



— BUREAU OF — RECLAMATION

Lower Colorado Basin Stream Flow Records for Calendar Year 2020



Cover:

The photograph captures the Colorado River at Lake Havasu, the confluence with the Bill Williams River, and the Colorado River below Parker Dam. The Bureau of Reclamation photograph was taken by Robert Callen-Young on January 22, 2020 from the top of the Metal Mountain near Parker Dam, California.

Abbreviated Terms and Symbols

The following abbreviated terms and symbols are found in the text, map, tables, and graphs contained within this report.

ac-ft	acre-foot/feet
cfs	cubic-feet per second
°	degrees
E	east
elev	elevation
ft	feet
gh	gage-height
gps	global positioning system
id	identification
max	maximum
mi	mile (miles)
mi ²	square mile (miles)
min	minimum
'	minutes
N	north
NE	northeast
NW	northwest
R	range
S	south
SE	southeast
SW	southwest
T	township
W	west

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Explanation of Records

The Bureau of Reclamation, Blythe Hydrographic Office is responsible for collecting surface water records along the Lower Colorado River between Hoover Dam and the Southern International Boundary with Mexico. The data in this report does not include all the data collection efforts of the Lower Colorado Region but is limited to the data collection responsibilities of the Operations Support Group of the Boulder Canyon Operations Office.

Data Collection and Computation

The data collected consist of records of stage, velocity, and discharge values and empirical measurements of discharge of streams or canals. Records of stage, velocity-index, and/or discharge-index are obtained from digital dataloggers that measure electronic sensors at programmed time intervals and calculate mean hourly values. The recorded values are transmitted via telemetry to the Lower Colorado River Hydrologic Database in Boulder City, Nevada and are also downloaded from gaging station field locations by Reclamation hydrologic technicians with a laptop computer. Electronic sensor selection is dependent on the parameters required to measure water level or a component of discharge and vary by gaging station. Measurements of discharge are made with a mechanical current meter, an acoustic Doppler velocimeter, or an acoustic Doppler current profiler. Measurement techniques comply with standards established by the United States Geological Survey and follow guidelines set forth by the Blythe Hydrographic Office draft quality assurance and quality control plan.

For stream-gaging discharge record stations, discharge rating tables for an appropriate range of stage are prepared from stage-discharge curves. Rating curves are extended to compute discharge values outside of the minimum and maximum measured values by plotting regressions generated from linear, logarithmic, or power equations. Hourly mean discharge values are computed from hourly mean gage-heights applied to rating tables. Monthly and yearly mean discharges are computed from mean daily discharge values. Stage-shifting and velocity-shifting methods are applied to rating curves when continual or temporal physical changes impact the discharge relationship. Dynamic physical conditions may include changes in control or channel geometry caused by migrating sandbars on the channel bottom, seasonal variations in aquatic growth, lack of bank line stability, and side wash ephemeral flows. Shift adjustments may be prorated with time, stage, or time and stage.

The use of velocity-index or discharge-index techniques may be used at gaging stations where stage-discharge relationships are not accurate due to backwater effect caused by downstream ponding in reservoirs, variations in downstream gate configurations, or other situations where no artificial or natural controls are present. The velocity indexing method consists of using an index velocity to calculate an average velocity for the flow in the stream. This average velocity along with a stage-area relationship is used to calculate discharge. Gaging stations that utilize pipe meter devices to measure discharge often require correction through the use of a discharge-index relationship. The discharge indexing method consists of using an index discharge to calculate stream discharge by direct correlation.

For some gaging stations, there are periods when no data are available or data are in error and cannot be used to compute hourly discharge. This condition occurs when the datalogger or connected sensors malfunction due to failure, drift, or fouling. For such periods, discharge is computed from an estimated independent variable using various techniques including, but not limited to, interpolation, projecting from surrounding data, or a hydrologic relation developed with another stream gage.

Data Presentation

Records published for each continuous-record station consist of three parts: (1) station manuscript; (2) hydrograph; and (3) a summary of the daily mean values for the current year. Times provided reference Mountain Standard Time.

Station Manuscript

The station manuscript provides descriptive information such as station location, period of record, historical extremes, and other remarks pertinent to station operation. The following descriptions detail the type of information included in each section.

Location—Information on the location is obtained from the Global Positioning System referencing the World Geodetic System of 1984, including reference to physical features in the vicinity. Township, range, section, and meridian descriptions are obtained from USGS topographical maps. The grid system is not available in several locations of the Fort Mojave Indian Reservation. In these locations, the grid system has been projected to obtain the required information. Descriptions of distance between a gaging station, and a nearby town are provided as a linear distance, not a driving distance. Distances downstream of dams are provided in river miles between the upstream dam, and the gaging station.

Drainage Area—Drainage areas were computed in 2014 using United States Geological Survey Hydrologic Unit Code boundaries. Computed values are reduced by non-contributing areas above the gage. Gaging stations with drainage areas listed as “not applicable” indicate a stream or canal that is not impacted by runoff. Drainage areas listed as “undetermined” indicate a drainage area that has not been outlined and/or measured by Reclamation.

Period of Record—The period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time when the present station was not in operation and the location was such that records from it can reasonably be considered equivalent with records from the present station. Calendar year 2005 was the first year that a final record was published by the Blythe Hydrographic Office. In many cases, the gaging stations mentioned in this publication have been in operation for some time prior to 2005. However, the records have not been finalized or published for any gage prior to 2005.

Gage—A description of the gage used during the reporting year including the gage equipment and the technique used to compute the record.

Extremes—Extreme discharge values are listed as minimum and maximum hourly, and daily mean values for the record period listed in the period of record section.

Remarks—Periods of estimated hourly discharge record will be identified in this paragraph if the method used to estimate the record was non-standard. The paragraph is also used to present information relative to the record that may include details regarding special methods of computation, conditions that affect flow at the station, information on system outages, and other pertinent items.

Hydrograph, Data Table, and Summary Data

The discharge hydrograph displays mean daily discharge in a graphical format. The data table page that follows each station manuscript provides mean daily discharge values presented in tabular format. Basic statistical information is provided near the bottom of the table summarizing each month, including total,

mean, maximum, and minimum discharge values in cubic-feet per second for the month and total volume expressed in acre-feet. In addition, annual discharge in cubic-feet per second, and volume in acre-feet are provided for the year along with the annual mean, maximum, and minimum daily discharges. Maximum and minimum hourly discharge values located on the bottom of the table indicate the date, time, stage, and discharge that the hourly extremes occurred during the year.

The stage hydrograph displays mean daily stage values in a graphical format. The data table that follows each manuscript provides mean daily stage values presented in tabular format. Basic statistical information is provided near the bottom of the table summarizing each month, including mean, maximum, and minimum values for the month. In addition, annual mean, maximum, and minimum daily values are provided. Maximum and minimum stage values located on the bottom of the table indicate the date, time, and stage that the hourly extremes occurred during the year.

Stage values throughout this report will be referenced as either gage-height or stage, where no vertical datum is used, or as an elevation which references sea level using the National Geodetic Vertical Datum of 1929.

Document Layout

The hydrographs and data tables are grouped by entity and gage type. The report begins with lakes, then Colorado River gaging stations, and concludes with Colorado River diversions and returns. Each grouping is presented geographically beginning with the northern most gage.

Lower Colorado River Gaging Stations

Operated And Reported By The Blythe Hydrographic Office



An aerial photograph of a large, calm reservoir nestled within a mountainous region. The water is a deep blue, contrasting with the dry, brownish-grey slopes of the surrounding mountains. The terrain is rugged with visible ridges and valleys. The sky above is a pale, clear blue.

Lake Gaging Stations

Lake Mohave at Davis Dam

Location—Latitude 35° 11.765', longitude -114° 34.189', in the NW¼ NW¼ of Section 19, T. 21 N., R. 21 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, river mi 275.9, 55.7 mi south of Boulder City, Nevada, 2.0 mi north of Laughlin, Nevada, and 66.3 river mi downstream of Hoover Dam.

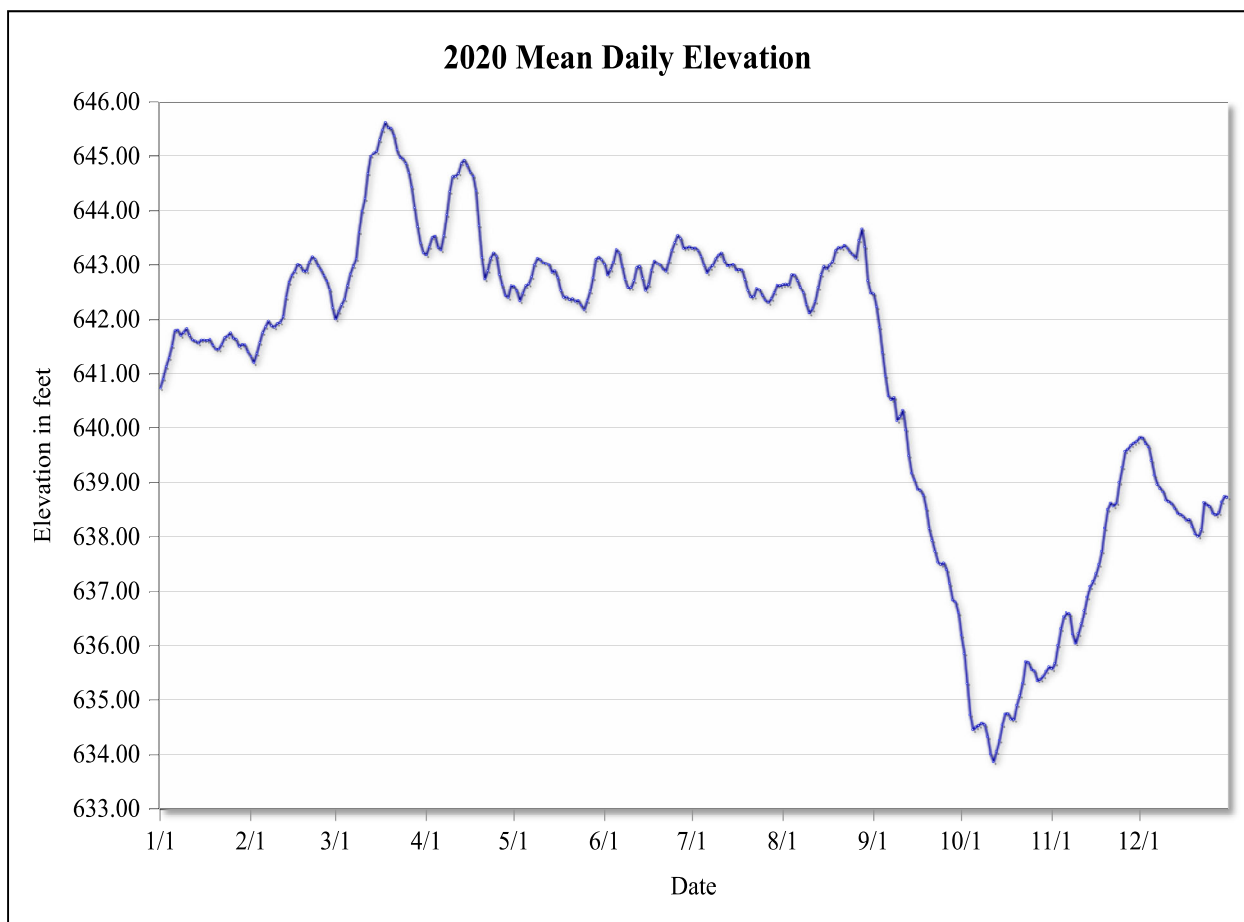
Drainage Area—171,200 mi².

Period of Record—January 1, 2011 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron multiple interface shaft encoder (Model 56-0540-400-DTR).

Extremes—Maximum daily elevation, 645.63 ft, Mar. 18, 2020; minimum daily elevation, 630.74 ft, Nov. 1, 2012; maximum hourly elevation, 645.73 ft, Mar. 18, 2020 at 00:00; minimum hourly elevation, 630.60 ft, Nov. 1, 2012 at 16:00.

Remarks—None.



Lake Mohave at Davis Dam

Mean daily elevation, in feet, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	640.74	641.33	642.01	643.19	642.62	643.02	643.31	642.65	642.48	636.20	635.58	639.83
2	640.91	641.21	642.16	643.34	642.53	642.82	643.32	642.66	642.24	635.86	635.68	639.82
3	641.14	641.38	642.28	643.51	642.35	642.92	643.27	642.64	641.86	635.31	636.01	639.72
4	641.30	641.58	642.38	643.54	642.49	643.06	643.16	642.83	641.40	634.73	636.32	639.66
5	641.52	641.76	642.63	643.33	642.63	643.29	643.00	642.82	640.96	634.46	636.54	639.41
6	641.80	641.87	642.84	643.28	642.66	643.23	642.86	642.72	640.60	634.51	636.62	639.14
7	641.81	641.98	642.98	643.55	642.79	642.97	642.95	642.59	640.53	634.54	636.60	638.97
8	641.71	641.89	643.12	643.93	643.01	642.74	643.00	642.50	640.57	634.58	636.22	638.89
9	641.77	641.86	643.61	644.36	643.13	642.59	643.12	642.28	640.14	634.55	636.05	638.83
10	641.84	641.93	644.00	644.63	643.10	642.59	643.19	642.13	640.22	634.33	636.23	638.68
11	641.71	641.95	644.23	644.63	643.04	642.72	643.23	642.20	640.34	634.01	636.41	638.65
12	641.63	642.06	644.69	644.69	643.03	642.96	643.07	642.34	639.97	633.87	636.65	638.61
13	641.61	642.41	645.01	644.87	643.01	642.98	642.99	642.59	639.50	634.06	636.90	638.53
14	641.57	642.69	645.07	644.93	642.87	642.76	643.00	642.83	639.18	634.27	637.10	638.44
15	641.63	642.82	645.10	644.83	642.90	642.54	643.02	642.98	639.05	634.55	637.19	638.42
16	641.63	642.89	645.31	644.71	642.77	642.65	642.91	642.93	638.88	634.75	637.33	638.38
17	641.62	643.02	645.49	644.64	642.54	642.91	642.92	643.01	638.86	634.75	637.50	638.31
18	641.64	642.98	645.63	644.37	642.41	643.08	642.91	643.07	638.77	634.65	637.74	638.33
19	641.53	642.89	645.53	643.73	642.42	643.03	642.74	643.27	638.52	634.64	638.17	638.19
20	641.46	642.89	645.52	643.14	642.37	643.01	642.54	643.33	638.16	634.91	638.51	638.06
21	641.46	643.06	645.38	642.75	642.39	642.93	642.42	643.32	637.94	635.09	638.63	638.01
22	641.55	643.16	645.13	642.90	642.34	642.89	642.43	643.37	637.74	635.32	638.57	638.14
23	641.67	643.11	644.98	643.13	642.36	643.08	642.58	643.32	637.54	635.71	638.63	638.64
24	641.70	642.99	644.95	643.23	642.27	643.28	642.55	643.24	637.50	635.69	639.01	638.59
25	641.76	642.91	644.87	643.17	642.19	643.42	642.45	643.19	637.53	635.57	639.29	638.56
26	641.66	642.81	644.70	642.83	642.35	643.55	642.36	643.13	637.40	635.54	639.58	638.44
27	641.64	642.71	644.44	642.64	642.52	643.49	642.32	643.46	637.15	635.36	639.62	638.41
28	641.51	642.55	644.06	642.45	642.77	643.31	642.39	643.67	636.85	635.39	639.69	638.45
29	641.55	642.22	643.71	642.41	643.11	643.32	642.50	643.34	636.81	635.45	639.73	638.65
30	641.54		643.41	642.63	643.15	643.34	642.64	642.72	636.62	635.54	639.76	638.75
31	641.41		643.23		643.10		642.63	642.49		635.62		638.73
Mean	641.55	642.38	644.14	643.64	642.68	643.02	642.83	642.89	639.18	634.96	637.59	638.72
Max	641.84	643.16	645.63	644.93	643.15	643.55	643.32	643.67	642.48	636.20	639.76	639.83
Min	640.74	641.21	642.01	642.41	642.19	642.54	642.32	642.13	636.62	633.87	635.58	638.01

