

JAMES RIVER BASIN

02011500 BACK CREEK NEAR MOUNTAIN GROVE, VA

LOCATION.--Lat 38°04'10", long 79°53'49", NAD83, Bath County, Hydrologic Unit 02080201, on left bank 0.3 mi downstream from Cummings Run, 0.8 mi downstream from bridge on State Highway 39, and 2.1 mi south of Mountain Grove.

DRAINAGE AREA.--134 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,701.45 ft above sea level.

REMARKS.--Records good except for period with ice effect, Jan. 9, 10, which is poor. Flow regulated since October 1984 by Back Creek Lake 11.3 mi upstream, amount unknown, and since January 1985 by Little Back Creek Lake 14.4 mi upstream, amount unknown. Statistics of monthly mean data and summary statistics for water years 1952-1984 (unregulated flow) are available in previous data books, water years 1991-1998. Diversion 10.5 mi upstream from station by Virginia Power for recreation lakes, net averages 0.5 ft³/s. U.S. Army Corps of Engineers satellite water temperature and gage-height telemeter at station. Maximum discharge, 18,400 ft³/s, from rating curve extended above 14,000 ft³/s on basis of slope-area measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	244	29	29	46	395	80	517	47	209	73	363	28
2	46	30	29	45	208	135	485	42	138	52	190	25
3	42	30	29	46	177	189	411	42	135	53	116	23
4	41	29	28	45	141	184	362	41	105	50	102	22
5	39	28	28	45	130	135	324	40	127	34	93	21
6	41	24	28	44	125	96	260	46	207	31	77	20
7	40	26	30	43	119	83	306	43	212	27	49	19
8	39	24	31	42	87	66	351	42	196	32	45	19
9	38	27	31	e65	77	79	330	41	184	27	42	18
10	39	38	31	e66	75	65	332	41	122	25	40	34
11	39	34	31	65	70	62	420	39	87	24	42	29
12	37	35	31	64	68	55	457	39	57	24	51	24
13	32	33	31	54	70	62	430	38	79	24	82	24
14	30	32	37	41	71	108	300	36	206	23	58	24
15	29	31	48	40	75	208	217	39	264	22	47	22
16	28	31	70	40	102	286	206	49	190	21	42	21
17	34	30	531	41	198	378	198	50	79	20	38	20
18	35	30	614	42	215	351	193	65	69	23	36	19
19	36	29	538	198	204	341	185	342	49	23	34	19
20	35	29	205	795	198	336	133	899	49	22	32	21
21	29	28	135	511	197	693	115	638	47	21	30	20
22	29	28	118	364	229	688	92	1310	47	20	25	19
23	27	28	114	255	233	533	84	2180	41	19	24	19
24	29	28	98	211	95	459	84	824	35	19	24	26
25	29	29	66	206	127	382	83	589	32	21	23	30
26	29	30	66	159	136	245	83	972	29	69	22	24
27	29	28	65	67	109	232	79	865	31	90	22	22
28	29	28	58	59	85	220	68	415	36	73	21	22
29	27	28	53	53	---	220	64	206	63	1380	30	23
30	26	29	48	241	---	532	51	146	63	1370	36	22
31	27	---	49	557	---	681	---	295	---	457	28	---
TOTAL	1254	883	3300	4550	4016	8184	7220	10461	3188	4169	1864	679
MEAN	40.5	29.4	106	147	143	264	241	337	106	134	60.1	22.6
MAX	244	38	614	795	395	693	517	2180	264	1380	363	34
MIN	26	24	28	40	68	55	51	36	29	19	21	18

