UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

REPORT OF THE ANNUAL YIELD OF THE ARKANSAS RIVER BASIN FOR THE ARKANSAS RIVER BASIN COMPACT ARKANSAS--OKLAHOMA

1982 WATER YEAR

By T. E. Lamb and Martha A. Moore

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Prepared in cooperation with the

ARKANSAS SOIL AND WATER CONSERVATION COMMISSION

Little Rock, Arkansas
1983

UNITED STATES DEPARTMENT OF THE INTERIOR

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ABSTRACT

The computed annual yield and deficiency of the subbasins as defined in the Arkansas River Compact, Arkansas-Oklahoma, are given in tables. Actual runoff from the subbasins and depletion caused by major reservoirs in the compact area are also given in tabular form. Monthly, maximum, minimum, and mean discharges are shown for the 14 streamflow stations used in computing annual yield.

INTRODUCTION

The computed annual yields for subbasins in the Arkansas River basin as defined in the Arkansas River Basin Compact, Arkansas-Oklahoma, 1972, are presented in this report. The area included in the Compact is shown in figure 1.

This report was prepared by the Water Resources Division of the U.S. Geological Survey in cooperation with the Arkansas Soil and Water Conservation Commission. Streamflow data were furnished by the Arkansas and Oklahoma Districts of the Water Resources Division, Geological Survey, and the U.S. Army Corps of Engineers, Tulsa District. The Tulsa District also provided data from the Webbers Falls, Tenkiller Ferry, Robert S. Kerr, and Wister Reservoirs.