Calendar Year Summary

Annual Mean 641.13 Daily Max 645.63 Daily Min 633.87

Maximum Elevation

Date	Time	Elev
Mar. 18	00:00	645.73

Minimum Elevation

Date	Time	Elev
Oct. 12	17:00	633.69

Lake Havasu at Parker Dam

Location—Latitude 34° 17.784', longitude -114° 08.311', in the NW¼ NW¼ of Section 3, T. 2 N., R. 27 E., San Bernardino meridian, San Bernardino County, California, Hydrologic Unit 15030101, river mi 192.0, 16.6 mi south of Lake Havasu City, Arizona, 13.3 mi north of Parker, Arizona, and 83.9 river mi downstream of Davis Dam.

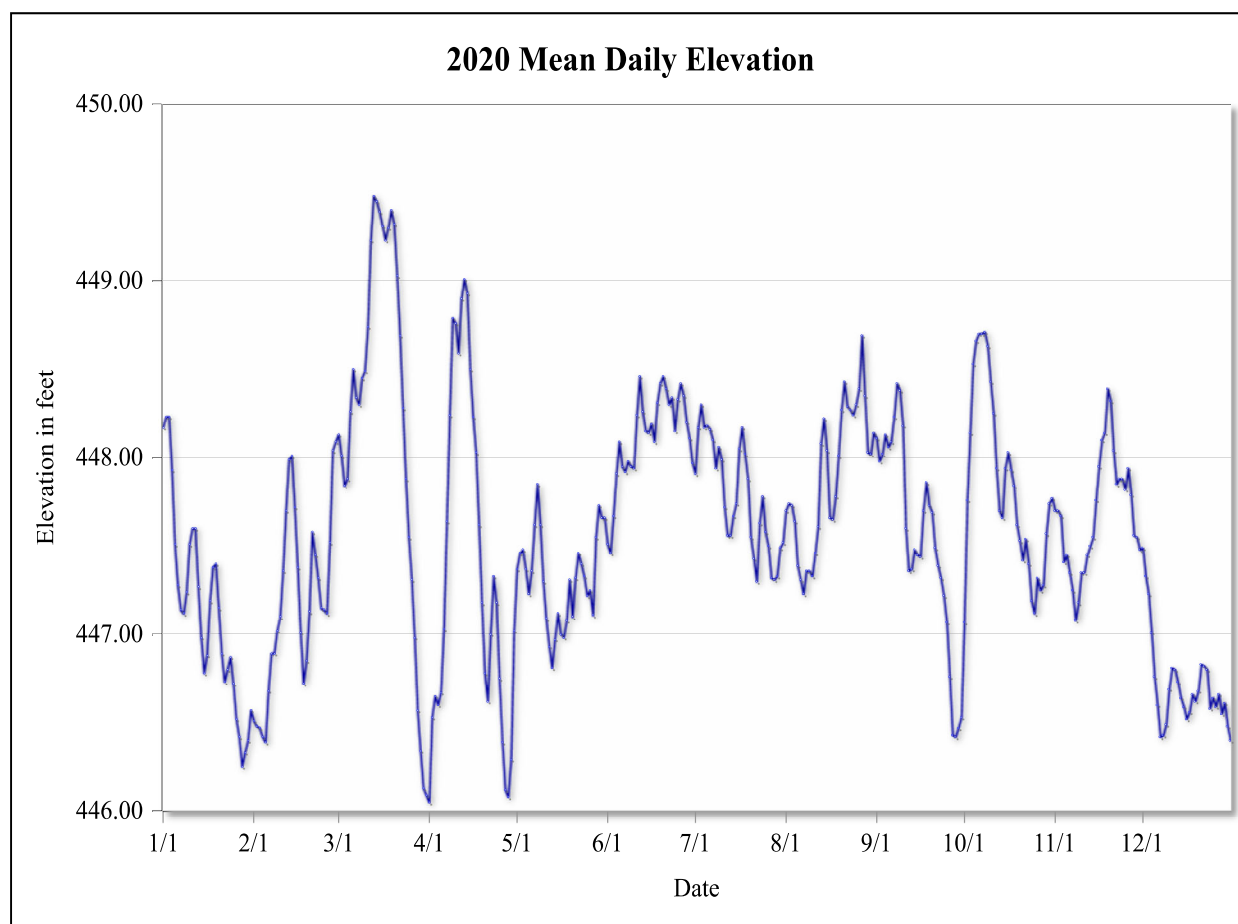
Drainage Area—180,800 mi².

Period of Record—January 1, 2011 to current year.

Gage—A Sutron Xpert datalogger (Model 8080-0000-2B) records water elevation measured with a Sutron stage discharge recorder shaft encoder (Model SDR-0001).

Extremes—Maximum daily elevation, 449.65 ft, Aug. 28, 2013; minimum daily elevation, 444.78 ft, Dec. 19, 2013; maximum hourly elevation, 449.76 ft, Aug. 29, 2013 at 23:00; minimum hourly elevation, 444.69 ft, Dec. 19, 2013 at 10:00.

Remarks—None.



Lake Havasu at Parker Dam

Mean daily elevation, in feet, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	448.17	446.51	448.13	446.05	447.37	447.51	447.91	447.70	448.11	447.07	447.70	447.49
2	448.23	446.48	448.01	446.53	447.46	447.46	448.17	447.74	447.98	447.76	447.70	447.33
3	448.23	446.47	447.84	446.65	447.48	447.67	448.30	447.73	448.02	448.14	447.67	447.23
4	447.93	446.42	447.88	446.60	447.37	447.91	448.17	447.64	448.13	448.53	447.41	447.01
5	447.51	446.39	448.26	446.67	447.23	448.09	448.18	447.39	448.06	448.66	447.45	446.76
6	447.28	446.68	448.50	447.03	447.36	447.95	448.16	447.31	448.09	448.70	447.35	446.60
7	447.14	446.89	448.34	447.64	447.62	447.92	448.10	447.23	448.23	448.70	447.25	446.42
8	447.12	446.89	448.30	448.24	447.85	447.98	447.94	447.36	448.42	448.71	447.08	446.43
9	447.24	447.02	448.45	448.79	447.62	447.95	448.06	447.36	448.38	448.63	447.18	446.49
10	447.51	447.10	448.49	448.76	447.30	447.94	447.99	447.33	448.18	448.43	447.35	446.69
11	447.60	447.36	448.74	448.59	447.09	448.24	447.72	447.46	447.60	448.25	447.35	446.81
12	447.60	447.70	449.23	448.90	446.93	448.46	447.56	447.61	447.36	447.94	447.45	446.80
13	447.27	447.99	449.48	449.01	446.81	448.26	447.56	448.08	447.37	447.70	447.50	446.73
14	446.98	448.01	449.45	448.93	446.97	448.15	447.67	448.22	447.48	447.66	447.55	446.64
15	446.78	447.72	449.39	448.50	447.12	448.14	447.74	448.04	447.45	447.94	447.76	446.59
16	446.88	447.38	449.31	448.23	447.00	448.19	448.05	447.66	447.44	448.03	447.95	446.52
17	447.19	447.01	449.23	448.03	446.98	448.09	448.17	447.65	447.70	447.93	448.10	446.56
18	447.38	446.72	449.30	447.62	447.08	448.31	448.02	447.78	447.86	447.84	448.14	446.66
19	447.40	446.85	449.40	447.18	447.31	448.42	447.88	448.01	447.73	447.62	448.39	446.62
20	447.15	447.13	449.32	446.78	447.10	448.46	447.55	448.27	447.69	447.53	448.32	446.68
21	446.89	447.58	449.03	446.62	447.32	448.39	447.43	448.43	447.49	447.42	448.04	446.83
22	446.73	447.45	448.69	447.00	447.46	448.30	447.30	448.29	447.39	447.54	447.85	446.82
23	446.80	447.32	448.28	447.33	447.40	448.34	447.63	448.27	447.32	447.40	447.88	446.80
24	446.87	447.15	447.88	447.18	447.33	448.15	447.78	448.24	447.22	447.19	447.88	446.58
25	446.72	447.14	447.55	446.75	447.22	448.33	447.58	448.30	447.07	447.12	447.82	446.64
26	446.52	447.12	447.31	446.39	447.25	448.42	447.50	448.39	446.76	447.32	447.94	446.59
27	446.42	447.52	446.98	446.12	447.11	448.35	447.32	448.69	446.43	447.25	447.79	446.66
28	446.25	448.04	446.57	446.08	447.55	448.20	447.31	448.35	446.42	447.28	447.56	446.55
29	446.33	448.09	446.34	446.29	447.73	448.11	447.33	448.03	446.47	447.57	447.55	446.61
30	446.40		446.13	447.02	447.66	447.97	447.49	448.02	446.53	447.74	447.48	446.48
31	446.57		446.09		447.66		447.52	448.14		447.77		446.40
Mean	447.13	447.18	448.25	447.38	447.31	448.12	447.78	447.89	447.55	447.85	447.68	446.71
Max	448.23	448.09	449.48	449.01	447.85	448.46	448.30	448.69	448.42	448.71	448.39	447.49
Min	446.25	446.39	446.09	446.05	446.81	447.46	447.30	447.23	446.42	447.07	447.08	446.40

Calendar Year Summary

Annual Mean 447.57 Daily Max 449.48 Daily Min 446.05

Maximum Elevation

Date	Time	Elev
Mar. 13	14:00	449.55

Minimum Elevation

Date	Time	Elev
Apr. 28	09:00	445.91

A photograph of a river gaging station. A concrete bridge with a metal railing spans the river. On the right side of the bridge, a tall, cylindrical metal structure is mounted on a steel frame. The structure has a corrugated metal body and a small platform at the top. The river is calm, and the surrounding landscape is rocky with some sparse vegetation. The sky is clear and blue.

Colorado River Gaging Stations

Colorado River Below Big Bend

Location—Latitude 35° 05.303', longitude -114° 37.458', in the SW¼ NW¼ of Section 10, T. 33 S., R. 66 E., Mount Diablo meridian, Clark County, Nevada, Hydrologic Unit 15030101, river mi 264.7, 2.4 mi southwest of Bullhead City, Arizona, 17.2 mi north of Needles, California, and 11.1 river mi downstream of Davis Dam.

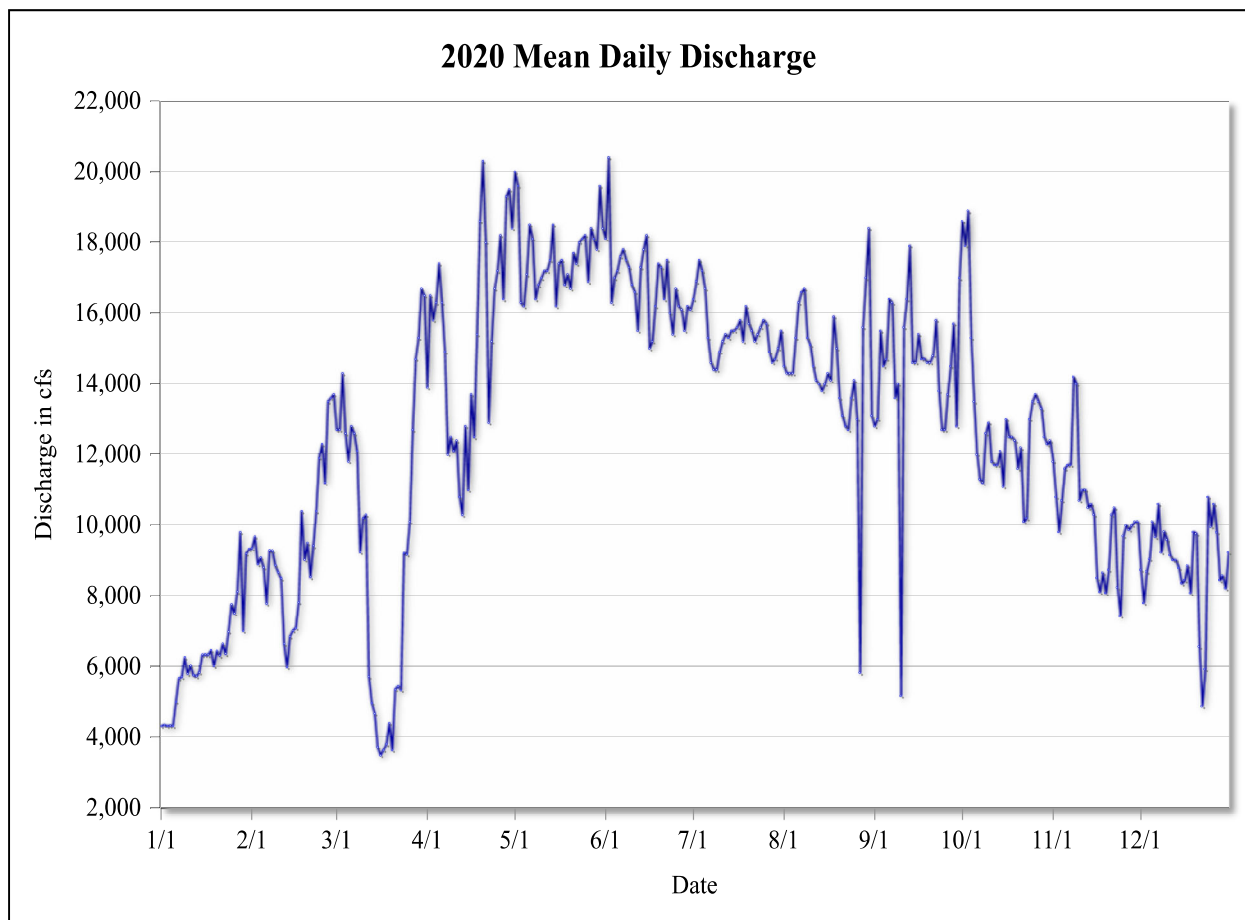
Drainage Area—171,300 mi².

