698.33	765.09	767.59	704.20
1987	590.79	543.62	637.51	669.40	524.34	449.69	286.80	226.03	181.42	121.00	127.40	154.40
1988	164.27	168.56	299.01	351.54	358.04	220.51	103.29	65.38	70.42	72.67	84.24	73.60
1989	104.72	144.74	279.28	708.32	625.50	571.01	319.99	142.90	165.21	131.06	103.14	91.40
1990	132.54	157.20	326.59	441.39	520.26	534.46	398.76	245.53	169.33	132.23	100.47	90.17
1991	101.82	156.68	254.80	384.68	694.31	721.80	680.21	446.25	336.44	225.65	174.40	174.12
1992	205.33	252.45	369.24	446.11	445.43	379.26	357.68	304.32	262.86	199.87	205.24	203.95
1993	225.87	283.95	417.25	626.85	687.36	963.96	1,034.93	961.32	1,023.97	973.25	782.94	650.03
1994	559.14	639.77	724.32	831.86	1,001.45	723.45	574.80	419.56	289.68	319.81	306.42	416.64
1995	409.15	416.81	634.51	865.07	896.79	630.20	517.70	327.34	264.00	361.77	439.02	414.64
1996	368.95	398.47	503.51	774.99	1,167.63	1,017.79	593.45	353.67	224.44	208.48	296.94	407.36
1997	505.26	462.35	521.69	1,351.79	1,368.28	1,065.71	853.21	726.75	577.84	525.12	529.88	565.93
1998	517.09	583.47	700.96	824.19	793.30	745.87	1,117.49	846.28	556.41	542.46	741.61	739.27
1999	738.19	746.88	792.83	1,085.21	1,260.52	1,199.91	876.76	713.74	764.95	719.31	595.55	467.07
2000	461.76	493.85	696.71	846.70	801.25	797.09	831.60	616.45	433.33	371.21	636.68	664.18
2001	690.00	608.96	635.29	1,148.95	1,442.35	1,414.61	1,019.33	636.69	472.34	414.92	386.99	470.52

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Otter Tail River at the mouth							
1931	33.63	72.88	149.09	159.27	183.45	120.07	72.00	37.15	51.07	34.50	32.29	33.63
1932	44.85	50.45	67.87	92.42	58.20	57.85	37.61	31.28	36.11	28.18	39.24	106.51
1933	25.79	28.03	192.30	58.03	43.48	71.08	21.97	16.91	29.67	15.07	19.62	33.97
1934	30.72	29.37	29.18	44.68	20.70	16.33	15.87	13.23	9.19	13.69	15.36	15.81
1935	17.94	12.11	66.51	58.26	59.58	73.03	118.00	26.22	15.99	12.08	19.06	40.36
1936	29.71	27.92	36.76	73.57	47.27	25.19	14.72	22.66	24.84	29.10	25.90	21.86
1937	16.93	17.60	26.58	69.46	67.44	204.95	111.45	83.61	143.77	102.02	42.38	22.76
1938	22.87	40.47	114.02	162.89	313.07	307.32	90.86	28.64	54.86	33.81	29.60	52.02
1939	131.62	133.31	259.85	235.94	207.86	95.86	53.39	21.28	19.55	22.77	25.23	19.73
1940	19.84	35.88	50.56	188.34	355.28	157.57	32.78	22.31	25.65	26.22	57.63	40.47
1941	65.70	117.95	185.01	313.62	348.17	243.02	114.14	44.98	59.52	92.31	115.45	117.29
1942	138.46	109.31	151.03	137.43	550.01	582.71	229.76	171.15	229.54	353.57	406.82	343.30
1943	343.30	270.09	320.19	913.01	685.05	884.29	600.22	464.79	397.23	390.18	325.49	273.11
1944	196.00	152.00	191.71	367.51	461.23	832.88	687.34	366.33	589.73	707.43	673.92	504.48
1945	405.30	370.73	683.19	673.48	748.68	654.41	299.13	142.99	139.55	221.29	258.97	221.23
1946	189.70	127.50	455.78	529.06	571.38	349.40	633.64	603.73	498.98	567.34	553.38	478.89
1947	411.50	342.33	373.37	933.70	929.91	911.80	575.60	222.66	205.92	189.54	196.74	184.66
1948	148.69	115.20	241.27	577.31	648.43	447.54	251.10	209.98	164.20	130.18	115.67	54.58
1949	69.80	85.70	205.44	259.66	215.88	215.65	321.39	181.68	90.59	91.31	90.80	94.98
1950	87.90	132.40	267.26	623.95	1,020.13	883.52	699.04	330.54	168.96	133.51	99.43	110.00
1951	144.75	146.88	237.72	918.79	670.11	677.08	476.63	334.15	322.79	329.53	357.39	449.54
1952	484.27	492.78	413.40	1,252.41	833.91	573.90	439.18	401.88	443.14	349.79	235.32	189.13
1953	166.50	192.70	375.07	445.65	585.51	1,338.80	1,254.98	645.65	610.34	522.42	452.86	379.97
1954	281.50	300.88	461.09	632.99	843.59	935.57	525.10	266.78	258.32	232.09	135.93	141.09
1955	130.94	148.22	235.72	501.14	369.48	321.73	486.42	423.28	450.29	448.02	254.26	133.84
1956	179.95	185.59	216.32	678.91	813.63	659.34	285.02	237.81	119.12	81.34	128.46	92.72
1957	68.60	73.82	260.19	470.44	640.67	625.04	566.17	507.46	487.78	444.66	415.86	302.34
1958	231.94	241.61	364.06	392.81	236.42	214.32	359.53	257.87	241.70	162.61	153.99	148.21
1959	170.53	184.91	287.87	314.00	352.95	522.73	430.51	282.72	204.50	195.59	131.39	172.65
1960	201.34	213.56	252.48	597.75	771.47	653.76	408.35	224.76	179.29	143.07	123.46	118.69
1961	138.36	135.22	208.80	282.34	342.72	383.57	203.27	212.15	104.31	77.59	50.02	40.71
1962	59.09	114.03	211.09	536.50	895.38	1,212.91	1,082.08	657.72	553.06	490.94	348.52	253.19
1963	190.17	180.54	291.86	455.06	447.63	690.98	365.90	249.97	243.99	235.58	147.14	51.21
1964	108.56	144.97	192.56	516.06	785.80	518.72	290.80	222.12	225.01	202.30	180.56	160.62
1965	149.89	146.49	180.94	864.96	960.67	1,192.07	808.87	460.15	445.98	546.81	477.05	465.16

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Otter Tail River at the mouth—Continued												
1966	413.47	323.51	968.13	1,061.94	1,349.15	1,015.76	578.37	592.88	414.93	429.39	417.07	327.20
1967	335.76	333.60	517.04	855.13	1,060.26	1,025.67	631.63	322.33	200.14	168.04	135.61	97.58
1968	89.02	129.54	260.73	398.69	559.19	580.37	462.96	323.82	241.42	245.32	242.59	205.79
1969	196.42	355.91	460.41	1,396.90	1,117.85	821.98	472.02	273.10	121.63	104.20	70.12	118.69
1970	111.80	131.47	225.04	442.54	691.26	735.99	481.39	205.32	96.50	103.46	100.26	78.36
1971	101.38	115.57	282.94	471.50	350.93	296.83	436.65	232.08	245.33	222.89	418.65	554.86
1972	508.13	464.52	834.59	824.02	1,170.33	1,040.25	695.61	582.08	497.94	412.39	335.41	309.65
1973	323.52	337.30	523.94	446.78	369.67	294.11	229.17	179.10	188.06	367.46	468.22	419.64
1974	407.81	446.95	477.58	620.75	1,017.22	1,131.85	682.65	436.99	322.16	253.09	196.59	144.14
1975	157.40	226.29	318.61	867.42	1,029.90	1,114.98	977.89	532.54	409.16	302.33	244.71	213.56
1976	215.83	291.33	474.25	530.92	328.04	187.58	136.58	28.04	16.22	18.24	12.58	13.65
1977	2.14	12.33	78.07	124.34	75.28	80.90	66.14	61.98	117.83	186.01	254.71	338.31
1978	348.41	290.74	724.31	1,121.48	807.64	530.97	558.98	246.10	158.86	89.60	92.20	78.48
1979	72.77	79.91	266.39	1,277.07	954.76	969.84	799.22	705.29	557.38	362.23	359.68	326.27
1980	330.17	364.70	519.36	723.11	482.68	368.25	181.33	134.69	105.74	86.25	75.59	64.56
1981	96.63	140.79	184.00	215.06	174.15	162.07	135.61	224.10	130.77	129.44	129.27	156.18
1982	176.60	243.12	453.61	698.03	748.74	718.37	545.88	376.14	251.84	288.66	259.60	266.78
1983	257.99	274.06	379.02	384.45	312.16	235.95	379.36	398.54	397.37	282.89	222.61	192.66
1984	235.87	326.34	671.10	666.48	585.60	869.32	455.92	254.48	152.26	235.26	233.55	249.01
1985	246.17	267.43	549.98	613.94	973.20	1,313.92	1,099.57	1,037.58	900.42	819.58	718.91	660.95
1986	589.65	559.47	945.64	1,283.84	1,582.31	1,346.81	911.02	614.86	849.67	785.70	780.86	707.20
1987	585.36	547.10	696.14	682.40	532.04	454.68	296.13	231.21	184.17	118.42	128.66	144.43
1988	145.96	174.48	342.81	359.09	361.20	224.70	105.80	67.74	66.92	72.68	84.94	70.30
1989	83.62	128.44	330.90	1,134.18	629.57	580.98	321.92	144.86	160.65	145.53	93.11	78.67
1990	141.76	173.19	443.16	428.36	508.38	508.61	400.72	243.10	162.87	118.00	88.40	87.22
1991	90.43	94.92	259.68	401.16	674.14	686.81	584.39	450.18	354.79	236.15	162.87	141.32
1992	177.54	226.74	464.28	450.36	431.24	381.64	362.69	328.99	274.65	192.98	186.31	200.29
1993	188.83	238.02	540.07	827.00	715.58	1,044.23	1,313.06	928.92	936.12	998.01	799.85	377.32
1994	555.79	559.10	1,340.41	984.56	1,059.04	801.42	609.77	450.51	293.09	351.41	305.93	420.55
1995	376.62	433.84	819.54	1,012.80	965.47	741.12	637.16	330.56	269.60	408.20	427.13	444.44
1996	453.32	449.94	876.46	1,065.29	1,185.62	1,041.61	605.32	350.52	210.57	205.01	310.08	397.06
1997	431.24	497.34	548.83	2,490.83	1,402.84	1,107.47	948.89	750.72	584.51	569.39	539.69	527.32
1998	424.09	678.22	647.39	879.91	835.85	785.54	1,165.82	866.73	590.59	594.22	666.66	742.65
1999	624.25	635.31	872.96	1,134.89	1,290.76	1,327.35	951.64	768.31	828.96	727.66	573.97	453.45
2000	409.23	498.17	854.39	831.94	864.61	831.94	859.94	636.92	444.92	391.15	596.74	664.78
2001	656.86	608.94	683.53	1,269.19	1,309.87	1,491.65	1,076.55	619.04	468.07	425.00	401.68	457.56

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Bois de Sioux River above White Rock Dam												
1931	0.00	0.00	2.93	1.76	0.81	4.62	1.79	2.60	5.54	0.00	0.00	0.00
1932	0.00	0.00	6.99	33.77	3.58	1.18	0.00	0.00	0.00	0.00	0.00	0.00
1933	0.00	0.72	18.70	7.22	5.53	3.02	0.00	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.00	2.69	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1935	0.00	1.26	55.77	7.22	13.82	18.14	20.97	0.65	0.00	0.00	0.00	0.00
1936	0.00	0.00	55.68	23.66	4.94	0.30	0.00	0.00	0.00	0.00	0.00	19.67
1937	0.00	0.00	83.18	222.52	28.34	5.63	16.26	1.25	0.00	0.00	0.00	0.00
1938	0.00	55.22	100.25	12.44	25.80	51.90	65.70	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	407.55	29.72	2.99	5.07	2.36	0.18	0.00	0.00	0.00	0.00
1940	0.00	0.00	21.83	130.96	13.53	0.08	0.00	0.00	0.00	0.00	0.00	0.00
1941	0.00	0.00	109.90	72.61	5.24	54.26	0.68	22.64	68.70	30.70	23.60	4.15
1942	0.00	0.00	10.15	32.68	799.52	733.71	35.99	18.90	54.05	20.30	18.40	1.69
1943	0.00	0.00	58.06	1,003.27	113.84	372.46	123.92	62.03	17.22	6.22	9.68	3.18
1944	0.00	0.00	7.24	61.17	189.03	700.11	84.57	10.00	6.05	3.99	7.73	2.75
1945	0.00	0.00	260.61	103.70	33.61	73.65	5.57	0.88	0.00	0.13	0.36	0.00
1946	0.00	0.00	587.38	170.14	21.14	4.87	88.77	3.09	2.60	15.12	9.41	2.29
1947	0.13	0.37	144.48	1,320.59	260.44	148.42	24.36	0.78	0.00	0.00	0.61	0.41
1948	0.00	0.00	338.92	781.82	74.49	17.22	25.34	5.21	0.27	0.15	0.49	0.06
1949	0.00	0.00	98.17	59.82	3.99	9.55	602.09	22.40	2.10	3.71	5.18	0.57
1950	0.00	0.00	92.50	672.45	659.50	104.18	358.45	20.72	1.46	3.39	1.95	0.24
1951	0.01	0.52	0.09	908.75	163.82	115.80	61.19	7.35	2.74	6.58	9.02	4.69
1952	2.69	1.68	1.86	2,385.97	315.05	70.43	96.61	11.16	6.55	0.36	0.57	1.44
1953	0.98	1.09	207.95	98.71	58.95	129.94	49.99	1.88	0.00	0.01	0.98	0.30
1954	0.00	0.00	23.09	58.87	36.83	127.56	12.83	8.21	8.02	3.98	4.69	1.07
1955	0.05	0.00	22.55	82.37	4.89	25.62	96.19	5.21	0.80	0.25	0.01	0.00
1956	0.00	0.00	0.08	193.09	99.00	56.29	9.55	105.44	6.30	0.67	3.83	1.97
1957	0.13	0.00	45.50	228.20	138.34	309.45	48.31	28.56	35.01	29.26	54.67	5.92
1958	0.97	14.56	140.43	167.44	29.40	10.08	5.61	2.17	3.08	7.27	0.62	4.12
1959	0.19	1.03	13.17	4.15	2.44	588.52	4.77	14.66	8.14	7.52	0.07	3.35
1960	3.22	1.47	22.35	205.14	54.51	59.37	3.50	0.11	5.52	2.23	0.74	1.23
1961	0.21	2.99	22.98	5.50	9.41	9.76	1.15	1.13	0.81	2.04	0.15	0.68
1962	0.04	0.99	0.68	750.68	872.68	948.70	1,793.35	340.91	18.76	7.41	7.27	2.10
1963	0.21	2.77	45.96	76.60	39.58	949.99	22.95	2.55	0.15	4.19	0.69	1.22
1964	0.19	1.88	17.99	142.90	97.09	53.03	16.98	1.65	0.84	3.50	8.19	0.64
1965	0.16	3.28	0.86	864.57	100.45	260.87	86.16	25.71	4.34	14.32	4.43	2.41

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Bois de Sioux River above White Rock Dam—Continued												
1966	1.60	0.29	889.46	353.57	113.57	41.21	65.05	202.11	25.71	9.35	14.38	3.16
1967	2.16	1.52	203.10	342.62	217.47	416.20	255.33	32.49	0.73	0.01	1.30	1.34
1968	0.48	0.04	21.08	48.11	52.14	43.46	6.27	2.38	3.51	8.93	7.00	2.87
1969	0.66	0.42	0.42	4,426.64	401.78	14.86	66.66	34.66	1.53	0.08	0.07	1.77
1970	1.96	2.41	19.80	130.98	51.93	230.29	46.47	0.10	0.29	1.26	1.77	0.99
1971	0.07	2.91	110.40	31.65	10.67	12.81	79.67	0.64	9.34	3.53	16.16	4.13
1972	3.23	1.36	542.75	290.88	584.07	68.20	55.84	18.31	0.49	2.35	3.23	1.96
1973	2.28	1.64	106.94	18.62	9.51	4.69	11.24	0.01	0.15	6.95	4.17	1.91
1974	0.42	0.30	69.03	143.55	62.73	131.27	0.14	0.06	2.59	3.16	1.97	2.10
1975	0.34	4.13	0.27	980.30	151.56	2,585.83	1,161.80	44.64	3.67	10.75	12.26	2.73
1976	3.34	204.91	260.23	170.97	24.91	2.00	0.04	0.85	0.03	0.24	0.01	0.23
1977	0.03	0.24	8.52	15.12	4.45	4.90	3.81	0.20	12.76	27.67	8.49	3.15
1978	3.95	7.43	611.76	1,257.64	157.64	13.71	236.27	50.58	30.25	5.98	4.26	1.87
1979	0.82	0.87	0.77	2,605.36	414.34	55.61	70.19	48.89	2.82	0.18	7.31	2.56
1980	2.00	1.52	122.98	292.65	23.68	4.12	1.19	4.14	0.37	0.60	0.57	1.17
1981	0.52	12.63	10.76	10.29	2.42	7.95	9.29	1.57	0.05	16.82	454.44	3.03
1982	0.09	0.79	51.99	384.71	24.18	11.19	30.22	1.35	1.02	9.43	4.85	2.97
1983	1.03	1.28	112.24	28.52	5.39	21.10	20.28	1.15	8.60	0.54	0.16	0.17
1984	0.07	371.11	586.16	524.56	65.33	1,253.81	4.51	1.40	0.12	21.32	9.39	3.11
1985	2.01	1.35	209.19	22.90	19.93	1,539.63	10.39	0.12	4.16	0.28	0.04	1.89
1986	2.25	2.85	435.19	1,071.08	814.63	742.98	24.85	17.83	170.62	78.29	28.24	5.75
1987	7.64	30.58	170.46	105.01	41.08	15.93	9.20	0.37	0.08	2.77	63.86	3.93
1988	0.54	13.97	31.22	7.97	1.20	3.24	4.92	1.42	0.66	0.91	0.34	1.39
1989	0.36	1.89	4.17	2,417.40	70.48	10.85	3.67	1.34	0.39	0.00	5.00	1.15
1990	0.36	0.56	9.56	9.47	5.27	69.18	0.10	1.46	0.39	0.00	0.00	1.89
1991	0.12	0.86	8.60	0.16	25.40	44.45	75.80	5.21	9.93	0.00	0.00	0.28
1992	0.08	1.09	33.42	33.33	20.82	122.83	113.80	28.90	1.88	0.00	1.09	0.34
1993	0.73	7.16	255.07	908.63	120.96	252.44	920.74	479.34	107.66	31.49	13.81	5.72
1994	15.65	56.66	618.26	875.81	267.60	49.52	761.91	44.56	13.60	22.87	20.14	5.15
1995	8.10	34.71	1,168.96	843.81	472.26	20.85	665.75	69.01	22.11	125.18	37.41	5.43
1996	6.69	8.58	287.68	1,126.84	1,157.15	190.18	54.66	13.09	1.32	5.70	14.00	3.22
1997	1.27	1.23	1.27	8,585.81	902.07	424.24	192.17	79.21	46.66	55.99	18.26	5.82
1998	11.64	210.66	653.89	1,099.19	1,547.86	1,979.57	1,147.07	254.27	104.13	155.96	113.36	19.65
1999	75.22	549.97	656.59	598.98	475.09	321.08	162.19	167.61	456.05	152.79	81.38	9.06
2000	28.03	805.40	411.69	238.41	233.10	196.67	303.53	53.42	4.05	8.72	13.79	2.46
2001	1.46	2.61	2.71	4,300.83	619.80	918.09	117.90	20.46	3.09	12.50	13.70	4.00

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Bois de Sioux River at the mouth							
1931	7.02	15.22	33.41	35.70	46.28	30.29	18.16	9.37	12.88	8.70	6.74	7.02
1932	9.37	10.54	15.21	20.71	14.68	14.59	9.49	7.89	9.11	7.11	8.20	22.24
1933	5.39	5.85	43.10	13.01	10.97	17.93	5.54	4.27	7.49	3.80	4.10	7.09
1934	6.42	6.13	6.54	10.01	5.22	4.12	4.00	3.34	2.32	3.45	3.21	3.30
1935	3.75	2.53	14.91	13.06	15.03	18.42	29.77	6.62	4.03	3.05	3.98	8.43
1936	6.20	5.83	8.24	16.87	11.92	6.35	3.71	5.72	6.27	7.34	5.41	4.57
1937	3.54	3.68	5.96	20.87	23.15	51.70	28.11	21.09	36.27	25.74	8.85	4.75
1938	4.78	8.45	25.55	36.51	78.97	77.52	22.92	7.22	13.84	8.53	6.18	10.86
1939	27.49	27.84	74.27	69.53	52.66	24.59	13.66	5.37	4.93	5.74	5.27	4.12
1940	4.14	7.49	11.33	42.21	89.62	39.75	8.27	5.63	6.47	6.62	12.04	8.45
1941	13.72	24.63	42.08	71.88	88.04	68.97	31.08	12.40	17.39	24.83	24.97	24.61
1942	0.97	0.18	74.21	93.97	1,373.16	1,417.29	138.90	103.97	166.21	67.42	42.53	67.55
1943	78.51	128.09	392.73	2,478.32	211.76	820.78	438.97	138.11	15.70	79.54	37.65	24.14
1944	27.04	7.27	69.31	426.44	728.50	1,746.10	752.04	87.86	68.47	65.91	73.00	26.69
1945	6.89	43.88	1,046.26	332.48	124.40	272.54	15.49	12.62	35.86	20.45	21.91	16.34
1946	3.20	26.04	1,041.98	345.98	69.40	111.98	200.83	11.54	76.79	118.94	59.30	12.02
1947	9.91	8.57	223.28	2,233.29	390.76	379.51	48.68	16.61	15.97	68.19	60.09	8.06
1948	13.06	11.84	393.84	1,273.85	158.46	146.22	55.17	29.14	61.74	38.92	110.53	9.01
1949	15.01	0.23	248.93	311.62	84.65	42.07	697.73	31.96	23.35	101.32	32.14	13.80
1950	10.68	3.81	480.41	1,507.30	1,256.48	67.66	598.63	180.39	64.60	100.26	11.02	16.59
1951	26.59	13.84	123.58	2,594.84	400.43	281.99	124.62	34.19	14.56	91.36	80.83	81.55
1952	46.49	44.43	25.89	4,247.03	164.61	241.49	172.94	38.95	71.90	25.08	70.63	56.65
1953	23.86	44.99	397.90	233.33	249.56	523.42	28.85	107.57	63.85	38.29	78.95	46.53
1954	33.06	36.00	120.40	72.19	87.52	298.50	60.56	9.15	45.86	39.22	111.91	12.26
1955	10.89	24.14	90.45	309.50	84.05	100.35	91.38	29.60	66.34	19.64	80.32	21.11
1956	25.82	49.69	216.05	311.90	113.58	82.59	36.04	149.25	6.16	19.36	39.39	4.97
1957	11.06	17.34	270.38	401.78	206.10	254.57	55.02	63.03	77.15	45.31	126.09	58.28
1958	24.38	31.35	138.14	207.28	54.98	26.70	27.69	1.79	70.70	66.02	133.27	10.45
1959	15.14	62.89	161.98	74.63	127.76	193.18	147.55	7.01	33.94	32.50	51.00	63.20
1960	32.56	11.02	278.93	619.52	76.67	91.05	21.08	38.62	22.03	18.88	74.68	23.86
1961	16.39	14.92	144.80	99.04	123.95	59.44	2.69	1.00	41.03	73.90	61.18	29.10
1962	3.02	5.56	194.63	1,284.07	1,916.28	1,333.64	1,371.93	86.62	86.43	37.81	68.99	36.75
1963	25.24	21.07	199.94	132.07	124.51	855.11	135.89	23.37	47.11	44.23	61.37	40.35
1964	27.51	19.82	77.94	429.08	157.89	83.88	19.96	49.73	60.96	21.07	25.65	10.74
1965	21.21	213.38	56.87	1,427.34	482.29	1,522.54	221.54	44.89	117.71	328.47	63.27	107.94

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Bois de Sioux River at the mouth—Continued												
1966	49.75	41.97	1,685.25	426.04	402.55	121.72	37.45	128.28	59.91	124.00	100.10	82.00
1967	42.24	16.06	460.56	508.68	151.43	402.97	110.33	21.73	15.11	61.46	29.55	24.61
1968	8.91	11.81	161.18	153.86	120.13	106.04	25.43	28.12	61.71	67.06	36.09	49.48
1969	51.34	35.60	62.91	4,493.33	398.71	66.31	46.22	22.25	33.84	67.06	51.81	36.02
1970	47.67	34.36	119.28	353.60	103.77	129.72	35.72	21.13	62.33	47.26	83.48	33.74
1971	18.74	55.02	485.45	151.61	66.76	132.24	76.16	16.35	42.46	69.31	125.87	54.27
1972	26.49	7.83	1,089.92	343.59	479.59	307.22	196.24	70.05	31.97	29.71	74.66	39.98
1973	23.32	23.66	266.49	185.72	122.56	55.47	35.99	29.69	41.63	44.42	135.24	165.13
1974	69.77	31.14	101.71	99.46	67.73	91.83	25.69	35.72	31.93	64.94	42.35	14.90
1975	51.27	67.89	125.16	900.43	200.43	408.63	610.03	114.79	27.29	81.20	113.56	22.92
1976	35.29	53.81	484.62	218.34	59.30	53.92	37.62	31.19	21.10	29.77	1.09	1.45
1977	57.42	23.34	165.15	157.57	18.99	64.56	23.58	2.73	14.02	106.05	183.03	41.11
1978	25.47	34.07	1,410.03	3,019.07	198.84	206.95	904.19	55.29	31.08	10.26	49.88	18.67
1979	6.17	50.89	161.04	3,493.73	208.08	486.77	190.81	41.02	34.71	78.58	79.79	27.66
1980	60.47	16.45	248.14	408.39	46.78	181.24	20.44	61.72	16.39	69.95	36.11	16.13
1981	6.47	82.09	31.19	110.59	171.85	120.54	59.31	54.07	11.10	51.73	63.18	59.59
1982	37.79	19.74	239.73	678.81	49.51	18.93	63.34	22.32	42.94	159.81	70.15	39.17
1983	38.07	46.93	259.00	118.49	36.94	38.84	65.49	47.21	29.88	52.94	55.84	43.46
1984	43.01	80.78	963.06	1,027.07	114.55	1,443.12	383.12	84.43	50.88	334.18	242.45	117.85
1985	19.09	31.57	1,109.43	193.32	190.29	454.43	57.74	63.06	80.16	67.68	132.23	141.63
1986	81.23	133.50	1,421.68	2,613.83	887.43	370.79	156.28	54.35	786.10	225.65	218.41	118.30
1987	58.86	124.94	429.48	180.87	116.56	29.41	72.23	117.35	140.51	137.72	130.71	119.58
1988	117.28	123.86	278.47	136.51	127.94	114.04	43.00	31.84	27.66	78.47	49.41	10.74
1989	19.35	5.48	666.79	2,406.24	84.14	168.38	93.36	50.83	81.13	42.53	50.54	4.18
1990	26.33	20.00	76.33	65.53	48.56	73.36	33.50	35.06	30.95	45.17	35.63	14.28
1991	4.74	102.54	146.06	150.26	206.26	502.75	984.37	72.82	417.76	89.37	40.73	46.40
1992	43.62	20.54	170.49	131.68	47.14	151.88	92.71	76.31	81.37	54.98	114.29	48.35
1993	71.65	54.07	548.54	1,298.21	195.54	448.03	2,882.71	978.07	298.81	217.34	150.12	326.94
1994	50.31	111.14	1,948.11	1,332.42	744.94	107.13	1,231.11	113.20	34.30	96.40	67.24	35.86
1995	67.07	33.67	3,644.82	1,403.35	516.45	182.20	310.21	52.71	83.95	450.08	438.10	65.89
1996	90.20	97.48	1,108.99	1,661.71	1,029.42	257.68	32.21	24.91	40.34	38.85	97.13	63.74
1997	143.77	95.73	413.18	8,184.66	735.67	197.24	146.49	77.25	33.10	567.41	557.40	628.73
1998	100.00	207.97	827.16	640.88	539.07	611.55	595.69	107.32	52.63	77.85	49.97	21.03
1999	5.22	5.27	530.95	640.82	390.26	409.08	224.34	284.88	92.25	10.33	0.00	1.65
2000	0.68	18.70	507.73	1,042.73	161.02	104.66	295.61	28.27	14.47	11.96	0.82	0.46
2001	0.89	7.76	534.48	4,434.23	2,079.55	1,615.98	1,189.95	127.05	19.52	17.90	20.78	21.68

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Wahpeton, N. Dak.												
1931	22.55	44.35	132.54	178.67	168.10	131.99	72.73	29.62	20.72	32.41	28.82	26.42
1932	38.16	52.77	138.82	209.72	63.55	37.47	11.16	22.87	12.48	18.33	7.02	88.86
1933	16.40	18.62	133.73	191.11	81.37	55.53	20.37	3.34	0.19	6.86	2.61	26.69
1934	15.08	24.08	50.66	107.00	11.65	5.28	7.15	8.61	4.04	8.73	0.63	11.93
1935	10.89	14.23	350.99	54.00	118.38	89.95	182.26	43.25	12.07	7.07	2.01	32.00
1936	14.98	7.38	162.52	148.31	94.01	4.66	6.50	15.86	13.59	20.51	21.45	16.79
1937	10.20	1.38	33.39	345.64	241.43	178.18	113.64	68.31	142.81	95.89	60.36	17.51
1938	14.32	17.85	227.65	356.52	382.37	304.58	105.59	26.82	65.66	35.02	19.72	41.80
1939	97.39	104.63	622.05	157.89	207.66	130.53	92.77	18.57	10.15	13.28	17.98	15.07
1940	12.20	10.62	47.64	519.39	349.47	180.04	20.14	6.05	14.13	8.14	35.96	32.10
1941	44.99	93.48	241.18	357.82	300.90	432.89	134.37	34.97	89.02	99.84	127.19	98.34
1942	139.43	109.49	225.24	231.40	1,923.17	2,000.00	368.66	275.12	395.75	420.99	449.35	410.85
1943	421.81	398.18	712.92	3,391.33	896.81	1,705.07	1,039.19	602.90	412.93	469.72	363.14	297.25
1944	223.04	159.27	261.02	793.95	1,189.73	2,578.98	1,439.38	454.19	658.20	773.34	746.92	531.17
1945	412.19	414.61	1,729.45	1,005.96	873.08	926.95	314.62	155.61	175.41	241.74	280.88	237.57
1946	192.90	153.54	1,497.76	875.04	640.78	461.38	834.47	615.27	575.77	686.28	612.68	490.91
1947	421.41	350.90	596.65	3,166.99	1,320.67	1,291.31	624.28	239.27	221.89	257.73	256.83	192.72
1948	161.75	127.04	635.11	1,851.16	806.89	593.76	306.27	239.12	225.94	169.10	226.20	63.59
1949	84.81	85.93	454.37	571.28	300.53	257.72	1,019.12	213.64	113.94	192.63	122.94	108.78
1950	98.58	136.21	747.67	2,131.25	2,276.61	951.18	1,297.67	510.93	233.56	233.77	110.45	126.59
1951	171.34	160.72	361.30	3,513.63	1,070.54	959.07	601.25	368.34	337.35	420.89	438.22	531.09
1952	530.76	537.21	439.29	5,499.44	998.52	815.39	612.12	440.83	515.04	374.87	305.95	245.78
1953	190.36	237.69	772.97	678.98	835.07	1,862.22	1,283.83	753.22	674.19	560.71	531.81	426.50
1954	314.56	336.88	581.49	705.18	931.11	1,234.07	585.66	275.93	304.18	271.31	247.84	153.35
1955	141.83	172.36	326.17	810.64	453.53	422.08	577.80	452.87	516.63	467.66	334.58	154.95
1956	205.77	235.28	432.37	990.81	927.21	741.93	321.06	387.06	125.28	100.70	167.85	97.69
1957	79.66	91.16	530.57	872.22	846.77	879.61	621.19	570.49	564.93	489.97	541.95	360.62
1958	256.32	272.96	502.20	600.09	291.40	241.02	387.22	259.66	312.40	228.63	287.26	158.66
1959	185.67	247.79	449.85	388.63	480.71	715.91	578.06	289.73	238.44	228.09	182.39	235.85
1960	233.90	224.58	531.41	1,217.27	848.14	744.81	429.43	263.38	201.32	161.95	198.14	142.55
1961	154.75	150.14	353.60	381.38	466.67	443.01	205.96	173.22	145.34	151.49	111.20	69.81
1962	62.11	119.59	405.72	1,820.56	2,811.66	2,546.55	2,454.01	744.34	639.49	528.75	417.51	289.94
1963	215.41	201.61	491.80	587.13	572.14	1,546.09	501.79	273.34	291.10	279.81	208.51	91.56
1964	136.07	164.79	270.50	945.14	943.69	602.60	310.76	271.85	285.97	223.36	206.21	171.36
1965	171.10	359.87	237.81	2,292.30	1,442.96	2,714.61	1,030.41	505.04	563.69	875.28	540.32	573.10

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Wahpeton, N. Dak.—Continued												
1966	463.22	365.48	2,653.38	1,487.98	1,751.70	1,137.48	615.82	721.16	474.84	553.39	517.17	409.20
1967	378.00	349.66	977.60	1,363.81	1,211.69	1,428.64	741.96	344.06	215.25	229.50	165.16	122.19
1968	97.93	141.35	421.91	552.55	679.32	686.41	488.39	351.94	303.13	312.38	278.68	255.27
1969	247.76	391.51	523.32	5,890.23	1,516.56	888.28	518.24	295.35	155.47	171.26	121.92	154.71
1970	159.47	165.83	344.32	796.14	795.03	865.71	517.11	226.45	158.83	150.72	183.74	112.10
1971	120.12	170.59	768.39	623.11	417.69	429.07	512.81	248.43	287.79	292.20	544.52	609.13
1972	534.62	472.35	1,924.51	1,167.61	1,649.92	1,347.47	891.85	652.13	529.91	442.10	410.07	349.63
1973	346.84	360.96	790.43	632.50	492.23	349.58	265.16	208.79	229.69	411.88	603.46	584.77
1974	477.58	478.09	579.29	720.21	1,084.95	1,223.68	708.34	472.71	354.09	318.03	238.94	159.04
1975	208.67	294.18	443.77	1,767.85	1,230.33	1,523.61	1,587.92	647.33	436.45	383.53	358.27	236.48
1976	251.12	345.14	958.87	749.26	387.34	241.50	174.20	59.23	37.32	48.01	13.67	15.10
1977	59.56	35.67	243.22	281.91	94.27	145.46	89.72	64.71	131.85	292.06	437.74	379.42
1978	373.88	324.81	2,134.34	4,140.55	1,006.47	737.92	1,463.17	301.39	189.95	99.86	142.08	97.15
1979	78.94	130.80	427.42	4,770.81	1,162.84	1,456.61	990.03	746.31	592.09	440.81	439.47	353.93
1980	390.64	381.15	767.50	1,131.50	529.45	549.49	201.76	196.41	122.13	156.19	111.70	80.70
1981	103.11	222.88	215.19	325.65	346.00	282.61	194.92	278.17	141.87	181.17	192.44	215.77
1982	214.39	262.86	693.34	1,376.84	798.25	737.30	609.22	398.46	294.78	448.47	329.75	305.95
1983	296.07	320.99	638.02	502.94	349.10	274.79	444.85	445.75	427.25	335.84	278.44	236.12
1984	278.88	407.12	1,634.15	1,693.55	700.15	2,312.44	839.05	338.91	203.15	569.44	476.01	366.86
1985	265.26	299.00	1,659.41	807.26	1,163.49	1,768.35	1,157.31	1,100.63	980.58	887.26	851.14	802.59
1986	670.88	692.97	2,367.32	3,897.67	2,469.74	1,717.60	1,067.29	669.21	1,635.77	1,011.35	999.26	825.49
1987	644.22	672.03	1,125.62	863.27	648.60	484.09	368.36	348.56	324.68	256.14	259.37	264.02
1988	263.24	298.34	621.28	495.60	489.14	338.74	148.80	99.57	94.58	151.15	134.35	81.04
1989	102.98	133.92	997.70	3,540.42	713.71	749.36	415.27	195.70	241.78	188.06	143.65	82.85
1990	168.09	172.52	519.49	493.89	556.94	581.97	434.22	278.16	193.82	163.18	124.03	101.50
1991	95.17	197.46	405.75	551.43	880.40	1,189.57	1,568.76	523.00	772.55	325.52	203.60	187.72
1992	221.16	247.28	634.77	582.04	478.38	533.51	455.40	405.30	356.02	247.96	300.59	248.64
1993	260.48	292.09	1,088.61	2,125.20	911.12	1,492.26	4,195.77	1,906.99	1,234.92	1,215.35	949.97	704.26
1994	606.09	670.24	3,288.53	2,316.98	1,803.98	908.55	1,840.88	563.70	327.39	447.81	373.18	456.40
1995	443.69	467.51	4,464.36	2,416.16	1,481.92	923.31	947.37	383.27	353.55	858.28	865.23	510.33
1996	543.52	547.42	1,985.46	2,727.00	2,215.04	1,299.29	637.53	375.43	250.91	243.85	407.20	460.80
1997	575.01	593.07	962.01	10,675.49	2,138.52	1,304.71	1,095.38	827.97	617.61	1,136.80	1,097.09	1,156.05
1998	524.09	886.19	1,474.55	1,520.79	1,374.92	1,397.09	1,761.50	974.05	643.22	672.07	716.63	763.68
1999	629.47	640.58	1,403.92	1,775.70	1,681.02	1,736.43	1,175.98	1,053.20	921.20	737.98	573.97	455.10
2000	409.91	516.87	1,362.12	1,874.66	1,025.63	936.60	1,155.54	665.19	459.39	403.11	597.56	665.24
2001	657.75	616.70	1,218.00	5,703.42	3,389.42	3,107.63	2,266.50	746.09	487.59	442.89	422.46	479.24