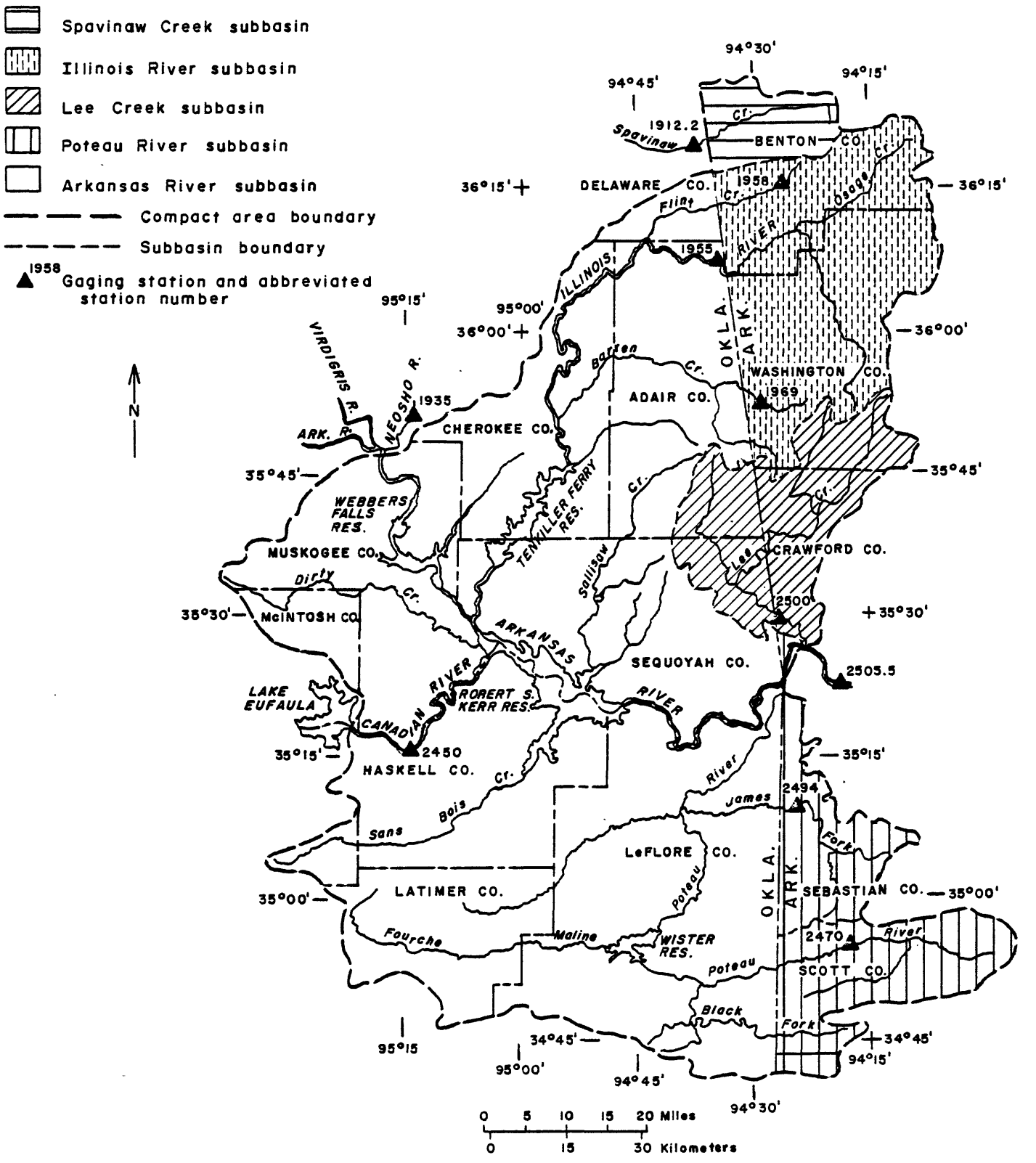

Figure 1.--Arkansas-Oklahoma Arkansas River Compact area and subbasins.

DEFINITION OF TERMS

The following terms used in this report are taken from Article II of the Arkansas River Basin Compact, Arkansas-Oklahoma, 1972.

The term "Arkansas River Basin" means all of the drainage basin of the the Arkansas River and its tributaries from a point immediately downstream from the confluence of the Neosho River with the Arkansas River (fig. 1) to a point immediately downstream from the confluence of Lee Creek with the Arkansas River, together with the drainage basin of Spavinaw Creek in Arkansas (top of fig. 1), but excludes that part of the drainage basin of the Canadian River upstream from Lake Eufaula Dam.

The term "Spavinaw Creek Subbasin" means the drainage area of Spavinaw Creek in the State of Arkansas.

The term "Illinois River Subbasin" means the drainage area of Illinois River in the State of Arkansas.

The term "Lee Creek Subbasin" means the drainage area of Lee Creek in the State of Arkansas and in the State of Oklahoma.

The term "Poteau River Subbasin" means the drainage area of Poteau River in the State of Arkansas.

The term "Arkansas River Subbasin" means all areas of the Arkansas River Basin except the four subbasins described previously.

The term "water year" means a 12-month period beginning on October 1 and ending September 30.

The term "annual yield" means the computed annual gross runoff from any specified subbasin. The runoff would have passed any certain point on a stream and would have originated within any specified area under natural conditions, without any manmade depletion or accretion during the water year.

Other hydrologic terms used in this report are defined as follows:

Acre-foot (acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or 325,851 gallons.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Cubic foot per second (ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a specified point during 1 second, and is equivalent to 7.48 gallons per second or 448.8 gallons per minute.

Discharge is the volume of water that passes a given point within a given period of time.

Instantaneous discharge is the discharge at a particular instant of time.

Mean discharge is the arithmetic average of individual daily mean discharges during a specific period.

Drainage area of a stream at a specified point on the stream is that area enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream upstream from the specified point. Figures of drainage area given herein include all closed basins, or non-contributing areas within the area, unless otherwise noted.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained.

Stage-discharge relation is the relation between gage height and the amount of water flowing past the gage in a channel.

The following factors may be used to convert the English units published herein to selected units of the International System (SI):

Multiply English units	By	To obtain SI units
	Length	
inch (in)	25.4	millimeter (mm)
foot (ft)	.3048	meter (m)
mile (mi)	1.609	kilometer (km)
	Area	
acre	4047	square meter (m^2)
	.004047	square kilometer (km^2)
square mile (mi^2)	2.590	square kilometer (km^2)
	Volume	
cubic foot (ft^3)	.02832	cubic meter (m^3)
acre-foot (acre-ft)	1233	cubic meter (m^3)
	1.233×10^{-6}	cubic kilometer (km^3)
	Flow	
cubic foot per second (ft^3/s)	28.32	liter per second (L/s)
	.02832	cubic meter per second (m^3/s)

COMPUTATION OF ANNUAL YIELD

The annual yield and deficiency (table 1) for each subbasin were computed as described in Appendix I to the Arkansas River Basin Compact Arkansas-Oklahoma, 1972, supplement No. 1. Actual runoff for the subbasins (table 2) was computed as described in the Compact except for the stations Arkansas River at Muskogee, which has been discontinued, and Arkansas River at Van Buren, which has been moved 7.9 miles (12.7 km) downstream.

