BRIGHT ANGEL CREEK BASIN

09403000 BRIGHT ANGEL CREEK NEAR GRAND CANYON, AZ

LOCATION.--Lat 36°06'11", long 112°05'44", in sec.5, T.31 N., R.3 E. (unsurveyed), Coconino County, Hydrologic Unit 15010001, in Grand Canyon National Park, on right bank 0.4 mi upstream from mouth and 4 mi northeast of Grand Canyon.

DRAINAGE AREA.--101 mi^2.

Annual peak discharges

Water year	Date	Annual peak discharge (ft^3/s)	Discharge codes	Water year	Date	Annual peak discharge (ft^3/s)	Discharge codes
1924	09-10-24	530		1949	04-28-49	206	
1925	09-17-25	122		1950	10-18-49	197	
1926	07-27-26	1,000		1951	08-29-51	193	
1927	09-16-27	1,000		1952	05-05-52	672	
1928	05-03-28	187		1953	08-27-53	930	
1929	07-10-29	173		1954	03-23-54	446	
1930	02-23-30	113		1955	06-13-55	103	
1931	06-25-31	45		1956	01-27-56	77	
1932	02-09-32	500		1957	08-05-57	1,770	
1933	08-07-33	186		1958	08-22-58	900	ES
1934	10-09-33	250		1959	08-11-59	660	
1935	07-20-35	270		1960	06-06-60	240	
1936	08-19-36	4,400		1961	08-30-61	266	
1937	07-29-37	2,000		1962	02-08-62	240	
1938	04-21-38	575		1963	08-17-63	855	
1939	09-06-39	270		1964	08-26-64	353	
1940	08-24-40	602		1965	08-15-65	788	
1941	05-13-41	848		1966	11-23-65	484	
1942	04-23-42	264		1967	12-06-66	4,000	
1943	04-23-43	426		1968	07-07-68	240	
1944	05-15-44	199		1969	01-25-69	930	
1945	07-30-45	297		1970	03-01-70	1,180	
1946	07-22-46	840		1971	07-19-71	2,300	
1947	08-27-47	310		1972	07-25-72	126	
1948	08-11-48	1,900		1973	05-12-73	578	

Discharge rating table developed October 1990

Gage height (ft)	Discharge (ft^3/s)	Gage height (ft)	Discharge (ft^3/s)
3.8	10.0	5.2	150
4.0	18.6	5.5	204
4.3	38.4	5.8	268
4.6	66.5	6.1	344
4.9	104	6.4	430

Basin characteristics

Main channel slope (ft/mi)	Stream length (mi)	Mean basin elevation (ft)	Forested area (percent)	Soil index	Mean annual precipitation (in)	Rainfall intensity, 24-hour	
						2-year (in)	50-year (in)
421	17.6	7,390	53	2.2	19.8	2.5	4.3

BRIGHT ANGEL CREEK BASIN

09403000 BRIGHT ANGEL CREEK NEAR GRAND CANYON, AZ--Continued

MEAN MONTHLY AND ANNUAL DISCHARGES 1924-73

MONTH	MAXIMUM (FT3/S)	MINIMUM (FT3/S)	MEAN (FT3/S)	STANDARD DEVIATION (FT3/S)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	34	15	21	4.1	0.20	5.0
NOVEMBER	34	15	21	4.2	0.20	5.1
DECEMBER	181	16	25	23	0.90	6.0
JANUARY	33	16	22	4.0	0.18	5.3
FEBRUARY	51	16	24	7.6	0.31	5.8
MARCH	64	16	27	9.8	0.36	6.5
APRIL	217	15	77	51	0.66	18.3
MAY	501	14	103	106	1.0	24.4
JUNE	131	14	34	23	0.67	8.0
JULY	44	13	23	5.8	0.25	5.5
AUGUST	41	13	22	4.7	0.21	5.2
SEPTEMBER	45	14	21	5.6	0.26	5.1
ANNUAL	89	15	35	15	0.44	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1925-74

