
Section E - Tables of monthly flows and statistics for stations
with 10 or more years of daily record

Table E1.1. Mean flow, in cubic feet per second, for station 06395000, Cheyenne River at Edgemont

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1903	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	1,034	795	385	(2)
1904	(1)	(1)	(1)	(1)	(1)	(1)	26.7	610	1,106	695	69.8	57.0	(2)
1905	26.9	(1)	(1)	(1)	(1)	195	50.5	245	1,021	2,025	1,266	47.0	(2)
1906	56.5	28.9	(1)	(1)	(1)	(1)	(1)	601	325	34.9	477	353	(2)
1907	6.06	8.40	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)
1928	(1)	(1)	(1)	(1)	(1)	(1)	(1)	60.6	338	861	215	50.2	(2)
1929	20.9	20.2	(1)	(1)	(1)	790	785	906	785	319	117	95.4	(2)
1930	41.6	16.6	(1)	(1)	335	108	64.4	96.2	267	8.90	611	136	(2)
1931	302	29.1	(1)	(1)	41.6	45.2	38.9	21.7	386	28.1	503	1.93	(2)
1932	180	12.8	(1)	(1)	213	496	494	480	355	217	486	7.23	(2)
1933	12.0	11.8	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)
1947	66.9	22.6	10.5	2.37	60.5	55.2	60.8	22.8	302	223	41.0	3.48	72.4
1948	3.84	10.5	6.13	2.58	20.8	298	17.1	49.0	431	221	171	1.13	103
1949	5.88	10.6	8.00	1.61	77.2	321	72.0	117	210	8.38	21.3	6.80	71.7
1950	9.27	2.56	.077	.000	5.59	20.8	86.5	98.3	81.8	145	3.30	2.80	38.2
1951	6.85	3.39	.87	.084	1.56	16.7	12.0	1.28	204	363	262	265	95.2
1952	4.43	4.50	.64	.19	3.16	38.4	32.9	437	482	152	57.4	.13	101
1953	.19	.23	.23	1.15	6.57	177	15.0	112	214	11.0	154	1.33	58.1
1954	.11	2.19	2.74	1.92	13.1	15.2	4.45	46.1	6.99	19.8	131	.017	20.5
1955	.039	.087	.15	.084	.11	180	558	225	275	22.2	388	82.3	144
1956	3.05	1.58	26.8	8.45	66.8	117	8.48	90.8	166	7.85	28.1	.000	43.7
1957	1.26	8.83	2.12	.035	26.6	58.0	4.00	515	487	79.2	99.3	25.7	109
1958	3.26	17.4	4.13	1.31	8.54	34.3	102	5.16	98.7	806	132	.37	102
1959	.35	2.89	.51	.097	.51	62.5	6.10	4.49	163	47.7	3.76	.26	24.3
1960	.094	.070	.000	.000	.000	103	1.50	.27	83.2	7.73	.000	.000	16.4
1961	.000	.063	.11	.000	6.84	3.39	.22	3.34	10.1	74.7	53.5	.65	12.9
1962	.003	.023	.029	.039	64.6	83.6	1.33	2,176	2,084	638	133	6.43	434
1963	21.0	8.58	10.3	.75	118	57.8	61.4	158	608	71.2	1.71	93.5	99.7
1964	.82	2.29	2.65	.000	1.03	28.0	55.8	63.1	450	62.3	1.93	1.11	55.3
1965	2.30	3.39	3.50	6.21	15.9	39.2	47.7	322	925	254	47.1	23.3	141
1966	38.8	10.3	8.77	4.18	2.37	160	34.1	10.5	1.76	239	229	17.1	64.0
1967	45.1	20.1	18.0	16.0	52.7	118	62.1	152	740	165	10.4	18.8	118
1968	8.84	16.7	14.7	6.06	17.7	105	24.3	22.0	256	27.7	59.6	37.5	49.5
1969	11.0	11.2	3.73	2.22	1.84	115	51.5	111	133	758	27.4	2.69	104
1970	7.45	6.85	9.58	6.37	24.5	71.5	81.6	90.0	51.7	8.49	8.98	1.91	30.7
1971	11.6	10.8	6.55	1.95	28.1	99.3	336	1,229	770	32.6	2.42	2.24	212
1972	23.4	21.6	9.77	2.89	26.7	155	26.2	35.3	139	16.0	32.3	7.71	41.4
1973	11.7	16.6	3.66	7.02	13.6	49.6	50.0	317	81.7	116	16.4	275	80.1
1974	36.9	37.6	12.9	34.0	65.4	104	35.4	13.0	1.94	1.01	7.39	.15	29.0
1975	2.20	23.0	8.72	1.25	9.43	73.3	162	54.3	103	27.3	4.26	.31	39.0
1976	5.48	8.81	9.71	4.52	13.2	39.6	14.7	22.3	254	39.3	43.2	.42	37.7
1977	3.73	13.1	4.13	.68	25.3	70.6	61.7	6.72	29.6	69.1	16.6	26.0	27.2
1978	11.9	9.40	8.00	4.14	7.62	304	46.1	2,192	243	506	295	22.2	309
1979	16.5	21.2	11.9	4.27	5.08	255	118	32.4	77.9	146	304	19.0	85.2
1980	10.7	17.9	6.48	8.50	119	131	36.2	15.9	76.3	6.24	115	5.37	45.4
1981	6.49	7.31	11.9	29.6	37.4	19.1	3.01	10.2	23.3	236	70.7	2.46	38.5
1982	8.64	11.3	10.0	4.79	94.5	177	26.0	45.1	342	141	112	72.2	86.7
1983	86.1	51.0	32.3	31.1	141	62.8	62.7	49.9	48.2	58.8	37.4	3.79	54.9
1984	16.4	15.9	4.33	30.2	156	295	87.8	427	128	29.4	34.8	4.84	103
1985	15.5	19.1	9.92	8.85	14.9	108	23.5	6.30	4.00	.15	.22	1.37	17.7
1986	1.93	2.29	.80	10.0	44.3	229	149	155	377	106	15.6	124	101
1987	202	28.8	24.2	26.3	37.7	379	105	97.6	126	21.6	4.64	3.78	88.8
1988	2.98	8.46	5.55	6.92	9.00	47.3	14.4	8.75	15.5	2.82	19.5	2.59	12.0
1989	2.43	.84	1.03	1.16	.16	27.8	14.4	64.9	4.10	11.6	.19	155	23.6
1990	4.09	11.9	7.80	13.7	23.2	94.7	31.5	58.2	19.7	79.6	24.5	7.78	31.6
1991	16.2	9.48	4.84	.41	.87	21.3	23.3	991	1,038	70.8	16.1	5.71	184
1992	11.0	10.9	8.45	10.1	20.9	33.2	8.91	5.87	11.8	27.3	5.91	1.15	13.0
1993	.45	5.75	3.49	3.50	2.29	208	106	192	215	178	182	23.8	94.2

¹Indicates a no-value month.

²Incomplete water year.

Table E1.2. Statistics on mean flow, in cubic feet per second, for station 06395000, Cheyenne River at Edgemont (October 1946 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	47	47	47	47	47	47	47	47	47	47	47	47	47
Maximum	202	51.0	32.3	34.0	156	379	558	2,192	2,084	806	388	275	434
Percentile													
75th	15.5	16.7	9.92	8.45	44.3	160	72.0	158	342	165	115	23.3	102
50th	6.49	9.48	6.13	2.89	15.9	83.6	35.4	58.2	139	69.1	32.3	3.79	64.0
25th	2.20	2.89	2.12	0.68	5.08	39.2	14.4	13.0	48.2	19.8	7.39	1.13	31.6
Minimum	0.000	0.023	0.000	0.000	0.000	3.39	0.22	0.27	1.76	0.15	0.000	0.000	12.0
Mean	15.94	11.28	7.25	6.54	31.75	111.96	62.61	231.10	267.94	134.78	72.87	28.92	82.20
Standard deviation	32.64	10.26	7.04	9.12	39.18	94.07	93.74	480.64	368.48	190.00	93.71	61.22	77.37
Skewness	4.50	1.67	1.70	1.96	1.72	1.20	3.89	3.30	3.07	2.33	1.73	3.05	2.73
Coefficient of variation	2.05	0.91	0.97	1.39	1.23	0.84	1.50	2.08	1.38	1.41	1.29	2.12	0.94
Percent of annual flow	1.62	1.15	0.74	0.67	3.23	11.39	6.37	23.51	27.26	13.71	7.41	2.94	¹ -0.178

¹Serial correlation for annual mean flows.

Table E1.3. Serial correlation for 1-year lag for monthly mean flow for station 06395000, Cheyenne River at Edgemont (October 1946 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
-0.059	0.301	-0.006	0.250	0.307	0.139	-0.121	-0.150	-0.014	-0.078	0.183	-0.175	

Table E1.4. Correlation matrix for monthly mean flow for station 06395000, Cheyenne River at Edgemont (October 1946 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.610	0.627	0.518	0.267	0.358	0.040	-0.081	-0.084	-0.086	-0.141	-0.096
Nov.	*	1.000	.697	.631	.454	.183	.004	-.165	-.232	-.081	-.168	-.142
Dec.	*	*	1.000	.606	.466	.216	-.070	-.159	-.163	-.187	-.173	-.214
Jan.	*	*	*	1.000	.542	.228	-.064	-.139	-.231	-.174	-.218	-.131
Feb.	*	*	*	*	1.000	.240	-.050	.020	.099	-.148	-.198	-.072
Mar.	*	*	*	*	*	1.000	.234	.149	-.058	-.023	.322	-.106
Apr.	*	*	*	*	*	*	1.000	.099	.047	-.076	.339	.081
May	*	*	*	*	*	*	*	1.000	.681	.389	.228	-.040
June	*	*	*	*	*	*	*	*	1.000	.321	.029	-.036
July	*	*	*	*	*	*	*	*	*	1.000	.330	.047
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	.180
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E1.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06395000, Cheyenne River at Edgemont

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1947	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.93	30	2.17	24	4.17	24	5.42	23	4.54	18
1948	.0000	2	.0000	2	.0000	2	.0000	2	.087	13	2.27	26	4.48	27	6.38	28	5.17	20
1949	.0000	3	.0000	3	.0000	3	.0000	3	.0000	1	.007	3	.20	6	1.83	12	3.76	14
1950	.0000	4	.0000	4	.0000	4	.0000	4	.053	10	.30	14	.59	9	1.23	9	2.35	9
1951	.0000	5	.0000	5	.0000	5	.057	22	.10	14	.25	13	1.24	13	1.98	13	3.94	15
1952	.0000	6	.0000	6	.0000	6	.050	21	.11	16	.16	9	.18	5	.19	5	1.29	7
1953	.10	30	.10	30	.10	28	.10	26	.10	15	.11	8	.96	12	1.41	10	3.16	13
1954	.0000	7	.0000	7	.0000	7	.0000	5	.0000	2	.023	5	.039	4	.068	4	.080	3
1955	.10	31	.10	31	.13	30	.16	29	.68	29	.99	20	9.25	40	9.81	35	22.5	41
1956	.0000	8	.0000	8	.0000	8	.0000	6	.0000	3	.023	6	1.49	15	3.00	17	2.38	10
1957	.0000	9	.033	28	.10	29	.15	28	.46	26	2.11	23	3.05	21	6.56	29	7.70	27
1958	.0000	10	.0000	9	.0000	9	.014	17	.030	9	.088	7	.29	7	.94	8	.80	4
1959	.0000	11	.0000	10	.0000	10	.0000	7	.0000	4	.0000	1	.0000	1	.006	1	.070	2
1960	.0000	12	.0000	11	.0000	11	.0000	8	.0000	5	.0000	2	.0000	2	.006	2	.030	1
1961	.0000	13	.0000	12	.0000	12	.0000	9	.0000	6	.012	4	.017	3	.021	3	5.95	23
1962	.0000	14	.0000	13	.0000	13	.007	16	.21	20	4.94	33	6.48	32	10.3	38	17.0	39
1963	.0000	15	.0000	14	.0000	14	.0000	10	.0000	7	.21	12	.71	11	1.45	11	2.17	8
1964	.0000	16	.0000	15	.0000	15	.0000	11	.27	23	1.23	21	1.55	16	2.08	14	2.47	11
1965	1.00	37	1.00	37	1.00	36	1.18	36	1.57	31	3.37	29	5.01	28	6.30	25	14.6	37
1966	.0000	17	.0000	16	.0000	16	.72	31	1.71	33	5.16	37	14.7	43	24.0	43	27.9	43
1967	1.20	39	1.40	39	1.89	40	2.34	40	3.42	38	8.65	43	11.4	42	11.6	41	12.1	34
1968	1.50	40	1.50	40	1.71	39	1.75	39	1.80	34	2.03	22	2.54	19	3.42	19	6.23	24
1969	.0000	18	.0000	17	.0000	17	.92	32	2.58	36	4.47	30	5.58	29	6.35	27	6.85	26
1970	.0000	19	.0000	18	.0000	18	.0000	12	.073	12	2.81	27	4.47	26	6.34	26	5.56	22
1971	.10	32	.10	32	.13	31	.24	30	.66	28	2.24	25	6.81	33	10.7	39	10.2	31
1972	.50	34	.83	36	1.14	38	1.46	38	2.72	37	5.03	35	6.82	34	8.88	32	9.40	28
1973	.50	35	.63	34	.87	35	1.01	34	4.88	42	12.7	44	24.2	44	27.5	44	47.9	44
1974	.0000	20	.0000	19	.0000	19	.021	19	.11	18	.18	11	2.63	20	2.24	15	4.18	16
1975	.0000	21	.0000	20	.014	27	.025	20	.21	19	.78	19	2.46	18	4.40	20	5.32	21
1976	.0000	22	.0000	21	.007	26	.075	24	.26	22	.38	15	3.47	22	5.09	22	4.52	17
1977	.0000	23	.047	29	.17	33	1.01	35	2.35	35	5.05	36	6.11	31	6.19	24	10.9	32
1978	3.00	44	3.33	44	3.54	44	3.79	42	4.27	40	4.57	31	6.86	35	9.83	36	12.8	35
1979	2.10	42	2.20	43	2.84	43	3.95	43	6.08	44	7.55	40	9.76	41	10.8	40	21.1	40
1980	.0000	24	.0000	22	.0000	20	.089	25	.41	25	5.00	34	5.69	30	7.50	30	16.0	38
1981	.0000	25	.0000	23	.0000	21	.0000	13	.60	27	5.48	38	7.36	36	8.04	31	9.98	30
1982	7.20	46	7.23	46	7.46	46	9.06	46	13.5	45	30.6	46	34.6	46	39.9	46	57.5	45
1983	1.00	38	1.03	38	1.07	37	1.39	37	3.72	39	4.82	32	8.69	38	10.2	37	13.9	36
1984	2.10	43	2.10	42	2.16	41	2.40	41	4.84	41	7.58	41	9.24	39	12.2	42	11.8	33
1985	.0000	26	.0000	24	.0000	22	.016	18	.11	17	.17	10	.34	8	.71	6	1.03	5
1986	3.50	45	3.93	45	4.80	45	5.71	45	15.0	46	24.3	45	24.7	45	29.1	45	69.9	46
1987	.68	36	.70	35	.83	34	.94	33	1.66	32	3.22	28	3.69	23	4.78	21	5.10	19
1988	.0000	27	.0000	25	.0000	23	.0000	14	.0000	8	.60	17	.70	10	.78	7	1.28	6
1989	.0000	28	.0000	26	.0000	24	.0000	15	.054	11	6.04	39	4.43	25	9.22	34	26.0	42
1990	.0000	29	.0000	27	.0000	25	.064	23	.35	24	.47	16	1.88	17	3.29	18	6.56	25
1991	1.50	41	1.83	41	2.61	42	4.04	44	5.71	43	7.74	42	8.44	37	9.04	33	9.76	29
1992	.13	33	.13	33	.14	32	.15	27	.24	21	.77	18	1.44	14	2.39	16	2.75	12

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E1.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06395000, Cheyenne River at Edgemont

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1947	2,230	18	1,446	21	881	20	802	15	501	14	280	18	195	21	161	22	126	23
1948	2,200	20	1,489	19	1,080	17	888	12	539	13	403	12	291	13	222	16	201	10
1949	1,250	32	713	34	547	29	455	23	355	20	235	24	191	22	200	18	137	21
1950	1,300	30	634	36	347	37	223	38	150	36	117	33	111	30	105	28	73.6	30
1951	2,260	15	1,893	12	1,398	13	716	17	485	16	396	14	366	8	279	10	187	14
1952	6,740	4	3,690	7	1,824	7	1,037	11	546	12	542	6	370	6	287	8	200	11
1953	1,890	22	1,167	27	633	25	349	29	306	24	164	26	160	26	132	25	115	24
1954	1,010	36	762	33	501	33	269	34	146	38	79.8	39	69.8	39	52.6	40	38.4	42
1955	4,380	9	2,955	9	1,463	12	859	13	594	11	409	11	354	11	316	6	275	5
1956	1,860	23	1,192	25	583	28	276	32	250	30	130	31	96.5	32	110	27	79.7	28
1957	5,960	7	3,437	8	1,755	8	1,150	9	875	7	519	8	368	7	301	7	210	8
1958	4,070	10	2,883	10	1,549	11	1,259	8	922	6	524	7	356	9	275	11	199	12
1959	1,070	35	831	32	506	32	345	30	182	32	107	35	73.1	38	70.0	37	47.9	39
1960	843	38	497	39	346	38	195	39	107	42	54.1	45	53.2	42	48.7	42	32.7	43
1961	950	37	641	35	330	39	154	43	97.2	43	66.3	43	48.1	45	36.6	45	25.5	45
1962	13,200	2	10,910	2	7,066	2	4,573	1	3,900	1	2,410	1	1,706	1	1,283	1	861	1
1963	2,020	21	1,877	13	1,615	9	1,104	10	652	10	399	13	286	14	226	15	176	17
1964	2,220	19	1,733	16	1,225	14	854	14	501	15	280	17	196	20	164	21	109	26
1965	6,310	5	5,550	4	3,259	5	1,695	5	1,027	5	675	5	517	5	392	5	272	6
1966	1,330	29	1,247	23	627	27	410	26	260	28	242	21	167	25	126	26	114	25
1967	3,150	12	2,517	11	1,555	10	1,261	7	788	8	467	9	355	10	286	9	214	7
1968	2,480	14	1,398	22	761	23	415	24	257	29	150	29	119	27	102	29	83.0	27
1969	5,340	8	3,800	6	2,701	6	1,450	6	785	9	465	10	342	12	269	12	202	9
1970	345	44	261	45	178	45	125	45	116	40	91.9	37	82.0	35	77.6	36	55.6	36
1971	9,850	3	7,163	3	3,948	3	3,293	3	1,863	4	1,123	3	810	3	624	3	416	3
1972	614	42	406	41	366	36	255	36	168	33	101	36	77.5	36	88.2	32	70.0	33
1973	3,270	11	1,647	17	966	19	612	20	353	21	219	25	180	24	146	23	143	20
1974	311	45	262	44	238	43	176	40	122	39	90.4	38	73.3	37	61.9	38	49.3	38
1975	642	41	398	42	383	35	275	33	165	34	119	32	107	31	98.4	30	71.4	31
1976	1,620	27	1,228	24	663	24	363	28	263	27	152	28	119	28	92.3	31	70.0	34
1977	1,130	34	609	37	286	41	137	44	96.6	45	69.9	42	53.2	43	52.5	41	44.5	40
1978	24,000	1	14,430	1	7,557	1	4,098	2	2,330	2	1,259	2	1,044	2	833	2	607	2
1979	2,240	16	1,575	18	812	22	495	22	322	23	236	23	183	23	144	24	158	18
1980	1,760	25	929	30	461	34	267	35	217	31	135	30	95.7	33	87.6	34	78.0	29
1981	1,250	33	872	31	524	30	384	27	284	25	159	27	114	29	87.8	33	62.5	35
1982	1,810	24	1,473	20	842	21	509	21	344	22	243	20	199	19	171	20	147	19
1983	837	39	498	38	326	40	231	37	149	37	108	34	88.7	34	77.8	35	70.3	32
1984	1,340	28	1,187	26	1,011	18	716	16	458	17	329	15	275	15	247	13	191	13
1985	438	43	367	43	273	42	175	41	112	41	70.1	41	50.7	44	39.6	44	31.3	44
1986	2,620	13	1,843	15	1,178	15	660	19	436	18	293	16	249	16	232	14	178	16
1987	2,240	17	1,873	14	1,126	16	667	18	402	19	248	19	201	18	180	19	130	22
1988	192	46	134	46	94.3	46	64.1	46	48.9	46	31.9	46	24.4	46	22.0	46	18.9	46
1989	1,300	31	980	29	519	31	285	31	155	35	77.5	40	55.7	41	42.6	43	42.2	41
1990	665	40	450	40	230	44	158	42	97.1	44	64.3	44	62.5	40	54.4	39	53.5	37
1991	6,110	6	5,333	5	3,797	4	2,632	4	1,896	3	1,046	4	711	4	540	4	360	4
1992	124	47	92.0	47	55.7	47	50.5	47	39.6	47	27.5	47	21.6	47	18.4	47	18.1	47
1993	1,680	26	1,019	28	628	26	413	25	275	26	241	22	205	17	202	17	183	15

Table E2.1. Mean flow, in cubic feet per second, for station 06400000, Hat Creek near Edgemont

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1905	(1)	(1)	(1)	(1)	(1)	(1)	(1)	134	448	519	698	6.3	(2)
1906	3.6	2.0	1.6	1.6	1.8	57	75	137	114	12	164	126	58.2
1951	1.00	0.000	0.010	0.70	1.12	5.29	0.68	2.81	108	174	34.2	35.5	30.5
1952	3.45	3.40	2.30	.53	6.55	71.5	10.8	56.5	99.0	15.1	9.91	.14	23.3
1953	.077	.14	.12	2.35	5.21	94.8	9.82	18.1	14.6	.000	.40	.023	12.3
1954	.000	.000	.000	.000	.000	8.07	2.93	135	7.48	1.09	2.14	.000	13.3
1955	.000	.030	.20	.061	.000	80.3	98.1	29.9	17.8	.003	68.4	70.1	30.5
1956	2.41	.70	16.0	3.67	3.27	10.6	.80	20.4	19.5	10.0	6.43	.000	7.86
1957	.000	1.86	2.40	.47	5.89	9.47	55.3	444	106	21.8	1.42	1.58	54.7
1958	2.95	2.16	1.84	2.21	3.75	13.6	29.2	.88	17.0	106	3.97	.000	15.4
1959	.000	.000	.013	1.53	.54	37.6	.46	11.1	21.9	40.2	.19	3.77	9.89
1960	.48	.32	.63	.32	.79	21.5	2.76	5.33	.72	.000	.000	.000	2.77
1961	.000	.000	.000	.000	.014	6.05	.36	.48	.20	6.33	2.02	.000	1.31
1962	.000	.000	.000	.000	.011	10.7	.37	73.7	134	40.7	2.51	.000	21.9
1963	.23	.023	.006	.013	23.1	34.0	3.72	3.13	72.6	3.90	.14	1.83	11.7
1964	.93	.077	.035	.14	.079	.73	11.9	3.49	52.5	.47	.000	.000	5.78
1965	.000	.000	.000	.000	.046	.21	.82	92.0	58.6	63.4	1.32	2.63	18.4
1966	6.59	1.65	.76	1.42	1.49	95.7	15.6	1.20	.15	12.9	44.9	.22	15.4
1967	6.34	1.03	.31	.24	1.60	.45	27.2	29.2	1,223	70.6	3.94	1.13	112
1968	1.76	6.73	3.51	4.50	11.4	5.12	141	50.0	272	90.6	31.5	1.81	51.3
1969	3.69	2.43	2.66	2.24	2.81	32.6	8.32	1.84	1.59	45.4	.91	.000	8.82
1970	.56	1.86	1.24	.19	1.29	1.21	14.9	.45	14.4	.000	.35	.000	3.00
1971	.000	.006	.000	.000	2.76	3.67	7.07	224	132	4.22	.005	.98	31.4
1972	1.31	2.67	.91	.67	6.54	11.5	1.53	2.70	6.99	3.49	.000	.000	3.18
1973	.000	.000	.000	.44	.45	24.6	57.2	64.4	.32	8.15	.030	7.83	13.7
1974	.28	.91	.98	25.5	24.2	7.80	86.9	1.07	.083	.000	.000	.000	12.1
1975	.000	.000	.000	.000	.000	.13	6.43	2.40	2.24	4.02	.000	.000	1.27
1976	.000	.000	.000	.000	3.59	.53	.34	25.0	42.0	1.02	.25	.000	6.02
1977	.000	.000	.000	.000	.000	.26	3.86	.42	2.83	.028	.000	.000	.61
1978	.094	.000	.016	.000	.014	119	2.03	69.6	1.91	1.39	.65	.000	16.6
1979	.000	.000	.000	.000	.000	9.65	2.86	1.07	.82	.60	17.9	.000	2.78
1980	.000	.000	.000	.074	52.6	15.2	10.0	.51	.062	.000	.22	.000	6.35
1981	.000	.000	.26	.38	.11	.097	.040	1.53	.93	.18	.000	.000	.30
1982	.000	.000	.000	.000	.010	.14	.075	82.2	172	4.82	37.5	2.61	25.0
1983	4.41	3.42	3.89	6.14	3.46	3.21	13.4	45.7	7.40	5.79	12.4	.40	9.22
1984	.14	1.26	1.04	5.06	10.1	2.30	20.3	116	103	9.98	1.96	.000	22.6
1985	.71	2.35	1.47	1.50	1.28	5.78	1.71	.60	1.87	.42	.000	.000	1.47
1986	.72	.000	.20	.39	15.5	103	90.9	33.2	206	29.0	2.56	.65	40.1
1987	13.0	6.50	5.12	5.89	10.4	67.0	15.2	15.4	13.5	.81	.004	.000	12.8
1988	.11	1.66	1.09	.80	2.08	4.94	.31	6.38	1.64	.011	.64	.000	1.64
1989	.000	.000	.000	.000	.000	.15	.36	.20	.23	.000	.000	1.01	.16
1990	.000	.000	.001	.015	.068	.35	.13	.74	.45	1.61	.014	.000	.29
1991	.000	.000	.000	.000	.11	.26	6.27	358	141	3.79	2.73	.000	43.1
1992	.046	.68	.60	.53	.87	.58	.48	.54	1.01	2.37	.20	.000	.66
1993	.000	.33	.25	.16	.19	150	107	12.2	64.7	71.3	2.90	.70	34.3

¹Indicates a no-value month.

²Incomplete water year.

Table E2.2. Statistics on mean flow, in cubic feet per second, for station 06400000, Hat Creek near Edgemont (October 1950 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	43	43	43	43	43	43	43	43	43	43	43	43	43
Maximum	13.0	6.73	16.0	25.5	52.6	150	141	444	1,223	174	68.4	70.1	112
Percentile													
75th	1.00	1.66	1.09	1.50	5.21	32.6	15.6	56.5	99.0	21.8	3.94	1.01	23.3
50th	.077	.030	.20	.32	1.28	7.80	6.27	11.1	14.4	3.90	.65	.000	12.1
25th	.000	.000	.000	.000	.046	.58	.68	1.07	1.01	.42	.005	.000	2.78
Minimum	.000	.000	.000	.000	.000	.097	.040	.20	.062	.000	.000	.000	.16
Mean	1.19	0.98	1.11	1.58	4.73	24.88	20.22	47.52	73.12	19.90	6.85	3.09	17.11
Standard deviation	2.48	1.62	2.62	4.08	9.43	38.05	34.20	91.59	190.87	35.95	14.59	11.82	20.56
Skewness	3.20	2.24	4.71	5.09	3.67	1.83	2.17	3.14	5.47	2.61	2.78	5.05	2.68
Coefficient of variation	2.08	1.65	2.35	2.57	1.99	1.53	1.69	1.93	2.61	1.81	2.13	3.82	1.20
Percent of annual flow	0.58	0.48	0.54	0.77	2.30	12.12	9.86	23.16	35.64	9.70	3.34	1.51	¹ 0.104

¹Serial correlation for annual mean flows.