Period of Record—January 1, 2008 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron Accubar constant flow bubbler system (Model 56-0133-25-1). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 25,500 cfs, Mar. 3, 2009; minimum daily discharge, 2,420 cfs, Dec. 8, 2019; maximum hourly discharge, 27,100 cfs, Apr. 1, 2010 at 22:00; minimum hourly discharge, 2,045 cfs, Mar. 20, 2020 at 17:00.

Remarks—None.



Colorado River Below Big Bend

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	4,320	9,350	12,700	13,900	20,000	18,100	16,400	14,500	12,800	18,600	11,800	8,740
2	4,350	9,680	12,700	16,500	19,600	20,400	16,900	14,300	13,000	17,900	10,800	7,800
3	4,320	8,900	14,300	15,800	16,300	16,300	17,500	14,300	15,500	18,900	9,810	8,690
4	4,330	9,090	12,600	16,300	16,200	17,000	17,200	14,300	14,500	15,300	10,700	9,050
5	4,320	8,810	11,800	17,400	17,100	17,200	16,700	15,300	14,700	13,500	11,600	10,100
6	5,000	7,780	12,800	16,300	18,500	17,600	15,300	16,300	16,400	12,000	11,700	9,670
7	5,670	9,290	12,600	14,900	18,100	17,800	14,600	16,600	16,300	11,300	11,700	10,600
8	5,710	9,280	12,100	12,000	16,400	17,500	14,400	16,700	13,600	11,200	14,200	9,240
9	6,270	8,870	9,250	12,500	16,800	17,300	14,400	15,300	14,000	12,600	14,000	9,820
10	5,800	8,670	10,200	12,100	17,000	16,800	14,900	15,100	5,170	12,900	10,700	9,590
11	6,030	8,500	10,300	12,400	17,200	16,600	15,200	14,500	15,600	11,800	11,000	9,160
12	5,760	6,650	5,720	10,800	17,200	15,500	15,400	14,100	16,400	11,700	11,000	9,020
13	5,730	5,990	4,970	10,300	17,500	17,300	15,300	14,000	17,900	11,700	10,500	9,020
14	5,840	6,850	4,670	12,800	18,500	17,800	15,500	13,800	14,600	12,100	10,600	8,790
15	6,340	7,020	3,720	11,000	16,200	18,200	15,500	14,000	14,600	11,100	10,300	8,360
16	6,350	7,090	3,490	13,700	17,400	15,000	15,600	14,300	15,400	13,000	8,510	8,450
17	6,340	7,820	3,640	12,500	17,500	15,200	15,800	14,100	14,700	12,500	8,110	8,860
18	6,470	10,400	3,810	15,400	16,800	16,200	15,200	15,900	14,700	12,500	8,660	8,080
19	6,020	9,030	4,400	18,600	17,100	17,400	16,200	15,000	14,600	12,400	8,080	9,810
20	6,450	9,500	3,640	20,300	16,700	17,300	15,700	13,600	14,600	11,600	8,740	9,760
21	6,320	8,540	5,350	18,000	17,700	16,400	15,500	13,100	14,800	12,200	10,300	6,570
22	6,650	9,420	5,440	12,900	17,400	17,500	15,200	12,800	15,800	10,100	10,500	4,880
23	6,370	10,400	5,330	15,200	18,000	16,000	15,400	12,700	13,800	10,200	8,240	5,930
24	6,990	11,900	9,220	16,700	18,100	15,400	15,600	13,600	12,700	13,000	7,430	10,800
25	7,760	12,300	9,180	17,200	18,200	16,700	15,800	14,100	12,700	13,500	9,700	9,960
26	7,500	11,200	10,100	18,200	16,900	16,200	15,700	13,000	13,700	13,700	10,000	10,600
27	8,120	13,500	12,700	16,400	18,400	16,100	14,900	5,830	14,500	13,500	9,870	9,800
28	9,800	13,600	14,700	19,300	18,100	15,500	14,600	15,600	15,700	13,300	10,000	8,450
29	7,010	13,700	15,300	19,500	17,800	16,200	14,700	17,000	12,800	12,500	10,100	8,580
30	9,200		16,700	18,400	19,600	16,100	15,000	18,400	17,000	12,300	10,100	8,220
31	9,330		16,500		18,400		15,500	13,100		12,400		9,240
Total	196,471	273,133	289,851	457,379	546,952	504,797	481,450	445,116	432,514	401,311	308,843	275,637
Mean	6,338	9,418	9,350	15,250	17,640	16,830	15,530	14,360	14,420	12,950	10,290	8,892
Max	9,800	13,700	16,700	20,300	20,000	20,400	17,500	18,400	17,900	18,900	14,200	10,800
Min	4,320	5,990	3,490	10,300	16,200	15,000	14,400	5,830	5,170	10,100	7,430	4,880
Ac-ft	389,694	541,752	574,911	907,198	1,084,864	1,001,251	954,942	882,875	857,878	795,988	612,581	546,717

Calendar Year Summary

Annual Total 4,613,454 Annual Mean 12,610 Daily Max 20,400 Daily Min 3,490 Annual Ac-ft 9,150,653

Maximum Discharge

Date	Time	Elev	Discharge
Aug. 19	22:00	488.97	25,536

Minimum Discharge

Date	Time	Elev	Discharge
Mar. 20	17:00	478.53	2,045

Colorado River Below Needles Bridge

Location—Latitude 34° 49.504', longitude -114° 34.870', in the SW¼ SE¼ of Section 33, T. 9 N., R. 23 E., San Bernardino meridian, San Bernardino County, California, Hydrologic Unit 15030101, river mi 243.5, 2.0 mi east of Needles, California, 20.1 mi south of Bullhead City, Arizona, and 32.4 river mi downstream of Davis Dam.

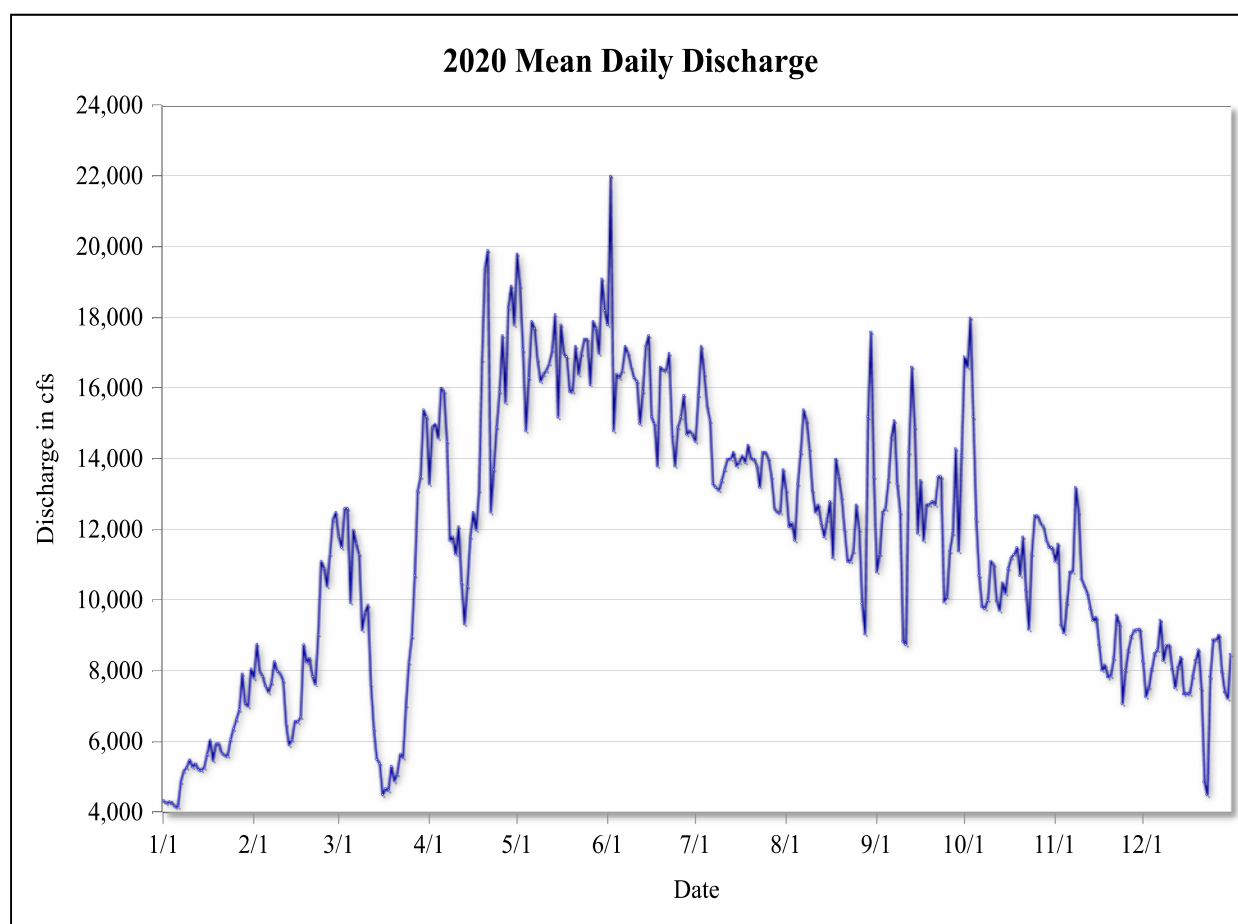
Drainage Area—171,700 mi².

Period of Record—January 1, 2008 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron submersible pressure sensor (Model 6661-1200-5). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 24,100 cfs, Apr. 24, 2009; minimum daily discharge, 3,620 cfs, Dec. 8, 2019; maximum hourly discharge, 24,300 cfs, Apr. 24, 2009 at 10:00; minimum hourly discharge, 3,513 cfs, Dec. 9, 2019 at 08:00.

Remarks—The stage record is estimated good. Discharge record is estimated poor due to the lack of stream stability during the record period.



Colorado River Below Needles Bridge

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	4,350	7,810	11,800	13,300	19,800	17,800	14,500	13,100	10,800	16,900	11,100	8,280
2	4,290	8,760	11,500	14,900	18,900	22,000	15,800	12,100	11,300	16,600	11,600	7,280
3	4,310	7,980	12,600	15,000	17,100	14,800	17,200	12,200	12,500	18,000	9,300	7,550
4	4,300	7,850	12,600	14,600	14,800	16,400	16,400	11,700	12,600	15,200	9,080	8,050
5	4,190	7,580	9,930	16,000	16,300	16,300	15,500	13,300	13,400	12,300	9,920	8,500
6	4,190	7,400	12,000	15,900	17,900	16,500	15,100	14,200	14,600	10,700	10,800	8,610
7	4,870	7,690	11,600	14,500	17,700	17,200	13,300	15,400	15,100	9,820	10,800	9,450
8	5,170	8,280	11,300	11,700	16,800	17,000	13,200	15,100	13,300	9,770	13,200	8,300
9	5,260	7,990	9,160	11,800	16,200	16,600	13,100	14,300	12,500	10,000	12,500	8,720
10	5,480	7,920	9,660	11,300	16,400	16,300	13,400	13,100	8,840	11,100	10,600	8,740
11	5,280	7,740	9,860	12,100	16,500	16,200	13,700	12,500	8,750	11,000	10,400	8,060
12	5,370	6,510	7,630	10,500	16,700	15,000	14,000	12,700	14,200	9,980	10,200	7,530
13	5,210	5,910	6,380	9,330	17,100	15,900	14,000	12,200	16,600	9,720	9,770	8,110
14	5,190	6,060	5,500	10,400	18,100	17,200	14,200	11,800	14,900	10,500	9,430	8,400
15	5,260	6,590	5,380	11,800	15,200	17,500	13,800	12,300	11,900	10,200	9,530	7,350
16	5,640	6,570	4,510	12,500	17,800	15,200	13,900	12,800	13,400	10,900	8,740	7,370
17	6,060	6,710	4,680	12,000	17,000	15,000	14,100	11,200	11,700	11,200	8,020	7,360
18	5,460	8,750	4,640	13,100	16,900	13,800	13,900	14,000	12,700	11,300	8,180	7,850
19	5,940	8,260	5,300	16,800	15,900	16,600	14,400	13,500	12,700	11,500	7,830	8,310
20	5,950	8,370	4,890	19,400	15,900	16,500	14,000	12,900	12,800	10,700	7,860	8,610
21	5,670	7,850	5,080	19,900	17,200	16,500	14,000	12,000	12,700	11,800	8,380	7,500
22	5,590	7,640	5,630	12,500	16,400	17,000	13,800	11,100	13,500	10,300	9,590	4,870
23	5,590	9,040	5,540	13,700	17,000	14,700	13,200	11,100	13,500	9,180	9,310	4,510
24	6,070	11,100	7,040	14,900	17,400	13,800	14,200	11,400	9,950	11,300	7,080	7,840
25	6,380	10,900	8,250	15,900	17,400	14,900	14,200	12,700	10,100	12,400	8,020	8,890
26	6,640	10,400	8,980	17,500	16,100	15,200	14,000	12,000	11,400	12,400	8,590	8,880
27	6,910	11,300	10,700	15,600	17,900	15,800	13,500	9,910	11,900	12,200	8,980	9,020
28	7,920	12,300	13,100	18,300	17,700	14,700	12,600	9,050	14,300	12,100	9,150	7,980
29	7,080	12,500	13,500	18,900	17,000	14,800	12,500	15,200	11,400	11,700	9,170	7,410
30	7,010		15,400	17,800	19,100	14,700	12,500	17,600	14,100	11,500	9,180	7,230
31	8,070		15,200		18,200		13,700	13,500		11,500		8,480
Total	174,701	243,821	279,375	431,943	530,532	481,744	435,724	396,144	377,348	363,727	286,343	245,022
Mean	5,636	8,408	9,012	14,400	17,110	16,060	14,060	12,780	12,580	11,730	9,545	7,904
Max	8,070	12,500	15,400	19,900	19,800	22,000	17,200	17,600	16,600	18,000	13,200	9,450
Min	4,190	5,910	4,510	9,330	14,800	13,800	12,500	9,050	8,750	9,180	7,080	4,510
Ac-ft	346,514	483,612	554,133	856,746	1,052,295	955,525	864,245	785,740	748,460	721,442	567,954	485,993

Calendar Year Summary

Annual Total 4,246,424 Annual Mean 11,600 Daily Max 22,000 Daily Min 4,190 Annual Ac-ft 8,422,660

Maximum Discharge

Date	Time	Elev	Discharge
Jun. 2	17:00	461.32	23,574

Minimum Discharge

Date	Time	Elev	Discharge
Sep. 11	04:00	451.80	3,975

Colorado River at River Section 41

Location—Latitude 34° 41.255', longitude -114° 27.759', in the SW¼ NW¼ of Section 13, T. 15 N., R. 21 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, at river mi 231.0, 13.5 mi south of Needles, California, 16.2 mi north of Lake Havasu City, Arizona, and 44.9 river mi downstream of Davis Dam.