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Wild Rice River (N. Dak.) at the mouth												
1931	0.01	0.31	1.74	9.33	5.41	2.70	0.26	0.01	0.08	0.02	0.02	0.40
1932	0.08	0.02	1.95	14.82	6.49	3.65	0.79	0.00	0.00	0.00	0.00	0.00
1933	0.00	0.47	36.72	16.26	8.37	2.04	0.00	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.35	4.10	0.12	1.51	0.40	0.00	0.00	0.00	0.00	0.00
1935	0.00	0.00	168.88	22.12	14.22	47.24	22.39	5.60	1.12	0.00	0.00	0.00
1936	0.00	0.00	88.92	61.49	14.55	0.40	0.00	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	129.95	95.27	23.40	20.15	4.35	2.24	0.00	0.00	0.00
1938	0.00	0.00	95.22	13.93	37.28	10.44	0.40	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	246.62	50.65	3.59	26.20	26.20	2.07	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	79.18	21.72	2.68	0.00	0.00	0.00	0.00	0.00	0.00
1941	0.00	0.00	87.48	70.23	21.16	87.32	13.66	5.04	11.15	8.18	6.20	3.49
1942	0.08	0.00	16.59	73.43	169.49	335.39	84.97	50.49	112.06	124.15	66.36	21.09
1943	7.35	2.01	257.24	1,954.18	195.01	791.36	395.73	57.65	25.30	8.08	12.74	6.32
1944	0.56	0.41	22.89	163.68	188.74	272.48	518.88	150.35	96.39	21.94	35.60	14.06
1945	0.98	1.37	1,112.57	456.20	145.98	176.21	17.69	4.69	2.45	2.33	2.88	0.76
1946	0.00	0.00	594.44	224.06	30.23	9.19	34.26	2.83	0.13	5.90	7.57	2.30
1947	1.06	0.27	58.39	792.84	177.32	83.40	24.74	0.68	0.00	0.00	0.00	0.00
1948	0.00	0.00	4.18	240.21	21.94	7.04	6.25	8.02	0.07	0.00	0.00	0.00
1949	0.00	0.00	36.05	166.22	27.99	7.98	106.35	14.89	0.00	0.00	0.00	0.00
1950	0.00	0.00	195.31	899.01	664.74	64.37	8.56	1.94	0.00	0.00	0.00	0.00
1951	0.00	0.00	16.15	645.31	45.90	30.34	22.17	0.51	1.07	1.78	4.64	10.10
1952	1.31	0.77	0.55	2,601.15	312.45	25.08	32.91	5.24	0.42	0.00	0.53	1.32
1953	0.80	1.09	105.51	43.91	305.06	360.14	53.18	7.00	0.22	0.00	0.00	0.07
1954	0.05	0.30	48.88	45.79	35.60	74.00	54.29	0.53	1.72	0.30	0.28	1.07
1955	0.21	0.03	25.55	117.67	3.73	1.44	2.16	18.92	0.02	0.00	0.00	0.00
1956	0.00	0.00	0.00	216.43	40.08	3.29	0.00	4.03	0.00	0.00	0.00	0.00
1957	0.00	0.00	50.87	105.84	64.93	90.45	53.18	24.18	89.33	35.60	29.66	11.43
1958	3.03	3.58	41.47	176.51	82.95	18.02	28.88	0.09	0.03	0.00	0.00	0.00
1959	0.00	0.00	13.16	7.41	3.28	25.97	4.53	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	22.67	228.71	60.45	5.68	3.29	0.10	0.00	0.00	0.00	0.00
1961	0.00	0.00	23.34	9.49	11.64	1.15	0.00	0.00	0.00	0.00	0.00	0.00
1962	0.00	0.00	0.00	715.32	814.75	1,039.99	2,000.50	363.38	18.47	7.11	8.39	3.16
1963	0.19	0.00	47.56	96.22	44.78	507.57	22.73	2.37	0.13	0.00	0.00	0.00
1964	0.00	0.00	18.14	166.44	103.89	32.02	16.68	1.52	0.75	0.00	0.00	0.00
1965	0.00	0.00	0.00	809.87	107.25	122.58	88.44	25.52	4.11	13.99	4.71	4.06

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Wild Rice River (N. Dak.) at the mouth—Continued												
1966	1.54	0.25	998.10	369.05	120.34	71.20	66.27	212.36	25.52	9.03	18.68	6.76
1967	2.08	0.81	218.86	358.99	221.32	538.47	270.02	32.46	0.65	0.01	1.12	1.34
1968	0.45	0.05	21.34	63.92	57.99	29.11	5.99	2.22	3.30	8.62	8.03	5.66
1969	0.61	0.33	0.38	3,402.95	393.61	85.53	67.95	34.70	1.40	0.07	0.05	2.27
1970	1.88	1.13	20.02	154.17	57.76	198.93	46.91	0.08	0.00	0.00	0.00	0.00
1971	0.00	0.00	117.01	44.24	13.10	19.37	81.61	0.58	9.02	3.31	21.42	11.10
1972	3.15	0.75	600.85	310.88	559.07	163.67	56.65	18.02	0.43	0.00	3.24	2.75
1973	2.20	0.86	113.25	27.76	11.75	9.83	10.91	0.01	0.13	6.65	4.37	2.61
1974	0.39	0.26	72.22	167.11	68.96	19.81	0.12	0.05	0.00	0.00	0.00	0.00
1975	0.00	0.00	0.24	904.43	157.73	423.27	1,280.68	45.00	3.45	10.42	15.49	5.11
1976	3.25	27.03	282.34	194.87	28.99	0.81	0.04	0.00	0.00	0.00	0.00	0.00
1977	0.00	0.00	8.42	23.11	5.86	3.77	3.99	0.47	12.60	27.54	10.06	6.68
1978	3.87	2.53	679.48	1,125.84	163.77	44.60	249.75	51.49	30.08	5.71	4.49	2.53
1979	1.32	1.09	1.26	2,136.10	405.73	47.36	72.36	50.11	3.25	0.70	8.99	5.06
1980	2.19	1.08	130.98	312.80	28.04	62.44	1.96	4.60	0.83	0.80	0.79	1.31
1981	0.74	3.95	10.96	16.74	3.55	10.62	9.11	1.73	0.37	0.26	0.26	0.26
1982	0.26	0.26	54.23	397.74	28.69	3.04	31.46	2.64	0.98	9.38	5.48	6.25
1983	1.24	0.98	119.26	40.63	7.33	0.47	21.13	2.16	9.11	0.70	0.40	0.29
1984	0.32	41.57	650.60	522.31	72.09	141.44	5.38	2.41	0.92	21.31	11.58	6.79
1985	2.20	1.01	225.93	33.61	23.95	222.79	11.21	1.38	4.63	0.52	0.30	2.84
1986	2.40	1.49	479.14	977.92	764.10	75.93	25.14	17.87	178.78	80.37	41.42	20.87
1987	7.80	7.12	183.04	127.19	46.69	13.13	9.90	1.30	0.76	0.18	0.18	0.18
1988	0.13	0.13	32.12	13.32	1.81	0.32	5.41	2.21	0.46	0.15	0.15	0.13
1989	0.09	0.09	4.13	1,999.61	78.20	41.99	3.13	2.02	0.84	0.09	0.09	0.09
1990	0.04	0.04	9.52	16.52	8.98	1.12	0.63	0.80	0.54	0.04	0.04	0.04
1991	0.04	0.04	8.54	3.14	30.42	14.36	77.84	5.22	11.00	0.12	0.05	0.11
1992	0.11	0.67	34.32	49.47	25.83	255.54	117.90	29.00	2.59	0.06	2.36	0.74
1993	0.03	2.49	276.62	847.61	128.43	170.98	1,010.26	517.46	111.21	33.06	20.57	20.46
1994	15.95	10.81	686.92	820.29	270.76	38.48	830.65	45.17	13.89	24.88	30.24	16.68
1995	7.98	7.47	1,321.46	793.82	459.94	160.66	723.36	70.65	23.05	131.33	58.68	18.59
1996	6.68	2.82	313.55	1,022.56	1,064.19	377.28	55.69	12.09	0.54	5.45	19.69	7.00
1997	1.23	0.72	1.22	6,093.71	840.97	210.94	201.03	80.56	46.55	57.46	27.71	21.22
1998	11.78	230.40	727.61	1,000.89	1,394.89	705.63	1,263.91	268.82	108.07	163.24	122.19	206.23
1999	80.00	54.73	730.71	587.16	461.19	307.12	169.69	175.43	490.15	160.11	87.58	48.36
2000	29.02	71.87	452.35	261.02	236.35	141.12	323.08	54.55	4.02	8.39	17.82	4.25
2001	1.40	1.22	2.62	3,317.82	591.24	182.55	122.76	20.72	3.21	12.21	17.68	10.48

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Fargo, N. Dak.												
1931	21.10	39.30	128.00	190.40	167.60	132.00	64.80	20.80	15.60	26.60	28.00	21.60
1932	36.10	47.30	134.90	231.80	55.60	33.20	7.73	0.00	8.78	14.10	6.74	1.93
1933	0.00	0.18	129.30	206.80	73.60	51.10	15.30	1.59	0.08	4.72	2.49	13.30
1934	14.00	20.50	43.00	102.10	8.12	3.31	0.00	0.00	0.00	0.00	0.59	0.57
1935	0.00	11.70	386.30	151.50	112.60	86.70	183.70	32.50	8.45	4.88	1.91	0.59
1936	13.90	5.81	161.30	428.00	86.70	2.87	0.00	0.00	0.00	0.00	0.00	4.23
1937	4.40	0.97	26.80	444.60	252.70	183.40	107.50	55.70	139.30	89.00	59.00	0.00
1938	5.34	14.90	236.40	163.60	425.70	330.10	98.90	18.50	57.70	29.00	19.10	21.80
1939	93.90	98.10	739.30	705.60	213.00	130.40	85.40	12.00	0.00	9.85	17.40	14.00
1940	1.08	8.57	40.10	446.60	384.40	185.50	15.10	3.20	0.00	5.71	35.00	37.70
1941	42.75	87.05	252.45	644.35	324.45	485.35	130.05	25.35	81.55	93.15	125.15	98.25
1942	84.25	87.25	226.12	374.18	2,201.27	2,387.10	423.36	353.32	527.75	559.59	385.36	310.06
1943	325.87	343.84	764.67	7,403.48	1,087.96	2,690.22	1,735.34	811.85	438.28	455.77	403.49	305.90
1944	229.44	170.67	321.52	1,021.35	1,424.93	2,750.18	2,072.58	724.69	813.20	765.04	778.92	531.37
1945	438.04	428.26	3,293.70	1,544.21	1,035.13	1,117.90	385.27	164.66	169.36	235.89	269.23	235.72
1946	190.30	139.14	2,224.96	1,109.34	676.38	519.58	824.27	606.57	578.57	667.68	564.88	499.01
1947	422.36	345.05	623.70	4,683.34	1,575.02	1,416.66	690.63	255.32	216.94	278.88	256.68	189.57
1948	153.65	115.54	595.11	2,378.56	1,023.29	674.26	324.87	240.22	219.24	180.10	212.60	72.49
1949	80.76	86.98	393.42	883.13	334.28	257.97	1,163.77	245.69	110.69	173.98	104.59	109.83
1950	99.48	137.91	828.87	4,460.75	4,025.11	1,261.68	1,293.17	604.33	236.16	233.17	83.35	117.79
1951	170.14	166.62	375.80	4,539.23	1,168.14	1,010.67	641.75	386.14	347.55	415.79	392.12	541.89
1952	535.86	537.71	504.99	9,595.14	1,272.22	871.09	1,136.62	458.53	517.54	348.07	319.45	242.98
1953	162.66	228.99	910.07	828.38	1,332.87	3,475.02	1,476.63	797.12	678.59	547.41	546.91	385.90
1954	295.86	331.58	651.89	892.08	1,024.21	1,383.97	767.06	309.73	310.78	301.91	254.64	126.55
1955	119.23	173.56	337.27	1,131.14	499.73	439.28	774.40	464.87	524.23	494.86	329.28	146.35
1956	197.67	240.58	424.67	1,554.71	950.71	874.63	369.36	381.36	121.68	93.40	163.35	92.19
1957	62.26	83.16	542.57	1,103.52	878.97	926.01	730.69	624.49	732.03	566.97	550.45	395.42
1958	264.52	295.76	593.40	795.09	412.40	265.22	820.22	260.86	308.10	235.43	281.36	148.36
1959	172.87	247.19	500.35	427.83	484.51	841.11	683.06	293.73	242.84	221.59	161.59	242.55
1960	210.40	205.68	498.81	1,810.67	936.14	784.71	493.53	263.68	199.72	144.55	205.54	121.45
1961	142.75	141.44	478.30	414.78	508.47	444.91	195.46	178.22	121.34	148.19	114.60	69.21
1962	56.71	105.39	360.32	3,412.36	4,237.46	4,996.35	5,392.81	1,455.14	740.39	612.95	484.11	268.84
1963	195.11	161.31	517.90	760.43	695.74	2,354.29	553.39	309.94	284.10	272.81	206.21	96.96
1964	127.47	176.69	285.50	1,354.24	1,110.39	740.70	407.26	289.85	282.57	239.06	203.31	148.76
1965	170.90	364.17	223.01	4,247.30	1,604.96	2,979.61	1,319.41	630.04	652.89	980.08	565.42	579.20

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Fargo, N. Dak.—Continued												
1966	460.52	417.58	4,764.38	2,270.98	1,993.70	1,282.48	787.62	1,104.36	540.44	578.49	541.87	470.90
1967	422.97	378.73	1,228.87	2,231.98	1,536.86	2,335.81	1,085.63	384.13	194.42	216.47	158.13	117.96
1968	104.61	144.43	496.09	649.63	792.70	751.49	504.77	357.12	307.91	317.56	264.76	254.65
1969	269.15	315.80	486.61	11,386.72	2,493.05	1,062.77	685.83	308.24	148.76	156.55	122.11	139.20
1970	164.11	169.17	348.46	1,202.58	886.17	1,265.35	576.35	232.39	155.07	130.96	184.38	97.14
1971	150.50	186.27	933.07	762.29	449.97	478.75	776.59	246.91	389.37	339.58	683.10	559.91
1972	523.32	436.05	3,128.91	1,719.01	2,159.32	1,617.87	1,028.35	753.73	543.21	474.80	438.37	383.13
1973	412.69	475.81	1,010.88	659.65	493.58	365.13	302.71	236.14	269.34	462.03	677.81	681.62
1974	540.33	532.34	789.14	1,380.86	1,168.20	1,243.93	746.89	505.96	358.94	359.08	250.69	193.39
1975	227.80	330.91	509.60	3,729.68	1,481.16	2,689.44	5,197.75	788.86	526.18	446.36	418.50	202.61
1976	251.14	290.86	1,015.29	1,079.78	414.49	266.33	172.26	56.85	63.52	62.08	34.29	36.22
1977	80.81	51.93	259.38	353.07	164.56	162.01	116.08	46.40	177.52	412.92	434.60	411.98
1978	400.79	339.85	2,083.31	7,970.44	1,080.95	787.18	1,552.86	405.81	215.84	127.94	148.35	98.96
1979	73.29	121.55	369.28	8,294.35	1,762.64	1,632.32	1,230.48	935.24	627.27	435.70	434.31	323.95
1980	366.70	352.72	727.74	1,994.54	553.79	597.57	181.11	199.04	122.77	150.44	102.90	73.43
1981	88.95	213.44	236.83	372.37	513.25	310.16	236.47	330.69	139.32	174.24	198.64	211.98
1982	212.39	255.27	819.87	2,608.28	841.19	825.82	682.55	421.10	311.99	521.74	333.47	289.62
1983	267.85	301.36	802.55	704.45	424.44	294.23	695.05	405.33	449.40	338.19	294.21	239.76
1984	269.45	411.19	2,096.71	3,280.03	892.31	2,456.69	1,005.76	372.47	247.60	653.26	478.71	337.34
1985	253.90	323.69	1,937.38	958.59	1,211.09	2,185.75	1,355.72	1,150.40	1,095.59	916.28	803.78	840.32
1986	736.99	695.85	2,604.38	6,661.71	3,977.11	1,817.29	1,417.97	802.65	1,913.00	1,202.59	943.60	808.40
1987	741.24	766.81	1,585.58	1,068.21	737.38	504.97	375.71	319.34	294.73	258.17	258.62	259.49
1988	258.72	288.38	700.44	588.03	510.39	341.34	135.34	89.08	96.06	143.21	125.27	64.86
1989	81.72	119.04	715.96	6,907.51	754.02	889.51	428.92	208.93	255.76	218.36	142.64	76.55
1990	141.04	155.76	364.85	570.16	591.46	652.08	449.97	278.89	218.32	183.00	126.78	90.74
1991	89.22	190.47	412.65	662.92	1,057.14	1,285.68	1,741.09	586.20	725.52	374.48	207.30	201.65
1992	239.13	293.21	797.04	591.29	513.89	982.13	556.33	478.22	408.53	277.66	331.72	249.19
1993	287.33	341.37	946.03	4,033.88	1,143.69	1,818.55	5,532.29	2,708.49	1,369.40	1,359.31	848.88	818.54
1994	653.96	797.38	4,078.65	4,725.46	2,289.98	1,146.79	2,802.67	781.76	353.48	519.74	339.65	432.18
1995	464.52	468.56	6,561.70	4,189.89	2,068.95	1,295.75	1,830.51	534.21	367.11	1,028.30	911.40	536.77
1996	525.35	576.00	2,458.97	4,842.32	3,726.30	1,836.80	797.45	423.39	254.53	304.26	375.63	415.83
1997	582.53	561.27	986.47	19,883.28	4,161.58	1,942.97	1,493.42	915.32	681.26	1,226.04	1,155.26	1,253.71
1998	624.14	1,378.68	3,464.66	2,839.68	3,786.19	2,526.71	4,063.06	1,373.71	794.42	984.69	957.75	1,065.56
1999	711.36	711.20	2,541.92	2,761.80	2,489.73	2,198.69	1,499.28	1,340.41	1,626.61	1,015.04	759.69	515.46
2000	449.34	508.55	2,327.91	2,374.21	1,425.41	1,764.90	1,716.15	814.33	595.07	476.03	915.10	759.15
2001	724.86	700.28	1,240.74	10,524.71	4,623.31	3,495.45	2,451.04	1,002.77	614.90	571.63	598.98	666.82

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River above Harvey, N. Dak.												
1931	1.00	4.01	8.02	14.94	3.98	5.53	1.47	1.02	0.86	0.97	3.10	2.70
1932	2.00	1.63	14.65	36.08	6.78	6.04	2.80	1.43	0.99	1.00	2.70	1.65
1933	1.25	1.23	27.21	26.29	8.33	3.21	1.86	0.83	0.57	0.56	1.35	1.05
1934	0.78	1.07	4.26	13.14	2.65	1.19	0.69	0.45	0.42	0.81	1.27	0.77
1935	0.71	1.20	7.78	11.69	5.01	4.38	5.10	6.43	1.61	1.25	1.42	1.53
1936	1.26	1.15	3.48	20.20	9.42	2.59	1.07	0.35	0.39	0.47	0.97	0.59
1937	0.61	0.43	2.40	12.79	4.79	4.86	1.73	1.05	1.00	0.64	1.29	0.89
1938	0.94	1.01	6.13	7.61	3.33	1.86	0.91	0.60	0.01	0.02	0.02	0.02
1939	0.03	0.04	6.25	10.53	1.46	1.01	0.11	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	15.89	4.30	0.59	0.02	0.12	0.00	0.00	0.00	0.00
1941	0.00	0.00	6.28	88.05	8.11	9.14	4.14	1.25	3.08	3.60	4.21	2.34
1942	0.44	0.56	2.47	68.09	16.56	11.29	3.86	3.43	3.16	1.73	2.58	1.17
1943	1.03	2.16	43.42	83.52	12.95	28.20	9.08	2.75	0.55	0.25	2.03	1.30
1944	0.42	0.49	1.44	10.07	5.13	11.15	4.34	5.16	6.93	1.48	5.91	3.35
1945	1.12	1.34	41.39	15.52	6.32	5.50	1.84	1.79	0.84	0.00	0.26	0.36
1946	0.09	0.00	20.76	6.41	1.02	0.17	1.99	0.01	0.00	0.00	0.05	0.03
1947	0.00	0.00	21.39	13.96	3.41	6.29	6.01	0.32	0.15	0.51	0.61	0.56
1948	0.10	0.00	0.18	187.90	25.87	2.86	1.05	0.21	0.00	0.00	0.00	0.00
1949	0.00	0.00	0.26	147.64	6.80	6.03	1.02	0.00	0.00	0.00	0.00	0.00
1950	0.00	0.00	3.06	289.91	177.45	27.10	4.36	0.24	0.11	0.72	1.34	1.32
1951	1.60	0.72	1.93	111.85	19.86	34.96	3.97	0.90	2.50	1.00	1.10	1.39
1952	0.00	0.00	5.28	102.01	9.36	2.82	5.78	0.03	0.00	0.00	0.00	0.00
1953	0.00	0.00	6.18	6.84	11.04	7.64	2.75	0.00	0.00	0.00	0.00	0.07
1954	0.05	8.05	4.65	7.55	2.83	76.10	23.84	4.79	5.05	2.94	2.40	1.60
1955	0.19	0.00	16.20	28.99	9.62	12.18	2.01	0.07	0.00	1.41	1.05	0.26
1956	0.11	0.00	11.27	76.59	17.22	20.22	2.82	0.46	0.53	1.32	2.77	0.38
1957	0.15	0.00	5.39	4.25	4.27	2.39	1.58	1.05	2.11	2.56	2.46	1.10
1958	0.64	3.57	7.15	4.97	2.38	2.07	6.94	0.10	0.44	1.07	1.50	0.10
1959	0.00	0.00	6.50	2.99	2.58	1.13	0.41	0.00	0.19	5.95	0.98	0.90
1960	0.32	0.00	30.60	5.76	6.69	3.40	0.18	0.92	0.74	0.55	0.71	0.17
1961	0.04	0.19	1.80	3.09	1.64	0.30	0.07	0.03	0.56	0.47	0.81	0.09
1962	0.00	0.00	14.20	3.21	6.54	5.56	5.78	0.76	0.68	1.10	1.53	0.80
1963	0.05	0.00	2.87	3.79	4.37	6.73	1.58	0.98	0.31	0.85	0.98	0.22
1964	0.01	0.03	0.08	10.00	3.42	8.30	2.55	0.95	1.76	1.40	1.61	0.10
1965	0.00	0.00	3.38	26.70	5.49	1.82	4.02	0.99	2.55	2.25	1.53	1.69

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River above Harvey, N. Dak.—Continued												
1966	0.00	0.00	61.40	4.89	3.43	3.01	9.32	1.07	0.46	1.06	1.73	0.16
1967	0.00	0.00	36.20	28.90	28.70	2.49	0.56	0.00	0.17	1.31	1.58	0.52
1968	0.01	0.05	10.30	4.07	5.75	1.65	1.11	2.01	2.02	1.54	1.94	0.44
1969	0.00	0.00	0.00	101.00	15.20	2.52	3.04	1.33	0.92	1.25	1.32	1.24
1970	0.34	0.20	0.63	19.80	14.80	7.41	3.81	1.64	1.39	1.80	2.15	0.79
1971	0.16	0.20	6.14	90.50	14.30	54.00	9.01	1.84	1.34	4.18	2.49	0.91
1972	0.00	0.00	61.20	25.80	13.90	3.09	1.09	0.81	0.71	1.57	2.32	0.74
1973	2.32	5.86	6.15	5.11	2.25	1.81	0.78	0.72	1.09	2.53	1.39	0.17
1974	0.00	0.90	15.60	22.40	54.40	17.50	0.76	0.37	0.94	1.38	1.92	1.05
1975	0.18	0.43	13.20	72.50	50.20	14.60	18.70	1.04	1.75	2.10	1.92	0.74
1976	0.42	2.04	71.10	49.80	8.64	1.78	0.42	0.07	0.06	0.99	0.26	0.13
1977	0.00	0.00	3.73	2.66	1.59	0.87	1.02	0.80	4.79	2.89	1.32	0.31
1978	0.25	0.34	34.80	15.90	7.76	3.71	2.94	0.33	0.60	1.21	1.26	1.02
1979	0.30	0.37	0.69	74.30	41.70	9.32	13.60	4.67	1.08	1.31	1.83	1.43
1980	0.94	0.50	9.27	19.10	3.55	2.15	1.29	6.64	3.90	5.22	5.92	2.55
1981	0.00	12.90	36.90	13.90	7.02	17.10	5.22	1.61	3.57	2.06	1.86	1.43
1982	0.15	19.10	123.00	98.70	25.80	17.60	43.40	5.35	0.73	11.80	10.40	6.27
1983	4.10	26.80	111.00	54.70	28.60	8.43	3.48	1.60	1.66	1.45	2.48	0.88
1984	3.19	6.68	44.80	93.40	62.10	18.10	3.34	3.24	4.29	4.37	3.36	0.66
1985	0.00	7.61	24.80	25.20	9.96	4.22	5.70	25.60	4.39	11.20	2.89	0.68
1986	0.56	3.45	81.40	45.90	24.90	6.07	2.81	1.73	2.53	3.69	2.54	1.09
1987	1.29	3.01	48.50	41.80	13.20	10.40	41.00	5.71	2.24	1.83	1.46	0.67
1988	0.01	0.77	9.09	3.79	2.35	1.63	0.93	1.32	0.73	0.50	1.32	0.74
1989	0.00	0.00	13.50	10.50	2.04	1.84	1.06	1.22	1.84	2.05	3.18	1.34
1990	1.13	1.08	2.25	2.90	2.83	5.06	6.29	0.92	1.48	0.43	0.63	1.03
1991	1.05	1.61	3.33	2.13	2.65	1.12	1.03	1.08	2.46	2.91	3.11	0.41
1992	0.48	3.75	11.50	3.05	2.15	1.40	1.51	0.76	1.68	1.52	2.36	1.40
1993	0.13	0.45	27.20	7.69	4.84	12.70	58.90	22.50	4.68	3.16	3.05	1.05
1994	0.32	0.14	54.80	34.20	9.24	10.90	4.19	1.84	2.57	34.50	39.00	21.20
1995	3.11	0.64	145.80	108.90	116.70	27.30	14.80	4.34	1.99	2.58	3.35	0.03
1996	0.00	0.00	36.00	165.80	51.00	15.80	6.75	4.18	1.86	2.98	3.79	3.35
1997	3.10	2.82	43.70	324.40	88.30	18.40	14.70	3.25	1.16	2.88	4.97	5.37
1998	3.10	13.20	95.90	77.10	18.10	7.33	5.53	0.92	3.03	2.65	10.60	8.22
1999	6.37	4.88	82.80	107.50	112.30	37.70	19.10	59.40	48.40	17.40	12.60	9.88
2000	6.73	18.50	39.30	20.80	26.80	77.30	67.40	23.50	16.30	8.62	18.30	7.07
2001	2.88	2.43	207.00	133.00	37.70	50.50	46.50	10.90	3.02	3.95	4.34	1.55

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River near Warwick, N. Dak.												
1931	3.89	15.54	34.19	63.69	20.24	28.08	7.46	5.19	4.38	4.95	12.02	10.47
1932	7.74	6.31	62.46	153.81	34.42	30.67	14.23	7.27	5.05	5.07	10.47	6.38
1933	4.86	4.77	115.99	112.06	42.29	16.31	9.42	4.23	2.87	2.85	5.22	4.07
1934	3.04	4.13	18.17	56.01	13.44	6.03	3.52	2.31	2.14	4.09	4.92	2.98
1935	2.76	4.65	33.18	49.82	25.43	22.27	25.91	32.65	8.18	6.34	5.50	5.92
1936	4.89	4.46	14.82	86.10	47.86	13.16	5.43	1.78	2.00	2.36	3.76	2.27
1937	2.36	1.66	10.21	54.51	24.35	24.69	8.78	5.31	5.09	3.23	5.01	3.43
1938	3.64	3.92	26.15	32.46	16.94	9.42	4.62	9.83	4.02	2.85	4.61	3.64
1939	3.46	3.07	29.31	72.23	14.76	13.30	6.39	2.70	2.17	2.97	5.22	4.61
1940	1.93	1.73	1.89	58.64	29.04	10.55	3.54	2.63	2.07	2.58	4.80	3.92
1941	3.83	3.83	9.01	289.70	55.11	52.31	27.05	11.53	12.68	17.63	19.86	15.57
1942	7.35	6.86	12.95	185.40	97.04	71.35	26.29	18.47	26.12	15.38	17.21	11.08
1943	10.08	11.08	75.13	462.18	88.77	183.92	65.01	31.57	15.05	9.78	18.00	12.75
1944	8.32	9.65	10.88	62.01	62.55	59.97	43.63	39.44	44.35	11.84	32.30	16.15
1945	5.17	6.46	253.03	80.17	46.29	38.83	11.72	5.07	6.04	5.53	8.27	5.46
1946	6.10	2.40	231.74	186.02	31.31	14.26	36.64	20.12	7.69	13.79	11.76	6.21
1947	5.00	2.88	95.20	260.55	39.48	38.12	17.34	8.58	3.18	11.07	10.08	7.82
1948	6.85	3.49	4.24	1,114.85	366.38	41.02	27.70	15.74	1.63	3.71	10.08	7.36
1949	3.62	3.00	13.90	715.26	82.86	43.86	32.97	14.56	1.69	7.90	8.87	4.05
1950	1.50	1.50	12.30	1,421.00	854.00	98.80	30.00	8.23	6.08	12.00	11.10	8.23
1951	10.60	6.68	21.70	440.00	90.50	70.10	21.50	2.68	11.60	7.77	8.87	6.74
1952	2.03	3.24	6.23	284.00	43.40	6.13	44.90	3.55	1.37	1.16	7.97	2.61
1953	2.35	2.57	13.30	38.50	60.30	61.20	64.40	3.06	2.07	1.55	2.83	3.45
1954	3.61	34.80	79.00	64.10	30.90	326.00	170.00	48.30	38.30	33.50	18.50	9.06
1955	3.14	2.43	40.40	333.00	65.40	77.50	23.60	4.48	2.11	2.62	2.37	2.07
1956	1.51	1.88	2.19	631.00	100.00	189.00	19.00	3.93	9.56	6.05	23.80	6.84
1957	2.62	1.30	43.30	51.30	36.40	21.10	24.50	25.80	63.00	31.10	18.10	10.10
1958	9.23	8.21	38.70	62.10	20.90	16.00	61.50	4.84	1.42	3.05	5.23	4.63
1959	3.62	2.96	49.04	35.70	24.40	9.42	3.07	1.61	1.51	8.68	11.44	4.60
1960	3.23	2.29	22.14	392.50	97.90	63.90	13.10	4.96	1.75	2.10	1.72	1.18
1961	1.14	1.43	23.64	32.00	14.20	2.25	1.95	0.59	1.42	2.13	2.82	2.52
1962	1.98	1.77	23.54	123.50	59.90	84.90	23.20	16.30	7.31	6.67	6.74	5.04
1963	2.56	1.99	17.54	32.50	22.90	23.50	7.45	4.07	2.42	1.74	2.30	1.47
1964	1.49	1.73	1.90	89.10	33.30	58.70	24.50	5.89	12.41	16.87	9.09	6.32
1965	2.46	3.53	12.74	271.50	39.20	17.50	123.50	57.70	24.91	43.57	13.34	10.02

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River near Warwick, N. Dak.—Continued												
1966	3.69	2.67	650.44	136.50	89.30	28.90	51.60	18.90	7.37	10.22	6.96	4.55
1967	4.06	5.21	197.44	212.50	140.50	30.00	10.90	1.93	2.28	3.83	4.28	2.95
1968	2.67	3.01	91.74	27.40	31.90	13.60	6.15	6.37	13.31	7.38	5.27	4.25
1969	3.00	2.64	2.81	1,022.81	85.83	27.51	25.32	25.01	6.56	3.58	5.10	5.28
1970	4.06	4.04	15.04	179.81	108.83	59.51	14.52	28.61	5.51	4.41	8.54	4.69
1971	3.60	2.57	5.05	675.81	67.43	164.81	80.72	7.86	19.01	32.97	24.64	9.51
1972	4.53	3.56	326.44	151.81	78.93	35.11	4.00	2.97	2.63	4.34	9.27	3.84
1973	2.81	2.35	73.34	26.31	20.93	7.47	2.68	2.89	3.96	8.59	5.29	4.66
1974	2.67	2.95	15.74	464.81	489.83	89.91	10.87	1.91	1.60	4.30	12.24	6.12
1975	7.77	7.77	53.42	562.88	370.87	69.40	47.49	8.40	10.07	8.94	12.68	7.80
1976	5.21	11.00	297.00	281.20	65.78	19.75	5.36	2.83	3.01	3.13	2.19	2.68
1977	3.68	3.83	15.76	16.18	12.93	2.64	1.80	1.80	2.23	3.65	4.27	5.02
1978	4.68	2.73	30.81	348.32	21.81	15.62	14.21	12.51	2.83	3.05	9.29	4.70
1979	7.12	4.79	5.91	701.12	289.07	56.27	117.03	52.03	8.33	8.14	12.73	7.25
1980	4.69	4.44	26.33	176.03	21.79	36.05	5.91	21.85	42.16	41.73	50.33	19.63
1981	12.33	154.03	165.05	71.65	53.77	135.05	40.68	19.83	28.09	25.13	20.63	15.13
1982	5.88	3.94	154.05	609.05	134.09	92.16	159.28	42.41	11.13	73.23	33.93	29.63
1983	26.33	55.93	793.15	309.15	105.14	45.30	21.73	5.71	8.55	26.73	18.83	7.00
1984	4.33	26.63	248.24	267.24	190.19	44.45	4.62	2.76	2.10	8.56	8.67	5.94
1985	3.68	4.12	250.04	39.94	29.55	29.11	7.45	80.62	44.80	43.53	26.53	12.63
1986	8.48	7.82	423.54	250.84	132.95	14.60	22.71	32.60	28.48	18.53	18.73	19.33
1987	13.42	16.42	216.14	545.54	53.29	19.12	142.95	60.97	17.47	18.62	18.12	15.92
1988	6.08	8.36	65.57	49.37	25.14	11.90	1.39	1.38	3.16	2.87	4.39	3.99
1989	4.20	3.82	4.76	186.82	23.49	5.09	1.00	0.95	1.22	1.58	3.91	1.82
1990	0.86	1.14	5.98	25.44	10.94	27.19	9.44	4.37	2.70	2.77	11.49	4.16
1991	2.04	3.04	11.03	17.53	34.99	24.27	32.47	15.12	22.57	14.40	13.80	9.50
1992	7.69	14.06	346.53	39.43	22.78	5.27	2.56	1.27	1.40	1.68	3.44	4.44
1993	3.37	3.33	82.99	182.59	50.03	21.13	299.57	423.77	38.17	13.07	14.07	14.67
1994	11.12	10.27	340.32	199.22	79.37	163.64	53.95	10.99	12.02	50.32	65.92	43.22
1995	22.70	15.90	696.65	479.84	283.14	91.62	89.12	53.78	12.34	14.50	11.90	9.25
1996	9.02	7.77	143.87	1,165.20	302.55	103.65	56.11	33.31	13.41	16.58	13.69	9.25
1997	7.99	7.13	35.35	1,794.34	414.29	61.99	104.46	34.97	18.67	20.57	16.47	13.17
1998	9.60	58.87	406.41	355.01	72.02	44.72	21.96	6.54	7.46	10.87	13.97	19.17
1999	10.15	11.28	205.36	1,106.26	518.50	191.11	182.07	196.77	125.58	66.78	52.18	27.78
2000	16.78	24.98	111.11	110.11	106.09	321.09	441.07	148.06	154.07	136.06	233.08	93.48
2001	55.31	45.51	122.15	1,106.15	277.12	258.11	205.10	135.11	52.21	35.85	64.84	32.56

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River near Cooperstown, N. Dak.												
1931	6.01	24.05	54.54	101.60	34.16	47.40	12.60	8.76	7.39	8.36	18.60	16.20
1932	11.98	9.77	99.65	245.37	58.10	51.76	24.02	12.27	8.52	8.56	16.20	9.86
1933	7.51	7.37	185.04	178.76	71.38	27.54	15.91	7.15	4.85	4.80	8.08	6.29
1934	4.70	6.39	28.99	89.36	22.69	10.17	5.94	3.89	3.61	6.90	7.61	4.61
1935	4.27	7.19	52.94	79.48	42.92	37.59	43.73	55.11	13.81	10.70	8.50	9.16
1936	7.56	6.90	23.64	137.36	80.79	22.21	9.17	3.01	3.38	3.99	5.82	3.51
1937	3.65	2.57	16.30	86.96	41.10	41.67	14.82	8.96	8.60	5.45	7.75	5.31
1938	5.64	6.06	41.72	28.55	15.85	5.02	7.79	5.15	0.08	0.13	0.14	0.10
1939	0.16	0.21	42.66	71.84	12.57	8.70	0.98	0.02	0.01	0.03	0.00	0.00
1940	0.00	0.00	0.00	108.38	36.95	5.07	0.19	1.03	0.04	0.03	0.00	0.01
1941	0.00	0.00	42.85	600.52	69.72	78.66	35.64	10.73	26.46	30.93	25.27	14.03
1942	2.62	3.39	16.82	464.41	142.43	97.14	33.19	29.50	27.17	14.90	15.53	7.02
1943	6.21	12.99	296.16	569.64	111.44	242.54	78.07	23.66	4.77	2.17	12.21	7.80
1944	2.51	2.94	9.83	68.68	44.16	95.94	37.30	44.40	59.59	20.00	50.00	25.00
1945	8.00	10.00	404.00	128.00	78.20	65.60	19.80	8.57	10.20	9.35	12.80	8.46
1946	9.44	3.71	370.00	297.00	52.90	24.10	61.90	34.00	13.00	23.30	18.20	9.61
1947	7.74	4.46	152.00	416.00	66.70	64.40	29.30	14.50	5.38	18.70	15.60	12.10
1948	10.60	5.41	6.77	1,780.00	619.00	69.30	46.80	26.60	2.76	6.26	15.60	11.40
1949	5.61	4.64	22.20	1,142.00	140.00	74.10	55.70	24.60	2.85	23.80	23.70	16.80
1950	12.90	8.61	53.70	2,293.00	1,953.00	273.00	80.40	24.60	25.40	29.00	23.90	23.20
1951	20.80	17.90	83.60	650.00	173.00	91.40	35.00	11.20	31.80	18.10	16.40	15.70
1952	11.60	10.60	44.30	447.00	80.00	32.00	85.60	12.10	6.26	3.64	11.30	7.47
1953	6.23	7.71	18.30	62.80	73.30	123.00	132.00	8.74	2.38	4.19	9.25	8.77
1954	7.68	48.20	122.00	117.00	51.36	313.03	213.25	65.70	47.42	46.00	34.50	17.80
1955	8.58	7.84	27.60	439.00	96.56	171.03	46.15	6.65	0.98	3.49	6.60	5.53
1956	4.66	4.00	4.81	678.00	243.06	280.03	51.55	13.10	18.42	13.20	37.80	15.00
1957	9.87	7.43	75.40	109.00	75.16	45.33	47.55	36.90	155.12	86.70	61.80	31.50
1958	17.80	15.80	48.10	127.00	45.96	38.03	108.25	13.00	2.47	3.48	9.91	6.41
1959	3.72	1.95	37.34	130.50	42.66	24.83	11.15	1.55	0.83	9.07	8.79	6.99
1960	5.50	4.21	53.24	616.60	101.96	121.93	32.55	8.90	5.07	3.42	9.40	6.31
1961	4.05	1.08	51.74	79.50	37.86	7.19	4.59	1.38	1.53	4.34	3.79	5.12
1962	4.51	2.83	25.14	361.00	108.76	189.73	49.85	27.10	12.73	9.59	19.94	11.92
1963	4.42	0.47	33.24	95.10	39.56	30.53	28.85	3.37	3.50	1.40	4.08	3.85
1964	2.36	1.69	2.58	162.30	62.96	237.23	102.05	28.40	41.73	44.47	25.74	11.12
1965	9.54	7.96	10.44	926.00	147.06	100.13	91.85	154.10	55.83	96.37	42.24	22.32