Annual depletion caused by major reservoirs (table 3) was computed for the four major reservoirs in the basin as described in Appendix I to the Compact. Depletion caused by small reservoirs and minor diversion for municipal

Table 1.--Annual yield and deficiency for the subbasins as defined in the Arkansas-Oklahoma Arkansas River Basin Compact

[Average annual flow in cubic feet per second for 1982 water year]

Subbasin	(1) Actual runoff from the subbasins	(2) Total depletions (+) or accretions (-)	(3) Annual yield	(4) Percent depletion allowed	(5) Minimum required flow	(6) Deficiency
Spavinaw Creek	82	0	82	50	41	0
Illinois River	545	0	545	60	218	0
Lee Creek	506	0	506	100	0	0
Poteau River	512	0	512	60	205	0
Arkansas River	3,466	+145	3,611	60	1,444	0

Table 2.--Actual runoff from the subbasins

[Mean discharge in cubic feet per second for the 1982 water year]

Month	Spavinaw Creek D.A.=135 mi^2 [a]	Illinois River D.A.=744 mi^2 [b]	Lee Creek D.A.=464 mi^2 [c]	Poteau River D.A.=536 mi^2 [d]	Arkansas River D.A.=4,553 mi^2 [e]
October	84	290	65	663	5,264
November	120	508	292	338	1,911
December	61	204	139	166	993
January	115	808	789	825	1,725
February	204	1,090	993	1,466	10,871
March	97	524	761	660	3,191
April	65	293	320	133	-286[f]
May	90	552	1,276	1,362	1,990
June	84	1,787	1,406	478	14,109
July	32	277	60	57	3,586
August	36	180	19	36	-120[f]
September	12	105	1	15	-858[f]
1982 Water Year	82	545	506	512	3,466
1982 Water Year (acre-ft)	59,370	394,600	366,300	370,700	2,509,000

a includes 31 mi^2 ungaged.

b includes 63 mi^2 ungaged.

c includes 38 mi^2 ungaged.

d includes 186 mi^2 ungaged.

e Computed by subtracting drainage area at Arkansas River at Muskogee, Canadian River near Whitefield, Illinois River Subbasin, Lee Creek Subbasin, and Poteau River Subbasin from drainage area at Arkansas River at Dam No. 13, near Van Buren, Ark.

f Negative discharge caused by storage in reservoirs, seepage into groundwater, and evaporation from reservoirs.

Table 3.--Annual depletion caused by major reservoirs

[1982 Water Year]

Reservoir	Yearend contents (acre-ft)	Change in contents in water year (acre-ft)	Precipitation on reservoir surface (in)[a]	Evaporation from reservoir (in)[b]	Depletion (acre-ft)	Depletion (Average annual ft^3/s)
Webbers Falls-----	166,640	+1,490	39.81	44.13	+14,070	+19.4
Tenkiller Ferry---	561,700	+4,100	55.06	44.16	+15,800	+21.8
Robert S. Kerr----	480,470	-10,630	30.36	51.15	+77,970	+108
Wister----------	58,710	-3,650	51.03	33.97	-2,850	-3.9

a From U.S. Corps of Engineers, Tulsa District.
b Adjusted for pan coefficient of 0.70 (from Wisler and Brater, 1949).

and agricultural use are insignificant at this time and data are not included in tables 1 and 3.

A compilation of the areas of lakes and ponds in the Poteau River, Lee Creek, Spavinaw Creek, and Illinois River Subbasins was conducted by the Arkansas Soil and Water Conservation Commission. This information was used to partially evaluate depletions caused by small reservoirs. Analysis showed that their present impact on the depletion in any Subbasin is less than 1 percent, and further consideration is not necessary at this time.

Streamflow data used in the computations are given in streamflow records (p. 11 to 25). The station description under "Remarks" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the actual discharge, "good" is within 10 percent, and "fair" is within 15 percent. "Poor" means that daily discharges have been less than "fair" accuracy.

REFERENCES

Arkansas River Compact Committee, March 1972, Arkansas River Basin Compact Arkansas-Oklahoma, 1972, with Supplemental Interpretive Comments, Supplement No. 1: Austin, Tex., 31 p.

Wisler, C. D., and Brater, E. F., 1949, Hydrology: New York, N.Y., John Wiley & Sons, Inc., 150 p.

STREAMFLOW RECORDS

07165570 Arkansas River near Haskell, Okla.

LOCATION.--Lat 35°49'23", long 95°38'39", in NE 1/4 sec.31, T.16 N., R.16 E., Muskogee County, near right bank on downstream side of bridge on State Highway 104, 2.0 mi (3.2 km) east of Haskell, 23.5 mi (37.8 km) upstream from Verdigris River, and at mile 483.7 (778.3 km).

DRAINAGE AREA.--75,473 mi^2 (195,475 km^2), of which 12,541 mi^2 (32,481 km^2) probably is noncontributing.