Table E2.3. Serial correlation for 1-year lag for monthly mean flow for station 06400000, Hat Creek near Edgemont (October 1950 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.062	0.106	0.065	-0.044	-0.146	-0.033	-0.006	-0.191	0.100	0.248	0.004	-0.056	

Table E2.4. Correlation matrix for monthly mean flow for station 06400000, Hat Creek near Edgemont (October 1950 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.678	0.387	0.183	0.038	0.208	0.005	-0.150	0.276	0.124	0.119	-0.088
Nov.	*	1.000	0.404	0.282	0.116	0.040	0.302	-0.026	0.071	0.154	0.104	-0.137
Dec.	*	*	1.000	0.226	0.028	-0.033	0.032	-0.015	-0.049	0.007	0.015	-0.093
Jan.	*	*	*	1.000	0.340	-0.051	0.343	-0.101	-0.072	-0.035	-0.041	-0.079
Feb.	*	*	*	*	1.000	0.042	0.206	-0.081	-0.020	-0.081	-0.119	-0.105
Mar.	*	*	*	*	*	1.000	0.379	-0.121	-0.087	0.035	0.206	0.166
Apr.	*	*	*	*	*	*	1.000	0.082	0.178	0.267	0.343	0.306
May	*	*	*	*	*	*	*	1.000	0.118	-0.047	-0.056	-0.044
June	*	*	*	*	*	*	*	*	1.000	0.337	0.055	-0.015
July	*	*	*	*	*	*	*	*	*	1.000	0.240	0.241
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.730
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E2.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06400000, Hat Creek near Edgemont

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1951	0.20	42	0.27	42	0.30	42	0.30	42	0.32	39	0.75	36	10.75	36	2.00	37	4.31	40
1952	.0000	1	.0000	1	.0000	1	.0000	1	.050	35	.083	29	.11	27	.11	23	1.25	30
1953	.0000	2	.0000	2	.0000	2	.0000	2	.0000	1	.0000	1	.0000	1	.0000	1	.004	12
1954	.0000	3	.0000	3	.0000	3	.0000	3	.0000	2	.0000	2	.0000	2	.022	19	.050	16
1955	.0000	4	.0000	4	.0000	4	.0000	4	.0000	3	.64	35	3.75	41	5.48	41	6.16	42
1956	.0000	5	.0000	5	.0000	5	.0000	5	.0000	4	.0000	3	.011	22	.73	30	.80	26
1957	.0000	6	.0000	6	.0000	6	.0000	6	.043	34	.90	37	1.78	37	1.88	36	1.91	34
1958	.0000	7	.0000	7	.0000	7	.0000	7	.0000	5	.0000	4	.0000	3	.0000	2	.32	22
1959	.0000	8	.033	40	.071	40	.10	39	.12	36	.24	32	.41	30	.42	27	.94	27
1960	.0000	9	.0000	8	.0000	8	.0000	8	.0000	6	.0000	5	.0000	4	.0000	3	.0000	1
1961	.0000	10	.0000	9	.0000	9	.0000	9	.0000	7	.0000	6	.0000	5	.0000	4	.0000	2
1962	.0000	11	.0000	10	.0000	10	.0000	10	.0000	8	.008	26	.014	24	.067	20	.21	20
1963	.0000	12	.0000	11	.0000	11	.0000	11	.0000	9	.035	28	.072	25	.076	21	.29	21
1964	.0000	13	.0000	12	.0000	12	.0000	12	.0000	10	.0000	7	.0000	6	.0000	5	.0000	3
1965	.0000	14	.0000	13	.0000	13	.0000	13	.31	38	1.04	38	1.06	35	1.27	35	2.30	35
1966	.0000	15	.0000	14	.0000	14	.0000	14	.12	37	.27	33	.48	32	.63	28	1.61	32
1967	.0000	16	.0000	15	.0000	15	.13	40	.91	42	1.34	39	2.11	38	3.24	39	3.56	38
1968	.0000	17	.0000	16	.030	39	.090	38	.65	41	2.27	41	2.35	39	2.40	38	2.54	36
1969	.0000	18	.0000	17	.0000	16	.0000	15	.0000	11	.024	27	.29	28	.77	31	.68	25
1970	.0000	19	.0000	18	.0000	17	.0000	16	.0000	12	.0000	8	.0000	7	.0010	16	.0010	11
1971	.0000	20	.0000	19	.0000	18	.0000	17	.0000	13	.19	31	.44	31	1.01	33	1.07	29
1972	.0000	21	.0000	20	.0000	19	.0000	18	.0000	14	.0000	9	.0000	8	.0000	6	.027	14
1973	.0000	22	.0000	21	.0000	20	.0000	19	.0000	15	.30	34	.71	34	1.10	34	2.90	37
1974	.0000	23	.0000	22	.0000	21	.0000	20	.0000	16	.0000	10	.0000	9	.0000	7	.0000	4
1975	.0000	24	.0000	23	.0000	22	.0000	21	.0000	17	.0000	11	.0000	10	.0000	8	.0000	5
1976	.0000	25	.0000	24	.0000	23	.0000	22	.0000	18	.0000	12	.0000	11	.0000	9	.0000	6
1977	.0000	26	.0000	25	.0000	24	.0000	23	.0000	19	.0000	13	.002	19	.004	17	.019	13
1978	.0000	27	.0000	26	.0000	25	.0000	24	.0000	20	.0000	14	.0000	12	.0000	10	.0000	7
1979	.0000	28	.0000	27	.0000	26	.0000	25	.0000	21	.0000	15	.0000	13	.0000	11	1.29	31
1980	.0000	29	.0000	28	.0000	27	.0000	26	.0000	22	.0000	16	.0000	14	.0000	12	.044	15
1981	.0000	30	.0000	29	.0000	28	.0000	27	.0000	23	.0000	17	.0000	15	.0000	13	.0000	8
1982	.0000	31	.0000	30	.0000	29	.0000	28	.008	33	2.87	42	3.47	40	3.58	40	3.76	39
1983	.0000	32	.0000	31	.0000	30	.0000	29	.0000	24	.12	30	.51	33	.64	29	1.86	33
1984	.0000	33	.0000	32	.0000	31	.0000	30	.0000	25	.0000	18	.37	29	.89	32	1.04	28
1985	.0000	34	.0000	33	.0000	32	.0000	31	.0000	26	.0000	19	.002	20	.17	24	.19	19
1986	.070	41	.090	41	.12	41	.21	41	.35	40	1.38	40	4.94	42	5.65	42	5.62	41
1987	.0000	35	.0000	34	.0000	33	.0000	32	.0000	27	.0000	20	.002	21	.21	25	.55	24
1988	.0000	36	.0000	35	.0000	34	.0000	33	.0000	28	.0000	21	.0000	16	.0000	14	.0000	9
1989	.0000	37	.0000	36	.0000	35	.0000	34	.0000	29	.0000	22	.0000	17	.004	18	.071	17
1990	.0000	38	.0000	37	.0000	36	.0000	35	.0000	30	.0000	23	.0000	18	.0000	15	.0000	10
1991	.0000	39	.0000	38	.0000	37	.0000	36	.0000	31	.0000	24	.10	26	.30	26	.42	23
1992	.0000	40	.0000	39	.0000	38	.0000	37	.0000	32	.0000	25	.011	23	.10	22	.13	18

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E2.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days for station 06400000, Hat Creek near Edgemont

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1951	1,350	8	785	8	415	9	286	8	190	9	155	6	118	6	90.3	8	60.2	8
1952	758	14	550	14	265	19	197	15	118	15	82.6	14	64.7	15	60.9	12	44.1	11
1953	547	22	466	19	309	16	183	19	99.1	20	60.0	19	42.2	20	35.4	20	24.3	20
1954	2,890	3	1,311	5	589	7	284	9	146	11	73.9	16	52.2	16	39.7	16	26.4	19
1955	1,330	9	677	9	302	17	146	21	105	18	90.7	13	70.8	13	57.4	13	49.3	10
1956	241	29	127	31	84.9	30	41.9	31	37.1	30	23.8	30	18.3	29	14.4	30	12.2	28
1957	4,440	2	2,340	2	1,505	2	868	2	508	2	284	2	206	2	161	2	108	2
1958	682	17	470	17	274	18	215	14	111	17	63.8	18	45.6	18	39.5	17	29.1	16
1959	283	28	187	27	124	27	69.6	29	57.6	26	32.5	26	25.0	25	24.8	24	18.9	24
1960	111	34	83.3	33	58.7	33	42.3	30	22.4	31	14.9	31	10.2	31	7.85	32	5.31	34
1961	80.0	36	43.3	36	21.6	36	11.6	37	8.05	35	4.31	36	3.01	38	2.39	38	2.61	36
1962	917	11	546	15	336	14	240	12	173	10	123	10	85.0	10	64.4	10	43.7	13
1963	567	21	385	22	230	21	126	22	72.6	22	38.3	23	35.3	22	28.9	22	23.0	22
1964	401	23	251	23	178	23	102	24	52.9	27	28.1	28	22.6	28	17.3	27	11.4	30
1965	597	19	418	21	211	22	187	17	131	12	79.9	15	73.3	12	55.1	14	36.7	14
1966	700	16	554	13	345	13	185	18	100	19	57.3	20	38.8	21	30.9	21	28.9	17
1967	8,350	1	5,463	1	3,795	1	2,117	1	1,229	1	649	1	442	1	339	1	223	1
1968	1,610	6	1,443	4	940	4	480	5	295	5	191	4	156	4	140	3	97.7	3
1969	309	27	220	25	155	24	90.1	25	47.5	28	24.6	29	16.8	30	14.6	29	15.6	25
1970	202	30	109	32	60.0	32	29.1	33	14.9	34	14.2	32	10.0	32	7.86	31	5.34	33
1971	1,530	7	1,277	6	827	5	630	4	352	4	184	5	125	5	94.6	6	62.6	7
1972	118	33	61.0	34	29.9	34	19.6	34	15.0	33	9.14	34	6.97	33	6.67	33	5.45	32
1973	579	20	442	20	234	20	196	16	118	16	73.4	17	49.7	17	37.4	18	26.7	18
1974	711	15	558	12	329	15	165	20	87.3	21	48.0	21	45.1	19	36.2	19	24.0	21
1975	104	35	40.4	37	19.9	37	12.6	36	7.97	36	4.47	35	3.78	36	3.86	35	2.53	37
1976	350	26	208	26	107	28	71.7	28	65.0	24	34.3	25	23.0	27	17.3	28	12.0	29
1977	46.0	38	31.7	38	15.4	39	7.50	39	3.90	39	2.18	39	2.38	39	1.86	39	1.22	39
1978	800	13	600	11	418	8	243	11	124	14	92.7	12	66.2	14	49.8	15	33.0	15
1979	394	24	174	28	76.3	31	35.9	32	18.5	32	9.75	33	6.80	34	5.26	34	5.55	31
1980	200	31	170	29	143	25	107	23	63.8	25	37.3	24	25.6	24	19.3	26	12.7	27
1981	13.0	41	8.87	40	3.91	43	2.79	42	2.41	41	1.35	41	.91	42	.70	42	.56	42
1982	840	12	615	10	362	10	290	7	209	7	131	9	87.5	9	75.6	9	49.8	9
1983	372	25	233	24	133	26	76.4	27	47.4	29	30.5	27	23.1	26	20.6	25	14.9	26
1984	625	18	541	16	348	11	223	13	129	13	116	11	82.3	11	63.5	11	43.8	12
1985	20.0	39	17.7	39	16.3	38	11.2	38	6.57	38	4.02	38	3.05	37	2.70	37	2.46	38
1986	1,640	5	1,236	7	761	6	396	6	213	6	145	7	112	7	112	5	79.5	5
1987	192	32	130	30	103	29	87.1	26	72.4	23	42.8	22	33.9	23	28.5	23	21.4	23
1988	71.0	37	54.3	35	27.2	35	12.8	35	7.66	37	4.12	37	4.16	35	3.56	36	2.71	35
1989	7.50	43	5.23	43	4.16	42	2.03	43	1.01	43	.51	43	.34	43	.31	43	.31	43
1990	11.0	42	6.70	42	5.14	41	3.31	41	1.68	42	1.06	42	.96	41	.75	41	.57	41
1991	2,890	4	1,862	3	966	3	649	3	478	3	256	3	174	3	131	4	86.0	4
1992	15.0	40	8.67	41	5.23	40	4.05	40	2.90	40	1.79	40	1.37	40	1.12	40	.98	40
1993	1,090	10	467	18	348	12	255	10	201	8	132	8	93.1	8	91.0	7	68.1	6

Table E3.1. Mean flow, in cubic feet per second, for station 06400497, Cascade Springs near Hot Springs

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1976	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	21.5	19.6	20.0	(2)
1977	20.0	19.8	19.1	18.5	19.0	19.6	20.0	20.0	20.0	20.0	19.1	18.8	19.5
1978	20.1	22.5	23.8	24.8	22.2	20.9	19.4	20.1	22.4	20.8	19.0	18.5	21.2
1979	18.1	19.0	19.0	18.8	18.9	17.7	17.6	19.9	20.7	23.1	21.3	20.0	19.5
1980	20.4	21.0	21.0	20.5	20.0	19.5	19.5	20.6	21.9	21.6	19.6	18.9	20.4
1981	19.0	19.0	19.0	18.8	18.5	18.4	18.0	18.1	18.0	18.5	19.0	19.3	18.6
1982	19.9	19.1	18.0	18.0	18.4	18.1	19.4	20.9	21.0	23.2	22.6	20.7	19.9
1983	21.0	21.0	21.0	21.0	21.0	21.3	22.0	21.4	20.5	20.8	21.6	20.9	21.1
1984	19.7	20.0	19.9	20.1	21.7	23.0	23.0	23.7	23.1	21.6	20.6	20.0	21.4
1985	19.2	19.5	20.8	21.5	19.6	19.4	19.7	21.3	22.0	21.6	21.0	21.5	20.6
1986	21.0	20.0	19.1	20.0	20.1	20.2	20.8	21.6	22.2	21.7	21.8	22.0	20.9
1987	22.0	21.2	21.0	20.5	20.6	20.1	21.3	21.8	22.3	22.3	21.3	21.0	21.3
1988	20.5	20.0	20.0	20.0	19.8	19.9	19.8	20.0	20.0	19.3	18.0	18.0	19.6
1989	18.0	19.0	18.6	18.0	18.0	18.0	18.7	18.0	18.0	18.1	18.6	18.5	18.3
1990	18.0	18.3	18.4	18.0	18.2	18.9	18.9	19.8	19.5	19.0	19.0	19.7	18.8
1991	19.5	19.4	19.0	18.1	18.9	19.1	18.0	18.0	18.0	17.7	17.1	17.7	18.4
1992	17.6	17.9	17.6	18.2	17.9	18.0	18.4	18.0	17.3	17.3	18.3	17.4	17.8
1993	18.4	16.3	15.8	15.6	16.5	15.6	16.6	17.1	16.2	14.6	16.2	16.6	16.3

¹Indicates a no-value month.²Incomplete water year.**Table E3.2.** Statistics on mean flow, in cubic feet per second, for station 06400497, Cascade Springs near Hot Springs (October 1976 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	17	17	17	17	17	17	17	17	17	17	17	17	17
Maximum	22.0	22.5	23.8	24.8	22.2	23.0	23.0	23.7	23.1	23.2	22.6	22.0	21.4
Percentile													
75th	20.5	20.5	20.9	20.5	20.3	20.1	20.4	21.3	22.1	21.6	21.3	20.8	21.0
50th	19.7	19.5	19.1	18.8	19.0	19.4	19.4	20.0	20.5	20.8	19.1	19.3	19.6
25th	18.2	19.0	18.5	18.0	18.3	18.0	18.2	18.0	18.0	18.3	18.4	18.2	18.5
Minimum	17.6	16.3	15.8	15.6	16.5	15.6	16.6	17.1	16.2	14.6	16.2	16.6	16.3
Mean	19.55	19.59	19.48	19.44	19.37	19.28	19.48	20.02	20.18	20.07	19.65	19.38	19.62
Standard deviation	1.25	1.42	1.77	2.01	1.47	1.66	1.63	1.74	2.07	2.32	1.78	1.53	1.44
Skewness	0.10	-0.21	0.41	0.86	0.20	0.09	0.48	0.12	-0.43	-0.72	-0.15	-0.01	-0.65
Coefficient of variation	0.06	0.07	0.09	0.10	0.08	0.09	0.08	0.09	0.10	0.12	0.09	0.08	0.07
Percent of annual flow	8.30	8.32	8.27	8.25	8.23	8.19	8.27	8.50	8.57	8.52	8.35	8.23	¹ 0.633

¹Serial correlation for annual mean flows.

Table E3.3. Serial correlation for 1-year lag for monthly mean flow for station 06400497, Cascade Springs near Hot Springs (October 1976 through September 1993)

Month											
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
0.289	0.207	0.070	0.054	0.280	0.281	0.496	0.546	0.528	0.549	0.499	0.625

Table E3.4. Correlation matrix for monthly mean flow for station 06400497, Cascade Springs near Hot Springs (October 1976 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.739	0.577	0.526	0.679	0.610	0.678	0.624	0.637	0.510	0.443	0.474
Nov.	*	1.000	.944	.886	.907	.767	.629	.596	.759	.627	.428	.401
Dec.	*	*	1.000	.965	.889	.717	.518	.526	.721	.544	.328	.342
Jan.	*	*	*	1.000	.888	.707	.520	.549	.739	.540	.372	.383
Feb.	*	*	*	*	1.000	.916	.777	.763	.832	.613	.455	.448
Mar.	*	*	*	*	*	1.000	.898	.799	.746	.513	.414	.452
Apr.	*	*	*	*	*	*	1.000	.888	.738	.566	.593	.606
May	*	*	*	*	*	*	*	1.000	.921	.807	.767	.758
June	*	*	*	*	*	*	*	*	1.000	.880	.732	.716
July	*	*	*	*	*	*	*	*	*	1.000	.900	.795
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	.920
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E3.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06400497, Cascade Springs near Hot Springs

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1977	18.0	8	18.0	8	18.0	7	18.1	10	18.4	9	18.7	9	19.0	9	19.2	9	19.5	9
1978	17.0	4	17.0	3	17.1	5	17.5	4	17.7	4	18.3	6	18.5	6	18.6	6	18.6	6
1979	17.0	5	17.0	4	17.0	3	17.1	3	17.6	3	18.8	10	19.4	10	20.2	14	20.4	14
1980	16.0	2	17.3	6	17.7	6	17.9	6	18.4	10	18.5	8	18.6	7	18.7	7	18.8	7
1981	18.0	9	18.0	9	18.0	8	18.0	7	18.0	6	18.0	4	18.0	3	18.1	3	18.5	5
1982	18.0	10	18.3	12	18.7	12	18.9	12	19.4	13	20.1	16	20.4	16	20.9	16	20.9	15
1983	19.0	13	19.0	13	19.0	13	19.4	15	19.7	15	19.9	13	19.9	13	19.9	12	20.3	13
1984	19.0	14	19.0	14	19.0	14	19.0	13	19.1	11	19.3	11	19.6	11	19.7	10	20.0	10
1985	19.0	15	19.0	15	19.0	15	19.0	14	19.1	12	19.5	12	19.7	12	19.8	11	20.1	12
1986	18.0	11	18.0	10	18.4	11	18.8	11	19.6	14	20.0	15	20.3	15	20.5	15	20.9	16
1987	19.0	16	19.3	16	19.6	16	19.7	16	19.8	16	19.9	14	19.9	14	19.9	13	20.0	11
1988	18.0	12	18.0	11	18.0	9	18.0	8	18.0	7	18.0	5	18.0	4	18.1	4	18.3	4
1989	17.0	6	17.0	5	17.0	4	17.5	5	17.8	5	17.9	3	18.0	5	18.1	5	18.2	3
1990	17.0	7	17.7	7	18.0	10	18.0	9	18.1	8	18.4	7	18.6	8	18.8	8	19.0	8
1991	16.0	3	16.0	2	16.0	2	16.7	2	17.1	2	17.2	2	17.4	2	17.5	2	17.6	2
1992	14.0	1	14.0	1	14.4	1	15.0	1	15.4	1	15.6	1	15.8	1	15.9	1	16.4	1

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E3.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days for station 06400497, Cascade Springs near Hot Springs

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1977	21.0	10	20.3	11	20.1	11	20.1	11	20.0	11	20.0	11	20.0	11	20.0	11	19.8	11
1978	25.0	1	25.0	1	25.0	1	25.0	1	24.9	1	24.3	1	23.8	1	23.4	1	22.5	2
1979	24.0	3	24.0	3	24.0	3	23.7	4	23.1	4	22.3	4	21.7	6	21.3	8	20.5	8
1980	22.0	8	22.0	8	22.0	8	22.0	8	22.0	8	21.8	8	21.4	9	21.0	9	20.5	9
1981	20.0	12	20.0	12	20.0	12	19.5	14	19.3	14	19.1	14	19.0	14	18.9	14	18.8	14
1982	25.0	2	25.0	2	25.0	2	24.6	2	24.0	2	23.1	3	22.3	3	22.0	3	21.3	5
1983	22.0	9	22.0	9	22.0	9	22.0	9	22.0	9	21.8	9	21.6	7	21.4	7	21.3	6
1984	24.0	4	24.0	4	24.0	4	24.0	3	23.9	3	23.4	2	23.3	2	23.2	2	22.7	1
1985	23.0	5	23.0	5	22.6	7	22.3	7	22.2	7	22.0	7	21.6	8	21.6	6	21.2	7
1986	23.0	6	23.0	6	23.0	5	22.9	5	22.5	6	22.1	6	21.9	5	21.9	5	21.7	3
1987	23.0	7	23.0	7	23.0	6	22.9	6	22.6	5	22.3	5	22.2	4	22.0	4	21.7	4
1988	21.0	11	21.0	10	21.0	10	20.9	10	20.5	10	20.2	10	20.2	10	20.1	10	20.0	10
1989	19.0	16	19.0	16	19.0	15	19.0	15	19.0	15	18.8	15	18.5	15	18.4	15	18.4	15
1990	20.0	13	20.0	13	20.0	13	20.0	12	20.0	12	19.6	12	19.4	12	19.3	12	19.3	12
1991	20.0	14	20.0	14	20.0	14	19.9	13	19.6	13	19.5	13	19.3	13	19.0	13	19.0	13
1992	19.0	17	19.0	17	19.0	16	18.7	17	18.4	16	18.2	16	18.1	16	18.1	16	18.1	16
1993	20.0	15	19.3	15	19.0	17	18.9	16	18.4	17	17.4	17	16.9	17	16.5	17	16.4	17

Table E.4.1. Mean flow, in cubic feet per second, for station 06400500, Cheyenne River near Hot Springs

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1915	148	44.9	34.7	25.8	25.7	378	1,203	2,535	3,589	2,462	3,362	2,812	1,390
1916	423	172	99.4	68.5	873	253	229	340	735	468	247	36.5	326
1917	46.7	41.5	27.4	23.0	109	610	681	1,958	867	43.1	104	23.0	380
1918	26.6	30.1	28.0	35.6	110	231	189	543	789	1,827	1,153	73.1	424
1919	122	38.7	27.2	30.4	36.9	295	443	39.5	252	911	375	137	227
1920	246	64.8	(1)	(1)	41.0	1,510	1,181	8,890	2,230	1,583	969	367	(2)
1943	(1)	(1)	(1)	(1)	(1)	533	165	159	732	44.7	28.8	18.2	(2)
1944	21.6	31.6	27.0	26.7	27.8	131	220	222	350	603	18.0	19.1	142
1945	19.7	26.4	33.2	21.4	25.9	231	85.0	51.0	496	423	250	48.5	143
1946	24.5	24.8	19.3	23.5	77.9	62.0	34.2	214	834	293	27.5	289	160
1947	132	50.6	26.2	22.9	172	138	93.2	35.8	770	401	64.7	21.4	160
1948	23.7	33.1	36.8	24.2	71.8	510	59.3	68.0	423	304	162	15.0	145
1949	21.9	36.5	25.5	23.7	212	857	133	206	251	31.8	29.6	19.9	154
1950	22.2	26.8	21.8	27.6	42.3	67.7	157	171	129	184	33.6	22.5	75.6
1951	29.2	24.1	23.4	23.6	30.1	62.8	36.9	16.3	414	632	379	406	174
1952	33.1	37.7	28.4	23.1	45.1	118	85.7	471	640	239	98.1	14.3	153
1953	18.3	19.4	18.3	25.9	47.6	280	52.2	108	273	18.0	175	24.8	88.5
1954	24.0	21.6	22.7	19.5	42.9	51.1	30.6	234	39.3	53.0	168	13.6	60.5
1955	20.4	20.4	21.4	20.5	23.2	259	889	316	360	45.9	486	182	220
1956	32.3	24.4	61.5	38.0	67.1	145	34.0	144	223	21.8	45.4	16.3	71.0
1957	15.1	20.3	23.0	19.1	39.3	76.8	97.1	1,151	618	106	112	37.2	194
1958	26.9	42.9	25.5	23.0	33.0	76.4	155	16.8	125	933	214	14.4	142
1959	15.7	20.6	18.8	17.9	19.7	100	26.8	23.6	193	109	11.8	15.2	47.8
1960	15.9	18.0	19.9	19.8	24.3	121	25.9	26.5	87.0	13.3	10.7	14.0	33.1
1961	21.4	19.4	23.0	21.3	22.7	30.7	23.1	16.9	34.2	92.1	48.7	15.7	30.9
1962	22.4	24.7	19.4	19.5	90.2	121	21.1	1,895	2,266	790	130	23.7	453
1963	50.6	33.3	29.5	23.4	159	112	75.5	156	685	83.5	16.9	95.7	125
1964	18.9	17.7	19.4	20.5	27.3	51.8	89.5	88.5	494	71.0	17.1	18.2	77.3
1965	19.6	20.1	21.3	28.2	38.6	80.7	88.9	451	1,033	338	64.7	38.0	185
1966	69.2	32.2	28.5	27.5	25.1	275	80.2	28.4	14.0	251	312	38.9	99.7
1967	69.3	46.8	37.8	39.4	93.4	502	108	185	1,921	330	39.3	40.2	283
1968	25.1	37.6	33.0	29.3	64.7	137	83.1	58.3	470	120	103	49.3	100
1969	29.2	35.3	31.0	27.5	28.7	189	92.5	123	117	909	48.4	15.5	139
1970	20.8	31.1	39.5	20.9	82.1	121	113	107	78.1	26.9	34.5	12.5	57.0
1971	31.4	31.3	31.2	22.5	80.1	158	395	1,283	967	59.6	10.5	25.4	258
1972	43.5	49.0	32.7	26.8	121	406	61.3	50.3	129	36.4	38.9	24.1	84.9

¹Indicates a no-value month.²Incomplete water year.

Table E4.2. Statistics on mean flow, in cubic feet per second, for station 06400500, Cheyenne River near Hot Springs (October 1943 to September 1972)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	29	29	29	29	29	29	29	29	29	29	29	29	29
Maximum	132	50.6	61.5	39.4	212	857	889	1,895	2,266	933	486	406	453
Percentile													
75th	31.9	35.9	31.9	27.1	81.1	245	110	228	662	369	165	39.5	167
50th	23.7	26.8	25.5	23.4	42.9	121	85.0	123	360	120	48.7	22.5	142
25th	20.0	20.5	21.3	20.7	27.5	76.6	35.5	43.1	127	49.4	28.5	15.4	76.4
Minimum	15.1	17.7	18.3	17.9	19.7	30.7	21.1	16.3	14.0	13.3	10.5	12.5	30.9
Mean	31.65	29.58	27.55	24.39	63.27	188.66	118.83	273.01	497.71	259.25	108.60	54.15	139.87
Standard deviation	23.74	9.55	8.92	5.02	48.89	180.04	165.75	434.65	528.13	273.89	119.77	89.23	87.23
Skewness	3.14	0.71	2.09	1.59	1.67	2.32	3.98	2.72	2.08	1.31	1.74	3.12	1.76
Coefficient of variation	0.75	0.32	0.32	0.21	0.77	0.95	1.39	1.59	1.06	1.06	1.10	1.65	0.62
Percent of annual flow	1.89	1.76	1.64	1.45	3.77	11.25	7.09	16.28	29.68	15.46	6.48	3.23	¹ -0.298

¹Serial correlation for annual mean flows.