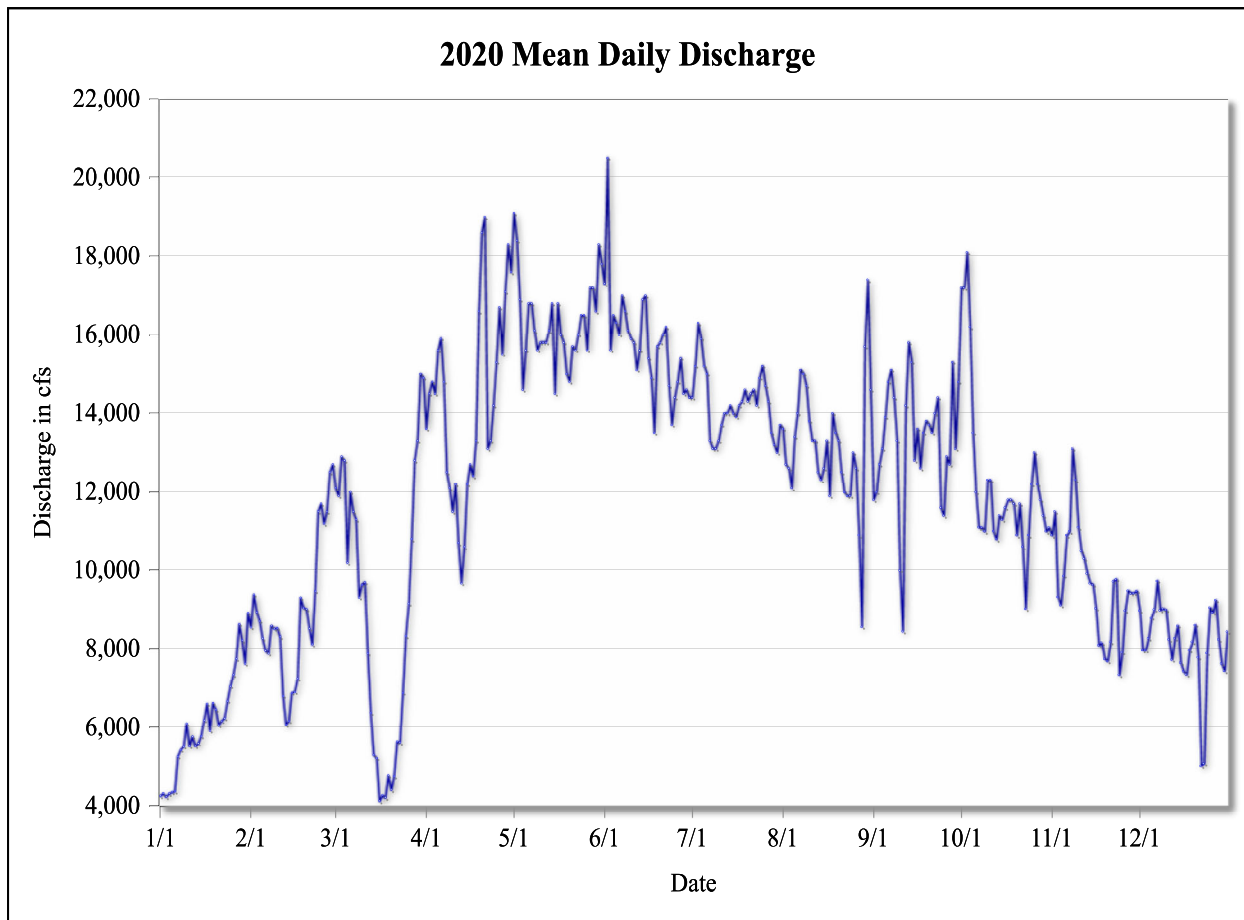
Drainage Area—174,300 mi².

Period of Record—June 29, 2006 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation and velocity measured with a SonTek/YSI Argonaut-SL current meter. Discharge is calculated using a velocity-index relationship.

Extremes—Maximum daily discharge, 23,300 cfs, Apr. 24, 2009; minimum daily discharge, 2,880 cfs, Dec. 7, 2019; maximum hourly discharge, 23,610 cfs, Apr. 24, 2009 at 12:00; minimum hourly discharge, 2,745 cfs, Dec. 9, 2019 at 03:00.

Remarks—None.



Colorado River at River Section 41

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	4,260	8,550	12,100	13,600	19,100	17,300	14,400	13,600	11,800	17,200	10,900	8,970
2	4,330	9,380	11,900	14,500	18,400	20,500	15,200	12,700	12,000	17,200	11,500	7,970
3	4,240	8,930	12,900	14,800	16,900	15,600	16,300	12,600	12,700	18,100	9,320	7,970
4	4,320	8,710	12,800	14,500	14,600	16,500	15,900	12,100	13,100	16,200	9,110	8,270
5	4,360	8,270	10,200	15,600	15,600	16,300	15,200	13,400	13,900	13,500	9,860	8,790
6	4,380	7,960	12,000	15,900	16,800	16,000	15,000	14,000	14,800	12,000	10,900	9,000
7	5,260	7,890	11,500	14,800	16,800	17,000	13,300	15,100	15,100	11,100	11,000	9,730
8	5,430	8,590	11,300	12,500	16,100	16,600	13,100	15,000	14,400	11,100	13,100	8,980
9	5,520	8,510	9,310	12,100	15,600	16,100	13,100	14,700	13,300	11,000	12,300	9,020
10	6,090	8,530	9,630	11,500	15,800	15,900	13,300	13,800	10,000	12,300	11,100	8,990
11	5,530	8,310	9,690	12,200	15,800	15,800	13,700	13,300	8,450	12,300	10,500	8,240
12	5,770	6,800	7,890	10,700	15,800	15,100	14,000	13,300	14,200	11,000	10,300	7,730
13	5,530	6,060	6,370	9,670	16,100	15,600	14,000	12,500	15,800	10,800	9,920	8,270
14	5,590	6,160	5,300	10,600	16,800	16,900	14,200	12,300	15,300	11,400	9,670	8,590
15	5,780	6,880	5,220	12,200	14,500	17,000	14,000	12,600	12,800	11,300	9,630	7,650
16	6,180	6,900	4,130	12,700	16,800	15,400	13,900	13,300	13,600	11,600	9,030	7,430
17	6,600	7,240	4,280	12,400	16,000	14,900	14,200	11,900	12,600	11,800	8,090	7,350
18	5,920	9,300	4,220	13,300	15,800	13,500	14,300	14,000	13,500	11,800	8,160	7,970
19	6,620	9,040	4,780	16,600	15,000	15,700	14,600	13,500	13,800	11,700	7,750	8,180
20	6,450	9,010	4,420	18,600	14,800	15,800	14,300	13,300	13,700	10,900	7,690	8,610
21	6,050	8,520	4,760	19,000	15,700	16,000	14,500	12,500	13,500	11,700	8,180	7,790
22	6,160	8,120	5,640	13,100	15,600	16,200	14,600	12,000	14,000	10,600	9,720	5,020
23	6,230	9,470	5,620	13,300	16,000	14,700	14,200	11,900	14,400	9,020	9,770	5,080
24	6,670	11,500	6,880	14,200	16,500	13,700	14,900	11,900	11,600	10,900	7,340	7,900
25	7,050	11,700	8,330	15,300	16,500	14,400	15,200	13,000	11,400	12,200	7,920	9,050
26	7,340	11,200	9,150	16,700	15,600	14,800	14,700	12,600	12,900	13,000	8,970	8,920
27	7,750	11,500	10,800	15,500	17,200	15,400	14,300	10,900	12,700	12,200	9,480	9,240
28	8,630	12,500	12,800	17,100	17,200	14,500	13,500	8,560	15,300	11,800	9,410	8,240
29	8,220	12,700	13,300	18,300	16,600	14,600	13,200	15,700	13,100	11,400	9,420	7,630
30	7,630		15,000	17,600	18,300	14,400	13,000	17,400	14,800	11,000	9,470	7,440
31	8,910		14,900		17,800		13,700	14,600		11,100		8,440
Total	188,808	258,093	277,195	428,803	506,332	472,527	441,881	408,035	398,889	379,314	289,540	252,476
Mean	6,091	8,900	8,942	14,290	16,330	15,750	14,250	13,160	13,300	12,240	9,651	8,144
Max	8,910	12,700	15,000	19,000	19,100	20,500	16,300	17,400	15,800	18,100	13,100	9,730
Min	4,240	6,060	4,130	9,670	14,500	13,500	13,000	8,560	8,450	9,020	7,340	5,020
Ac-ft	374,494	511,920	549,809	850,517	1,004,294	937,244	876,458	809,326	791,184	752,359	574,293	500,780

Calendar Year Summary

Annual Total 4,301,892 Annual Mean 11,750 Daily Max 20,500 Daily Min 4,130 Annual Ac-ft 8,532,679

Maximum Discharge

Date	Time	Elev	Discharge
Jun. 2	17:00	454.29	21,702

Minimum Discharge

Date	Time	Elev	Discharge
Mar. 19	01:00	450.21	3,045

Colorado River at Parker Gage

Location—Latitude 34° 08.934', longitude -114° 18.468', in the NW¼ SE¼ of Section 2, T. 9 N., R. 20 W., Gila-Salt River meridian, La Paz County, Arizona, Hydrologic Unit 15030104, river mi 175.0, 1.1 mi west of Parker, Arizona, 40.4 mi north of Blythe, California, and 17.0 river mi downstream of Parker Dam.

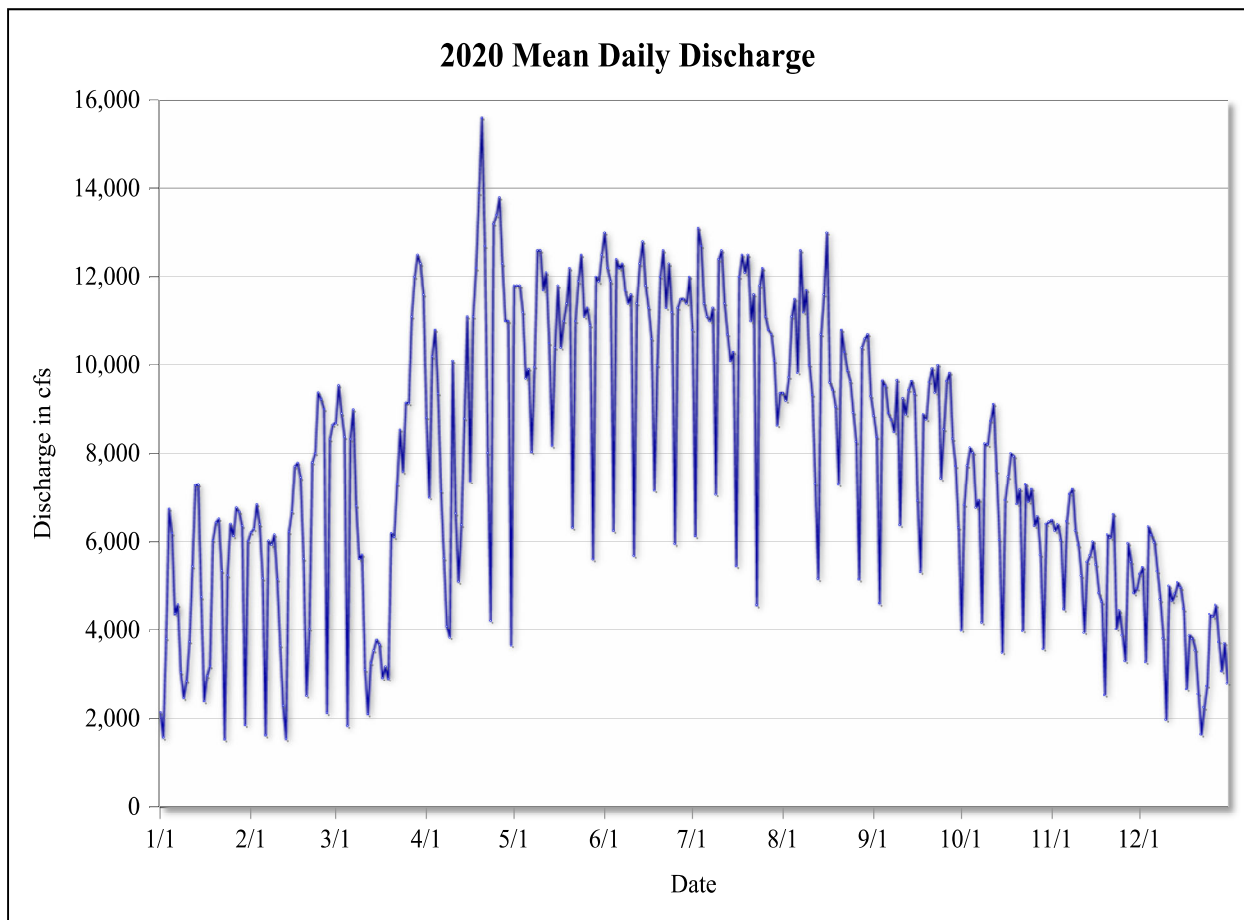
Drainage Area—181,000 mi².