AVERAGE DISCHARGE.--10 years, 8,855 ft^3/s (250.8 m^3/s).

EXTREMES.--June 1972 to current year: Maximum discharge, 108,000 ft^3/s (3,060 m^3/s) Nov. 6, 1974; minimum daily, 193 ft^3/s (5.47 m^3/s) Feb. 26, 1977.

REMARKS.--Records good. Flow regulated by Keystone Lake, 55.1 mi (88.7 km) upstream.

COOPERATION.--Gage-height record and discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	58,606	7,430	365	1,891	116,200
November	382,320	17,300	3,070	12,740	758,300
December	159,620	7,710	2,240	5,149	316,600
January	88,660	9,960	1,090	2,860	175,900
February	162,710	13,300	1,730	5,811	322,700
March	270,960	13,300	2,990	8,741	537,400
April	105,320	8,410	910	3,511	208,900
May	835,057	62,100	797	26,940	1,656,000
June	959,100	45,300	27,600	31,970	1,902,000
July	550,440	34,800	6,870	17,760	1,092,000
August	180,912	12,900	992	5,836	358,800
September	66,956	7,070	836	2,232	132,800
Water Year 1982	3,820,661	62,100	365	10,470	7,578,000

07176000 Verdigris River near Claremore, Okla.

LOCATION.--Lat 36°18'26", long 95°41'52", in SE 1/4 SW 1/4 sec.10, T.21 N., R.15 E., Rogers County, near left bank on downstream side of bridge on State Highway 20, 2.3 mi (3.7 km) downstream from Caney River, 4.5 mi (7.2 km) west of Claremore, 12.4 mi (20.0 km) upstream from Bird Creek, and at mile 76.0 (122.3 km).

DRAINAGE AREA.--6,534 mi^2 (16,923 km^2).

AVERAGE DISCHARGE.--27 years (water years 1936-62), 3,723 ft^3/s (105.4 m^3/s); 18 years (water years 1965-82), 3,725 ft^3/s (105.5 m^3/s).

EXTREMES.--October 1935 to current year: Maximum discharge, 182,000 ft^3/s (5,150 m^3/s) May 21, 1943; no flow at times in 1936, 1939-40, 1956.

REMARKS.--Records good. Flow regulated since May 1963 by Oologah Lake 14.3 mi (23.0 km) upstream; some regulation by dams in Kansas since 1949 and by Hulah Lake since 1950.

COOPERATION.--Gage-height record and discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	14,660	3,900	2.5	473	29,080
November	102,292	10,300	433	3,410	202,900
December	38,263	3,300	530	1,234	75,890
January	28,621	2,500	501	923	56,770
February	125,770	7,280	710	4,492	249,500
March	139,426	13,000	418	4,498	276,600
April	13,178	831	187	439	26,140
May	180,048	12,300	180	5,808	357,100
June	539,870	21,900	8,370	18,000	1,071,000
July	183,620	21,200	1,820	5,923	364,200
August	49,116	5,800	106	1,584	97,420
September	2,887	360	18	96.2	5,730
Water Year 1982	1,417,751	21,900	2.5	3,884	2,812,000

STREAMFLOW

07177500 Bird Creek near Sperry, Okla.

LOCATION.--Lat 36°16'42", long 95°57'14", in NW 1/4 NW 1/4 sec.29, T.21 N., R.13 E., Tulsa County, on downstream side of county road bridge, 1.5 mi (2.4 km) upstream from Delaware Creek, 2.4 mi (3.9 km) downstream from Hominy Creek, 2.5 mi (4.0 km) southeast of Sperry, and at mile 25.0 (40.2 km).

DRAINAGE AREA.--905 mi^2 (2,344 km^2).

AVERAGE DISCHARGE.--44 years, 479 ft^3/s (13.57 m^3/s).

EXTREMES.--October 1938 to current year: Maximum discharge, 90,000 ft^3/s (2,550 m^3/s) Oct. 3, 1959; no flow at times in 1939, 1954-57, 1964-66, 1970.

REMARKS.--Records fair.