Table E4.3. Serial correlation for 1-year lag for monthly mean flow for station 06400500, Cheyenne River near Hot Springs (October 1943 to September 1972)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.012	0.192	0.015	0.124	0.134	0.217	-0.139	-0.201	-0.124	-0.109	-0.081	-0.129	

Table E4.4. Correlation matrix for monthly mean flow for station 06400500, Cheyenne River near Hot Springs (October 1943 to September 1972)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.663	0.188	0.287	0.492	0.122	-0.063	-0.158	0.212	0.106	-0.022	-0.039
Nov.	*	1.000	0.364	0.389	0.570	0.414	-0.045	-0.163	0.143	0.276	-0.150	-0.179
Dec.	*	*	1.000	0.644	0.194	0.227	-0.078	-0.155	-0.050	-0.092	-0.130	-0.201
Jan.	*	*	*	1.000	0.126	0.290	-0.104	-0.229	0.178	0.054	-0.148	-0.061
Feb.	*	*	*	*	1.000	0.551	-0.094	0.075	0.263	-0.168	-0.339	-0.070
Mar.	*	*	*	*	*	1.000	0.104	-0.118	0.059	-0.146	0.025	-0.156
Apr.	*	*	*	*	*	*	1.000	0.147	-0.010	-0.110	0.462	0.161
May	*	*	*	*	*	*	*	1.000	0.661	0.142	-0.055	-0.092
June	*	*	*	*	*	*	*	*	1.000	0.281	-0.108	0.078
July	*	*	*	*	*	*	*	*	*	1.000	0.200	0.153
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.478
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E4.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06400500, Cheyenne River near Hot Springs

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1943	3.00	3	4.00	3	4.00	2	4.50	1	8.00	1	13.7	3	17.2	5	21.2	11	22.8	9
1944	5.00	5	6.33	5	7.29	6	8.36	5	16.4	21	17.7	12	18.4	9	20.5	10	22.6	8
1945	11.0	20	12.7	20	14.3	24	15.3	24	17.1	22	20.6	19	21.9	14	22.4	14	30.9	20
1946	3.90	4	4.13	4	5.49	4	7.10	3	9.71	4	24.3	24	30.9	27	36.0	27	82.7	29
1947	2.80	2	2.93	2	4.83	3	13.4	16	17.8	24	19.6	17	22.0	16	26.9	19	26.7	17
1948	9.00	13	11.0	19	11.0	16	13.6	17	15.0	15	16.4	8	22.9	18	24.5	16	24.4	14
1949	12.0	21	12.7	21	13.4	22	14.0	20	16.1	18	20.0	18	22.5	17	22.3	13	24.0	13
1950	14.0	25	15.3	26	15.6	26	15.9	25	17.9	25	23.0	22	23.1	20	23.5	15	23.8	12
1951	10.0	17	10.0	16	11.0	17	12.9	14	16.0	17	23.1	23	29.5	25	29.9	23	37.2	25
1952	9.00	14	9.00	13	9.43	12	10.3	10	14.0	11	16.0	7	17.2	6	17.5	4	23.3	10
1953	13.0	23	13.0	23	13.1	20	13.1	15	17.1	23	20.9	20	21.1	13	21.9	12	25.0	16
1954	10.0	18	10.3	18	11.9	19	12.7	13	13.6	10	15.7	6	17.3	7	18.4	7	19.4	5
1955	7.00	10	7.67	10	8.57	9	9.07	8	13.3	8	24.7	25	37.9	28	37.7	28	61.5	28
1956	10.0	19	10.0	17	10.0	14	14.7	22	15.0	16	15.6	5	16.0	3	18.0	5	18.7	4
1957	14.0	26	14.0	25	15.0	25	17.5	26	20.8	27	22.1	21	23.3	21	29.5	22	29.6	19
1958	5.00	6	7.00	8	9.14	11	9.21	9	12.3	7	14.8	4	16.7	4	17.3	3	17.8	3
1959	6.00	7	6.67	7	7.29	7	8.57	6	9.10	3	12.3	2	14.0	2	15.0	2	16.7	2
1960	6.00	8	6.33	6	6.71	5	7.14	4	8.83	2	10.4	1	11.9	1	13.6	1	16.0	1
1961	9.00	15	9.33	14	9.71	13	11.0	11	13.5	9	17.7	13	19.8	11	20.1	9	23.6	11
1962	7.00	11	7.67	11	9.00	10	11.4	12	14.1	13	25.9	26	28.4	23	34.2	26	38.3	26
1963	7.20	12	8.27	12	11.5	18	13.8	19	16.1	19	18.3	15	18.5	10	18.8	8	22.2	7
1964	12.0	22	12.7	22	13.6	23	14.9	23	16.1	20	16.9	10	17.9	8	18.3	6	19.4	6
1965	16.0	28	17.0	28	19.3	28	23.1	28	24.8	28	26.1	27	26.7	22	27.9	20	36.8	24
1966	13.0	24	13.0	24	13.1	21	13.6	18	14.0	12	18.9	16	38.5	29	47.2	29	53.8	27
1967	15.0	27	15.7	27	17.7	27	18.5	27	20.0	26	29.1	29	30.3	26	30.1	24	33.2	23
1968	23.0	29	23.7	29	24.3	29	25.9	29	26.0	29	26.9	28	28.6	24	30.2	25	31.9	22
1969	9.90	16	9.90	15	10.8	15	14.1	21	14.8	14	18.0	14	20.6	12	25.4	18	27.4	18
1970	1.20	1	1.60	1	2.23	1	4.58	2	9.97	5	16.9	11	21.9	15	24.6	17	24.8	15
1971	6.80	9	7.10	9	7.44	8	8.74	7	9.97	6	16.5	9	23.0	19	28.0	21	31.1	21

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E4.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days in year ending September 30, for station 06400500, Cheyenne River near Hot Springs

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1944	6,290	7	4,447	8	2,224	8	1,160	14	850	12	508	14	401	13	366	11	260	13
1945	3,030	16	2,223	15	1,425	18	851	18	540	16	467	15	397	14	311	15	257	15
1946	4,780	11	3,547	10	1,985	11	1,346	11	976	9	615	10	453	10	378	9	280	9
1947	5,920	9	4,627	6	2,469	7	1,809	6	1,092	7	599	11	422	12	343	12	273	11
1948	2,360	18	1,670	20	1,503	16	924	16	533	18	429	16	312	17	269	16	262	12
1949	2,070	20	1,980	17	1,859	14	1,488	9	1,001	8	593	12	461	9	411	8	282	8
1950	1,420	24	799	26	508	26	309	26	217	26	177	24	164	23	162	22	127	23
1951	3,740	14	3,037	12	2,162	9	1,116	15	751	13	676	6	606	6	466	7	318	7
1952	7,320	4	3,787	9	1,957	12	1,277	12	712	14	674	7	466	8	375	10	276	10
1953	1,380	25	1,025	24	708	23	494	22	327	23	191	22	176	22	181	20	152	20
1954	3,900	13	2,104	16	964	21	473	23	252	25	152	26	163	24	127	25	98.6	25
1955	4,260	12	2,840	13	2,060	10	1,397	10	918	11	617	9	528	7	466	6	392	4
1956	2,320	19	1,326	22	705	24	358	25	336	22	185	23	137	25	145	24	113	24
1957	8,270	3	6,330	3	3,756	4	2,291	4	1,556	4	912	4	638	4	508	4	364	5
1958	4,950	10	3,447	11	1,922	13	1,518	8	1,103	6	636	8	437	11	342	13	257	14
1959	1,170	26	975	25	580	25	408	24	256	24	153	25	110	27	102	27	78.8	27
1960	704	28	474	28	320	27	211	27	127	28	79.1	28	73.1	28	67.3	28	51.5	28
1961	849	27	567	27	320	28	174	28	110	29	73.9	29	59.8	29	49.3	29	41.9	29
1962	13,200	1	10,230	1	6,369	1	4,153	1	3,760	1	2,410	1	1,717	1	1,295	1	880	1
1963	2,020	21	1,897	18	1,542	15	1,165	13	710	15	429	17	312	16	259	17	209	17
1964	1,950	22	1,477	21	1,137	20	906	17	538	17	308	18	228	19	193	19	136	21
1965	6,730	5	5,653	4	3,319	5	1,833	5	1,188	5	800	5	627	5	482	5	343	6
1966	1,600	23	1,245	23	893	22	543	21	341	21	290	20	206	20	158	23	162	19
1967	6,560	6	5,623	5	3,779	3	3,100	3	2,016	3	1,134	3	817	3	688	3	520	2
1968	3,490	15	2,707	14	1,479	17	792	20	471	20	303	19	240	18	194	18	163	18
1969	5,980	8	4,480	7	3,056	6	1,744	7	943	10	537	13	393	15	316	14	250	16
1970	493	29	327	29	219	29	149	29	145	27	118	27	120	26	111	26	88.6	26
1971	11,900	2	8,027	2	4,311	2	3,601	2	2,061	2	1,262	2	910	2	717	2	490	3
1972	2,480	17	1,790	19	1,297	19	793	19	493	19	281	21	204	21	177	21	135	22

Table E5.1. Mean flow, in cubic feet per second, for station 06400875, Horsehead Creek at Oelrichs

Water year	Month												Annual
	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	
1983	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	1.19	0.008	0.009	0.000	(2)
1984	0.000	0.000	0.000	0.046	0.080	0.087	16.5	53.0	6.62	.15	.10	.000	6.42
1985	.000	.000	.000	.000	.005	.12	.052	.000	.000	.000	.000	.000	.015
1986	.000	.000	.000	.000	1.40	58.9	83.3	7.81	187	14.2	.74	.008	29.3
1987	.10	.076	.15	.19	.12	18.5	46.8	1.87	1.38	.013	.000	.000	5.75
1988	.000	.000	.020	.038	.095	.087	.031	.20	.000	1.16	.000	.000	.14
1989	.000	.000	.000	.000	.000	.000	.000	.000	.000	.020	.000	.000	.002
1990	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1991	.000	.016	.000	.000	.000	.009	.095	246	62.3	3.54	.24	.000	26.3
1992	.000	.000	.000	.049	.59	1.12	.48	.092	.24	.000	.000	.000	.21
1993	.000	.000	.000	.000	.000	24.9	38.4	2.48	37.5	31.4	.63	.000	11.3

¹Indicates a no-value month.²Incomplete water year.**Table E5.2.** Statistics on mean flow, in cubic feet per second, for station 06400875, Horsehead Creek at Oelrichs (October 1983 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	10	10	10	10	10	10	10	10	10	10	10	10	10
Maximum	0.10	0.076	0.15	0.19	1.40	58.9	83.3	246	187	31.4	0.74	0.008	29.3
Percentile													
75th	0.000	0.004	0.005	0.047	0.24	20.1	40.5	19.1	43.7	6.20	0.34	0.000	15.0
50th	0.000	0.000	0.000	0.000	0.042	0.10	0.29	1.03	0.81	0.085	0.000	0.000	2.98
25th	0.000	0.000	0.000	0.000	0.000	0.007	0.023	0.000	0.000	0.000	0.000	0.000	0.012
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mean	0.01	0.01	0.02	0.03	0.23	10.37	18.57	31.15	29.50	5.05	0.17	0.001	7.94
Standard deviation	0.03	0.02	0.05	0.06	0.45	19.31	28.73	77.24	59.25	10.26	0.28	0.00	11.16
Skewness	3.16	2.93	3.06	2.48	2.44	2.13	1.55	2.93	2.52	2.35	1.54	3.16	1.35
Coefficient of variation	3.16	2.61	2.77	1.84	1.96	1.86	1.55	2.48	2.01	2.03	1.65	3.16	1.41
Percent of annual flow	0.01	0.01	0.02	0.03	0.24	10.91	19.52	32.75	31.02	5.31	0.18	0.00	¹ -0.337

¹Serial correlation for annual mean flows.**Table E5.3.** Serial correlation for 1-year lag for monthly mean flow for station 06400875, Horsehead Creek at Oelrichs (October 1983 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
-0.125	-0.185	-0.011	-0.088	-0.212	0.069	0.160	-0.167	-0.255	-0.265	-0.328	-0.125	

Table E5.4. Correlation matrix for monthly mean flow for station 06400875, Horsehead Creek at Oelrichs (October 1983 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.978	0.991	0.935	-0.085	0.148	0.345	-0.133	-0.167	-0.173	-0.212	-0.111
Nov.	*	1.000	.966	.896	-.123	.108	.298	.073	-.126	-.184	-.195	-.135
Dec.	*	*	1.000	.945	-.100	.124	.317	-.153	-.191	-.191	-.242	-.127
Jan.	*	*	*	1.000	-.062	.022	.240	-.176	-.283	-.288	-.336	-.191
Feb.	*	*	*	*	1.000	.790	.701	-.179	.815	.204	.571	.917
Mar.	*	*	*	*	*	1.000	.962	-.199	.866	.614	.845	.883
Apr.	*	*	*	*	*	*	1.000	-.203	.765	.549	.763	.792
May	*	*	*	*	*	*	*	1.000	.195	-.071	.094	-.106
June	*	*	*	*	*	*	*	*	1.000	.469	.843	.934
July	*	*	*	*	*	*	*	*	*	1.000	.863	.314
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	.707
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E5.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06400875, Horsehead Creek at Oelrichs

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1984	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
1985	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2
1986	.0000	3	.0000	3	.0000	3	.0000	3	.0010	9	.042	9	.060	9	.077	9	.11	9
1987	.0000	4	.0000	4	.0000	4	.0000	4	.0000	3	.0000	3	.0000	3	.0000	3	.003	7
1988	.0000	5	.0000	5	.0000	5	.0000	5	.0000	4	.0000	4	.0000	4	.0000	4	.0000	3
1989	.0000	6	.0000	6	.0000	6	.0000	6	.0000	5	.0000	5	.0000	5	.0000	5	.0000	4
1990	.0000	7	.0000	7	.0000	7	.0000	7	.0000	6	.0000	6	.0000	6	.0000	6	.0000	5
1991	.0000	8	.0000	8	.0000	8	.0000	8	.0000	7	.0000	7	.0000	7	.0000	7	.016	8
1992	.0000	9	.0000	9	.0000	9	.0000	9	.0000	8	.0000	8	.0000	8	.0000	8	.0000	6

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E5.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06400875, Horsehead Creek at Oelrichs

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1984	358	3	308	3	229	3	134	3	69.9	3	38.3	3	25.9	4	19.5	4	12.8	4
1985	.26	9	.26	8	.24	8	.21	8	.16	8	.092	8	.062	8	.046	8	.030	8
1986	2,920	2	1,591	2	761	2	371	2	192	2	135	2	94.3	2	84.9	1	58.4	1
1987	265	5	179	5	140	4	94.9	4	61.5	4	33.1	5	22.6	5	17.3	5	11.4	5
1988	30.0	6	11.8	6	5.12	6	2.39	6	1.20	7	.65	7	.47	7	.36	7	.27	7
1989	.56	8	.19	9	.090	9	.042	9	.021	9	.010	9	.007	9	.005	9	.003	9
1990	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10	.0000	10
1991	4,080	1	1,750	1	806	1	459	1	308	1	160	1	107	1	80.1	2	52.6	2
1992	2.50	7	2.47	7	2.29	7	1.95	7	1.46	6	1.00	6	.74	6	.62	6	.43	6
1993	344	4	191	4	114	5	60.1	5	57.3	5	35.0	4	29.6	3	30.8	3	22.5	3

Table E6.1. Mean flow, in cubic feet per second, for station 06401500, Cheyenne River below Angostura Dam

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1946	(1)	28.0	20.2	27.3	111	60.0	29.0	203	950	302	51.1	328	(2)
1947	157	56.6	29.2	26.9	169	147	108	54.3	905	469	69.1	22.0	184
1948	24.2	21.7	37.9	35.6	79.0	518	83.4	76.1	433	305	150	14.0	149
1949	27.3	46.6	27.6	23.2	127	1057	173	256	238	29.4	33.4	26.6	173
1950	2.78	.000	.000	.000	.56	1.32	1.03	18.2	47.5	123	89.0	32.9	26.6
1951	11.2	8.36	4.48	1.36	1.29	1.15	1.01	.42	.96	1.46	1.09	1.56	2.88
³ 1952	1.02	.99	20.8	43.4	175	170	188	87.5	57.5	149	151	158	99.9
1953	104	103	108	118	122	119	111	117	2.04	96.6	108	39.2	95.9
1954	2.17	1.34	42.7	41.2	23.1	18.1	.96	2.58	1.58	1.84	1.57	2.25	11.6
1955	2.01	1.65	2.98	1.59	1.97	2.19	115	205	272	77.6	56.1	53.6	66.1
1956	56.1	88.9	85.1	84.2	89.8	88.5	89.2	90.6	38.2	38.2	24.5	20.0	66.0
1957	.90	1.23	1.01	1.20	1.28	1.25	1.03	457	569	31.1	1.68	1.52	89.2
1958	1.58	33.7	54.4	57.1	57.9	55.7	1.17	3.22	1.40	146	201	3.94	51.9
1959	61.4	48.9	54.5	56.8	63.9	1.36	1.33	1.51	3.53	1.88	2.74	1.26	24.7
1960	1.26	1.26	1.16	.99	1.43	1.98	1.53	1.47	2.40	1.67	1.04	.70	1.41
1961	.81	.79	.75	.84	.83	.88	.96	.78	.96	.89	.70	.79	.83
1962	1.25	1.22	1.14	1.15	1.18	1.18	.87	783	2,802	1,210	48.0	1.47	404
1963	1.92	1.49	1.07	1.05	3.81	18.5	56.8	77.0	689	1.70	1.36	1.45	70.6
1964	1.60	1.53	1.17	1.25	1.21	1.11	.97	.94	153	13.6	1.28	1.00	14.7
1965	1.02	1.20	1.03	.96	1.12	1.22	1.00	71.3	939	177	1.52	1.38	99.2
1966	1.43	1.43	1.17	1.00	1.89	116	73.0	6.79	1.30	1.19	1.28	1.24	17.4
1967	1.27	1.51	1.23	1.47	2.17	174	71.1	115	1,763	196	1.83	1.34	193
1968	5.29	1.67	.97	.97	1.29	1.31	1.32	1.00	308	14.8	1.62	2.10	28.0
1969	2.08	1.61	1.05	1.19	1.29	25.2	16.7	6.34	1.50	724	2.06	1.28	66.6
1970	1.21	1.40	1.25	1.21	.66	.82	1.07	11.9	1.91	1.15	1.08	1.21	2.09
1971	1.31	1.13	1.16	1.27	1.05	.94	3.55	1,384	968	2.75	.72	.83	198
1972	1.29	1.28	1.26	1.08	1.09	1.69	1.99	2.35	25.2	2.66	1.26	1.01	3.48
1973	1.20	1.30	1.15	1.31	1.58	1.40	1.40	102	1.93	1.39	1.37	1.44	9.95
1974	1.55	1.62	1.66	79.9	211	76.2	107	2.11	1.56	1.56	1.55	1.41	39.3
1975	1.51	1.43	1.39	1.35	1.20	1.57	1.46	1.14	1.38	1.45	1.28	1.01	1.35
1976	1.08	1.39	1.01	1.29	1.36	1.31	1.12	1.05	1.28	1.25	1.16	.87	1.18
1977	1.31	1.21	1.20	1.25	1.19	1.26	1.14	1.04	.78	2.03	.82	.91	1.18
1978	1.11	1.44	1.08	1.01	1.13	1.81	1.69	2,203	171	110	88.1	1.51	219
1979	(1)	(1)	(1)	(1)	1.78	173	141	2.09	2.13	1.84	(1)	(1)	(2)
1980	(1)	(1)	(1)	(1)	84.3	130	64.0	3.61	3.37	2.15	(1)	(1)	(2)
1981	(1)	(1)	(1)	(1)	2.96	2.73	1.68	1.98	2.17	1.59	(1)	(1)	(2)
1982	(1)	(1)	(1)	(1)	2.06	2.32	2.75	2.75	278	42.0	(1)	(1)	(2)
1983	(1)	(1)	(1)	23.7	32.2	84.5	74.2	88.3	16.8	1.90	(1)	(1)	(2)
1984	(1)	(1)	(1)	(1)	1.72	86.4	132	577	232	2.74	(1)	(1)	(2)
1985	(1)	(1)	(1)	(1)	1.39	1.37	1.45	1.46	1.74	1.75	(1)	(1)	(2)
1986	(1)	(1)	(1)	(1)	1.29	1.69	2.02	136	651	66.6	(1)	(1)	(2)
1987	(1)	(1)	(1)	(1)	62.3	529	186	99.7	93.0	3.78	(1)	(1)	(2)
1988	(1)	(1)	(1)	(1)	1.77	1.44	1.41	1.47	1.40	1.70	(1)	(1)	(2)
1989	(1)	(1)	(1)	(1)	1.12	1.29	1.09	1.07	1.44	1.01	(1)	(1)	(2)
1990	(1)	(1)	(1)	(1)	1.08	1.30	1.17	1.93	1.93	1.77	(1)	(1)	(2)
1991	(1)	(1)	(1)	(1)	.82	.92	1.17	595	1312	4.72	(1)	(1)	(2)
1992	(1)	(1)	(1)	(1)	2.23	1.62	1.12	1.31	1.66	1.62	(1)	(1)	(2)
1993	(1)	(1)	(1)	(1)	1.32	1.87	29.5	182	252	117	(1)	(1)	(2)

¹Indicates a no-value month.

²Incomplete water year.

³Angostura Reservoir effectively filled during water year 1952.

Table E6.2. Statistics on mean flow, in cubic feet per second, for station 06401500, Cheyenne River below Angostura Dam (October 1952 through September 1978)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	26	26	26	26	26	26	26	26	26	26	26	26	26
Maximum	104	103	108	118	211	174	115	2,203	2,802	1,210	201	53.6	404
Percentile													
75th	2.03	1.63	1.99	11.5	8.63	32.8	60.4	115	373	99.9	8.18	1.66	90.9
50th	1.37	1.43	1.17	1.25	1.32	1.63	1.43	6.56	2.97	2.70	1.53	1.36	33.7
25th	1.21	1.25	1.06	1.04	1.17	1.24	1.06	1.39	1.47	1.53	1.23	1.01	3.13
Minimum	0.81	0.79	0.75	0.84	0.66	0.82	0.87	0.78	0.78	0.89	0.70	0.70	0.83
Mean	9.91	11.72	14.25	17.72	22.94	27.48	25.55	217.27	335.42	109.93	21.29	5.57	68.33
Standard deviation	24.70	27.21	29.27	33.14	49.72	47.47	40.94	508.41	659.55	267.99	46.53	12.74	93.33
Skewness	3.03	2.71	2.22	1.89	2.76	1.89	1.33	3.12	2.70	3.47	2.86	3.14	2.26
Coefficient of variation	2.49	2.32	2.05	1.87	2.17	1.73	1.60	2.34	1.97	2.44	2.19	2.29	1.37
Percent of annual flow	1.21	1.43	1.74	2.16	2.80	3.36	3.12	26.53	40.95	13.42	2.60	0.68	¹ -0.200

¹Serial correlation for annual mean flows.

Table E6.3. Serial correlation for 1-year lag for monthly mean flow for station 06401500, Cheyenne River below Angostura Dam (October 1952 through September 1978)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
-0.100	-0.020	0.267	0.115	-0.065	0.127	0.046	-0.158	-0.018	-0.152	-0.116	0.218	

Table E6.4. Correlation matrix for monthly mean flow for station 06401500, Cheyenne River below Angostura Dam (October 1952 through September 1978)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.939	0.880	0.795	0.529	0.379	0.428	-0.102	-0.175	-0.072	0.276	0.509
Nov.	*	1.000	.951	.850	.563	.445	.445	-.112	-.194	-.064	.443	.512
Dec.	*	*	1.000	.885	.559	.421	.370	-.144	-.228	-.081	.510	.476
Jan.	*	*	*	1.000	.878	.493	.532	-.171	-.256	-.110	.443	.413
Feb.	*	*	*	*	1.000	.451	.586	-.158	-.222	-.114	.262	.256
Mar.	*	*	*	*	*	1.000	.693	-.171	.117	-.002	.218	.225
Apr.	*	*	*	*	*	*	1.000	-.147	-.022	-.080	.156	.696
May	*	*	*	*	*	*	*	1.000	.317	.193	.238	-.044
June	*	*	*	*	*	*	*	*	1.000	.682	-.015	-.103
July	*	*	*	*	*	*	*	*	*	1.000	.174	-.037
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	.383
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E6.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06401500, Cheyenne River below Angostura Dam

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1953	1.00	22	1.00	20	1.01	21	1.08	22	1.34	24	1.76	24	13.9	24	21.0	23	21.6	23
1954	.90	19	.90	17	.90	16	.92	15	.96	12	1.63	23	1.61	22	1.74	21	1.79	20
1955	.80	13	1.40	25	1.59	25	4.06	25	48.7	25	53.0	25	54.2	25	56.3	25	66.0	25
1956	.50	2	.53	3	.59	3	.69	5	.88	9	1.03	10	1.03	6	1.07	7	1.14	8
1957	.70	9	.73	10	.77	8	.84	10	1.00	18	1.54	22	1.59	21	1.90	22	17.0	22
1958	1.00	23	1.00	21	1.00	20	1.06	21	1.17	21	1.49	21	1.94	23	36.8	24	47.0	24
1959	.90	20	.90	18	.91	18	.96	19	.98	14	1.07	14	1.09	9	1.17	12	1.20	11
1960	.60	5	.67	7	.69	6	.70	6	.70	4	.74	1	.76	1	.76	1	.78	1
1961	.60	6	.60	4	.60	4	.64	3	.69	3	.74	2	.78	2	.82	2	.85	2
1962	.80	14	.80	12	.80	10	.80	9	.87	8	1.04	11	1.19	16	1.33	18	1.57	19
1963	.70	10	.70	9	.80	11	.90	12	1.10	19	1.16	17	1.19	17	1.19	14	1.31	15
1964	.70	11	.73	11	.79	9	.79	8	.83	7	.91	6	1.03	7	1.05	6	1.05	4
1965	.70	12	.80	13	.84	13	.92	16	.99	16	1.06	13	1.16	14	1.24	16	1.30	14
1966	1.00	24	1.00	22	1.06	23	1.12	23	1.17	22	1.22	18	1.23	18	1.22	15	1.28	13
1967	.88	17	.88	16	.88	14	.89	11	.92	10	.96	7	1.07	8	1.12	9	1.91	21
1968	.82	15	.88	15	.88	15	.90	14	.98	15	1.11	16	1.17	15	1.24	17	1.49	17
1969	.50	3	.50	2	.51	2	.53	2	.59	2	.74	3	.89	4	.99	4	1.09	6
1970	.55	4	.65	6	.84	12	.90	13	.93	11	1.00	9	1.09	10	1.11	8	1.15	9
1971	.46	1	.48	1	.50	1	.50	1	.57	1	.75	4	.93	5	1.02	5	1.07	5
1972	.91	21	.91	19	.93	19	.95	18	.98	13	1.08	15	1.14	13	1.17	13	1.20	12
1973	.88	18	1.06	24	1.11	24	1.24	24	1.27	23	1.36	20	1.39	20	1.44	20	1.50	18
1974	1.00	25	1.00	23	1.03	22	1.04	20	1.14	20	1.26	19	1.32	19	1.34	19	1.38	16
1975	.84	16	.87	14	.91	17	.94	17	.99	17	1.04	12	1.11	12	1.12	10	1.17	10
1976	.67	8	.69	8	.72	7	.75	7	.82	6	.99	8	1.09	11	1.12	11	1.12	7
1977	.62	7	.64	5	.66	5	.68	4	.74	5	.80	5	.87	3	.96	3	1.04	3

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E6.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06401500, Cheyenne River below Angostura Dam

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1953	162	17	159	16	158	16	156	16	125	15	122	13	120	12	118	10	116	10
1954	53.0	21	45.7	21	43.6	21	43.0	20	42.7	19	42.1	19	36.1	19	31.6	18	21.4	18
1955	1,440	11	1,001	11	529	12	377	11	343	9	254	9	217	9	177	9	130	9
1956	112	19	111	18	95.0	17	95.1	17	94.0	17	92.7	15	91.2	14	90.2	13	88.4	11
1957	6,620	6	4,037	7	2,100	7	1,270	7	969	6	536	6	358	6	269	6	177	6
1958	2,790	9	1376	10	727	10	600	9	334	10	180	10	121	11	91.3	12	69.8	13
1959	93.0	20	92.0	20	65.7	19	66.8	18	65.8	18	62.1	17	58.2	16	56.6	15	47.3	15
1960	19.0	23	10.3	23	5.37	23	3.42	22	2.72	22	2.07	22	1.89	22	1.88	22	1.75	22
1961	3.80	24	2.73	24	1.63	25	1.15	26	.99	26	.93	26	.90	26	.90	26	.88	26
1962	20,600	1	14,670	2	8,671	1	4,859	1	3,543	1	2,394	1	1,637	1	1,228	1	805	1
1963	2,130	10	1,857	9	1,519	8	1,210	8	689	8	391	7	278	7	211	7	139	7
1964	886	12	754	12	534	11	304	13	165	13	83.5	16	56.0	17	42.3	17	28.1	17
1965	6,780	5	5,540	5	3,111	5	1,702	5	984	5	575	5	399	5	299	5	197	5
1966	652	15	552	15	372	15	236	14	141	14	98.9	14	66.7	15	50.5	16	33.5	16
1967	8,830	4	6,533	4	4,050	4	2,940	4	1,838	4	999	4	698	4	550	4	383	4
1968	3,260	8	2,010	8	1,067	9	526	10	322	11	162	12	108	13	81.8	14	54.1	14
1969	5,490	7	4,050	6	2,830	6	1,494	6	749	7	375	8	252	8	193	8	131	8
1970	153	18	106	19	46.7	20	22.9	21	12.5	21	7.10	21	5.11	21	4.10	21	3.08	21
1971	15,900	3	10,220	3	5,267	3	3,972	3	2,270	3	1,200	3	801	3	601	3	395	3
1972	173	16	136	17	89.6	18	49.2	19	26.0	20	14.2	20	10.2	20	8.09	20	5.80	20
1973	696	13	575	14	402	14	209	15	105	16	53.7	18	36.3	18	27.5	19	18.6	19
1974	694	14	597	13	454	13	333	12	254	12	178	11	147	10	116	11	76.9	12
1975	1.90	26	1.80	25	1.69	24	1.63	24	1.61	24	1.54	23	1.45	23	1.43	23	1.41	23
1976	2.00	25	1.57	26	1.50	26	1.45	25	1.39	25	1.37	25	1.33	25	1.27	25	1.26	25
1977	33.0	22	13.3	22	6.23	22	3.37	23	2.08	23	1.48	24	1.36	24	1.33	24	1.29	24
1978	19,600	2	15,140	1	7,678	2	4,076	2	2,368	2	1,223	2	878	2	663	2	435	2

Table E7.1. Mean flow, in cubic feet per second, for station 06402000, Fall River at Hot Springs