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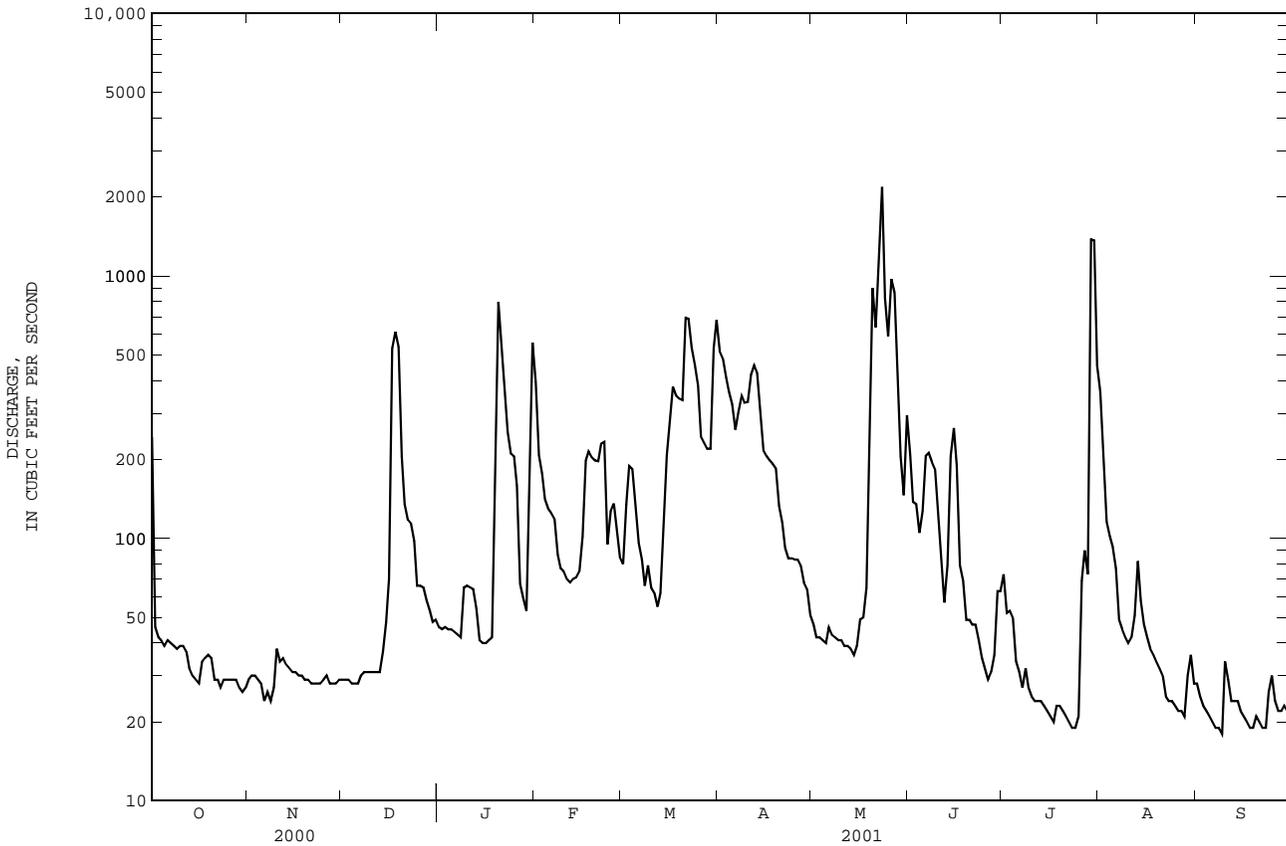
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	51.0	129	189	293	280	386	260	248	118	53.6	50.5	52.8
MAX	246	696	392	818	608	833	824	528	351	134	127	300
(WY)	1990	1986	1997	1996	1998	1993	1987	1996	1995	2001	2000	1996
MIN	18.9	11.4	12.6	77.7	107	92.8	77.6	62.9	18.2	14.0	17.9	16.5
(WY)	1999	1999	1999	1986	1993	1988	1999	1991	1999	1999	1987	1985

SUMMARY STATISTICS FOR 2000 CALENDAR YEAR FOR 2001 WATER YEAR WATER YEARS 1985 - 2001

ANNUAL TOTAL	52663	49768	
ANNUAL MEAN	144	136	176
HIGHEST ANNUAL MEAN			262
LOWEST ANNUAL MEAN			81.3
HIGHEST DAILY MEAN	2520	Feb 19	2180
LOWEST DAILY MEAN	24	aNov 6	18
ANNUAL SEVEN-DAY MINIMUM	27	Nov 3	20
MAXIMUM PEAK FLOW			3740
MAXIMUM PEAK STAGE			7.04
INSTANTANEOUS LOW FLOW			17
10 PERCENT EXCEEDS	342		355
50 PERCENT EXCEEDS	70		48
90 PERCENT EXCEEDS	29		24

- a Also Nov. 8, 2000.
- b Also Sept. 9, 2001.
- c Result of freezeup.
- e Estimated.



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WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1978 to current year.