COOPERATION.--Gage-height record and discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	1,960.3	1,670	1.1	63.2	3,890
November	14,047	5,020	26	468	27,860
December	2,077	592	22	67	4,120
January	10,754	6,600	11	347	21,330
February	12,614	2,750	69	451	25,020
March	16,559	5,140	37	534	32,840
April	893.7	81	9.2	29.8	1,770
May	97,705	9,080	20	3,152	193,800
June	31,119	5,240	130	1,037	61,720
July	2,061	196	24	66.5	4,090
August	549.5	59	8.4	17.7	1,090
September	298.3	31	5.8	9.94	592
Water Year 1982	190,637.8	9,080	1.1	522	378,100

07191220 Spavinaw Creek near Sycamore, Okla.

LOCATION.--Lat 36°20'07", long 94°38'24", in NE 1/4 NW 1/4 sec.4, T.21 N., R.25 E., Delaware County, on right bank 1.8 mi (2.9 km) upstream from Cherokee Creek, 4.8 mi (7.7 km) northeast of Row, 6.5 mi (10.5 km) southeast of Sycamore, and at mile 35.0 (56.3 km).

DRAINAGE AREA.--133 mi^2 (344 km^2).

AVERAGE DISCHARGE.--21 years, 103 ft^3/s (2.917 m^3/s).

EXTREMES.--October 1961 to current year: Maximum discharge, 39,800 ft^3/s (1,130 m^3/s) July 27, 1975; minimum, 1.2 ft^3/s (0.034 m^3/s) Aug. 9, 1964.

REMARKS.--Records good.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	2,555	251	13	82.4	5,070
November	3,546	368	51	118	7,030
December	1,855	89	41	59.8	3,680
January	3,492	1,560	38	113	6,930
February	5,617	607	87	201	11,140
March	2,977	223	61	96.0	5,900
April	1,916	87	52	63.9	3,800
May	2,776	258	46	89.5	5,510
June	2,491	110	49	83.0	4,940
July	993	107	17	32.0	1,970
August	1,100	106	14	35.5	2,180
September	340.2	14	9.4	11.3	675
Water Year 1982	29,658.2	1,560	9.4	81.3	58,830

07193500 Neosho River below Fort Gibson Lake, near Fort Gibson, Okla.

LOCATION.--Lat 35°51'15", long 95°13'45", in SE 1/4 NW 1/4 sec.19, T.16 N., R.19 E., Cherokee County, on left bank 1.1 mi (1.8 km) downstream from Fort Gibson Dam, 4.5 mi (7.2 km) north of Fort Gibson, and at mile 6.6 (10.6 km).

DRAINAGE AREA.--12,495 mi^2 (32,362 km^2).

AVERAGE DISCHARGE.--32 years (1950-82), 7,557 ft^3/s (214.0 m^3/s).

EXTREMES.--May 1950 to current year: Maximum discharge, 223,000 ft^3/s (6,320 m^3/s) May 26, 1957; minimum, 12 ft^3/s (0.34 m^3/s) Oct. 10, 1957, Aug. 23, 1964.

REMARKS.--Records fair. Flow completely regulated by Fort Gibson Lake.

COOPERATION.--Gage-height record and discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	97,680	11,400	15	3,151	193,700
November	328,616	18,700	15	10,950	651,800
December	122,294.3	11,300	2.3	3,945	242,600
January	148,731	11,200	15	4,798	295,000
February	458,900	24,000	12,500	16,390	910,200
March	322,270	15,000	15	10,400	639,200
April	142,483	10,200	15	4,749	282,600
May	280,520	21,300	1,550	9,049	556,400
June	777,115	31,600	15	25,900	1,541,000
July	296,890	29,100	1,410	9,577	588,900
August	91,626	8,270	15	2,956	181,700
September	30,957	7,530	15	1,032	61,400
Water Year 1982	3,098,082.3	31,600	2.3	8,488	6,145,000

07194500 Arkansas River near Muskogee, Okla.

LOCATION.--Lat 35°46'10", long 95°17'55", in NW 1/4 sec.21, T.15 N., R.19 E., Muskogee County, at bridge on U.S. Highway 62, 1.7 mi (2.7 km) downstream from Neosho River, 3.5 mi (5.6 km) northeast of Muskogee.

DRAINAGE AREA.--96,674 mi^2 (250,386 km^2) of which 12,541 mi^2 (32,481 km^2) probably is noncontributing.

REMARKS.--Gaging station discontinued Sept. 30, 1970, due to backwater conditions. Streamflow computed by combining flow at station 07165570 Arkansas River near Haskell, station 07176000 Verdigris River near Claremore, station 07177500 Bird Creek near Sperry, station 07193500 Neosho River below Fort Gibson Lake near Fort Gibson, and adjusting the total for the ungaged intervening drainage area.