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1938	(1)	(1)	32.7	30.7	29.5	30.3	29.1	30.4	28.1	28.5	28.2	67.2	(2)
1939	29.9	29.7	27.9	30.3	30.6	30.3	27.0	25.7	27.8	28.0	27.8	27.1	28.5
1940	29.2	30.4	31.3	31.5	29.3	30.5	34.2	30.7	32.1	31.6	29.0	28.9	30.7
1941	29.5	30.8	32.0	30.2	30.3	29.5	32.0	31.9	31.4	33.0	40.1	28.6	31.6
1942	31.8	28.2	25.5	28.1	30.0	28.8	28.7	28.7	31.5	29.8	28.6	31.0	29.2
1943	29.4	26.9	23.9	27.7	29.0	39.5	29.0	28.9	31.1	29.0	28.0	25.8	29.0
1944	29.6	28.8	30.3	28.9	26.1	28.3	27.4	30.5	27.3	33.3	33.0	31.1	29.6
1945	31.5	32.5	30.4	30.9	31.7	33.8	32.1	32.3	30.8	29.4	33.6	28.6	31.5
1946	29.5	28.1	30.3	26.3	27.4	25.8	23.1	30.8	31.3	27.7	25.2	26.2	27.6
1947	29.2	(1)	(1)	29.0	31.2	27.7	25.5	(1)	48.0	37.9	24.8	29.5	(2)
1948	27.7	30.5	28.5	30.2	29.7	27.1	24.3	25.7	30.2	29.3	36.4	29.9	29.1
1949	31.7	27.6	31.6	32.5	28.9	29.5	29.3	28.6	27.8	25.7	25.3	25.4	28.7
1950	25.6	26.2	27.5	27.1	27.2	27.4	26.0	24.3	24.4	27.2	24.2	26.2	26.1
1951	28.9	29.6	28.3	26.1	25.9	26.3	26.2	25.8	28.1	27.6	26.2	27.1	27.2
³ 1952	29.2	30.6	25.5	25.7	27.8	26.7	28.4	27.0	25.4	28.0	26.3	23.7	27.0
1953	26.8	26.6	25.1	23.5	25.6	27.5	26.2	26.0	24.8	25.8	23.5	25.1	25.5
1954	24.9	26.4	25.1	26.3	26.4	23.5	22.9	26.0	25.2	25.0	23.7	24.3	25.0
1955	23.6	23.8	23.4	23.2	23.9	26.6	21.6	23.5	24.7	23.5	24.5	28.2	24.2
1956	24.9	23.0	24.6	28.0	24.7	23.2	21.9	23.2	21.5	21.4	24.2	24.5	23.8
1957	23.0	22.3	21.0	21.0	21.8	21.8	21.8	23.1	26.6	22.6	22.1	24.6	22.6
1958	24.7	24.2	23.3	23.3	24.9	25.7	24.5	23.2	24.5	25.7	22.7	23.1	24.2
1959	24.2	25.1	25.1	24.2	23.9	23.6	25.3	25.1	22.4	21.7	21.0	21.6	23.6
1960	24.5	24.4	23.8	24.9	25.4	25.8	24.9	23.1	22.1	21.6	22.1	22.7	23.8
1961	24.0	23.8	23.8	24.2	24.7	24.7	24.2	23.7	24.4	31.2	20.9	23.5	24.4
1962	23.0	24.0	24.1	23.2	25.0	25.3	22.9	23.0	22.9	24.6	22.2	21.9	23.5
1963	23.8	24.5	22.9	24.1	23.7	25.6	23.6	21.3	23.6	22.5	22.3	27.6	23.8
1964	26.5	25.6	24.5	22.0	22.5	23.4	24.5	26.1	24.0	22.6	22.6	23.8	24.0
1965	24.0	25.1	22.9	23.7	23.5	24.0	24.1	25.9	25.1	24.3	24.3	22.6	24.1
1966	23.4	23.7	23.0	23.9	22.3	25.7	23.3	22.5	22.6	23.9	22.8	22.3	23.3
1967	23.0	23.3	23.4	23.5	24.7	23.7	22.7	22.9	29.7	23.1	20.5	21.0	23.4
1968	22.8	24.0	25.1	23.4	24.2	25.5	24.3	23.7	26.1	24.0	23.0	24.9	24.2
⁴ 1969	22.9	21.9	19.4	21.7	23.2	20.4	26.8	21.4	25.8	23.2	24.9	23.8	22.9
1970	23.7	20.7	22.7	20.6	21.7	21.7	19.5	19.3	20.3	20.5	21.0	22.5	21.2
1971	22.9	21.7	21.1	21.5	22.1	22.6	23.2	23.2	22.5	19.4	19.6	24.8	22.0
1972	21.4	23.8	26.8	24.0	21.7	22.6	22.6	22.2	19.7	19.5	18.6	17.8	21.7
1973	18.8	20.7	26.5	22.6	24.0	24.1	22.3	21.5	20.3	19.2	19.9	23.4	21.9
1974	20.9	19.3	22.6	22.0	21.0	21.3	20.0	20.9	22.9	20.6	19.5	20.0	20.9
1975	21.9	22.3	21.8	22.3	22.3	22.8	19.9	21.1	20.9	21.1	21.4	20.6	21.5
1976	21.3	20.7	22.1	21.9	20.6	22.6	21.3	19.0	18.3	20.0	22.0	22.1	21.0
1977	22.8	22.2	22.2	21.6	19.8	22.3	20.7	20.9	22.1	22.5	20.2	20.8	21.5
1978	22.5	22.6	21.4	21.0	23.0	25.4	23.8	25.8	22.6	21.9	23.4	19.7	22.8
1979	23.0	21.7	22.4	22.1	23.0	21.3	22.3	23.1	22.3	22.6	23.3	20.7	22.3
1980	22.0	20.6	22.7	24.4	21.7	22.1	22.7	20.1	19.4	18.0	19.3	20.7	21.2
1981	22.2	21.4	21.5	21.2	20.4	20.8	20.5	20.2	17.9	20.0	22.8	21.9	20.9
1982	22.7	21.0	21.0	21.4	21.3	20.0	19.7	22.0	22.3	20.1	22.3	23.4	21.4
1983	21.3	20.9	21.4	20.9	22.7	23.2	22.2	21.0	20.1	20.1	20.1	17.7	21.0
1984	21.0	21.8	19.7	19.4	21.0	21.0	22.3	21.7	23.3	21.6	21.8	23.5	21.5
1985	22.0	22.8	23.0	20.3	24.0	24.6	19.9	21.1	24.3	18.2	19.3	19.5	21.6
1986	22.4	23.1	24.4	23.6	21.5	21.7	21.7	22.1	22.1	21.5	20.5	22.4	22.2
1987	20.8	18.3	19.0	19.9	23.7	26.8	26.8	21.8	20.9	20.9	20.7	22.6	21.8
1988	21.4	20.9	21.8	23.2	23.3	22.1	20.2	22.1	18.7	19.5	21.0	21.5	21.3
1989	21.5	22.8	21.8	21.3	22.5	21.1	21.1	21.7	23.0	21.1	20.2	19.9	21.5
1990	19.3	21.8	22.4	22.4	23.3	23.4	23.5	23.9	24.4	18.8	19.7	20.5	21.9
1991	19.9	20.0	19.3	20.6	22.1	22.5	22.4	23.5	21.8	21.0	20.7	21.1	21.2
1992	21.8	22.1	22.5	22.9	22.7	21.8	21.3	21.8	20.5	20.2	20.5	21.9	21.7
1993	22.3	23.1	22.7	22.1	21.5	22.4	22.9	22.4	23.3	21.4	21.2	21.8	22.3

¹Indicates a no-value month.

²Incomplete water year.

³Cold Brook Reservoir constructed during water year 1952.

⁴Cottonwood Springs Reservoir constructed during water year 1969.

Table E7.2. Statistics on mean flow, in cubic feet per second, for station 06402000, Fall River at Hot Springs (October 1938 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	55	54	54	55	55	55	55	54	55	55	55	55	54
Maximum	31.8	32.5	32.0	32.5	31.7	39.5	34.2	32.3	48.0	37.9	40.1	31.1	31.6
Percentile													
75th	26.8	26.5	25.5	26.3	26.1	26.7	26.0	25.8	26.6	27.2	24.8	25.8	25.6
50th	23.0	23.5	23.3	23.4	23.7	24.0	23.2	23.1	23.6	22.6	22.3	23.4	23.3
25th	22.0	21.8	22.0	21.7	22.1	22.3	21.8	21.7	22.1	20.6	20.7	21.5	21.6
Minimum	18.8	18.3	19.0	19.4	19.8	20.0	19.5	19.0	17.9	18.0	18.6	17.7	20.9
Mean	24.41	24.22	24.19	24.21	24.48	24.86	24.03	24.02	24.67	23.89	23.54	23.73	24.08
Standard deviation	3.42	3.37	3.25	3.30	3.08	3.58	3.27	3.25	4.87	4.38	4.31	3.24	3.07
Skewness	0.73	0.71	0.86	0.89	0.81	1.61	1.10	0.97	2.21	1.08	1.96	0.52	1.05
Coefficient of variation	0.14	0.14	0.13	0.14	0.13	0.14	0.14	0.14	0.20	0.18	0.18	0.14	0.13
Percent of annual flow	8.41	8.34	8.33	8.34	8.43	8.57	8.28	8.27	8.50	8.23	8.11	8.18	¹ 0.935

¹Serial correlation for annual mean flows.

Table E7.3. Correlation matrix for monthly mean flow for station 06402000, Fall River at Hot Springs (October 1938 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.906	0.775	0.851	0.853	0.750	0.758	0.846	0.708	0.822	0.767	0.777
Nov.	*	1.000	.841	.847	.866	.717	.762	.855	.797	.848	.809	.731
Dec.	*	*	1.000	.877	.770	.613	.651	.771	.647	.714	.689	.629
Jan.	*	*	*	1.000	.875	.726	.737	.773	.641	.757	.755	.725
Feb.	*	*	*	*	1.000	.822	.785	.826	.776	.820	.757	.737
Mar.	*	*	*	*	*	1.000	.782	.743	.591	.686	.650	.623
Apr.	*	*	*	*	*	*	1.000	.813	.579	.713	.710	.635
May	*	*	*	*	*	*	*	1.000	.824	.820	.776	.684
June	*	*	*	*	*	*	*	*	1.000	.836	.574	.684
July	*	*	*	*	*	*	*	*	*	1.000	.756	.782
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	.774
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E7.4. Serial correlation for 1-year lag for monthly mean flow for station 06402000, Fall River at Hot Springs (October 1938 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
	0.873	0.835	0.673	0.760	0.796	0.559	0.609	0.795	0.617	0.743	0.626	0.614

Table E7.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06402000, Fall River at Hot Springs

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1938	27.0	53	27.0	53	27.0	53	27.3	53	27.6	52	28.1	51	28.2	51	28.7	51	29.8	51
1939	17.0	18	19.7	35	24.4	51	25.2	51	25.7	50	26.1	48	26.8	48	27.1	46	27.2	45
1940	16.0	7	16.0	7	23.1	47	26.5	52	27.9	53	28.7	53	29.1	53	29.4	52	30.0	52
1941	23.0	48	23.3	51	23.9	49	24.7	49	25.4	48	26.0	47	27.2	49	27.8	49	28.6	49
1942	23.0	49	23.0	48	23.0	45	23.0	43	23.9	42	25.0	43	26.1	45	26.8	45	27.7	46
1943	22.0	43	22.7	46	22.9	44	23.4	45	24.3	46	26.6	50	27.3	50	27.8	50	28.1	48
1944	24.0	52	24.0	52	24.6	52	24.9	50	26.7	51	28.4	52	28.4	52	29.5	53	30.5	53
1945	23.0	50	23.0	49	23.3	48	24.1	47	25.4	49	26.4	49	26.4	46	27.4	48	27.9	47
1946	(2)		(2)		(2)		(2)		(2)		(2)		(2)		(2)		(2)	
1947	(2)		(2)		(2)		(2)		(2)		(2)		(2)		(2)		(2)	
1948	22.0	44	22.7	47	23.0	46	23.6	46	24.1	44	25.0	44	26.7	47	27.3	47	29.3	50
1949	23.0	51	23.0	50	23.9	50	24.4	48	24.9	47	25.2	45	25.2	43	25.4	43	25.9	43
1950	22.0	45	22.0	42	22.4	43	22.9	42	24.0	43	24.3	42	24.8	42	25.0	41	25.4	42
1951	21.0	41	22.0	43	22.3	42	23.0	44	24.1	45	25.6	46	26.0	44	26.4	44	26.8	44
1952	18.0	26	18.7	29	20.4	36	21.7	38	23.5	41	23.9	40	24.7	41	25.1	42	25.1	41
1953	16.0	8	16.3	14	17.9	17	20.3	33	22.9	40	24.0	41	23.9	40	24.5	40	24.8	40
1954	21.0	42	21.0	41	21.0	37	21.9	39	22.8	39	23.2	39	23.3	38	23.3	36	23.6	37
1955	20.0	38	20.0	38	20.0	34	20.2	29	21.0	31	22.5	36	23.2	37	23.3	37	24.3	39
1956	16.0	9	16.0	8	17.4	14	18.9	21	20.2	22	20.9	23	21.2	24	21.4	22	21.8	22
1957	18.0	27	19.3	33	20.1	35	20.4	34	21.0	32	22.3	34	22.9	35	23.5	38	23.5	35
1958	22.0	46	22.0	44	22.0	40	22.1	41	22.3	37	22.8	37	23.3	39	23.7	39	23.9	38
1959	17.0	19	17.3	19	17.6	15	17.8	12	19.5	20	21.0	24	21.4	26	21.6	25	22.6	27
1960	20.0	39	20.7	39	21.1	39	21.4	36	21.6	34	21.7	29	21.9	28	22.1	29	22.6	28
1961	16.0	10	16.0	9	16.7	11	19.1	23	20.8	29	22.1	32	22.4	31	22.8	32	23.1	32
1962	19.0	33	19.0	31	19.6	29	20.2	30	21.5	33	22.0	31	22.6	33	22.7	31	22.9	30
1963	16.0	11	17.0	17	18.6	25	20.2	31	20.8	30	21.9	30	22.3	30	22.4	30	23.5	36
1964	20.0	40	20.7	40	21.0	38	21.6	37	21.8	35	22.3	35	22.8	34	23.1	34	23.4	34
1965	22.0	47	22.0	45	22.0	41	22.0	40	22.4	38	23.0	38	23.1	36	23.1	35	23.2	33
1966	19.0	34	19.7	36	19.9	33	21.2	35	21.9	36	22.1	33	22.4	32	22.8	33	22.9	31
1967	19.0	35	19.7	37	19.7	30	20.0	26	20.5	24	20.7	22	21.1	22	21.8	27	22.7	29
1968	17.0	20	17.3	20	17.9	18	18.4	15	19.3	17	20.4	19	20.9	19	21.1	18	21.6	20
1969	14.0	1	15.0	2	16.0	4	18.4	16	20.5	25	21.0	25	21.3	25	21.4	23	21.9	23
1970	16.0	12	16.0	10	16.1	6	17.3	10	18.3	12	19.2	9	19.7	10	19.9	9	20.5	8
1971	17.0	21	17.7	22	17.9	19	17.9	13	18.1	10	19.3	11	20.2	14	21.1	19	21.7	21
1972	16.0	13	16.3	15	16.7	12	16.9	4	17.3	2	17.8	1	18.3	1	18.5	1	19.2	1
1973	16.0	14	16.0	11	16.3	7	16.7	3	18.2	11	19.5	12	19.7	11	20.2	12	20.4	6
1974	17.0	22	17.0	18	17.6	16	18.6	19	19.3	18	19.6	14	19.9	13	20.4	13	20.6	12
1975	17.0	23	17.3	21	18.0	21	18.6	20	19.1	15	20.1	16	20.5	16	20.7	14	20.8	13
1976	15.0	5	15.3	5	15.7	2	16.0	2	17.0	1	18.4	3	18.3	2	19.3	3	20.5	9
1977	18.0	28	18.0	25	18.4	23	18.9	22	19.2	16	20.2	17	20.7	17	21.2	21	21.2	16
1978	17.0	24	17.7	23	17.9	20	18.1	14	19.4	19	21.1	27	21.4	27	21.6	26	21.9	24
1979	19.0	36	19.3	34	19.7	31	20.1	28	20.6	28	21.1	28	21.1	23	21.4	24	21.9	25
1980	16.0	15	16.0	12	16.6	9	17.1	9	17.9	7	18.4	4	18.7	3	19.1	2	19.8	3
1981	16.0	16	16.0	13	16.6	10	17.0	8	17.7	4	18.5	5	19.0	6	19.6	7	20.5	10
1982	14.0	2	15.0	3	15.7	3	16.9	5	17.9	8	20.2	18	21.0	21	20.9	16	21.5	19
1983	14.0	3	14.7	1	15.1	1	15.6	1	17.5	3	18.6	6	19.2	7	19.5	5	19.9	4
1984	19.0	37	19.0	32	19.4	28	20.0	27	20.3	23	21.0	26	21.9	29	21.8	28	22.2	26
1985	14.0	4	15.0	4	16.0	5	16.9	6	18.0	9	18.7	7	18.9	4	19.5	6	20.4	7
1986	16.0	17	16.3	16	17.0	13	17.3	11	17.8	6	18.3	2	18.9	5	19.3	4	20.1	5
1987	18.0	29	18.0	26	18.6	26	19.8	25	20.5	26	20.5	20	20.7	18	21.0	17	21.2	17
1988	15.0	6	15.7	6	16.3	8	16.9	7	17.7	5	18.9	8	19.6	8	20.1	10	20.5	11
1989	18.0	30	18.3	28	18.4	24	18.5	18	18.9	14	19.5	13	19.8	12	20.1	11	20.8	14
1990	17.0	25	17.7	24	18.0	22	18.4	17	18.8	13	19.2	10	19.6	9	19.7	8	19.7	2
1991	18.0	31	18.7	30	19.7	32	20.2	32	20.5	27	20.6	21	20.9	20	21.1	20	21.4	18
1992	18.0	32	18.0	27	19.3	27	19.4	24	19.8	21	20.0	15	20.4	15	20.7	15	21.0	15

¹Low-flow water year is Apr. 1 to Mar. 31.

²Statistic not computed.

Table E7.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06402000, Fall River at Hot Springs

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1970	30.0	19	25.7	22	25.1	18	24.3	18	23.8	13	22.3	24	22.4	17	22.0	21	21.9	18
1971	37.0	8	28.0	11	26.6	11	25.7	10	24.8	9	23.5	9	23.2	7	23.0	8	22.5	8
1972	32.0	15	30.7	6	30.3	3	28.5	2	27.4	2	26.2	2	25.0	3	24.2	4	23.7	2
1973	30.0	20	30.0	9	29.6	6	28.1	5	26.9	3	24.8	4	24.6	4	24.3	3	23.6	3
1974	37.0	9	26.0	19	24.9	20	24.3	19	23.2	21	22.4	22	22.0	21	21.9	22	21.4	23
1975	35.0	10	27.7	13	23.9	24	23.5	23	23.0	23	22.6	19	22.4	18	22.3	17	22.3	13
1976	63.0	2	38.3	2	29.6	7	25.7	11	23.8	14	22.7	18	21.8	24	21.8	23	21.6	21
1977	38.0	5	29.7	10	26.4	13	25.1	13	23.8	15	22.5	20	22.4	19	22.2	19	21.8	19
1978	75.0	1	45.7	1	33.6	1	28.5	3	26.1	5	25.3	3	25.1	2	24.6	2	23.9	1
1979	34.0	12	27.0	14	25.1	19	23.9	21	23.4	20	23.0	12	22.8	14	22.8	10	22.5	9
1980	27.0	21	27.0	15	26.6	12	25.8	9	24.9	7	23.6	8	23.0	9	23.0	9	22.4	11
1981	32.0	16	26.0	20	24.7	21	23.7	22	23.0	24	22.5	21	21.9	22	21.7	24	21.3	24
1982	42.0	4	33.3	3	30.3	4	26.6	7	24.8	10	23.0	13	21.9	23	22.3	18	21.6	22
1983	35.0	11	30.3	7	27.3	9	25.7	12	24.4	11	23.2	11	22.9	11	22.5	15	22.1	17
1984	26.0	23	26.0	21	25.6	15	24.6	16	23.6	16	22.8	17	22.5	16	22.5	16	22.4	12
1985	32.0	17	30.3	8	29.7	5	28.4	4	24.9	8	24.5	5	23.1	8	23.2	7	22.8	7
1986	38.0	6	28.0	12	27.0	10	26.6	8	25.3	6	24.5	6	23.8	6	23.4	6	22.9	6
1987	38.0	7	32.7	4	31.6	2	29.9	1	27.7	1	27.4	1	25.9	1	24.9	1	23.5	4
1988	34.0	13	25.0	24	24.0	22	24.0	20	23.9	12	23.5	10	23.0	10	22.6	13	22.2	15
1989	26.0	24	25.3	23	24.0	23	23.5	24	23.1	22	22.4	23	22.1	20	22.1	20	21.8	20
1990	45.0	3	31.3	5	28.7	8	27.5	6	26.4	4	24.3	7	24.3	5	24.0	5	23.5	5
1991	31.0	18	26.3	17	25.6	16	24.7	15	23.6	17	23.0	14	22.9	12	22.7	12	22.2	16
1992	27.0	22	26.7	16	26.1	14	24.9	14	23.6	18	22.9	16	22.7	15	22.6	14	22.3	14
1993	34.0	14	26.3	18	25.4	17	24.5	17	23.6	19	23.0	15	22.9	13	22.8	11	22.5	10

Table E8.1. Mean flow, in cubic feet per second, for station 06402500, Beaver Creek near Buffalo Gap

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1938	(1)	(1)	9.55	9.55	9.96	8.94	8.10	8.94	4.35	2.69	1.34	56.6	(2)
1939	10.1	9.77	10.0	9.19	10.6	8.84	3.78	1.37	1.54	.55	1.47	2.42	5.78
1940	4.73	5.22	6.94	7.16	9.07	8.55	7.77	4.13	.61	1.16	1.47	3.65	5.02
1941	4.77	8.90	12.0	12.9	11.6	10.3	16.9	5.27	4.43	5.80	4.13	7.27	8.66
1942	7.61	8.23	8.26	7.94	7.00	7.97	5.80	9.61	11.0	10.5	12.1	9.87	8.84
1943	10.4	11.0	9.94	8.94	7.93	11.1	15.5	11.7	19.3	11.0	3.45	3.91	10.3
1944	5.88	7.47	8.77	8.48	9.14	9.74	10.0	11.8	13.4	4.95	.51	3.46	7.79
1945	6.81	10.0	10.9	11.6	9.25	8.42	9.00	3.90	7.04	3.99	4.39	6.05	7.59
1946	8.35	7.20	8.58	7.84	8.29	7.03	1.01	8.25	6.65	2.81	2.16	8.73	6.40
1947	11.2	9.83	9.35	8.90	7.86	8.23	7.53	4.61	27.9	22.2	6.99	9.00	11.1
1948	9.39	10.7	12.2	10.7	9.93	9.26	8.12	3.02	3.28	6.04	4.14	1.77	7.38
1949	7.98	8.63	7.87	8.87	8.75	9.26	5.20	2.30	5.72	.88	.55	4.03	5.81
1950	5.27	3.40	6.94	8.42	10.2	8.61	8.90	6.58	.77	.81	3.97	3.44	5.59
1951	8.23	10.7	10.5	9.90	10.1	7.89	1.50	.74	4.50	5.50	3.39	9.07	6.81
1952	7.94	10.8	9.42	9.29	9.17	8.75	1.29	3.30	3.84	.69	.53	2.02	5.58
1953	2.11	6.87	7.74	8.45	10.1	8.26	1.69	7.35	1.41	.24	1.11	3.24	4.86
1954	1.93	3.79	10.9	10.9	9.42	7.23	1.60	2.16	7.79	1.75	7.06	1.87	5.52
1955	4.87	6.26	10.7	11.1	9.75	9.29	2.87	.87	3.30	.56	18.3	8.22	7.17
1956	6.35	9.20	10.4	11.1	11.1	10.5	6.43	1.76	2.27	1.36	.43	.47	5.93
1957	1.62	5.18	11.9	12.4	10.7	8.38	3.41	9.39	16.6	7.71	2.17	4.12	7.78
1958	9.51	12.0	9.32	10.9	11.5	10.5	10.0	4.40	7.12	11.6	4.23	4.81	8.80
1959	6.71	8.00	10.9	11.0	9.43	8.03	1.70	.92	.67	3.30	1.52	1.55	5.30
1960	4.09	9.64	11.2	10.4	9.69	9.03	1.11	.61	.69	.37	.30	.37	4.78
1961	.67	4.47	10.3	10.9	9.04	4.34	.96	.99	2.41	.38	.25	.96	3.78
1962	1.24	6.23	9.77	9.49	10.1	9.59	1.60	2.45	9.99	15.2	2.24	.81	6.56
1963	9.27	11.3	8.42	9.13	8.60	9.25	7.75	5.55	25.9	11.7	3.69	5.84	9.67
1964	8.22	11.6	9.54	10.4	11.0	9.07	7.88	1.82	4.53	1.95	.61	.68	6.42
1965	1.56	8.96	11.3	11.7	11.7	10.6	7.24	9.25	9.63	6.58	2.52	6.55	8.11
1966	10.8	10.9	11.7	10.4	12.3	9.05	5.62	1.64	.44	8.71	3.05	6.95	7.61
1967	7.12	8.34	10.8	10.9	10.7	9.86	.79	3.37	14.4	6.10	3.47	5.86	7.63
1968	9.36	9.58	10.5	11.5	11.1	6.23	2.49	2.67	7.78	3.74	1.09	5.29	6.76
1969	6.65	9.04	9.05	10.8	10.4	9.00	2.28	.94	.72	6.09	2.37	1.07	5.69
1970	10.1	8.05	7.71	8.52	9.49	11.3	8.38	5.03	1.77	1.02	1.19	6.08	6.53
1971	10.0	7.94	8.20	10.2	13.5	10.6	9.75	9.39	10.3	6.00	.76	7.07	8.60
1972	9.20	11.0	11.1	8.02	9.51	9.11	4.74	4.63	13.3	4.05	3.47	5.99	7.83
1973	9.29	9.21	6.98	9.36	11.1	9.41	8.37	4.84	.83	1.48	2.30	6.39	6.59
1974	8.11	7.22	8.65	10.0	11.9	7.51	8.01	2.99	.39	.26	.28	.60	5.46
1975	2.77	7.60	9.21	9.30	9.48	9.73	6.63	2.78	6.37	12.8	3.34	5.75	7.14
1976	1.88	5.92	7.16	9.98	10.3	10.1	7.10	4.29	2.62	4.73	7.51	3.53	6.26
1977	5.56	7.73	9.60	9.61	9.99	7.23	6.53	4.95	1.84	.52	4.55	5.43	6.10
1978	6.52	12.4	11.8	11.5	9.87	16.1	3.76	7.11	4.61	1.19	1.46	4.64	7.57
1979	7.36	9.18	12.5	12.2	11.6	11.5	7.04	1.50	.84	1.40	12.2	7.64	7.90
1980	7.74	11.0	8.77	10.4	11.3	10.8	7.94	1.14	.71	.31	.39	.58	5.90
1981	3.94	11.0	9.06	9.27	10.1	7.46	1.19	4.37	3.30	4.12	7.42	6.86	6.49
1982	5.85	9.14	11.2	9.79	10.8	10.8	6.02	7.40	12.1	7.12	7.96	8.56	8.88
1983	9.65	10.0	8.42	8.19	7.89	7.37	4.82	5.54	5.51	2.04	1.35	2.93	6.14
1984	5.56	9.09	8.91	11.1	9.50	8.63	9.30	9.69	10.3	10.3	4.82	7.62	8.73
1985	10.5	10.9	11.0	7.10	7.12	8.06	4.98	.81	.48	.67	5.48	9.69	6.39
1986	9.79	9.11	10.3	10.7	10.2	8.87	12.7	5.05	8.81	5.90	3.38	9.82	8.70
1987	9.94	10.0	8.89	8.32	9.35	10.8	10.5	7.91	10.2	4.73	4.29	7.55	8.53
1988	9.12	8.99	9.92	11.2	9.94	8.18	3.14	.98	.57	.29	2.76	6.29	5.94
1989	7.33	8.45	8.49	9.82	9.16	9.30	6.29	3.14	1.48	1.53	2.52	4.58	5.99
1990	4.78	7.71	7.91	9.30	8.89	8.68	7.73	1.88	8.12	2.22	3.21	1.23	5.94
1991	4.13	8.09	5.96	8.52	9.96	8.73	8.73	5.76	9.96	7.50	2.90	4.24	7.01
1992	9.43	7.58	8.63	8.34	8.23	8.37	10.3	1.74	7.97	7.27	4.19	7.99	7.49
1993	7.43	9.47	8.33	8.45	9.04	9.81	9.06	6.93	6.29	5.68	6.02	10.6	8.07

¹Indicates a no-value month.²Incomplete water year.

Table E8.2. Statistics on mean flow, in cubic feet per second, for station 06402500, Beaver Creek near Buffalo Gap (October 1938 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	55	55	55	55	55	55	55	55	55	55	55	55	55
Maximum	11.2	12.4	12.5	12.9	13.5	16.1	16.9	11.8	27.9	22.2	18.3	10.6	11.1
Percentile													
75th	9.36	10.0	10.9	10.9	10.7	9.86	8.38	6.58	9.96	6.58	4.29	7.27	7.90
50th	7.36	9.04	9.42	9.82	9.93	9.03	6.53	4.13	4.61	3.99	3.05	5.29	6.76
25th	4.78	7.60	8.42	8.52	9.14	8.23	2.87	1.76	1.48	1.02	1.35	2.42	5.93
Minimum	0.67	3.40	5.96	7.10	7.00	4.34	0.79	0.61	0.39	0.24	0.25	0.37	3.78
Mean	6.85	8.73	9.54	9.83	9.89	9.10	6.20	4.41	6.44	4.68	3.59	5.00	7.00
Standard deviation	2.86	2.04	1.54	1.35	1.28	1.64	3.69	3.03	6.14	4.50	3.34	2.91	1.46
Skewness	-0.56	-0.64	-0.09	0.06	0.14	0.99	0.48	0.73	1.57	1.53	2.23	0.01	0.47
Coefficient of variation	0.42	0.23	0.16	0.14	0.13	0.18	0.59	0.69	0.95	0.96	0.93	0.58	0.21
Percent of annual flow	8.13	10.36	11.33	11.67	11.73	10.80	7.35	5.23	7.65	5.55	4.26	5.93	¹ 0.213

¹Serial correlation for annual mean flows.