Period of Record—January 1, 2005 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron Accubar constant flow bubbler (Model 56-0133-25-1). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 19,000 cfs, Mar. 25, 2014; minimum daily discharge, 967 cfs, Dec. 22, 2017; maximum hourly discharge, 21,600 cfs, Apr. 16, 2011 at 22:00; minimum hourly discharge, 111 cfs, June 20, 2018 at 07:00.

Remarks—None.



Colorado River at Parker Gage

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2,150	6,220	8,690	8,810	11,800	13,000	10,800	9,370	8,860	4,000	6,500	5,280
2	1,580	6,300	9,540	7,010	11,800	12,200	6,140	9,200	8,380	6,840	6,260	5,430
3	3,810	6,850	8,910	10,200	11,800	11,900	13,100	9,730	4,620	7,730	6,400	3,290
4	6,750	6,400	8,380	10,800	11,200	6,260	12,700	11,100	9,650	8,140	6,040	6,350
5	6,200	5,180	1,840	9,360	9,700	12,400	11,400	11,500	9,530	8,020	4,490	6,160
6	4,380	1,630	8,330	7,150	9,910	12,200	11,100	9,830	8,920	6,780	6,470	5,990
7	4,590	6,030	9,000	5,630	8,040	12,300	11,000	12,600	8,760	6,950	7,090	5,340
8	3,050	5,940	6,820	4,090	9,960	11,700	11,300	11,200	8,490	4,180	7,200	4,700
9	2,470	6,170	5,620	3,840	12,600	11,400	7,080	11,700	9,660	8,230	6,260	3,820
10	2,850	5,160	5,710	10,100	12,600	11,600	12,400	10,000	6,390	8,210	5,930	1,980
11	3,740	3,650	3,110	6,650	11,700	5,690	12,600	9,330	9,250	8,740	5,240	5,010
12	5,450	2,300	2,110	5,110	12,100	11,400	11,400	7,320	8,890	9,120	3,950	4,680
13	7,290	1,550	3,260	6,390	10,500	12,300	10,700	5,170	9,440	7,610	5,550	4,830
14	7,300	6,230	3,540	8,790	8,190	12,800	10,100	10,700	9,640	6,050	5,700	5,090
15	4,760	6,690	3,780	11,100	10,400	11,800	10,300	11,600	9,360	3,500	6,010	4,970
16	2,400	7,710	3,670	7,380	11,800	11,300	5,460	13,000	6,940	6,950	5,490	4,490
17	2,970	7,790	2,920	11,100	10,400	10,600	12,000	9,610	5,330	7,480	4,850	2,670
18	3,190	7,460	3,180	12,200	11,000	7,170	12,500	9,440	8,890	8,010	4,650	3,880
19	6,040	5,620	2,900	13,900	11,400	9,990	12,100	9,060	8,770	7,940	2,540	3,810
20	6,440	2,520	6,200	15,600	12,200	12,000	12,500	7,310	9,620	6,860	6,170	3,550
21	6,530	4,030	6,120	12,700	6,330	12,600	11,000	10,800	9,920	7,190	6,100	2,560
22	5,350	7,800	7,310	8,020	11,000	11,300	11,600	10,300	9,380	3,990	6,630	1,650
23	1,540	8,010	8,540	4,220	11,900	12,300	4,580	9,880	10,000	7,310	4,030	2,260
24	5,250	9,380	7,600	13,200	12,500	11,200	11,800	9,630	7,440	6,910	4,460	2,740
25	6,410	9,230	9,150	13,400	11,100	5,960	12,200	8,930	8,550	7,200	3,890	4,370
26	6,140	9,010	9,140	13,800	11,300	11,300	11,100	8,270	9,640	6,370	3,310	4,310
27	6,780	2,140	11,100	12,300	10,900	11,500	10,800	5,160	9,820	6,580	5,970	4,580
28	6,680	8,330	12,000	11,000	5,610	11,500	10,700	10,400	8,340	5,710	5,550	3,740
29	6,370	8,650	12,500	11,000	12,000	11,400	10,100	10,600	7,720	3,580	4,850	3,080
30	1,860		12,300	3,660	11,900	12,000	8,640	10,700	6,330	6,410	4,960	3,700
31	6,020		11,600		12,500		9,370	9,300		6,460		2,800
Total	146,317	173,994	214,929	278,524	336,014	331,043	328,556	302,815	256,535	209,066	162,568	127,095
Mean	4,720	6,000	6,933	9,284	10,840	11,030	10,600	9,768	8,551	6,744	5,419	4,100
Max	7,300	9,380	12,500	15,600	12,600	13,000	13,100	13,000	10,000	9,120	7,200	6,350
Min	1,540	1,550	1,840	3,660	5,610	5,690	4,580	5,160	4,620	3,500	2,540	1,650
Ac-ft	290,216	345,113	426,306	552,444	666,475	656,615	651,681	600,626	508,830	414,676	322,449	252,090

Calendar Year Summary

Annual Total 2,867,458 Annual Mean 7,835 Daily Max 15,600 Daily Min 1,540 Annual Ac-ft 5,687,521

Maximum Discharge

Date	Time	Elev	Discharge
Aug. 19	23:00	345.97	19,871

Minimum Discharge

Date	Time	Elev	Discharge
Apr. 9	07:00	339.19	268

Colorado River at Water Wheel

Location—Latitude 33° 55.914', longitude -114° 32.108', in the NW¼ SW¼ of Section 22, T. 7 N., R. 22 W., Gila-Salt meridian, La Paz County, Arizona, Hydrologic Unit 15030104, river mi 151.6, 20.7 mi south of Parker, Arizona, 22.3 mi north of Blythe, California, and 40.4 river mi downstream of Parker Dam.

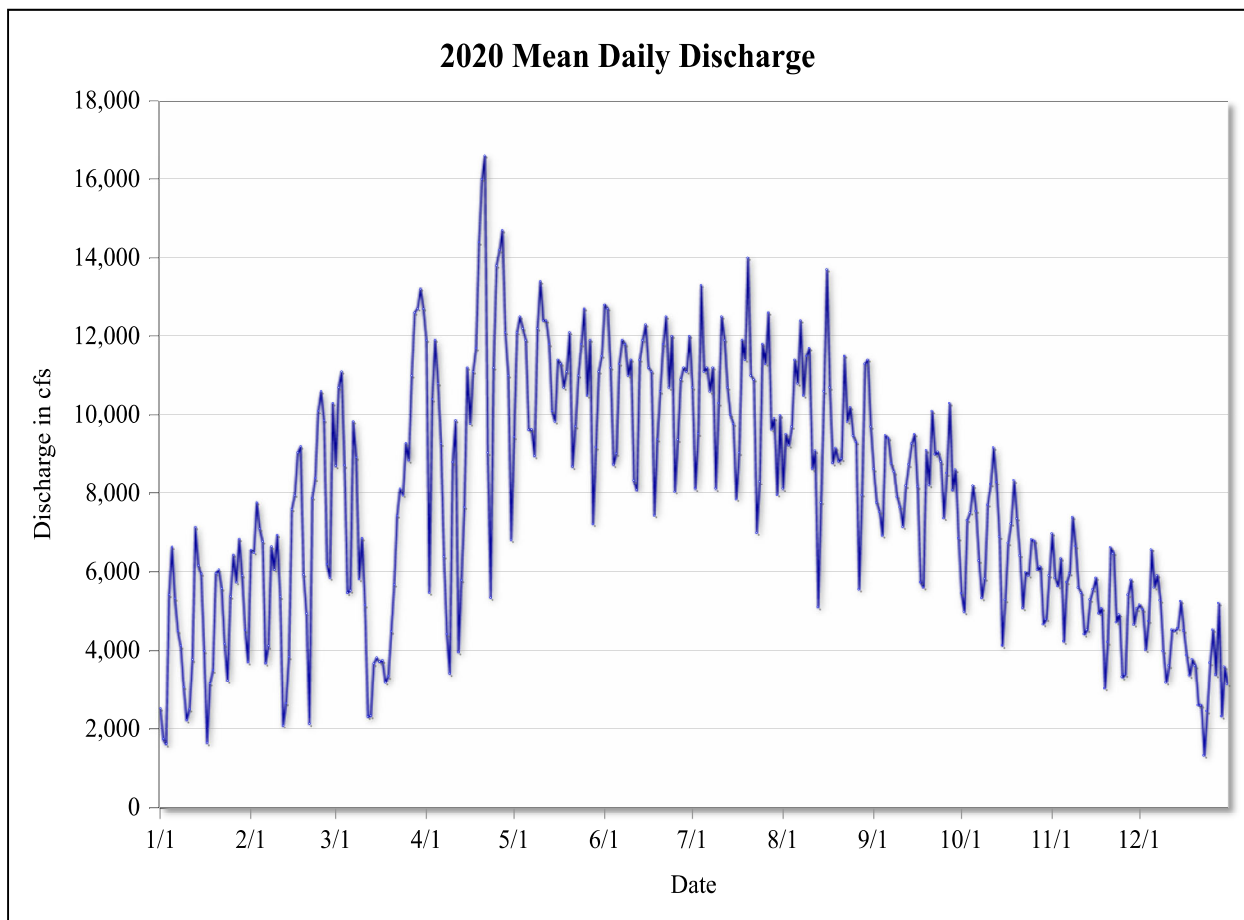
Drainage Area—181,600 mi².

Period of Record—January 1, 2005 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron multiple interface shaft encoder (Model 56-0540-400-DTR). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 19,200 cfs, Mar. 26, 2014; minimum daily discharge, 1,320 cfs, Jan. 8, 2019; maximum hourly discharge, 20,402 cfs, Apr. 22, 2015 at 03:00; minimum hourly discharge, 1,053 cfs, Dec. 4, 2020 at 02:00.

Remarks—The stage record is estimated good. Discharge record is estimated poor due to the lack of stream stability during the record period.



Colorado River at Water Wheel

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2,530	6,560	8,710	11,900	9,440	12,800	10,700	8,130	8,630	5,460	6,980	5,170
2	1,750	6,490	10,700	5,480	12,100	12,700	8,130	9,510	7,770	4,990	5,850	5,050
3	1,630	7,760	11,100	10,400	12,500	11,200	9,520	9,230	7,530	7,320	5,640	4,020
4	5,420	7,100	8,720	11,900	12,200	8,740	13,300	9,700	6,930	7,510	6,340	4,750
5	6,640	6,780	5,470	10,800	11,900	9,020	11,100	11,400	9,480	8,200	4,240	6,570
6	5,330	3,680	5,530	9,270	9,620	11,300	11,200	10,800	9,410	7,550	5,740	5,610
7	4,500	4,120	9,830	6,390	9,630	11,900	10,600	12,400	8,770	6,290	5,960	5,910
8	4,120	6,650	8,920	4,420	8,960	11,800	11,200	10,500	8,550	5,340	7,390	5,280
9	3,070	6,060	5,820	3,420	12,200	11,000	8,130	11,500	7,910	5,830	6,660	3,990
10	2,230	6,940	6,860	8,800	13,400	11,400	10,300	11,700	7,650	7,710	5,600	3,190
11	2,510	5,370	5,160	9,860	12,400	8,330	12,500	8,640	7,150	8,240	5,470	3,620
12	3,770	2,090	2,320	3,960	12,400	8,090	11,900	9,090	8,200	9,170	4,420	4,530
13	7,140	2,660	2,340	5,790	11,800	11,400	10,700	5,110	8,740	8,290	4,530	4,500
14	6,170	3,840	3,670	7,650	10,100	11,900	10,000	7,770	9,270	6,900	5,300	4,570
15	5,950	7,590	3,820	11,200	9,830	12,300	9,770	10,600	9,510	4,140	5,560	5,260
16	3,990	7,950	3,720	9,780	11,400	11,200	7,850	13,700	8,180	5,290	5,850	4,510
17	1,660	9,040	3,750	11,100	11,300	11,100	9,040	10,700	5,740	6,740	4,950	3,880
18	3,160	9,200	3,190	11,700	10,700	7,440	11,900	8,780	5,610	7,230	5,080	3,370
19	3,500	5,930	3,350	14,400	11,100	9,380	11,400	9,160	9,100	8,340	3,040	3,780
20	5,960	4,940	4,490	16,000	12,100	10,600	14,000	8,820	8,220	7,360	4,220	3,610
21	6,060	2,140	5,680	16,600	8,690	11,800	11,000	8,890	10,100	6,420	6,630	2,610
22	5,580	7,880	7,430	9,040	9,710	12,500	10,900	11,500	9,000	5,090	6,470	2,610
23	4,170	8,390	8,120	5,350	11,000	10,700	7,000	9,830	9,060	5,990	4,720	1,330
24	3,230	10,100	7,950	11,200	11,800	12,000	8,300	10,200	8,810	5,910	4,920	2,460
25	5,380	10,600	9,280	13,800	12,700	8,040	11,800	9,470	7,370	6,830	3,330	3,690
26	6,430	9,860	8,850	14,200	10,500	9,370	11,300	9,310	8,520	6,790	3,400	4,530
27	5,740	6,200	11,000	14,700	11,900	10,900	12,600	5,560	10,300	6,060	5,420	3,390
28	6,840	5,850	12,600	12,100	7,220	11,200	9,630	7,960	8,090	6,140	5,800	5,210
29	5,910	10,300	12,700	11,000	9,180	11,100	9,910	11,300	8,610	4,670	4,660	2,330
30	4,520		13,200	6,820	11,100	12,000	7,960	11,400	6,860	4,800	5,070	3,590
31	3,710		12,700		11,500		9,990	9,700		5,910		3,150
Total	138,595	192,058	227,116	299,231	340,225	323,072	323,668	302,443	249,121	202,518	159,245	126,038
Mean	4,471	6,623	7,326	9,974	10,970	10,770	10,440	9,756	8,304	6,533	5,308	4,066
Max	7,140	10,600	13,200	16,600	13,400	12,800	14,000	13,700	10,300	9,170	7,390	6,570
Min	1,630	2,090	2,320	3,420	7,220	7,440	7,000	5,110	5,610	4,140	3,040	1,330
Ac-ft	274,898	380,941	450,478	593,516	674,825	640,804	641,986	599,887	494,125	401,689	315,858	249,992

Calendar Year Summary

Annual Total 2,883,330 Annual Mean 7,878 Daily Max 16,600 Daily Min 1,330 Annual Ac-ft 5,719,002

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 21	04:00	305.29	18,099

Minimum Discharge

Date	Time	Elev	Discharge
Dec. 24	02:00	296.95	1,053

Colorado River Below Interstate Bridge

Location—Latitude 33° 35.362', longitude -114° 32.559', in the NW¼, lot 11 of Section 21, T. 3 N., R. 22 W., San Bernardino meridian, Riverside County, California, Hydrologic Unit 15030104, river mi 120.1, 2.8 mi southeast of Blythe, California, 61.6 mi north of Yuma, Arizona, and 91.9 river mi downstream of Parker Dam.