Monthly and yearly discharge

Month	Mean (ft^3/s)	Runoff in acre-feet
October	5,667	348,500
November	28,230	1,680,000
December	10,480	644,400
January	9,409	578,500
February	27,780	1,543,000
March	24,920	1,532,000
April	8,767	521,700
May	49,360	3,035,000
June	78,370	4,663,000
July	33,420	2,055,000
August	10,420	640,700
September	3,383	201,300
Water Year 1982	24,099	17,450,000

07195500 Illinois River near Watts, Okla.

LOCATION.--Lat 36°07'48", long 94°34'12", in NE 1/4 sec.18, T.19 N., R.26 E., Adair County, near right bank on downstream side of bridge on U.S. Highway 59, 1.5 mi (2.4 km) north of Watts, 4.5 mi (7.2 km) downstream from Cincinnati Creek, and at mile 106.2 (170.9 km).

DRAINAGE AREA.--635 mi^2 (1,645 km^2).

AVERAGE DISCHARGE.--27 years, 561 ft^3/s (15.89 m^3/s).

EXTREMES.--August 1955 to current year: Maximum discharge, 68,000 ft^3/s (1,930 m^3/s) July 25, 1960; minimum, 8.6 ft^3/s (0.24 m^3/s) Oct. 26, 1955, Sept. 19, Oct. 14, 1956.

REMARKS.--Records good. Some regulation at low flow by Lake Francis Dam, 0.8 mi (1.29 km) above station. Since July 2, 1957, small diversion above station for municipal water supply for city of Siloam Springs, Ark.

COOPERATION.--Gage-height record and discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	7,358	983	55	237	14,590
November	12,991	1,440	158	433	25,770
December	5,500	302	121	177	10,910
January	20,138	13,400	121	650	39,940
February	27,723	4,210	405	990	54,990
March	14,147	1,180	262	456	28,060
April	7,158	391	173	239	14,200
May	13,162	2,790	137	425	26,110
June	51,380	19,700	434	1,713	101,900
July	6,705	645	78	216	13,300
August	4,823	396	93	156	9,570
September	3,105	182	80	104	6,160
Water Year 1982	174,190	19,700	55	477	345,500

07195800 Flint Creek at Springtown, Ark.

LOCATION.--Lat 36°15'20", long 94°25'50", in NW 1/4 sec.7, T.18 N., R.32 W., Benton County, on right bank 20 ft (6 m) downstream from State Highway 12, 0.8 mi (1.3 km) southwest of Springtown.

DRAINAGE AREA.--14.2 mi^2 (36.8 km^2).

AVERAGE DISCHARGE.--21 years, 13.3 ft^3/s (0.377 m^3/s).

EXTREMES.--June 1961 to current year: Maximum discharge, 6,730 ft^3/s (191 m^3/s) Aug. 14, 1961; no flow Aug. 3, Sept. 16, 1980.

REMARKS.--Records fair. Some diversion for irrigation above gage.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	409.5	61	2.2	13.2	812
November	407.5	45	4.6	13.6	808
December	203.0	16	3.9	6.55	403
January	475.2	161	4.2	15.3	943
February	477.7	66	7.5	17.1	948
March	265.0	17	6.0	8.55	526
April	148.6	5.9	4.1	4.95	295
May	209.3	24	3.4	6.75	415
June	229.5	25	4.0	7.65	455
July	298.2	135	2.0	9.62	591
August	186.4	31	2.4	6.01	370
September	88.5	3.5	2.5	2.95	176
Water Year 1982	3,398.4	161	2.0	9.31	6,740

07196900 Baron Fork at Dutch Mills, Ark.

LOCATION.--Lat 35°52'48", long 94°29'11", on line between secs.21 and 22, T.14 N., R.33 W., Washington County, near right bank on downstream side of bridge on State Highway 59 at Dutch Mills, 2.2 mi (3.5 km) downstream from Fly Creek, and 2.9 mi (4.7 km) upstream from Arkansas-Oklahoma State line.

DRAINAGE AREA.--46.0 mi^2 (119 km^2).

AVERAGE DISCHARGE.--24 years, 37.3 ft^3/s (1.056 m^3/s).

EXTREMES.--April 1958 to current year: Maximum discharge, 17,100 ft^3/s (484 m^3/s) July 13, 1972; no flow at times in 1963, 1967, 1980, 1981.

