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

1979 WATER YEAR

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Prepared in cooperation with the
Arkansas Division of Soil and Water Resources

Little Rock, Arkansas
1980

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By G. Louis Ducret, Jr.

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

1979 WATER YEAR

By G. Louis Ducret, Jr.

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 bounded by 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 Division of Soil and Water Resources. 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.

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 Arkansas River and its tributaries from a point immediately downstream from the confluence of the Neosho River with the Arkansas River (fig. 1)

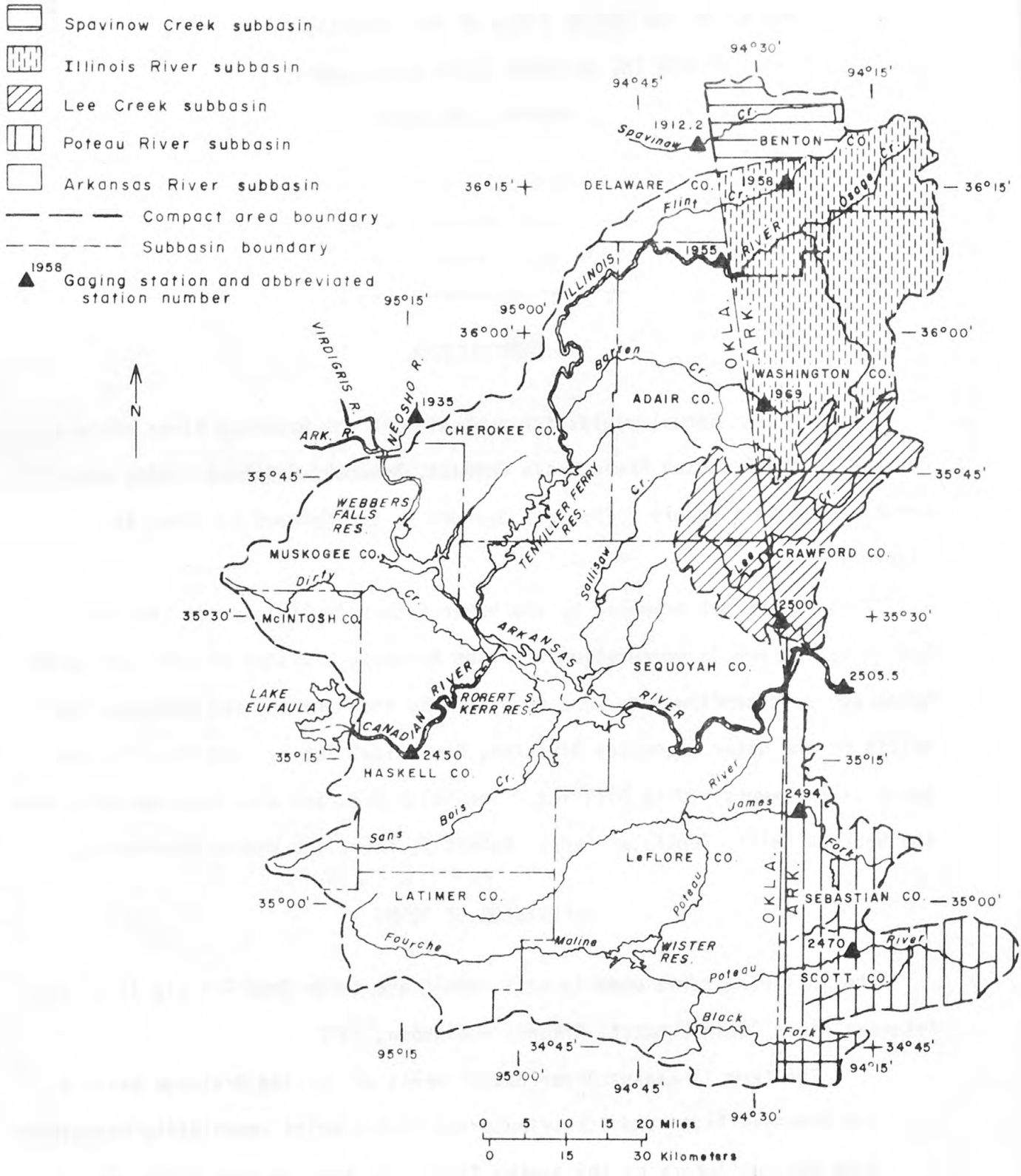

Figure 1.--Arkansas-Oklahoma Arkansas River Compact area and subbasins.