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River near Cooperstown, N. Dak.—Continued												
1966	14.42	8.12	1,022.44	385.80	236.76	155.03	189.15	108.60	28.63	28.97	18.54	17.02
1967	11.62	12.27	237.34	891.60	314.16	95.83	39.75	8.72	6.04	13.57	15.14	10.24
1968	9.17	8.00	169.64	126.40	79.46	81.83	24.65	15.30	25.43	16.07	18.14	15.12
1969	9.19	8.90	8.28	1,867.81	264.59	98.44	89.57	40.11	33.03	27.97	27.14	22.92
1970	16.02	12.17	32.74	521.51	266.29	185.54	40.37	40.51	20.03	16.87	23.14	15.42
1971	9.95	9.33	44.24	993.11	170.89	220.04	160.57	27.11	33.33	52.07	52.84	24.32
1972	10.52	7.53	462.44	479.31	267.49	131.54	22.77	16.71	8.62	15.17	21.64	18.02
1973	12.22	9.27	143.24	74.31	48.99	31.94	7.74	3.06	18.13	42.67	18.24	13.72
1974	8.17	6.31	10.74	1,111.81	660.79	436.04	43.27	17.91	6.12	15.37	35.44	15.92
1975	14.12	16.02	106.22	716.88	671.87	170.20	97.41	19.93	13.01	23.42	23.18	17.52
1976	11.70	12.10	196.30	597.60	117.18	40.25	18.49	4.65	2.33	2.54	2.83	3.14
1977	3.46	3.87	22.26	59.58	39.64	11.64	10.60	1.81	4.09	11.66	12.58	9.51
1978	8.83	5.38	91.61	708.22	94.24	50.97	22.48	22.29	31.40	4.89	9.47	8.49
1979	6.84	6.53	6.18	1,322.12	949.19	127.58	187.14	69.31	21.58	11.73	23.73	15.53
1980	11.23	10.53	43.33	283.53	57.51	53.46	15.52	8.37	50.79	48.13	61.13	23.83
1981	15.53	74.73	303.55	127.85	73.77	149.45	87.51	29.86	26.21	40.63	32.63	21.13
1982	8.87	4.64	104.55	875.55	214.59	165.96	195.70	61.72	17.14	114.23	65.03	61.03
1983	28.93	26.93	1,094.15	542.35	176.66	161.61	121.32	115.31	97.69	49.33	46.43	37.13
1984	25.53	16.63	354.74	771.14	328.67	115.22	42.22	9.90	1.52	17.23	18.53	12.13
1985	5.08	5.54	299.64	128.84	105.26	80.31	18.79	17.76	57.12	54.23	71.03	24.13
1986	20.23	10.73	501.04	421.24	298.85	49.10	72.05	42.43	24.50	39.73	29.23	30.23
1987	23.22	28.32	248.34	1,603.44	141.90	94.32	230.38	214.39	53.79	52.62	53.12	43.32
1988	16.87	17.97	154.97	183.37	72.74	29.70	25.04	9.05	2.34	3.94	13.07	7.63
1989	2.95	7.91	11.52	305.72	68.59	38.15	8.74	2.45	7.58	4.70	11.42	4.37
1990	6.55	6.18	8.37	70.04	39.00	77.31	41.88	14.46	7.15	2.95	11.89	7.31
1991	3.61	9.06	23.03	42.93	62.29	30.47	45.98	10.93	15.48	25.90	23.30	17.30
1992	13.26	19.96	517.33	96.93	64.48	39.52	81.66	16.02	9.12	9.31	19.76	12.26
1993	9.23	9.73	43.79	397.99	126.03	74.03	640.57	1,033.37	220.77	79.57	50.47	41.57
1994	31.82	31.62	426.52	686.52	179.77	319.14	315.45	108.69	321.52	392.02	255.12	119.32
1995	68.40	64.60	1,381.25	1,244.24	533.74	223.02	205.62	118.38	51.54	69.90	70.90	33.10
1996	34.19	33.19	116.57	2,623.20	578.75	252.75	203.61	107.91	35.71	69.98	46.49	37.69
1997	31.57	26.67	41.45	2,390.34	1,153.29	202.49	213.46	101.87	47.37	48.47	49.37	42.47
1998	31.17	112.57	329.51	741.21	209.82	119.52	76.76	26.16	17.86	54.07	46.47	38.57
1999	21.08	22.28	191.16	1,940.26	820.80	480.51	409.37	263.07	224.88	119.18	85.88	43.88
2000	31.48	45.88	180.11	154.11	146.09	873.09	722.08	251.07	287.07	177.06	375.08	144.08
2001	66.31	50.91	126.15	1,892.15	574.12	417.11	310.10	365.11	68.21	69.92	117.91	55.72

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for Baldhill Creek at the mouth							
1931	2.24	8.98	18.99	35.38	10.47	14.53	3.86	2.69	2.26	2.56	6.94	6.05
1932	4.47	3.65	34.70	85.44	17.81	15.87	7.36	3.76	2.61	2.62	6.05	3.68
1933	2.81	2.75	64.43	62.25	21.88	8.44	4.88	2.19	1.49	1.47	3.02	2.35
1934	1.75	2.38	10.09	31.12	6.96	3.12	1.82	1.19	1.11	2.12	2.84	1.72
1935	1.60	2.68	18.43	27.67	13.16	11.52	13.40	16.89	4.23	3.28	3.17	3.42
1936	2.82	2.58	8.23	47.83	24.76	6.81	2.81	0.92	1.04	1.22	2.17	1.31
1937	1.36	0.96	5.67	30.28	12.60	12.77	4.54	2.75	2.64	1.67	2.89	1.98
1938	2.10	2.26	14.53	9.89	4.83	1.53	2.39	1.57	0.02	0.04	0.05	0.04
1939	0.06	0.08	14.78	24.88	3.83	2.65	0.30	0.01	0.00	0.01	0.00	0.00
1940	0.00	0.00	0.00	37.54	11.26	1.54	0.06	0.31	0.01	0.01	0.00	0.00
1941	0.00	0.00	14.84	207.99	21.24	23.97	10.86	3.27	8.06	9.42	9.39	5.21
1942	0.97	1.26	5.83	160.85	43.40	29.60	10.11	8.99	8.28	4.54	5.77	2.61
1943	2.31	4.83	102.58	197.30	33.95	73.90	23.79	7.21	1.45	0.66	4.54	2.90
1944	0.93	1.09	3.40	23.79	13.45	29.23	11.37	13.53	18.16	4.98	15.89	8.39
1945	2.74	3.35	118.91	40.52	20.20	17.21	5.43	3.65	2.65	2.20	4.14	2.75
1946	2.97	1.30	109.09	93.05	14.43	7.02	13.63	9.42	3.83	6.78	6.36	3.17
1947	3.28	1.87	51.55	140.85	18.08	18.46	7.69	3.37	0.96	5.02	4.76	4.05
1948	2.96	1.61	4.67	535.16	181.54	19.48	12.08	7.73	1.37	1.03	6.05	3.42
1949	1.80	1.73	12.65	334.77	38.42	20.65	17.57	3.17	0.27	4.77	3.99	2.29
1950	1.04	0.94	7.61	629.55	407.83	41.11	12.20	3.17	3.29	5.59	4.02	3.40
1951	2.48	2.17	12.58	107.85	20.70	10.65	4.74	1.29	4.25	3.84	2.79	2.10
1952	0.87	1.19	6.11	63.71	7.99	2.90	13.11	1.42	0.67	1.08	1.93	0.84
1953	0.28	0.83	2.24	4.08	7.18	15.40	21.52	0.98	0.23	1.20	1.59	1.03
1954	0.41	6.67	19.33	9.72	4.63	48.78	36.98	9.66	6.68	8.06	5.75	2.45
1955	0.50	0.84	3.57	62.16	10.07	23.16	6.45	0.69	0.07	1.04	1.14	0.59
1956	0.17	0.39	0.49	131.99	13.72	12.02	3.68	1.98	2.09	1.67	5.06	1.94
1957	0.76	0.00	8.78	10.74	10.12	6.03	9.80	6.55	66.33	33.79	22.76	8.24
1958	2.11	2.42	5.19	14.09	8.10	9.75	13.38	2.44	1.45	2.00	2.42	0.17
1959	0.00	0.00	8.80	7.80	7.76	6.59	3.76	1.70	1.42	2.95	0.42	0.68
1960	0.02	0.00	36.02	94.96	8.30	8.13	2.10	2.62	2.39	1.98	1.85	0.22
1961	0.15	0.04	10.97	8.36	6.11	1.03	0.99	1.02	2.20	1.88	1.57	0.64
1962	0.11	0.11	28.63	52.35	16.21	20.41	16.10	2.87	3.24	3.14	4.79	2.33
1963	0.10	0.00	2.71	11.15	6.41	4.44	2.01	1.13	1.13	1.10	1.39	0.81
1964	0.25	0.22	0.66	15.21	6.80	19.95	13.38	5.19	5.14	5.01	3.18	1.08
1965	0.48	0.46	2.48	277.73	22.11	10.03	13.38	7.71	9.00	10.95	6.25	3.40

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for Baldhill Creek at the mouth—Continued							
1966	0.27	0.10	183.22	32.10	29.82	25.85	22.34	6.77	3.25	4.07	3.71	2.15
1967	1.35	0.92	108.05	111.63	46.26	20.07	8.28	4.04	1.64	3.64	2.42	1.64
1968	0.62	0.61	22.37	15.88	19.61	35.83	12.59	5.53	4.58	4.66	5.44	3.63
1969	0.30	0.68	2.38	509.94	32.31	23.36	13.27	1.98	3.97	5.54	6.12	4.65
1970	1.99	2.22	14.21	48.88	29.93	57.37	12.36	6.95	7.78	6.43	7.57	2.91
1971	0.35	1.00	35.79	97.98	15.31	25.06	10.28	1.94	3.13	5.71	7.84	3.32
1972	1.53	0.21	74.05	89.26	38.21	15.42	2.91	3.13	2.20	3.12	3.12	2.11
1973	0.90	1.89	26.17	8.08	6.72	3.23	0.70	1.07	3.37	4.14	3.28	1.90
1974	0.44	0.81	2.68	260.51	42.40	18.71	2.53	2.17	1.63	2.88	4.26	3.36
1975	1.72	0.75	10.63	165.77	43.65	23.70	40.48	3.07	3.20	3.66	3.82	2.10
1976	1.13	4.06	85.90	37.69	8.61	2.73	1.33	0.10	0.15	1.42	2.22	0.80
1977	0.09	0.46	6.42	7.62	3.53	1.77	1.85	0.97	3.73	3.99	5.46	3.70
1978	0.81	0.20	66.89	93.62	13.61	3.80	0.93	0.92	0.84	2.01	1.89	0.85
1979	0.16	0.11	1.45	731.19	92.97	10.83	3.15	2.21	1.04	1.50	2.20	2.09
1980	1.03	0.49	17.23	33.00	3.05	2.09	0.27	2.25	1.27	1.98	1.85	1.14
1981	0.89	2.58	3.26	2.73	1.94	2.53	0.50	0.64	0.57	2.43	2.59	1.23
1982	0.53	1.79	75.50	83.89	11.79	7.35	5.17	1.08	0.69	14.85	5.13	6.00
1983	2.69	5.97	195.74	42.50	14.29	19.84	19.73	4.04	4.41	4.06	4.53	2.02
1984	2.12	4.75	160.29	67.56	26.87	6.11	0.72	0.09	0.11	1.92	2.82	1.95
1985	0.62	2.08	26.29	3.62	4.01	9.89	2.68	1.36	2.73	5.51	3.39	1.99
1986	2.59	1.92	54.36	34.79	42.40	5.36	6.42	5.24	5.88	7.97	5.04	4.83
1987	3.39	5.58	301.45	295.74	21.88	10.44	14.17	3.40	4.34	7.02	6.24	3.78
1988	1.17	1.87	46.31	28.52	11.03	2.20	0.40	0.76	0.62	1.07	2.42	1.80
1989	0.89	0.49	8.42	65.43	6.97	1.96	0.02	2.23	5.00	1.44	2.95	0.65
1990	0.00	0.07	3.20	13.76	2.36	13.95	8.29	0.30	0.57	1.08	1.23	0.88
1991	0.00	0.08	2.64	3.53	8.27	2.88	0.91	0.15	0.37	0.54	1.12	1.13
1992	1.67	5.12	88.03	7.94	2.93	2.43	3.03	0.74	2.04	2.02	2.32	0.97
1993	0.06	1.32	85.12	81.88	21.09	13.83	309.86	151.13	59.52	17.35	12.10	8.03
1994	5.97	5.37	219.12	140.26	40.14	56.01	58.39	16.55	45.46	120.64	54.07	17.88
1995	8.12	7.13	531.87	377.40	162.47	53.86	93.88	62.36	39.46	25.40	20.10	9.57
1996	7.04	6.00	119.24	752.55	152.04	60.09	51.59	32.65	9.85	10.00	8.23	6.35
1997	5.45	5.91	22.48	1,163.28	249.21	44.10	31.75	6.25	7.17	10.98	10.41	6.75
1998	3.64	37.97	142.61	116.66	36.62	9.24	8.87	3.82	3.25	8.82	9.90	8.72
1999	3.73	4.13	277.85	457.82	207.37	204.42	72.90	25.96	20.64	13.95	9.12	4.47
2000	1.75	16.10	27.07	32.66	28.23	104.08	72.45	29.14	16.67	13.95	60.96	14.43
2001	5.83	3.73	58.61	259.50	74.04	48.98	21.43	41.50	14.29	79.15	130.79	61.74

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River below Baldhill Dam, N. Dak.												
1931	8.50	34.01	79.06	147.27	51.78	71.86	19.10	13.28	11.20	12.67	26.30	22.92
1932	16.94	13.82	144.43	355.66	88.08	78.47	36.42	18.61	12.91	12.98	22.92	13.95
1933	10.63	10.43	268.21	259.11	108.22	41.74	24.12	10.83	7.35	7.28	11.43	8.90
1934	6.64	9.03	42.01	129.52	34.40	15.42	9.00	5.90	5.48	10.47	10.76	6.52
1935	6.04	10.16	76.73	115.20	65.06	56.98	66.29	83.55	20.93	16.22	12.02	12.95
1936	10.69	9.76	34.27	199.09	122.48	33.66	13.89	4.57	5.12	6.05	8.24	4.97
1937	5.16	3.63	23.62	126.04	62.31	63.17	22.46	13.59	13.04	8.26	10.96	7.51
1938	7.97	8.57	60.47	41.37	24.03	7.61	11.81	7.80	0.12	0.20	0.19	0.15
1939	0.23	0.30	61.82	104.10	19.06	13.19	1.49	0.03	0.01	0.05	0.00	0.00
1940	0.00	0.00	0.00	157.06	56.00	7.68	0.29	1.55	0.05	0.05	0.00	0.02
1941	0.00	0.00	62.10	870.25	105.67	119.22	54.01	16.26	40.10	46.88	35.74	19.84
1942	3.70	4.80	24.38	673.00	215.86	147.22	50.31	44.71	41.19	22.58	21.96	9.92
1943	8.78	18.37	429.19	825.50	168.90	367.60	118.32	35.86	7.23	3.29	17.27	11.02
1944	3.55	4.16	14.25	99.54	66.93	145.41	56.54	67.29	90.32	19.24	50.25	28.48
1945	9.55	11.39	409.10	153.41	82.37	71.71	23.93	23.30	10.93	7.69	13.41	8.96
1946	9.28	4.65	376.22	347.92	63.31	33.33	41.73	42.09	18.33	32.06	22.69	10.56
1947	14.06	7.91	210.94	575.30	78.67	85.98	32.06	11.56	1.44	21.59	14.15	13.69
1948	7.52	4.57	29.22	1,896.65	867.07	88.69	49.22	36.58	9.48	0.71	23.98	9.92
1949	5.74	6.61	73.69	1,145.11	169.80	93.03	90.32	28.50	3.21	29.13	28.38	19.61
1950	14.39	9.85	62.92	2,970.08	2,405.21	321.62	94.81	28.50	29.43	35.29	28.62	27.31
1951	23.95	20.75	98.64	776.28	198.91	104.82	40.75	12.83	36.97	22.35	19.67	18.29
1952	12.88	12.14	51.75	524.13	90.53	35.94	101.05	13.88	7.12	4.77	13.56	8.56
1953	6.74	9.31	21.11	69.11	82.82	142.04	157.02	9.98	2.68	5.46	11.11	10.09
1954	8.37	56.38	144.85	130.72	57.66	370.29	255.70	77.18	55.44	55.23	41.27	20.81
1955	9.39	9.74	32.02	514.36	109.66	199.12	53.90	7.54	1.08	4.59	7.94	6.30
1956	5.00	4.52	35.67	796.63	265.36	302.25	56.98	15.44	21.07	15.26	44.05	17.42
1957	24.41	34.32	73.15	99.66	87.45	52.67	58.43	44.38	222.16	121.16	85.59	40.48
1958	20.49	20.40	54.85	145.19	55.22	48.49	124.84	15.75	3.90	5.45	12.57	6.83
1959	6.17	3.16	43.54	142.95	51.46	31.84	15.02	3.14	3.76	10.53	9.52	7.89
1960	5.72	4.36	88.84	729.54	113.63	134.24	35.75	11.63	7.43	5.35	11.49	6.75
1961	4.34	2.45	63.99	90.43	44.96	8.40	5.65	6.33	0.77	6.22	5.39	5.90
1962	4.78	3.45	52.75	424.09	127.96	216.02	66.58	30.79	16.18	12.83	25.20	14.56
1963	4.67	2.06	37.07	109.25	47.00	35.81	31.82	4.52	4.65	2.44	5.53	4.74
1964	2.67	1.94	3.28	182.92	71.70	265.00	118.37	34.27	48.08	50.82	29.73	12.56
1965	11.88	11.37	76.43	1,345.70	199.76	130.67	124.23	192.94	76.36	127.12	57.36	30.37

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River below Baldhill Dam, N. Dak.—Continued												
1966	16.79	11.32	1,364.11	476.60	302.44	204.43	240.07	131.65	36.10	37.36	25.10	21.74
1967	14.45	64.41	335.24	1,120.22	401.03	128.22	53.07	13.79	8.36	18.89	19.51	13.19
1968	10.66	9.36	208.56	154.61	106.38	124.72	39.25	22.13	32.33	22.14	25.30	20.19
1969	26.77	32.88	11.41	2,523.67	322.31	130.86	111.26	45.93	40.10	36.09	35.87	29.78
1970	19.55	18.04	49.94	621.65	321.87	259.67	56.26	51.18	29.50	24.74	32.91	19.80
1971	11.25	48.71	83.82	1,156.56	202.74	266.27	186.47	31.58	39.62	62.76	65.85	30.00
1972	13.05	8.45	581.46	614.94	331.22	159.57	27.74	21.30	11.53	19.66	26.85	21.87
1973	14.29	13.78	183.26	89.60	60.32	38.19	9.06	4.29	23.13	50.90	23.26	16.93
1974	37.27	64.07	13.77	1,333.63	733.06	475.12	47.71	20.75	7.90	18.78	41.22	19.88
1975	16.36	18.84	121.42	908.24	745.79	200.56	139.66	23.67	16.52	27.89	27.86	20.29
1976	13.36	16.55	286.76	662.81	130.94	44.73	13.58	11.87	4.31	2.18	5.07	4.06
1977	3.70	4.65	29.38	69.69	44.86	13.84	12.78	2.74	7.71	15.92	18.36	13.46
1978	30.51	18.37	158.97	801.49	111.53	57.02	24.42	24.22	31.30	9.31	9.30	12.00
1979	8.19	9.46	57.62	2,261.23	1,206.50	160.45	222.21	83.39	26.33	23.34	21.78	20.39
1980	13.89	12.58	65.11	344.85	66.72	61.34	17.81	11.87	57.59	55.38	69.59	27.86
1981	18.48	82.68	337.61	143.83	83.54	167.36	97.24	33.97	29.88	47.56	38.97	24.98
1982	10.28	16.14	181.40	1,045.60	247.48	189.68	220.25	68.92	19.51	140.06	76.61	73.07
1983	34.48	36.95	1,396.05	638.37	208.17	197.01	152.55	130.72	111.72	58.20	55.56	42.84
1984	30.18	23.00	547.83	914.67	387.57	132.64	40.53	17.37	6.26	16.41	23.18	15.28
1985	6.20	8.27	355.44	145.27	119.67	97.92	23.20	20.81	65.46	65.00	81.49	28.50
1986	23.68	42.25	555.79	474.92	353.03	56.49	81.57	49.38	31.16	49.09	35.45	36.30
1987	27.56	36.50	543.71	1,961.19	169.20	108.65	254.98	228.22	60.47	61.73	61.66	49.04
1988	18.80	77.59	154.72	219.30	86.58	33.20	26.63	10.17	3.01	5.11	16.00	9.70
1989	9.49	10.41	19.99	376.68	78.46	41.86	9.16	4.61	12.56	6.25	14.77	5.19
1990	6.86	6.74	11.76	86.43	43.08	94.00	48.22	18.78	8.00	4.08	13.63	8.49
1991	3.78	9.55	26.63	48.36	72.98	34.63	49.07	11.59	16.57	27.68	25.51	19.22
1992	15.48	25.78	625.81	109.21	70.36	43.70	88.49	17.47	11.44	11.62	22.92	13.77
1993	11.52	16.34	149.74	588.87	180.65	107.65	1,142.25	1,458.25	341.50	118.50	76.62	60.91
1994	42.72	46.70	715.72	933.65	247.36	423.69	421.90	141.69	415.78	573.12	349.33	155.67
1995	87.04	84.60	2,135.23	1,818.85	778.54	311.03	331.63	199.35	99.26	106.12	102.32	47.95
1996	44.57	42.43	245.46	3,625.59	784.11	336.23	274.01	150.37	48.83	86.66	59.27	47.73
1997	40.10	39.92	67.67	3,773.35	1,510.37	265.51	265.58	118.09	59.03	63.94	64.60	53.38
1998	37.87	160.95	502.67	930.02	266.28	140.35	93.01	32.46	22.78	68.01	60.90	51.03
1999	26.87	62.52	483.49	2,557.17	1,104.02	726.82	521.02	314.55	267.37	144.61	103.48	52.68
2000	36.36	66.41	224.73	201.63	188.08	1,061.37	864.57	304.44	331.94	208.29	472.97	172.78
2001	78.70	65.25	196.39	2,336.56	703.35	506.33	361.89	441.87	88.88	153.69	259.27	122.45

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River at Valley City, N. Dak.												
1931	9.26	37.03	86.59	161.30	57.34	79.58	21.15	14.71	12.40	14.03	28.64	24.95
1932	18.44	15.04	158.19	389.54	97.54	86.90	40.33	20.61	14.30	14.37	24.95	15.19
1933	11.57	11.35	293.76	283.80	119.84	46.23	26.71	12.00	8.13	8.07	12.44	9.69
1934	7.23	9.84	46.02	141.86	38.09	17.08	9.96	6.53	6.07	11.59	11.72	7.09
1935	6.58	11.07	84.04	126.17	72.05	63.10	73.41	92.52	23.18	17.96	13.09	14.10
1936	11.64	10.63	37.53	218.06	135.63	37.28	15.39	5.06	5.67	6.70	8.97	5.41
1937	5.62	3.96	25.87	138.05	69.00	69.95	24.88	15.05	14.44	9.15	11.93	8.17
1938	8.68	9.33	66.23	45.30	26.60	8.43	13.08	8.64	0.13	0.22	0.21	0.16
1939	0.25	0.33	67.70	114.00	21.10	14.60	1.65	0.03	0.01	0.05	0.00	0.00
1940	0.00	0.00	0.00	172.00	62.00	8.50	0.32	1.72	0.06	0.05	0.00	0.02
1941	0.00	0.00	68.00	953.00	117.00	132.00	59.80	18.00	44.40	51.90	38.90	21.60
1942	4.03	5.22	26.70	737.00	239.00	163.00	55.70	49.50	45.60	25.00	23.90	10.80
1943	9.56	20.00	470.00	904.00	187.00	407.00	131.00	39.70	8.00	3.64	18.80	12.00
1944	3.86	4.53	15.60	109.00	74.10	161.00	62.60	74.50	100.00	21.30	54.70	31.00
1945	10.40	12.40	448.00	168.00	91.20	79.40	26.50	25.80	12.10	8.51	14.60	9.75
1946	10.10	5.06	412.00	381.00	70.10	36.90	46.20	46.60	20.30	35.50	24.70	11.50
1947	15.30	8.61	231.00	630.00	87.10	95.20	35.50	12.80	1.59	23.90	15.40	14.90
1948	8.19	4.98	32.00	2,077.00	960.00	98.20	54.50	40.50	10.50	0.79	26.10	10.80
1949	6.25	7.20	80.70	1,254.00	188.00	103.00	100.00	28.79	3.33	29.65	30.88	23.21
1950	14.79	8.81	90.02	2,986.08	2,420.21	398.62	102.81	26.70	28.22	35.39	32.82	26.61
1951	24.15	21.15	132.24	785.28	203.91	110.32	41.05	11.43	35.57	23.65	19.17	18.09
1952	11.68	11.94	86.25	553.90	96.23	43.64	109.15	16.48	11.62	6.27	14.66	7.46
1953	5.74	21.91	31.05	70.23	92.32	176.64	166.02	10.52	1.58	5.46	11.31	7.59
1954	6.67	62.68	142.25	136.72	61.86	379.29	274.70	79.88	56.74	57.53	39.17	16.31
1955	9.39	11.14	47.51	519.36	114.96	217.12	59.90	12.04	2.56	3.96	4.86	4.93
1956	4.02	4.03	39.37	779.63	276.36	314.25	59.18	17.04	19.79	14.70	48.15	16.32
1957	21.71	29.32	73.75	98.76	84.45	54.17	65.23	53.78	239.16	125.36	90.59	41.98
1958	18.19	25.40	53.35	153.99	58.22	51.10	125.34	14.65	2.50	4.45	7.57	3.53
1959	2.97	1.96	46.04	143.97	54.37	53.84	21.84	4.45	4.29	12.83	8.32	6.29
1960	2.92	2.16	147.34	756.54	118.43	141.24	35.45	18.03	8.83	4.55	2.89	4.95
1961	2.44	0.15	76.19	93.23	44.56	9.10	6.75	4.33	4.27	7.82	4.59	4.40
1962	3.58	2.45	107.85	440.09	138.96	242.02	149.58	40.99	22.08	15.23	24.60	14.36
1963	6.07	4.76	43.37	112.55	47.90	42.61	35.48	5.46	8.37	1.41	4.24	3.50
1964	2.03	1.34	3.16	199.65	75.41	254.33	121.76	38.52	47.36	54.78	30.44	14.02
1965	11.34	10.27	80.71	1,534.03	211.07	146.90	145.62	213.29	88.54	134.38	57.67	24.63

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River at Valley City, N. Dak.—Continued												
1966	16.05	23.42	1,527.39	562.93	332.75	226.76	237.46	139.00	40.98	37.92	20.51	21.10
1967	11.71	68.81	378.52	1,161.55	440.34	137.25	50.56	13.74	10.44	22.05	18.02	13.65
1968	8.92	6.06	233.14	170.94	122.69	167.05	44.04	23.78	34.41	21.00	32.31	21.15
1969	22.03	42.28	32.69	2,680.00	344.62	138.39	141.65	50.48	45.48	32.65	38.28	29.94
1970	21.11	16.84	48.22	675.98	312.18	287.00	58.45	51.53	28.98	28.60	36.72	20.06
1971	9.31	66.11	133.10	1,162.89	214.05	278.60	196.86	33.63	41.70	66.92	71.16	30.26
1972	8.31	6.95	658.74	697.27	317.53	132.90	36.03	26.35	16.91	26.72	29.76	24.33
1973	15.65	16.48	226.04	96.33	63.03	39.02	11.12	6.74	28.91	50.16	12.17	15.19
1974	31.53	84.47	41.05	1,421.96	777.37	476.45	50.40	23.90	8.88	21.84	46.83	23.24
1975	16.62	22.44	126.99	1,001.05	832.16	229.67	189.44	26.55	19.53	34.52	37.01	32.05
1976	26.43	28.27	298.49	744.27	151.93	49.37	18.31	17.72	12.35	9.38	9.91	7.86
1977	7.25	7.53	32.55	72.80	47.99	16.90	15.27	5.01	10.64	19.28	24.69	21.63
1978	40.03	34.08	182.37	915.76	135.30	64.73	28.20	28.13	38.59	21.56	17.05	17.47
1979	14.91	20.04	87.81	2,555.24	1,456.13	191.40	251.24	95.22	33.55	42.66	47.41	23.11
1980	17.30	16.01	80.49	371.82	71.14	67.06	23.81	15.97	87.59	80.70	85.77	33.33
1981	21.85	86.09	355.70	168.12	98.60	194.77	115.14	41.03	40.08	77.74	61.33	28.23
1982	12.70	22.24	210.85	1,191.81	291.70	223.55	263.89	81.51	23.79	167.92	113.69	91.35
1983	53.69	49.58	1,598.03	746.70	246.72	238.83	175.60	140.23	127.45	78.84	77.86	64.17
1984	43.15	33.74	590.65	1,064.07	453.44	155.08	48.65	26.57	15.54	36.51	31.61	24.07
1985	11.53	11.17	372.18	169.54	142.93	113.59	29.48	30.64	71.08	71.89	97.48	51.16
1986	45.95	73.25	583.87	539.59	410.76	67.54	95.37	62.00	37.64	52.96	53.36	66.21
1987	47.52	49.56	702.52	2,168.45	199.71	130.63	296.31	269.88	74.40	79.64	77.58	66.99
1988	37.91	95.84	165.60	223.79	97.93	41.44	32.72	16.83	7.02	8.99	21.05	16.59
1989	17.96	20.46	38.49	410.04	83.69	48.19	15.71	11.77	17.62	13.59	19.54	9.62
1990	10.22	9.53	15.24	89.27	45.86	97.03	52.64	29.17	19.89	6.34	16.18	10.88
1991	6.13	11.86	29.14	50.83	76.56	38.91	55.87	19.16	20.96	31.33	30.73	28.91
1992	23.39	29.50	699.77	124.32	79.12	50.96	101.17	24.73	18.09	15.56	25.31	21.52
1993	24.03	31.44	185.72	632.81	217.75	132.99	1,377.54	1,745.75	407.76	141.47	100.75	81.24
1994	58.55	75.14	786.34	1,051.57	278.81	499.66	522.35	178.60	523.08	688.61	394.27	191.61
1995	115.54	110.86	2,340.33	2,035.91	848.33	306.96	332.47	199.42	108.25	120.20	114.85	64.83
1996	64.53	88.99	429.69	3,639.68	948.30	342.07	277.04	155.32	58.23	93.72	80.26	77.13
1997	66.59	67.01	99.20	4,315.64	1,794.93	302.30	308.56	134.99	68.72	75.14	85.48	72.00
1998	49.04	184.34	583.71	1,022.39	299.80	169.19	106.31	39.09	31.24	73.55	100.87	65.57
1999	44.30	92.65	610.20	2,874.07	1,315.15	855.45	616.38	377.89	315.72	169.38	127.40	90.51
2000	60.09	73.60	235.43	234.10	224.65	1,251.63	1,006.85	338.29	377.93	257.33	562.60	230.44
2001	113.57	99.15	243.80	2,617.37	831.37	596.94	427.51	512.32	101.03	180.31	296.00	161.38

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River at Lisbon, N. Dak.												
1931	10.66	42.62	100.67	187.53	67.89	94.22	25.04	17.42	14.69	16.61	32.97	28.72
1932	21.23	17.32	183.92	452.89	115.48	102.88	47.75	24.40	16.93	17.01	28.72	17.48
1933	13.32	13.07	341.54	329.95	141.89	54.73	31.62	14.20	9.63	9.55	14.32	11.16
1934	8.33	11.32	53.50	164.93	45.10	20.22	11.80	7.74	7.18	13.72	13.49	8.17
1935	7.58	12.74	97.71	146.69	85.31	74.72	86.91	109.55	27.45	21.27	15.07	16.23
1936	13.40	12.24	43.64	253.52	160.59	44.14	18.22	5.99	6.72	7.93	10.32	6.23
1937	6.47	4.55	30.08	160.50	81.70	82.82	29.45	17.82	17.09	10.83	13.74	9.41
1938	9.99	10.74	77.00	52.66	31.49	9.98	15.49	10.23	0.15	0.26	0.24	0.18
1939	0.29	0.38	78.70	132.53	24.98	17.29	1.95	0.04	0.01	0.06	0.00	0.00
1940	0.00	0.00	0.10	200.06	73.50	10.06	0.38	2.04	0.07	0.06	0.00	0.02
1941	0.00	0.00	79.15	1,108.01	138.62	156.28	70.80	21.31	52.57	61.45	44.78	24.86
1942	4.64	6.01	31.14	856.90	283.06	192.98	65.94	58.60	53.99	29.60	27.51	12.43
1943	11.00	23.02	546.50	1,051.05	221.49	481.85	155.09	47.00	9.47	4.31	21.64	13.81
1944	4.44	5.21	18.24	126.82	87.83	190.61	74.11	88.20	118.39	25.22	62.96	35.68
1945	11.97	14.27	520.92	195.41	108.07	94.00	31.37	30.55	14.33	10.08	16.81	11.22
1946	11.63	5.82	479.07	443.03	83.09	43.69	54.70	55.17	24.03	42.03	28.43	13.24
1947	17.61	9.91	268.65	732.51	103.22	112.71	42.03	15.15	1.88	28.30	17.73	17.15
1948	9.43	5.73	37.30	2,414.72	1,136.66	116.26	64.52	47.95	12.43	0.94	30.04	12.43
1949	7.19	8.29	93.92	1,457.94	222.68	121.94	118.39	29.35	3.56	30.21	35.04	26.52
1950	16.46	10.19	102.65	3,270.00	2,967.45	625.01	149.52	38.91	28.64	37.82	37.46	30.63
1951	28.06	24.77	144.24	875.76	263.78	127.85	49.73	15.53	40.63	33.08	21.36	20.31
1952	15.21	16.29	94.35	559.26	99.88	47.69	113.03	20.93	15.50	9.05	16.46	9.53
1953	9.23	27.40	34.11	70.85	96.71	197.40	191.89	13.24	4.46	9.01	14.34	13.45
1954	15.52	72.13	155.05	159.25	69.63	411.64	319.14	87.08	66.69	65.20	54.26	31.19
1955	22.13	16.18	51.40	560.58	128.01	264.36	103.61	16.21	3.59	4.19	5.19	5.88
1956	4.42	5.12	50.36	837.76	343.99	367.20	70.54	20.72	20.88	15.17	44.65	12.92
1957	17.61	15.72	96.65	124.96	90.76	54.73	71.64	60.60	273.87	131.76	99.49	39.08
1958	11.09	47.90	103.35	202.79	76.03	70.37	122.75	19.67	1.51	8.55	10.67	0.23
1959	0.07	1.76	65.54	167.30	62.41	64.20	36.85	6.33	0.22	16.43	4.92	5.89
1960	1.02	3.96	247.44	899.04	136.74	153.20	46.56	19.35	7.54	7.25	1.19	5.95
1961	2.14	3.05	153.49	108.63	53.87	9.76	1.56	0.19	7.68	13.02	9.39	3.90
1962	2.98	3.45	231.55	593.59	201.87	274.58	635.99	97.31	41.99	27.83	39.00	21.86
1963	5.37	8.06	74.37	163.05	69.91	65.47	44.09	11.64	10.18	6.46	7.44	6.10
1964	4.33	11.74	13.06	253.15	94.22	213.69	188.57	46.04	53.57	51.88	33.64	14.32
1965	4.34	4.27	56.71	1,757.13	292.28	201.26	149.63	254.31	77.65	138.88	51.57	26.43

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River at Lisbon, N. Dak.—Continued												
1966	17.75	23.92	1,602.49	846.43	384.96	239.82	219.87	144.62	46.19	56.82	21.11	18.70
1967	11.21	44.41	516.72	1,108.55	562.85	184.11	57.77	14.96	9.35	23.95	22.82	14.35
1968	5.82	5.26	295.84	181.34	141.50	230.41	61.45	24.90	37.82	22.70	26.31	19.65
1969	0.63	36.58	66.99	3,137.10	453.83	181.45	200.36	56.10	53.89	41.15	47.28	40.94
1970	33.11	32.74	136.42	726.18	395.19	374.66	94.76	56.05	35.49	31.20	42.42	22.86
1971	11.61	25.21	226.70	1,204.49	268.76	289.06	235.07	39.15	39.51	74.22	45.76	33.86
1972	27.51	40.35	753.34	749.17	287.24	177.56	52.14	31.77	14.12	31.42	26.36	22.63
1973	13.85	22.88	288.14	121.73	73.64	46.18	8.10	0.46	35.42	54.56	13.97	15.39
1974	31.83	63.37	79.95	1,420.06	736.38	524.01	53.61	23.42	6.59	23.64	49.03	22.24
1975	16.92	20.04	136.28	978.45	887.93	487.99	723.43	64.87	26.87	38.05	39.86	44.75
1976	30.24	56.66	393.11	772.71	198.03	79.87	21.02	1.57	0.50	14.86	13.59	8.44
1977	10.14	13.94	72.97	99.00	105.33	26.67	25.35	5.77	26.41	30.16	27.65	17.90
1978	22.81	13.17	441.84	905.06	163.36	94.57	48.99	27.24	54.35	0.41	12.60	0.30
1979	10.53	11.60	111.69	2,255.30	1,851.65	212.95	230.40	107.35	38.66	5.28	48.23	40.82
1980	21.21	19.34	193.28	440.89	79.17	78.97	32.33	20.34	66.84	56.45	90.35	45.49
1981	27.15	104.10	325.15	161.66	80.91	147.01	143.09	40.23	15.92	37.22	73.56	36.54
1982	17.52	0.60	198.43	1,398.81	313.45	185.32	180.39	87.29	20.91	131.13	34.81	82.60
1983	42.43	38.01	1,375.12	769.11	214.82	247.15	255.24	111.91	125.01	60.23	54.00	46.22
1984	62.41	36.06	707.61	1,095.85	420.45	130.14	46.93	1.14	0.69	10.07	32.28	18.45
1985	19.96	26.78	418.21	175.90	145.83	103.27	25.36	19.67	68.56	70.73	84.23	29.43
1986	24.21	39.12	744.57	594.61	537.16	88.89	89.52	80.42	38.28	70.12	23.59	36.62
1987	36.86	34.04	903.40	2,318.36	216.34	149.98	170.73	278.65	57.78	63.18	69.05	53.16
1988	20.61	105.97	243.66	241.31	90.98	40.07	19.79	6.64	7.31	8.25	21.96	9.84
1989	1.58	2.10	121.18	560.06	92.44	64.39	11.08	10.76	21.83	7.06	20.38	1.72
1990	16.47	12.34	29.00	106.41	55.95	145.49	58.42	0.54	8.35	16.42	17.83	10.13
1991	5.32	13.39	54.20	61.92	114.03	60.40	82.42	13.23	25.86	32.78	25.00	25.28
1992	40.96	71.99	763.54	158.48	102.45	68.92	127.16	34.64	35.38	22.82	37.68	1.36
1993	16.21	25.86	260.91	770.37	147.31	226.55	1,296.15	1,849.81	367.84	151.02	72.00	125.07
1994	71.45	68.21	854.63	1,204.09	390.37	375.16	510.06	227.61	401.31	668.24	513.15	215.75
1995	110.42	85.21	2,094.35	2,361.62	890.05	353.51	362.85	186.14	118.45	129.55	98.10	53.23
1996	72.40	156.38	638.91	3,505.71	1,271.92	437.12	263.27	203.36	65.62	101.44	68.76	73.13
1997	63.40	63.93	132.30	4,626.39	2,365.54	513.64	421.69	167.56	94.18	97.77	103.86	116.30
1998	85.91	218.79	882.42	1,283.62	401.87	266.67	203.85	65.39	30.98	133.23	116.43	78.90
1999	18.45	0.11	643.28	2,940.15	1,425.27	786.26	504.63	262.67	357.40	204.37	164.41	49.61
2000	68.25	141.58	326.79	229.60	215.60	1,004.69	921.29	350.99	401.75	188.35	366.66	191.81
2001	69.30	89.78	114.01	2,604.10	719.22	399.76	399.73	456.26	114.70	126.27	206.73	96.87