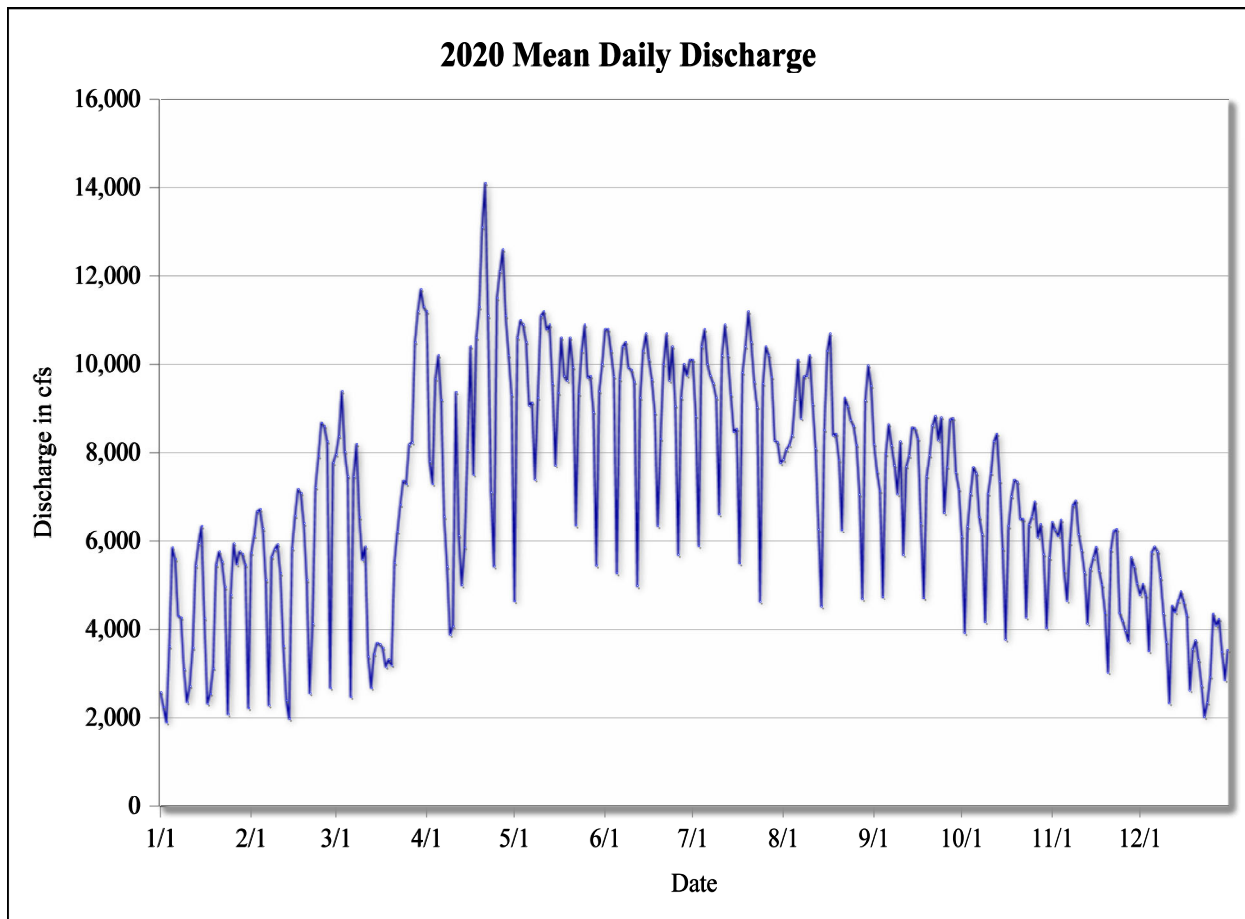
Drainage Area—184,300 mi².

Period of Record—January 1, 2011 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron stage discharge recorder shaft encoder (Model SDR-0001). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 16,800 cfs, Mar. 26, 2014; minimum daily discharge, 1,340 cfs, Dec. 23, 2015; maximum hourly discharge, 17,541 cfs, Mar. 27, 2014 at 07:00; minimum hourly discharge, 916 cfs, Dec. 23, 2013 at 19:00.

Remarks—The following periods were downgraded due to the elevation dropping below the bottom of the stilling well: Jan. 24, 2020 at 14:00 to Jan. 24, 2020 at 20:00, Jan. 31 at 10:00 to Jan. 31 at 13:00, Feb. 14, 2020 at 06:00 to Feb. 14, 2020 at 20:00, and Feb. 21, 2020 at 20:00 to Feb. 22, 2020 at 09:00.



Colorado River Below Interstate Bridge

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2,570	5,730	7,960	11,200	4,640	10,800	10,100	7,840	8,190	6,100	6,430	4,790
2	2,240	6,110	8,370	7,800	10,600	10,800	8,820	8,070	7,560	3,920	6,250	5,030
3	1,900	6,670	9,390	7,290	11,000	10,300	5,890	8,170	7,130	6,330	6,110	4,780
4	3,610	6,720	8,020	9,670	10,900	9,720	10,400	8,390	4,740	7,070	6,480	3,510
5	5,850	6,280	7,460	10,200	10,500	5,280	10,800	9,220	7,970	7,670	5,320	5,750
6	5,590	5,120	2,470	9,190	9,060	9,660	10,000	10,100	8,630	7,520	4,650	5,870
7	4,300	2,280	7,460	6,550	9,120	10,400	9,740	8,770	8,160	6,540	5,950	5,760
8	4,260	5,640	8,190	5,420	7,390	10,500	9,570	9,720	7,710	6,150	6,810	5,170
9	3,090	5,810	6,540	3,880	9,240	9,920	9,240	9,740	7,060	4,170	6,910	4,360
10	2,350	5,920	5,580	4,070	11,100	9,870	6,610	10,200	8,250	7,070	6,150	3,710
11	2,710	5,270	5,870	9,370	11,200	9,600	10,200	9,090	5,690	7,530	5,790	2,330
12	3,580	3,620	3,380	6,120	10,800	4,990	10,900	8,090	7,680	8,250	5,290	4,530
13	5,440	2,390	2,670	5,010	10,900	9,240	10,200	6,260	7,930	8,420	4,130	4,390
14	5,940	1,980	3,440	5,860	9,560	10,300	9,310	4,520	8,560	7,350	5,370	4,640
15	6,340	5,830	3,690	8,050	7,710	10,700	8,470	8,510	8,540	5,820	5,620	4,860
16	4,250	6,570	3,660	10,400	9,350	10,100	8,530	10,300	8,310	3,770	5,860	4,600
17	2,320	7,170	3,580	7,500	10,600	9,650	5,500	10,700	6,400	6,340	5,330	4,320
18	2,540	7,080	3,140	10,600	9,730	8,890	9,810	8,390	4,710	7,010	5,010	2,620
19	3,110	6,400	3,320	11,300	9,630	6,350	10,400	8,420	7,460	7,380	4,370	3,550
20	5,460	5,120	3,180	13,100	10,600	8,310	11,200	7,830	7,940	7,330	3,020	3,750
21	5,760	2,550	5,510	14,100	9,930	10,000	10,500	6,250	8,610	6,500	5,800	3,300
22	5,530	4,130	6,210	11,100	6,360	10,700	9,600	9,240	8,820	6,500	6,230	2,720
23	4,960	7,210	6,820	7,100	9,330	9,630	9,020	9,040	8,280	4,270	6,270	2,020
24	2,080	7,920	7,360	5,430	10,300	10,400	4,630	8,730	8,790	6,370	4,370	2,340
25	4,780	8,670	7,290	11,500	10,900	9,050	9,560	8,600	6,640	6,550	4,190	2,920
26	5,940	8,590	8,180	12,100	9,700	5,690	10,400	8,170	7,670	6,890	3,970	4,350
27	5,480	8,250	8,230	12,600	9,730	9,240	10,200	7,050	8,740	6,080	3,730	4,090
28	5,760	2,670	10,500	11,100	8,910	10,000	9,710	4,690	8,770	6,380	5,630	4,230
29	5,700	7,770	11,200	10,200	5,450	9,750	8,270	9,180	7,550	5,700	5,420	3,490
30	5,460		11,700	9,310	9,390	10,100	8,230	9,970	7,170	4,030	5,040	2,850
31	2,220		11,300		10,000		7,770	9,510		5,620		3,530
Total	131,143	165,453	201,562	267,101	293,835	279,912	283,483	262,847	229,678	196,624	161,494	124,144
Mean	4,230	5,705	6,502	8,903	9,479	9,330	9,145	8,479	7,656	6,343	5,383	4,005
Max	6,340	8,670	11,700	14,100	11,200	10,800	11,200	10,700	8,820	8,420	6,910	5,870
Min	1,900	1,980	2,470	3,880	4,640	4,990	4,630	4,520	4,710	3,770	3,020	2,020
Ac-ft	260,118	328,172	399,792	529,786	582,814	555,198	562,281	521,349	455,559	389,998	320,318	246,236

Calendar Year Summary

Annual Total 2,597,275 Annual Mean 7,096 Daily Max 14,100 Daily Min 1,900 Annual Ac-ft 5,151,620

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 21	13:00	251.89	14,415

Minimum Discharge

Date	Time	Elev	Discharge
Dec. 24	09:00	244.30	1,543

Colorado River Below McIntyre Park

Location—Latitude 33° 30.659', longitude -114° 34.090', in the SE¼, lot 18 of Section 18, T. 2 N., R. 22 W., San Bernardino meridian, Riverside County, California, Hydrologic Unit 15030104, river mi 113.3, 6.9 mi southeast of Blythe, California, 56.1 mi north of Yuma, Arizona, and 78.7 river mi downstream of Parker Dam.

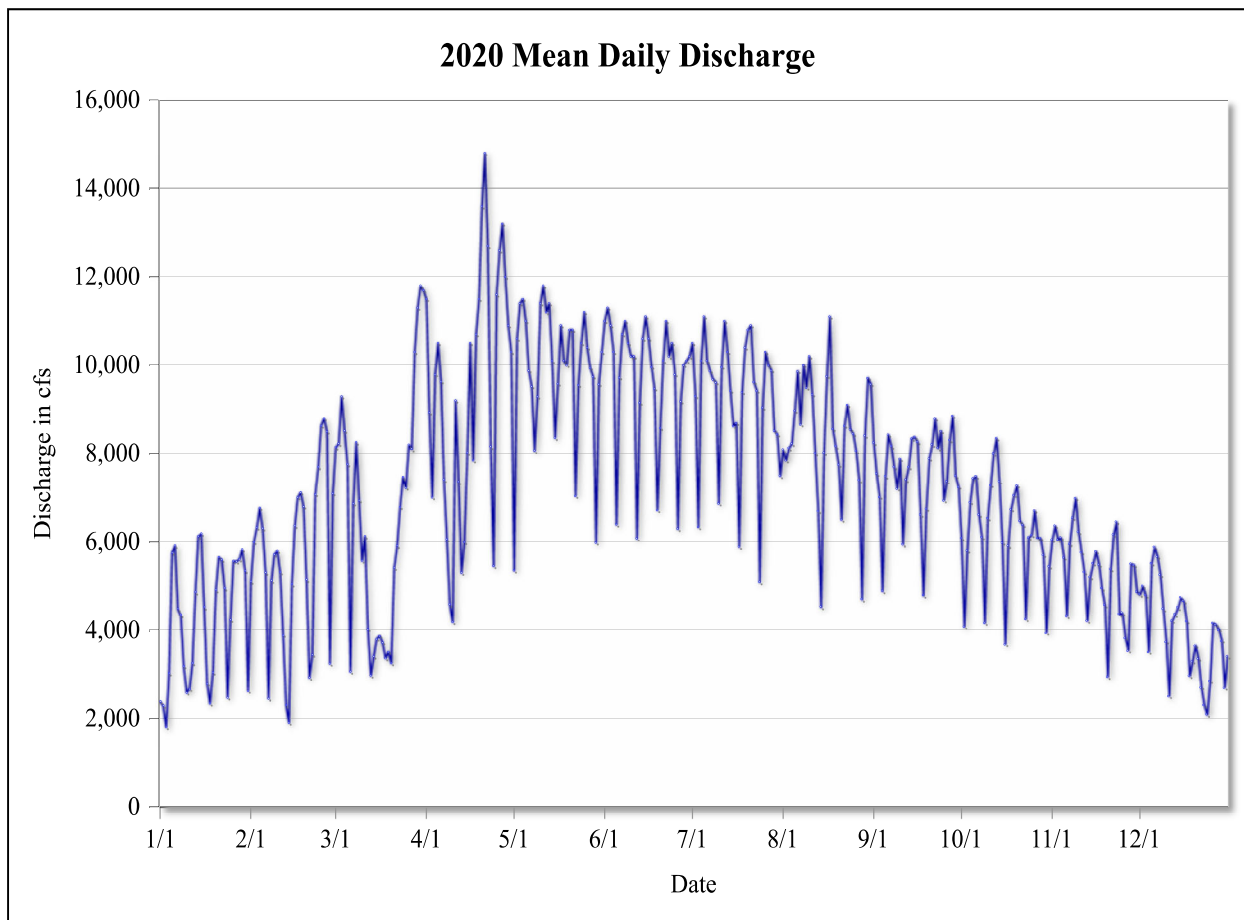
Drainage Area—184,400 mi².