Table E8.3. Correlation matrix for monthly mean flow for station 06402500, Beaver Creek near Buffalo Gap (October 1938 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.617	-0.007	-0.251	-0.093	0.125	0.292	-0.036	0.122	0.072	-0.066	0.330
Nov.	*	1.000	.275	.049	.035	.376	.154	-.048	.118	.147	-.095	.181
Dec.	*	*	1.000	.633	.216	.141	-.178	-.211	.020	.026	.168	.067
Jan.	*	*	*	1.000	.593	.172	-.027	-.192	-.096	-.024	.059	-.154
Feb.	*	*	*	*	1.000	.265	.083	-.090	-.271	-.126	-.168	-.168
Mar.	*	*	*	*	*	1.000	.356	.256	.074	.085	.046	.074
Apr.	*	*	*	*	*	*	1.000	.412	.230	.256	.030	.230
May	*	*	*	*	*	*	*	1.000	.509	.307	.007	.313
June	*	*	*	*	*	*	*	*	1.000	.734	.123	.282
July	*	*	*	*	*	*	*	*	*	1.000	.194	.310
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	.531
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E8.4. Serial correlation for 1-year lag for monthly mean flow for station 06402500, Beaver Creek near Buffalo Gap (October 1938 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
	0.252	0.028	0.077	-0.013	0.178	-0.041	0.258	0.148	0.096	0.125	-0.001	0.144

Table E8.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06402500, Beaver Creek near Buffalo Gap

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1938	0.20	20	0.27	25	0.39	29	0.41	25	1.27	38	1.97	31	2.28	28	4.09	35	9.74	54
1939	.30	29	.43	42	.49	41	.51	31	.54	23	.78	15	1.03	14	1.20	9	1.84	8
1940	.40	39	.40	36	.41	34	.47	29	.61	24	.83	19	.83	10	1.43	11	2.53	13
1941	.30	30	.37	33	.41	35	.63	36	2.25	44	3.97	48	4.16	38	4.55	36	5.59	36
1942	1.20	53	1.47	53	2.27	55	4.21	55	5.80	55	7.37	55	7.99	54	8.54	54	9.27	53
1943	1.60	54	1.63	54	1.80	53	1.93	51	2.27	45	3.60	44	4.35	40	5.04	39	6.23	42
1944	.20	21	.20	16	.26	18	.28	13	.36	11	1.62	29	2.87	30	3.85	31	6.06	41
1945	.10	7	.17	12	.36	26	.76	41	2.54	47	3.89	47	4.35	41	4.62	37	5.58	35
1946	.10	8	.13	8	.24	16	.28	14	.62	25	2.27	35	3.76	35	4.62	38	4.93	32
1947	.40	40	.60	46	1.74	52	3.34	54	4.49	53	6.03	52	8.34	55	8.95	55	9.81	55
1948	.40	41	.40	37	.40	30	.65	37	1.19	37	2.82	40	3.78	36	3.85	32	4.13	27
1949	.10	9	.17	13	.21	12	.24	10	.39	12	.67	12	1.61	21	2.33	19	2.85	14
1950	.10	10	.20	17	.23	14	.32	16	.62	26	.76	13	1.48	19	2.02	17	3.94	25
1951	.40	42	.50	43	.61	43	.70	38	.73	28	.90	20	2.16	25	2.97	26	4.10	26
1952	.0000	1	.0000	1	.057	1	.093	1	.19	1	.46	8	.61	7	1.17	8	1.94	10
1953	.10	11	.10	6	.13	6	.20	5	.24	4	.57	9	.89	12	1.43	12	1.88	9
1954	.10	12	.10	7	.23	15	.34	19	.40	13	1.77	30	3.33	33	3.07	27	3.67	20
1955	.20	22	.20	18	.20	9	.24	9	.50	21	1.02	22	1.57	20	1.47	13	5.70	38
1956	.20	23	.23	22	.31	23	.36	21	.41	15	.44	7	.72	9	.94	6	1.29	5
1957	.10	13	.33	30	.56	42	.81	43	2.05	42	3.13	42	4.44	43	5.73	46	7.22	49
1958	.90	52	.97	52	1.29	50	1.90	50	3.20	51	4.21	49	5.09	48	5.86	47	6.43	43
1959	.20	24	.23	23	.27	19	.29	15	.32	9	.77	14	.97	13	1.55	14	1.61	6
1960	.20	25	.20	19	.20	10	.25	12	.29	8	.30	3	.34	2	.38	2	.50	1
1961	.0000	2	.067	3	.10	2	.16	4	.23	3	.27	2	.36	3	.68	5	.98	3
1962	.30	31	.33	31	.36	27	.41	24	.49	19	1.00	21	3.97	37	5.70	45	5.34	33
1963	1.70	55	1.73	55	2.01	54	2.34	53	3.12	50	3.70	45	5.06	47	6.53	51	7.79	50
1964	.10	14	.17	14	.20	11	.34	20	.49	18	.62	11	.68	8	1.06	7	1.82	7
1965	.30	32	.37	34	.41	36	.48	30	1.15	36	2.89	41	5.03	46	6.19	49	6.92	46
1966	.20	26	.27	26	.29	21	.36	22	.44	16	.60	10	2.20	27	3.42	29	4.40	28
1967	.68	50	.68	49	.69	46	.71	39	.78	30	2.02	33	4.48	44	6.01	48	5.65	37
1968	.62	48	.66	48	.80	47	.81	44	.85	31	1.99	32	3.21	32	3.84	30	3.82	22
1969	.40	43	.40	39	.41	37	.42	26	.45	17	.79	17	.88	11	2.43	20	2.25	11
1970	.36	38	.39	35	.41	33	.58	33	.89	32	1.09	23	1.32	18	1.40	10	3.87	23
1971	.42	46	.43	41	.44	39	.46	28	.74	29	2.53	36	4.38	42	5.54	43	6.74	45
1972	.75	51	.83	51	.94	48	1.41	48	2.64	48	2.80	38	4.29	39	5.46	42	6.00	40
1973	.40	44	.41	40	.43	38	.45	27	.54	22	.78	16	1.11	15	1.94	16	3.88	24
1974	.18	17	.21	21	.23	13	.24	8	.25	5	.26	1	.31	1	.36	1	1.06	4
1975	.18	18	.20	20	.33	25	.60	35	1.86	41	3.37	43	3.62	34	3.94	34	5.43	34
1976	.58	47	.59	45	.64	44	.71	40	1.51	40	2.02	34	2.78	29	3.87	33	4.62	31
1977	.11	15	.14	10	.18	7	.25	11	.40	14	1.11	24	1.29	17	2.49	22	3.67	21
1978	.30	33	.31	29	.38	28	.52	32	.92	33	1.23	26	2.19	26	2.65	24	3.50	17
1979	.050	4	.080	4	.12	5	.15	2	.62	27	.80	18	1.12	16	2.44	21	4.59	30
1980	.0000	3	.003	2	.11	4	.21	6	.28	7	.33	4	.41	4	.44	3	.83	2
1981	.31	36	.40	38	.47	40	.88	45	1.10	35	2.74	37	2.96	31	3.13	28	4.54	29
1982	.62	49	.65	47	1.13	49	1.24	47	3.09	49	6.65	54	7.63	53	7.95	52	8.18	51
1983	.27	28	.28	27	.29	22	.33	18	.98	34	1.28	27	1.96	23	2.90	25	3.64	18
1984	.30	34	.73	50	1.53	51	1.81	49	4.68	54	6.15	53	7.36	52	8.18	53	8.65	52
1985	.070	5	.080	5	.10	3	.15	3	.21	2	.35	6	.51	6	1.62	15	3.66	19
1986	.18	19	.19	15	.24	17	1.00	46	2.22	43	3.79	46	5.61	51	5.45	41	7.06	47
1987	.30	35	.36	32	.40	31	2.07	52	3.28	52	4.46	50	5.41	49	6.34	50	7.19	48
1988	.11	16	.14	9	.19	8	.22	7	.27	6	.35	5	.50	5	.62	4	2.32	12
1989	.23	27	.24	24	.27	20	.37	23	.50	20	1.22	25	1.80	22	2.02	18	2.96	15
1990	.31	37	.31	28	.32	24	.33	17	.36	10	1.50	28	2.15	24	2.60	23	3.43	16
1991	.080	6	.14	11	.41	32	.59	34	2.33	46	2.80	39	4.69	45	5.64	44	6.49	44
1992	.41	45	.55	44	.68	45	.79	42	1.45	39	4.79	51	5.45	50	5.27	40	5.93	39

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E8.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06402500, Beaver Creek near Buffalo Gap

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1939	14.0	38	13.0	34	11.9	41	11.3	43	11.0	38	10.5	38	10.0	39	10.0	29	9.71	23
1940	16.0	33	11.3	49	9.71	55	9.40	55	9.20	54	8.85	54	8.47	54	8.23	54	7.64	52
1941	126	8	55.3	8	34.6	4	23.1	4	17.2	6	13.6	5	12.9	4	12.9	4	12.3	3
1942	29.0	21	19.3	22	15.6	20	15.0	17	13.4	14	11.5	15	11.3	13	11.0	11	9.83	20
1943	57.0	14	42.0	13	27.0	12	22.7	5	20.6	3	16.1	3	16.2	2	15.6	2	12.8	2
1944	17.0	30	16.7	24	16.1	19	15.1	16	14.2	10	12.7	9	11.8	8	11.2	10	10.4	12
1945	16.0	34	12.7	36	12.3	33	12.1	30	11.7	25	11.3	19	11.1	14	10.5	22	9.86	19
1946	29.0	22	14.7	27	10.9	49	9.60	54	8.73	55	8.35	55	8.28	55	8.11	55	7.84	51
1947	242	2	136	1	78.6	1	51.9	1	37.8	1	25.4	1	19.5	1	16.6	1	13.1	1
1948	13.0	41	13.0	35	12.7	30	12.3	26	12.3	19	11.8	12	11.4	12	11.0	12	10.5	11
1949	13.0	42	12.7	37	11.9	42	10.9	48	9.90	51	9.22	52	9.00	53	8.73	53	8.67	43
1950	12.0	47	11.3	50	11.1	47	11.1	45	10.5	46	9.43	51	9.40	46	9.02	48	8.21	49
1951	20.0	28	12.3	41	11.3	46	11.0	46	11.0	39	10.8	33	10.4	30	10.3	23	9.51	28
1952	23.0	24	15.7	25	11.0	48	11.0	47	10.8	43	10.1	42	9.86	41	9.67	40	9.22	30
1953	11.0	52	11.0	51	10.7	50	10.4	49	10.2	47	10.1	43	9.28	50	8.97	50	7.41	54
1954	140	6	62.3	6	28.7	11	14.2	20	11.6	28	11.1	23	10.5	27	9.72	37	7.42	53
1955	313	1	125	2	60.7	2	34.2	3	19.6	4	13.5	6	10.6	24	10.3	24	8.84	39
1956	13.0	43	12.3	42	12.0	35	11.7	38	11.3	34	11.2	22	11.1	15	10.8	16	9.89	18
1957	78.0	12	45.0	11	29.6	9	20.8	7	17.4	5	13.8	4	11.8	9	11.0	13	10.3	14
1958	82.0	10	35.0	14	20.7	15	15.5	14	12.2	21	11.5	16	10.9	19	10.9	14	10.8	7
1959	23.0	25	12.0	45	11.9	43	11.5	40	11.2	35	10.9	30	10.5	28	10.1	27	8.98	36
1960	13.0	44	12.3	43	12.1	34	11.5	41	11.2	36	11.0	26	10.6	25	10.3	25	8.99	35
1961	14.0	39	12.2	44	12.0	36	12.0	31	11.7	26	10.7	34	10.1	36	9.07	47	6.61	55
1962	81.0	11	53.3	9	29.4	10	20.1	8	16.4	8	13.0	8	10.1	37	9.78	36	8.18	50
1963	199	3	119	3	60.3	3	41.4	2	26.3	2	19.1	2	14.9	3	13.2	3	11.7	4
1964	53.0	16	23.3	19	13.1	27	11.9	35	11.6	29	10.9	31	10.7	21	10.7	17	10.2	16
1965	44.0	18	29.0	16	19.0	17	13.9	21	11.8	23	11.7	13	11.6	10	11.4	8	10.3	15
1966	158	5	64.7	5	32.6	5	17.0	11	12.4	18	11.5	17	11.5	11	11.3	9	10.8	8
1967	39.0	19	26.7	17	19.6	16	16.3	13	14.4	9	11.1	24	11.0	17	10.9	15	9.57	26
1968	16.0	35	13.3	31	12.7	31	12.3	27	11.8	24	11.3	20	11.1	16	10.7	18	9.69	24
1969	55.0	15	24.9	18	15.2	22	12.0	32	11.4	32	10.7	35	10.3	33	10.2	26	9.13	32
1970	13.0	45	12.7	38	12.4	32	12.2	28	11.6	30	10.4	39	9.94	40	9.84	35	9.23	29
1971	49.0	17	32.3	15	21.4	14	16.5	12	14.0	12	12.5	10	12.0	7	11.6	7	10.6	9
1972	131	7	62.3	7	32.0	7	20.0	9	13.7	13	11.4	18	10.5	29	9.91	32	9.66	25
1973	12.0	48	12.0	46	12.0	37	11.8	37	11.0	40	10.7	36	10.1	38	9.63	41	9.19	31
1974	12.0	49	12.0	47	12.0	38	12.0	33	12.0	22	11.3	21	10.7	22	9.70	38	8.98	37
1975	170	4	64.8	4	32.4	6	19.0	10	14.1	11	9.98	44	9.69	44	9.62	42	8.70	41
1976	100	9	42.7	12	21.9	13	15.4	15	11.0	41	10.7	37	10.2	34	9.43	43	8.70	42
1977	12.0	50	10.7	52	10.3	51	10.1	50	10.0	49	9.97	45	9.76	43	9.69	39	8.66	44
1978	61.0	13	47.7	10	30.6	8	21.6	6	16.5	7	13.2	7	12.7	5	12.4	5	11.6	5
1979	21.0	27	15.3	26	14.9	24	13.9	22	12.6	16	12.4	11	12.1	6	12.0	6	11.3	6
1980	14.0	40	13.3	32	13.1	28	12.8	24	11.7	27	11.1	25	11.0	18	10.6	21	10.6	10
1981	13.0	46	12.7	39	12.0	39	11.9	36	11.4	33	10.2	41	9.84	42	9.87	34	8.48	47
1982	16.0	36	14.0	30	13.6	26	12.9	23	12.3	20	11.7	14	10.6	26	10.7	19	9.98	17
1983	11.0	53	10.7	53	10.3	52	10.1	51	10.0	50	9.91	46	9.40	47	9.09	46	8.59	45
1984	17.0	31	13.3	33	11.7	44	11.4	42	11.2	37	10.3	40	10.2	35	9.92	31	9.78	21
1985	12.0	51	12.0	48	11.4	45	11.2	44	11.0	42	11.0	27	10.8	20	9.94	30	9.12	33
1986	22.0	26	17.7	23	15.6	21	14.3	19	13.1	15	10.9	32	10.7	23	10.7	20	10.4	13
1987	30.0	20	22.3	20	18.9	18	14.9	18	12.5	17	11.0	28	10.4	31	9.88	33	9.74	22
1988	17.0	32	14.7	28	13.1	29	12.0	34	11.6	31	11.0	29	10.4	32	10.1	28	9.56	27
1989	11.0	54	10.3	55	10.1	54	10.1	52	9.81	52	9.50	48	9.44	45	9.20	45	8.90	38
1990	11.0	55	10.7	54	10.3	53	10.1	53	9.41	53	9.18	53	9.03	52	8.77	52	8.35	48
1991	27.0	23	21.0	21	15.2	23	12.2	29	10.1	48	9.83	47	9.35	48	9.01	49	8.81	40
1992	15.0	37	14.3	29	14.0	25	12.8	25	10.6	44	9.49	49	9.09	51	8.91	51	8.59	46
1993	20.0	29	12.7	40	12.0	40	11.7	39	10.6	45	9.48	50	9.34	49	9.24	44	9.10	34

Table E9.1. Mean flow, in cubic feet per second, for station 06402600, Cheyenne River near Buffalo Gap

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1969	66.8	67.5	55.6	45.5	62.0	88.0	66.5	51.6	52.8	866	61.4	76.3	131
1970	75.4	64.4	77.4	71.6	77.8	65.5	77.8	60.3	58.3	51.5	64.2	75.9	68.2
1971	83.7	62.6	52.6	52.9	81.9	70.4	74.5	1,403	1,069	51.6	56.3	91.1	263
1972	76.8	72.9	73.5	55.0	59.2	57.5	58.6	68.9	131	56.5	78.1	76.7	72.0
1973	67.0	70.5	67.6	65.3	69.1	71.5	74.0	171	50.9	62.7	50.3	95.4	76.4
1974	73.6	84.1	40.2	98.3	235	135	190	59.3	44.3	36.9	57.6	60.3	91.8
1975	63.1	69.5	59.2	61.6	60.5	67.4	53.8	60.5	62.8	48.8	45.2	58.5	59.2
1976	63.7	63.9	62.5	44.1	58.1	59.5	64.2	58.8	49.1	32.6	66.3	55.6	56.5
1977	67.0	64.1	69.5	61.3	64.9	59.0	61.5	51.6	32.3	70.1	43.9	68.5	59.5
1978	75.2	70.9	34.7	39.7	54.9	109	45.6	1,909	198	140	147	61.0	243
1979	68.5	77.6	73.7	56.8	63.7	263	181	59.6	58.7	63.2	71.5	60.6	91.7
1980	68.5	73.6	71.9	62.6	135	162	102	50.6	56.1	20.7	49.2	64.1	76.0

Table E9.2. Statistics on mean flow, in cubic feet per second, for station 06402600, Cheyenne River near Buffalo Gap (October 1968 through September 1980)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	12	12	12	12	12	12	12	12	12	12	12	12	12
Maximum	83.7	84.1	77.4	98.3	235	263	190	1,909	1,069	866	147	95.4	263
Percentile													
75th	75.3	73.4	73.1	64.6	80.9	128	95.9	145	114	68.4	70.2	76.6	121
50th	68.5	70.0	65.1	59.1	64.3	70.9	70.2	59.9	57.2	54.0	59.5	66.3	76.2
25th	66.8	64.2	53.3	47.3	59.5	61.0	59.3	53.4	49.5	39.9	49.5	60.4	61.7
Minimum	63.1	62.6	34.7	39.7	54.9	57.5	45.6	50.6	32.3	20.7	43.9	55.6	56.5
Mean	70.77	70.13	61.53	59.56	85.17	100.65	87.46	333.68	155.27	125.05	65.92	70.33	107.36
Standard deviation	6.15	6.35	13.64	15.37	51.87	61.00	47.95	627.86	291.47	235.20	27.60	12.96	71.09
Skewness	0.74	0.90	-0.89	1.36	2.64	2.02	1.70	2.18	3.32	3.37	2.62	0.88	1.75
Coefficient of variation	0.09	0.09	0.22	0.26	0.61	0.61	0.55	1.88	1.88	1.88	0.42	0.18	0.66
Percent of annual flow	5.51	5.46	4.79	4.63	6.63	7.83	6.80	25.96	12.08	9.73	5.13	5.47	¹ -0.244

¹Serial correlation for annual mean flows.**Table E9.3.** Serial correlation for 1-year lag for monthly mean flow for station 06402600, Cheyenne River near Buffalo Gap (October 1968 through September 1980)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.304	0.240	-0.382	0.005	-0.139	0.414	-0.152	-0.233	-0.059	-0.049	-0.174	0.377	

Table E9.4. Correlation matrix for monthly mean flow for station 06402600, Cheyenne River near Buffalo Gap (October 1968 through September 1980)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	-0.020	-0.237	0.081	0.172	-0.079	0.039	0.595	0.723	-0.174	0.331	0.437
Nov.	*	1.000	-.228	.566	.673	.651	.775	-.196	-.358	-.139	.101	-.341
Dec.	*	*	1.000	.006	-.336	.050	-.037	-.647	-.271	-.193	-.506	.193
Jan.	*	*	*	1.000	.825	.134	.636	-.424	-.208	-.340	-.455	-.016
Feb.	*	*	*	*	1.000	.272	.691	-.175	-.065	-.191	-.230	-.191
Mar.	*	*	*	*	*	1.000	.778	-.069	-.161	-.067	.119	-.369
Apr.	*	*	*	*	*	*	1.000	-.291	-.140	-.176	-.180	-.266
May	*	*	*	*	*	*	*	1.000	.644	-.051	.712	.151
June	*	*	*	*	*	*	*	*	1.000	-.103	.037	.486
July	*	*	*	*	*	*	*	*	*	1.000	.052	.145
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	-.227
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E9.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06402600, Cheyenne River near Buffalo Gap

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1969	32.0	10	33.0	10	35.3	8	37.0	6	44.5	9	49.5	6	51.9	5	69.4	11	71.0	11
1970	21.0	4	26.0	6	30.7	6	38.6	9	42.0	6	52.1	7	53.1	6	57.7	5	63.9	6
1971	21.0	5	21.3	4	23.9	4	32.6	5	45.0	10	53.1	8	57.2	8	61.2	7	65.8	7
1972	26.0	7	26.7	7	33.6	7	39.6	10	54.3	11	63.7	11	65.5	11	66.8	9	67.6	10
1973	15.0	3	17.3	3	20.0	3	20.5	3	26.3	1	45.4	4	54.4	7	62.4	8	65.9	8
1974	25.0	6	25.7	5	26.9	5	30.2	4	33.9	4	40.4	3	45.4	3	49.1	2	53.1	1
1975	30.0	8	31.7	9	36.1	10	38.3	8	42.1	7	46.3	5	50.0	4	52.1	4	54.7	4
1976	13.0	2	14.0	2	15.4	2	20.1	2	28.2	2	38.7	2	45.1	2	50.1	3	54.4	3
1977	10.0	1	10.7	1	13.7	1	19.9	1	30.2	3	35.5	1	42.4	1	48.7	1	54.3	2
1978	30.0	9	30.7	8	36.4	11	39.7	11	43.8	8	59.2	10	64.7	10	67.9	10	66.8	9
1979	33.0	11	33.3	11	36.0	9	37.4	7	40.1	5	55.5	9	58.1	9	60.8	6	63.1	5

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E9.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06402600, Cheyenne River near Buffalo Gap

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1969	5,980	3	4,143	3	2,986	3	1,730	3	895	3	483	3	344	3	271	3	201	3
1970	285	10	212	10	144	10	110	10	80.8	9	78.1	9	75.7	9	73.7	9	72.5	9
1971	12,500	2	8,860	2	5,097	2	3,991	1	2,302	1	1,261	1	865	1	665	1	460	1
1972	939	4	394	8	215	8	176	8	135	8	101	8	90.8	8	85.7	8	78.1	8
1973	895	5	691	4	484	5	283	6	181	7	126	7	109	7	98.1	7	87.1	7
1974	722	7	603	5	483	6	376	5	304	5	211	5	190	4	167	4	128	4
1975	249	12	161	12	113	12	83.3	12	72.5	11	66.5	11	64.6	11	63.5	11	63.7	11
1976	280	11	198	11	132	11	93.7	11	70.0	12	65.4	12	63.5	12	60.2	12	59.0	12
1977	880	6	377	9	205	9	118	9	76.5	10	67.2	10	67.0	10	65.6	10	64.4	10
1978	20,600	1	12,810	1	6,443	1	3,510	2	2,052	2	1,085	2	795	2	616	2	430	2
1979	600	9	533	7	514	4	424	4	326	4	227	4	174	5	146	5	120	5
1980	616	8	576	6	381	7	263	7	213	6	167	6	133	6	116	6	101	6

Table E10.1. Mean flow, in cubic feet per second, for station 06403300, French Creek above Fairburn

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1982	(1)	(1)	(1)	(1)	(1)	(1)	2.25	19.1	53.3	20.1	8.04	16.8	(2)
1983	12.6	8.63	2.06	1.84	4.08	8.40	10.2	16.6	13.5	3.38	3.04	6.21	7.55
1984	4.64	1.87	1.49	1.41	2.19	5.47	9.81	23.3	32.1	24.2	10.7	3.77	10.1
1985	5.97	6.72	2.22	3.90	1.71	5.54	7.42	4.34	1.46	.44	.53	2.05	3.53
1986	1.42	1.07	1.16	1.30	1.21	5.43	8.14	7.72	8.73	5.79	1.74	3.85	3.97
1987	9.67	5.30	2.93	1.94	1.99	24.8	11.4	11.8	10.6	2.27	.56	.65	7.03
1988	.84	1.07	.96	.66	.32	1.59	2.31	3.44	2.00	20.1	1.69	1.17	3.04
1989	1.33	1.56	.79	.39	.19	2.32	1.63	1.00	.46	.50	.63	1.32	1.01
1990	1.76	1.21	.69	.68	.93	2.30	2.15	20.7	18.7	4.69	3.65	1.54	4.94
1991	.98	1.72	1.02	.41	1.19	4.69	10.5	54.8	64.8	10.1	11.4	2.76	13.7
1992	3.55	3.20	2.31	1.36	2.67	9.93	5.41	3.74	7.80	9.00	4.09	1.59	4.57
1993	1.75	1.94	.91	.94	.95	8.43	12.0	23.9	50.9	22.9	12.2	7.36	12.0

¹Indicates a no-value month.²Incomplete water year.**Table E10.2.** Statistics on mean flow, in cubic feet per second, for station 06403300, French Creek above Fairburn (October 1982 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	11	11	11	11	11	11	11	11	11	11	11	11	11
Maximum	12.6	8.63	2.93	3.90	4.08	24.8	12.0	54.8	64.8	24.2	12.2	7.36	13.7
Percentile													
75th	5.97	5.30	2.22	1.84	2.19	8.43	10.5	23.3	32.1	20.1	10.7	3.85	10.1
50th	1.76	1.87	1.16	1.30	1.21	5.47	8.14	11.8	10.6	5.79	3.04	2.05	4.94
25th	1.33	1.21	0.91	0.66	0.93	2.32	2.31	3.74	2.00	2.27	0.63	1.32	3.53
Minimum	0.84	1.07	0.69	0.39	0.19	1.59	1.63	1.00	0.46	0.44	0.53	0.65	1.01
Mean	4.05	3.12	1.50	1.35	1.58	7.17	7.36	15.58	19.19	9.40	4.57	2.93	6.49
Standard deviation	3.92	2.60	0.75	1.00	1.12	6.44	3.89	15.48	21.35	8.93	4.58	2.18	4.00
Skewness	1.40	1.33	0.73	1.78	1.01	2.32	-0.48	1.75	1.36	0.82	0.96	1.14	0.63
Coefficient of variation	0.97	0.83	0.50	0.74	0.71	0.90	0.53	0.99	1.11	0.95	1.00	0.74	0.62
Percent of annual flow	5.20	4.01	1.93	1.73	2.04	9.22	9.46	20.02	24.66	12.08	5.87	3.77	¹ 0.080

¹Serial correlation for annual mean flows.**Table E10.3.** Serial correlation for 1-year lag for monthly mean flow for station 06403300, French Creek above Fairburn (October 1982 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
-0.049	-0.389	-0.189	0.160	0.340	-0.161	0.117	-0.074	-0.110	-0.437	0.018	0.043	

Table E10.4. Correlation matrix for monthly mean flow for station 06403300, French Creek above Fairburn (October 1982 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.915	0.780	0.581	0.833	0.617	0.464	-0.125	-0.234	-0.351	-0.270	0.186
Nov.	*	1.000	.751	.739	.771	.452	.388	-0.160	-0.262	-0.466	-.322	.189
Dec.	*	*	1.000	.699	.689	.792	.420	-0.265	-.321	-.345	-.338	-.169
Jan.	*	*	*	1.000	.457	.318	.299	-.329	-.363	-.345	-.351	.002
Feb.	*	*	*	*	1.000	.412	.489	.034	-.044	-.160	.010	.348
Mar.	*	*	*	*	*	1.000	.571	-.053	-.035	-.203	-.137	-.079
Apr.	*	*	*	*	*	*	1.000	.502	.578	.213	.514	.600
May	*	*	*	*	*	*	*	1.000	.930	.278	.780	.311
June	*	*	*	*	*	*	*	*	1.000	.489	.926	.488
July	*	*	*	*	*	*	*	*	*	1.000	.712	.390
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	.563
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E10.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06403300, French Creek above Fairburn

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1982	1.30	11	1.33	11	1.39	11	1.46	11	1.68	10	1.89	9	2.38	10	3.55	11	6.37	11
1983	.90	9	.97	9	1.03	9	1.13	9	1.35	8	1.43	7	1.57	7	1.68	7	2.86	8
1984	.70	8	.79	7	.91	8	1.07	7	1.73	11	2.71	11	2.62	11	3.08	10	4.03	9
1985	.25	4	.26	4	.30	5	.37	5	.43	5	.47	3	.57	3	.98	4	1.05	4
1986	.50	6	.83	8	.86	7	1.08	8	1.67	9	1.97	10	2.17	9	2.92	9	4.22	10
1987	.15	3	.18	3	.26	3	.29	3	.32	3	.48	4	.61	4	.72	3	.75	1
1988	.020	1	.020	1	.030	1	.081	1	.15	1	.24	1	.39	1	.63	2	.85	2
1989	.12	2	.13	2	.15	2	.20	2	.31	2	.43	2	.46	2	.62	1	.89	3
1990	.28	5	.29	5	.29	4	.30	4	.36	4	.53	5	.85	5	1.02	5	1.13	5
1991	1.10	10	1.17	10	1.24	10	1.29	10	1.34	7	1.45	8	1.95	8	2.30	8	2.58	7
1992	.52	7	.57	6	.65	6	.71	6	.83	6	.92	6	.93	6	1.04	6	1.29	6