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized historic streamflow, in cubic feet per second, for the Sheyenne River near Kindred, N. Dak.												
1931	12.55	50.20	119.93	223.42	82.62	114.65	30.47	21.19	17.87	20.21	38.82	33.82
1932	25.00	20.39	219.11	539.55	140.52	125.19	58.10	29.69	20.61	20.70	33.82	20.59
1933	15.69	15.39	406.89	393.09	172.65	66.60	38.48	17.28	11.72	11.62	16.86	13.14
1934	9.80	13.33	63.74	196.50	54.88	24.61	14.36	9.41	8.74	16.70	15.88	9.62
1935	8.92	15.00	116.41	174.76	103.81	90.92	105.76	133.30	33.40	25.88	17.75	19.12
1936	15.78	14.41	51.99	302.04	195.41	53.71	22.17	7.29	8.17	9.65	12.16	7.33
1937	7.62	5.36	35.83	191.21	99.41	100.78	35.84	21.68	20.80	13.18	16.18	11.08
1938	11.77	12.65	91.74	113.86	69.14	38.48	18.85	40.14	16.41	11.62	14.90	11.77
1939	11.18	9.90	102.80	253.38	60.25	54.30	26.07	11.04	8.85	12.11	16.86	14.90
1940	6.25	5.59	6.72	205.80	118.65	43.07	14.45	10.74	8.46	10.55	15.49	12.65
1941	12.35	12.35	31.72	1,016.35	225.10	213.57	110.45	47.07	51.76	71.97	64.12	50.30
1942	23.73	22.16	45.53	650.48	396.28	291.30	107.32	75.39	106.64	62.79	55.59	35.79
1943	32.55	35.79	263.66	1,621.40	362.50	750.87	265.43	128.90	61.42	39.94	58.14	41.18
1944	26.86	31.18	38.28	217.64	255.47	244.82	178.12	161.03	181.05	76.95	90.69	59.51
1945	43.63	46.08	541.42	446.84	184.08	156.35	77.05	61.72	36.82	36.23	37.06	25.98
1946	28.24	24.80	325.63	673.20	147.95	112.21	86.52	72.46	41.02	74.71	57.06	40.88
1947	37.26	39.61	70.10	1,249.37	233.01	225.78	111.42	56.44	31.44	33.30	63.53	46.57
1948	31.67	29.41	38.87	1,419.72	1,589.92	265.82	146.38	100.97	53.22	33.69	51.47	38.14
1949	27.35	21.86	116.31	1,132.86	507.02	189.45	135.25	119.16	34.10	61.43	43.08	45.51
1950	33.49	28.55	213.62	2,815.18	2,498.31	1,105.62	250.21	134.70	83.33	73.19	66.22	47.61
1951	48.25	47.15	146.44	912.08	409.51	199.42	120.85	48.13	79.27	33.85	91.37	50.79
1952	33.78	42.14	99.25	1,309.00	193.83	95.04	163.95	31.18	31.72	33.97	46.26	29.26
1953	17.34	31.21	141.25	166.44	209.33	353.50	302.23	62.22	22.89	26.76	38.91	21.69
1954	15.17	111.48	196.95	221.52	122.37	317.35	378.71	120.70	75.95	83.23	47.97	25.51
1955	5.89	27.04	95.31	617.26	153.27	233.58	123.01	106.66	26.98	32.57	25.37	16.26
1956	21.06	18.56	8.42	679.02	523.46	327.10	106.24	54.09	44.30	32.11	57.75	23.02
1957	22.61	23.62	142.10	199.65	140.15	89.22	115.49	86.63	275.98	151.46	136.29	73.88
1958	36.89	41.30	197.30	281.68	123.22	117.36	156.50	47.40	19.62	25.75	21.97	2.53
1959	5.17	2.06	83.99	232.39	99.50	84.29	72.70	29.96	20.58	36.43	22.82	21.79
1960	19.52	18.16	141.99	1,121.53	219.33	194.89	97.01	36.08	35.45	26.65	22.19	18.35
1961	21.04	24.85	189.54	159.42	105.66	44.25	24.41	20.08	19.99	33.82	23.99	15.80
1962	14.98	19.65	131.60	853.58	298.56	392.57	1,045.44	281.04	114.40	85.23	79.90	65.46
1963	21.87	14.06	128.12	309.24	153.00	158.86	84.84	45.37	36.59	31.86	27.74	15.20
1964	9.03	28.74	45.31	340.64	151.51	180.18	263.12	73.87	75.88	78.68	56.64	22.22
1965	18.04	24.17	8.56	1,632.02	461.37	309.15	142.68	331.74	110.66	204.68	80.47	58.63

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River near Kindred, N. Dak.—Continued												
1966	27.15	48.02	1,420.34	1,183.92	490.65	323.91	265.25	200.96	78.65	87.22	26.51	32.80
1967	35.11	2.31	592.77	1,066.34	673.44	305.70	107.65	37.50	28.71	43.95	31.82	19.75
1968	22.32	13.96	329.99	261.33	214.89	242.40	115.83	52.64	58.28	46.30	43.11	30.35
1969	21.93	13.78	110.54	3,053.99	976.92	274.54	295.64	111.84	85.75	74.75	61.18	50.34
1970	29.91	19.54	123.77	796.27	416.48	449.35	195.14	91.69	60.55	56.00	68.62	28.96
1971	29.41	8.61	264.55	1,135.58	471.95	350.55	324.55	74.89	84.77	116.72	74.96	39.76
1972	54.51	70.55	837.29	785.26	467.03	307.75	136.02	83.71	50.08	70.12	53.66	30.03
1973	19.25	46.78	432.59	216.42	119.83	83.37	36.51	21.40	55.78	83.06	31.57	30.79
1974	18.03	9.07	106.80	1,352.65	896.87	649.60	108.99	62.86	32.05	51.54	68.43	26.54
1975	35.77	32.97	154.35	1,006.30	1,110.54	611.38	1,491.73	162.65	115.59	104.00	94.16	68.70
1976	52.44	171.06	539.21	796.51	307.90	125.98	61.15	26.89	8.10	9.66	28.29	29.84
1977	28.45	38.55	132.79	167.89	140.78	64.80	47.17	21.14	42.89	63.87	47.06	28.21
1978	20.41	15.17	431.70	979.15	259.18	160.23	104.89	49.42	117.69	24.21	44.80	25.20
1979	24.03	6.30	36.04	2,285.05	2,169.56	361.89	299.81	188.67	83.32	10.38	99.33	83.92
1980	47.91	46.14	177.55	575.06	122.54	132.83	67.17	51.89	52.03	62.55	117.15	75.19
1981	48.25	124.40	362.56	220.38	121.69	167.42	195.30	69.84	25.79	56.72	99.76	56.94
1982	30.72	16.50	154.28	1,410.75	388.48	254.73	190.05	128.74	41.84	130.93	21.81	124.60
1983	54.13	47.61	1,326.87	912.76	294.36	246.53	353.54	139.64	142.06	55.64	65.50	62.82
1984	91.22	56.38	690.45	1,207.50	496.57	228.90	104.58	20.00	26.36	29.59	61.60	30.06
1985	37.77	35.98	473.72	229.71	212.95	166.45	74.68	37.27	106.73	92.73	60.63	28.94
1986	47.71	32.92	902.63	732.10	737.86	174.97	137.88	128.11	97.80	121.37	30.51	51.93
1987	74.87	75.54	831.91	2,490.86	320.92	228.09	144.57	335.27	84.99	84.08	87.35	67.87
1988	27.31	106.77	376.68	318.33	108.72	59.75	52.75	15.10	28.43	27.80	30.86	9.44
1989	2.88	10.60	89.08	892.16	149.11	94.14	40.95	27.16	41.97	28.79	48.31	17.52
1990	19.87	28.34	91.18	186.00	93.84	181.92	90.05	11.70	12.86	46.85	37.33	19.94
1991	14.68	29.29	87.24	115.21	150.80	91.63	97.70	20.90	51.36	47.91	33.30	16.59
1992	30.56	69.89	724.55	225.89	116.86	103.56	157.98	65.06	67.94	52.07	63.38	2.26
1993	9.91	30.16	189.21	1,008.13	210.71	293.93	1,123.97	2,137.14	473.92	225.27	104.80	180.97
1994	110.55	80.61	903.62	1,418.92	548.07	395.40	654.45	210.75	311.48	644.98	647.77	264.75
1995	111.32	115.31	1,751.65	2,785.95	1,181.32	538.72	524.46	247.95	192.14	218.39	171.42	63.33
1996	47.30	60.48	875.26	3,457.29	2,006.09	728.70	336.72	322.47	125.26	146.67	98.09	88.13
1997	61.50	72.43	92.57	4,403.29	2,880.36	609.18	503.92	223.25	131.69	151.00	122.88	124.70
1998	131.21	213.09	1,147.94	1,435.67	701.06	560.96	496.27	138.55	109.73	217.07	193.15	188.00
1999	66.25	37.51	751.68	3,064.18	1,596.44	924.03	624.69	337.62	543.32	304.41	239.42	51.61
2000	109.25	145.58	537.14	356.99	327.67	877.59	1,202.23	451.10	529.78	209.38	409.69	198.81
2001	94.30	131.78	308.70	2,960.83	839.60	497.87	449.49	503.95	147.57	118.61	222.66	145.37

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River at West Fargo, N. Dak.												
1931	12.80	51.20	122.50	228.20	84.60	117.40	31.20	21.70	18.30	20.70	39.60	34.50
1932	25.50	20.80	223.80	551.10	143.90	128.20	59.50	30.40	21.10	21.20	34.50	21.00
1933	16.00	15.70	415.60	401.50	176.80	68.20	39.40	17.70	12.00	11.90	17.20	13.40
1934	10.00	13.60	65.10	200.70	56.20	25.20	14.70	9.64	8.95	17.10	16.20	9.81
1935	9.10	15.30	118.90	178.50	106.30	93.10	108.30	136.50	34.20	26.50	18.10	19.50
1936	16.10	14.70	53.10	308.50	200.10	55.00	22.70	7.46	8.37	9.88	12.40	7.48
1937	7.77	5.47	36.60	195.30	101.80	103.20	36.70	22.20	21.30	13.50	16.50	11.30
1938	12.00	12.90	93.70	116.30	70.80	39.40	19.30	41.10	16.80	11.90	15.20	12.00
1939	11.40	10.10	105.00	258.80	61.70	55.60	26.70	11.30	9.06	12.40	17.20	15.20
1940	6.37	5.70	6.86	210.20	121.50	44.10	14.80	11.00	8.66	10.80	15.80	12.90
1941	12.60	12.60	32.40	1,038.10	230.50	218.70	113.10	48.20	53.00	73.70	65.40	51.30
1942	24.20	22.60	46.50	664.40	405.80	298.30	109.90	77.20	109.20	64.30	56.70	36.50
1943	33.20	36.50	269.30	1,656.10	371.20	768.90	271.80	132.00	62.90	40.90	59.30	42.00
1944	27.40	31.80	39.10	222.30	261.60	250.70	182.40	164.90	185.40	78.80	92.50	60.70
1945	44.50	47.00	553.00	456.40	188.50	160.10	78.90	63.20	37.70	37.10	37.80	26.50
1946	28.80	25.30	332.60	687.60	151.50	114.90	88.60	74.20	42.00	76.50	58.20	41.70
1947	38.00	40.40	71.60	1,276.10	238.60	231.20	114.10	57.80	32.20	34.10	64.80	47.50
1948	32.30	30.00	39.70	1,450.10	1,628.10	272.20	149.90	103.40	54.50	34.50	52.50	38.90
1949	27.90	22.30	118.80	1,157.10	519.20	194.00	138.50	111.36	29.40	59.93	45.68	46.41
1950	33.19	27.15	143.72	2,782.18	2,099.31	952.62	292.81	149.30	87.83	74.79	67.22	54.41
1951	48.25	47.15	126.84	938.28	432.51	206.82	126.35	50.93	76.87	35.15	96.97	58.59
1952	33.78	41.04	105.15	1,492.10	201.83	96.44	311.85	35.78	30.62	34.77	49.76	28.96
1953	16.14	28.61	142.25	175.24	227.93	539.60	320.33	67.92	24.09	28.76	45.91	27.59
1954	20.97	111.78	208.15	238.92	138.37	304.75	383.71	128.70	77.85	80.13	38.07	10.71
1955	6.09	28.34	82.41	642.76	156.37	242.78	126.21	130.36	32.58	40.67	27.27	18.06
1956	20.26	15.16	7.32	695.32	528.96	333.00	131.64	58.29	47.00	34.61	53.55	19.62
1957	7.01	8.02	149.30	226.15	148.45	105.32	125.39	93.03	241.58	159.16	136.89	88.78
1958	50.99	47.70	189.10	299.38	136.12	122.06	183.20	62.40	28.22	25.85	23.87	4.93
1959	5.97	4.26	91.79	256.19	99.80	117.89	88.40	30.16	28.98	36.03	20.12	22.59
1960	21.72	25.46	131.39	1,133.53	228.73	189.19	97.61	35.28	40.35	24.75	21.59	19.65
1961	28.24	27.05	194.24	175.52	115.96	43.45	26.91	18.58	19.69	36.62	23.69	16.20
1962	14.18	23.95	51.20	898.28	310.36	417.27	1,077.44	280.84	105.90	76.73	75.00	60.66
1963	24.27	16.96	115.12	332.14	160.20	151.16	88.54	46.57	36.39	30.56	27.34	15.80
1964	10.23	35.04	49.71	373.04	162.21	162.18	267.82	80.67	78.28	76.88	58.34	22.82
1965	22.24	28.77	6.96	1,533.02	569.77	320.95	121.08	347.14	112.06	212.38	95.97	62.23

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River at West Fargo, N. Dak.—Continued												
1966	32.25	47.52	1,186.54	1,340.92	550.35	352.61	289.65	203.56	82.75	97.72	28.01	35.60
1967	39.21	9.51	516.37	1,142.84	726.94	354.00	127.45	52.40	39.11	41.15	35.72	24.35
1968	24.02	21.76	331.29	287.43	199.49	245.50	131.23	56.14	64.08	50.10	43.41	34.75
1969	26.13	9.08	132.14	2,378.99	1,135.82	324.04	313.34	126.94	89.45	82.95	62.28	44.74
1970	37.01	18.44	103.47	835.97	498.98	527.35	233.44	98.49	59.65	54.20	69.02	30.46
1971	27.61	8.71	229.45	1,103.68	568.05	359.05	338.45	78.79	86.57	103.72	70.46	43.26
1972	41.31	70.25	800.19	839.26	511.63	386.15	128.52	91.91	50.48	64.82	44.66	30.03
1973	19.45	46.38	391.69	215.32	121.93	86.77	38.61	23.00	59.28	89.36	32.97	40.19
1974	9.83	8.57	110.30	1,359.45	912.07	716.50	139.49	72.16	40.35	49.24	67.93	24.64
1975	33.18	41.19	171.55	979.00	1,094.59	566.73	1,383.74	185.96	109.81	104.71	94.08	64.81
1976	44.24	160.36	553.65	829.75	357.07	136.64	62.61	21.63	3.63	23.86	26.99	22.79
1977	23.85	38.35	131.79	188.22	156.19	48.10	48.72	20.77	38.71	66.47	45.66	29.31
1978	13.91	6.37	441.30	1,201.55	299.10	160.24	114.07	54.88	115.92	22.21	39.90	22.50
1979	22.73	5.40	7.54	2,059.05	1,929.57	409.39	290.75	199.80	85.33	4.18	108.63	86.32
1980	50.71	53.54	131.35	631.76	126.95	134.64	72.20	50.81	48.04	65.35	122.84	80.28
1981	49.34	120.99	353.95	240.17	128.58	175.11	203.62	73.97	25.60	58.72	94.66	57.82
1982	27.70	16.20	144.28	1,422.75	405.59	265.64	191.42	134.78	46.07	153.83	73.61	146.49
1983	62.92	52.80	1,228.86	1,066.35	307.05	292.02	461.66	154.56	134.87	77.94	112.20	51.12
1984	94.02	73.28	567.75	1,389.50	589.98	284.20	114.23	19.75	19.10	20.39	69.60	42.46
1985	51.68	48.79	452.62	279.92	232.87	164.86	74.31	36.99	115.35	98.94	57.64	30.95
1986	45.41	12.52	876.83	804.70	824.86	197.97	163.71	149.12	123.11	138.37	31.51	73.63
1987	80.68	76.65	698.92	2,451.87	379.14	253.60	133.86	376.64	96.63	91.99	89.66	76.68
1988	32.96	11.51	378.42	357.09	131.82	72.86	53.47	19.26	26.94	28.35	33.50	7.78
1989	8.41	6.34	27.42	925.30	162.66	106.78	44.69	30.07	52.94	33.33	66.04	15.95
1990	17.27	21.44	68.38	170.20	94.45	167.32	92.52	7.25	8.79	56.05	37.13	23.84
1991	21.28	35.19	90.24	108.71	129.32	75.64	96.48	18.16	39.89	35.41	28.50	22.39
1992	42.71	79.54	686.80	249.84	145.02	120.21	142.09	49.75	46.42	55.42	70.43	6.92
1993	12.35	31.50	189.54	1,114.36	254.16	326.47	1,152.26	2,130.41	529.27	252.50	91.04	165.81
1994	113.48	90.44	982.45	1,593.55	568.91	408.83	954.34	270.33	340.94	667.51	734.60	286.78
1995	144.12	118.51	1,753.65	2,743.95	1,200.33	589.23	537.32	263.99	208.46	265.05	215.48	78.39
1996	52.00	30.68	806.98	3,029.29	2,057.09	690.90	344.63	393.78	158.97	180.97	155.39	188.93
1997	140.00	153.23	195.27	3,758.29	3,208.37	692.58	574.05	288.56	170.00	174.50	130.38	131.80
1998	141.41	213.59	1,189.94	1,428.67	768.46	639.67	636.79	158.47	93.84	272.37	248.85	242.40
1999	74.35	41.31	895.68	3,207.18	1,730.45	1,069.23	626.82	353.05	623.83	292.55	234.42	74.61
2000	126.25	164.58	658.78	385.99	362.68	1,085.60	1,485.26	536.12	667.80	227.38	573.69	266.81
2001	128.30	164.78	379.59	3,212.37	1,134.61	660.87	569.52	586.97	172.58	125.31	232.66	156.67

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Maple River at the mouth												
1931	0.01	1.58	10.23	30.37	5.28	11.58	0.76	1.07	0.24	0.43	3.58	1.13
1932	0.09	19.80	333.85	217.86	33.16	13.41	2.82	0.21	0.28	0.75	2.93	0.47
1933	0.02	0.13	139.22	104.59	21.01	4.68	1.22	0.16	0.08	0.04	1.07	0.21
1934	0.01	0.10	2.65	36.75	3.21	2.69	0.16	1.18	2.37	1.00	0.98	0.12
1935	0.00	0.21	77.00	35.64	24.86	7.87	9.52	0.79	0.29	0.43	1.15	0.41
1936	0.02	0.14	0.78	177.76	18.23	3.28	0.40	0.06	0.06	0.15	0.66	0.07
1937	0.00	0.14	0.36	50.21	10.31	9.35	1.06	3.27	1.67	0.15	1.00	0.15
1938	0.01	0.06	36.53	24.14	7.62	1.88	0.29	1.01	0.15	0.04	0.90	0.17
1939	0.01	0.05	111.96	41.11	1.86	3.33	0.55	0.06	0.04	0.04	1.07	0.27
1940	0.00	0.01	0.02	148.81	12.22	2.27	0.16	4.19	0.01	0.03	0.95	0.19
1941	0.01	0.07	24.78	437.44	18.11	32.66	10.39	1.02	2.15	8.34	7.39	2.31
1942	0.07	0.28	8.64	232.85	88.11	54.75	9.81	3.10	2.33	1.30	6.01	1.25
1943	0.17	0.22	258.75	119.03	39.52	265.07	61.60	1.77	0.34	0.34	6.41	1.61
1944	0.10	0.07	1.67	63.39	60.90	25.09	13.95	13.95	10.76	5.47	15.48	5.17
1945	0.35	0.00	99.96	92.67	27.26	17.85	3.89	3.65	0.51	1.43	2.51	0.85
1946	0.11	0.03	124.20	74.86	9.54	10.14	4.77	0.05	0.14	6.45	5.85	1.37
1947	0.14	0.00	108.01	1,014.20	64.14	382.04	19.36	1.10	4.37	2.57	6.92	5.99
1948	2.75	0.35	6.79	555.04	55.49	21.09	14.93	9.89	1.68	0.75	6.62	1.87
1949	0.04	0.00	9.61	224.27	16.66	8.73	7.85	0.25	0.00	0.51	2.91	1.07
1950	0.04	0.00	92.35	993.93	670.20	82.96	70.52	6.99	2.66	4.64	3.79	1.45
1951	0.76	0.21	7.90	251.08	17.41	12.55	12.33	6.51	11.68	4.99	6.51	6.75
1952	1.55	0.38	0.26	971.62	27.80	7.21	52.68	0.60	0.01	0.00	1.87	2.12
1953	1.52	1.57	26.81	22.52	95.73	775.01	68.58	55.27	1.93	0.86	6.30	5.52
1954	2.65	3.81	41.19	39.79	15.25	7.05	13.95	2.77	3.41	0.85	3.60	3.26
1955	1.58	0.27	0.20	126.45	6.81	14.49	68.36	10.24	0.30	0.67	2.12	0.67
1956	0.02	0.00	0.00	122.38	29.53	14.71	3.14	0.53	0.26	0.02	7.92	2.02
1957	0.53	0.16	7.62	29.07	14.60	58.73	14.93	16.44	27.58	11.14	20.71	7.83
1958	2.51	0.63	34.11	80.23	18.28	16.98	45.86	3.34	5.53	2.06	2.63	0.33
1959	0.00	0.00	10.94	14.91	9.03	122.44	22.72	1.19	0.00	0.83	1.96	1.17
1960	0.88	0.43	75.40	386.33	17.09	6.30	2.17	0.00	0.00	0.00	0.00	0.00
1961	0.00	0.00	32.28	19.31	18.71	1.85	0.00	0.00	4.31	24.66	3.61	2.19
1962	0.47	0.18	0.98	743.70	229.96	184.32	823.04	289.02	71.17	32.99	30.32	13.02
1963	0.82	0.00	16.62	171.29	35.91	37.75	13.63	7.21	6.09	3.41	5.47	1.13
1964	0.11	0.11	6.30	118.84	42.29	53.22	18.50	9.36	4.33	4.33	7.14	1.47
1965	1.28	0.60	0.32	1,232.35	100.05	45.86	69.88	62.95	43.37	41.54	22.63	11.64

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Maple River at the mouth—Continued							
1966	3.28	1.16	1,115.45	489.83	161.71	46.84	24.45	22.82	9.36	6.85	6.43	2.01
1967	0.87	0.91	84.41	406.49	182.48	31.15	7.08	1.32	0.70	3.21	5.61	2.63
1968	0.29	0.18	49.98	65.96	33.32	125.69	44.56	12.76	6.67	5.79	7.38	3.21
1969	0.05	0.00	0.00	1,831.91	163.87	38.51	403.89	38.40	23.80	16.98	14.20	7.58
1970	4.04	2.27	44.30	560.19	463.49	516.93	35.59	7.63	29.64	9.74	13.13	2.25
1971	0.52	0.00	221.48	139.22	29.75	41.97	59.17	6.27	29.96	53.11	38.65	11.96
1972	3.81	2.07	512.68	291.63	405.41	117.25	45.11	56.35	31.26	7.76	15.37	7.15
1973	4.59	5.18	431.70	85.70	25.64	8.75	1.13	2.09	13.74	9.91	8.15	4.07
1974	0.24	0.06	0.35	598.27	185.72	53.22	14.60	17.31	7.72	2.72	16.76	4.84
1975	1.24	0.00	1.01	1,399.67	354.35	373.71	2,568.95	54.41	29.42	1.42	16.73	9.17
1976	3.94	4.47	285.24	210.84	28.32	10.11	3.01	0.04	0.02	0.49	1.23	0.11
1977	0.00	0.21	1.89	20.80	13.03	1.95	1.35	0.10	1.63	5.88	6.30	3.02
1978	0.41	1.70	374.70	765.07	85.46	16.31	8.77	1.06	4.92	1.47	10.23	1.94
1979	0.42	1.76	2.77	2,054.25	388.55	90.58	36.50	15.11	3.00	6.06	10.36	3.91
1980	0.38	4.17	59.69	198.67	13.46	7.59	5.32	2.60	2.69	1.11	23.68	4.45
1981	0.23	4.29	9.29	63.44	10.92	15.92	31.95	9.94	3.68	6.76	34.18	1.44
1982	0.07	3.66	89.66	660.25	72.03	41.25	33.08	3.36	1.47	83.60	46.63	23.17
1983	9.23	7.41	531.50	211.56	64.57	59.19	150.46	31.04	48.00	35.74	36.03	14.15
1984	8.14	6.43	510.35	349.20	90.38	44.54	9.32	1.57	2.23	8.12	12.44	4.78
1985	1.40	2.05	430.63	77.37	47.57	16.01	4.07	19.69	1.05	5.67	8.81	14.73
1986	11.65	4.73	494.10	239.86	214.66	25.90	16.22	7.17	4.59	19.57	14.99	33.01
1987	14.75	6.18	1,248.39	822.93	151.61	41.37	7.41	191.13	54.75	20.91	18.36	13.22
1988	6.55	13.35	436.79	226.13	44.37	4.49	2.69	2.12	1.25	1.02	3.52	0.95
1989	0.32	3.62	5.86	640.24	59.14	7.09	3.59	2.66	2.06	0.75	8.51	0.91
1990	0.03	0.95	2.13	27.19	14.53	6.41	4.39	5.85	2.80	3.93	2.57	0.52
1991	0.07	2.49	6.59	27.08	87.37	44.16	3.98	0.93	0.96	0.15	2.14	2.84
1992	1.23	0.15	337.43	33.02	16.66	9.81	12.00	15.47	19.27	8.85	5.58	1.14
1993	1.23	4.73	185.26	205.31	49.61	69.13	1,412.73	671.08	241.71	73.25	26.96	32.50
1994	12.65	16.51	721.30	227.95	166.88	84.23	972.48	270.74	409.66	563.31	67.39	74.90
1995	33.15	17.04	1,020.53	743.17	325.19	50.03	245.35	52.15	56.13	55.27	16.12	7.44
1996	3.43	1.46	538.20	1,499.42	392.17	96.19	20.58	14.53	42.33	14.17	17.83	7.59
1997	2.23	0.62	3.29	3,170.44	646.56	179.83	303.93	32.73	42.10	36.78	24.13	24.45
1998	13.35	307.90	1,475.82	526.62	408.78	238.55	236.79	40.60	16.17	104.38	85.19	133.24
1999	22.10	19.64	1,018.60	1,228.06	1,119.61	101.93	94.35	44.35	434.04	58.30	40.67	23.70
2000	14.30	47.93	465.48	151.22	63.01	937.86	404.41	21.66	86.48	29.73	273.29	27.64
2001	16.00	14.51	194.12	1,945.58	327.80	241.22	85.38	61.91	56.93	26.44	36.16	17.19

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Rush River at the mouth							
1931	0.00	0.17	9.44	9.23	2.16	1.49	0.05	0.02	0.02	0.05	0.06	0.05
1932	0.03	1.98	24.99	36.29	5.16	0.36	0.02	0.02	0.02	0.05	0.02	0.02
1933	0.00	0.00	67.96	22.43	5.24	0.21	0.02	0.02	0.02	0.07	0.06	0.05
1934	0.03	0.06	3.40	7.56	1.31	0.08	0.00	0.00	0.02	0.10	0.02	0.02
1935	0.02	0.06	8.99	4.67	3.85	0.64	0.47	0.65	0.02	0.08	0.02	0.02
1936	0.00	0.00	2.44	28.82	2.80	0.11	0.02	0.00	0.00	0.02	0.02	0.00
1937	0.02	0.00	1.33	2.22	1.57	0.75	0.05	0.08	0.07	0.03	0.02	0.00
1938	0.00	0.00	6.12	0.92	1.16	2.36	0.08	0.05	0.02	0.02	0.02	0.02
1939	0.02	0.00	7.36	5.49	0.28	0.13	0.02	0.00	0.00	0.00	0.02	0.00
1940	0.00	0.00	0.09	23.56	1.87	0.13	0.02	0.03	0.02	0.02	0.05	0.02
1941	0.02	0.03	11.67	79.93	2.78	1.26	0.03	0.07	0.10	0.18	0.12	0.11
1942	0.00	0.00	5.65	39.13	13.91	12.73	0.38	0.18	7.35	1.69	1.04	0.05
1943	0.03	0.02	33.69	18.30	6.17	50.79	19.87	0.61	0.51	0.23	0.35	0.06
1944	0.02	0.03	1.49	9.70	3.26	19.76	75.55	1.03	90.82	5.65	6.91	0.15
1945	0.08	0.06	107.82	5.94	3.55	5.50	0.28	0.11	0.75	0.70	0.24	0.09
1946	0.05	0.02	47.40	7.61	3.16	2.42	23.65	0.00	0.00	0.50	1.28	0.25
1947	0.00	0.00	47.65	270.68	12.82	63.51	2.50	0.00	0.00	0.07	0.15	0.20
1948	0.15	0.00	0.00	214.03	9.00	2.46	0.83	0.19	0.00	0.00	0.28	0.05
1949	0.00	0.00	23.59	63.01	4.22	1.78	3.24	0.16	0.00	0.00	0.06	0.00
1950	0.00	0.00	38.34	316.15	133.07	27.99	4.26	0.04	0.00	0.24	0.23	0.00
1951	0.00	0.00	46.25	43.77	3.60	5.01	1.03	0.00	0.43	0.02	1.11	0.42
1952	0.00	0.00	0.00	118.11	2.75	0.14	1.85	0.01	0.00	0.00	0.00	0.00
1953	0.00	0.00	8.23	3.46	9.26	80.04	13.26	1.49	0.00	0.00	0.00	0.00
1954	0.00	0.24	9.27	14.11	3.42	2.88	0.06	0.00	0.00	0.00	0.00	0.00
1955	0.00	0.00	9.51	17.85	0.19	2.26	0.00	2.83	0.00	0.00	0.00	0.00
1956	0.00	0.00	0.00	40.04	4.57	14.42	0.11	0.00	0.00	0.00	0.00	0.00
1957	0.00	0.00	5.85	2.67	3.55	27.17	10.88	4.32	2.83	1.47	4.15	0.09
1958	0.00	1.78	2.93	5.28	3.06	5.06	15.91	0.00	0.00	0.00	0.00	0.00
1959	0.00	0.00	25.30	2.24	2.01	7.37	0.31	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	42.68	76.05	4.24	1.56	18.82	0.01	0.00	0.00	0.00	0.00
1961	0.00	0.00	11.70	4.56	3.52	0.25	0.00	0.00	0.00	6.94	0.19	0.00
1962	0.00	0.00	17.54	144.81	27.50	13.21	63.18	4.52	2.46	0.83	3.97	1.87
1963	0.00	0.00	3.72	15.83	5.60	6.33	0.04	0.00	0.00	0.00	0.00	0.00
1964	0.00	0.00	0.00	33.83	7.99	16.69	0.70	0.05	0.17	0.19	1.00	0.15
1965	0.00	0.00	0.00	169.02	24.88	7.35	9.79	0.17	0.97	6.87	1.76	0.52

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Rush River at the mouth—Continued							
1966	0.00	0.00	91.42	74.81	23.08	7.53	3.99	3.54	0.30	0.02	0.02	0.00
1967	0.00	0.00	29.49	78.07	16.09	4.48	1.92	0.00	0.00	0.00	0.00	0.00
1968	0.00	0.00	15.83	15.13	10.98	50.58	2.98	0.00	0.00	0.15	0.71	0.26
1969	0.00	0.00	0.00	369.70	13.78	8.90	37.15	1.12	0.55	1.22	2.52	0.49
1970	0.05	0.01	50.13	174.76	39.77	51.23	2.50	0.06	0.77	0.40	1.64	0.18
1971	0.00	0.00	31.82	28.56	11.39	4.30	0.78	0.00	0.00	0.97	3.24	0.53
1972	0.02	0.00	32.44	59.91	22.75	3.03	1.82	0.52	0.03	0.40	1.48	0.06
1973	0.00	0.00	52.46	4.69	2.28	0.32	0.00	0.07	12.90	4.30	2.50	0.34
1974	0.00	0.00	0.00	211.85	42.06	17.84	6.25	0.74	0.01	0.00	2.19	0.12
1975	0.00	0.00	0.16	444.35	71.69	65.80	64.65	0.14	0.00	0.12	0.47	0.06
1976	0.00	3.33	54.94	21.26	2.39	0.04	0.00	0.00	0.00	0.00	0.00	0.00
1977	0.00	0.00	3.65	4.66	3.85	0.64	0.00	0.00	0.00	2.18	0.13	0.00
1978	0.00	0.00	126.96	67.51	12.03	7.87	0.64	0.11	0.14	0.00	0.00	0.00
1979	0.00	0.00	0.00	592.72	32.73	14.63	1.92	0.11	0.00	0.01	0.22	0.27
1980	0.00	0.00	17.23	24.83	1.43	0.49	0.00	0.80	0.88	0.00	0.18	0.07
1981	0.00	0.55	2.69	1.74	4.81	5.55	0.27	0.00	0.00	0.00	0.00	0.00
1982	0.00	0.00	5.51	219.15	28.97	2.72	0.00	0.00	0.00	18.66	5.28	1.54
1983	0.00	0.54	55.56	28.40	11.21	59.41	17.35	0.03	0.00	0.00	0.00	0.00
1984	0.00	0.00	210.30	81.48	7.84	35.35	1.90	0.00	0.00	0.00	0.00	0.00
1985	0.00	0.00	19.71	7.25	18.17	11.59	2.91	0.00	0.00	0.00	0.00	0.00
1986	0.00	0.00	62.39	142.48	100.50	1.62	66.62	4.53	2.21	2.80	2.52	1.25
1987	0.68	2.70	157.38	27.47	43.05	11.46	9.46	1.56	0.11	0.00	0.82	0.85
1988	0.09	0.09	6.81	10.72	1.67	0.01	0.00	0.00	0.00	0.00	0.00	0.00
1989	0.00	0.00	26.07	131.46	3.83	1.93	0.00	0.00	9.61	0.12	0.00	0.00
1990	0.00	0.00	1.45	6.88	5.30	34.54	11.34	0.01	0.00	0.00	0.00	0.00
1991	0.00	0.00	5.85	2.30	17.51	2.49	10.52	0.23	0.00	0.00	0.00	0.00
1992	0.00	0.00	35.70	6.33	2.19	9.12	32.90	0.02	0.00	0.00	0.00	0.00
1993	0.00	0.00	59.44	45.47	11.92	12.26	274.97	36.50	1.38	3.19	3.15	0.00
1994	0.00	0.00	104.61	25.76	12.86	6.09	95.75	36.17	65.63	82.98	12.79	6.45
1995	2.44	1.10	248.33	107.54	62.03	2.91	26.52	7.81	6.40	19.97	11.58	2.62
1996	1.47	1.37	78.38	308.39	105.41	12.97	3.16	1.78	77.42	4.70	11.01	5.38
1997	4.28	3.32	58.67	823.51	59.09	127.68	88.47	1.85	5.59	9.76	6.17	4.28
1998	1.60	126.95	196.33	26.85	63.66	200.53	94.16	1.33	0.18	24.88	13.00	18.85
1999	3.26	3.50	310.25	185.31	89.81	4.93	10.57	3.62	8.02	2.72	1.78	1.28
2000	0.45	4.09	31.04	16.14	9.67	150.90	14.31	1.63	1.08	2.82	33.17	1.43
2001	1.43	1.28	14.20	304.20	71.36	6.58	4.12	10.30	2.60	1.82	3.96	3.07

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River at the mouth							
1931	13.34	55.14	148.49	279.72	96.64	137.00	33.61	23.93	19.48	22.24	45.03	37.16
1932	26.68	44.35	608.56	841.07	191.33	149.07	65.46	32.15	22.47	23.10	38.99	22.38
1933	16.69	16.49	650.49	552.04	213.20	76.75	42.67	18.77	12.70	12.61	19.09	14.23
1934	10.46	14.33	74.31	255.90	63.76	29.37	15.61	11.36	11.90	19.10	17.91	10.36
1935	9.49	16.22	214.00	228.55	141.75	106.69	124.21	144.84	36.23	28.37	20.07	20.75
1936	16.79	15.45	58.83	538.00	232.18	61.31	24.27	7.90	8.86	10.55	13.62	7.87
1937	8.11	5.84	40.00	258.75	119.36	118.96	39.70	26.83	24.18	14.37	18.25	11.92
1938	12.51	13.50	142.41	147.65	83.56	45.82	20.66	44.26	17.82	12.56	16.78	12.69
1939	11.90	10.57	234.30	318.99	67.03	62.02	28.63	11.93	9.56	13.07	19.04	16.11
1940	6.63	5.95	7.28	399.58	142.36	48.83	15.73	15.98	9.12	11.39	17.49	13.65
1941	13.15	13.23	71.91	1,624.67	263.96	265.25	129.70	51.75	58.01	86.33	75.93	55.94
1942	25.28	23.83	63.49	978.03	533.21	384.08	126.09	84.51	124.82	70.65	66.40	39.36
1943	34.79	38.26	586.74	1,873.22	437.74	1,139.00	370.94	141.10	66.93	43.54	68.79	45.48
1944	28.65	33.23	44.14	308.53	342.04	310.33	285.50	188.88	301.34	94.42	119.65	68.76
1945	46.79	49.01	794.63	579.70	230.27	192.62	87.23	70.31	40.91	41.19	42.23	28.58
1946	30.15	26.40	526.63	804.33	172.40	133.83	122.87	77.96	44.24	87.62	68.04	45.12
1947	39.72	42.08	237.36	2,674.92	331.33	710.59	142.76	61.85	38.40	38.58	74.85	55.91
1948	36.67	31.61	48.55	2,317.90	1,777.22	310.54	173.94	119.15	58.99	37.01	61.86	42.51
1949	29.10	23.23	158.76	1,508.64	567.08	214.74	157.07	116.07	30.77	62.13	50.53	49.40
1950	34.46	28.29	286.03	4,219.16	3,075.46	1,158.37	393.53	166.13	93.72	82.54	74.11	58.18
1951	51.12	49.44	186.42	1,277.79	482.25	234.85	147.00	60.86	93.03	43.54	108.73	68.35
1952	37.28	43.83	108.45	2,673.49	240.15	107.90	380.29	38.60	32.64	36.95	53.66	32.63
1953	19.11	32.03	184.60	207.19	346.04	1,461.15	420.55	130.81	27.82	31.80	54.74	35.78
1954	26.75	120.63	267.25	305.90	163.81	320.20	415.50	135.68	84.99	84.24	45.91	17.96
1955	11.10	30.72	95.14	810.22	169.25	274.44	212.74	150.81	34.48	43.27	30.50	19.57
1956	21.06	15.92	8.83	877.06	595.64	378.83	141.24	61.51	48.71	35.98	63.61	24.04
1957	9.22	9.93	168.70	265.68	172.35	201.27	157.68	118.86	288.03	179.25	169.89	102.44
1958	58.19	54.17	236.73	397.34	163.41	149.13	254.63	68.84	35.97	29.93	28.46	6.98
1959	7.71	5.75	132.93	279.49	114.10	258.84	116.47	33.08	30.66	38.69	23.32	25.58
1960	24.31	27.71	257.32	1,664.18	260.68	207.79	123.92	37.08	42.66	26.39	23.52	22.13
1961	31.10	29.68	246.78	204.68	143.47	48.03	28.53	19.76	25.72	72.03	29.01	19.53
1962	15.68	25.61	73.45	1,860.73	596.60	645.63	2,062.83	602.75	188.38	116.26	114.47	80.20
1963	27.96	19.48	141.18	537.91	210.01	203.77	105.95	56.51	44.70	35.93	34.93	18.90
1964	11.66	37.21	58.76	541.31	219.89	240.94	302.08	93.40	85.91	84.21	70.07	26.97
1965	26.27	32.16	10.64	3,059.43	730.14	390.93	213.80	427.28	163.67	272.91	127.28	80.77