REMARKS.--Records good.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	353.88	87	.52	11.4	702
November	788.5	170	9.0	26.3	1,560
December	234.1	22	4.5	7.55	464
January	2,008.2	1,360	4.5	64.8	3,980
February	1,432	163	19	51.1	2,840
March	959	190	13	30.9	1,900
April	665	58	12	22.2	1,320
May	1,706.3	364	4.5	55.0	3,380
June	2,448	423	12	81.6	4,860
July	561.5	225	2.7	18.1	1,110
August	171.2	43	1.0	5.52	340
September	21.60	1.2	.35	.72	43
Water Year 1982	11,349.28	1,360	.35	31.1	22,510

07245000 Canadian River near Whitefield, Okla.

LOCATION.--Lat 35°15'45", long 95°14'19", in SE 1/4 SE 1/4 sec.12, T.9 N., R.19 E., Haskell County, near right bank on downstream side of bridge on State Highway 2, 0.8 mi (1.3 km) north of Whitefield, 5.5 mi (8.8 km) upstream from Taleka (Snake) Creek, 8.2 mi (13.2 km) downstream from Eufaula Dam, and at mile 18.8 (30.2 km).

DRAINAGE AREA.--47,576 mi^2 (123,222 km^2), of which 9,700 mi^2 (25,123 km^2) is probably noncontributing.

AVERAGE DISCHARGE.--25 years (water years 1939-63), 6,005 ft^3/s (170.1 m^3/s); 15 years (water years 1968-82), 5,063 ft^3/s (143.4 m^3/s).

EXTREMES.--July 1938 to current year: Maximum discharge, 281,000 ft^3/s (7,960 m^3/s) May 10, 1943; minimum daily, 0.4 ft^3/s (0.011 m^3/s) Oct. 8, 1956.

REMARKS.--Records fair. Prior to February 1964, occasional slight regulation by Conchas Lake in New Mexico and except for 54 mi^2 (140 km^2) of intervening area, completely regulated thereafter by Eufaula Lake.

COOPERATION.--Gage-height record and discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	141,387	13,900	79	4,561	280,400
November	290,740	14,300	1,270	9,691	576,700
December	127,359	9,840	152	4,108	252,600
January	80,091	7,300	127	2,584	158,900
February	231,570	11,400	1,410	8,270	459,300
March	167,218	11,000	174	5,394	331,700
April	68,183	5,690	107	2,273	135,200
May	402,354	40,300	96	12,980	798,100
June	1,066,600	43,900	15,700	35,550	2,116,000
July	323,170	15,600	7,510	10,420	641,000
August	171,880	11,100	141	5,545	340,900
September	36,169	4,230	73	1,206	71,740
Water Year 1982	23,106,721	43,900	73	8,512	6,162,000

07247000 Poteau River at Cauthron, Ark.

LOCATION.--Lat 34°55'08", long 94°17'55", in NW 1/4 SW 1/4 sec.16, T.3 N., R.31 W., Scott County, on right bank at downstream side of highway bridge at Cauthron, 2.9 mi (4.7 km) downstream from Cross Creek, 7.8 mi (12.6 km) downstream from Jones Creek, and at mile 109.0 (175.4 km).

DRAINAGE AREA.--203 mi^2 (526 km^2).

AVERAGE DISCHARGE.--43 years, 213 ft^3/s (6.032 m^3/s).

EXTREMES.--February 1939 to current year: Maximum discharge, 32,200 ft^3/s (912 m^3/s) May 20, 1960; no flow at times in most years.

REMARKS.--Records fair. As of September 1973, flow from 74.8 mi^2 (194 km^2) above this station is controlled by 12 floodwater-detention reservoirs with a total combined capacity of 32,660 acre-ft (40.3 hm^3) below the flood spillway crests, of which 29,546 acre-ft (36.4 hm^3) is flood-detention capacity, 2,100 acre-ft (2.58 hm^3) is water-supply storage, and 1,014 acre-ft (1.25 hm^3) is sediment-storage capacity.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	5,204.17	1,640	0.78	168	10,320
November	2,993	568	12	99.8	5,940
December	1,359	234	15	43.8	2,700
January	9,833	5,480	10	317	19,500
February	17,271	1,470	183	617	34,260
March	8,856	1,460	51	286	17,570
April	1,643	212	24	54.8	3,260
May	11,100	1,780	14	358	22,020
June	5,872	590	28	196	11,650
July	454.3	70	1.7	14.7	901
August	369.4	45	1.4	11.9	733
September	74.9	4.9	1.7	2.50	149
Water Year 1982	65,029.77	5,480	.78	178	129,000

07249400 James Fork near Hackett, Ark.

LOCATION.--Lat 35°09'45", long 94°24'25", in NW 1/4 NW 1/4 sec.34, T.6 N., R.32 W., Sebastian County, near left bank on downstream side of bridge on State Highway 45, 1.7 mi (2.7 km) south of Hackett, 2.0 mi (3.2 km) downstream from Elder Branch, 2.0 mi (3.2 km) upstream from small tributary, and 3.6 mi (5.8 km) upstream from Arkansas-Oklahoma State line.

