GILA RIVER BASIN

09481500 SONOITA CREEK NEAR PATAGONIA, AZ

LOCATION.--Lat 31°30'00", long 110°49'00", SE$^1/_4$SW$^1/_4$ sec.21, T.22 S., R.15 E., Santa Cruz County, Hydrologic Unit 15050301, on left abutment of former railroad bridge, 5 mi downstream from Patagonia.

DRAINAGE AREA.--209 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
1930	08-07-30	2,600		1953	07-14-53	2,870	
1931	07-28-31	1,900		1954	07-20-54	4,670	
1932	07-26-32	1,700		1955	08-12-55	6,920	
1933	07-15-33	1,050		1956	07-19-56	780	
1934	08-00-34	11,000		1957	08-02-57	4,860	
1935	08-23-35	4,700		1958	07-05-58	5,590	
1936	08-09-36	3,600		1959	08-24-59	2,310	
1937	09-06-37	3,600		1960	08-13-60	1,550	
1938	09-09-38	3,400		1961	10-09-60	2,760	
1939	08-08-39	3,300		1962	12-15-61	680	
1940	08-13-40	2,580		1963	08-26-63	4,320	
1941	08-09-41	2,150		1964	09-10-64	2,640	
1942	09-12-42	1,000		1965	09-08-65	806	
1943	08-28-43	4,530		1966	08-18-66	4,120	
1944	08-09-44	669		1967	07-03-67	2,060	
1945	08-06-45	3,140		1968	12-20-67	5,410	
1946	09-30-46	14,000		1969	08-24-69	450	
1947	08-12-47	2,360		1970	08-03-70	622	
1948	08-15-48	4,750		1971	08-11-71	2,860	
1949	08-08-49	5,790		1972	09-09-72	368	
1950	07-30-50	7,300		1978	10-09-77	[1]7,380	HP
1951	08-02-51	5,030		1984	10-02-83	[2]16,000	HP
1952	08-14-52	3,630					

[1]Highest since 1946.

[2]Highest since 1930.

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)	Rainfall intensity, 24-hour 50-year (in)
76.7	21.7	4,800	52.0	2.0	19.3	2.0	4.1

GILA RIVER BASIN

09481500 SONOITA CREEK NEAR PATAGONIA, AZ--Continued

MEAN MONTHLY AND ANNUAL DISCHARGES 1931-33, 1936-72

MONTH	MAXIMUM (FT3/S)	MINIMUM (FT3/S)	MEAN (FT3/S)	STANDARD DEVIATION (FT3/S)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	20	0.03	3.9	3.9	0.99	4.0
NOVEMBER	18	0.32	4.0	3.3	0.83	4.1
DECEMBER	107	0.99	10	21	2.1	10.5
JANUARY	52	1.1	7.5	8.9	1.2	7.8
FEBRUARY	96	0.99	9.9	18	1.8	10.2
MARCH	16	0.87	5.5	3.3	0.61	5.7
APRIL	12	0.49	4.1	2.9	0.70	4.3
MAY	10	0.06	2.5	2.4	0.95	2.6
JUNE	8.6	0.00	1.6	2.1	1.3	1.7
JULY	112	0.06	13	19	1.4	13.5
AUGUST	151	1.5	25	27	1.1	26.1
SEPTEMBER	71	0.05	9.2	13	1.4	9.5
ANNUAL	33	1.9	8.1	5.6	0.69	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW
BASED ON PERIOD OF RECORD 1932-33, 1937-72

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	0.00	0.00	0.00	0.00	0.00	0.00
3	0.08	0.00	0.00	0.00	0.00	0.00
7	0.11	0.00	0.00	0.00	0.00	0.00
14	0.19	0.00	0.00	0.00	0.00	0.00
30	0.35	0.05	0.00	0.00	0.00	0.00
60	0.70	0.18	0.08	0.03	0.00	0.00
90	1.3	0.52	0.31	0.20	0.12	0.09
120	2.4	1.3	0.97	0.74	0.55	0.45
183	3.8	2.2	1.6	1.2	0.90	0.73