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 feet 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 noncontributing 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 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. Depletions caused by small reservoirs and minor diversion for

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 1979 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	78.3	0	78.3	50	39.2	0
Illinois River	507	0	507	60	203	0
Lee Creek	445	0	445	100	0	0
Poteau River	997	0	997	60	399	0
Arkansas River	3,496	+287	3,783	60	1,513	0

Table 2.--Actual runoff from the subbasins

[Mean discharge in cubic feet per second for the 1979 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	22	130	0	1	-273[f]
November	28	205	23	123	809
December	32	181	42	386	200
January	38	256	260	704	2,758
February	63	645	863	1,906	1,330
March	173	936	1,350	1,805	6,156
April	192	1,587	1,430	2,283	7,994
May	208	1,197	933	2,808	9,233
June	62	347	371	1,247	13,325
July	47	257	42	541	923
August	53	261	46	206	468
September	19	132	4	28	-1,043[f]
1979 Water Year	78	507	445	997	3,496
1979 Water Year (acre-ft)	56,470	367,100	322,200	721,800	2,531,000

a Includes 31 mi^2 ungaged.
b Includes 72 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

[1979 Water Year]

Reservoir	Yearend contents (acre-ft)	Change in contents in water year (acre-ft)	Precipitation on reservoir surface (In.)	Evaporation from reservoir (In.)[c]	Depletion (acre-ft)	Depletion (Average annual ft^3/s)
Webbers Falls-----	154,200	-2,800	30.54[a,b]	45.47[b]	+14,960	+20.6
Tenkiller Ferry---	640,500	+72,900	40.51[a,b]	38.81[b]	+81,800	+113
Robert S. Kerr----	471,300	+20,200	24.31[b]	39.77[b]	+84,500	+117
Wister----------	60,470	+24,540	58.59[a,b]	38.63[b]	+26,270	+36.3

a From climatological data-Oklahoma; U.S. Dept. of Commerce, NOAA.
b From U.S. Corps of Engineers, Tulsa District.
c Adjusted for pan coefficient of 0.70 (from Wisler).

municipal 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 Division of Soil and Water Resources. 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, "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.

U.S. Department of Commerce, NOAA, Climatological Data-Oklahoma: Vol. 86, No. 10-12, Vol. 87, No. 1-9, October 1977 September 1978.

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 NE¼ 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.--7 years, 9,685 ft^3/s (274.3 m^3/s).

EXTREMES.--June 1972 to current year: Maximum discharge, 106,000 ft^3/s (3,001 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	17,856	1,040	265	576	35,420
November	32,948	2,840	328	1,098	65,350
December	39,941	2,950	309	1,288	79,220
January	34,765	2,840	400	1,121	68,960
February	58,470	4,500	518	2,088	116,000
March	304,658	26,000	586	9,828	604,300
April	423,560	28,900	6,640	14,120	840,100
May	375,860	25,700	1,630	12,120	745,500
June	298,820	23,300	3,430	9,961	592,700
July	203,400	8,870	3,200	6,561	403,400
August	163,873	11,400	551	5,286	325,000
September	156,230	10,900	1,680	5,208	309,900
Water Year 1979	2,110,381	28,900	265	5,782	4,186,000

07176000 Verdigris River near Claremore, Okla.

LOCATION.--Lat 36°18'26", long 95°41'52", in SE¼SW¼ sec.10, T.21 N., R.15 E., Rogers County, near left bank on downstream side of pier 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 year 1936-62), 3,723 ft^3/s (105.4 m^3/s); 15 years (water years 1965-79), 4,025 ft^3/s (114.0 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 fair. 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	2,216	80	65	71.5	4,400
November	2,130	146	35	71.0	4,220
December	1,469	104	35	47.4	2,910
January	15,815	4,550	42	510	31,370
February	9,566	1,230	111	342	18,970
March	146,549	9,870	300	4,727	290,700
April	151,270	9,300	1,010	5,042	300,000
May	64,910	5,880	282	2,094	128,700
June	227,682	13,000	428	7,589	451,600
July	113,820	5,020	2,280	3,672	225,800
August	39,555	5,710	58	1,276	78,460
September	1,723	124	35	57.4	3,420
Water Year 1979	776,705	13,000	35	2,128	1,541,000

07177500 Bird Creek near Sperry, Okla.

LOCATION.--Lat 36°16'42", long 95°57'14", in NW¼NW¼ sec.29, T.21 N., R.13 E., Tulsa County, on downstream side of right pier 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.--41 years, 490 ft^3/s (13.88 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 good.

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	166.3	9.2	2.5	5.36	330
November	851.5	125	8.7	28.4	1,690
December	384.7	21	7.2	12.4	763
January	11,863	5,040	14	383	23,530
February	3,357	500	35	120	6,660
March	25,138	11,200	33	811	49,860
April	19,642	6,060	92	655	38,960
May	17,137	5,590	44	553	33,990
June	22,253	7,060	31	742	44,140
July	3,072	344	12	99.1	6,090
August	1,615	515	13	52.1	3,200
September	871.9	166	6.5	29.1	1,730
Water Year 1979	106,351.4	11,200	2.5	291	210,900

07191220 Spavinaw Creek near Sycamore, Okla.

LOCATION.--Lat 36°19'57", long 94°58'24", in NE¼SW¼ 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.--18 years, 112 ft^3/s (3.172 m^3/s).