Period of Record—January 1, 2011 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron stage discharge recorder shaft encoder (Model SDR-0001). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 17,200 cfs, Mar. 26, 2014; minimum daily discharge, 1,620 cfs, Dec. 22, 2018; maximum hourly discharge, 17,801 cfs, Mar. 27, 2014 at 10:00; minimum hourly discharge, 1,039 cfs, Dec. 23, 2013 at 22:00.

Remarks—None.



Colorado River Below McIntyre Park

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2,390	5,110	8,150	11,500	5,360	11,000	10,500	8,090	8,250	6,090	6,050	4,820
2	2,300	6,000	8,230	8,930	10,600	11,300	9,300	7,850	7,550	4,080	6,370	5,010
3	1,810	6,330	9,290	7,010	11,400	10,900	6,340	8,130	7,020	5,810	6,050	4,800
4	3,030	6,770	8,520	9,790	11,500	10,300	10,100	8,230	4,900	6,900	6,100	3,510
5	5,760	6,310	7,760	10,500	11,000	6,400	11,100	8,970	7,490	7,440	5,650	5,520
6	5,920	5,310	3,070	9,630	9,880	9,720	10,100	9,860	8,430	7,490	4,330	5,890
7	4,490	2,460	6,870	7,410	9,520	10,700	9,870	8,660	8,170	6,620	5,960	5,670
8	4,350	5,130	8,260	6,060	8,070	11,000	9,680	10,000	7,700	6,110	6,550	5,260
9	3,190	5,720	6,940	4,590	9,290	10,500	9,610	9,490	7,210	4,170	6,990	4,490
10	2,590	5,800	5,580	4,190	11,400	10,200	6,870	10,200	7,880	6,540	6,230	3,740
11	2,670	5,320	6,130	9,200	11,800	10,200	9,960	9,340	5,950	7,290	5,770	2,510
12	3,260	3,890	4,020	7,360	11,200	6,080	11,000	8,010	7,410	8,000	5,320	4,220
13	4,870	2,310	2,980	5,310	11,400	9,150	10,300	6,700	7,700	8,350	4,220	4,360
14	6,130	1,910	3,410	6,000	10,100	10,600	9,420	4,540	8,340	7,370	5,210	4,520
15	6,190	5,050	3,800	8,020	8,360	11,100	8,620	8,020	8,380	5,990	5,520	4,750
16	4,530	6,370	3,870	10,500	9,580	10,600	8,690	9,750	8,270	3,680	5,790	4,670
17	2,790	7,010	3,720	7,850	10,900	9,960	5,900	11,100	6,620	5,920	5,490	4,210
18	2,350	7,120	3,370	10,700	10,100	9,470	9,390	8,560	4,800	6,740	4,960	2,970
19	3,050	6,800	3,510	11,500	10,000	6,720	10,400	8,170	6,750	7,060	4,580	3,300
20	4,920	5,150	3,260	13,600	10,800	8,580	10,800	7,750	7,890	7,280	2,950	3,650
21	5,660	2,930	5,420	14,800	10,800	10,100	10,900	6,510	8,210	6,480	5,390	3,360
22	5,600	3,450	5,920	12,700	7,040	11,000	9,620	8,630	8,790	6,390	6,170	2,710
23	4,960	7,080	6,790	8,160	9,550	10,200	9,420	9,100	8,130	4,260	6,460	2,310
24	2,480	7,700	7,470	5,460	10,500	10,500	5,100	8,550	8,510	6,100	4,370	2,100
25	4,240	8,630	7,230	11,600	11,200	9,790	9,040	8,450	6,940	6,160	4,400	2,850
26	5,570	8,790	8,200	12,600	10,400	6,300	10,300	8,060	7,370	6,710	3,830	4,170
27	5,560	8,500	8,110	13,200	9,940	9,180	10,000	7,400	8,310	6,090	3,540	4,130
28	5,610	3,250	10,300	12,000	9,740	10,000	9,880	4,710	8,850	6,090	5,510	4,010
29	5,830	7,100	11,300	10,900	5,990	10,100	8,520	8,410	7,500	5,710	5,480	3,760
30	5,350		11,800	10,300	9,570	10,200	8,440	9,710	7,250	3,940	4,880	2,700
31	2,630		11,700		10,300		7,500	9,570		5,450		3,410
Total	130,093	163,340	205,105	281,370	307,102	291,700	286,825	260,471	226,562	192,300	160,113	123,359
Mean	4,197	5,632	6,616	9,379	9,907	9,723	9,252	8,402	7,552	6,203	5,337	3,979
Max	6,190	8,790	11,800	14,800	11,800	11,300	11,100	11,100	8,850	8,350	6,990	5,890
Min	1,810	1,910	2,980	4,190	5,360	6,080	5,100	4,540	4,800	3,680	2,950	2,100
Ac-ft	258,035	323,981	406,821	558,090	609,128	578,579	568,909	516,637	449,379	381,422	317,580	244,679

Calendar Year Summary

Annual Total 2,628,342 Annual Mean 7,181 Daily Max 14,800 Daily Min 1,810 Annual Ac-ft 5,213,240

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 22	04:00	242.92	15,311

Minimum Discharge

Date	Time	Elev	Discharge
Feb. 14	21:00	234.95	1,588

Colorado River at Taylor Ferry

Location—Latitude 33° 26.063', longitude -114° 37.567', in the SE¼, lot 4 of Section 10, T. 1 N., R. 23 W., Gila-Salt River meridian, La Paz County, Arizona, Hydrologic Unit 15030104, river mi 106.3, 12.4 mi south of Blythe, California, 50.8 mi north of Yuma, Arizona, and 85.7 river mi downstream of Parker Dam.

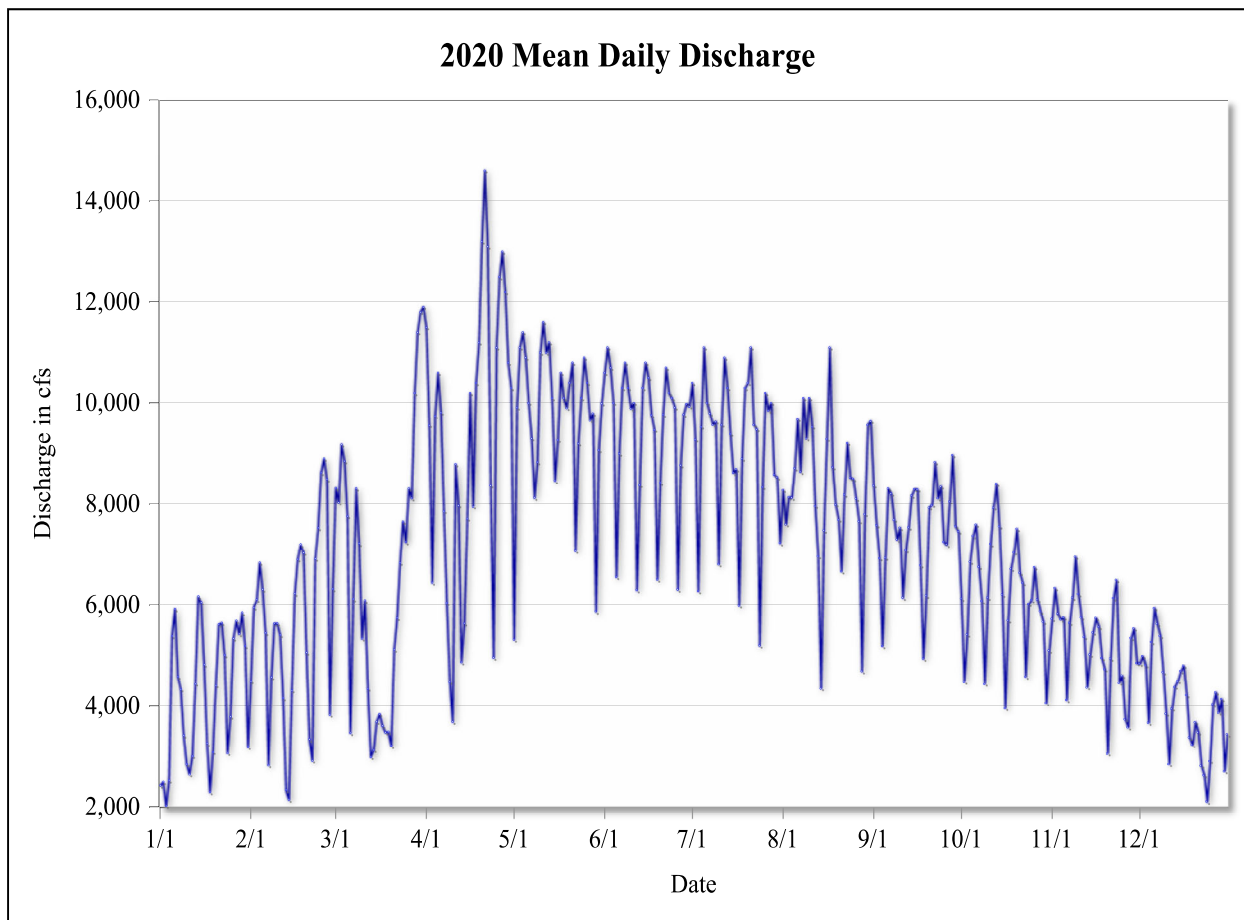
Drainage Area—184,400 mi².

Period of Record—January 1, 2005 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation with a Sutron multiple interface shaft encoder (Model 56-0540-400-DTR). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 16,400 cfs, Mar. 26, 2014; minimum daily discharge, 1,700 cfs, Dec. 23, 2011; maximum hourly discharge, 16,805 cfs, Mar. 27, 2014 at 11:00; minimum hourly discharge, 1,468 cfs, Dec. 24, 2014 at 08:00.

Remarks—None.



Colorado River at Taylor Ferry

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2,430	4,490	8,320	11,500	5,320	10,600	10,400	8,280	8,370	6,130	5,730	4,840
2	2,500	5,950	8,030	9,560	9,910	11,100	9,280	7,600	7,580	4,480	6,340	4,990
3	2,020	6,110	9,180	6,450	11,100	10,700	6,280	8,140	6,930	5,420	5,830	4,810
4	2,530	6,840	8,850	9,740	11,400	10,000	9,530	8,130	5,190	6,860	5,720	3,670
5	5,390	6,310	7,760	10,600	10,900	6,560	11,100	8,710	6,940	7,370	5,760	5,270
6	5,920	5,450	3,470	9,810	10,000	9,000	10,000	9,680	8,310	7,590	4,120	5,940
7	4,580	2,830	6,120	7,860	9,300	10,300	9,790	8,640	8,210	6,760	5,650	5,630
8	4,330	4,570	8,310	6,040	8,130	10,800	9,570	10,100	7,690	6,080	6,150	5,390
9	3,420	5,640	7,220	4,480	8,830	10,300	9,630	9,300	7,300	4,440	6,960	4,670
10	2,850	5,640	5,340	3,690	11,000	9,890	6,810	10,100	7,530	6,150	6,220	3,850
11	2,650	5,410	6,090	8,790	11,600	10,000	9,570	9,530	6,150	7,210	5,760	2,850
12	3,010	4,160	4,340	7,970	11,000	6,300	10,900	7,960	7,090	7,930	5,370	3,950
13	4,440	2,340	2,990	4,870	11,200	8,380	10,300	6,970	7,540	8,400	4,370	4,380
14	6,170	2,150	3,130	5,640	10,100	10,300	9,390	4,350	8,170	7,560	5,020	4,490
15	6,050	4,310	3,690	7,710	8,460	10,800	8,620	7,480	8,300	6,210	5,460	4,690
16	4,820	6,230	3,840	10,200	9,270	10,500	8,690	9,290	8,290	3,960	5,750	4,800
17	3,260	6,910	3,610	7,950	10,600	9,760	5,990	11,100	6,790	5,700	5,570	4,220
18	2,300	7,200	3,480	10,400	10,100	9,470	8,900	8,730	4,940	6,720	4,950	3,380
19	3,090	7,040	3,490	11,200	9,900	6,510	10,300	7,990	6,190	7,050	4,730	3,230
20	4,410	5,060	3,210	13,200	10,400	8,420	10,400	7,690	7,930	7,510	3,060	3,680
21	5,620	3,340	5,120	14,600	10,800	9,770	11,100	6,670	7,980	6,640	4,940	3,480
22	5,650	2,920	5,750	13,100	7,080	10,700	9,570	8,190	8,830	6,440	6,140	2,820
23	5,010	6,920	6,840	8,370	9,200	10,200	9,480	9,210	8,120	4,580	6,500	2,630
24	3,070	7,530	7,650	4,960	10,100	10,100	5,200	8,520	8,350	6,020	4,460	2,110
25	3,790	8,620	7,250	11,100	10,900	9,910	8,340	8,500	7,250	6,100	4,600	2,910
26	5,340	8,900	8,310	12,500	10,400	6,310	10,200	8,110	7,200	6,750	3,740	4,030
27	5,690	8,490	8,120	13,000	9,660	8,770	9,850	7,660	8,050	6,110	3,580	4,270
28	5,430	3,830	10,200	12,200	9,790	9,770	10,000	4,690	8,970	5,880	5,350	3,870
29	5,850	6,320	11,400	10,800	5,880	9,980	8,580	7,800	7,560	5,670	5,540	4,140
30	5,190		11,800	10,300	9,070	9,930	8,530	9,570	7,460	4,060	4,850	2,710
31	3,190		11,900		9,990		7,230	9,640		5,100		3,440
Total	130,012	161,511	204,830	278,698	301,457	285,145	283,508	258,377	225,204	192,865	158,249	125,157
Mean	4,194	5,569	6,607	9,290	9,724	9,505	9,145	8,335	7,507	6,221	5,275	4,037
Max	6,170	8,900	11,900	14,600	11,600	11,100	11,100	11,100	8,970	8,400	6,960	5,940
Min	2,020	2,150	2,990	3,690	5,320	6,300	5,200	4,350	4,940	3,960	3,060	2,110
Ac-ft	257,876	320,352	406,275	552,790	597,931	565,576	562,330	512,483	446,685	382,542	313,883	248,246

Calendar Year Summary

Annual Total 2,605,013 Annual Mean 7,118 Daily Max 14,600 Daily Min 2,020 Annual Ac-ft 5,166,968

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 21	19:00	234.82	15,144

Minimum Discharge

Date	Time	Elev	Discharge
Feb. 14	23:00	225.36	1,797

Colorado River Below Oxbow Bridge

Location—Latitude 33° 22.060', longitude -114° 42.195', in the NE¼ NE¼ of Section 25, T. 9 S., R. 21 E., San Bernardino meridian, Imperial County, California, Hydrologic Unit 15030104, river mi 98.5, 18.0 mi south of Blythe, California, 46.3 mi north of Yuma, Arizona, and 93.5 river mi downstream of Parker Dam.