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Sheyenne River at the mouth—Continued												
1966	40.57	52.90	2,486.58	1,996.75	770.55	426.19	330.38	245.10	98.30	108.76	36.85	41.44
1967	44.09	14.38	650.64	1,693.11	975.32	405.06	141.99	56.48	42.12	46.30	43.30	29.27
1968	26.62	24.34	407.27	384.30	257.04	447.76	186.96	71.92	73.48	58.83	54.78	41.07
1969	28.98	16.34	144.79	4,758.15	1,378.57	387.94	792.69	172.98	118.07	105.25	82.29	55.73
1970	44.14	24.42	210.88	1,631.74	1,052.65	1,153.84	283.71	109.51	93.62	66.81	86.75	35.06
1971	30.46	11.31	509.96	1,306.99	637.30	423.32	417.94	88.82	121.48	164.81	119.53	63.23
1972	51.61	76.91	1,387.78	1,251.68	986.85	534.62	183.53	155.82	86.10	76.24	64.72	39.87
1973	26.68	55.67	909.30	316.62	154.98	99.37	41.55	26.91	89.67	107.14	46.21	47.25
1974	11.82	13.74	124.61	2,247.63	1,194.28	828.48	166.61	94.31	50.65	54.09	90.06	32.11
1975	37.35	44.32	177.87	2,937.76	1,600.71	1,057.71	4,216.98	253.97	146.12	111.48	116.77	79.03
1976	52.81	177.23	923.64	1,101.47	405.88	152.73	68.91	23.21	4.05	25.75	29.05	23.28
1977	24.20	39.26	141.30	219.73	179.81	52.82	52.25	22.01	42.28	77.95	54.79	34.94
1978	16.26	11.96	984.20	2,120.20	417.23	192.84	129.16	58.50	127.33	27.73	53.95	26.46
1979	24.95	9.30	15.75	4,894.43	2,475.06	539.89	341.44	223.90	92.59	14.08	129.57	93.44
1980	52.96	59.94	218.21	884.09	145.81	147.48	80.95	56.53	58.56	73.15	153.63	87.86
1981	51.15	127.94	371.42	318.13	150.70	204.48	246.37	87.44	31.04	73.89	138.06	60.93
1982	28.75	21.27	249.64	2,397.59	531.09	324.33	236.07	144.41	49.57	268.81	137.38	179.95
1983	78.53	64.86	1,889.51	1,365.26	401.48	431.96	659.44	190.60	190.25	121.69	157.84	71.70
1984	108.34	84.66	1,332.70	1,900.90	720.62	381.23	131.06	23.06	23.89	34.15	86.39	50.59
1985	56.08	53.01	931.47	379.72	313.30	200.96	85.07	60.52	119.58	108.02	69.78	52.21
1986	64.16	24.31	1,479.63	1,235.55	1,194.41	235.89	257.85	169.07	136.06	166.78	53.92	118.73
1987	104.04	90.75	2,216.99	3,418.02	601.68	321.28	155.96	596.82	159.23	119.67	114.64	96.97
1988	45.27	27.34	854.15	610.96	184.71	80.42	57.47	22.42	29.34	31.09	38.49	10.07
1989	10.49	12.17	65.76	1,764.28	233.65	120.40	50.29	34.65	67.49	37.01	77.77	18.06
1990	18.23	23.51	75.19	209.70	117.88	214.15	110.94	14.27	14.08	62.75	40.99	25.31
1991	22.35	39.13	106.28	142.29	242.45	127.29	115.06	20.85	42.67	36.49	31.88	27.74
1992	46.89	82.57	1,099.04	300.86	170.27	144.99	194.06	68.58	69.43	67.29	78.16	9.54
1993	16.53	40.65	456.15	1,411.09	331.69	429.08	2,987.82	2,984.18	811.11	344.98	128.84	209.00
1994	133.55	116.87	1,875.87	1,919.28	781.63	522.59	2,128.41	607.86	864.45	1,381.79	845.74	386.34
1995	191.05	145.71	3,131.64	3,762.38	1,667.72	672.73	844.26	344.09	288.58	355.24	251.25	94.31
1996	62.55	45.54	1,490.65	5,023.03	2,690.68	837.61	384.88	427.73	290.90	206.78	194.78	216.04
1997	157.86	169.15	273.90	8,077.31	4,111.07	1,046.07	1,011.94	336.95	227.71	231.56	170.07	169.74
1998	163.99	674.75	2,988.81	2,053.84	1,297.52	1,132.54	1,014.08	209.62	116.05	419.38	369.43	412.41
1999	107.18	72.50	2,336.34	4,798.73	3,088.44	1,232.50	767.06	421.80	1,118.43	370.33	290.25	111.62
2000	151.58	224.52	1,198.92	577.57	457.01	2,281.31	1,993.03	580.21	788.38	275.51	921.14	316.38
2001	157.91	194.51	617.60	5,677.32	1,609.73	952.73	690.78	688.47	241.89	160.52	282.89	189.70

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Buffalo River at the mouth							
1931	6.30	19.94	82.36	40.18	33.34	32.00	21.33	15.57	7.58	16.30	21.33	16.59
1932	12.80	13.63	65.00	147.51	63.01	38.74	8.16	3.49	7.02	15.57	11.46	6.97
1933	5.47	5.21	108.53	143.07	74.66	29.42	11.05	8.91	9.54	18.76	20.86	17.77
1934	13.03	17.77	45.57	169.45	34.94	18.51	5.01	1.78	7.02	23.78	12.56	11.42
1935	10.85	17.77	148.47	92.10	73.92	52.59	49.28	19.49	10.62	20.59	11.84	7.45
1936	3.52	1.19	77.95	694.49	120.50	21.58	2.73	0.00	0.97	7.83	10.36	7.11
1937	7.11	5.92	3.60	164.06	128.23	57.49	17.29	21.09	18.14	13.98	12.68	5.63
1938	5.14	6.47	126.76	61.40	302.92	104.69	20.96	8.58	8.86	9.19	13.39	9.44
1939	6.87	4.94	259.04	324.04	39.47	23.05	9.61	2.13	2.15	6.72	12.44	9.67
1940	1.03	0.90	2.71	274.39	78.58	22.07	7.67	13.61	7.09	11.02	17.66	11.23
1941	11.19	11.66	73.87	420.46	57.25	75.39	15.08	9.07	23.41	31.26	28.32	13.27
1942	2.65	1.85	34.90	104.46	362.62	255.84	43.89	38.49	187.19	91.70	68.73	25.12
1943	12.68	9.62	88.98	1,388.74	287.10	532.03	303.41	133.99	51.24	34.94	43.49	18.37
1944	10.25	11.57	28.06	257.00	282.08	322.90	580.21	870.38	634.40	164.76	152.39	75.60
1945	25.60	18.84	1,032.92	698.93	302.06	164.15	38.13	27.21	62.15	60.19	36.73	24.41
1946	15.52	11.28	529.35	275.59	123.81	106.53	330.25	65.09	39.47	93.66	78.21	49.06
1947	35.67	25.48	153.14	1,264.01	328.41	336.02	82.99	22.56	24.52	33.22	30.45	26.78
1948	20.14	19.20	53.25	741.26	121.00	76.13	42.54	28.93	17.90	16.67	20.86	16.59
1949	12.92	11.66	21.83	258.20	133.01	45.11	124.30	67.55	20.84	30.52	34.25	25.48
1950	11.32	7.32	242.85	1,891.22	1,044.70	205.34	65.09	19.74	15.57	24.15	20.50	18.49
1951	16.00	16.35	23.03	959.88	176.90	212.45	63.26	40.33	47.44	70.12	52.73	45.74
1952	32.35	31.64	34.54	1,539.84	147.23	40.09	622.63	284.28	112.41	43.89	47.52	27.37
1953	18.60	20.62	242.61	353.78	305.86	1,171.70	162.92	252.53	65.58	36.41	36.85	30.93
1954	26.19	37.80	118.61	429.33	322.78	174.93	55.78	24.89	31.63	47.81	38.63	22.04
1955	15.40	15.76	17.39	441.09	109.47	121.98	571.39	533.63	68.53	55.04	36.26	24.77
1956	19.91	23.82	29.98	1,240.03	271.41	120.38	31.87	29.05	17.29	24.15	46.10	21.33
1957	16.47	16.83	224.74	415.06	177.88	257.56	242.85	79.93	411.90	228.26	189.24	60.91
1958	37.45	31.52	72.79	138.99	95.37	171.01	800.63	65.95	97.83	62.64	100.72	46.21
1959	20.03	16.12	139.71	254.60	210.12	476.87	476.13	107.27	66.44	63.75	47.99	41.47
1960	40.64	31.88	74.71	1,003.90	437.03	154.46	126.27	51.49	54.18	33.59	36.62	24.53
1961	20.74	19.55	171.01	195.12	303.04	63.62	23.78	11.06	19.86	32.12	26.19	17.89
1962	11.72	13.51	17.99	808.03	1,111.12	2,621.15	690.95	188.32	80.54	68.98	80.70	41.95
1963	11.38	7.38	113.57	279.01	194.61	603.68	36.91	86.91	125.11	47.13	40.41	24.41
1964	19.91	21.45	53.37	1,024.58	428.27	146.43	53.71	22.92	35.86	42.96	41.00	17.30
1965	18.72	19.43	20.39	1,669.66	379.35	320.01	95.51	49.76	68.71	136.01	86.74	77.38

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Buffalo River at the mouth—Continued												
1966	43.25	34.48	1,568.62	766.14	497.41	129.39	101.52	228.01	60.50	71.28	51.31	40.17
1967	43.01	47.28	233.97	1,021.23	344.42	402.51	103.48	25.49	19.92	25.19	23.46	22.51
1968	12.44	12.21	110.81	203.09	158.99	132.84	93.21	28.02	40.38	70.30	63.16	32.47
1969	20.50	17.77	21.47	2,282.48	240.14	78.53	121.29	39.42	21.51	43.45	48.11	29.98
1970	22.63	21.80	51.33	527.37	317.25	301.03	63.67	11.72	11.99	25.19	40.88	21.92
1971	14.81	16.35	100.26	306.47	103.82	73.02	143.00	26.55	149.98	227.82	361.89	114.94
1972	41.36	36.02	856.75	747.08	514.74	165.69	55.59	57.69	36.58	34.87	50.48	29.62
1973	18.60	18.60	146.55	117.35	82.25	44.70	28.74	29.37	161.87	226.11	97.76	66.83
1974	36.14	38.63	62.36	928.28	558.88	228.46	85.32	68.03	36.85	40.75	55.22	32.47
1975	23.94	22.51	32.38	1,140.91	483.86	987.28	3,450.37	97.33	38.93	59.14	69.56	39.34
1976	29.98	33.77	233.26	367.99	81.94	29.52	13.30	2.94	3.66	10.62	14.81	10.02
1977	10.48	11.13	49.68	107.42	43.73	45.78	36.83	8.06	45.85	118.75	80.49	79.30
1978	60.70	36.41	465.94	2,379.65	230.45	75.58	46.28	17.84	12.58	16.02	22.90	21.48
1979	16.95	15.40	21.47	1,601.01	396.43	150.81	232.84	68.38	20.98	23.31	71.22	39.93
1980	25.60	28.20	81.19	595.57	73.04	44.50	19.22	15.81	37.62	42.97	43.88	28.79
1981	20.74	34.36	73.87	100.02	186.98	59.13	54.81	78.88	46.85	97.57	85.67	39.34
1982	15.76	17.06	285.30	856.87	186.95	69.11	99.46	37.76	22.43	161.61	69.70	53.21
1983	30.10	31.52	243.09	174.73	127.93	94.29	991.94	137.98	74.43	95.43	84.22	54.51
1984	34.13	72.40	741.02	641.48	154.80	692.47	71.16	20.48	13.84	185.34	83.50	49.18
1985	30.81	24.53	411.58	209.78	789.75	765.93	182.99	120.52	173.19	140.44	93.57	68.92
1986	55.34	52.49	697.01	1,635.83	1,114.70	535.63	187.76	72.12	247.06	166.22	137.74	94.90
1987	63.37	66.10	664.36	274.12	189.73	81.56	44.50	44.61	33.57	38.08	54.39	45.15
1988	27.58	26.64	315.74	329.65	99.42	37.23	12.41	17.73	18.11	21.57	28.30	26.04
1989	24.47	22.66	59.80	1,629.82	165.57	69.05	24.10	23.03	116.04	44.85	38.23	23.29
1990	24.13	27.93	127.08	260.53	174.24	167.68	48.28	15.74	14.55	28.27	54.94	30.67
1991	17.38	22.59	99.25	165.52	319.22	136.08	185.64	26.08	22.09	31.08	41.54	39.20
1992	36.46	45.24	205.16	125.84	92.94	221.72	188.01	41.44	64.62	39.64	65.46	42.54
1993	30.17	31.95	150.22	758.37	183.84	315.02	1,833.19	1,117.63	194.26	101.42	86.26	79.11
1994	63.29	59.28	756.39	643.02	358.82	141.50	192.77	82.81	61.40	145.39	128.85	72.48
1995	54.51	57.23	818.13	551.14	342.32	94.52	254.85	57.47	41.16	243.91	140.07	72.52
1996	45.03	41.47	183.13	1,281.50	882.42	274.38	64.19	40.31	32.21	66.29	129.96	66.57
1997	43.33	40.38	40.14	4,090.43	552.10	404.90	567.54	127.85	131.78	237.83	204.32	162.55
1998	101.54	337.58	941.76	667.33	1,402.34	865.87	1,808.11	117.33	72.87	341.39	303.34	283.74
1999	86.98	108.66	541.70	907.74	782.73	354.30	321.63	175.97	594.18	212.10	145.75	106.77
2000	82.24	120.87	863.46	465.31	258.67	1,350.95	628.93	95.83	231.52	199.49	681.36	168.27
2001	117.31	104.99	103.26	3,311.14	767.51	595.30	166.41	76.30	64.73	125.52	181.30	149.31

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Elm River at the mouth							
1931	0.00	0.09	1.17	0.62	0.05	0.08	0.35	0.00	0.00	0.00	0.00	0.00
1932	0.00	1.22	146.62	60.97	1.62	0.61	1.06	0.00	0.00	0.00	0.02	0.00
1933	0.00	0.00	44.14	11.01	0.53	0.16	0.50	0.00	0.00	0.00	0.00	0.00
1934	0.00	0.00	0.19	0.96	0.03	0.03	0.08	0.00	0.03	0.00	0.00	0.00
1935	0.00	0.00	7.00	0.88	0.80	21.76	2.97	0.00	0.00	0.00	0.00	0.00
1936	0.00	0.00	0.00	37.95	0.37	0.03	0.19	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	0.19	0.08	0.37	0.45	0.05	0.03	0.00	0.00	0.00
1938	0.00	0.00	1.48	0.02	0.13	0.00	0.40	0.05	0.00	0.00	0.00	0.00
1939	0.00	0.00	15.21	1.24	0.00	0.32	0.27	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	25.08	0.13	0.03	0.08	0.11	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.67	309.88	0.37	11.62	3.21	0.00	0.03	0.16	0.09	0.02
1942	0.00	0.00	0.07	71.22	18.41	3.34	3.05	0.05	0.03	0.00	0.00	0.00
1943	0.00	0.00	86.41	14.90	2.52	24.36	14.86	0.03	0.00	0.00	0.00	0.00
1944	0.00	0.00	0.00	4.04	0.53	1.59	7.40	4.99	0.61	0.03	0.59	0.11
1945	0.00	0.00	15.02	1.46	0.66	1.09	1.72	0.00	0.00	0.03	0.00	0.00
1946	0.00	0.00	81.80	2.44	0.48	0.35	21.31	0.00	0.00	0.00	0.00	0.00
1947	0.00	0.00	24.05	175.61	3.45	8.52	3.26	0.03	0.00	0.00	0.02	0.00
1948	0.00	0.00	0.00	4,460.22	70.60	1.91	5.25	0.40	0.00	0.00	0.05	0.00
1949	0.00	0.00	0.00	308.63	3.37	68.19	4.59	0.61	0.00	0.05	0.16	0.09
1950	0.02	0.02	2.60	6,295.86	9,667.72	50.36	34.97	0.56	0.21	0.16	0.23	0.18
1951	0.14	0.11	12.92	91.42	1.62	0.77	4.25	0.00	0.08	0.03	0.07	0.02
1952	0.07	0.02	0.19	119.01	0.21	0.00	10.59	0.35	0.00	0.00	0.02	0.02
1953	0.02	0.02	0.93	0.41	1.78	50.84	16.24	0.03	0.03	0.00	0.02	0.05
1954	0.02	0.81	4.56	3.49	0.74	5.52	22.13	0.00	0.00	0.00	0.00	0.00
1955	0.00	0.00	0.00	48.79	0.16	11.73	17.14	0.03	0.00	0.00	0.00	0.00
1956	0.00	0.00	0.00	24.36	5.52	5.49	0.00	0.00	0.00	0.00	0.00	0.00
1957	0.00	0.00	0.65	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1958	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1959	0.00	0.00	1.70	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	12.32	111.77	0.41	0.03	0.00	0.00	0.00	0.00	0.00	0.00
1961	0.00	0.00	4.47	0.51	0.14	0.00	0.00	0.00	0.00	0.74	0.00	0.00
1962	0.00	0.00	0.00	218.53	30.25	23.72	99.76	3.79	13.77	2.95	1.33	1.13
1963	0.06	0.00	4.11	21.09	2.44	1.29	0.00	0.00	0.00	0.00	0.00	0.00
1964	0.07	0.12	0.05	22.98	0.71	190.13	15.81	0.18	0.32	2.49	0.25	0.10
1965	0.10	0.07	0.05	3,466.47	98.22	14.80	7.32	1.99	4.40	8.04	2.26	1.00

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Elm River at the mouth—Continued							
1966	0.43	0.21	3,392.00	257.24	89.49	22.79	10.05	48.47	1.30	0.42	0.41	0.12
1967	0.14	0.12	159.90	1,102.16	385.81	27.62	2.70	0.08	0.05	0.08	0.10	0.10
1968	0.12	0.07	23.14	2.56	2.84	354.53	3.37	1.38	0.69	0.29	0.50	0.28
1969	0.12	0.10	0.07	3,260.02	55.93	19.10	20.24	0.87	3.47	2.65	0.82	0.73
1970	0.41	0.46	0.22	1,772.47	385.73	177.00	9.10	0.34	0.37	0.10	0.64	0.25
1971	0.10	0.14	9.20	276.32	11.46	14.64	20.88	0.24	0.13	3.15	5.94	0.86
1972	0.25	0.14	390.82	704.28	200.08	27.27	3.31	0.24	0.08	0.05	0.21	0.12
1973	0.10	0.19	150.56	2.39	0.71	0.63	0.45	0.08	0.13	0.45	0.30	0.14
1974	0.05	0.10	0.05	1,422.14	304.89	89.57	2.81	5.52	0.21	0.08	0.19	0.25
1975	0.23	0.19	0.86	1,039.25	213.98	23.43	245.98	0.08	0.08	0.05	0.14	0.10
1976	0.13	0.15	105.84	56.57	1.15	0.25	1.17	0.06	0.06	0.09	0.06	0.06
1977	0.04	0.04	0.04	0.30	0.20	0.15	0.60	0.04	0.07	0.12	0.56	0.20
1978	0.12	0.07	186.33	1,141.21	17.11	4.06	2.84	0.05	0.18	0.05	0.05	0.07
1979	0.46	0.46	0.44	11,418.27	418.98	15.96	10.31	1.63	0.68	0.51	0.59	0.68
1980	0.18	0.09	4.13	49.17	0.42	0.13	2.61	0.99	0.68	0.08	0.09	0.09
1981	0.04	0.07	0.06	0.06	0.24	0.12	1.09	0.79	0.47	0.15	0.24	0.45
1982	0.09	0.07	11.27	573.42	38.65	6.30	8.43	0.66	0.37	12.15	1.31	1.47
1983	0.34	0.29	312.93	163.18	24.18	295.69	55.25	11.23	6.70	2.50	2.03	0.80
1984	0.30	0.23	350.41	130.45	22.28	249.82	2.75	0.97	0.64	0.20	0.11	0.05
1985	0.00	0.02	120.13	27.94	7.27	2.84	0.70	1.35	0.28	0.08	0.09	0.11
1986	0.14	0.11	203.48	233.09	65.08	7.43	8.51	0.72	0.27	0.77	0.72	1.02
1987	0.55	0.19	2,261.17	1,353.08	70.52	30.22	2.35	69.53	8.15	0.91	1.88	1.57
1988	0.50	0.63	256.02	66.54	3.58	0.80	1.80	1.10	0.62	0.00	0.02	0.05
1989	0.07	0.07	0.02	753.50	7.00	1.64	1.90	0.96	0.54	0.00	0.00	0.00
1990	0.04	0.04	0.04	0.51	0.33	0.37	1.18	0.52	0.38	0.17	0.04	0.04
1991	0.00	0.05	0.05	0.48	18.18	7.38	10.33	0.80	0.48	0.00	0.02	0.00
1992	0.00	0.00	149.89	0.74	0.39	0.50	3.57	1.20	1.50	0.19	0.86	0.29
1993	0.07	0.11	43.20	53.09	4.38	7.46	219.40	608.66	104.65	9.47	3.70	2.77
1994	1.62	0.90	724.67	67.78	89.62	55.35	10.07	127.26	260.15	447.18	79.26	16.12
1995	2.91	0.95	4,225.83	1,223.70	611.17	31.79	34.80	22.46	13.30	25.05	9.20	1.53
1996	1.17	0.47	8.55	5,247.53	519.57	49.61	18.39	1.16	0.41	2.26	1.38	0.63
1997	0.52	0.83	1.41	16,327.12	338.75	57.22	46.72	16.22	2.00	2.28	1.80	0.59
1998	0.11	103.89	1,011.07	118.17	25.04	25.91	58.83	0.92	0.30	3.34	3.61	4.53
1999	0.92	0.56	2,075.06	3,010.21	3,549.44	487.70	60.58	9.94	20.59	3.87	7.69	4.06
2000	2.48	25.87	23.83	2,128.61	12.90	38.60	53.91	20.39	1.03	15.02	185.23	59.26
2001	12.36	19.17	59.25	10,035.27	325.06	178.27	50.49	92.35	2.07	1.01	5.66	13.94

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Wild Rice River (Minn.) at the mouth							
1931	2.19	21.31	120.04	64.06	56.98	54.09	21.81	14.73	6.01	15.60	15.27	11.05
1932	11.93	12.89	89.18	234.86	112.96	66.16	6.60	2.29	5.47	14.73	5.61	2.29
1933	4.14	3.90	168.83	227.79	135.57	49.52	9.61	7.36	8.01	18.58	14.74	12.53
1934	12.20	17.95	57.32	269.75	59.92	30.40	3.59	0.99	5.47	24.97	6.51	5.61
1935	9.71	17.95	249.39	146.73	134.13	91.28	61.86	19.49	9.15	20.88	5.92	2.58
1936	2.39	0.62	111.81	1,103.65	226.84	35.73	1.68	2.20	0.47	6.26	4.77	2.37
1937	5.74	4.57	2.43	261.17	242.51	100.26	16.79	21.49	17.83	12.88	6.61	1.55
1938	3.83	5.10	204.84	97.86	611.17	188.44	21.34	7.02	7.31	7.65	7.22	3.97
1939	5.50	3.65	498.71	515.42	68.32	38.29	8.08	1.24	1.25	5.18	6.41	4.14
1940	0.51	0.44	1.71	436.53	143.23	36.57	6.11	12.46	5.53	9.59	11.27	5.44
1941	10.08	10.62	104.58	668.58	101.89	133.36	14.16	7.52	24.49	35.09	24.12	7.36
1942	1.68	1.07	41.12	166.38	741.59	482.80	53.54	45.47	325.85	134.01	100.59	23.48
1943	11.79	8.36	131.85	2,205.04	576.93	1,043.64	594.50	214.89	64.94	40.31	48.13	13.29
1944	9.04	10.51	31.34	319.37	531.29	700.34	1,188.42	1,016.83	807.42	316.70	238.77	145.30
1945	79.73	66.51	1,133.70	1,527.39	710.51	257.91	105.50	99.46	157.61	238.64	148.45	75.11
1946	36.93	24.02	783.90	927.91	451.00	280.37	213.22	31.99	37.92	202.84	118.23	73.75
1947	57.18	48.99	185.90	1,883.18	702.03	778.61	103.80	14.41	6.34	14.09	10.17	6.97
1948	4.29	3.57	3.41	881.49	165.76	40.99	19.49	4.16	0.19	0.46	3.48	1.82
1949	0.84	0.42	0.49	238.85	104.86	215.76	453.65	290.75	58.68	43.64	46.16	32.94
1950	14.06	13.22	89.05	1,829.50	1,730.72	511.06	273.48	7.94	4.83	6.56	4.98	3.73
1951	3.18	2.95	8.59	840.96	208.34	76.05	9.34	8.22	17.58	17.58	26.44	159.57
1952	104.07	87.18	85.05	1,304.23	313.63	9.69	289.05	155.70	61.54	33.58	44.80	50.88
1953	38.71	38.40	208.00	526.74	465.83	940.35	592.62	250.29	94.59	52.32	54.87	61.69
1954	64.52	76.37	134.74	765.48	631.07	345.93	125.62	35.69	30.82	44.91	52.87	31.37
1955	22.98	32.52	34.74	640.96	299.75	276.77	148.60	181.23	15.57	24.47	19.93	15.32
1956	14.27	19.30	24.74	1,236.86	442.43	238.11	43.74	24.36	20.34	17.90	45.85	19.41
1957	15.11	15.11	169.69	449.90	341.48	350.91	386.71	115.03	367.01	225.18	220.94	82.04
1958	51.51	45.11	115.48	181.79	106.98	170.53	235.14	46.29	39.61	37.92	74.38	46.06
1959	23.39	20.35	124.95	317.48	318.92	284.18	224.76	93.63	40.14	56.98	57.91	49.10
1960	58.96	49.20	100.42	943.80	431.09	453.86	224.55	107.61	176.99	103.06	85.61	59.80
1961	41.96	37.98	219.06	320.21	635.94	193.83	57.62	26.27	36.86	48.19	42.80	28.43
1962	27.28	23.60	35.05	649.27	1,009.73	1,881.13	830.94	217.24	120.96	89.18	99.77	54.87
1963	10.91	6.00	118.00	499.27	390.84	850.21	137.27	58.26	66.20	29.55	33.47	20.35
1964	20.46	25.39	29.90	1,240.02	674.71	511.80	185.78	54.02	43.53	96.07	68.40	30.21
1965	31.16	32.94	24.63	2,377.93	795.03	774.80	257.17	72.77	80.39	178.05	99.14	123.69

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Wild Rice River (Minn.) at the mouth—Continued												
1966	89.70	58.85	1,563.18	2,052.66	1,045.53	305.05	131.87	232.28	110.37	84.21	71.02	57.70
1967	64.41	72.28	324.95	1,652.65	681.38	552.69	267.66	46.39	18.22	27.22	25.28	51.72
1968	33.89	22.87	218.85	407.48	336.82	256.85	198.81	71.81	92.26	143.73	111.31	65.15
1969	58.64	64.73	74.84	2,608.45	576.84	322.63	177.52	54.12	39.72	160.04	178.87	114.56
1970	71.65	56.65	61.90	1,505.28	1,134.40	1,401.31	223.60	39.61	25.21	37.50	82.46	47.84
1971	36.51	39.45	205.69	836.43	351.76	171.17	79.97	38.24	128.27	788.04	822.28	168.06
1972	95.68	73.44	1,042.12	1,831.60	948.30	347.84	160.89	125.94	66.20	80.50	82.88	39.66
1973	41.54	45.32	428.53	257.69	216.71	150.83	86.85	87.91	872.46	677.04	304.55	151.17
1974	84.87	84.45	91.90	2,468.45	1,731.78	581.71	188.54	132.29	45.65	70.44	165.34	72.70
1975	64.62	68.82	104.63	2,268.45	1,224.43	932.62	3,321.63	226.56	86.96	74.04	120.75	71.65
1976	67.04	77.32	493.37	873.80	206.75	87.07	43.64	8.59	0.76	8.13	10.81	1.13
1977	0.10	0.23	30.32	176.21	59.43	38.87	13.48	1.15	27.02	88.44	119.70	157.99
1978	85.29	54.03	151.58	3,432.68	431.95	175.72	77.46	67.17	97.88	52.32	41.44	33.68
1979	31.26	30.63	64.32	3,221.09	1,202.07	444.83	640.69	86.29	50.43	44.01	126.10	63.57
1980	48.89	50.57	74.74	708.64	164.04	51.82	14.87	8.77	14.62	28.74	30.63	16.16
1981	9.38	12.90	55.16	111.05	189.74	155.34	189.26	158.73	180.08	305.18	222.41	103.23
1982	65.46	62.95	230.74	1,723.18	648.87	233.19	120.97	42.50	22.39	282.91	175.19	69.97
1983	49.20	48.68	759.59	377.16	186.13	448.63	823.16	181.00	108.89	186.31	167.21	96.83
1984	67.56	129.98	832.75	931.17	261.54	1,646.44	127.28	25.66	17.08	322.47	137.94	79.53
1985	35.61	26.81	887.61	333.61	2,196.77	1,266.46	802.52	524.73	329.53	273.32	195.91	134.07
1986	126.84	107.01	632.11	2,490.56	1,706.51	524.27	219.66	93.50	133.10	199.18	197.44	134.28
1987	85.50	79.21	909.49	457.58	492.41	290.67	410.39	249.54	105.94	126.38	106.48	96.83
1988	69.24	62.42	491.90	755.06	220.07	60.14	19.47	25.96	33.83	34.84	54.13	52.45
1989	52.86	57.05	75.77	2,512.29	522.94	280.67	67.06	17.19	117.77	43.46	58.94	17.95
1990	16.87	20.54	147.25	513.90	322.00	298.46	79.20	16.49	5.14	10.95	20.91	18.04
1991	17.83	28.33	154.00	245.37	581.98	144.28	152.24	29.88	25.39	25.91	36.34	38.29
1992	38.61	40.91	518.43	215.13	239.37	120.38	635.03	277.78	326.32	92.96	107.11	80.26
1993	74.49	77.95	258.11	1,120.83	369.79	447.51	1,699.55	1,942.01	378.13	141.11	118.79	109.21
1994	88.65	81.09	361.58	1,174.25	738.67	765.16	887.54	255.22	445.89	676.11	494.72	227.84
1995	129.25	121.59	1,445.28	903.13	910.03	238.18	1,038.85	326.46	151.42	358.71	216.69	148.48
1996	156.00	156.63	152.11	3,250.02	2,180.61	537.11	151.25	69.01	45.47	69.10	305.47	153.69
1997	138.38	22.87	136.63	5,383.39	1,216.78	698.28	1,682.36	314.80	166.15	332.82	315.32	247.99
1998	196.70	804.76	1,437.91	845.88	2,263.86	1,868.36	1,861.27	204.75	84.88	268.49	315.58	264.79
1999	161.46	146.35	1,323.17	2,163.93	2,036.50	985.01	1,070.44	692.59	1,409.24	426.18	320.81	251.78
2000	174.15	180.44	1,030.68	662.45	375.11	2,656.03	1,036.56	229.60	309.65	428.91	1,368.68	408.92
2001	257.03	219.26	233.69	4,839.36	1,546.00	936.18	290.28	376.58	162.25	247.53	397.53	230.21

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Halstad, Minn.							
1931	41.75	73.20	241.31	556.68	366.32	257.90	139.88	49.55	20.76	40.63	101.51	67.51
1932	68.82	86.69	639.15	2,035.95	535.24	209.82	78.49	20.42	14.77	12.07	60.08	42.68
1933	13.02	0.53	495.33	1,159.05	452.29	224.10	33.68	14.07	10.38	10.53	42.96	45.38
1934	28.50	40.42	209.82	788.30	230.91	78.39	67.27	10.13	6.65	13.75	39.91	20.97
1935	9.10	24.23	478.69	778.46	500.74	263.60	391.02	75.48	70.07	37.56	45.14	29.13
1936	28.31	12.79	27.29	2,899.00	803.00	194.00	58.30	8.67	11.80	10.50	10.10	17.76
1937	9.71	2.50	17.43	1,156.00	883.00	517.00	230.48	125.47	339.52	125.80	108.60	35.22
1938	11.62	30.21	719.74	485.60	2,382.82	1,053.99	212.28	44.36	80.15	83.40	97.50	68.02
1939	167.53	168.68	229.01	1,613.76	530.95	360.54	183.67	29.49	87.32	128.98	165.55	47.33
1940	2.63	18.24	109.14	2,117.27	1,081.69	505.74	134.45	8.48	64.70	95.66	169.64	106.54
1941	80.51	151.23	225.67	3,655.71	1,190.23	2,504.26	278.06	59.65	724.15	784.29	502.92	233.42
1942	169.70	164.40	944.58	1,786.68	3,859.37	3,317.10	1,492.05	821.33	1,375.89	716.31	438.66	600.78
1943	529.64	499.65	878.62	13,519.59	2,438.06	5,817.22	3,104.34	1,321.05	741.01	652.58	564.00	582.74
1944	369.29	275.88	394.62	1,953.25	2,591.03	4,039.18	4,195.58	3,038.39	2,667.40	1,135.74	1,054.55	921.04
1945	698.78	632.33	6,346.65	5,017.31	2,335.93	1,667.90	801.27	339.12	630.27	787.62	570.07	467.13
1946	321.24	217.95	4,721.71	3,544.44	1,448.68	978.18	1,593.57	1,186.73	599.26	881.47	673.16	879.78
1947	674.62	528.99	870.90	13,036.44	2,798.12	3,258.66	1,025.63	369.92	637.99	784.42	650.36	395.14
1948	256.72	189.07	941.17	8,672.66	2,883.39	1,238.86	609.17	476.52	431.99	289.70	390.79	172.06
1949	134.93	150.75	566.50	3,398.43	1,244.18	771.47	1,848.87	753.65	753.36	591.38	559.18	243.85
1950	173.18	227.57	885.70	14,531.93	11,680.42	3,216.30	2,079.98	1,287.75	1,080.90	1,392.96	858.81	270.00
1951	279.51	263.93	1,484.96	7,922.61	1,969.15	1,574.69	1,327.37	770.26	653.58	623.88	631.66	935.53
1952	832.19	778.99	1,127.85	15,690.74	2,126.25	1,072.73	2,780.67	880.20	622.11	390.83	430.28	444.30
1953	247.01	329.67	1,318.13	1,965.02	2,150.30	7,942.83	2,806.06	1,472.04	639.73	532.16	491.85	698.17
1954	467.59	517.72	988.86	2,595.90	2,089.88	2,218.42	1,411.07	608.45	370.64	432.65	378.13	240.93
1955	195.38	268.02	441.17	2,903.00	1,056.30	1,038.46	1,546.41	1,209.43	403.15	415.31	284.55	344.08
1956	359.33	369.76	423.35	4,747.33	2,216.97	1,635.03	630.40	503.25	676.84	242.48	496.01	150.76
1957	98.44	123.28	978.50	2,111.27	1,561.02	1,940.43	1,615.68	949.82	2,138.60	1,689.07	1,249.73	700.38
1958	410.88	418.67	1,102.01	1,496.47	828.82	759.78	2,117.02	472.26	486.72	236.04	332.14	300.73
1959	300.96	358.26	647.33	1,339.32	1,027.51	2,079.70	1,542.16	538.59	397.52	282.39	245.27	444.92
1960	335.09	323.97	547.92	5,667.20	2,143.67	1,614.20	1,009.14	470.16	488.87	194.52	277.97	242.56
1961	205.57	213.39	1,043.16	1,044.73	1,289.99	768.56	325.67	288.60	244.23	334.71	229.59	134.11
1962	108.39	172.64	392.02	7,228.65	6,216.84	10,182.63	9,059.54	2,637.35	1,223.73	917.29	817.01	482.90
1963	258.18	230.97	792.52	2,272.27	1,425.16	3,901.46	982.65	563.60	525.92	385.27	333.45	163.36
1964	192.25	218.48	388.86	4,277.73	2,482.47	1,795.64	982.25	479.76	424.23	407.29	359.90	164.53
1965	219.69	408.79	246.52	12,831.67	3,524.60	4,368.92	1,940.36	1,200.02	908.13	1,532.81	830.34	818.78

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Halstad, Minn.—Continued												
1966	628.32	611.75	10,736.77	9,393.25	4,316.02	2,151.65	1,443.84	1,774.76	872.87	817.96	755.43	600.55
1967	550.73	428.29	2,017.79	7,327.87	3,584.77	3,577.67	1,625.55	565.57	273.21	328.87	282.80	215.26
1968	192.48	208.04	1,229.03	1,653.41	1,545.41	1,685.17	1,063.35	545.20	491.38	538.01	494.02	442.35
1969	327.73	361.23	772.40	22,133.07	5,646.29	1,986.09	2,126.02	694.12	347.80	469.95	474.84	345.09
1970	314.47	290.06	579.68	6,223.90	3,407.47	5,003.78	1,278.34	430.72	340.51	272.71	443.85	206.85
1971	195.86	233.23	1,794.37	3,657.42	1,601.14	1,093.08	1,406.40	462.14	841.53	1,696.25	1,786.51	1,030.62
1972	821.68	817.55	6,999.65	6,455.62	4,538.47	3,106.20	1,580.03	1,176.88	776.18	676.17	675.78	409.51
1973	424.29	566.74	3,075.82	1,561.22	1,006.33	715.68	466.68	376.98	1,445.81	1,491.84	1,089.53	1,053.26
1974	798.51	629.56	1,159.59	7,753.16	5,177.20	3,118.81	1,513.80	981.01	504.70	559.37	607.57	363.58
1975	332.63	474.05	901.90	12,023.33	6,133.18	4,820.05	19,906.31	1,547.41	852.70	771.92	808.43	424.47
1976	457.44	566.58	2,819.30	3,997.49	1,281.35	558.28	324.22	102.50	86.46	116.43	122.74	89.42
1977	113.63	100.85	553.34	970.06	575.69	321.27	301.36	87.50	223.76	732.46	703.63	730.56
1978	668.78	406.60	2,435.39	17,884.37	2,259.52	1,528.70	2,030.84	649.51	417.25	218.43	281.53	232.34
1979	133.64	159.00	453.36	19,344.38	8,045.41	2,514.49	2,345.54	1,365.31	845.68	590.23	756.71	551.78
1980	507.00	454.38	849.37	4,316.70	1,036.84	862.03	355.06	339.70	279.33	306.10	358.77	219.30
1981	168.33	363.28	864.83	846.08	1,127.33	701.41	738.59	640.36	396.07	571.23	688.84	537.59
1982	316.10	371.66	1,295.26	9,670.73	2,269.40	1,413.36	1,141.23	664.88	436.52	1,262.77	738.58	612.41
1983	313.91	290.14	3,949.36	2,991.07	1,111.78	1,673.40	3,626.33	1,015.75	887.62	736.43	718.33	530.17
1984	491.01	629.08	4,978.21	9,185.75	1,952.48	5,744.79	1,535.81	591.63	350.20	1,412.81	1,193.02	798.67
1985	675.18	506.55	3,908.96	2,073.48	4,987.89	4,301.93	2,444.53	1,820.57	1,711.97	1,479.37	1,228.67	1,012.21
1986	847.77	833.67	5,740.21	12,809.03	8,090.81	3,482.30	2,308.16	1,232.82	2,265.80	2,006.97	1,409.01	1,122.10
1987	979.11	1,015.28	4,736.50	5,185.71	2,151.21	1,444.66	1,534.16	1,115.24	627.48	521.86	575.86	541.95
1988	354.73	510.70	2,827.00	2,444.47	983.55	612.34	289.98	201.29	224.52	263.03	300.77	228.00
1989	162.48	193.76	908.32	14,997.53	1,940.91	1,596.89	691.45	353.47	930.29	314.52	302.83	100.92
1990	171.33	173.34	375.72	1,411.29	1,205.61	1,615.72	762.44	336.39	274.23	267.68	263.98	171.54
1991	119.91	284.01	747.67	1,288.42	2,245.64	1,809.11	2,415.87	700.89	860.36	505.42	377.60	342.58
1992	344.58	392.62	2,698.32	1,245.23	1,056.28	1,717.14	2,008.45	883.91	858.22	469.87	504.84	448.22
1993	438.89	475.74	1,473.52	8,410.04	1,924.84	2,987.30	12,252.58	11,032.08	2,455.92	1,586.41	1,451.96	1,433.05
1994	904.12	891.18	5,842.65	8,716.65	4,212.13	2,554.88	6,111.38	1,726.05	2,042.48	2,841.87	1,978.68	975.98
1995	863.68	839.98	11,861.75	11,826.03	5,105.24	2,409.01	4,570.57	1,362.95	863.04	2,015.16	1,603.91	1,165.83
1996	782.16	597.76	3,541.79	14,738.21	9,430.28	3,751.73	1,386.95	969.18	575.17	569.46	876.36	668.42
1997	799.94	1,027.95	1,844.57	40,864.14	14,342.51	4,354.45	5,075.39	1,756.45	1,248.21	2,072.30	1,691.05	1,655.43
1998	1,023.02	1,995.20	8,981.05	6,647.93	8,621.16	5,943.44	8,726.09	1,869.47	1,135.27	1,975.41	1,339.70	1,255.76
1999	861.19	693.34	6,651.12	11,129.81	8,439.56	4,247.20	3,468.12	2,408.23	4,578.32	1,822.20	1,413.82	1,116.95
2000	821.50	1,017.31	6,144.00	4,354.31	2,876.47	10,487.46	6,764.76	1,943.85	2,237.54	1,624.66	5,668.92	2,220.47
2001	1,108.48	1,000.95	1,850.19	29,087.76	12,262.97	7,384.42	4,292.57	2,552.32	1,270.66	1,233.33	1,658.63	1,139.91