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW
BASED ON PERIOD OF RECORD 1930-72, 1978, 1984

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%
3,130	5,360	7,190	9,950	12,300	15,100

WEIGHTED SKEW (LOGS)= 0.22
MEAN (LOGS)= 3.51
STANDARD DEV. (LOGS)= 0.27

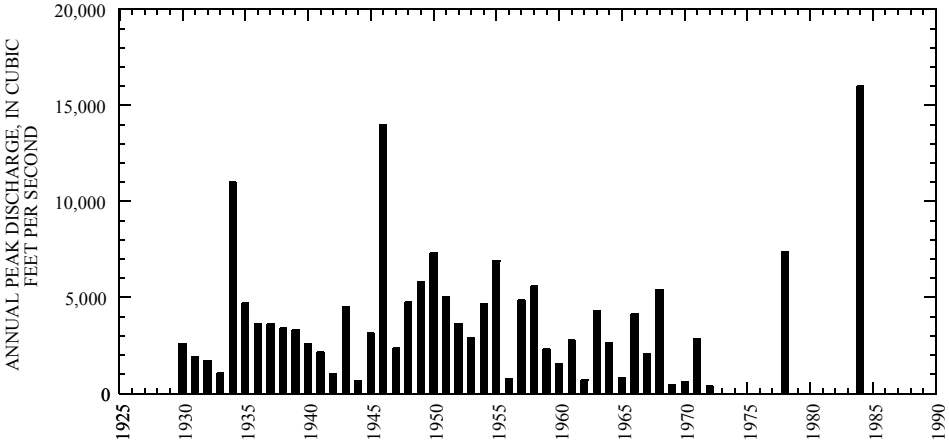
MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW
BASED ON PERIOD OF RECORD 1931-33, 1936-72

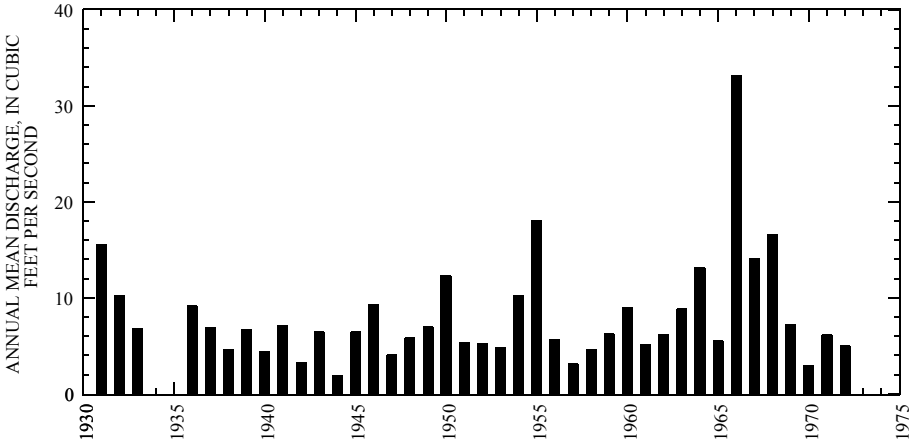
PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN FT3/S, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50# 2%	100# 1%
1	277	599	881	1,310	1,680	2,090
3	132	285	415	608	771	948
7	74	156	225	329	418	516
15	44	92	138	212	282	364
30	29	59	87	131	171	218
60	20	39	54	79	100	124
90	15	28	39	56	71	87