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	17	14	13	12	11	11
3	17	14	13	12	11	10
7	17	15	13	12	12	11
14	18	15	14	13	12	12
30	18	16	15	14	13	12
60	19	16	15	14	13	13
90	19	17	16	15	14	13
120	20	17	16	15	14	13
183	20	18	16	15	14	14

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1924-73

DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL IN YEARS, AND EXCEEDANCE PROBABILITY, IN PERCENT					
2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
435	1,010	1,600	2,640	3,670	4,970

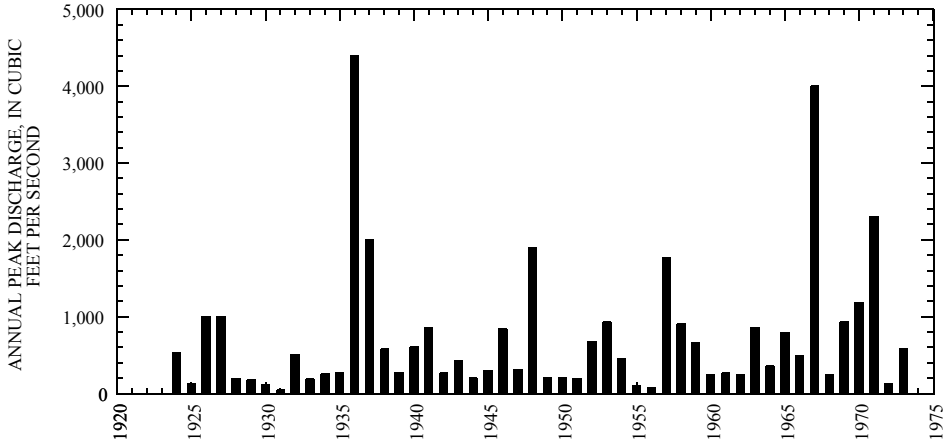
WEIGHTED SKEW (LOGS)= 0.18
MEAN (LOGS)= 2.65
STANDARD DEV. (LOGS)= 0.43

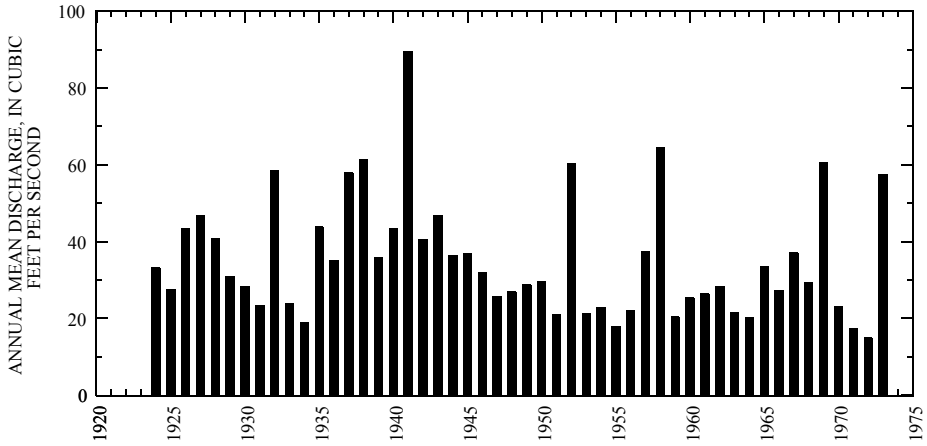
MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1924-73