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Goose River at the mouth							
1931	0.14	1.68	12.01	28.50	3.81	4.54	1.36	1.43	0.35	0.32	0.21	0.21
1932	0.21	21.18	289.49	253.75	29.36	13.50	1.05	0.32	0.42	0.56	0.94	0.36
1933	0.21	0.17	139.72	112.41	17.68	6.44	1.24	0.25	0.12	0.11	0.23	0.15
1934	0.08	0.13	3.37	35.20	2.20	2.95	1.33	1.55	2.97	0.75	0.21	0.21
1935	0.21	0.32	74.45	34.03	21.32	92.14	12.86	1.07	0.43	0.32	0.42	0.21
1936	0.21	0.21	1.06	202.49	15.11	2.97	0.62	0.11	0.11	0.11	0.11	0.11
1937	0.11	0.21	0.53	16.38	8.03	10.34	2.60	4.00	2.14	0.11	0.11	0.11
1938	0.11	0.11	37.33	6.92	5.73	1.45	0.01	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	105.29	39.88	1.20	9.66	0.13	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	166.23	9.70	1.75	0.00	5.03	0.01	0.00	0.00	0.00
1941	0.00	0.00	26.06	550.04	15.00	65.79	7.43	1.35	2.71	6.49	5.55	2.47
1942	0.08	0.00	9.84	273.21	86.89	33.64	6.48	3.80	2.91	0.98	0.87	0.79
1943	0.47	0.34	228.65	129.75	35.68	97.93	23.04	2.27	0.49	0.25	0.43	0.31
1944	0.18	0.13	2.15	69.66	17.79	22.71	6.13	41.79	13.61	3.08	14.30	5.93
1945	0.70	0.68	104.76	43.07	19.50	18.32	6.41	1.39	1.17	1.78	0.56	0.54
1946	0.50	0.59	223.12	54.88	17.14	9.76	9.48	0.58	0.90	1.46	1.55	0.71
1947	0.23	0.15	129.22	419.77	41.04	55.72	9.83	2.08	0.95	0.82	2.32	1.55
1948	0.48	0.11	0.57	1,956.85	158.57	24.86	16.71	10.61	1.02	0.48	4.00	1.71
1949	0.49	0.27	1.21	548.98	40.61	170.25	19.93	13.39	1.19	3.46	7.00	5.25
1950	2.85	2.51	47.96	2,305.68	2,437.55	144.65	62.04	12.86	7.69	6.51	8.35	7.79
1951	6.64	6.15	97.95	307.67	29.36	15.43	3.87	1.69	4.60	2.83	4.69	1.97
1952	0.00	1.95	15.10	348.83	12.00	1.53	140.79	9.78	1.51	1.16	2.17	2.89
1953	1.99	2.03	30.20	23.18	30.64	145.40	108.86	2.33	3.06	0.82	2.60	3.14
1954	2.70	17.05	61.47	65.09	20.68	44.14	5.03	0.75	0.38	0.21	0.28	0.31
1955	0.60	0.74	1.04	228.23	6.80	66.11	6.06	2.76	0.17	0.21	0.51	0.67
1956	0.98	0.89	1.11	299.95	59.72	61.75	6.84	1.43	1.40	0.77	2.29	1.87
1957	1.41	1.14	19.82	19.29	8.80	11.61	6.04	0.47	57.15	18.04	16.04	4.81
1958	1.38	1.22	2.03	17.16	5.58	3.74	31.43	4.13	0.85	0.70	0.41	0.36
1959	0.36	0.36	36.09	39.92	7.54	7.66	0.88	1.79	0.67	0.72	1.07	1.32
1960	1.29	1.21	76.72	463.52	16.43	13.97	11.29	4.79	2.09	0.64	1.47	1.40
1961	1.17	1.23	58.21	28.97	21.36	4.08	0.53	0.45	0.79	2.99	1.09	1.00
1962	0.96	0.91	1.26	734.18	192.15	156.90	51.79	12.15	131.93	18.04	15.61	10.00
1963	2.82	0.67	31.52	95.01	20.07	11.61	13.00	2.59	0.74	1.28	0.95	0.48
1964	0.36	0.36	1.98	159.67	20.38	295.80	32.64	6.43	9.46	28.86	8.22	4.30
1965	3.54	2.31	1.83	1,736.00	184.31	75.30	73.57	25.81	39.39	54.15	29.49	18.90

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Goose River at the mouth—Continued												
1966	11.80	7.63	1,176.60	503.72	176.81	94.90	127.57	142.39	20.53	10.60	11.48	5.09
1967	5.40	4.49	301.23	1,006.44	432.46	105.19	19.14	3.08	1.71	2.46	4.32	3.93
1968	4.83	2.88	127.24	55.88	37.95	413.23	58.14	21.31	14.31	8.42	12.86	8.71
1969	4.57	4.13	6.52	1,686.01	143.38	86.33	79.68	16.70	34.67	29.82	16.78	15.72
1970	11.27	11.91	14.50	1,261.68	339.46	284.66	42.18	9.93	10.13	4.17	14.55	8.35
1971	4.14	5.61	84.27	521.16	70.74	74.87	67.25	7.84	4.96	32.72	49.61	17.41
1972	8.19	5.58	448.73	813.30	253.21	104.44	12.93	8.02	3.50	1.53	7.51	4.55
1973	4.25	6.68	293.25	54.07	20.38	13.58	4.70	2.65	5.33	10.96	9.53	5.41
1974	1.77	3.60	2.96	1,136.18	305.60	197.55	41.32	44.56	7.09	2.11	6.60	8.25
1975	7.68	6.91	28.76	978.68	260.92	96.30	63.61	3.78	2.98	1.43	5.33	4.15
1976	4.66	5.92	250.81	245.28	25.31	7.54	2.28	0.99	0.77	0.57	0.57	0.82
1977	0.78	0.77	2.86	19.18	10.89	5.89	5.02	0.67	2.59	5.01	13.91	7.48
1978	4.60	2.48	322.44	1,023.18	84.38	37.51	11.34	2.00	6.29	1.41	1.38	2.02
1979	1.80	2.17	3.34	3,060.77	451.19	76.82	47.47	16.18	3.45	4.63	7.14	8.95
1980	5.32	5.01	58.81	229.08	10.46	2.84	0.47	1.59	2.41	0.84	2.57	2.54
1981	2.29	5.14	10.51	7.03	8.01	15.43	8.19	8.73	2.96	5.24	8.30	11.65
1982	5.54	4.44	85.72	868.56	68.89	20.46	20.14	1.71	0.44	67.39	21.93	23.30
1983	9.49	8.47	445.18	245.56	61.18	138.86	67.18	31.07	47.47	28.39	27.22	16.21
1984	8.92	7.48	428.81	427.53	88.93	122.68	4.44	0.06	0.00	6.32	4.77	0.71
1985	0.88	2.54	366.38	80.40	43.61	14.68	0.62	20.36	0.87	4.35	5.48	5.88
1986	6.44	5.62	416.15	282.36	233.47	44.68	50.04	7.98	5.29	15.43	15.99	19.07
1987	13.45	7.21	981.51	1,109.24	158.36	109.82	570.55	171.54	53.57	16.50	26.48	23.83
1988	13.13	14.72	371.27	264.49	40.18	14.46	4.84	0.84	0.58	0.79	2.65	3.98
1989	4.85	4.41	6.87	839.53	55.39	22.29	3.38	1.41	1.54	0.61	0.52	0.20
1990	0.89	1.28	2.73	25.21	11.25	9.27	14.89	4.54	0.00	0.00	0.01	0.00
1991	0.29	3.11	7.66	25.10	85.93	51.22	9.55	0.59	0.00	0.02	2.13	1.66
1992	0.40	0.22	292.36	31.27	13.18	11.46	115.72	14.79	19.50	6.89	17.48	9.69
1993	4.18	5.62	167.82	237.59	45.75	51.86	781.19	551.80	214.29	58.93	38.34	32.94
1994	24.57	17.90	590.67	266.83	176.36	152.15	456.65	237.75	349.40	467.58	199.13	84.63
1995	33.68	18.43	1,297.48	1,057.44	552.97	112.93	329.36	93.00	70.18	99.43	62.60	23.83
1996	20.65	12.71	81.46	2,114.25	506.80	143.47	95.14	17.14	9.30	27.32	22.56	14.93
1997	13.24	17.26	36.37	3,628.68	402.76	154.93	497.80	78.43	25.07	27.43	26.16	14.19
1998	5.74	230.27	685.32	347.66	99.54	101.14	82.29	12.64	4.89	33.64	37.92	42.79
1999	18.32	14.09	944.60	1,622.91	1,422.88	489.87	327.86	59.79	89.14	36.43	56.88	40.36
2000	30.93	109.10	128.68	75.72	85.50	1,022.16	654.66	98.25	20.57	65.36	496.76	73.51
2001	49.89	42.47	354.15	1,376.17	458.58	125.36	70.29	88.50	16.61	26.68	106.56	33.11

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Marsh River at the mouth							
1931	0.01	0.14	7.46	26.53	5.29	6.69	0.08	0.07	0.04	0.15	0.27	0.16
1932	0.09	0.10	196.92	9.53	1.79	8.12	0.04	0.00	0.03	0.14	0.08	0.03
1933	0.01	0.01	12.36	8.96	2.60	2.00	0.07	0.04	0.05	0.21	0.26	0.18
1934	0.09	0.18	2.00	12.61	0.49	0.40	0.01	0.00	0.03	0.33	0.09	0.08
1935	0.06	0.18	40.69	3.68	2.54	3.99	1.55	0.22	0.05	0.25	0.08	0.03
1936	0.00	0.00	0.29	218.42	7.49	1.24	0.00	0.01	0.00	0.03	0.06	0.03
1937	0.03	0.01	0.13	11.82	8.60	5.02	0.18	0.26	0.19	0.11	0.09	0.01
1938	0.01	0.03	18.26	1.63	57.42	9.75	0.26	0.04	0.04	0.04	0.10	0.05
1939	0.03	0.01	60.85	46.77	0.64	1.27	0.05	0.00	0.00	0.03	0.09	0.05
1940	0.00	0.00	0.00	33.42	2.91	0.77	0.03	0.11	0.03	0.07	0.18	0.06
1941	0.06	0.08	12.02	79.19	1.45	26.58	0.12	0.04	0.33	0.59	0.49	0.10
1942	0.00	0.00	3.87	4.75	85.42	52.96	1.22	0.92	25.62	5.72	3.18	0.38
1943	0.09	0.05	149.74	886.61	51.00	433.25	70.73	12.69	1.68	0.75	1.21	0.19
1944	0.05	0.08	0.19	110.12	59.48	155.06	448.22	224.11	196.63	25.98	15.32	4.62
1945	1.07	0.45	577.98	832.06	252.28	30.63	9.90	3.57	2.50	1.76	1.06	0.11
1946	0.00	0.00	480.55	370.42	83.00	17.78	17.50	0.08	0.62	5.46	2.18	0.66
1947	0.00	0.00	29.08	1,682.90	580.17	830.67	177.62	90.11	76.57	99.82	72.42	61.65
1948	45.95	32.58	38.21	867.63	363.45	139.74	103.92	55.52	16.00	14.77	25.70	23.10
1949	23.62	19.34	23.93	286.48	271.15	562.67	800.18	495.94	101.46	82.73	96.43	76.06
1950	35.30	30.89	68.61	2,031.91	3,578.39	1,408.38	1,121.37	182.68	69.46	161.90	111.23	100.07
1951	83.71	80.60	141.45	1,573.17	976.84	411.71	140.15	83.00	167.50	177.48	132.12	17.00
1952	16.09	14.02	19.57	516.50	171.19	123.47	276.07	74.25	5.20	1.78	1.14	0.88
1953	0.23	0.17	68.88	61.47	52.64	137.42	163.13	9.04	2.24	0.05	0.29	0.96
1954	0.27	0.06	8.78	179.00	82.32	30.63	3.02	0.15	0.00	0.00	0.07	0.14
1955	0.00	0.00	0.64	91.88	12.84	20.37	24.07	15.31	0.00	0.00	0.00	0.00
1956	0.00	0.00	0.01	419.34	51.28	32.27	1.39	0.05	0.12	0.00	0.00	0.00
1957	0.00	0.00	53.54	46.93	14.08	56.88	23.52	1.24	7.07	4.12	9.12	1.23
1958	0.00	0.44	1.76	5.46	1.85	4.10	21.19	0.35	0.00	0.00	0.00	0.00
1959	0.00	0.01	24.19	26.31	9.23	6.78	1.74	0.00	0.00	0.00	0.00	0.00
1960	0.00	0.00	31.33	143.97	14.49	17.23	11.31	0.38	4.74	0.00	0.15	0.00
1961	0.00	0.00	47.06	17.05	34.18	4.14	0.00	0.00	0.02	0.53	0.00	0.00
1962	0.00	0.00	0.34	129.42	271.42	474.61	361.39	11.96	2.05	0.94	2.08	0.93
1963	0.20	0.00	27.23	44.55	15.86	44.71	0.61	0.00	0.00	0.00	0.00	0.00
1964	0.00	0.00	0.00	136.69	31.72	25.43	4.46	0.08	0.23	0.11	0.16	0.00
1965	0.00	0.00	0.00	757.90	35.41	40.61	28.71	4.96	5.14	36.78	7.05	3.53

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Marsh River at the mouth—Continued							
1966	0.20	0.09	514.78	385.36	68.92	13.66	3.25	2.32	3.17	0.29	0.04	0.00
1967	0.00	0.00	79.45	189.84	41.16	13.56	1.60	0.00	0.00	0.00	0.00	0.00
1968	0.00	0.00	26.31	15.60	7.41	21.47	1.45	0.00	0.00	0.00	0.00	0.00
1969	0.00	0.00	0.00	804.43	42.94	33.77	58.52	4.36	3.20	3.90	2.97	1.00
1970	0.23	0.22	1.94	463.23	79.31	188.15	3.19	0.06	0.19	0.35	0.73	0.03
1971	0.00	0.00	61.74	133.12	7.37	3.77	0.63	0.00	0.00	83.00	78.13	5.93
1972	0.65	0.00	420.26	424.76	72.33	6.44	7.19	3.32	0.80	1.14	0.00	0.36
1973	0.13	0.10	111.18	13.62	5.76	1.01	0.00	0.00	35.00	41.98	6.98	1.83
1974	0.38	0.23	0.22	1,024.81	204.97	28.30	1.71	5.31	0.11	0.32	8.24	0.77
1975	0.31	0.16	0.17	730.80	117.59	23.25	314.63	1.22	0.01	0.00	1.12	0.01
1976	0.00	0.01	90.03	93.86	3.34	5.55	0.02	0.00	0.00	0.00	0.00	0.00
1977	0.00	0.00	3.69	13.48	1.86	0.77	0.00	0.00	0.01	0.69	0.23	0.03
1978	0.03	0.03	20.49	894.07	13.61	1.36	0.02	0.01	0.00	0.00	0.00	0.00
1979	0.00	0.00	0.00	1,182.92	59.75	18.32	73.02	1.96	0.12	0.00	0.81	0.09
1980	0.02	0.00	8.92	140.00	1.18	0.00	0.00	0.05	0.00	0.00	0.00	0.00
1981	0.00	1.77	1.72	0.10	65.22	5.36	1.61	0.27	6.34	17.37	6.90	2.00
1982	0.13	0.30	93.60	445.91	33.91	3.91	1.61	0.17	0.00	16.41	9.68	6.54
1983	1.73	1.03	452.65	90.95	5.93	337.88	76.16	28.03	25.30	6.17	4.85	1.95
1984	0.73	3.54	310.76	186.03	12.99	40.04	3.02	0.15	0.10	25.00	4.78	1.57
1985	0.58	0.36	258.87	18.90	406.93	15.31	12.48	11.13	5.24	6.30	2.36	0.74
1986	0.58	0.52	217.07	425.55	185.28	26.39	25.16	5.73	0.75	0.44	1.35	1.56
1987	0.44	0.35	272.60	27.63	45.40	8.09	354.97	17.23	1.97	1.02	0.92	0.81
1988	0.26	0.21	108.27	65.70	2.13	0.14	0.00	3.99	7.77	0.13	0.09	0.00
1989	0.00	0.00	0.64	804.57	17.09	6.29	0.10	0.00	0.00	6.06	0.92	0.32
1990	0.35	0.48	0.87	37.15	4.88	41.98	7.04	0.00	0.00	0.00	1.99	0.58
1991	0.18	0.31	12.16	6.52	98.45	37.47	3.88	0.17	0.00	0.00	1.10	0.97
1992	0.84	1.32	84.21	6.34	3.73	23.79	37.34	27.32	29.95	4.58	2.93	1.16
1993	0.56	0.64	104.56	175.83	4.92	4.97	137.01	47.28	0.66	7.12	5.20	4.27
1994	2.67	2.34	450.76	145.16	43.52	127.03	169.48	2.50	125.36	71.42	29.19	2.81
1995	1.95	2.17	539.24	101.42	114.06	15.43	229.31	6.00	0.83	23.61	13.61	3.21
1996	1.31	1.10	45.17	851.63	304.56	14.71	3.87	0.25	-0.32	-0.01	12.27	2.97
1997	1.21	1.04	17.71	1,730.49	109.90	404.06	341.75	3.30	1.82	36.50	31.58	19.21
1998	7.22	90.26	177.15	94.39	394.00	245.51	64.13	0.70	-0.10	34.32	72.08	62.88
1999	5.20	8.32	777.53	248.80	130.17	13.17	55.79	3.43	70.15	33.31	15.43	8.02
2000	4.63	10.41	11.04	33.84	10.15	393.80	72.20	4.58	0.96	8.49	395.19	20.87
2001	9.77	7.74	248.87	909.53	38.01	13.66	1.27	15.45	3.38	2.12	14.82	16.24

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Sand Hill River at the mouth							
1931	3.57	9.26	34.85	58.94	19.68	14.15	9.71	7.23	7.96	7.92	9.67	5.06
1932	5.75	6.35	27.93	51.30	61.77	16.91	3.97	9.43	8.55	7.59	5.55	3.36
1933	2.39	2.50	45.02	49.51	25.19	13.09	5.25	4.30	4.59	9.04	9.48	7.91
1934	5.86	8.23	20.06	60.28	11.15	8.51	2.52	0.96	19.68	11.31	6.02	5.06
1935	4.85	8.23	60.27	29.67	24.93	22.49	21.16	38.61	8.64	9.87	5.71	5.06
1936	4.27	0.60	33.08	310.83	42.12	9.81	1.43	4.67	4.79	3.96	5.06	3.84
1937	3.14	2.82	1.89	58.05	45.02	24.44	7.98	9.60	17.13	6.85	6.07	3.84
1938	2.24	3.08	52.02	18.52	113.25	42.70	9.55	12.52	4.28	4.62	6.37	4.43
1939	3.03	2.37	101.21	128.10	12.72	10.43	4.62	1.14	1.14	3.42	5.97	4.53
1940	2.08	0.45	1.45	105.57	26.62	10.01	3.75	6.38	3.48	5.48	8.17	5.19
1941	5.00	5.47	31.46	173.42	42.40	31.45	7.02	14.54	18.94	14.64	12.47	13.35
1942	5.86	0.91	15.65	34.34	137.36	98.13	19.00	22.61	19.53	40.44	27.59	8.49
1943	5.70	4.53	37.42	310.20	118.70	236.89	66.88	33.74	19.70	18.59	17.25	5.91
1944	4.57	5.42	12.78	64.38	59.30	58.89	98.70	126.58	73.34	46.67	46.90	26.32
1945	11.77	8.71	182.65	297.58	146.48	98.19	42.13	30.81	45.86	58.19	34.69	7.32
1946	7.02	5.29	146.62	227.25	75.36	42.83	32.63	13.03	18.89	36.17	24.61	13.72
1947	12.81	13.11	24.22	693.05	193.86	372.36	66.07	30.61	19.60	19.50	18.76	11.40
1948	8.81	6.50	5.86	515.65	76.67	35.05	34.14	22.53	12.83	12.63	17.04	13.61
1949	9.16	9.03	14.63	173.46	61.02	198.61	69.91	29.19	13.03	24.24	27.73	18.15
1950	11.09	7.06	9.99	825.95	1,167.79	116.58	183.15	43.54	18.59	32.83	21.99	16.14
1951	14.12	12.10	10.90	432.60	132.84	45.06	20.51	18.59	25.86	21.32	20.88	14.12
1952	12.10	11.09	15.14	223.92	47.28	21.72	53.44	18.79	14.75	18.99	20.88	13.41
1953	7.97	10.89	69.02	100.10	66.57	81.12	50.21	28.89	16.47	12.63	13.61	10.99
1954	5.34	6.49	20.28	145.41	57.58	82.43	29.60	11.01	8.07	10.91	13.01	8.39
1955	6.87	7.42	7.49	151.57	31.82	34.75	15.76	12.53	6.56	10.51	8.71	6.18
1956	5.27	5.46	7.49	319.58	106.37	60.71	16.16	11.62	11.62	13.74	20.57	10.49
1957	8.59	7.60	49.04	121.39	41.52	119.81	131.83	23.84	52.53	31.72	43.37	17.55
1958	14.02	12.51	22.40	30.98	23.94	25.86	63.54	18.08	11.42	13.03	17.65	7.30
1959	4.85	3.87	37.24	79.32	68.90	27.78	16.67	14.45	7.97	18.89	11.90	12.30
1960	12.10	9.86	16.45	163.57	39.70	47.48	42.02	16.26	14.65	11.92	16.34	8.45
1961	6.77	7.34	64.88	53.28	42.13	13.44	10.30	6.36	9.93	17.38	12.61	6.64
1962	2.04	3.58	6.27	256.01	234.87	295.58	301.04	60.71	47.28	36.37	32.68	17.55
1963	9.33	4.98	37.74	95.26	47.68	58.09	33.74	12.22	10.71	10.91	8.96	5.15
1964	6.66	9.67	11.91	228.26	89.71	48.79	68.79	17.78	34.85	25.05	19.77	11.60
1965	10.89	8.41	10.70	925.04	136.88	127.29	55.46	25.66	31.01	72.33	32.57	32.98

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Sand Hill River at the mouth—Continued							
1966	18.25	16.34	388.10	943.10	193.66	68.39	25.46	27.98	22.12	19.09	12.40	10.59
1967	12.61	14.42	90.82	344.00	103.44	73.74	26.77	12.83	12.22	13.54	13.01	13.11
1968	10.29	8.03	101.72	68.52	37.98	272.05	48.99	15.15	12.32	21.21	19.56	12.71
1969	4.74	5.69	7.57	675.09	131.02	104.25	50.51	20.61	25.05	30.81	19.87	16.44
1970	13.11	11.19	12.82	758.13	243.66	166.99	37.88	16.97	13.44	25.26	30.66	11.40
1971	11.70	12.61	43.69	348.24	61.97	36.89	17.71	10.77	33.63	225.78	211.08	49.11
1972	26.02	19.26	321.40	723.12	171.27	49.72	29.53	33.90	17.67	22.73	32.98	12.81
1973	11.09	12.30	230.17	51.56	37.92	22.75	12.55	12.89	81.21	95.97	45.99	23.50
1974	18.86	18.15	19.17	717.97	303.50	88.41	19.83	25.01	18.88	18.69	34.19	17.14
1975	12.00	13.82	23.71	762.98	223.09	49.42	184.39	35.82	18.88	23.13	27.33	19.36
1976	16.04	15.23	84.56	319.68	41.78	33.66	20.01	11.03	7.53	9.53	10.29	8.99
1977	7.93	8.25	19.07	52.07	32.99	41.03	11.32	7.25	15.68	21.32	26.52	28.14
1978	18.46	13.31	37.54	954.60	64.11	54.07	22.13	15.68	17.50	13.74	14.93	13.41
1979	12.20	13.01	17.36	876.80	162.14	71.83	168.16	46.40	18.18	18.18	28.34	24.20
1980	19.36	21.48	43.29	282.55	33.98	12.01	10.31	11.38	11.21	15.56	15.43	9.64
1981	8.12	12.30	33.10	25.53	51.45	39.20	24.55	17.27	34.85	60.11	35.70	22.49
1982	12.20	10.29	50.35	350.66	145.87	36.26	43.84	13.90	10.30	82.63	27.73	27.13
1983	19.36	19.16	336.94	183.05	55.26	230.64	114.82	50.29	72.73	70.92	50.32	36.21
1984	27.03	47.20	203.33	339.86	56.12	602.39	46.11	17.76	11.97	78.44	32.82	8.17
1985	14.25	11.26	155.78	77.20	316.54	170.02	183.36	259.02	94.86	89.00	47.40	38.42
1986	30.36	23.09	219.38	584.67	271.85	70.83	84.86	27.81	21.59	24.24	28.34	22.59
1987	17.35	16.24	186.88	80.83	111.29	61.00	140.14	105.69	28.08	26.77	27.43	24.71
1988	20.47	16.54	127.55	211.00	37.55	37.45	15.08	10.85	14.50	13.38	17.14	15.13
1989	13.92	11.30	14.33	783.66	80.61	41.93	29.34	12.82	14.77	15.10	14.62	7.14
1990	8.65	11.40	60.24	89.41	40.01	60.19	19.08	9.77	8.40	10.19	12.20	10.39
1991	6.32	10.99	51.46	49.40	98.17	31.64	32.96	11.64	10.48	13.03	10.79	10.09
1992	10.59	14.22	80.93	54.40	36.85	21.36	29.87	54.74	85.81	22.25	27.43	23.80
1993	14.32	12.20	39.76	341.64	47.20	51.62	227.31	431.18	41.74	22.97	21.78	25.41
1994	17.55	14.12	52.98	223.72	106.57	176.86	379.69	64.78	124.97	137.08	90.36	38.22
1995	23.40	22.19	459.44	231.51	158.60	42.12	330.42	46.13	27.61	136.92	55.77	36.61
1996	31.77	28.94	31.38	1,177.62	374.62	91.74	34.45	21.82	18.22	23.36	36.92	27.83
1997	24.20	22.09	24.42	1,582.26	178.04	188.02	483.28	63.52	40.97	71.84	49.11	42.86
1998	32.27	184.45	425.33	155.10	454.27	281.10	228.13	46.52	23.80	83.75	54.96	58.49
1999	30.25	35.40	615.95	971.46	380.19	162.24	106.81	135.93	377.49	119.22	67.37	46.09
2000	33.89	37.11	94.15	107.97	75.08	257.92	189.79	48.61	33.50	54.86	286.41	49.01
2001	37.11	33.48	62.26	823.42	160.64	87.16	40.98	44.68	46.77	33.12	56.98	26.03

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Red Lake River at the mouth							
1931	127.17	160.23	285.23	391.53	252.68	245.90	84.81	33.33	23.06	37.27	107.36	76.35
1932	56.96	60.84	237.60	1,403.98	347.32	88.53	40.66	20.87	13.99	13.33	33.27	29.29
1933	24.77	31.66	117.12	659.23	177.60	134.10	40.11	16.83	14.54	9.61	12.71	21.54
1934	16.80	19.92	141.59	542.54	167.87	87.87	48.31	13.44	9.69	11.48	25.41	22.51
1935	17.34	22.83	369.45	562.78	309.95	173.77	98.69	35.08	61.97	34.21	33.71	31.12
1936	34.24	26.92	26.95	1,478.67	513.88	99.78	28.63	14.43	11.37	8.77	10.88	5.75
1937	21.32	19.17	28.36	437.00	782.74	418.04	769.62	1,268.86	631.26	182.84	99.28	38.66
1938	63.53	86.90	670.71	317.38	3,637.18	1,137.71	380.00	118.91	155.52	169.73	142.79	165.19
1939	169.17	152.91	217.15	714.11	451.37	338.80	197.16	101.53	257.49	314.65	286.76	259.84
1940	168.96	187.15	201.34	2,182.28	1,098.37	526.56	236.61	163.50	156.39	234.86	262.53	196.31
1941	225.49	228.07	213.14	2,865.33	806.89	2,771.60	553.77	333.55	974.87	1,187.98	765.63	581.39
1942	482.53	514.62	1,689.75	3,151.10	3,091.82	892.25	313.99	373.23	1,394.54	631.81	382.28	336.94
1943	391.11	363.86	572.63	4,293.12	2,480.89	3,769.42	1,547.55	1,017.16	1,039.90	945.47	735.91	538.20
1944	445.27	483.07	534.64	1,438.62	1,343.18	2,495.10	1,621.87	2,084.16	1,675.42	1,393.45	1,668.02	1,278.21
1945	764.23	753.79	3,686.93	5,631.07	3,170.51	1,521.32	940.77	626.01	1,059.24	1,189.08	793.95	646.43
1946	613.15	583.75	3,918.58	4,185.96	1,907.11	1,107.11	835.09	382.84	507.65	821.75	635.44	568.25
1947	534.65	489.21	686.83	4,613.54	3,615.32	6,089.65	2,701.65	1,028.64	1,238.26	1,346.46	960.86	1,054.23
1948	983.05	686.92	731.54	7,092.42	3,725.70	1,170.50	1,043.39	720.55	619.57	438.14	431.71	356.97
1949	378.62	380.77	515.69	2,800.38	1,372.69	3,203.30	1,326.78	2,161.76	1,377.06	934.21	932.87	646.10
1950	715.56	705.76	858.95	6,235.09	16,710.47	5,138.83	3,936.63	1,825.15	2,045.91	2,570.51	1,914.62	1,898.47
1951	1,790.78	1,576.49	1,765.53	6,032.67	4,661.23	2,127.88	1,328.97	571.37	797.05	745.80	738.07	1,129.60
1952	1,227.60	1,302.98	1,275.16	3,502.91	2,122.42	1,865.58	2,542.09	938.58	655.30	454.32	400.48	386.91
1953	395.63	404.57	910.37	963.63	1,128.97	1,368.31	1,133.34	494.43	429.29	389.18	369.03	353.63
1954	316.27	326.07	446.52	2,013.42	1,426.24	1,321.32	736.40	474.10	391.81	379.46	438.70	419.21
1955	346.31	363.33	395.65	2,806.87	772.24	1,221.86	532.24	295.74	282.52	285.90	192.22	203.74
1956	243.47	248.43	249.08	3,689.10	2,720.23	926.34	955.74	329.18	1,412.03	393.88	658.70	382.77
1957	248.86	127.50	724.51	2,717.03	1,390.17	3,056.85	3,642.64	1,502.74	2,391.27	2,508.21	1,944.77	843.12
1958	890.55	835.63	1,083.56	1,061.91	530.39	659.68	1,674.33	398.04	113.44	106.45	126.74	80.57
1959	79.58	90.24	323.15	1,644.43	749.32	525.94	347.46	199.70	141.02	240.22	227.64	216.69
1960	198.78	190.17	206.89	2,468.20	826.26	1,030.42	459.92	77.19	93.15	126.34	186.94	80.39
1961	69.46	73.55	439.09	716.09	622.66	101.67	98.17	57.74	202.11	237.16	153.56	78.13
1962	85.07	88.30	111.64	3,084.13	5,158.64	7,874.50	4,148.80	2,082.12	1,894.14	1,657.93	1,475.27	1,014.77
1963	1,063.85	954.98	1,372.41	3,460.52	2,271.92	2,432.58	1,365.90	717.92	878.69	1,182.16	649.70	498.38
1964	591.12	557.63	396.67	1,999.23	1,433.68	2,743.29	1,269.97	829.96	512.89	1,093.85	888.22	668.96
1965	675.22	688.46	693.16	7,930.15	4,180.15	4,230.73	1,986.91	874.34	1,251.15	2,634.62	1,479.29	1,320.23

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red Lake River at the mouth—Continued												
1966	1,174.55	1,125.01	1,829.22	11,111.56	5,747.37	2,626.35	1,523.52	1,923.41	1,631.48	1,317.68	1,245.62	1,200.70
1967	1,139.01	1,167.01	1,584.58	7,401.97	5,196.56	2,758.96	1,452.74	921.26	916.39	596.03	425.50	377.99
1968	341.72	285.62	1,317.21	918.13	442.24	2,367.63	3,965.43	2,039.44	1,443.50	1,043.90	1,248.85	1,353.61
1969	1,345.77	1,340.38	1,325.87	8,495.49	3,996.77	2,236.12	1,308.32	1,038.34	1,347.32	1,958.12	1,440.53	1,154.39
1970	1,204.70	1,120.71	1,129.94	6,069.75	4,259.63	4,485.67	1,712.94	911.16	1,060.33	1,024.23	1,020.67	858.26
1971	836.85	931.72	1,069.54	3,258.94	1,570.26	1,345.19	914.89	747.74	620.65	3,104.57	3,420.84	1,143.63
1972	976.84	997.62	2,484.12	5,883.25	3,266.28	1,874.83	1,117.22	1,340.12	1,401.97	1,222.59	738.32	716.34
1973	655.19	658.53	1,840.05	628.96	687.07	572.46	359.18	596.71	2,399.79	2,519.87	1,425.45	1,069.11
1974	1,004.84	1,090.55	1,090.97	7,450.04	6,303.61	3,138.35	1,864.13	2,268.74	1,596.51	1,731.89	1,543.90	992.98
1975	1,077.89	983.78	1,018.69	6,594.92	5,149.52	2,871.69	7,582.21	2,013.02	1,916.74	2,155.95	1,734.55	1,183.47
1976	1,447.03	1,340.43	1,741.58	3,721.07	1,480.70	1,386.08	1,095.82	1,141.84	738.92	312.88	205.22	217.40
1977	197.47	202.21	306.85	495.43	416.23	376.10	515.26	268.40	500.23	694.19	728.78	795.39
1978	679.14	677.20	757.82	8,159.33	1,981.28	1,539.60	1,581.98	969.15	674.44	677.36	567.58	551.63
1979	536.58	554.43	647.94	8,444.73	4,989.41	2,906.58	2,553.43	1,726.54	1,283.28	1,253.55	1,017.53	1,301.58
1980	1,176.44	1,126.45	1,213.31	3,048.72	980.11	746.82	440.43	462.99	425.56	216.96	205.18	156.82
1981	143.11	169.39	354.28	373.80	356.82	1,005.23	1,486.14	962.62	1,489.54	1,943.90	1,230.17	1,047.39
1982	1,067.95	995.28	1,103.84	5,095.66	3,835.18	1,906.42	2,207.75	1,490.49	1,096.81	2,435.22	1,695.11	1,414.25
1983	1,178.51	1,049.69	2,918.39	2,673.12	1,732.87	2,895.48	2,170.61	1,955.70	1,624.17	1,549.84	1,390.13	1,109.76
1984	1,054.52	1,136.46	2,018.22	2,792.57	1,355.09	3,874.36	1,487.91	910.39	640.28	904.86	1,016.26	1,123.11
1985	1,093.05	1,025.21	2,382.59	2,205.73	3,059.42	3,256.16	3,307.97	4,237.63	2,958.33	2,669.01	1,534.63	1,136.41
1986	1,075.24	1,031.78	2,586.03	6,240.20	4,819.94	1,996.89	1,439.34	1,198.89	1,304.18	957.73	738.25	879.29
1987	786.09	756.94	2,208.66	1,082.19	1,512.01	857.68	938.81	748.64	501.34	287.98	231.19	197.00
1988	185.86	184.40	597.28	1,632.23	317.46	245.71	184.15	199.91	227.94	176.00	152.51	162.72
1989	206.52	179.92	226.09	3,991.41	1,046.46	627.07	392.47	193.84	183.18	158.49	122.08	101.52
1990	115.72	123.90	335.12	562.63	330.54	551.34	218.44	159.09	102.58	124.91	143.03	134.19
1991	116.64	118.11	237.90	368.49	535.15	332.26	703.82	247.24	491.01	206.17	166.00	170.68
1992	178.86	185.44	1,195.25	1,601.06	1,074.15	338.04	582.76	626.71	1,379.21	620.68	302.95	670.14
1993	633.34	648.52	1,030.56	3,035.47	1,167.09	1,660.48	2,689.70	3,101.35	2,653.27	1,375.06	797.57	806.93
1994	721.77	657.19	1,493.26	1,414.22	1,419.85	2,017.14	4,788.48	1,286.68	1,468.29	1,821.70	1,606.88	1,195.05
1995	961.89	956.20	4,703.60	2,986.93	2,517.28	975.58	1,966.52	1,170.68	1,058.24	1,708.33	1,394.14	1,298.48
1996	1,131.85	1,228.75	1,358.10	9,081.42	7,784.73	3,378.43	2,384.46	1,776.22	1,180.91	1,443.35	1,836.44	1,573.61
1997	1,247.10	1,116.07	1,241.41	12,957.95	4,302.94	3,612.43	5,913.32	1,707.17	1,495.42	1,969.66	1,767.58	1,515.69
1998	1,036.36	1,938.97	3,146.19	2,178.62	3,876.28	3,283.43	3,006.67	1,280.92	1,104.04	1,624.13	1,306.29	1,192.66
1999	784.07	740.13	2,458.02	8,787.64	6,054.47	3,804.36	2,538.75	2,595.60	5,923.41	2,458.66	2,156.00	1,390.56
2000	1,167.87	1,145.50	2,465.80	2,379.87	1,634.82	2,762.09	2,394.37	1,010.30	943.01	1,246.36	3,929.56	1,331.69
2001	1,097.14	1,033.33	1,171.24	8,032.35	3,960.05	3,155.68	1,921.24	3,555.77	1,644.26	1,479.78	2,118.67	1,665.02