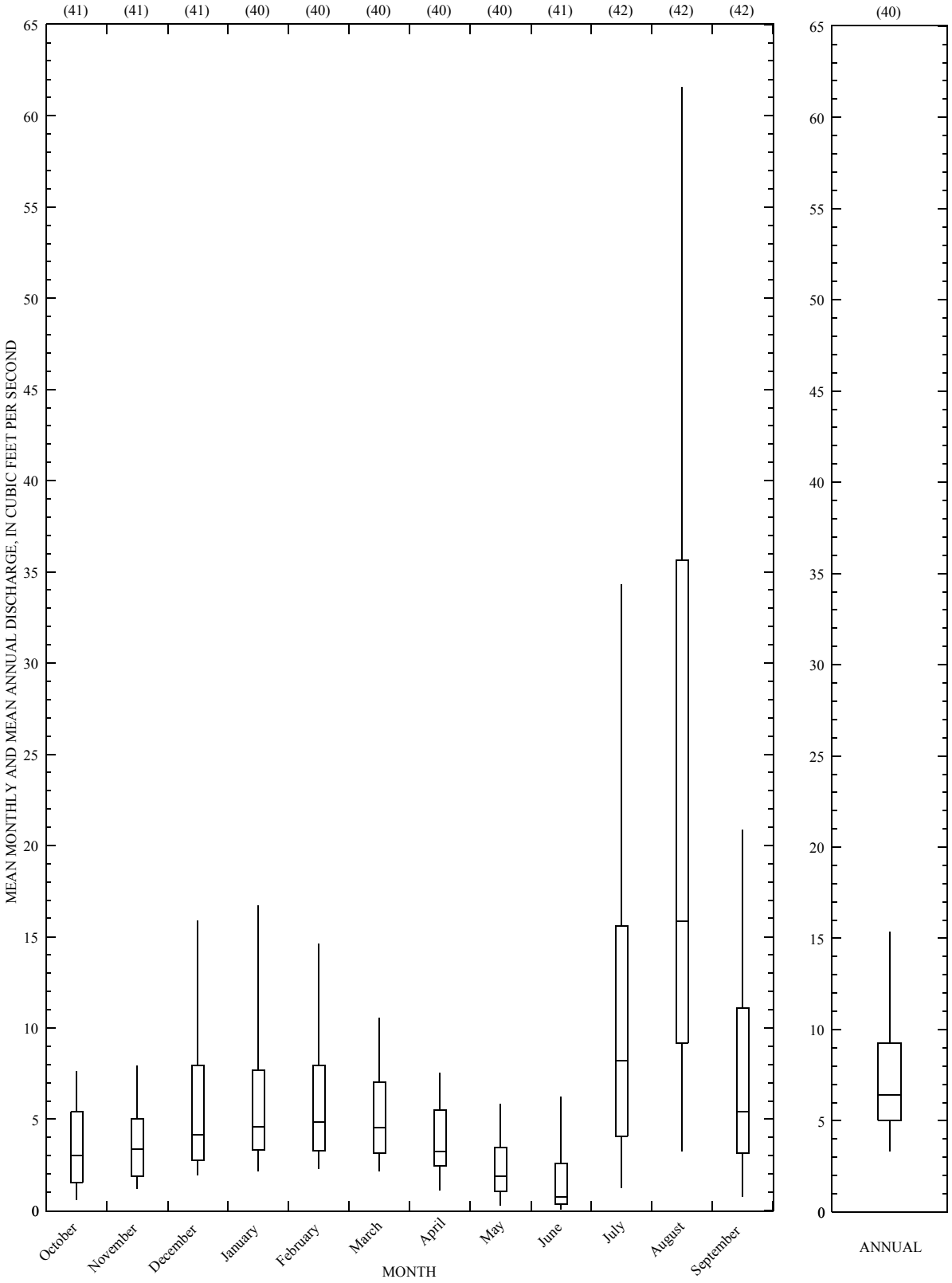
DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1931-33, 1936-72

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%
115	19	11	8.0	7.1	5.3	4.0	3.2	2.6	2.1	1.2	0.45	0.10	0.00	0.00	0.00	0.00

Reliability of values in column is uncertain, and potential errors are large.


ANNUAL PEAK DISCHARGE, IN CUBIC FEET PER SECOND
20,000
15,000
10,000
5,000
0
1925
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990


ANNUAL MEAN DISCHARGE, IN CUBIC FEET PER SECOND
40
30
20
10
0
1930
1935
1940
1945
1950
1955
1960
1965
1970
1975

GILA RIVER BASIN

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