EXTREMES.--October 1961 to current year: Maximum discharge, 39,800 ft^3/s (1,127 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	650	24	20	21.0	1,290
November	826	53	19	27.5	1,640
December	978	52	23	31.5	1,940
January	1,135	72	21	36.6	2,250
February	1,732	97	38	61.9	3,440
March	5,274	427	85	170	10,460
April	5,666	572	90	189	11,240
May	6,359	1,310	67	205	12,610
June	1,848	85	47	61.6	3,670
July	1,456	93	39	47.0	2,890
August	1,597	261	26	51.5	3,170
September	567	29	13	18.9	1,120
Water Year 1979	28,088	1,310	13	77.0	55,710

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

LOCATION.--Lat 35°51'15", long 95°13'45", in SE¼NW¼ sec.19, T.16 N., R.20 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.--29 years (1950-79), 7,825 ft^3/s (221.6 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 good. 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	27,715	1,910	15	894	54,970
November	38,838	6,120	15	1,295	77,040
December	36,052	3,280	15	1,165	71,510
January	48,294	5,400	15	1,558	95,790
February	119,615	12,000	15	4,272	237,300
March	424,400	16,900	11,700	13,690	841,800
April	395,946	18,700	15	13,200	785,400
May	262,765	18,500	15	8,476	521,200
June	367,611	26,600	15	12,250	729,200
July	421,660	19,900	7,080	13,600	836,400
August	233,200	13,100	1,160	7,523	462,600
September	102,410	6,020	1,150	3,414	203,100
Water Year 1979	2,478,506	26,600	15	6,790	4,916,000

07194500 Arkansas River near Muskogee, Okla.

LOCATION.--Lat 35°46'10", long 95°17'55", in NW¼ sec.21, T.15 N., R.19 E., 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	1,554	95,550
November	2,530	150,500
December	2,524	155,200
January	4,104	252,300
February	6,987	388,000
March	30,200	1,857,000
April	33,930	2,019,000
May	24,020	1,477,000
June	31,580	1,879,000
July	24,070	1,480,000
August	14,210	873,800
September	8,746	520,400
Water Year 1979	15,396	11,150,000

07195500 Illinois River near Watts, Okla.

LOCATION.--Lat 36°07'48", long 94°34'12", in NE¼ sec.18, T.19 N., R.26 E., Adair County, near right bank on downstream side of pier 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.--24 years, 594 ft^3/s (16.92 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	3,690	133	110	119	7,320
November	5,452	551	111	182	10,810
December	5,016	236	122	162	9,950
January	6,738	486	117	217	13,360
February	14,665	1,440	196	524	29,090
March	25,038	1,990	371	808	49,660
April	41,525	12,100	441	1,384	82,360
May	30,865	6,950	334	996	61,220
June	8,930	525	183	298	17,710
July	6,862	713	149	221	13,610
August	7,839	1,100	135	253	15,550
September	3,842	164	106	128	7,620
Water Year 1979	160,462	12,100	106	440	318,300

07195800 Flint Creek at Springtown, Ark.

LOCATION.--Lat 36°15'20", long 94°25'50", in NW¼ 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.--18 years, 14.4 ft^3/s (0.408 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 for part of July 9, 29, 30, Aug. 7, 1964, result of pumpage for irrigation above gage.

REMARKS.--Records good. 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	160.1	9.5	3.9	5.16	318
November	216.4	23	3.5	7.21	429
December	172.6	7.0	4.4	5.57	342
January	184.3	9.0	4.5	5.95	366
February	313.5	28	4.3	11.2	622
March	595.1	38	7.7	19.2	1,180
April	458.9	28	4.5	15.3	910
May	733.6	180	4.2	23.7	1,460
June	210.7	10	5.8	7.02	418
July	264.3	29	4.5	8.53	524
August	203.9	12	4.3	6.58	404
September	119.4	6.9	3.3	3.98	237
Water Year 1979	3,632.8	180	3.3	9.95	7,210

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.--21 years, 39.9 ft^3/s (1.130 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.