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E10.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06403300, French Creek above Fairburn

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1983	33.0	8	28.7	8	23.7	7	21.1	7	16.9	7	15.2	6	13.5	6	12.3	5	9.50	5
1984	109	5	75.0	5	62.9	4	48.5	3	32.8	3	29.2	3	27.1	3	23.3	3	17.7	3
1985	15.0	10	11.7	10	9.50	10	8.39	10	7.72	10	7.06	10	5.83	10	4.93	10	4.65	10
1986	37.0	7	31.7	7	22.3	8	14.0	8	11.7	8	9.65	8	9.03	7	8.00	7	6.30	8
1987	198	3	123	3	62.1	5	41.3	5	26.6	5	18.7	5	17.1	4	14.9	4	10.6	4
1988	52.0	6	51.7	6	50.7	6	37.7	6	21.4	6	11.8	7	8.77	8	7.18	8	5.30	9
1989	8.00	11	4.50	11	3.91	11	2.97	11	2.79	11	2.10	11	1.70	11	1.38	11	1.23	11
1990	110	4	97.3	4	68.1	3	42.2	4	30.5	4	20.0	4	15.0	5	12.2	6	8.72	6
1991	252	1	195	1	142	1	136	1	97.3	1	61.1	1	45.2	1	36.9	1	26.1	1
1992	24.0	9	19.7	9	15.9	9	12.2	9	10.0	9	8.54	9	7.30	9	6.73	9	6.73	7
1993	211	2	175	2	108	2	75.7	2	51.9	2	38.0	2	32.7	2	27.8	2	22.2	2

Table E11.1. Mean flow, in cubic feet per second, for station 06404000, Battle Creek near Keystone

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1945	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	3.68	4.59	1.07	(2)
1946	1.12	1.09	.93	.65	1.15	3.44	2.50	54.4	49.2	46.3	4.85	10.8	14.8
1947	12.3	8.93	4.42	3.24	2.11	3.56	8.57	13.5	64.2	52.6	(1)	(1)	(2)
1962	.000	.060	.026	.000	.021	.46	2.17	36.6	65.0	46.3	14.7	3.59	14.2
1963	5.20	3.09	2.11	1.25	2.11	7.11	19.4	22.9	85.5	21.3	3.90	6.11	15.0
1964	2.93	3.00	2.24	1.94	3.03	2.57	5.82	12.5	29.1	25.7	4.16	1.81	7.90
1965	1.25	1.32	1.32	1.29	1.01	1.13	4.64	67.6	91.1	44.3	13.0	4.87	19.5
1966	4.70	3.56	3.13	1.88	1.40	4.39	11.3	6.20	1.93	1.35	2.90	2.64	3.79
1967	4.14	2.55	1.64	1.76	1.73	2.54	4.22	9.37	131	19.1	4.02	2.74	15.3
1968	2.12	2.50	1.85	2.07	2.42	3.40	3.14	2.93	16.5	5.84	3.26	2.26	4.01
1969	1.10	1.34	1.34	1.05	.74	1.35	4.38	3.06	7.83	41.9	4.25	.56	5.80
1970	1.48	1.72	.93	.16	.33	1.03	9.78	17.8	40.9	3.35	3.36	1.37	6.83
1971	2.18	1.20	.63	.83	1.19	3.46	38.8	71.2	59.8	6.77	1.64	1.46	15.8
1972	2.25	2.18	1.68	.66	.66	3.54	4.93	13.4	199	15.8	7.61	3.78	21.1
1973	2.73	2.89	1.65	1.64	1.20	4.83	37.6	24.5	13.4	5.89	4.80	2.13	8.61
1974	1.89	2.47	1.04	.87	1.20	2.62	3.61	3.05	1.74	1.08	.10	.11	1.65
1975	.32	.86	.13	.000	.37	1.44	13.0	10.5	21.1	5.21	2.14	.000	4.58
1976	.074	.45	1.48	1.35	1.85	1.77	5.24	49.8	72.3	13.9	7.95	1.94	13.2
1977	1.84	1.53	1.54	.72	1.43	3.58	11.6	3.91	1.61	1.43	2.84	1.40	2.78
1978	1.89	1.77	1.47	.69	.96	4.25	5.20	89.8	25.4	5.45	3.07	.86	11.9
1979	.95	1.21	1.02	.53	.80	2.50	5.05	2.78	4.72	33.0	15.6	3.08	6.00
1980	1.40	2.77	2.01	.43	.96	3.29	7.49	5.19	3.87	1.28	.97	.15	2.48
1981	1.85	1.32	2.28	.95	.65	1.44	1.49	44.7	6.16	4.02	3.43	.25	5.79
1982	1.38	1.05	.76	.50	1.38	2.96	3.68	20.1	31.9	8.50	2.48	1.84	6.38
1983	4.85	2.64	1.83	1.27	1.45	2.65	5.57	16.9	8.20	1.78	.39	.000	3.98
1984	.75	1.32	1.15	1.80	1.73	1.96	5.19	22.7	51.4	12.9	2.68	.46	8.65
1985	1.46	1.22	.69	.75	.041	3.78	3.71	1.24	.22	.069	.008	.036	1.11
1986	.25	.48	.63	1.46	1.67	3.03	11.6	16.6	14.6	4.51	1.05	4.70	5.05
1987	12.7	5.24	4.25	2.64	2.91	12.8	12.7	18.1	8.50	1.77	.088	.000	6.84
1988	.21	.75	.42	.12	.28	1.47	1.90	2.25	.65	.22	.033	.000	.69
1989	.000	.000	.000	.000	.000	1.95	1.77	1.64	.64	.039	.000	6.20	1.02
1990	2.57	1.82	1.14	.69	1.51	3.83	6.46	33.4	23.7	17.0	5.45	1.45	8.32
1991	1.04	1.68	.98	.62	1.55	2.65	9.22	73.6	92.8	10.3	3.92	1.60	16.7
1992	2.16	2.47	1.78	2.17	2.72	4.90	3.37	2.71	6.20	9.86	2.95	.66	3.50
1993	.59	1.61	1.66	1.45	1.05	4.75	12.3	58.0	68.0	17.3	10.1	4.16	15.1

¹Indicates a no-value month.²Incomplete water year.

Table E11.2. Statistics on mean flow, in cubic feet per second, for station 06404000, Battle Creek near Keystone (October 1961 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	32	32	32	32	32	32	32	32	32	32	32	32	32
Maximum	12.7	5.24	4.25	2.64	3.03	12.8	38.8	89.8	199	46.3	15.6	6.20	21.1
Percentile													
75th	2.49	2.54	1.82	1.60	1.71	3.82	11.5	35.8	63.7	17.2	4.66	2.99	14.0
50th	1.66	1.64	1.40	0.91	1.20	2.80	5.22	16.7	18.8	6.33	3.16	1.53	6.60
25th	0.80	1.20	0.80	0.55	0.68	1.81	3.69	3.27	5.08	1.77	1.20	0.30	3.84
Minimum	0.000	0.000	0.000	0.000	0.000	0.46	1.49	1.24	0.22	0.039	0.000	0.000	0.69
Mean	2.13	1.81	1.40	1.05	1.26	3.23	8.64	23.91	37.02	12.10	4.15	1.94	8.24
Standard deviation	2.38	1.10	0.87	0.70	0.80	2.24	8.79	24.79	45.29	13.26	4.12	1.81	5.76
Skewness	3.06	0.86	1.05	0.32	0.46	2.68	2.57	1.26	1.89	1.44	1.56	0.91	0.66
Coefficient of variation	1.11	0.61	0.62	0.67	0.64	0.69	1.02	1.04	1.22	1.10	0.99	0.93	0.70
Percent of annual flow	2.16	1.84	1.42	1.06	1.28	3.28	8.75	24.23	37.53	12.27	4.21	1.97	¹ 0.030

¹Serial correlation for annual mean flows.

Table E11.3. Serial correlation for 1-year lag for monthly mean flow for station 06404000, Battle Creek near Keystone (October 1961 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
-0.211	-0.162	-0.119	0.175	-0.012	-0.167	-0.145	-0.271	-0.055	0.058	-0.014	-0.011	

Table E11.4. Correlation matrix for monthly mean flow for station 06404000, Battle Creek near Keystone (October 1961 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.863	0.809	0.590	0.550	0.840	0.211	-0.103	-0.024	-0.175	-0.263	-0.145
Nov.	*	1.000	.874	.660	.628	.749	.223	-.176	-.027	-.204	-.257	-.209
Dec.	*	*	1.000	.739	.638	.704	.083	-.047	-.027	-.126	-.118	-.148
Jan.	*	*	*	1.000	.828	.559	.141	-.053	.002	-.006	-.095	-.025
Feb.	*	*	*	*	1.000	.547	.112	-.021	.017	-.032	-.151	-.049
Mar.	*	*	*	*	*	1.000	.335	-.023	-.068	-.271	-.248	-.017
Apr.	*	*	*	*	*	*	1.000	.257	.039	-.159	-.096	.086
May	*	*	*	*	*	*	*	1.000	.350	.192	.305	.117
June	*	*	*	*	*	*	*	*	1.000	.378	.405	.427
July	*	*	*	*	*	*	*	*	*	1.000	.802	.382
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	.448
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E11.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06404000, Battle Creek near Keystone

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1962	0.50	25	0.53	24	0.63	24	0.84	24	1.23	27	1.57	26	1.74	26	1.99	27	2.76	29
1963	1.00	29	1.00	29	1.16	30	1.55	31	1.91	31	2.05	31	2.30	30	2.39	29	2.60	28
1964	.40	23	.53	25	.66	25	.80	23	.92	22	.94	22	1.10	22	1.13	17	1.20	15
1965	1.00	30	1.10	30	1.10	29	1.18	29	1.24	28	1.59	27	2.01	27	2.41	30	3.15	30
1966	.30	21	.37	22	.59	23	.87	25	1.20	26	1.33	24	1.64	25	1.80	25	2.40	27
1967	1.00	31	1.27	31	1.31	31	1.51	30	1.62	30	1.90	30	2.05	28	2.12	28	2.26	25
1968	.35	22	.35	21	.38	20	.39	18	.44	16	.74	18	.89	14	1.02	13	1.12	11
1969	.0000	1	.0000	1	.007	12	.011	12	.13	11	.23	8	.39	8	.60	8	.85	8
1970	.0000	2	.0000	2	.11	13	.18	13	.30	13	.65	16	.74	12	.85	11	1.13	12
1971	.10	14	.10	14	.16	14	.20	14	.26	12	.64	15	.98	18	1.26	19	1.47	18
1972	.80	27	.80	27	.89	27	1.03	27	1.16	25	1.41	25	1.50	23	1.74	24	2.16	24
1973	.0000	3	.0000	3	.0000	1	.0000	1	.46	17	.86	21	1.03	20	1.39	21	1.58	20
1974	.0000	4	.0000	4	.0000	2	.0000	2	.0000	1	.028	5	.077	4	.31	4	.24	3
1975	.0000	5	.0000	5	.0000	3	.0000	3	.0000	2	.019	4	.15	6	.39	6	.75	5
1976	.42	24	.50	23	.57	22	.60	22	.63	20	.86	20	1.09	21	1.26	20	1.50	19
1977	.20	16	.27	19	.38	21	.38	17	.64	21	.79	19	.96	16	1.18	18	1.36	17
1978	.20	17	.24	16	.36	18	.45	21	.53	19	.62	13	.78	13	.89	12	.90	10
1979	.29	20	.32	20	.37	19	.41	20	.43	15	.52	11	1.02	19	1.50	22	1.66	21
1980	.0000	6	.0000	6	.0000	4	.0000	4	.010	8	.47	10	.70	10	1.05	14	1.19	14
1981	.0000	7	.0000	7	.0000	5	.0000	5	.13	10	.57	12	.72	11	.82	10	.89	9
1982	.70	26	.72	26	.78	26	.88	26	1.01	23	1.28	23	1.51	24	1.73	23	2.31	26
1983	.0000	8	.0000	8	.0000	6	.0000	6	.0000	3	.093	7	.34	7	.53	7	.83	7
1984	.0000	9	.0000	9	.0000	7	.0000	7	.047	9	.36	9	.49	9	.63	9	.78	6
1985	.0000	10	.0000	10	.0000	8	.0000	8	.0000	4	.018	3	.036	2	.038	2	.18	2
1986	.11	15	.15	15	.25	15	.39	19	1.03	24	1.87	29	3.20	31	3.72	31	5.10	31
1987	.0000	11	.0000	11	.0000	9	.0000	9	.0000	5	.030	6	.059	3	.21	3	.26	4
1988	.0000	12	.0000	12	.0000	10	.0000	10	.0000	6	.0000	1	.0000	1	.0000	1	.0000	1
1989	.0000	13	.0000	13	.0000	11	.0000	11	.0000	7	.008	2	.13	5	.37	5	1.70	22
1990	.23	18	.25	18	.30	17	.35	16	.48	18	.70	17	.98	17	1.09	15	1.21	16
1991	.83	28	.90	28	.99	28	1.09	28	1.60	29	1.75	28	2.05	29	1.98	26	2.07	23
1992	.23	19	.24	17	.26	16	.29	15	.36	14	.62	14	.94	15	1.11	16	1.17	13

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E11.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06404000, Battle Creek near Keystone

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1962	230	14	192	13	146	10	98.0	9	77.9	9	65.2	6	53.6	5	41.7	5	28.1	7
1963	300	11	217	10	164	8	115	7	85.9	8	56.7	10	47.6	8	38.0	8	27.0	8
1964	131	18	83.0	18	56.1	18	42.3	17	36.9	17	27.7	16	22.7	15	18.6	14	13.3	14
1965	402	4	267	7	176	6	139	4	104	4	85.8	2	70.3	2	55.1	2	37.6	2
1966	25.0	27	20.3	27	19.4	26	15.9	25	12.9	25	9.17	25	7.42	25	6.04	25	4.74	26
1967	380	5	311	3	286	2	193	2	132	3	76.8	5	53.5	6	41.5	6	28.2	6
1968	90.0	20	65.0	20	39.3	21	24.3	23	17.5	23	11.4	24	8.78	24	7.25	24	5.84	24
1969	236	13	158	14	121	14	81.7	13	44.2	16	26.4	17	18.6	19	14.8	18	10.6	18
1970	380	6	234	9	128	11	69.9	16	45.3	15	31.2	13	23.1	14	18.3	15	12.7	15
1971	340	9	252	8	178	5	120	5	95.3	5	79.6	4	57.6	4	45.1	4	30.3	4
1972	2,400	1	1,417	1	667	1	375	1	203	1	108	1	76.6	1	59.3	1	40.4	1
1973	284	12	200	11	112	16	73.5	14	50.7	12	33.9	12	25.6	12	20.5	13	15.2	12
1974	6.50	32	6.17	31	4.66	31	4.12	31	3.63	31	3.34	30	3.17	29	2.86	29	2.23	29
1975	93.0	19	68.7	19	50.6	19	34.9	20	21.8	20	15.9	21	15.5	20	12.6	21	8.91	21
1976	617	2	352	2	203	4	118	6	93.6	6	61.4	8	46.3	9	36.9	9	25.2	9
1977	22.0	28	21.0	26	17.4	27	15.5	26	11.6	26	8.16	27	6.39	27	5.30	27	4.16	27
1978	144	17	122	16	114	15	96.5	10	90.0	7	59.9	9	41.9	10	32.4	10	22.4	10
1979	179	16	92.3	17	65.7	17	42.3	18	36.9	18	25.0	19	18.7	18	14.6	19	10.9	17
1980	14.0	29	10.3	29	10.0	29	9.07	29	7.61	28	6.48	28	5.64	28	5.04	28	3.75	28
1981	364	7	284	5	156	9	85.4	11	47.8	14	26.2	18	18.9	17	15.0	17	10.3	19
1982	66.0	22	65.0	21	46.7	20	38.1	19	34.1	19	28.2	15	20.5	16	16.2	16	11.6	16
1983	56.0	24	43.7	24	32.4	24	24.4	22	17.2	24	12.8	23	10.4	23	8.53	23	6.12	23
1984	204	15	156	15	126	12	84.8	12	51.7	11	37.5	11	29.3	11	23.4	11	16.1	11
1985	11.0	30	9.07	30	7.26	30	6.71	30	5.55	30	3.98	29	2.96	30	2.29	30	1.74	30
1986	70.0	21	50.7	22	34.9	22	24.3	24	20.5	21	17.3	20	14.6	22	12.0	22	8.82	22
1987	53.0	25	44.7	23	34.6	23	24.7	21	18.4	22	15.6	22	15.2	21	13.2	20	9.65	20
1988	7.00	31	5.80	32	4.17	32	3.26	32	2.53	32	2.27	32	1.92	32	1.60	32	1.14	32
1989	64.0	23	37.7	25	21.1	25	11.5	28	6.20	29	3.10	31	2.07	31	1.70	31	1.70	31
1990	313	10	194	12	121	13	73.5	15	48.1	13	30.2	14	25.1	13	21.1	12	15.1	13
1991	348	8	306	4	223	3	173	3	137	2	84.3	3	60.9	3	47.4	3	32.1	3
1992	27.0	26	19.0	28	13.2	28	12.6	27	11.1	27	8.34	26	6.59	26	5.70	26	5.11	25
1993	521	3	280	6	170	7	107	8	72.1	10	63.7	7	48.3	7	39.7	7	28.6	5

Table E12.1. Mean flow, in cubic feet per second, for station 06404998, Grace Coolidge Creek near Game Lodge, near Custer

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1977	1.27	1.02	1.50	.97	.69	.87	2.00	.67	.60	1.38	2.76	1.43	1.27
1978	1.46	1.38	1.00	.98	.95	1.06	2.27	40.4	9.53	3.61	2.73	.93	5.58
1979	1.15	1.19	.81	.95	1.28	1.60	2.01	1.06	1.55	22.3	11.9	5.58	4.33
1980	3.44	1.11	.95	.56	.59	.84	1.68	1.39	1.71	.78	.58	.44	1.17
1981	.78	.88	1.05	.95	.77	.61	.63	26.5	4.84	3.01	3.79	1.50	3.82
1982	1.67	1.48	1.23	.93	.94	1.26	1.66	6.89	21.2	6.59	2.49	3.27	4.13
1983	4.13	2.36	1.69	1.18	1.04	1.35	2.91	7.69	4.35	1.83	.81	.28	2.48
1984	.98	1.10	.72	.82	.71	.68	2.22	13.7	14.4	9.10	3.48	1.51	4.13
1985	1.62	1.55	.98	.93	.62	.67	1.33	.76	.28	.24	.26	.50	.81
1986	.55	.41	.32	.61	.71	.81	2.90	4.89	5.87	3.40	1.49	2.49	2.04
1987	5.92	3.33	2.26	1.95	2.20	5.00	5.22	6.70	5.28	2.09	.93	.85	3.49
1988	.82	.91	.58	.45	.42	.80	1.01	.86	.25	.097	.96	.13	.61
1989	.36	.83	1.21	.54	.004	5.54	1.00	.78	.70	.57	.80	4.42	1.40
1990	1.80	1.10	.82	.83	.97	2.77	3.52	19.6	18.0	4.67	2.60	.92	4.82
1991	1.11	1.43	.72	.64	.92	.98	4.25	38.7	43.9	7.56	4.00	2.26	8.89
1992	2.42	2.60	2.50	1.73	1.66	2.58	2.13	1.83	4.65	7.11	4.22	2.21	2.98
1993	2.32	2.44	1.76	1.59	1.73	3.40	8.52	23.8	37.2	12.4	8.06	5.93	9.12

Table E12.2. Statistics on mean flow, in cubic feet per second, for station 06404998, Grace Coolidge Creek near Game Lodge, near Custer (October 1976 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	17	17	17	17	17	17	17	17	17	17	17	17	17
Maximum	5.92	3.33	2.50	1.95	2.20	5.54	8.52	40.4	43.9	22.3	11.9	5.93	9.12
Percentile													
75th	2.37	1.95	1.60	1.08	1.16	2.67	3.21	21.7	16.2	7.34	3.89	2.88	4.57
50th	1.46	1.19	1.00	0.93	0.92	1.06	2.13	6.70	4.84	3.40	2.60	1.50	3.49
25th	0.90	0.96	0.76	0.62	0.65	0.80	1.49	0.96	1.12	1.08	0.87	0.67	1.34
Minimum	0.36	0.41	0.32	0.45	0.004	0.61	0.63	0.67	0.25	0.097	0.26	0.13	0.61
Mean	1.87	1.48	1.18	0.98	0.95	1.81	2.66	11.54	10.25	5.10	3.05	2.04	3.59
Standard deviation	1.44	0.77	0.59	0.42	0.53	1.54	1.92	13.44	13.06	5.64	2.98	1.80	2.52
Skewness	1.70	1.14	0.94	1.11	0.80	1.55	1.99	1.20	1.71	1.98	1.97	1.15	1.04
Coefficient of variation	0.77	0.52	0.50	0.43	0.55	0.85	0.72	1.16	1.27	1.10	0.98	0.88	0.70
Percent of annual flow	4.36	3.44	2.75	2.28	2.22	4.22	6.20	26.89	23.89	11.89	7.11	4.75	¹ 0.015

¹Serial correlation for annual mean flows.

Table E12.3. Serial correlation for 1-year lag for monthly mean flow for station 06404998, Grace Coolidge Creek near Game Lodge, near Custer (October 1976 through September 1993)

Month											
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
-0.363	-0.158	-0.211	-0.117	0.037	-0.017	0.012	-0.261	0.008	-0.111	-0.026	-0.344

Table E12.4. Correlation matrix for monthly mean flow for station 06404998, Grace Coolidge Creek near Game Lodge, near Custer (October 1976 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.821	0.661	0.676	0.674	0.353	0.418	-0.133	-0.061	-0.149	-0.205	-0.296
Nov.	*	1.000	.859	.906	.845	.467	.575	.016	.177	.092	.065	.001
Dec.	*	*	1.000	.881	.680	.537	.348	-.158	-.044	-.028	.027	.070
Jan.	*	*	*	1.000	.908	.449	.556	.020	.092	.204	.232	.129
Feb.	*	*	*	*	1.000	.342	.681	.146	.280	.412	.400	.182
Mar.	*	*	*	*	*	1.000	.396	-.133	.033	.003	.005	.384
Apr.	*	*	*	*	*	*	1.000	.358	.673	.321	.330	.365
May	*	*	*	*	*	*	*	1.000	.674	.130	.185	.007
June	*	*	*	*	*	*	*	*	1.000	.354	.315	.353
July	*	*	*	*	*	*	*	*	*	1.000	.951	.723
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	.742
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E12.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06404998, Grace Coolidge Creek near Game Lodge, near Custer

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1977	0.0000	1	0.0000	1	0.004	2	0.11	2	0.33	4	0.44	4	0.58	5	0.98	10	1.14	9
1978	.50	12	.53	12	.61	12	.67	12	.79	12	.80	11	.90	11	1.00	11	1.05	7
1979	.060	4	.10	4	.37	9	.50	9	.52	9	.56	8	.65	7	.73	7	1.25	11
1980	.25	9	.27	8	.30	7	.35	8	.42	6	.50	6	.56	4	.63	4	.75	4
1981	.45	11	.45	11	.49	11	.59	11	.61	11	.93	12	1.00	12	1.07	12	1.23	10
1982	.90	14	.92	14	.93	14	.94	13	1.03	13	1.09	13	1.18	13	1.31	13	1.98	13
1983	.18	6	.19	6	.20	4	.21	4	.27	3	.46	5	.66	8	.73	6	.75	5
1984	.30	10	.38	10	.46	10	.54	10	.60	10	.63	10	.74	10	.80	8	1.07	8
1985	.020	3	.037	3	.077	3	.16	3	.19	2	.24	2	.24	2	.28	1	.36	1
1986	.70	13	.75	13	.89	13	1.03	14	1.38	14	1.69	16	2.07	16	2.36	16	2.88	16
1987	.20	7	.20	7	.23	6	.26	6	.37	5	.43	3	.48	3	.54	3	.65	3
1988	.0000	2	.0000	2	.0000	1	.0000	1	.0000	1	.15	1	.23	1	.36	2	.41	2
1989	.10	5	.12	5	.20	5	.23	5	.51	7	.53	7	.59	6	.66	5	1.33	12
1990	.20	8	.27	9	.32	8	.34	7	.52	8	.63	9	.72	9	.81	9	.95	6
1991	1.00	16	1.07	15	1.30	15	1.43	15	1.49	15	1.68	15	1.92	15	2.11	15	2.20	15
1992	.96	15	1.22	16	1.39	16	1.49	16	1.52	16	1.58	14	1.69	14	1.83	14	1.98	14

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E12.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06404998, Grace Coolidge Creek near Game Lodge, near Custer

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1977	15.0	12	8.87	15	5.29	15	4.07	15	3.50	15	2.46	14	1.90	14	1.58	14	1.48	14
1978	76.0	6	67.7	5	63.1	5	50.7	5	40.8	2	25.8	3	18.4	3	14.6	3	10.0	3
1979	104	5	63.7	6	36.4	6	27.0	6	25.1	6	17.7	5	13.6	5	10.6	5	7.49	5
1980	13.0	14	12.7	12	8.06	14	5.85	14	3.51	14	2.31	15	1.86	15	1.54	15	1.25	15
1981	232	2	155	1	91.6	3	52.1	4	29.5	5	16.2	6	11.9	7	9.81	7	6.78	8
1982	39.0	8	35.7	7	29.0	7	23.9	7	21.4	7	15.6	7	11.9	8	9.53	8	6.99	7
1983	13.0	15	12.0	13	10.9	12	10.0	10	7.86	9	6.13	11	5.08	11	4.27	12	3.21	12
1984	33.0	9	30.0	8	24.4	8	20.4	8	14.6	8	14.2	8	12.5	6	10.4	6	7.42	6
1985	2.10	17	2.03	17	1.87	17	1.77	17	1.63	16	1.59	16	1.40	16	1.29	16	1.06	16
1986	19.0	11	13.8	10	11.3	11	8.53	12	6.51	12	5.56	12	5.06	12	4.36	11	3.50	11
1987	14.0	13	13.7	11	12.9	10	10.2	9	7.74	10	6.27	10	6.24	9	5.66	9	4.48	9
1988	22.0	10	8.43	16	3.84	16	1.90	16	1.11	17	1.00	17	.90	17	.79	17	.71	17
1989	67.0	7	25.4	9	13.7	9	9.23	11	5.84	13	3.41	13	2.53	13	2.07	13	1.89	13
1990	254	1	154	2	92.4	2	54.5	2	32.0	4	19.2	4	14.4	4	11.7	4	8.54	4
1991	148	4	124	3	100	1	90.8	1	68.7	1	42.3	1	30.7	1	24.4	1	16.8	1
1992	12.0	16	9.87	14	8.27	13	7.35	13	7.20	11	6.46	9	5.39	10	4.62	10	3.79	10
1993	179	3	123	4	79.1	4	54.1	3	37.3	3	30.9	2	24.8	2	20.8	2	16.0	2

Table E13.1. Mean flow, in cubic feet per second, for station 06405000, Grace Coolidge Creek near Custer

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1945	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	3.23	1.90	1.00	(2)
1946	1.45	1.60	1.23	1.43	1.41	1.53	1.54	14.3	17.2	10.1	3.47	7.28	5.21
1947	7.14	4.20	3.34	3.16	2.21	2.24	4.23	6.94	36.2	27.4	(1)	(1)	(2)
1967	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	9.62	1.19	.21	(2)
1968	.25	.63	.27	.27	.23	.84	.57	.27	5.92	1.62	2.71	1.91	1.28
1969	.92	1.01	.75	.24	.000	.13	1.73	2.60	1.15	5.87	2.00	.55	1.43
1970	1.22	1.33	.58	.63	.99	.80	2.24	5.46	14.7	.83	6.09	.99	2.98
1971	1.17	2.69	1.27	.53	1.19	2.52	18.7	25.5	22.8	4.26	.52	1.24	6.86
1972	2.50	3.23	1.80	1.36	1.42	1.63	2.07	3.10	29.0	8.33	3.46	.30	4.82
1973	1.73	.94	.18	.045	.000	.13	10.3	11.0	4.70	2.01	1.73	8.79	3.47
1974	1.44	1.28	.83	.000	.000	.000	.038	.000	.000	.000	.000	.50	.34
1975	.041	.000	.000	.000	.000	.52	1.00	.74	10.8	3.10	.22	.000	1.36
1976	.000	.000	.000	.000	.000	.000	.62	25.0	50.4	7.87	3.54	.53	7.31

¹Indicates a no-value month.²Incomplete water year.**Table E13.2.** Statistics on mean flow, in cubic feet per second, for station 06405000, Grace Coolidge Creek near Custer (October 1967 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	9	9	9	9	9	9	9	9	9	9	9	9	9
Maximum	2.50	3.23	1.80	1.36	1.42	2.52	18.7	25.5	50.4	8.33	6.09	8.79	7.31
Percentile													
75th	1.59	2.01	1.05	0.58	1.09	1.23	6.27	18.0	25.9	6.87	3.50	1.58	5.84
50th	1.17	1.01	0.58	0.24	0.000	0.52	1.73	3.10	10.8	3.10	2.00	0.55	2.98
25th	0.15	0.31	0.090	0.000	0.000	0.065	0.60	0.50	2.92	1.22	0.37	0.40	1.32
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.038	0.000	0.000	0.000	0.000	0.000	0.34
Mean	1.03	1.23	0.63	0.34	0.43	0.73	4.14	8.19	15.50	3.77	2.25	1.65	3.32
Standard deviation	0.83	1.10	0.61	0.45	0.60	0.86	6.28	10.25	16.32	3.03	1.96	2.74	2.53
Skewness	0.30	0.85	0.87	1.67	0.93	1.34	2.01	1.22	1.35	0.46	0.76	2.77	0.62
Coefficient of variation	0.81	0.89	0.96	1.31	1.40	1.17	1.52	1.25	1.05	0.80	0.87	1.66	0.76
Percent of annual flow	2.58	3.10	1.58	0.86	1.07	1.83	10.38	20.53	38.86	9.44	5.65	4.13	¹ 0.188