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Grand Forks, N. Dak.												
1931	161.30	273.40	477.00	1,092.00	612.30	492.30	276.80	136.30	59.50	110.90	198.60	132.60
1932	159.70	207.30	1,173.00	3,933.00	919.50	401.10	177.60	58.60	43.40	36.00	82.70	57.40
1933	38.60	33.60	926.90	2,254.00	767.60	428.20	116.50	41.50	31.30	31.70	79.00	52.50
1934	39.00	40.70	419.20	1,540.00	373.30	150.90	153.30	30.60	20.70	40.60	73.00	40.70
1935	27.70	31.80	898.10	1,521.00	856.10	503.10	666.20	404.40	183.80	103.10	83.30	70.60
1936	58.60	54.30	63.70	4,829.00	1,482.00	274.30	88.80	32.10	20.30	12.10	30.50	17.80
1937	18.80	2.87	42.10	1,485.00	1,636.00	922.00	767.00	1,333.00	793.80	316.20	213.50	55.90
1938	61.30	89.50	1,309.00	954.10	4,560.16	1,992.06	698.14	190.30	208.55	216.00	190.20	199.40
1939	237.10	228.60	454.50	3,126.00	911.76	686.66	388.44	118.80	225.75	323.60	335.50	282.30
1940	161.30	170.00	229.10	4,088.10	1,955.26	960.86	297.54	212.70	171.05	245.30	344.40	281.90
1941	334.25	357.95	448.25	7,013.15	2,166.31	4,704.11	987.19	756.65	1,602.40	1,725.05	1,104.05	879.75
1942	517.65	550.65	1,659.22	5,391.68	7,597.53	4,321.16	1,085.40	916.02	2,981.90	1,555.19	1,015.66	729.86
1943	779.57	752.24	1,369.17	19,549.58	4,988.22	10,277.28	4,943.18	2,323.65	1,626.43	1,395.87	1,204.29	936.40
1944	724.04	659.17	700.22	3,464.25	3,580.19	6,047.24	5,959.42	5,065.99	4,210.75	2,411.94	2,369.82	1,689.17
1945	1,384.14	1,412.06	9,572.80	12,063.31	5,898.09	3,171.96	1,637.71	1,027.26	1,371.31	1,713.59	1,234.03	968.22
1946	866.70	793.64	7,127.06	9,302.44	3,502.84	2,145.24	2,358.51	1,235.27	1,263.12	1,830.38	1,467.68	1,120.61
1947	1,083.56	845.15	1,487.60	20,766.44	7,180.28	10,124.72	3,829.47	1,421.52	1,408.59	1,660.78	1,382.08	1,261.57
1948	1,119.45	925.34	1,420.51	20,372.66	7,221.55	2,550.92	1,746.01	1,180.02	939.09	638.60	702.50	472.39
1949	432.56	444.58	892.02	6,945.43	2,740.34	4,876.53	3,598.71	3,107.25	1,636.74	1,193.91	1,199.47	1,053.55
1950	795.97	735.36	1,371.69	26,131.93	36,660.59	9,741.36	7,382.82	2,825.83	2,274.74	2,832.25	1,975.77	2,038.00
1951	1,943.99	1,831.57	2,448.44	15,915.61	7,528.31	3,998.75	2,252.74	1,100.77	1,441.77	1,353.14	1,328.59	1,883.78
1952	1,742.23	1,854.85	1,976.74	19,490.74	4,518.52	2,776.83	5,578.07	1,863.41	1,324.34	887.04	837.51	723.34
1953	582.80	638.20	2,143.13	3,356.02	3,221.57	9,203.93	4,499.46	1,937.04	1,320.55	1,024.57	996.52	789.09
1954	699.63	840.56	1,700.74	4,836.90	3,618.15	3,685.52	2,179.47	992.73	771.60	803.24	747.91	553.96
1955	547.62	631.10	768.48	6,133.00	1,878.57	2,315.56	2,054.81	1,581.43	850.08	846.93	558.45	346.81
1956	394.89	488.50	687.85	9,495.69	5,082.60	2,827.49	1,498.16	820.71	1,478.01	533.67	916.36	513.15
1957	358.53	373.84	1,665.43	4,700.63	3,053.65	4,055.89	5,615.44	2,535.18	4,322.94	3,383.99	2,857.40	1,446.34
1958	1,209.17	1,213.82	1,935.86	2,656.83	1,429.45	1,427.24	3,726.78	863.02	568.25	472.94	572.59	276.60
1959	268.00	347.81	1,077.84	3,150.82	1,708.28	2,611.30	1,928.06	721.99	549.09	574.58	475.67	450.35
1960	487.02	444.34	822.64	9,146.64	3,137.38	2,534.74	1,756.98	569.40	650.38	403.60	525.53	277.79
1961	261.09	264.69	1,782.48	1,876.94	2,257.44	913.10	418.41	314.14	396.84	616.81	387.89	215.20
1962	172.69	229.04	459.96	11,564.09	10,635.55	19,216.17	13,656.38	4,662.79	3,133.74	2,431.59	2,160.31	1,519.49
1963	1,175.58	1,040.37	2,075.06	5,858.81	3,453.97	6,237.10	2,521.59	1,243.14	1,338.03	1,451.67	952.85	729.01
1964	738.75	736.88	799.90	6,651.33	4,081.50	4,620.76	2,337.89	1,223.51	897.88	1,569.69	1,246.30	785.79
1965	888.69	1,059.99	886.26	25,120.27	8,062.63	8,502.04	4,071.00	2,130.07	2,045.48	4,052.21	2,297.74	2,151.64

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Grand Forks, N. Dak.—Continued												
1966	1,783.72	1,695.15	11,566.31	25,226.85	10,588.05	4,732.77	3,033.48	3,636.81	2,423.22	2,046.36	1,848.83	1,756.41
1967	1,650.13	1,519.69	3,215.33	17,063.54	9,189.82	6,333.16	3,058.45	1,312.77	974.26	832.77	703.20	653.62
1968	538.78	521.44	2,176.57	2,713.15	1,987.24	4,614.52	4,298.01	2,313.80	1,727.73	1,500.41	1,614.42	1,595.21
1969	1,499.13	1,352.63	1,972.94	30,755.19	11,011.64	4,167.73	3,315.88	1,656.67	1,570.15	2,051.35	1,826.24	1,499.95
1970	1,396.87	1,471.46	1,689.22	14,546.47	8,289.48	9,829.72	3,032.84	1,281.70	1,328.86	1,224.11	1,458.25	1,098.71
1971	1,093.26	1,169.63	2,669.91	7,688.63	3,168.55	2,401.14	2,257.77	1,180.01	1,405.97	4,392.65	5,241.91	2,950.48
1972	1,694.08	1,477.95	9,654.19	15,018.03	7,753.08	5,099.86	2,476.30	2,393.49	2,019.62	1,852.57	1,480.18	1,137.37
1973	1,121.69	1,158.14	5,632.36	2,170.03	1,577.09	1,267.46	810.27	908.15	3,237.25	3,851.24	2,518.93	2,061.12
1974	1,736.91	1,564.96	1,911.13	17,185.01	13,327.97	6,164.78	3,033.73	2,920.56	1,934.14	2,019.77	1,981.97	1,228.44
1975	1,315.23	1,473.65	1,928.64	19,547.38	14,598.15	6,543.22	25,216.44	3,121.16	2,334.34	2,445.52	2,373.03	1,723.33
1976	1,673.37	1,660.51	3,952.37	9,483.01	2,635.69	1,818.44	1,290.70	1,055.68	760.37	472.46	341.67	245.58
1977	306.93	280.75	726.38	1,607.10	980.61	762.27	742.28	318.40	607.58	1,319.86	1,205.03	1,369.91
1978	1,259.76	1,051.58	3,322.51	31,360.03	4,307.77	2,851.35	3,178.83	1,520.81	1,082.64	808.11	813.01	749.23
1979	648.41	677.67	1,000.43	33,608.16	17,465.14	5,711.66	5,648.18	3,276.48	1,949.22	1,617.42	1,784.13	1,564.43
1980	1,362.05	1,418.94	1,988.76	9,319.95	2,010.01	1,589.80	767.70	585.19	801.93	483.17	444.72	361.59
1981	330.89	556.60	1,283.34	1,245.52	1,658.48	1,441.49	2,491.67	1,579.47	1,919.27	2,441.41	1,767.19	1,193.67
1982	1,155.40	1,102.00	2,535.10	17,957.74	6,024.38	3,439.87	3,310.81	2,071.69	1,439.05	3,783.13	2,212.90	1,851.93
1983	1,514.23	1,470.52	8,104.05	7,210.21	3,135.13	5,146.13	6,232.02	2,870.15	2,644.79	2,191.63	2,002.72	1,876.53
1984	1,678.96	1,867.49	6,478.97	15,541.03	3,708.58	11,967.66	3,118.36	1,519.23	1,036.77	2,318.37	2,022.78	1,440.61
1985	1,399.65	1,375.45	6,630.38	4,925.14	9,029.60	7,603.36	6,084.63	6,493.94	4,823.40	4,135.11	2,535.30	1,992.07
1986	1,792.33	1,726.25	7,685.94	20,822.55	14,163.20	5,511.06	3,841.64	2,330.31	3,419.87	3,180.35	2,024.30	1,927.03
1987	1,681.60	1,762.99	7,942.80	8,539.02	3,654.52	2,568.91	3,439.18	2,146.83	1,196.89	793.13	774.36	713.87
1988	501.09	558.52	3,201.80	4,719.77	1,340.12	848.81	459.57	379.72	444.48	437.78	440.92	299.11
1989	302.81	319.49	917.34	22,731.70	3,097.30	2,151.30	1,037.51	530.97	1,002.84	539.69	479.83	237.79
1990	257.44	286.26	1,185.98	2,753.39	1,686.61	2,290.03	1,104.76	538.21	392.84	434.02	395.06	273.95
1991	243.25	446.45	919.48	1,853.37	3,182.54	2,276.28	3,185.50	1,074.90	1,364.19	765.03	560.13	518.51
1992	573.68	600.80	4,586.35	2,927.03	2,152.21	2,174.35	2,825.86	1,445.83	2,189.52	1,161.77	908.38	950.87
1993	852.63	1,098.50	2,374.30	14,307.97	3,289.58	4,415.36	13,527.97	16,388.06	5,361.70	3,208.08	1,993.73	2,344.10
1994	1,591.97	1,512.20	8,170.47	12,561.34	6,104.84	5,392.66	13,059.52	3,512.27	3,830.71	5,140.53	3,742.31	2,453.38
1995	1,812.46	1,758.59	17,885.53	18,290.95	9,235.68	3,664.23	7,527.04	2,693.10	2,171.29	3,810.73	2,824.65	2,227.37
1996	2,029.07	1,741.18	5,079.22	29,092.34	20,320.01	7,577.34	3,889.33	2,788.28	1,804.91	1,844.57	2,179.72	2,130.00
1997	1,884.11	1,641.39	2,189.23	58,723.64	23,799.26	8,137.32	13,799.51	3,409.46	2,508.40	3,746.50	3,281.03	3,168.72
1998	1,994.68	3,588.94	14,191.91	9,681.27	13,318.75	9,369.36	12,888.60	3,098.02	2,181.38	3,613.72	3,115.61	3,386.90
1999	1,670.41	1,558.15	11,602.31	26,865.60	16,744.34	9,610.46	6,560.90	5,277.17	11,223.50	4,543.64	3,779.26	2,432.66
2000	1,945.21	1,948.72	8,297.54	6,480.07	4,165.79	11,511.94	10,669.53	3,075.73	2,964.28	2,726.61	9,959.95	3,653.46
2001	2,537.37	2,389.64	3,268.04	38,221.82	15,204.39	9,433.97	5,671.24	5,692.97	2,760.81	2,303.94	3,530.65	2,257.71

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Turtle River at the mouth							
1931	0.87	0.87	6.65	34.16	6.14	7.75	3.26	2.59	0.47	1.49	2.03	0.32
1932	0.29	19.97	221.56	208.88	29.94	16.71	2.79	1.04	0.55	2.19	8.44	0.34
1933	0.00	0.00	57.56	106.43	20.19	9.90	4.05	2.02	4.21	6.30	6.20	1.29
1934	0.58	0.47	28.43	40.69	4.00	5.70	3.22	2.73	3.32	2.66	2.03	0.32
1935	0.29	0.43	63.64	39.56	23.36	64.81	13.08	2.19	0.56	1.49	2.85	0.32
1936	0.29	0.29	1.29	173.27	17.87	5.74	2.00	1.61	0.16	0.70	1.44	0.17
1937	0.16	0.29	0.68	21.59	10.94	13.84	4.88	4.80	2.46	0.70	1.44	0.17
1938	0.16	0.16	33.75	10.58	8.42	3.46	0.19	0.01	0.00	0.00	0.00	0.00
1939	0.00	0.00	87.50	45.11	2.50	13.20	0.76	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	147.15	12.66	3.95	2.00	5.51	0.02	0.00	0.00	0.00
1941	0.00	0.00	24.26	396.43	17.77	51.09	9.32	2.51	3.06	11.71	10.00	3.09
1942	0.11	0.13	9.92	222.06	69.56	31.83	8.56	4.66	3.26	3.19	4.04	1.09
1943	0.60	0.45	178.39	119.85	34.83	67.65	18.74	3.42	0.63	1.25	2.88	0.47
1944	0.26	0.18	2.45	71.60	20.29	24.13	8.28	19.59	13.47	7.01	15.86	6.91
1945	0.87	0.85	87.09	48.08	21.79	20.73	8.51	2.55	1.41	2.37	2.03	0.41
1946	0.11	0.11	158.55	39.95	9.01	5.82	54.96	0.33	6.55	13.05	4.90	2.13
1947	0.21	0.11	82.71	217.90	23.59	67.33	9.49	9.84	1.74	7.33	7.89	2.80
1948	0.13	0.11	0.11	1,313.50	78.32	100.99	24.16	11.45	2.51	1.49	5.17	0.53
1949	0.15	0.11	0.11	434.00	32.86	38.93	9.62	3.49	0.47	7.63	7.53	7.69
1950	0.11	0.00	0.00	2,242.20	1,667.17	55.99	48.44	10.21	22.44	19.12	15.34	5.06
1951	5.71	2.24	46.49	238.10	27.60	16.15	4.52	13.74	47.52	8.55	9.18	6.18
1952	0.83	0.11	2.02	188.56	16.95	8.02	46.95	4.24	0.80	0.94	10.34	4.18
1953	1.29	0.90	20.42	30.69	30.11	102.71	48.66	4.66	1.19	2.99	3.48	2.63
1954	0.31	1.37	30.02	51.12	18.89	23.36	12.94	2.36	1.79	3.63	7.33	3.06
1955	1.21	0.75	0.06	253.90	21.64	126.07	12.02	4.16	0.79	4.16	4.18	0.74
1956	0.39	0.53	0.76	364.60	71.68	49.01	8.02	2.47	5.15	1.10	9.40	4.05
1957	3.24	0.72	51.01	45.81	18.55	15.92	1.88	8.08	246.53	42.82	27.88	8.27
1958	2.53	4.71	13.77	26.18	16.26	15.92	22.44	1.25	0.36	1.66	5.72	1.43
1959	0.02	0.00	43.33	67.14	18.89	12.82	8.95	3.31	0.21	11.07	6.50	3.69
1960	2.72	2.05	42.09	484.66	27.94	20.27	8.13	2.31	1.40	0.72	4.48	0.68
1961	0.88	0.62	40.62	29.23	16.72	3.93	1.32	0.76	1.34	6.78	3.57	1.44
1962	0.00	0.00	0.00	405.45	152.40	194.43	23.59	3.97	5.36	5.12	11.87	3.93
1963	0.54	0.00	24.26	51.91	15.92	14.31	11.56	3.71	0.74	1.27	0.72	0.11
1964	0.00	0.00	0.08	167.35	23.02	308.13	23.82	8.71	16.15	14.20	8.23	3.78
1965	1.33	1.66	2.36	629.33	98.36	83.36	22.21	7.43	37.44	56.22	18.70	11.42

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Turtle River at the mouth—Continued												
1966	5.42	1.86	540.75	445.84	169.58	39.73	52.10	25.31	9.23	10.19	9.24	6.33
1967	4.51	5.42	108.78	604.05	218.70	36.76	7.57	2.58	0.95	5.11	6.82	4.15
1968	2.18	1.94	113.75	56.65	23.13	61.95	66.30	15.11	15.46	10.10	13.99	9.12
1969	1.99	0.20	0.09	712.83	36.18	43.40	18.32	4.89	12.48	16.03	12.43	8.69
1970	4.75	0.94	2.16	702.45	180.46	65.04	17.18	14.77	12.37	8.13	15.81	9.07
1971	4.10	5.55	71.04	378.89	58.92	55.71	36.05	6.78	4.73	35.32	28.99	18.18
1972	8.00	5.52	331.16	547.88	159.38	70.55	12.60	6.87	3.26	3.61	11.31	5.03
1973	4.21	6.58	223.95	57.73	22.06	16.33	6.24	3.08	5.10	16.40	12.77	5.96
1974	1.66	3.56	2.91	722.73	184.51	110.81	26.55	8.04	6.82	4.75	10.58	8.97
1975	7.52	6.80	26.26	638.68	163.14	66.61	34.82	4.08	2.71	3.40	9.47	4.58
1976	4.41	5.64	193.81	202.70	26.13	10.44	3.06	5.10	2.03	3.72	4.27	0.37
1977	0.43	0.41	2.72	24.11	13.39	8.78	6.81	1.56	2.42	9.18	15.39	8.06
1978	4.61	2.47	244.42	662.68	67.75	34.16	11.63	2.58	6.18	3.49	4.50	2.22
1979	2.25	2.65	3.86	1,642.78	250.27	57.19	29.55	11.34	4.03	9.47	11.48	10.25
1980	5.61	5.32	51.25	191.91	13.54	5.61	1.98	3.16	2.98	2.81	6.81	3.12
1981	2.59	5.44	10.54	10.65	10.89	18.30	9.70	7.38	2.93	9.96	12.01	12.68
1982	5.82	4.76	72.43	578.18	57.58	21.88	17.17	2.72	0.32	58.40	19.46	24.14
1983	9.55	8.61	329.00	203.29	53.04	86.59	36.20	16.18	42.07	31.76	21.19	16.81
1984	9.02	7.68	317.86	321.76	70.91	79.35	6.36	4.31	-0.17	11.37	9.14	0.87
1985	1.07	2.84	275.08	80.05	40.21	17.19	2.47	5.22	1.26	8.44	9.49	6.40
1986	6.69	5.91	309.22	228.07	149.85	38.79	30.30	7.20	5.43	20.76	16.29	19.65
1987	13.16	7.42	680.11	708.04	110.29	72.73	136.34	4.14	47.50	21.54	20.76	24.03
1988	12.87	14.29	278.45	216.10	38.22	17.48	7.78	2.32	0.98	2.04	6.27	4.08
1989	5.15	4.72	7.13	562.00	48.45	23.17	6.12	2.82	1.86	2.30	3.15	0.31
1990	1.08	1.52	3.05	30.85	14.21	12.78	14.46	5.62	0.27	-0.32	0.36	0.01
1991	0.39	3.43	7.87	30.75	68.97	42.67	11.67	6.12	4.83	-0.10	5.92	2.15
1992	0.51	0.30	223.58	36.87	16.17	14.56	52.21	11.53	19.07	11.02	14.06	10.26
1993	7.28	8.42	81.38	112.78	25.67	28.64	190.74	174.94	154.75	30.37	25.25	20.10
1994	15.79	18.64	357.61	197.15	61.62	77.85	60.92	31.45	108.67	144.69	59.62	28.07
1995	24.03	18.90	478.71	349.27	163.17	48.40	72.17	34.34	21.28	26.93	21.11	20.36
1996	19.63	17.70	22.02	658.07	157.21	65.96	67.30	21.78	12.03	18.55	26.38	13.63
1997	14.11	20.91	113.55	1,005.03	192.04	37.26	349.76	67.78	27.95	23.88	24.14	22.01
1998	14.77	59.26	239.35	184.52	41.98	35.13	54.07	12.18	6.39	18.49	31.75	24.40
1999	17.69	19.63	267.89	412.39	397.80	129.24	97.76	137.60	56.50	33.08	27.28	21.04
2000	16.62	14.86	32.11	34.98	35.18	1,911.80	170.02	39.78	32.83	22.25	106.80	33.39
2001	24.77	23.85	149.10	333.12	101.64	37.72	27.62	29.17	18.49	22.94	28.80	24.44

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Forest River at the mouth							
1931	2.70	2.29	12.31	42.73	26.85	12.69	8.92	2.98	1.32	4.04	3.52	0.90
1932	0.15	9.16	35.92	161.95	55.77	21.51	9.63	0.74	0.30	7.77	5.30	2.67
1933	0.00	0.00	88.08	273.47	45.68	20.37	6.22	3.04	5.08	11.64	9.99	5.16
1934	1.99	0.78	35.92	69.97	20.18	9.56	1.66	0.00	0.00	5.70	3.52	0.90
1935	0.22	0.65	99.26	71.56	27.41	16.60	13.00	5.00	2.97	0.38	0.00	0.00
1936	0.00	0.00	0.00	190.01	34.07	15.86	2.66	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	25.22	19.41	12.26	0.97	0.21	0.00	0.00	0.00	0.00
1938	0.00	0.00	42.80	19.53	17.25	4.59	2.66	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	36.58	67.48	13.19	3.06	24.93	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	74.05	21.32	5.92	0.00	25.13	0.42	0.00	0.00	0.00
1941	0.00	0.00	0.00	619.75	41.30	42.07	14.26	6.74	17.30	61.29	19.15	10.00
1942	0.55	0.00	225.52	630.40	74.04	27.60	14.01	28.93	8.93	5.54	5.98	3.27
1943	2.17	1.90	253.94	175.09	44.92	365.46	346.42	38.64	18.27	5.22	8.70	7.83
1944	1.18	0.05	0.44	164.26	41.88	48.73	18.08	6.72	13.10	3.62	20.43	15.57
1945	3.54	2.28	127.46	67.29	29.84	22.56	8.30	4.31	1.47	3.15	3.84	1.46
1946	0.70	0.27	220.35	60.03	15.74	13.21	7.96	0.00	4.42	7.53	8.10	3.81
1947	0.69	0.03	128.03	137.56	25.53	23.01	29.10	7.97	5.42	5.80	8.48	7.27
1948	4.80	1.05	0.25	1,691.40	157.80	60.12	27.76	14.12	7.04	6.01	9.74	5.11
1949	1.58	0.70	0.85	686.38	55.67	25.83	16.63	4.90	0.97	8.33	9.69	6.95
1950	0.97	0.97	1.13	2,237.66	2,248.95	80.31	42.01	11.95	13.26	12.48	12.84	6.37
1951	5.07	6.25	44.38	282.66	40.67	23.01	9.62	13.84	12.50	9.47	9.33	5.70
1952	1.53	0.95	5.08	136.56	24.35	11.24	43.20	7.94	4.47	3.28	5.82	2.74
1953	0.80	0.11	4.24	31.15	24.49	76.30	14.99	3.18	0.40	2.67	6.35	3.36
1954	0.39	0.32	35.14	56.62	27.17	65.02	14.84	16.48	9.55	10.41	9.13	5.56
1955	1.82	0.71	0.05	414.10	32.81	137.16	16.63	4.23	2.51	7.66	7.38	2.72
1956	0.73	0.66	0.83	727.34	130.48	309.95	39.64	16.33	20.78	14.79	21.96	8.95
1957	6.30	2.22	67.09	36.79	30.37	22.21	9.66	11.64	84.11	19.09	19.83	9.61
1958	3.73	1.26	8.63	35.51	24.29	60.80	19.09	5.73	3.16	11.56	9.17	1.08
1959	0.46	0.23	15.45	152.59	27.40	16.42	8.57	3.28	0.74	8.36	6.44	5.25
1960	2.69	1.46	29.39	862.01	45.66	22.65	6.96	2.91	1.48	2.49	5.80	1.12
1961	0.97	0.09	33.38	34.80	17.31	7.78	8.46	0.85	0.09	3.77	4.75	1.56
1962	0.35	0.09	0.09	566.83	93.91	395.70	30.08	17.61	12.28	19.68	22.05	6.86
1963	1.40	0.09	60.12	49.17	28.15	33.79	39.43	5.63	1.27	4.77	7.53	1.66
1964	0.30	0.22	0.46	197.40	41.65	395.85	75.06	18.05	15.53	18.79	14.13	7.03
1965	5.36	3.94	4.13	685.04	93.61	106.82	34.83	17.16	23.84	38.39	22.05	16.21

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Forest River at the mouth—Continued							
1966	6.98	3.06	623.45	506.23	339.29	85.15	54.27	26.22	14.76	16.27	15.10	11.42
1967	5.01	3.54	176.34	510.50	312.86	58.58	25.92	13.30	8.57	7.16	14.41	7.83
1968	2.90	2.24	94.69	65.53	31.71	27.85	24.73	17.61	15.68	13.32	15.24	7.89
1969	1.23	0.66	0.74	741.94	79.21	30.08	18.35	7.07	7.72	9.74	11.11	8.42
1970	7.57	3.23	1.22	682.20	207.17	62.29	59.17	17.01	9.78	13.66	15.10	6.21
1971	1.34	1.41	10.69	728.86	88.42	45.22	99.70	31.26	17.31	18.35	20.38	7.93
1972	1.20	0.45	383.89	506.94	106.82	46.41	14.93	6.78	6.65	12.08	10.96	2.93
1973	0.65	0.82	84.73	56.85	28.15	42.25	9.22	2.27	6.71	17.46	6.21	4.38
1974	3.63	0.91	1.39	940.10	721.09	261.80	40.91	29.19	11.37	19.83	20.66	11.85
1975	8.23	5.20	7.84	405.80	241.17	42.99	161.15	13.87	9.80	16.57	13.35	5.30
1976	5.09	5.84	153.87	551.47	51.45	26.07	12.71	4.40	2.36	2.17	3.13	0.77
1977	0.09	0.09	15.74	46.89	26.36	16.27	10.17	4.75	6.27	13.51	7.18	1.88
1978	1.42	0.32	106.07	704.82	83.81	90.94	39.28	12.22	12.92	8.22	4.36	3.04
1979	2.87	1.97	1.52	1,691.49	538.95	94.50	94.21	18.05	25.63	12.18	11.56	6.14
1980	1.52	1.92	11.69	99.94	18.79	10.97	2.87	2.06	4.52	8.02	14.54	11.47
1981	5.79	24.14	47.46	55.29	22.65	32.01	18.36	7.27	22.80	30.52	16.35	11.70
1982	2.22	0.50	47.88	468.38	93.61	89.15	350.13	143.19	20.72	87.82	32.88	18.70
1983	13.52	17.46	337.09	280.75	78.03	48.49	27.86	11.85	25.48	13.67	20.94	4.99
1984	1.18	6.32	75.91	126.70	39.73	38.69	14.83	4.77	5.69	5.94	5.10	2.26
1985	0.27	0.09	249.61	90.71	46.41	39.44	7.93	9.19	12.78	27.56	29.70	12.05
1986	8.95	7.17	270.38	160.98	128.06	24.15	89.36	31.34	18.68	29.94	15.25	12.20
1987	13.51	10.26	174.07	1,207.26	121.68	42.56	40.67	22.43	11.52	18.06	15.53	15.94
1988	8.88	1.03	57.00	140.50	105.06	44.67	7.23	3.32	0.50	7.81	4.53	1.62
1989	1.68	1.63	1.52	128.98	45.98	13.12	3.66	0.40	0.14	1.84	2.49	0.48
1990	0.08	0.08	0.97	37.81	16.73	12.40	4.24	0.08	0.03	0.00	1.35	1.16
1991	0.00	0.00	4.12	32.76	20.80	6.27	21.55	9.58	18.27	17.07	14.32	12.05
1992	9.92	8.31	265.59	86.35	35.64	22.27	10.15	5.22	0.97	4.02	7.48	5.02
1993	2.20	3.81	18.67	138.88	35.32	32.42	197.48	486.77	102.69	30.73	23.91	15.43
1994	8.60	6.34	217.83	234.33	78.20	128.22	97.48	21.26	22.64	19.15	14.73	12.59
1995	9.23	8.38	557.78	438.71	213.56	91.98	114.26	30.91	17.15	20.34	19.46	17.93
1996	11.86	5.48	164.87	1,142.02	567.46	139.54	48.56	24.21	11.21	14.30	13.88	8.62
1997	4.43	3.98	3.97	1,479.44	478.54	87.14	519.43	108.53	43.16	31.03	33.08	29.05
1998	21.96	69.77	351.65	343.69	53.66	55.53	59.50	20.43	12.20	21.38	18.62	14.59
1999	13.90	14.45	374.55	681.82	300.58	117.43	79.44	49.70	31.34	27.17	21.68	18.49
2000	16.26	15.43	33.58	25.33	22.76	97.49	42.96	18.57	14.12	20.93	45.03	24.60
2001	17.79	15.98	80.23	396.89	98.58	53.89	41.93	43.99	15.27	19.71	21.08	16.94

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Snake River at the mouth							
1931	2.14	1.96	48.84	47.39	45.13	7.08	4.21	0.88	0.46	0.46	0.09	0.37
1932	0.03	0.98	25.61	427.32	77.02	25.47	1.22	0.15	0.19	4.28	5.20	0.31
1933	0.00	0.00	64.40	826.05	79.05	10.67	2.22	0.92	6.65	12.62	4.31	2.08
1934	1.44	1.38	25.61	209.61	8.22	4.25	0.08	1.03	0.38	0.42	0.09	0.06
1935	0.03	0.06	107.38	182.40	22.41	244.79	8.38	2.22	0.23	0.15	0.24	0.21
1936	0.18	0.00	0.30	505.85	43.37	4.28	0.15	0.04	0.04	0.04	0.03	0.46
1937	0.18	0.03	0.13	236.31	74.96	18.62	19.24	4.97	1.57	0.04	0.03	0.03
1938	0.00	0.00	84.95	23.16	21.72	1.84	19.08	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	15.45	78.46	7.84	17.17	0.57	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	115.82	15.68	2.29	0.61	1.22	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.79	1,092.34	62.87	164.60	6.27	1.03	119.93	123.22	5.87	1.19
1942	1.07	0.28	180.48	1,536.04	204.90	74.69	14.23	13.84	13.50	1.22	0.58	2.05
1943	1.93	1.59	369.34	398.73	105.74	1,206.25	65.13	13.73	4.05	3.56	2.39	18.29
1944	2.17	1.04	0.70	280.62	26.12	75.95	157.83	277.87	80.35	28.76	19.21	6.27
1945	11.87	16.94	574.21	731.76	168.17	52.29	49.57	29.08	39.19	47.46	11.74	7.25
1946	2.63	2.69	342.60	188.33	34.72	40.35	12.73	1.57	3.67	16.10	1.19	1.44
1947	0.55	0.31	8.67	398.13	35.49	2,962.55	63.37	11.01	4.02	3.94	1.96	0.95
1948	4.07	1.59	0.99	2,801.88	718.20	27.08	14.11	5.47	1.53	1.45	3.91	1.41
1949	3.70	3.70	0.66	1,383.45	177.56	849.83	72.05	9.90	1.57	6.50	7.86	2.69
1950	2.60	2.08	0.40	3,107.58	6,373.61	294.89	643.70	24.55	3.56	42.07	23.82	15.63
1951	9.82	8.41	13.77	1,114.87	275.35	27.46	5.85	11.59	105.17	44.33	15.08	11.04
1952	3.15	5.90	11.32	587.39	74.96	13.39	23.06	1.51	0.00	0.13	1.54	0.16
1953	0.00	0.00	51.95	109.87	84.13	64.63	13.19	0.94	0.00	0.00	0.00	0.00
1954	0.00	0.00	0.00	83.23	67.73	86.27	10.65	0.32	0.00	0.09	0.22	0.15
1955	0.04	0.00	0.00	113.60	40.67	233.81	15.01	0.63	0.00	0.75	0.01	0.20
1956	0.07	0.00	0.00	212.58	224.28	45.77	531.93	20.08	12.46	2.32	102.14	16.82
1957	5.93	4.77	131.71	227.01	160.62	247.43	335.01	14.42	624.89	155.27	71.87	22.66
1958	7.65	5.20	12.44	40.37	20.35	18.55	713.99	20.19	0.59	1.04	1.68	1.97
1959	0.61	0.00	5.33	691.63	114.35	60.04	38.13	16.67	9.29	47.80	31.80	13.18
1960	6.42	3.39	5.56	1,016.26	190.83	188.15	39.77	3.39	0.85	1.21	1.29	1.76
1961	1.00	0.59	76.11	90.34	41.30	2.96	0.00	0.00	5.62	31.47	8.96	2.82
1962	1.15	0.39	0.00	810.43	1,143.08	1,842.92	167.89	28.07	29.06	10.06	12.81	10.64
1963	1.24	0.00	61.88	624.12	159.47	117.02	26.31	17.86	0.55	0.05	0.54	0.10
1964	0.00	0.00	0.00	244.22	170.56	1,170.61	154.50	107.84	32.24	103.26	39.45	12.05
1965	7.83	3.58	4.53	1,910.41	607.29	390.46	352.60	19.20	30.44	246.67	66.06	26.12

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Snake River at the mouth—Continued							
1966	12.39	5.87	307.76	2,472.31	886.85	125.05	409.96	92.55	18.13	19.31	5.90	2.79
1967	1.99	1.62	51.62	1,563.60	903.29	80.31	18.78	0.60	0.00	2.05	4.98	1.83
1968	0.00	0.40	86.04	63.54	15.45	889.91	783.98	107.46	106.70	89.11	39.76	16.54
1969	2.75	5.05	9.83	1,828.67	241.69	180.12	43.98	4.51	0.83	0.67	1.29	1.47
1970	1.09	0.11	0.00	1,001.37	1,263.16	2,523.25	97.14	10.52	3.34	7.92	13.82	6.94
1971	4.74	4.40	20.42	536.09	106.31	46.27	12.96	1.00	0.34	2.69	23.46	8.62
1972	1.10	0.18	68.17	700.89	137.67	66.54	8.49	0.07	0.09	0.02	0.53	0.01
1973	0.00	0.00	115.16	21.25	12.62	1.40	0.00	0.09	0.30	7.30	7.43	0.14
1974	0.32	0.17	0.00	1,410.39	733.11	172.09	11.51	1.89	1.34	1.33	1.87	2.00
1975	2.43	1.16	4.10	742.92	481.09	175.92	2,629.95	42.07	5.89	4.47	13.21	5.20
1976	5.17	5.50	69.82	625.77	62.34	12.58	4.97	0.27	0.00	0.00	0.00	0.00
1977	0.00	0.00	2.47	34.09	16.75	12.43	0.85	1.22	0.28	0.30	13.64	12.35
1978	3.79	2.54	44.34	1,585.78	446.29	187.01	234.43	27.19	4.09	1.51	4.80	3.79
1979	2.66	1.88	4.70	2,022.59	484.92	182.42	47.04	6.16	2.55	1.13	4.98	4.07
1980	3.88	3.18	6.62	372.62	25.70	3.03	0.07	0.53	2.27	1.16	0.23	0.16
1981	0.04	1.55	18.23	17.80	8.11	32.12	81.46	0.17	2.96	51.09	9.72	4.37
1982	0.31	4.07	30.97	940.15	391.22	61.95	200.01	44.74	1.89	359.86	73.40	48.32
1983	14.22	10.15	718.43	515.24	216.84	234.43	75.34	3.82	1.20	15.95	21.10	12.20
1984	5.02	3.21	190.94	373.28	85.66	346.86	11.82	0.56	0.05	0.98	1.46	1.04
1985	0.43	0.43	227.34	275.33	160.24	969.45	284.91	112.82	137.29	200.77	28.72	11.81
1986	11.35	10.09	412.99	1,040.09	708.26	131.56	10.67	2.08	0.71	1.83	2.54	1.83
1987	1.83	1.83	391.15	387.51	74.96	34.65	6.00	1.30	0.09	0.25	1.50	0.94
1988	0.27	0.18	1.16	189.62	45.89	102.87	3.27	0.03	0.04	0.00	0.00	0.06
1989	0.03	0.04	0.07	764.76	108.61	107.46	11.28	0.33	0.01	0.00	0.05	0.00
1990	0.00	0.00	31.83	44.01	10.48	17.94	8.60	0.07	0.00	0.00	0.00	0.00
1991	0.00	0.04	0.28	0.65	16.34	12.65	155.34	12.99	1.47	-0.15	4.71	6.79
1992	2.58	1.35	283.27	339.23	145.51	20.07	46.84	2.11	2.79	3.78	1.61	3.82
1993	2.31	2.11	29.82	398.62	60.73	196.47	374.58	1,010.56	1,041.92	53.72	32.35	18.01
1994	8.17	3.43	158.51	176.42	117.47	41.39	557.01	93.51	529.85	209.47	329.26	67.89
1995	26.82	11.38	1,108.59	452.89	414.73	46.14	358.91	43.90	38.81	35.98	15.60	11.87
1996	7.52	4.31	4.90	1,902.32	3,425.28	54.91	41.12	13.31	4.60	12.69	30.03	14.13
1997	8.41	7.16	8.21	3,195.86	579.55	67.03	907.64	16.34	11.77	273.59	96.24	38.53
1998	14.37	91.62	845.17	439.95	410.55	719.98	761.88	18.14	10.92	197.04	84.06	62.08
1999	6.18	8.44	275.33	2,957.27	1,183.32	2,001.13	642.56	494.95	684.26	123.99	48.50	19.54
2000	10.95	213.46	301.80	427.37	131.64	968.02	231.84	90.72	25.57	154.97	1,636.59	59.63
2001	19.66	17.10	88.03	2,201.11	551.16	242.18	32.13	386.72	15.05	12.55	86.68	20.23