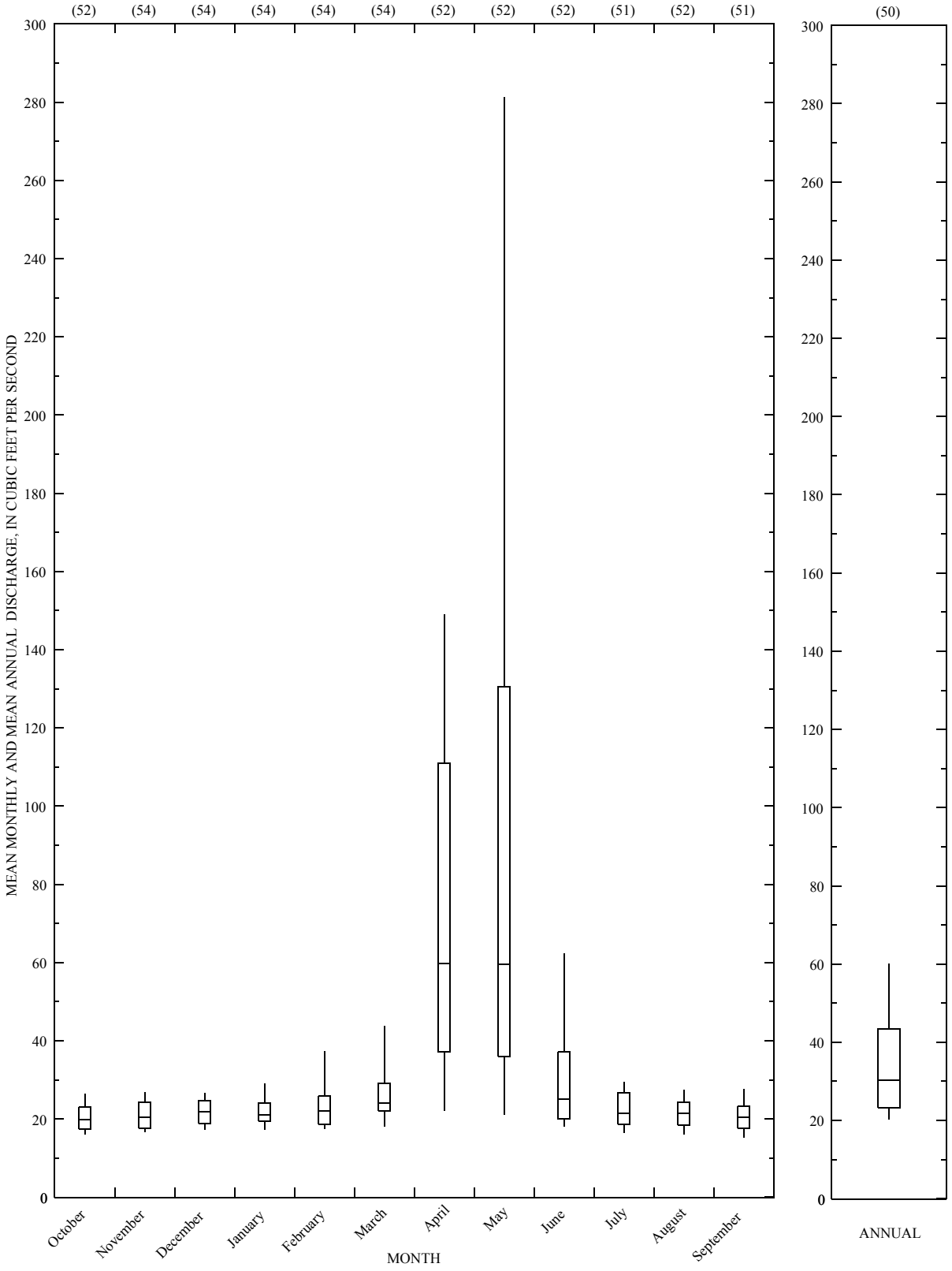
PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	148	339	539	907	1,290	1,780
3	137	309	476	760	1,030	1,360
7	126	281	424	654	863	1,110
15	112	242	360	546	712	902
30	94	195	284	422	544	681
60	72	138	194	281	357	444
90	58	104	143	203	256	315

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1924-73

DISCHARGE, IN FT3/S, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME																
1%	5%	10%	15%	20%	30%	40%	50%	60%	70%	80%	90%	95%	98%	99%	99.5%	99.9%
294	100	54	37	32	27	25	23	22	20	19	17	16	15	14	13	12


ANNUAL PEAK DISCHARGE, IN CUBIC FEET PER SECOND
5,000
4,000
3,000
2,000
1,000
0
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975


ANNUAL MEAN DISCHARGE, IN CUBIC FEET PER SECOND
100
80
60
40
20
0
1920
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975

BRIGHT ANGEL CREEK BASIN

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