¹Serial correlation for annual mean flows.**Table E13.3.** Serial correlation for 1-year lag for monthly mean flow for station 06405000, Grace Coolidge Creek near Custer (October 1967 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.463	0.458	0.110	0.165	0.422	0.332	-0.200	-0.254	0.172	-0.171	-0.250	-0.216	

Table E13.4. Correlation matrix for monthly mean flow for station 06405000, Grace Coolidge Creek near Custer (October 1967 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.815	0.767	0.666	0.571	0.317	0.264	-0.148	-0.142	0.066	0.102	0.278
Nov.	*	1.000	.963	.841	.864	.768	.467	.090	.081	.243	.058	-.083
Dec.	*	*	1.000	.828	.789	.672	.281	-.027	.063	.319	.018	-.280
Jan.	*	*	*	1.000	.908	.676	.108	-.076	.260	.411	.453	-.237
Feb.	*	*	*	*	1.000	.859	.391	.182	.320	.255	.382	-.229
Mar.	*	*	*	*	*	1.000	.643	.318	.233	.204	-.007	-.191
Apr.	*	*	*	*	*	*	1.000	.631	.046	-.012	-.287	.419
May	*	*	*	*	*	*	*	1.000	.698	.397	.031	.127
June	*	*	*	*	*	*	*	*	1.000	.713	.372	-.274
July	*	*	*	*	*	*	*	*	*	1.000	.167	-.287
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	-.053
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E13.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06405000, Grace Coolidge Creek near Custer

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1968	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.010	5	0.12	5	0.28	5	0.51	3
1969	.0000	2	.0000	2	.14	7	.21	7	.43	7	.58	6	.71	6	.74	6	.87	6
1970	.0000	3	.0000	3	.0000	2	.10	6	.39	6	.60	7	.90	7	1.23	7	1.30	7
1971	.080	8	.080	8	.15	8	.32	8	.46	8	.86	8	1.23	8	1.54	8	1.77	8
1972	.0000	4	.0000	4	.0000	3	.0000	2	.0000	2	.006	4	.016	4	.072	3	.52	4
1973	.0000	5	.0000	5	.0000	4	.0000	3	.0000	3	.0000	1	.0000	1	.19	4	.61	5
1974	.0000	6	.0000	6	.0000	5	.0000	4	.0000	4	.0000	2	.0000	2	.0000	1	.037	2
1975	.0000	7	.0000	7	.0000	6	.0000	5	.0000	5	.0000	3	.0000	3	.0000	2	.0000	1

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E13.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06405000, Grace Coolidge Creek near Custer

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1968	26.0	7	18.0	7	13.7	7	8.47	8	6.14	8	3.82	8	3.47	7	3.07	8	2.21	8
1969	16.0	8	15.3	8	12.5	8	10.1	7	6.52	7	4.05	7	3.30	8	3.12	7	2.35	7
1970	92.0	3	71.7	3	44.6	4	26.3	4	15.5	5	10.3	5	7.77	5	7.05	5	5.07	5
1971	70.0	4	62.0	4	49.0	3	37.9	3	30.1	3	29.7	2	22.6	2	18.2	2	12.5	2
1972	230	2	107	2	57.9	2	50.1	2	32.7	2	19.7	3	14.2	3	11.2	3	7.96	3
1973	38.0	6	29.3	6	22.9	6	21.4	5	17.0	4	11.8	4	8.81	4	7.12	4	6.40	4
1974	5.60	9	4.60	9	3.37	9	2.51	9	1.72	9	1.42	9	1.21	9	.91	9	.60	9
1975	57.0	5	37.3	5	25.0	5	17.6	6	12.0	6	7.02	6	5.00	6	3.95	6	2.71	6
1976	481	1	256	1	141	1	81.9	1	57.8	1	37.9	1	28.0	1	22.1	1	14.6	1

Table E14.1. Mean flow, in cubic feet per second, for station 06406000, Battle Creek at Hermosa

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1949	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	8.24	4.12	(2)
1950	5.05	5.85	4.71	3.18	2.61	3.97	4.65	8.51	4.51	5.13	1.31	2.55	4.35
1951	1.96	3.11	3.35	2.84	2.75	2.85	2.98	2.96	12.9	16.2	4.71	5.68	5.20
1952	3.69	3.36	3.38	2.29	2.84	3.29	2.57	125	31.6	9.30	2.19	1.26	16.1
1953	2.54	2.93	2.41	2.54	2.89	3.27	3.31	7.47	13.3	2.49	12.3	1.10	4.72
1954	1.83	1.89	2.07	1.86	2.54	3.05	2.67	1.54	.78	.35	.22	.19	1.58
1955	.24	.97	1.78	1.52	1.33	1.65	1.39	.74	1.29	.73	.24	.050	.99
1956	.10	.23	.31	.89	1.21	1.53	.94	15.1	3.46	5.85	3.30	.16	2.78
1957	.14	.51	.69	.62	.69	.80	2.18	88.0	97.7	49.7	25.5	5.15	22.8
1958	3.00	3.28	2.68	2.66	2.78	3.28	11.7	20.9	13.1	5.25	2.61	1.78	6.10
1959	1.66	1.98	2.55	2.90	2.16	2.24	2.24	2.24	4.80	5.33	.68	.74	2.46
1960	1.06	1.20	1.61	1.74	1.75	1.91	1.08	3.97	4.68	.85	.27	.14	1.69
1961	.10	.32	.77	.71	.64	.73	.89	.93	3.17	3.87	.17	.10	1.04
1962	.10	.10	.10	.19	.31	.41	.34	47.5	93.5	75.5	17.3	2.07	19.9
1963	4.92	5.25	3.55	2.00	2.44	3.97	17.3	26.5	100	25.5	5.62	5.83	16.9
1964	2.63	3.59	3.35	3.68	3.70	3.87	3.77	8.95	23.4	21.3	2.48	1.47	6.85
1965	2.62	2.73	2.30	2.58	2.84	2.75	2.99	129	102	46.5	13.6	5.62	26.5
1966	6.60	7.29	6.07	5.13	4.82	6.01	7.08	6.00	3.30	2.49	3.12	1.63	4.97
1967	2.65	2.73	2.13	2.05	2.25	3.20	2.89	3.77	158	25.8	9.04	6.88	18.3
1968	6.67	7.36	6.57	5.23	6.16	5.66	5.35	4.85	13.8	5.12	5.29	5.80	6.47
1969	5.76	4.85	4.48	4.98	3.00	3.85	4.17	3.27	2.82	29.5	3.21	3.86	6.20
1970	2.78	3.26	2.25	3.34	2.32	2.37	4.22	6.95	26.6	2.86	2.34	1.68	5.06
1971	2.67	2.60	2.35	2.33	4.15	3.53	31.9	57.2	80.8	14.3	6.06	4.99	17.7
1972	5.62	6.06	5.81	3.76	3.94	4.86	4.91	9.34	142	29.5	17.1	8.75	20.0
1973	7.89	8.88	5.82	5.07	5.03	5.97	28.6	31.8	19.0	8.12	6.42	8.78	11.8
1974	7.46	7.85	6.04	4.85	5.71	5.35	5.62	5.32	3.28	2.38	1.54	1.77	4.76
1975	1.86	3.61	2.12	2.11	2.59	3.59	8.98	6.56	18.6	2.64	2.01	1.73	4.68
1976	3.15	2.32	2.88	2.13	2.46	2.93	3.63	44.4	107	17.2	11.1	6.05	17.0
1977	6.47	6.47	6.45	5.60	5.09	5.59	6.11	4.98	2.47	4.08	3.65	2.89	4.99
1978	4.76	4.06	3.94	3.41	3.19	6.25	4.09	86.5	30.3	11.8	8.13	4.64	14.4
1979	5.03	6.59	5.90	4.59	3.95	4.76	5.28	4.90	2.12	19.6	16.5	9.57	7.44
1980	10.5	10.6	8.96	5.83	3.77	4.24	4.94	3.93	2.43	1.50	1.93	2.03	5.06
1981	1.80	3.00	3.03	2.76	2.29	2.65	1.91	38.5	4.80	2.93	2.18	2.02	5.71
1982	2.95	2.89	2.92	3.28	2.77	2.77	3.20	9.01	23.6	9.87	10.0	7.16	6.71
1983	8.93	8.51	6.86	5.63	4.83	5.10	5.35	10.5	8.05	8.73	5.93	3.61	6.86
1984	5.47	5.29	3.55	4.03	3.23	3.92	4.76	16.0	57.4	21.6	13.6	10.1	12.4
1985	9.76	8.83	7.57	6.63	4.79	5.05	5.55	4.08	3.02	5.65	2.13	2.34	5.46
1986	2.65	3.17	3.07	3.02	3.70	2.86	4.20	11.1	14.8	4.96	3.13	5.05	5.13
1987	8.70	6.99	7.09	6.13	5.51	9.98	9.33	11.4	11.4	7.37	4.92	4.53	7.79
1988	4.48	4.55	4.30	3.15	3.17	2.86	2.01	2.75	1.57	1.06	1.07	1.39	2.70
1989	1.66	2.21	1.99	1.85	1.73	2.04	1.57	1.41	1.05	.23	.37	3.08	1.59
1990	1.38	1.80	1.69	2.41	1.40	1.29	1.51	27.8	29.4	8.45	2.97	2.18	6.88
1991	2.73	2.78	2.45	2.14	2.34	2.47	3.10	77.5	149	18.5	6.53	5.88	23.0
1992	5.67	6.72	6.37	4.90	4.51	5.27	4.53	4.81	4.52	5.17	4.86	4.91	5.19
1993	4.55	4.53	3.12	2.93	2.65	3.83	6.32	81.7	132	34.0	20.4	17.1	26.1

¹Indicates a no-value month.

²Incomplete water year.

Table E14.2. Statistics on mean flow, in cubic feet per second, for station 06406000, Battle Creek at Hermosa (October 1949 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	44	44	44	44	44	44	44	44	44	44	44	44	44
Maximum	10.5	10.6	8.96	6.63	6.16	9.98	31.9	129	158	75.5	25.5	17.1	26.5
Percentile													
75th	5.66	6.37	5.82	4.78	3.95	4.83	5.50	30.8	50.9	19.3	8.81	5.77	15.7
50th	2.97	3.32	3.09	2.91	2.81	3.28	4.13	8.73	13.2	6.61	3.47	2.98	6.15
25th	1.84	2.39	2.16	2.11	2.30	2.51	2.32	4.00	3.28	2.88	2.04	1.64	4.73
Minimum	0.10	0.10	0.10	0.19	0.31	0.41	0.34	0.74	0.78	0.23	0.17	0.050	0.99
Mean	3.91	4.16	3.67	3.22	3.06	3.59	5.50	24.22	35.53	13.16	6.09	3.96	9.19
Standard deviation	2.73	2.61	2.12	1.59	1.39	1.78	6.27	33.36	47.20	15.42	6.07	3.38	7.27
Skewness	0.63	0.53	0.56	0.32	0.26	0.96	3.14	1.89	1.42	2.17	1.45	1.59	1.02
Coefficient of variation	0.70	0.63	0.58	0.49	0.45	0.50	1.14	1.38	1.33	1.17	1.00	0.85	0.79
Percent of annual flow	3.56	3.78	3.33	2.92	2.78	3.26	5.00	22.00	32.28	11.96	5.53	3.60	¹ -0.053

¹Serial correlation for annual mean flows.

Table E14.3. Serial correlation for 1-year lag for monthly mean flow for station 06406000, Battle Creek at Hermosa (October 1949 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.260	0.312	0.227	0.323	0.335	0.249	-0.019	-0.201	-0.067	-0.005	-0.118	0.153	

Table E14.4. Correlation matrix for monthly mean flow for station 06406000, Battle Creek at Hermosa (October 1949 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.970	0.953	0.920	0.833	0.821	0.312	-0.172	-0.168	-0.205	-0.063	0.253
Nov.	*	1.000	0.964	0.915	0.847	0.795	0.335	-0.236	-0.218	-0.249	-0.082	0.258
Dec.	*	*	1.000	0.941	0.862	0.817	0.224	-0.266	-0.276	-0.291	-0.124	0.185
Jan.	*	*	*	1.000	0.883	0.822	0.222	-0.301	-0.345	-0.309	-0.153	0.185
Feb.	*	*	*	*	1.000	0.870	0.412	-0.199	-0.234	-0.317	-0.124	0.218
Mar.	*	*	*	*	*	1.000	0.381	-0.130	-0.166	-0.245	-0.052	0.268
Apr.	*	*	*	*	*	*	1.000	0.079	0.103	-0.051	-0.001	0.273
May	*	*	*	*	*	*	*	1.000	0.525	0.502	0.456	0.282
June	*	*	*	*	*	*	*	*	1.000	0.677	0.654	0.570
July	*	*	*	*	*	*	*	*	*	1.000	0.764	0.414
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.683
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E14.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06406000, Battle Creek at Hermosa

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1950	0.70	15	0.77	14	0.91	15	1.05	13	1.19	12	1.78	16	1.92	14	2.13	13	2.51	19
1951	.80	17	.93	19	1.34	23	1.83	26	2.14	25	2.51	24	2.74	25	2.91	25	3.14	24
1952	.70	16	.70	13	.83	12	.99	12	1.26	13	1.72	14	1.98	15	2.20	14	2.31	17
1953	.80	18	.83	16	.87	13	.91	11	1.06	11	1.44	9	1.58	9	1.68	9	1.79	9
1954	.0000	1	.0000	1	.0000	1	.021	3	.090	3	.18	5	.17	4	.24	4	.45	5
1955	.0000	2	.0000	2	.0000	2	.007	1	.050	1	.075	1	.13	2	.15	2	.26	2
1956	.0000	3	.0000	3	.0000	3	.007	2	.070	2	.14	4	.22	5	.33	5	.44	4
1957	.90	21	.90	17	1.37	24	1.54	24	2.18	26	2.56	26	2.68	24	2.82	24	2.90	23
1958	1.20	27	1.20	24	1.26	21	1.40	20	1.52	19	1.71	13	1.79	12	1.93	12	2.17	12
1959	.0000	4	.0000	4	.0000	4	.021	4	.18	6	.64	7	.81	7	.91	7	1.17	6
1960	.10	7	.10	6	.10	6	.10	5	.10	4	.12	3	.13	3	.19	3	.37	3
1961	.10	8	.10	7	.10	7	.10	6	.10	5	.10	2	.10	1	.10	1	.12	1
1962	.20	10	.20	9	.23	8	.27	8	.34	8	2.11	20	2.35	21	2.72	23	3.32	25
1963	2.00	31	2.03	31	2.16	29	2.20	28	2.49	28	3.07	29	3.15	28	3.30	28	3.44	26
1964	.80	19	.93	20	1.07	17	1.21	18	1.37	15	1.79	17	2.08	17	2.23	16	2.30	16
1965	2.10	35	2.10	33	2.30	32	2.56	32	2.60	30	4.98	41	5.23	39	5.51	38	5.89	35
1966	.90	22	1.07	23	1.16	19	1.40	21	1.58	20	2.07	19	2.14	18	2.27	18	2.22	14
1967	2.10	36	2.10	34	2.21	30	2.33	29	2.89	33	3.09	30	5.58	43	5.88	42	6.27	39
1968	2.10	37	2.30	37	2.41	33	2.46	30	2.57	29	3.46	32	3.88	31	4.10	31	4.53	31
1969	.94	23	1.05	22	1.44	26	1.48	23	1.63	21	2.36	23	2.60	23	2.53	22	2.71	22
1970	.86	20	.92	18	1.08	18	1.19	17	1.42	16	1.64	11	2.05	16	2.22	15	2.21	13
1971	1.50	28	1.70	28	2.59	36	3.40	40	3.72	39	3.83	35	4.16	33	4.58	32	5.00	32
1972	3.00	41	3.07	41	3.09	41	3.79	42	4.58	42	4.94	40	5.13	37	5.47	36	6.46	40
1973	2.00	32	2.43	39	2.83	40	2.91	39	4.29	41	5.07	42	5.26	40	5.47	37	6.21	38
1974	.42	11	.46	11	.88	14	1.14	14	1.34	14	1.57	10	1.60	10	1.80	11	2.15	11
1975	.57	13	.81	15	.94	16	1.17	15	1.47	17	1.74	15	1.89	13	2.24	17	2.28	15
1976	2.20	39	2.23	36	2.60	37	2.84	38	3.63	38	5.29	43	5.43	41	5.68	41	5.94	36
1977	1.00	25	1.30	26	1.43	25	1.87	27	2.21	27	2.51	25	3.35	29	3.16	27	3.61	27
1978	3.30	42	3.30	42	3.36	42	3.66	41	3.80	40	4.17	36	4.45	35	4.81	33	5.08	33
1979	.080	6	.19	8	.66	10	1.18	16	1.94	23	3.32	31	3.95	32	5.66	40	7.32	43
1980	.16	9	.21	10	.34	9	.42	9	1.03	10	1.66	12	1.68	11	1.74	10	2.07	10
1981	.42	12	.97	21	1.24	20	1.26	19	1.64	22	2.05	18	2.36	22	2.44	20	2.63	20
1982	2.00	33	2.13	35	2.47	35	2.82	37	3.02	34	4.93	39	5.20	38	5.61	39	6.67	41
1983	2.30	40	2.33	38	2.67	39	2.74	36	3.21	37	3.47	33	3.59	30	3.68	30	4.17	30
1984	3.80	43	4.00	43	4.14	43	4.25	43	4.76	43	4.92	38	5.51	42	6.02	43	7.15	42
1985	.94	24	1.35	27	1.49	27	1.59	25	1.96	24	2.14	22	2.25	20	2.50	21	2.67	21
1986	2.10	38	2.47	40	2.60	38	2.68	34	3.09	36	3.53	34	4.31	34	5.41	35	5.97	37
1987	1.90	30	2.00	30	2.27	31	2.73	35	2.84	32	3.01	28	3.05	27	3.35	29	3.76	29
1988	.61	14	.64	12	.69	11	.76	10	.91	9	1.06	8	1.17	8	1.22	8	1.49	8
1989	.0000	5	.0000	5	.029	5	.15	7	.21	7	.28	6	.45	6	.67	6	1.24	7
1990	1.00	26	1.23	25	1.27	22	1.40	22	1.51	18	2.11	21	2.20	19	2.35	19	2.43	18
1991	1.50	29	1.70	29	2.07	28	2.63	33	3.02	35	4.64	37	4.89	36	5.27	34	5.58	34
1992	2.00	34	2.07	32	2.46	34	2.48	31	2.66	31	2.79	27	2.88	26	3.11	26	3.62	28

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E14.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06406000, Battle Creek at Hermosa

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1950	43.0	32	20.6	33	14.7	33	11.5	31	8.86	33	7.33	34	6.38	36	5.90	37	4.92	37
1951	98.0	24	60.0	24	39.3	24	24.9	25	23.2	23	15.2	23	12.1	23	9.99	24	7.59	24
1952	1,520	2	1,005	1	508	1	272	1	153	4	83.6	8	56.8	9	43.3	10	29.4	11
1953	140	21	86.7	20	46.3	22	23.5	27	13.5	29	12.9	25	10.4	27	9.19	26	7.13	29
1954	5.00	44	4.67	44	4.19	43	3.69	43	3.34	42	3.01	42	2.76	42	2.57	41	2.35	41
1955	13.0	39	6.67	42	3.46	44	2.09	44	1.80	44	1.66	44	1.57	44	1.58	44	1.44	44
1956	198	15	83.7	21	38.8	25	35.8	19	18.4	25	12.2	27	9.25	30	7.17	32	5.15	36
1957	540	9	347	10	233	9	156	8	138	6	95.9	5	83.0	4	66.5	3	44.9	3
1958	67.0	26	48.3	25	39.9	23	34.3	21	24.0	21	18.8	18	15.4	20	12.9	18	9.53	19
1959	29.0	36	19.7	35	13.6	34	9.33	35	7.29	37	5.42	38	4.18	39	3.72	39	3.22	39
1960	72.0	25	29.3	30	14.9	32	7.90	37	7.34	36	4.37	40	3.32	40	2.95	40	2.53	40
1961	44.0	31	26.2	32	11.6	36	7.65	38	5.73	40	3.68	41	2.78	41	2.29	42	1.73	43
1962	433	13	277	12	200	11	142	10	122	9	101	4	78.5	5	59.9	5	39.5	5
1963	664	5	390	8	233	10	146	9	101	10	66.6	11	54.7	11	43.3	11	30.2	10
1964	111	22	71.3	23	47.6	21	35.1	20	30.6	18	22.6	16	18.1	16	14.6	16	10.9	16
1965	748	4	547	3	305	6	254	4	156	3	124	1	96.5	1	74.5	1	50.2	1
1966	24.0	38	13.6	38	12.9	35	10.3	33	8.22	34	7.08	35	6.68	34	6.30	34	6.11	33
1967	660	6	503	6	428	2	258	2	158	2	92.0	6	64.5	6	50.1	6	34.0	7
1968	51.0	29	43.0	27	28.6	28	17.2	29	14.3	28	9.78	30	8.26	32	7.57	31	6.96	31
1969	183	16	117	18	88.3	16	58.7	17	31.7	17	17.3	21	12.7	22	10.3	22	7.97	22
1970	201	14	149	14	86.0	17	47.9	18	28.4	19	17.1	22	12.8	21	10.3	23	7.65	23
1971	519	10	356	9	235	8	141	11	95.8	11	78.4	9	59.8	8	46.9	8	32.5	8
1972	1,750	1	733	2	377	3	254	3	152	5	89.2	7	63.4	7	50.0	7	34.9	6
1973	181	17	121	17	79.0	18	64.1	16	48.6	15	35.9	14	26.9	14	22.2	14	17.1	14
1974	10.0	41	9.50	40	8.93	39	8.45	36	8.10	35	7.80	33	7.19	33	6.57	33	6.21	32
1975	152	19	96.0	19	57.6	19	33.2	23	18.8	24	12.8	26	11.5	24	9.48	25	7.18	28
1976	860	3	517	4	298	7	181	7	123	8	76.5	10	56.7	10	45.3	9	31.4	9
1977	36.0	34	16.8	37	9.66	38	7.33	39	7.10	38	6.68	36	6.52	35	6.30	35	6.00	34
1978	177	18	138	15	115	14	96.8	13	89.4	12	59.6	12	43.8	12	34.9	12	24.8	12
1979	101	23	72.7	22	52.9	20	34.3	22	23.9	22	18.8	19	15.6	19	12.2	20	9.73	18
1980	12.0	40	11.3	39	11.0	37	10.8	32	10.7	31	10.6	29	10.1	28	9.05	27	7.32	26
1981	503	11	270	13	146	13	77.7	15	41.7	16	22.4	17	16.0	17	12.4	19	8.99	21
1982	45.0	30	41.3	28	30.9	27	28.1	24	24.3	20	18.4	20	15.7	18	13.8	17	10.5	17
1983	26.0	37	20.0	34	16.7	31	13.9	30	11.4	30	9.61	31	9.46	29	8.50	29	7.35	25
1984	143	20	121	16	114	15	91.7	14	59.9	13	40.0	13	32.4	13	27.5	13	20.5	13
1985	57.0	28	39.0	29	18.7	30	9.97	34	9.79	32	9.32	32	8.78	31	8.26	30	7.13	30
1986	60.0	27	46.3	26	36.0	26	24.5	26	15.7	26	13.2	24	10.6	26	8.85	28	7.19	27
1987	32.0	35	28.7	31	24.0	29	17.9	28	14.4	27	11.5	28	10.8	25	10.6	21	9.18	20
1988	5.10	43	4.80	43	4.76	42	4.71	42	4.64	41	4.58	39	4.46	38	4.14	38	3.76	38
1989	43.0	33	18.8	36	8.67	40	4.88	41	3.08	43	2.14	43	2.05	43	1.98	43	1.94	42
1990	438	12	310	11	185	12	101	12	55.4	14	31.5	15	22.6	15	17.5	15	12.1	15
1991	607	7	484	7	344	4	253	5	189	1	118	2	83.3	3	63.9	4	43.3	4
1992	8.50	42	7.47	41	7.33	41	7.07	40	6.75	39	6.55	37	6.27	37	5.96	36	5.58	35
1993	597	8	511	5	320	5	203	6	132	7	110	3	83.7	2	67.8	2	48.5	2

Table E15.1. Mean flow, in cubic feet per second, for station 06407500, Spring Creek near Keystone

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1945	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	15.7	10.7	1.32	(2)
1946	13.1	3.99	.29	.44	1.66	2.70	4.44	110	120	109	26.5	23.4	34.9
1947	22.6	17.6	7.55	7.48	9.61	8.77	20.4	26.0	145	108	(1)	(1)	(2)
1987	15.7	8.10	5.00	4.15	4.04	24.0	24.0	31.0	19.9	7.89	3.33	.74	12.4
1988	.30	.35	.22	.17	.80	4.54	5.29	8.18	1.58	.047	.022	.000	1.80
1989	.000	.006	.076	.10	.010	.74	3.47	5.11	1.61	.16	.001	.49	.98
1990	.37	1.01	1.23	1.08	1.13	3.17	11.4	26.9	35.8	13.0	7.41	1.58	8.69
1991	1.87	3.28	1.94	1.58	3.34	6.53	15.1	84.4	147	44.0	20.4	6.25	28.0
1992	6.25	7.31	5.85	4.57	5.40	10.8	8.67	6.49	10.3	13.7	7.25	2.81	7.46
1993	1.49	3.19	2.69	3.13	3.64	11.3	21.9	97.2	146	70.7	32.5	17.5	34.4

¹Indicates a no-value month.²Incomplete water year.**Table E15.2.** Statistics on mean flow, in cubic feet per second, for station 06407500, Spring Creek near Keystone (October 1986 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	7	7	7	7	7	7	7	7	7	7	7	7	7
Maximum	15.7	8.10	5.85	4.57	5.40	24.0	24.0	97.2	147	70.7	32.5	17.5	34.4
Percentile													
75th	6.25	7.31	5.00	4.15	4.04	11.3	21.9	84.4	146	44.0	20.4	6.25	28.0
50th	1.49	3.19	1.94	1.58	3.34	6.53	11.4	26.9	19.9	13.0	7.25	1.58	8.69
25th	0.30	0.35	0.22	0.17	0.80	3.17	5.29	6.49	1.61	0.16	0.022	0.49	1.80
Minimum	0.000	0.006	0.076	0.10	0.010	0.74	3.47	5.11	1.58	0.047	0.001	0.000	0.98
Mean	3.71	3.32	2.43	2.11	2.62	8.73	12.83	37.04	51.74	21.36	10.13	4.20	13.39
Standard deviation	5.70	3.26	2.25	1.84	1.99	7.76	7.92	38.27	65.79	26.33	12.06	6.24	12.92
Skewness	2.01	0.66	0.64	0.29	-0.05	1.41	0.39	0.99	1.10	1.39	1.31	2.10	0.93
Coefficient of variation	1.54	0.98	0.93	0.87	0.76	0.89	0.62	1.03	1.27	1.23	1.19	1.49	0.96
Percent of annual flow	2.32	2.07	1.52	1.32	1.64	5.45	8.01	23.12	32.29	13.33	6.32	2.62	¹ -0.090

¹Serial correlation for annual mean flows.**Table E15.3.** Serial correlation for 1-year lag for monthly mean flow for station 06407500, Spring Creek near Keystone (October 1986 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
-0.216	0.058	0.077	0.198	0.438	0.114	-0.266	-0.362	-0.201	0.125	0.210	0.271	

Table E15.4. Correlation matrix for monthly mean flow for station 06407500, Spring Creek near Keystone (October 1986 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.877	0.780	0.744	0.609	0.939	0.607	-0.092	-0.205	-0.170	-0.185	-0.194
Nov.	*	1.000	0.975	0.949	0.906	0.874	0.595	0.073	0.014	0.098	0.096	0.057
Dec.	*	*	1.000	0.980	0.932	0.789	0.524	0.045	0.003	0.135	0.140	0.118
Jan.	*	*	*	1.000	0.943	0.815	0.634	0.188	0.128	0.290	0.294	0.294
Feb.	*	*	*	*	1.000	0.706	0.588	0.335	0.319	0.423	0.428	0.370
Mar.	*	*	*	*	*	1.000	0.799	0.184	0.052	0.131	0.113	0.123
Apr.	*	*	*	*	*	*	1.000	0.684	0.563	0.601	0.589	0.549
May	*	*	*	*	*	*	*	1.000	0.983	0.948	0.940	0.857
June	*	*	*	*	*	*	*	*	1.000	0.945	0.941	0.835
July	*	*	*	*	*	*	*	*	*	1.000	0.999	0.964
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.960
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E15.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06407500, Spring Creek near Keystone