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Park River at the mouth							
1931	0.03	0.58	39.10	186.92	18.30	4.45	1.44	0.28	0.15	0.15	0.55	0.14
1932	0.00	2.75	21.07	259.92	31.77	8.17	0.39	0.00	0.00	1.46	1.10	0.00
1933	0.00	0.00	56.20	578.00	32.65	17.86	0.73	0.29	0.00	0.00	0.00	0.00
1934	0.00	0.07	21.07	109.59	3.16	0.60	0.02	0.00	0.12	0.00	0.00	0.00
1935	0.00	0.00	96.80	92.59	8.89	5.72	2.93	0.73	0.00	0.00	0.00	0.00
1936	0.00	0.00	0.00	318.92	17.57	19.03	0.05	0.00	0.00	0.00	0.00	0.00
1937	0.00	0.00	0.00	126.73	30.89	5.40	6.95	1.71	0.00	0.00	0.00	0.00
1938	0.00	0.00	75.45	7.59	8.61	0.51	6.90	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	12.32	33.30	3.00	4.14	0.18	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	53.39	6.15	0.55	0.20	0.40	0.00	0.00	0.00	0.00
1941	0.00	0.00	0.53	811.08	25.76	17.57	2.17	0.34	46.55	47.87	11.54	4.29
1942	0.00	0.00	168.17	1,226.24	87.25	24.01	5.09	4.95	4.82	0.40	1.00	0.06
1943	0.13	0.15	360.23	238.98	44.06	296.15	220.46	18.59	0.37	0.02	1.03	0.97
1944	0.01	0.00	0.46	156.09	10.41	12.18	3.54	16.69	11.43	1.22	20.06	9.60
1945	0.36	0.31	576.03	188.69	83.00	46.11	10.75	1.24	0.89	0.24	0.29	0.19
1946	0.14	0.17	332.55	96.24	13.97	7.22	1.86	0.19	0.55	0.56	0.26	0.05
1947	0.00	0.00	6.66	238.56	14.27	30.45	90.76	18.59	5.48	1.87	3.45	3.31
1948	0.67	0.16	0.65	2,541.56	318.40	55.34	66.17	44.65	3.41	0.71	1.42	0.53
1949	0.31	0.27	0.44	1,080.13	75.24	16.83	3.34	1.68	0.09	0.57	0.26	0.14
1950	0.14	0.14	0.24	2,881.56	3,031.73	95.15	31.03	18.88	1.84	3.19	2.21	2.90
1951	1.51	0.78	17.00	465.18	49.48	9.41	1.03	4.36	60.46	49.92	1.83	0.79
1952	0.13	0.00	0.28	65.89	12.06	0.58	0.33	0.00	32.35	0.00	0.04	1.11
1953	0.28	0.00	3.12	11.37	7.70	14.79	1.68	0.07	0.29	0.10	0.95	0.24
1954	0.02	2.05	8.29	22.62	19.91	191.62	27.81	8.84	7.13	7.13	5.39	1.61
1955	0.27	0.27	1.12	625.63	67.92	112.43	15.37	1.90	17.27	0.64	0.00	0.00
1956	0.86	0.86	17.58	1,425.48	654.93	241.38	29.55	5.81	11.84	11.44	12.04	5.11
1957	3.03	8.35	81.64	68.30	34.24	16.08	3.61	7.68	222.20	10.96	10.70	6.81
1958	3.18	2.73	5.96	26.15	6.66	4.78	5.03	0.97	0.86	2.70	0.86	1.12
1959	1.41	0.86	1.79	342.26	40.39	9.42	5.66	0.91	0.87	0.86	0.96	0.95
1960	0.92	0.88	2.32	1,324.33	50.93	17.40	2.40	0.90	1.48	1.63	0.86	0.86
1961	0.86	0.86	5.31	18.56	4.27	0.86	0.95	0.94	0.92	0.89	2.04	1.25
1962	0.98	4.87	15.19	1,007.65	152.08	341.66	28.09	16.96	1.03	1.22	1.52	0.97
1963	0.86	1.19	43.43	36.97	13.65	155.01	26.04	13.79	0.86	1.47	0.89	0.86
1964	0.96	1.88	1.88	312.20	86.21	843.92	94.84	4.71	2.56	10.65	3.59	1.41
1965	1.01	2.89	9.05	1,254.92	239.04	125.58	33.07	15.40	56.20	68.35	22.43	14.21

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Park River at the mouth—Continued							
1966	3.73	1.13	418.97	896.52	646.44	125.15	199.95	49.61	3.83	2.21	2.54	3.44
1967	2.41	2.69	156.11	895.39	751.84	34.97	3.76	0.98	0.86	0.91	1.04	0.93
1968	0.89	3.17	118.03	66.05	75.37	34.82	14.62	1.25	1.02	1.10	0.96	1.02
1969	0.97	3.99	12.13	1,208.42	45.66	22.09	11.28	1.47	4.15	1.50	0.98	4.25
1970	1.23	1.03	1.70	891.18	304.91	57.51	22.82	1.29	0.87	0.88	5.26	1.94
1971	0.87	1.73	24.74	1,231.74	84.89	111.82	110.21	8.12	0.91	8.68	10.02	1.45
1972	0.86	6.16	451.71	587.29	84.60	14.85	1.18	0.90	3.66	0.92	0.96	5.32
1973	1.85	1.29	88.95	40.48	19.01	14.69	1.42	2.20	1.69	8.87	8.43	11.04
1974	3.06	3.36	12.80	1,515.40	1,007.58	148.27	9.03	7.51	1.98	1.17	6.38	12.78
1975	7.85	5.38	5.96	346.34	214.44	23.40	117.39	1.59	1.26	2.03	10.97	10.44
1976	8.37	7.52	48.76	763.32	40.36	120.87	6.67	1.86	1.82	1.61	3.61	4.18
1977	3.80	3.54	9.30	13.20	7.90	3.04	0.98	0.92	0.87	1.10	4.10	4.21
1978	4.37	3.06	28.89	1,215.79	145.85	33.86	7.82	1.58	4.03	1.34	8.26	6.73
1979	2.36	2.15	4.43	2,038.28	417.92	69.80	80.43	10.08	7.63	1.55	8.56	6.98
1980	4.49	2.95	4.38	131.00	19.20	37.08	2.22	4.12	59.11	60.17	44.15	20.55
1981	7.89	63.19	158.48	152.45	41.70	74.61	86.75	14.29	15.83	13.21	10.68	9.06
1982	7.83	5.08	41.19	699.41	163.74	143.85	372.81	56.84	2.62	102.79	30.59	24.35
1983	19.47	14.62	561.79	449.78	85.55	109.19	31.30	2.24	0.69	2.25	6.93	1.74
1984	1.10	2.75	51.99	109.41	31.18	25.34	3.75	2.33	0.45	4.42	10.73	2.60
1985	1.21	1.38	307.23	97.39	32.03	20.88	4.75	38.30	4.18	15.96	11.10	2.95
1986	11.82	15.83	320.95	274.45	157.03	27.00	81.45	34.46	12.62	1.57	1.13	0.97
1987	0.84	3.05	137.07	1,388.81	69.79	21.29	14.07	7.21	0.61	0.27	0.16	0.63
1988	0.55	1.39	5.81	60.11	12.04	8.47	2.31	0.85	0.54	0.35	0.46	0.44
1989	0.47	0.47	3.75	45.93	16.45	2.80	1.36	0.79	0.57	0.35	1.00	0.53
1990	0.35	0.32	0.86	13.73	6.78	2.75	0.72	0.60	0.43	0.30	0.15	0.28
1991	0.33	0.35	0.40	0.38	7.75	2.66	24.12	3.87	2.10	2.13	6.15	12.66
1992	14.16	6.79	502.81	305.98	52.86	34.22	8.37	6.57	0.47	0.08	-0.03	0.64
1993	0.93	15.64	29.97	129.68	87.75	39.64	583.44	832.56	106.44	40.71	19.45	15.30
1994	9.44	8.39	279.97	311.47	160.54	53.38	31.52	3.51	0.54	0.43	10.17	4.04
1995	1.52	1.42	919.47	608.21	175.76	43.90	63.44	34.66	7.55	1.09	0.09	0.44
1996	0.86	9.61	13.63	1,506.70	724.31	106.04	15.69	10.72	1.13	21.91	4.49	3.22
1997	3.44	3.64	13.56	2,520.98	587.08	63.99	646.04	30.87	5.72	14.82	16.49	14.11
1998	9.09	33.42	711.80	972.28	141.58	185.91	149.93	7.15	3.75	1.42	6.94	7.82
1999	3.91	4.14	219.73	855.84	339.18	122.30	38.47	19.99	4.70	1.93	4.16	4.00
2000	3.50	3.82	11.72	8.76	9.06	52.60	34.48	4.48	1.39	0.47	15.85	8.99
2001	6.98	5.71	47.48	1,004.82	253.27	104.19	22.54	39.16	0.57	0.84	6.95	6.69

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Drayton, N. Dak.												
1931	157.52	271.28	492.19	1,164.16	638.05	576.97	336.18	154.88	64.30	120.56	215.29	137.93
1932	155.93	206.07	1,254.05	4,410.11	973.64	512.41	218.16	66.87	46.92	39.68	90.29	59.72
1933	36.58	33.81	981.79	2,472.58	807.04	895.42	144.65	47.44	33.85	35.00	86.29	54.62
1934	36.97	40.90	430.35	1,664.17	381.48	172.12	189.02	35.03	22.40	44.69	79.78	42.34
1935	26.07	32.01	950.10	1,642.83	903.96	383.56	791.20	457.01	198.33	112.18	90.94	73.45
1936	56.03	54.46	60.71	5,768.00	1,826.00	398.90	117.80	50.10	27.40	13.80	33.57	18.52
1937	17.55	2.94	39.48	1,729.00	1,952.00	968.40	907.65	1,497.40	854.95	339.32	231.31	58.15
1938	58.66	89.47	1,405.51	1,011.75	5,143.24	2,248.03	828.01	215.80	224.98	232.88	206.26	207.41
1939	233.42	227.10	468.08	3,473.63	965.11	575.81	467.57	135.01	243.51	347.16	362.15	293.63
1940	157.52	169.22	229.66	4,591.01	2,132.85	918.97	360.56	241.07	184.57	264.06	371.68	293.22
1941	331.44	354.55	461.38	8,045.22	2,372.63	4,585.65	1,160.59	852.32	1,724.24	1,812.76	1,180.25	914.94
1942	518.64	543.43	1,793.71	11,448.68	7,905.53	4,358.62	1,350.19	1,044.80	3,212.02	1,635.21	1,089.32	759.23
1943	786.63	742.91	1,438.75	21,879.58	5,784.83	10,651.08	5,581.04	2,598.17	1,749.31	1,468.44	1,284.57	973.23
1944	728.89	650.42	727.78	3,840.80	3,963.06	6,645.27	6,687.26	5,648.71	4,522.13	2,523.43	2,515.06	1,755.76
1945	1,413.65	1,386.95	11,018.32	15,743.31	6,816.09	3,514.96	1,899.49	1,154.25	1,473.26	1,800.19	1,316.76	1,006.29
1946	876.62	782.52	8,052.29	12,191.44	3,723.84	2,231.24	2,697.68	1,387.18	1,353.97	1,918.69	1,563.63	1,165.06
1947	1,100.92	832.50	1,592.08	24,585.22	10,054.28	10,944.72	4,809.47	1,770.52	1,514.81	1,743.65	1,471.72	1,311.71
1948	1,137.98	911.07	1,487.21	24,235.00	12,104.55	3,144.92	2,119.01	1,323.64	1,007.63	677.38	746.69	490.95
1949	430.97	439.73	923.50	11,605.43	3,060.34	5,493.53	3,717.71	3,307.25	1,761.74	1,246.91	1,310.47	1,084.55
1950	812.97	733.56	1,293.69	33,151.93	59,040.59	14,021.36	8,084.82	3,121.83	2,348.74	3,064.25	1,975.77	2,014.00
1951	1,988.99	1,840.57	2,460.44	18,705.61	8,357.31	4,377.75	2,444.74	1,232.77	1,725.77	1,399.14	1,343.59	1,775.78
1952	1,634.23	1,861.85	1,997.74	19,450.74	5,734.52	2,842.83	5,632.07	2,146.41	1,385.34	921.64	885.91	746.54
1953	607.00	650.70	1,906.13	3,847.02	3,218.57	9,097.93	5,209.46	2,130.04	1,420.55	1,023.77	989.12	836.59
1954	696.43	833.06	1,681.74	5,499.90	3,964.15	4,091.52	2,326.47	1,105.83	768.90	822.04	781.21	556.56
1955	545.02	617.20	745.98	7,808.00	2,254.57	3,094.56	2,172.81	1,689.43	933.68	944.33	640.15	401.71
1956	385.63	470.34	672.59	11,499.83	8,262.74	4,036.63	2,595.30	1,030.75	1,644.15	639.31	1,211.00	561.69
1957	384.66	372.97	1,434.66	5,141.86	3,698.88	3,639.12	6,719.67	2,679.41	5,450.17	3,765.22	3,373.63	1,568.57
1958	1,239.47	1,229.12	1,903.16	3,038.13	1,600.75	1,622.54	4,071.08	1,016.82	605.85	492.74	607.79	315.70
1959	261.90	357.41	931.74	5,162.12	1,873.58	2,767.60	2,211.36	853.89	623.69	626.88	581.27	483.15
1960	561.42	527.64	812.44	13,873.94	3,801.68	2,744.04	2,134.28	653.60	775.18	406.90	544.73	318.49
1961	302.39	276.69	1,773.78	2,275.24	2,492.74	1,080.40	490.81	357.94	431.74	705.61	428.69	237.10
1962	175.49	216.24	427.26	15,015.39	10,805.02	23,297.53	14,658.59	5,764.74	3,294.41	2,477.89	2,162.61	1,539.79
1963	1,214.88	1,057.67	1,857.36	6,523.11	3,623.46	6,504.47	2,914.92	1,303.18	1,345.91	1,506.13	1,053.31	720.27
1964	751.26	765.89	790.61	7,924.74	4,744.10	7,555.24	3,249.33	1,533.96	895.27	1,812.26	1,302.87	762.26
1965	829.30	1,024.50	944.87	25,951.68	12,984.23	9,420.52	4,792.44	2,219.22	2,087.47	4,285.78	2,463.31	2,262.21

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Drayton, N. Dak.—Continued												
1966	1,958.13	1,710.56	8,980.72	38,258.26	14,119.65	5,401.25	3,660.92	3,655.96	2,552.21	1,992.93	1,785.40	1,548.98
1967	1,658.54	1,469.10	2,721.74	22,854.95	14,441.42	6,340.64	3,185.89	1,451.92	994.75	905.34	729.47	599.99
1968	472.79	518.35	2,013.98	3,704.56	2,293.84	5,630.00	5,846.45	2,730.95	2,082.72	1,640.98	1,827.99	1,652.78
1969	1,530.54	1,418.04	2,016.35	29,546.60	17,673.24	4,711.21	3,620.32	1,821.82	1,615.14	2,071.92	1,939.81	1,752.52
1970	1,368.28	1,337.87	1,558.63	17,737.88	13,996.08	12,510.20	3,865.28	1,323.85	1,376.85	1,203.68	1,405.82	1,066.28
1971	1,059.67	1,148.04	2,888.32	11,724.04	3,615.15	2,656.62	2,607.21	1,289.16	1,589.96	4,571.22	5,682.48	2,955.05
1972	1,729.49	1,448.36	8,316.60	21,549.44	9,328.68	5,983.34	2,597.74	2,567.64	2,199.61	1,833.14	1,549.75	1,128.94
1973	1,125.10	1,194.55	6,272.77	2,662.44	1,797.69	1,439.94	831.61	975.50	3,184.24	4,531.81	2,810.50	2,135.69
1974	1,781.32	1,580.37	1,880.54	19,466.42	18,439.57	7,871.26	3,473.17	3,455.71	2,114.13	2,037.34	2,094.54	1,278.01
1975	1,344.64	1,476.06	1,876.05	17,088.79	22,849.75	6,342.70	28,188.88	4,122.31	2,591.33	2,470.09	2,636.60	1,680.90
1976	1,600.14	1,692.28	3,548.14	13,547.78	3,138.64	2,178.27	1,546.43	1,244.84	779.29	446.89	323.90	204.71
1977	290.66	268.08	662.71	2,066.43	1,085.81	890.86	790.74	336.39	540.54	1,389.35	1,247.52	1,464.39
1978	1,319.39	1,064.21	2,991.14	37,921.66	6,759.58	3,500.04	3,826.39	1,655.11	1,190.21	920.30	828.90	790.92
1979	691.67	719.47	919.43	31,389.77	31,225.73	6,406.77	6,143.57	3,318.42	2,105.92	1,626.90	1,752.76	1,534.93
1980	1,411.77	1,480.77	1,791.72	10,655.41	2,236.64	1,672.40	859.19	621.04	883.28	615.90	660.21	420.75
1981	343.90	511.44	1,581.39	1,543.30	1,672.51	1,483.13	2,852.48	1,621.43	2,012.78	2,539.01	1,850.60	1,251.85
1982	1,132.16	1,073.26	2,102.05	24,207.88	7,814.29	3,793.03	4,357.87	2,466.71	1,435.57	4,369.56	2,324.13	2,058.30
1983	1,523.15	1,470.32	9,739.79	11,104.86	3,528.20	5,232.93	6,755.66	3,143.84	3,099.65	2,233.69	1,959.95	1,747.91
1984	1,582.84	1,638.28	5,316.74	19,321.62	4,108.09	12,357.49	3,389.14	1,481.15	1,057.93	2,299.69	2,158.31	1,538.32
1985	1,340.34	1,344.12	7,282.01	5,780.08	9,222.48	8,348.33	7,032.94	7,271.17	5,033.11	4,014.59	2,537.19	2,281.21
1986	1,882.44	1,581.37	6,459.02	22,883.67	16,396.09	5,757.18	4,236.52	2,639.91	3,239.22	3,342.47	2,051.53	2,220.87
1987	1,813.64	1,647.98	7,671.74	16,153.63	3,623.11	3,071.60	2,983.01	2,737.43	1,278.68	911.78	881.24	791.32
1988	511.71	553.39	2,683.67	6,651.54	1,673.27	1,155.55	516.31	345.55	402.25	474.58	431.67	311.88
1989	296.16	320.18	836.85	24,781.53	4,346.37	2,396.21	1,325.54	543.34	1,108.67	515.22	489.76	276.73
1990	244.55	282.40	1,238.62	3,126.59	1,700.18	2,203.60	1,270.98	525.08	402.21	401.90	416.17	303.55
1991	237.18	433.97	837.38	2,162.59	3,107.83	2,323.57	3,341.78	1,148.73	1,420.78	884.13	658.25	573.34
1992	577.20	578.76	5,256.14	4,440.14	2,834.29	2,370.50	3,122.21	1,564.98	2,631.32	1,261.52	880.72	894.18
1993	858.40	1,008.71	1,756.78	15,545.25	3,806.61	4,508.61	12,068.85	20,917.17	7,023.11	3,469.14	2,091.39	2,187.53
1994	1,562.84	1,483.02	9,147.35	15,652.28	6,445.11	5,710.90	14,054.61	3,911.98	4,134.55	5,208.02	4,173.10	2,719.59
1995	1,961.44	1,745.45	18,237.61	25,120.86	10,367.48	4,016.14	8,048.37	2,768.63	2,313.88	3,518.06	2,966.88	2,187.18
1996	2,052.98	1,799.14	5,025.17	31,644.46	31,169.06	10,943.97	4,197.00	3,086.78	1,897.30	1,865.07	2,400.13	2,318.67
1997	1,985.99	1,623.30	2,314.13	57,225.90	36,359.41	8,675.92	15,103.64	3,802.98	2,821.03	4,072.69	3,648.59	3,667.85
1998	2,360.56	2,668.72	16,553.81	12,891.43	13,571.02	9,680.76	15,786.19	3,570.05	2,316.84	3,624.54	3,265.56	3,984.21
1999	1,869.47	1,790.15	7,990.37	40,577.67	20,345.67	12,115.57	8,075.14	6,253.63	12,026.89	4,664.61	3,786.71	2,979.35
2000	2,029.13	1,909.56	8,755.46	7,003.19	4,436.75	12,234.37	14,288.01	3,307.83	2,960.39	2,725.63	11,829.29	3,817.71
2001	2,562.38	2,446.58	3,380.00	37,544.26	24,696.13	10,619.07	6,056.59	6,898.91	2,966.18	2,621.39	3,813.18	2,519.46

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Pembina River at the mouth							
1931	8.16	7.48	51.66	529.01	119.45	25.94	12.56	2.41	0.45	0.74	5.57	1.18
1932	0.15	3.91	16.11	483.30	215.99	82.81	24.54	7.10	2.14	8.76	9.09	3.07
1933	0.00	0.00	20.46	823.62	644.94	371.96	86.65	31.64	33.61	54.90	27.30	10.87
1934	5.37	5.45	85.94	392.33	178.54	78.74	23.15	1.59	0.12	1.95	1.21	0.10
1935	0.00	0.00	14.40	164.68	74.67	125.85	72.58	27.33	17.33	16.28	5.68	2.48
1936	0.64	0.04	0.00	778.60	498.28	228.55	66.30	24.08	29.43	16.40	8.02	4.00
1937	0.63	0.00	0.00	128.11	87.00	76.18	16.63	14.54	0.47	0.95	0.41	0.19
1938	0.00	0.00	205.02	115.42	91.07	42.57	14.54	0.06	0.00	0.00	0.00	0.00
1939	0.00	0.00	1.28	62.64	20.54	14.79	0.87	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	195.41	52.18	10.36	0.78	7.64	0.02	0.00	0.02	0.00
1941	0.00	0.00	0.00	1,395.35	419.35	230.04	66.87	28.78	186.81	166.36	65.09	34.15
1942	7.33	1.85	116.23	2,635.32	1,170.47	423.95	141.19	163.95	108.81	58.99	41.29	10.95
1943	8.25	6.33	314.82	734.95	394.94	612.17	322.18	215.34	185.62	127.42	77.97	43.37
1944	8.80	3.70	3.79	449.91	239.47	291.52	596.70	854.20	540.51	217.35	349.31	131.25
1945	52.54	57.20	1,239.59	1,255.30	898.31	535.78	312.10	154.99	110.60	78.16	45.64	28.08
1946	12.97	12.31	818.03	770.35	330.36	133.56	76.94	33.86	27.78	41.32	30.03	9.80
1947	1.86	1.22	2.33	835.40	336.85	309.93	116.45	137.76	72.19	69.53	38.43	23.13
1948	19.88	7.01	7.40	1,666.23	1,094.71	465.19	376.04	222.93	125.22	76.65	53.94	23.36
1949	14.21	12.41	15.56	2,928.84	1,661.59	693.76	284.39	148.59	74.54	72.80	51.75	21.27
1950	9.79	7.77	11.11	2,301.59	4,142.44	1,366.22	650.44	423.63	237.30	170.00	98.72	43.57
1951	35.90	27.82	110.41	1,137.32	579.12	292.71	128.03	80.19	56.95	40.38	23.15	12.72
1952	4.53	3.59	13.88	416.42	226.09	130.95	75.51	22.62	6.41	7.53	8.40	1.55
1953	1.52	0.71	6.53	99.22	106.04	208.38	99.78	79.48	20.17	17.02	16.19	6.89
1954	2.71	3.13	28.81	195.05	139.46	556.97	710.65	417.36	231.83	163.48	89.59	33.32
1955	13.81	20.44	18.23	1,993.96	924.74	658.74	417.11	117.13	64.00	108.29	36.64	22.50
1956	17.71	19.56	23.06	2,006.83	2,950.39	997.29	426.59	200.07	178.68	119.58	104.73	35.46
1957	23.33	11.65	230.48	357.84	272.27	178.16	84.38	103.07	182.47	187.21	102.11	70.93
1958	42.38	28.62	51.56	252.53	148.50	52.83	70.54	9.87	6.42	14.94	10.67	5.82
1959	6.66	6.00	17.12	783.90	233.06	168.00	49.80	22.50	19.71	45.07	71.53	111.45
1960	75.08	46.86	29.82	2,402.12	1,392.64	509.08	214.94	100.62	49.22	33.90	29.14	9.99
1961	9.34	5.51	88.91	299.01	199.19	61.30	16.66	5.33	5.95	7.28	10.98	7.51
1962	5.09	2.99	3.79	1,038.72	639.17	510.50	184.11	116.70	125.90	94.00	66.27	27.68
1963	32.55	16.52	108.02	232.33	226.07	483.91	228.97	156.82	99.73	66.75	33.52	24.94
1964	9.90	8.34	4.76	563.95	445.98	452.89	131.05	65.42	93.84	105.10	51.43	22.39
1965	17.34	11.83	19.55	1,467.14	1,047.66	575.51	218.92	95.69	127.51	131.63	74.22	61.03

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Pembina River at the mouth—Continued							
1966	36.44	25.84	513.77	2,138.10	1,429.62	438.62	344.80	142.04	57.77	51.69	51.39	21.04
1967	17.45	17.32	124.98	1,374.08	1,591.47	330.42	117.35	43.13	24.89	27.40	33.34	33.99
1968	19.78	16.40	214.22	281.65	266.77	121.99	90.28	166.87	366.18	407.72	218.31	81.80
1969	31.03	26.99	42.68	3,898.80	1,951.93	666.65	395.59	191.75	126.43	85.94	74.49	50.65
1970	35.50	33.22	28.55	2,231.21	2,945.66	1,634.95	844.90	342.50	194.44	145.83	116.76	59.33
1971	34.90	20.81	22.90	3,130.83	1,667.00	737.15	398.31	278.88	164.77	115.32	103.90	45.45
1972	24.49	21.32	542.83	1,653.75	978.00	380.50	220.32	190.30	123.54	95.33	47.06	18.06
1973	13.07	13.91	192.48	141.87	100.14	66.08	77.17	68.21	67.27	72.73	49.47	33.72
1974	23.18	15.91	44.63	3,752.94	5,394.03	1,892.33	548.89	156.69	104.16	80.00	64.68	40.66
1975	27.28	20.44	19.82	454.32	1,328.23	686.82	279.52	114.45	60.73	50.65	31.41	15.36
1976	25.37	28.66	45.88	3,198.21	1,492.37	608.23	263.29	94.67	48.70	33.97	22.36	9.30
1977	8.57	8.52	36.96	83.22	96.58	65.12	45.50	13.10	34.52	42.51	34.18	34.53
1978	13.72	25.05	39.04	1,754.12	624.66	209.92	71.36	51.78	52.76	35.50	19.02	9.77
1979	10.20	26.98	59.81	2,709.61	3,912.45	955.79	352.28	96.63	128.03	64.83	43.89	28.16
1980	19.92	17.07	27.16	311.34	92.51	41.48	15.80	43.29	102.60	116.18	84.85	20.20
1981	14.13	74.39	194.11	355.01	202.36	129.13	49.50	36.60	49.80	49.54	36.89	11.56
1982	5.49	3.17	70.02	884.43	773.08	616.36	313.14	156.07	87.61	95.58	33.66	24.57
1983	15.65	7.84	326.28	1,239.18	522.54	305.00	86.72	29.75	23.14	29.64	22.77	3.99
1984	1.76	1.05	34.40	212.09	196.91	166.05	59.52	11.53	13.91	9.74	6.17	3.68
1985	1.22	1.12	714.60	999.47	310.94	174.51	177.84	174.28	103.19	66.90	48.79	21.33
1986	18.70	10.87	807.71	1,285.59	997.37	424.16	254.83	171.33	129.01	59.34	21.32	15.53
1987	17.07	21.19	159.22	2,769.63	957.88	293.83	128.34	66.81	72.39	77.61	41.96	22.25
1988	5.62	3.18	60.26	187.52	77.03	20.08	6.90	3.00	2.36	1.76	4.26	4.79
1989	1.27	0.88	43.64	220.98	121.16	74.15	17.92	7.13	1.61	1.21	5.71	0.97
1990	1.24	1.19	5.97	338.83	146.29	208.18	68.65	12.24	6.00	1.34	2.57	1.01
1991	1.00	1.25	12.45	77.95	108.72	206.03	284.84	121.77	30.57	14.96	13.73	10.74
1992	10.19	10.05	540.08	2,650.51	953.06	259.25	119.90	41.41	35.57	11.69	15.40	9.20
1993	6.55	5.01	90.57	681.29	399.28	284.83	994.77	1,410.29	740.99	372.41	213.88	120.49
1994	54.15	42.25	513.14	1,361.31	592.99	249.58	197.68	148.49	205.36	749.78	552.00	296.59
1995	137.28	75.76	1,564.29	4,869.37	3,358.48	1,342.14	543.79	912.73	379.14	182.76	91.52	53.08
1996	27.91	16.54	109.62	3,901.80	3,278.30	1,019.44	524.38	341.42	212.25	154.82	89.95	48.06
1997	46.26	43.44	84.28	5,352.05	5,761.98	1,051.34	2,209.14	474.39	194.83	149.60	83.61	62.93
1998	38.96	40.31	846.43	5,541.05	1,709.97	684.64	531.74	304.77	166.92	107.52	66.59	55.91
1999	29.34	28.83	415.19	1,589.16	1,829.06	1,976.80	819.96	258.64	139.36	83.20	53.72	38.23
2000	33.94	36.41	176.40	155.86	121.18	119.34	64.02	64.81	51.51	32.98	33.46	22.35
2001	20.03	15.51	57.46	3,594.15	1,924.17	708.74	347.97	263.40	129.32	56.20	41.06	32.93

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
					Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Emerson, Manitoba							
1931	176.00	199.60	959.60	3,385.00	881.00	660.10	356.40	157.50	81.00	84.80	220.50	187.00
1932	166.50	138.00	1,364.00	7,809.00	1,925.00	586.00	256.10	62.50	40.00	46.10	121.40	89.00
1933	54.00	49.40	861.90	5,839.00	1,548.00	1,026.00	253.40	73.10	45.90	48.80	84.80	46.30
1934	54.30	32.60	491.80	2,178.00	662.60	196.10	138.20	46.60	23.80	47.10	77.20	41.70
1935	14.10	27.00	749.00	3,325.00	1,173.00	438.20	1,082.00	514.10	268.70	116.80	77.80	59.20
1936	56.80	54.00	58.20	6,739.00	2,602.00	583.30	120.60	79.30	66.80	28.60	23.80	33.40
1937	7.05	1.21	2.25	2,025.00	2,886.00	1,059.00	830.40	1,565.00	818.30	401.70	280.80	72.50
1938	53.30	75.90	1,453.00	1,282.00	4,870.16	2,584.06	855.64	218.10	193.75	199.80	207.20	181.90
1939	197.60	255.40	259.90	3,718.00	1,193.16	658.76	566.64	188.10	230.65	357.00	384.50	278.00
1940	135.30	148.20	224.30	5,085.10	2,232.26	1,053.06	358.04	255.70	187.15	236.10	392.40	296.00
1941	312.05	348.05	361.85	13,650.15	3,120.31	5,284.11	1,426.89	756.05	1,853.40	3,065.05	1,389.05	887.55
1942	537.25	612.55	1,998.22	16,578.68	9,868.53	4,909.16	1,244.40	1,138.02	3,029.90	1,672.19	1,088.66	770.96
1943	804.67	771.54	1,508.17	24,369.58	6,486.22	12,327.28	6,468.18	2,625.65	1,828.43	1,527.87	1,464.29	941.50
1944	689.84	743.57	834.12	4,502.25	4,005.19	7,569.24	6,866.42	6,038.99	5,952.75	2,925.94	4,074.82	2,754.17
1945	1,301.14	1,404.06	9,600.80	20,023.31	8,682.09	4,053.96	2,197.71	1,319.26	1,811.31	1,992.59	1,419.03	1,004.42
1946	948.40	817.24	6,413.06	14,401.44	4,155.84	2,322.24	2,561.51	1,281.27	1,242.12	1,750.38	1,646.68	1,177.61
1947	1,039.56	903.45	1,167.60	18,976.44	11,634.28	11,854.72	5,327.47	2,037.52	1,586.59	1,926.78	1,705.08	1,352.57
1948	1,097.45	856.84	1,230.51	25,462.66	19,454.55	3,906.92	3,191.01	1,684.02	1,056.49	712.40	820.80	565.69
1949	464.46	454.58	809.12	14,885.43	5,175.34	6,103.53	3,706.71	3,331.25	1,830.74	1,267.91	1,414.47	1,081.55
1950	842.27	751.86	1,241.49	28,571.93	72,970.59	20,961.36	9,731.82	3,601.83	2,665.74	3,440.25	2,061.77	2,161.00
1951	2,067.99	1,810.57	2,466.44	21,185.61	10,195.31	4,852.75	2,745.74	1,448.77	1,969.77	1,620.14	1,471.59	1,939.78
1952	1,783.23	1,899.85	2,017.74	20,010.74	6,863.52	3,098.83	5,834.07	2,310.41	1,439.34	960.44	937.51	748.94
1953	616.90	642.00	1,602.13	4,268.02	3,301.57	9,148.93	5,504.46	2,202.04	1,417.55	1,052.67	1,022.12	877.99
1954	721.13	834.96	1,460.74	5,850.90	4,332.15	4,681.52	3,047.47	1,560.53	972.80	979.84	879.41	591.16
1955	554.12	616.80	738.48	11,135.00	3,396.57	4,364.56	2,642.81	1,820.43	1,012.88	1,037.03	637.05	420.51
1956	393.63	474.74	657.99	13,319.83	14,589.74	5,500.63	4,184.30	1,278.75	2,056.15	722.31	1,456.00	612.49
1957	386.36	353.77	1,559.66	6,167.86	4,507.88	4,008.12	9,140.67	2,945.41	6,446.17	3,916.22	3,430.63	1,650.57
1958	1,267.58	1,249.23	1,877.27	3,383.24	1,722.86	1,571.65	4,137.19	1,046.03	585.96	507.75	599.40	312.61
1959	242.81	318.22	789.75	6,207.23	2,215.69	2,928.71	2,147.47	837.10	620.90	644.19	619.78	646.56
1960	607.71	522.23	740.03	16,915.33	5,231.07	3,048.43	2,267.67	680.69	711.77	404.99	611.72	342.58
1961	311.38	234.38	1,829.17	2,771.63	2,519.13	1,132.79	461.60	373.23	331.63	637.60	418.38	259.89
1962	174.18	214.53	374.25	15,676.78	12,894.41	25,308.92	15,749.98	5,991.13	3,273.80	2,550.28	2,227.00	1,575.18
1963	1,119.27	1,013.06	1,633.75	7,941.50	3,852.85	7,484.86	3,115.31	1,447.57	1,367.24	1,472.83	1,000.13	633.29
1964	745.55	758.18	785.90	8,833.13	5,500.49	9,584.63	3,648.72	1,555.35	877.70	1,749.96	1,385.39	832.88
1965	855.69	1,043.39	912.06	25,623.07	18,535.62	10,273.91	5,391.83	2,523.61	2,273.80	4,611.48	3,308.83	2,768.13

Supplement 3. Estimated naturalized monthly streamflow for 35 sites in the Red River of the North Basin, 1931-2001.—Continued

Year	January	February	March	April	May	June	July	August	September	October	November	December
Estimated naturalized streamflow, in cubic feet per second, for the Red River of the North at Emerson, Manitoba—Continued												
1966	1,773.52	1,533.95	7,163.11	45,689.65	19,971.04	6,514.64	4,833.31	3,930.35	3,020.54	2,144.63	2,193.92	1,800.90
1967	1,581.93	1,398.49	2,599.13	25,566.34	19,922.81	6,897.03	3,497.28	1,625.31	1,074.98	977.34	973.59	617.51
1968	441.18	477.64	1,739.37	5,057.95	2,612.23	6,074.39	6,974.84	3,454.34	3,183.05	2,251.68	2,111.51	1,952.70
1969	1,702.93	1,456.43	2,040.74	31,227.99	26,354.69	6,106.62	4,097.04	2,233.44	1,805.59	2,194.62	2,064.33	1,601.44
1970	1,442.67	1,349.26	1,597.02	19,579.27	23,017.53	16,991.61	5,655.00	1,808.47	1,581.30	1,387.38	1,721.34	1,068.20
1971	1,029.06	1,017.13	2,212.71	15,065.43	5,622.60	3,481.03	3,046.93	1,617.78	1,681.41	4,135.92	5,198.00	2,567.97
1972	1,832.88	1,598.75	7,896.99	23,230.83	11,049.13	6,272.75	2,686.46	2,609.26	2,184.06	1,898.84	1,791.27	1,136.86
1973	1,112.49	1,114.94	5,988.16	2,920.83	1,940.14	1,552.35	876.63	954.72	2,748.69	4,278.51	2,722.02	2,204.61
1974	1,751.71	1,597.76	1,890.93	19,857.81	29,841.02	10,999.67	3,921.89	3,487.33	2,203.58	2,030.04	2,162.06	1,355.93
1975	1,331.03	1,454.45	1,845.44	13,760.18	27,271.20	7,296.11	27,970.60	4,833.93	2,677.78	2,541.79	2,478.12	1,524.82
1976	1,494.86	1,608.00	3,047.92	17,679.50	4,522.39	2,641.00	1,743.34	1,202.70	798.44	462.87	364.78	236.09
1977	275.58	258.40	639.24	2,375.35	1,351.73	1,077.91	790.58	356.08	558.28	1,530.18	1,257.35	1,313.22
1978	1,203.66	928.88	2,563.44	37,212.93	9,573.97	3,573.36	3,733.27	1,849.82	1,240.75	898.20	894.00	646.92
1979	532.43	578.85	817.98	28,214.42	48,359.05	7,851.36	6,313.27	3,353.89	2,240.83	1,721.81	1,914.59	1,579.56
1980	1,380.49	1,354.46	1,624.11	10,760.62	2,569.90	1,776.72	968.92	623.06	883.23	626.82	682.74	378.66
1981	334.72	471.20	1,822.36	2,077.76	1,696.57	1,757.83	2,828.59	1,634.22	1,929.43	2,383.56	1,921.69	1,172.66
1982	1,174.01	1,090.21	1,913.06	22,640.52	8,877.37	4,351.93	4,205.35	2,642.85	1,530.10	4,439.86	2,404.73	1,882.38
1983	1,532.02	1,379.75	9,773.71	12,696.79	4,089.88	4,949.51	6,603.91	2,763.79	2,961.28	2,178.33	2,090.97	1,667.91
1984	1,383.28	1,331.62	3,771.12	19,222.93	4,115.59	12,019.45	3,460.68	1,573.72	1,047.04	1,943.31	1,869.73	1,443.73
1985	1,233.27	1,181.22	7,306.51	7,418.51	9,099.57	8,036.43	7,450.87	7,371.50	5,992.10	4,715.51	2,929.03	2,074.93
1986	1,922.13	1,714.99	7,241.68	28,065.56	21,848.13	6,690.26	4,490.07	2,773.12	3,171.96	3,449.94	2,101.37	1,867.79
1987	1,775.43	1,595.55	6,792.92	23,486.03	4,440.04	3,771.35	3,230.75	2,850.26	1,300.78	982.30	954.06	800.85
1988	522.65	551.63	2,523.63	7,025.45	1,690.70	1,299.24	634.90	355.38	412.05	479.39	414.00	299.31
1989	290.70	344.52	809.92	22,362.58	6,656.90	2,796.34	1,321.12	525.20	1,113.04	510.36	418.99	250.56
1990	243.96	292.96	1,269.56	3,810.55	1,848.89	2,393.02	1,354.65	557.28	411.24	400.61	395.61	291.33
1991	229.11	392.03	753.43	2,367.20	3,184.50	2,574.68	4,136.27	1,342.21	1,605.46	954.34	954.20	626.02
1992	609.52	632.40	7,425.18	10,366.00	4,687.87	2,702.86	3,116.61	1,286.79	2,701.47	1,334.64	1,004.42	1,004.97
1993	905.07	1,027.88	1,496.02	15,546.52	4,028.41	4,555.34	11,840.29	26,338.74	9,139.35	3,914.43	2,849.44	2,379.06
1994	1,520.31	1,499.36	7,130.81	17,673.72	7,160.02	5,741.36	13,457.00	4,344.10	4,700.81	6,029.73	5,201.74	2,945.10
1995	1,954.89	1,757.77	17,859.17	33,312.38	13,408.78	5,542.16	8,557.48	3,826.60	2,778.50	3,641.08	3,259.39	2,290.84
1996	1,891.82	1,617.92	3,823.08	29,676.37	41,120.55	14,885.89	4,868.37	3,240.18	1,923.39	2,026.91	2,464.15	2,143.32
1997	1,988.59	1,857.81	2,249.86	51,407.14	53,510.41	10,468.02	19,016.12	4,448.27	3,055.76	4,548.97	3,970.88	3,270.25
1998	2,031.35	2,518.38	20,755.61	19,951.70	14,642.09	10,668.87	16,528.75	3,636.47	2,483.84	3,754.17	3,335.33	4,074.18
1999	2,175.64	1,995.25	7,352.51	45,988.52	21,816.74	14,626.94	9,570.58	6,195.65	11,368.47	4,811.47	3,874.71	3,068.57
2000	2,106.32	1,821.61	8,750.57	7,184.36	4,496.58	11,706.55	16,491.60	3,742.14	3,595.76	2,788.86	13,770.11	3,887.57
2001	2,568.38	2,347.60	3,728.09	40,225.23	30,927.55	11,690.42	7,171.46	9,236.97	2,861.73	2,458.96	3,884.01	1,990.64