DRAINAGE AREA.--147 mi^2 (381 km^2).

AVERAGE DISCHARGE.--24 years, 129 ft^3/s (3.653 m^3/s).

EXTREMES.--April 1958 to current year: Maximum discharge, 30,000 ft^3/s (850 m^3/s) May 14, 1968; no flow at times.

REMARKS.-- Records good.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	8,940.7	5,200	2.2	288	17,730
November	3,859	952	34	129	7,650
December	2,130	405	19	68.7	4,220
January	6,846	3,960	18	221	13,580
February	9,006	963	98	322	17,860
March	4,143	584	38	134	8,220
April	941	74	22	31.4	1,870
May	17,881	7,400	15	577	35,470
June	3,286	372	26	110	6,520
July	766	164	11	24.7	1,520
August	350.8	51	5.0	11.3	696
September	256.1	14	2.8	8.54	508
Water Year 1982	58,405.6	7,400	2.2	160	115,800

07250000 Lee Creek near Van Buren, Ark.

LOCATION.--Lat 35°29'40", long 94°26'58", in SE 1/4 sec.21, T.12 N., R.27 E., Indian Meridian, Sequoyah County, Okla., on right bank 300 ft (91 m) west of Arkansas-Oklahoma State line, 3.2 mi (5.1 km) downstream from Webbers Creek, 6.8 mi (10.9 km) northwest of Van Buren, and at mile 7.8 (12.6 km).

DRAINAGE AREA.--426 mi^2 (1,103 km^2).

AVERAGE DISCHARGE.--38 years (1930-36, 1950-82), 485 ft^3/s (13.74 m^3/s).

EXTREMES.--September 1930 to June 1937, October 1950 to current year: Maximum discharge, 80,600 ft^3/s (2,280 m^3/s) May 6, 1960; no flow at times.

REMARKS.--Records good.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	1,865.00	280	.28	60.2	3,700
November	8,073	1,470	52	269	16,010
December	3,969	376	63	128	7,870
January	22,442	14,200	37	724	44,510
February	25,494	4,270	320	911	50,570
March	21,647	3,090	248	698	42,940
April	8,864	627	165	295	17,580
May	36,377	12,000	73	1,173	72,150
June	38,761	7,480	181	1,292	76,880
July	1,645.1	156	6.8	53.1	3,260
August	460.5	82	2.1	14.9	913
September	21.54	2.0	.09	.72	43
Water Year 1982	169,619.14	14,200	.09	465	336,400

07250550 Arkansas River at Dam No. 13, near Van Buren, Ark.

LOCATION.--Lat 35°20'56", long 94°17'54", in sec.28, T.8 N., R.31 W., Sebastian County, in Dam No. 13 control house on right bank, and at mile 308.9 (497.0 km).

DRAINAGE AREA.--150,547 mi^2 (389,917 km^2), of which 22,241 mi^2 (57,604 km^2) is probably noncontributing.

AVERAGE DISCHARGE.--55 years, 30,730 ft^3/s (870.3 m^3/s).

EXTREMES.--October 1927 to current year: Maximum discharge, 850,000 ft^3/s (24,100 m^3/s) May 12, 1943; no flow Nov. 2, 1975, Feb. 1, 1981.

REMARKS.--Records good. Prior to October 1969, published as 07250500 Arkansas River at Van Buren. Beginning Apr. 26, 1970, daily discharge computed from relation between discharge, head, and gate openings. Flow regulated by many locks, dams, and reservoirs upstream.

Monthly and yearly discharge

Month	Total (ft^3/s)	Maximum daily (ft^3/s)	Minimum daily (ft^3/s)	Mean (ft^3/s)	Runoff in acre-feet
October	511,913	38,100	60	16,510	1,015,000
November	1,229,210	64,100	9,200	40,970	2,438,000
December	498,900	27,100	3,360	16,090	989,600
January	500,350	129,000	1,760	16,140	992,400
February	1,413,100	93,000	43,900	50,470	2,803,000
March	1,098,900	47,700	20,800	35,450	2,180,000
April	344,980	20,400	2,070	11,500	684,300
May	2,093,260	118,000	1,560	67,520	4,152,000
June	3,951,000	154,000	108,000	131,700	7,837,000
July	1,482,300	111,000	19,800	47,820	2,940,000
August	498,460	32,500	1,170	16,080	988,700
September	115,550	9,770	216	3,852	229,200
Water Year 1982	13,737,923	154,000	60	37,640	27,250,000