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1987	.050	3	.063	3	.067	3	.075	3	.11	3	.17	3	.23	3	.24	3	.38	2
1988	.0000	1	.0000	1	.0000	1	.0000	1	.0000	1	.0000	1	.0000	1	.003	1	.024	1
1989	.0000	2	.0000	2	.0000	2	.0000	2	.0000	2	.002	2	.16	2	.24	2	.51	3
1990	.51	4	.58	5	.83	5	1.05	5	1.20	5	1.71	4	2.00	4	2.11	4	2.23	4
1991	4.00	6	4.13	6	4.33	6	4.48	6	4.54	6	4.71	6	5.22	6	5.67	6	5.95	6
1992	.55	5	.56	4	.60	4	.75	4	1.13	4	1.94	5	2.17	5	2.38	5	2.81	5

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E15.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive day, for station 06407500, Spring Creek near Keystone

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1987	96.0	3	73.0	4	55.6	4	39.2	4	32.5	4	28.9	4	28.2	3	25.3	3	18.6	3
1988	12.0	7	11.3	7	9.97	7	8.92	6	8.21	6	6.82	6	6.30	6	5.06	6	3.44	6
1989	24.0	5	20.0	6	14.0	6	8.09	7	5.93	7	4.37	7	3.57	7	2.81	7	1.89	7
1990	86.0	4	74.3	3	64.7	3	53.8	3	40.7	3	33.2	3	26.0	4	22.4	4	16.3	4
1991	245	2	236	2	215	2	189	2	161	1	121	2	93.3	2	75.5	2	53.0	2
1992	23.0	6	20.3	5	18.6	5	16.6	5	15.3	5	12.9	5	10.8	5	10.1	5	9.64	5
1993	267	1	260	1	233	1	191	1	146	2	125	1	106	1	88.2	1	64.7	1

Table E16.1. Mean flow, in cubic feet per second, for station 06408500, Spring Creek near Hermosa

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1949	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	1.66	1.53	(2)
1950	1.90	1.70	1.87	1.30	1.78	1.06	0.83	1.48	0.79	0.53	.97	.29	1.21
1951	.20	.37	.52	.23	.071	.23	.063	.10	.33	.077	.000	.12	.19
1952	.17	.10	.10	.12	.22	.22	.10	65.9	15.1	10.9	1.82	1.83	8.13
1953	2.17	1.91	1.16	1.07	1.08	1.45	1.37	1.03	4.78	1.14	.45	.17	1.48
1954	.48	.66	.53	.41	.47	.67	.54	.34	.067	.000	3.35	.000	.63
1955	.068	.10	.16	.12	.14	.24	.31	.074	.15	.000	.000	.000	.11
1956	.000	.000	.013	.006	.045	.045	.017	.11	.000	.055	.000	.000	.024
1957	.000	.000	.000	.000	.000	.000	.090	32.0	73.4	23.6	2.95	1.98	11.2
1958	2.41	2.32	2.49	2.11	1.43	1.12	1.13	1.41	1.81	1.19	.59	.15	1.52
1959	.44	.61	.64	.33	.41	.40	.33	.32	.080	.006	.000	.000	.30
1960	.000	.000	.000	.045	.034	.31	.013	.000	.000	.000	.000	.000	.034
1961	.000	.000	.000	.000	.000	.000	.000	.000	.000	.010	.000	.000	.001
1962	.000	.000	.000	.000	.000	.000	.000	2.32	82.0	73.2	16.4	3.33	14.8
1963	2.89	2.20	2.73	1.74	1.90	2.05	3.47	12.9	94.3	29.7	5.27	2.93	13.5
1964	2.32	2.55	2.74	2.48	2.00	1.71	1.20	1.07	6.41	10.6	1.57	1.44	3.01
1965	2.80	1.89	1.52	1.49	1.36	.97	.99	78.5	130	61.4	15.8	3.65	25.1
1966	2.76	2.60	2.37	1.83	1.71	2.31	1.57	1.15	.66	.26	1.23	.56	1.59
1967	.91	.99	.95	1.22	.82	.69	.87	1.13	103	30.4	3.06	2.21	12.1
1968	2.68	2.40	2.59	2.29	2.26	2.36	1.69	1.08	2.75	.79	1.03	.50	1.87
1969	.43	.66	.48	.28	.000	2.03	.79	.42	.28	24.8	.000	.000	2.56
1970	.035	.52	.23	.37	.32	.21	.26	.47	1.36	.068	.000	.000	.32
1971	.086	.47	.57	.69	20.8	1.22	5.24	73.8	95.5	9.37	1.60	1.45	17.5
1972	2.11	6.54	2.97	2.27	2.89	1.84	1.61	1.39	271	33.5	4.45	2.83	27.5
1973	1.03	1.57	1.51	1.80	2.21	2.33	3.22	9.75	12.5	4.13	2.22	1.91	3.68
1974	1.79	2.25	1.99	1.26	1.46	1.04	1.36	.96	.75	.25	.73	.13	1.16
1975	.48	.33	.28	.18	.39	.46	.71	.32	.63	.000	.000	.000	.31
1976	.000	.027	.12	.32	.66	.74	.78	.78	71.9	7.71	1.50	1.26	7.06
1977	1.55	1.42	1.97	1.70	1.77	1.81	3.62	1.39	2.13	.65	.36	.27	1.55
1978	.49	.41	.36	.31	.50	.86	.69	62.4	35.5	3.73	2.33	1.59	9.16
1979	1.60	1.16	1.01	.000	.000	1.65	1.13	1.25	.53	.72	1.00	.45	.88
1980	.032	.74	.28	.23	.26	.31	.53	.26	4.55	.11	.000	.000	.60
1981	.000	.000	.011	.025	.031	.074	.015	.38	.000	.000	.000	.000	.045
1982	.000	.000	.000	.000	.000	.000	.000	.000	2.99	2.98	.58	1.19	.65
1983	2.28	1.51	1.44	1.45	1.20	1.15	.91	2.04	3.88	2.36	2.52	2.77	1.96
1984	2.42	2.23	1.89	2.12	1.95	1.16	1.28	3.04	41.9	9.41	2.98	3.15	6.09
1985	3.19	3.06	1.79	1.96	2.06	4.22	1.21	.98	.65	.24	.39	.44	1.68
1986	.61	.34	.35	.47	.74	.97	1.56	1.17	1.06	.49	.19	.40	.69
1987	.64	.77	.71	.82	.52	.96	.52	.60	.53	.044	.000	.000	.51
1988	.092	.31	.24	.45	.65	1.74	.36	.42	.028	.000	.000	.000	.36
1989	.000	.000	.000	.000	.000	.069	.000	.000	.000	.000	.000	.000	.006
1990	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
1991	.000	.000	.000	.000	.000	.000	.000	.000	30.9	137	12.1	2.73	15.3
1992	1.88	1.94	1.77	1.83	1.41	1.20	1.06	.64	.39	.67	.21	.083	1.09
1993	.21	.31	.25	.17	.21	.57	1.69	34.1	116	34.4	11.6	3.72	16.9

¹Indicates a no-value month.

²Incomplete water year.

Table E16.2. Statistics on mean flow, in cubic feet per second, for station 06408500, Spring Creek near Hermosa (October 1949 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	44	44	44	44	44	44	44	44	44	44	44	44	44
Maximum	3.19	6.54	2.97	2.48	20.8	4.22	5.24	78.5	271	73.2	16.4	3.72	27.5
Percentile													
75th	2.06	1.90	1.78	1.65	1.65	1.60	1.34	2.25	40.3	10.3	2.47	1.89	7.86
50th	0.48	0.63	0.52	0.39	0.51	0.91	0.78	1.05	1.58	0.69	0.66	0.34	1.50
25th	0.008	0.045	0.10	0.064	0.037	0.22	0.093	0.32	0.29	0.047	0.000	0.000	.33
Minimum	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mean	0.98	1.07	0.92	0.81	1.27	0.96	0.98	9.74	29.92	8.90	2.04	0.97	4.87
Standard deviation	1.07	1.26	0.95	0.82	3.12	0.89	1.11	21.09	55.53	16.42	3.72	1.20	7.04
Skewness	0.67	2.11	0.76	0.64	5.94	1.28	2.02	2.39	2.47	2.48	2.98	1.01	1.74
Coefficient of variation	1.09	1.18	1.03	1.02	2.46	0.92	1.13	2.17	1.86	1.84	1.82	1.23	1.45
Percent of annual flow	1.67	1.82	1.58	1.38	2.16	1.65	1.67	16.62	51.10	15.20	3.49	1.66	¹ 0.071

¹Serial correlation for annual mean flows.

Table E16.3. Serial correlation for 1-year lag for monthly mean flow for station 06408500, Spring Creek near Hermosa (October 1949 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.235	0.132	0.197	0.305	0.077	0.190	0.136	-0.170	0.024	0.047	0.043	0.197	

Table E16.4. Correlation matrix for monthly mean flow for station 06408500, Spring Creek near Hermosa (October 1949 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.810	0.916	0.887	0.097	0.745	0.420	-0.054	0.092	0.087	0.138	0.242
Nov.	*	1.000	0.888	0.846	0.159	0.673	0.393	-0.122	0.398	0.133	0.089	0.243
Dec.	*	*	1.000	0.949	0.187	0.710	0.529	-0.123	0.177	0.059	0.059	0.208
Jan.	*	*	*	1.000	0.230	0.726	0.529	-0.092	0.161	0.055	0.062	0.248
Feb.	*	*	*	*	1.000	0.239	0.728	0.435	0.240	0.017	0.000	0.130
Mar.	*	*	*	*	*	1.000	0.566	-0.092	0.006	-0.047	-0.063	0.051
Apr.	*	*	*	*	*	*	1.000	0.262	0.232	0.064	0.079	0.253
May	*	*	*	*	*	*	*	1.000	0.406	0.383	0.440	0.497
June	*	*	*	*	*	*	*	*	1.000	0.688	0.587	0.728
July	*	*	*	*	*	*	*	*	*	1.000	0.910	0.768
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.790
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E16.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06408500, Spring Creek near Hermosa

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1950	0.0000	1	0.0000	1	0.0000	1	0.021	26	0.043	24	0.11	20	0.18	19	0.27	20	0.27	19
1951	.0000	2	.0000	2	.0000	2	.0000	1	.0000	1	.012	18	.048	16	.082	15	.088	12
1952	.10	32	.10	32	.10	32	.10	30	.10	26	1.05	33	1.08	30	1.19	29	1.48	30
1953	.10	33	.10	33	.10	33	.12	32	.16	30	.25	24	.36	26	.43	26	.43	25
1954	.0000	3	.0000	3	.0000	3	.0000	2	.0000	2	.005	17	.046	15	.072	14	.093	13
1955	.0000	4	.0000	4	.0000	4	.0000	3	.0000	3	.0000	1	.0000	1	.0000	1	.002	9
1956	.0000	5	.0000	5	.0000	5	.0000	4	.0000	4	.0000	2	.0000	2	.0000	2	.0000	1
1957	.0000	6	.0000	6	.0000	6	.0000	5	.013	23	1.28	37	1.56	36	1.79	37	1.99	37
1958	.10	34	.10	34	.10	34	.10	31	.14	28	.25	25	.36	27	.42	25	.42	24
1959	.0000	7	.0000	7	.0000	7	.0000	6	.0000	5	.0000	3	.0000	3	.0000	3	.0000	2
1960	.0000	8	.0000	8	.0000	8	.0000	7	.0000	6	.0000	4	.0000	4	.0000	4	.0000	3
1961	.0000	9	.0000	9	.0000	9	.0000	8	.0000	7	.0000	5	.0000	5	.0000	5	.0000	4
1962	.0000	10	.0000	10	.0000	10	.0000	9	.0000	8	1.20	35	1.90	40	2.08	40	2.27	38
1963	1.20	43	1.20	43	1.31	43	1.44	43	1.70	43	1.85	43	2.05	42	2.23	41	2.30	40
1964	.60	42	.60	41	.61	41	.71	41	.86	39	1.04	32	1.25	32	1.32	31	1.67	33
1965	.50	40	.50	40	.50	39	.55	39	.71	36	1.76	42	1.95	41	2.06	39	2.28	39
1966	.0000	11	.0000	11	.0000	11	.057	27	.20	32	.34	29	.52	28	.65	28	.76	27
1967	.47	39	.49	39	.52	40	.61	40	.86	38	.99	31	2.24	43	2.35	42	2.39	41
1968	.0000	12	.0000	12	.0000	12	.0000	10	.0000	9	.055	19	.17	18	.27	21	.35	21
1969	.0000	13	.0000	13	.0000	13	.0000	11	.0000	10	.0000	6	.007	13	.12	16	.18	15
1970	.0000	14	.0000	14	.0000	14	.0000	12	.0000	11	.0000	7	.011	14	.035	13	.18	16
1971	.34	38	.36	38	.45	38	.46	37	1.42	42	1.51	40	1.71	37	2.39	43	2.81	43
1972	.31	37	.31	37	.40	37	.55	38	.86	37	1.15	34	1.33	33	1.46	34	1.74	35
1973	.50	41	.73	42	.89	42	.94	42	1.03	40	1.24	36	1.24	31	1.43	33	1.63	32
1974	.0000	15	.0000	15	.0000	15	.0000	13	.12	27	.18	23	.24	20	.25	18	.27	18
1975	.0000	16	.0000	16	.0000	16	.0000	14	.0000	12	.0000	8	.0000	6	.0000	6	.022	11
1976	.20	36	.25	36	.31	36	.40	35	.65	35	.69	30	1.41	34	1.40	32	1.56	31
1977	.0000	17	.040	30	.059	29	.091	29	.15	29	.31	27	.35	25	.36	22	.36	22
1978	.0000	18	.0000	17	.0000	17	.0000	15	.0000	13	.0000	9	.28	22	.49	27	.84	28
1979	.0000	19	.0000	18	.0000	18	.0000	16	.0000	14	.14	22	.25	21	.26	19	.28	20
1980	.0000	20	.0000	19	.0000	19	.0000	17	.0000	15	.0000	10	.0000	7	.0000	7	.006	10
1981	.0000	21	.0000	20	.0000	20	.0000	18	.0000	16	.0000	11	.0000	8	.0000	8	.0000	5
1982	.0000	22	.0000	21	.0000	21	.0000	19	.0000	17	.0000	12	.85	29	1.31	30	1.29	29
1983	.13	35	.18	35	.27	35	.41	36	.54	34	1.34	39	1.74	38	1.78	36	1.96	36
1984	.010	30	.037	29	.063	30	.19	34	1.28	41	1.67	41	1.85	39	2.05	38	2.46	42
1985	.030	31	.050	31	.067	31	.14	33	.21	33	.31	28	.35	24	.40	23	.39	23
1986	.0000	23	.023	28	.051	28	.071	28	.17	31	.26	26	.35	23	.42	24	.53	26
1987	.0000	24	.0000	22	.0000	22	.0000	20	.0000	18	.0000	13	.0000	9	.028	12	.11	14
1988	.0000	25	.0000	23	.0000	23	.0000	21	.0000	19	.0000	14	.0000	10	.0000	9	.0000	6
1989	.0000	26	.0000	24	.0000	24	.0000	22	.0000	20	.0000	15	.0000	11	.0000	10	.0000	7
1990	.0000	27	.0000	25	.0000	25	.0000	23	.0000	21	.0000	16	.0000	12	.0000	11	.0000	8
1991	.0000	28	.0000	26	.0000	26	.0000	24	.0000	22	1.30	38	1.48	35	1.56	35	1.67	34
1992	.0000	29	.0000	27	.0000	27	.0000	25	.062	25	.12	21	.16	17	.20	17	.20	17

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E16.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06408500, Spring Creek near Hermosa

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1950	11.0	27	7.07	27	3.37	28	2.21	31	2.07	28	1.86	28	1.83	27	1.71	27	1.59	26
1951	2.00	37	1.43	37	.76	39	.63	37	.56	37	.45	37	.41	37	.34	37	.27	37
1952	496	2	416	2	270	2	141	8	77.6	11	46.6	11	31.9	11	24.3	11	16.1	11
1953	82.0	15	35.6	16	16.6	18	8.61	18	5.02	18	2.96	20	2.41	23	2.19	23	1.82	23
1954	49.0	17	29.0	18	14.5	19	6.91	21	3.46	23	1.73	29	1.20	31	.99	31	.86	31
1955	.50	41	.43	41	.40	40	.39	40	.35	39	.28	38	.23	38	.20	38	.18	38
1956	1.30	40	.57	40	.24	42	.15	41	.11	41	.065	41	.062	41	.055	41	.046	41
1957	270	9	203	9	138	11	99.0	12	88.4	9	63.3	8	44.2	9	33.7	9	22.3	9
1958	3.50	34	3.27	31	3.06	30	2.79	27	2.60	26	2.44	24	2.42	22	2.34	22	1.98	22
1959	1.50	39	1.00	39	.91	37	.81	36	.68	36	.66	36	.58	36	.51	36	.47	35
1960	4.00	33	2.00	36	1.24	36	.63	38	.32	40	.18	40	.13	40	.10	40	.067	40
1961	.30	43	.10	43	.043	43	.020	43	.010	43	.005	43	.003	43	.002	43	.002	43
1962	292	6	266	6	226	5	164	5	126	4	86.4	4	58.8	6	44.8	6	29.6	6
1963	171	12	164	12	154	10	130	10	98.6	8	62.4	9	45.8	8	36.2	7	24.6	7
1964	33.0	21	30.0	17	21.0	16	18.3	16	15.7	15	8.87	16	6.34	16	5.08	16	3.84	16
1965	285	8	271	5	241	4	186	3	141	3	121	2	95.0	2	72.9	2	48.4	2
1966	18.0	25	7.83	26	3.97	26	2.83	26	2.76	24	2.68	22	2.58	20	2.42	21	2.27	20
1967	443	3	247	8	192	8	146	6	115	6	67.5	7	45.9	7	34.9	8	23.2	8
1968	20.0	24	12.3	24	6.63	24	3.88	24	2.76	25	2.59	23	2.57	21	2.49	19	2.43	18
1969	248	10	189	11	91.7	14	51.1	14	25.6	14	13.0	14	8.77	15	6.95	15	4.79	15
1970	5.00	31	4.70	28	3.76	27	2.49	29	1.38	33	.96	33	.70	34	.58	34	.49	34
1971	248	11	196	10	169	9	141	7	111	7	86.1	5	61.8	4	46.9	4	34.1	3
1972	3,300	1	1,633	1	859	1	506	1	288	1	153	1	103	1	78.2	1	51.8	1
1973	56.0	16	41.3	15	25.3	15	19.2	15	15.0	16	11.6	15	8.96	14	7.47	14	5.74	14
1974	3.20	35	2.53	34	2.49	31	2.43	30	2.36	27	2.18	26	2.03	25	1.83	26	1.63	25
1975	5.80	28	2.67	33	2.21	33	1.43	34	.90	35	.70	35	.60	35	.55	35	.44	36
1976	342	5	294	4	212	7	136	9	77.2	12	40.1	12	27.2	12	20.7	12	13.8	12
1977	37.0	19	17.2	20	7.77	23	5.11	23	3.62	22	2.72	21	2.64	19	2.45	20	2.24	21
1978	165	13	149	13	136	12	110	11	85.4	10	50.6	10	34.7	10	26.5	10	17.8	10
1979	5.00	32	4.00	29	3.36	29	2.66	28	1.92	30	1.58	30	1.39	29	1.19	30	1.10	28
1980	32.0	22	27.3	19	16.8	17	9.04	17	4.55	20	2.44	25	1.80	28	1.43	28	1.01	29
1981	1.60	38	1.21	38	.80	38	.57	39	.39	38	.20	39	.16	39	.13	39	.090	39
1982	43.0	18	16.7	21	11.5	20	7.49	20	4.82	19	3.31	18	2.39	24	1.96	24	1.29	27
1983	37.0	20	13.3	22	9.76	21	7.84	19	5.03	17	3.44	17	3.57	17	2.97	17	2.41	19
1984	136	14	135	14	103	13	75.1	13	45.6	13	25.8	13	18.2	13	14.5	13	10.2	13
1985	13.0	26	11.7	25	9.67	22	6.54	22	4.31	21	3.17	19	2.78	18	2.53	18	2.72	17
1986	5.10	30	3.60	30	2.27	32	1.94	33	1.62	32	1.40	31	1.27	30	1.23	29	1.01	30
1987	5.20	29	2.97	32	1.73	35	1.12	35	.99	34	.80	34	.80	33	.78	33	.74	32
1988	23.0	23	12.7	23	6.43	25	3.42	25	1.90	31	1.23	32	.99	32	.84	32	.65	33
1989	.35	42	.28	42	.26	41	.14	42	.072	42	.036	42	.024	42	.018	42	.012	42
1990	.000	44	.000	44	.000	44	.000	44	.000	44	.000	44	.000	44	.000	44	.000	44
1991	357	4	311	3	259	3	206	2	150	2	89.7	3	60.9	5	46.2	5	30.4	5
1992	2.20	36	2.10	35	2.09	34	2.04	32	2.00	29	1.91	27	1.86	26	1.85	25	1.67	24
1993	286	7	258	7	214	6	168	4	118	5	79.8	6	63.1	3	49.7	3	33.5	4

Table E17.1. Mean flow, in cubic feet per second, for station 06408700, Rhoads Fork near Rochford

Water year	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1982	(1)	4.94	4.25	3.72	4.03	4.12	4.51	4.67	5.10	5.17	6.11	6.36	(2)
1983	5.87	5.46	5.96	5.57	5.04	4.77	5.02	6.17	5.86	6.52	6.67	6.33	5.78
1984	7.74	7.43	6.50	6.54	7.22	6.90	6.97	7.15	6.72	6.88	6.90	6.49	6.95
1985	6.13	6.67	6.59	6.33	6.36	7.27	6.88	6.50	6.57	6.35	5.69	5.86	6.43
1986	5.97	5.85	5.66	5.27	5.12	5.35	5.40	5.64	5.98	5.30	5.11	5.28	5.49
1987	5.28	5.13	4.98	4.95	4.88	4.88	4.88	4.85	5.00	5.24	5.38	5.58	5.09
1988	5.40	5.22	4.76	4.95	5.06	5.06	5.05	5.33	5.66	5.29	5.01	5.15	5.16
1989	5.29	5.14	4.57	4.36	4.30	4.25	4.28	4.28	4.30	4.37	4.37	4.35	4.49
1990	4.35	4.16	3.83	3.65	3.78	3.98	4.05	4.04	3.97	4.27	4.14	4.01	4.02
1991	3.66	3.42	3.30	3.25	3.58	3.81	4.07	3.98	3.87	3.83	3.75	3.83	3.69
1992	3.83	3.61	3.59	3.66	3.73	3.60	3.78	3.92	3.79	3.82	3.74	3.78	3.74
1993	3.84	3.81	3.75	3.76	3.57	3.60	3.77	4.08	4.60	4.49	4.32	4.28	3.99

¹Indicates a no-value month.²Incomplete water year.**Table E17.2.** Statistics on mean flow, in cubic feet per second, for station 06408700, Rhoads Fork near Rochford (October 1982 through September 1993)

Statistic	Month												Annual
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
Number	11	11	11	11	11	11	11	11	11	11	11	11	11
Maximum	7.74	7.43	6.59	6.54	7.22	7.27	6.97	7.15	6.72	6.88	6.90	6.49	6.95
Percentile													
75th	5.97	5.85	5.96	5.57	5.12	5.35	5.40	6.17	5.98	6.35	5.69	5.86	3.99
50th	5.29	5.14	4.76	4.95	4.88	4.77	4.88	4.85	5.00	5.24	5.01	5.15	5.09
25th	3.84	3.81	3.75	3.66	3.73	3.81	4.05	4.04	3.97	4.27	4.14	4.01	5.78
Minimum	3.66	3.42	3.30	3.25	3.57	3.60	3.77	3.92	3.79	3.82	3.74	3.78	3.69
Mean	5.21	5.08	4.86	4.75	4.79	4.86	4.92	5.09	5.12	5.12	5.01	4.99	4.98
Standard deviation	1.23	1.27	1.18	1.12	1.18	1.25	1.13	1.15	1.09	1.08	1.09	1.00	1.11
Skewness	0.52	0.41	0.22	0.28	0.93	1.03	0.98	0.60	0.17	0.42	0.62	0.20	0.46
Coefficient of variation	0.24	0.25	0.24	0.24	0.25	0.26	0.23	0.23	0.21	0.21	0.22	0.20	0.22
Percent of annual flow	8.72	8.50	8.13	7.95	8.00	8.13	8.23	8.50	8.56	8.57	8.37	8.35	¹ 0.859

¹Serial correlation for annual mean flows.**Table E17.3.** Serial correlation for 1-year lag for monthly mean flow for station 06408700, Rhoads Fork near Rochford (October 1982 through September 1993)

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
0.729	0.772	0.914	0.868	0.702	0.688	0.717	0.844	0.782	0.878	0.884	0.908	

Table E17.4. Correlation matrix for monthly mean flow for station 06408700, Rhoads Fork near Rochford (October 1982 through September 1993)

Month	Month											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Oct.	1.000	0.981	0.933	0.947	0.954	0.876	0.902	0.933	0.895	0.901	0.892	0.894
Nov.	*	1.000	0.959	0.970	0.972	0.939	0.949	0.937	0.922	0.900	0.858	0.880
Dec.	*	*	1.000	0.988	0.930	0.912	0.924	0.961	0.948	0.951	0.908	0.938
Jan.	*	*	*	1.000	0.966	0.935	0.946	0.973	0.963	0.960	0.915	0.946
Feb.	*	*	*	*	1.000	0.964	0.980	0.957	0.924	0.909	0.861	0.882
Mar.	*	*	*	*	*	1.000	0.994	0.914	0.908	0.853	0.761	0.810
Apr.	*	*	*	*	*	*	1.000	0.944	0.924	0.881	0.805	0.841
May	*	*	*	*	*	*	*	1.000	0.968	0.972	0.932	0.942
June	*	*	*	*	*	*	*	*	1.000	0.946	0.883	0.921
July	*	*	*	*	*	*	*	*	*	1.000	0.979	0.980
Aug.	*	*	*	*	*	*	*	*	*	*	1.000	0.984
Sept.	*	*	*	*	*	*	*	*	*	*	*	1.000

Table E17.5. Lowest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06408700, Rhoads Fork near Rochford

Water year ¹	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		14		30		60		90		120		183	
1982	4.40	6	4.40	6	4.40	6	4.42	6	4.51	6	4.59	6	4.75	6	4.85	6	5.32	8
1983	4.70	9	4.73	9	4.80	9	4.84	9	5.02	9	5.60	10	5.68	10	5.89	10	6.10	10
1984	5.80	11	5.87	11	5.91	11	5.96	11	6.10	11	6.30	11	6.41	11	6.44	11	6.42	11
1985	5.00	10	5.00	10	5.03	10	5.06	10	5.12	10	5.19	9	5.25	9	5.35	9	5.54	9
1986	4.50	7	4.53	7	4.57	7	4.63	7	4.84	8	4.88	8	4.90	7	4.92	7	5.02	6
1987	4.60	8	4.60	8	4.60	8	4.64	8	4.71	7	4.82	7	4.90	8	4.94	8	5.07	7
1988	4.20	5	4.20	5	4.20	5	4.21	5	4.25	5	4.27	5	4.31	5	4.37	5	4.66	5
1989	3.50	4	3.50	4	3.50	4	3.56	4	3.64	4	3.69	4	3.75	4	3.80	4	3.96	4
1990	3.10	1	3.10	1	3.14	1	3.18	1	3.24	1	3.27	1	3.32	1	3.37	1	3.50	1
1991	3.30	2	3.30	2	3.36	2	3.44	2	3.55	3	3.60	3	3.62	2	3.64	2	3.67	2
1992	3.40	3	3.40	3	3.40	3	3.45	3	3.50	2	3.57	2	3.64	3	3.67	3	3.72	3

¹Low-flow water year is Apr. 1 to Mar. 31.

Table E17.6. Highest mean flow, in cubic feet per second, and ranking for the following number of consecutive days, for station 06408700, Rhoads Fork near Rochford

Water year	Flow, in cubic feet per second, and ranking for number of consecutive days																	
	1		3		7		15		30		60		90		120		183	
1983	7.10	4	6.97	4	6.93	4	6.81	3	6.72	3	6.61	3	6.50	3	6.35	3	6.10	3
1984	8.40	2	8.40	1	8.33	1	8.13	1	7.77	1	7.60	1	7.25	1	7.07	1	7.05	1
1985	8.50	1	8.33	2	7.74	2	7.43	2	7.30	2	7.10	2	6.93	2	6.83	2	6.69	2
1986	7.60	3	7.53	3	7.24	3	6.39	4	6.01	4	5.91	4	5.84	4	5.70	4	5.54	4
1987	5.70	6	5.70	6	5.70	6	5.63	6	5.58	6	5.48	6	5.40	6	5.30	6	5.16	6
1988	6.40	5	6.10	5	6.07	5	5.86	5	5.72	5	5.55	5	5.44	5	5.34	5	5.25	5
1989	5.50	7	5.50	7	5.50	7	5.45	7	5.44	7	5.22	7	5.01	7	4.85	7	4.65	7
1990	5.50	8	5.33	8	5.04	8	4.57	9	4.38	9	4.26	9	4.15	9	4.12	9	4.09	9
1991	4.30	10	4.27	10	4.19	10	4.13	10	4.08	10	4.03	10	3.99	10	3.96	10	3.90	10
1992	4.30	11	4.20	11	4.04	11	3.98	11	3.93	11	3.87	11	3.85	11	3.83	11	3.80	11
1993	5.20	9	5.17	9	5.03	9	4.87	8	4.66	8	4.57	8	4.48	8	4.43	8	4.26	8