INSTRUMENTATION.--Water-temperature recorder since June 1978.

REMARKS.--Interruption in record due to little or no streamflow past the temperature sensor. Some record in prior years fragmentary due to instrument malfunction. Records represent water temperature at sensor within 0.5°C. Temperature at the sensor was compared with the average for the creek by temperature cross section on Oct. 3, 2000. A maximum variation of 1.0°C was found within the cross section.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 33.5°C, Aug. 14, 1988; minimum recorded, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 30.1°C, July 11; minimum recorded, 0.0°C, on many days during winter.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	20.9	17.7	19.2	10.2	6.0	8.3	4.6	2.5	3.8	.0	.0	.0
2	18.9	15.0	17.1	10.6	6.4	8.8	4.6	3.2	4.0	.0	.0	.0
3	20.1	15.0	17.4	12.1	8.5	10.2	3.2	.4	1.9	.0	.0	.0
4	20.5	16.5	18.4	12.1	10.2	11.2	.7	.0	.2	.0	.0	.0
5	20.9	16.9	18.7	11.0	8.1	9.5	1.4	.0	.5	.0	.0	.0
6	18.5	15.8	17.2	9.5	5.7	7.8	1.1	.0	.3	.0	.0	.0
7	15.8	12.1	14.2	10.6	8.1	9.2	2.1	.0	.9	.0	.0	.0
8	12.4	8.8	10.9	12.8	10.2	11.5	3.2	1.1	2.2	.0	.0	.0
9	10.6	8.8	9.8	13.5	12.4	13.0	3.2	.7	2.0	.0	.0	.0
10	12.8	8.5	10.4	13.5	9.2	11.5	2.1	.4	1.2	.0	.0	.0
11	13.1	8.5	10.9	10.2	8.1	9.1	3.2	1.4	2.4	1.8	.0	.2
12	13.9	8.8	11.5	9.2	6.0	7.8	3.2	1.4	2.5	3.9	1.4	2.5
13	13.9	8.8	11.5	8.5	6.4	7.6	1.4	.0	.5	3.2	.7	2.0
14	13.9	8.8	11.5	9.2	7.1	8.3	2.5	.0	.8	2.5	.0	1.6
15	15.0	10.2	12.7	7.1	4.9	6.3	3.9	2.1	3.1	4.9	2.1	3.3
16	15.4	11.7	13.7	6.4	3.5	4.9	4.2	3.5	3.8	3.2	2.5	2.9
17	17.3	13.9	15.6	7.8	5.3	6.5	6.4	4.2	5.5	2.8	1.1	2.0
18	17.3	14.6	15.9	6.0	3.9	5.0	7.1	4.6	5.7	2.8	1.8	2.2
19	15.4	11.7	13.8	4.6	2.5	4.0	6.4	4.9	6.1	3.9	2.8	3.2
20	14.6	10.6	12.9	2.8	.7	2.1	4.9	2.5	3.4	4.2	2.8	3.9
21	14.6	11.0	13.1	2.5	.7	1.9	3.9	1.4	2.7	4.2	1.8	2.8
22	16.1	11.7	13.9	1.1	.0	.4	3.9	.4	2.6	4.2	1.4	2.5
23	15.8	11.7	13.8	1.8	.0	.6	1.8	.0	.5	4.6	.7	2.5
24	14.3	11.7	13.3	2.8	.0	1.4	3.5	1.1	1.9	4.6	2.5	3.3
25	16.9	13.1	14.8	3.9	1.8	2.7	1.4	.0	.0	3.9	1.8	2.7
26	15.4	13.1	14.3	6.7	3.9	5.6	.0	.0	.0	3.5	.7	2.0
27	15.8	12.1	14.0	7.4	5.7	6.6	.4	.0	.0	4.2	1.1	2.9
28	14.3	12.1	13.2	6.7	4.2	5.5	1.1	.0	.5	2.8	.0	1.0
29	12.1	8.1	10.2	4.2	2.1	3.2	.0	.0	.0	4.6	1.1	2.7
30	11.0	6.4	8.7	3.9	2.5	3.2	.0	.0	.0	6.4	3.2	4.3
31	10.6	6.0	8.4	---	---	---	.0	.0	.0	4.6	3.5	3.9
MONTH	20.9	6.0	13.6	13.5	.0	6.5	7.1	.0	1.9	6.4	.0	1.8