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	24.67	1.2	.56	.80	49
November	132.77	19	.82	4.43	263
December	121.6	14	2.4	3.92	241
January	476.8	40	7.6	15.4	946
February	1,385.3	230	7.5	49.5	2,750
March	1,640	222	18	52.9	3,250
April	3,248	1,610	19	108	6,440
May	2,509	987	18	80.9	4,980
June	610.6	117	7.0	20.4	1,210
July	303.7	80	2.3	9.80	602
August	84.5	7.4	1.2	2.73	168
September	27.21	2.0	.53	.91	54
Water Year 1979	10,564.15	1,610	.53	28.9	20,950

07245000 Canadian River near Whitefield, Okla.

LOCATION.--Lat 35°15'45", long 95°14'19", in SE¼SE¼ sec.12, T.9 N., R.19 E., Haskell County, near right bank on downstream side of pier 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); 12 years (water years 1968-79), 5,315 ft^3/s (150.5 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 good. 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	7,484	635	46	241	14,840
November	9,384	1,300	51	313	18,610
December	18,467	1,510	67	596	36,630
January	16,058	1,170	56	518	31,850
February	13,424	2,110	63	479	26,630
March	5,971	805	67	193	11,840
April	127,072	8,570	65	4,236	252,000
May	303,759	16,200	329	9,799	602,500
June	432,340	36,100	4,130	14,410	857,500
July	262,170	11,900	5,160	8,457	520,000
August	50,807	5,490	52	1,639	100,800
September	30,180	4,240	58	1,006	59,860
Water Year 1979	1,277,116	36,100	46	3,499	2,533,000

07247000 Poteau River at Cauthron, Ark.

LOCATION.--Lat 34°55'08", long 94°17'55", in NW¼SW¼ 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.--40 years, 215 ft^3/s (6.089 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 good. 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	.47	.12	.00	.015	.9
November	1,707.66	531	.00	56.9	3,390
December	6,125	3,880	14	198	12,150
January	9,773	2,210	60	315	19,380
February	20,900	3,190	95	746	41,460
March	20,788	3,150	65	671	41,230
April	26,885	6,220	134	896	53,330
May	33,061	4,210	126	1,066	65,580
June	15,650	3,860	35	522	31,040
July	6,982	2,110	11	225	13,850
August	2,536.9	318	9.1	81.8	5,030
September	170.33	16	.93	5.68	338
Water Year 1979	144,579.36	6,220	.00	396	286,800

07249400 James Fork near Hackett, Ark.

LOCATION.--Lat 35°09'45", long 94°24'25", in NW¼NW¼ 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.--21 years, 132 ft^3/s (3.738 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 Aug. 16 to Dec. 12, 1963, Sept. 14-21, 1965, Aug. 26 to Sept. 8, 1978.

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	24.86	13	.00	.80	49
November	632.58	104	.48	21.1	1,250
December	1,181.9	393	7.4	38.1	2,340
January	4,051	546	32	131	8,040
February	13,797	2,190	60	493	27,370
March	15,808	2,890	77	510	31,360
April	17,623	3,460	124	587	34,960
May	23,801	5,630	86	768	47,210
June	8,349	1,760	28	278	16,560
July	3,769	1,070	14	122	7,480
August	1,648	217	23	53.2	3,270
September	397.59	175	.42	13.3	789
Water Year 1979	91,082.93	5,630	.00	250	180,700

07250000 Lee Creek near Van Buren, Ark.

LOCATION.--Lat 35°29'40", long 94°26'58", in SE¼ 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.--35 years (1930-36, 1950-79), 502 ft^3/s (14.22 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	.06	.04	.00	.002	.1
November	668.34	82	.00	22.3	1,330
December	1,190	201	17	38.4	2,360
January	7,433	624	70	240	14,740
February	22,214	3,210	157	793	44,060
March	38,442	3,430	250	1,240	76,250
April	39,293	8,620	378	1,310	77,940
May	26,533	4,950	132	856	52,630
June	10,227	1,920	38	341	20,290
July	1,156	156	11	37.3	2,290
August	1,308	193	10	42.2	2,590
September	113.23	26	.82	3.77	225
Water Year 1979	148,577.63	8,620	.00	407	294,700

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.--52 years, 31,260 ft^3/s (885.3 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.

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	51,234	3,710	115	1,653	101,600
November	120,102	12,500	113	4,003	238,200
December	121,784	14,400	92	3,929	241,600
January	266,604	26,900	104	8,600	528,800
February	341,954	33,700	104	12,210	678,300
March	1,259,900	64,000	16,400	40,640	2,499,000
April	1,543,800	86,800	26,000	51,460	3,062,000
May	1,487,600	77,900	19,500	47,990	2,951,000
June	1,838,500	107,000	31,400	61,280	3,647,000
July	1,062,900	40,500	25,200	34,290	2,108,000
August	521,863	32,700	123	16,830	1,035,000
September	266,190	13,800	2,130	8,873	528,000
Water Year 1979	8,882,431	107,000	92	24,340	17,620,000

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