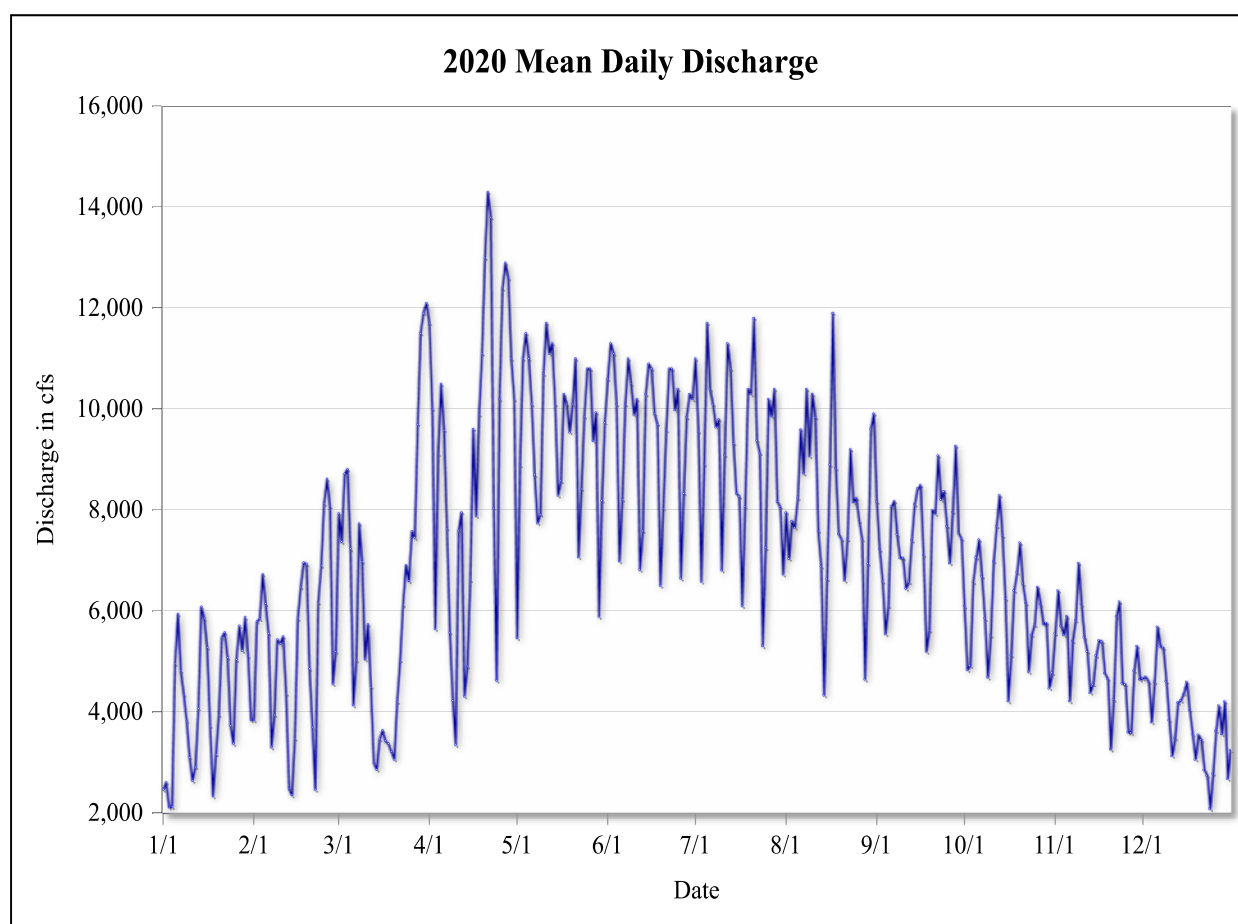
Drainage Area—184,700 mi².

Period of Record—January 1, 2011 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron stage discharge recorder shaft encoder (Model SDR-0001). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 17,100 cfs, Mar. 27, 2014; minimum daily discharge, 1,200 cfs, Dec. 24, 2015; maximum hourly discharge, 17,439 cfs, Mar. 27, 2014 at 15:00; minimum hourly discharge, 1,017 cfs, Dec. 24, 2015 at 08:00.

Remarks—None.



Colorado River Below Oxbow Bridge

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2,470	3,840	7,930	11,700	5,470	10,600	11,000	7,950	8,170	6,100	5,560	4,670
2	2,610	5,800	7,380	10,000	8,890	11,300	9,550	7,040	7,230	4,840	6,410	4,700
3	2,120	5,860	8,720	5,650	11,000	11,100	6,590	7,780	6,590	4,920	5,710	4,600
4	2,130	6,730	8,810	9,110	11,500	10,100	8,910	7,650	5,550	6,580	5,530	3,800
5	4,960	6,150	7,240	10,500	11,000	6,990	11,700	8,240	6,110	7,060	5,900	4,600
6	5,940	5,560	4,140	9,580	10,100	8,210	10,400	9,590	8,070	7,420	4,220	5,690
7	4,820	3,310	5,030	7,640	8,700	10,100	10,100	8,730	8,180	6,690	5,410	5,300
8	4,340	3,940	7,730	5,580	7,740	11,000	9,640	10,400	7,520	5,860	5,820	5,270
9	3,820	5,440	6,980	4,230	7,910	10,500	9,800	9,070	7,050	4,690	6,950	4,610
10	3,100	5,360	5,050	3,360	10,700	9,890	6,810	10,300	7,050	5,520	6,140	3,840
11	2,640	5,500	5,740	7,590	11,700	10,200	9,090	9,840	6,450	6,990	5,480	3,130
12	2,910	4,360	4,490	7,950	11,100	6,820	11,300	7,590	6,580	7,680	5,200	3,490
13	4,070	2,490	2,990	4,310	11,300	7,590	10,800	6,880	7,410	8,290	4,380	4,190
14	6,090	2,360	2,860	4,910	10,100	10,300	9,320	4,330	8,120	7,500	4,550	4,230
15	5,860	3,480	3,470	6,620	8,290	10,900	8,330	6,640	8,430	6,250	5,120	4,360
16	5,280	5,860	3,640	9,600	8,580	10,800	8,270	8,900	8,500	4,220	5,420	4,600
17	3,730	6,480	3,430	7,880	10,300	9,910	6,110	11,900	7,110	5,130	5,400	4,040
18	2,340	6,960	3,380	9,890	10,100	9,700	8,070	8,830	5,200	6,410	4,770	3,560
19	3,160	6,930	3,220	11,100	9,540	6,510	10,400	7,530	5,620	6,770	4,660	3,060
20	3,940	4,860	3,060	13,000	10,100	8,030	10,300	7,430	8,000	7,360	3,270	3,550
21	5,480	3,700	4,210	14,300	11,000	9,570	11,800	6,610	7,920	6,540	4,250	3,450
22	5,580	2,470	5,030	13,800	7,070	10,800	9,380	7,430	9,080	6,160	5,900	2,850
23	5,080	6,180	6,130	8,040	8,420	10,800	9,130	9,200	8,210	4,800	6,190	2,740
24	3,730	6,900	6,910	4,630	9,850	9,980	5,310	8,160	8,370	5,530	4,570	2,090
25	3,380	8,130	6,600	10,200	10,800	10,400	7,260	8,240	7,680	5,730	4,550	2,780
26	5,040	8,620	7,580	12,400	10,800	6,650	10,200	7,780	6,950	6,480	3,600	3,630
27	5,710	8,080	7,460	12,900	9,370	8,330	9,860	7,430	7,960	6,140	3,590	4,130
28	5,220	4,560	9,700	12,600	9,930	9,840	10,400	4,650	9,270	5,740	4,820	3,570
29	5,880	5,200	11,500	11,000	5,900	10,300	8,170	6,940	7,550	5,770	5,310	4,210
30	5,110		11,900	10,200	8,190	10,200	8,070	9,600	7,440	4,470	4,650	2,680
31	3,840		12,100		9,730		6,730	9,910		4,780		3,250
Total	130,379	155,080	194,396	270,271	295,219	287,493	282,722	252,592	223,375	188,409	153,327	120,667
Mean	4,206	5,348	6,271	9,009	9,523	9,583	9,120	8,148	7,446	6,078	5,111	3,892
Max	6,090	8,620	12,100	14,300	11,700	11,300	11,800	11,900	9,270	8,290	6,950	5,690
Min	2,120	2,360	2,860	3,360	5,470	6,510	5,310	4,330	5,200	4,220	3,270	2,090
Ac-ft	258,602	307,597	385,579	536,075	585,558	570,234	560,771	501,009	443,058	373,704	304,120	239,339

Calendar Year Summary

Annual Total 2,553,930 Annual Mean 6,978 Daily Max 14,300 Daily Min 2,090 Annual Ac-ft 5,065,646

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 21	22:00	223.58	14,974

Minimum Discharge

Date	Time	Elev	Discharge
Jan. 4	08:00	215.93	1,865

Colorado River at Cibola Gage

Location—Latitude 33° 13.256', longitude -114° 40.354', in the NE¼ SW¼ of Section 30, T. 2 S., R. 23 W., Gila-Salt River meridian, La Paz County, Arizona, Hydrologic Unit 15030104, river mi 86.9, 27.4 mi south of Blythe, California, 36.2 mi north of Yuma, Arizona, and 105.1 river mi downstream of Parker Dam.

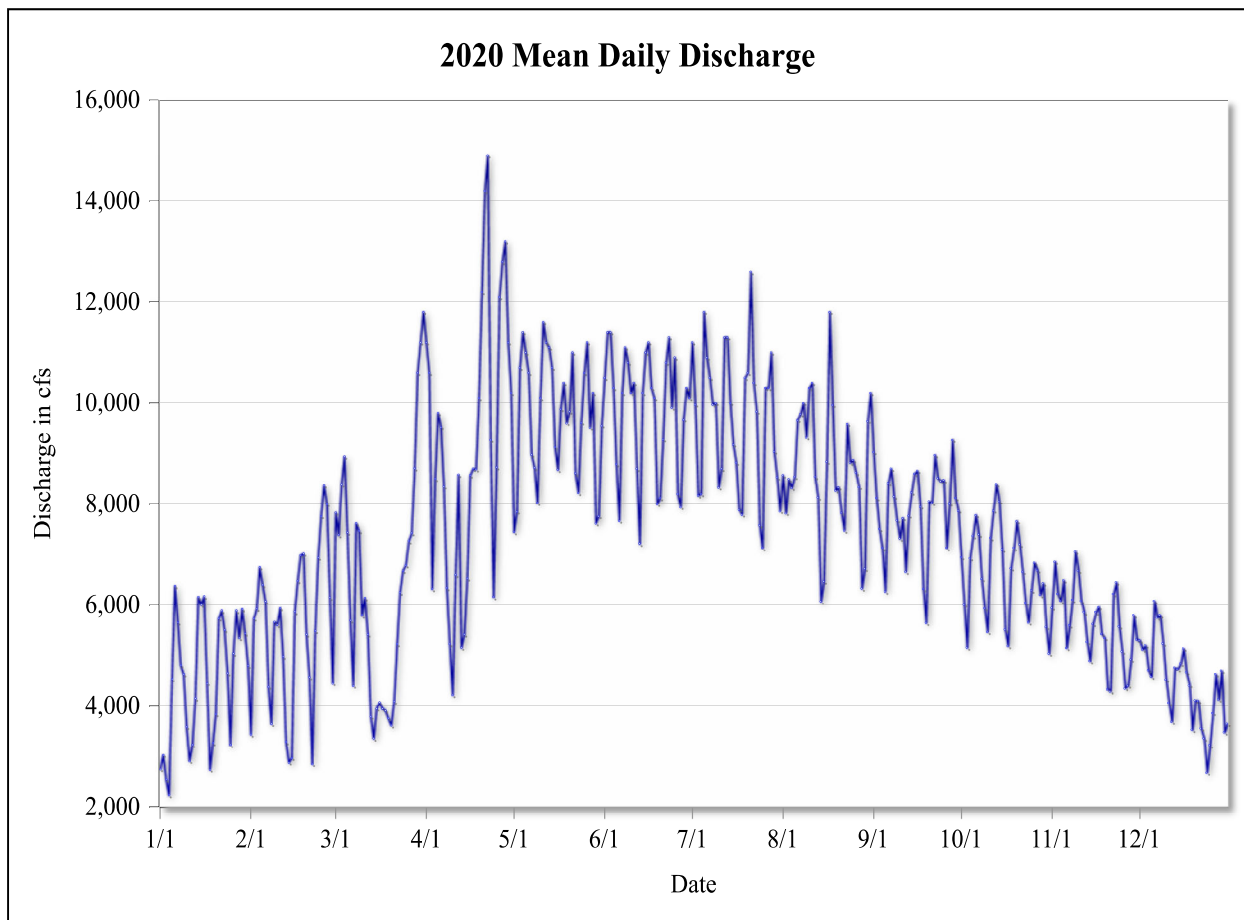
Drainage Area—185,100 mi².

Period of Record—January 1, 2005 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron multiple interface shaft encoder (Model 56-0540-400-DTR). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 17,300 cfs, Mar. 27, 2014; minimum daily discharge, 2,110 cfs, Jan. 9, 2019; maximum hourly discharge, 17,615 cfs, Mar. 27, 2014 at 19:00; minimum hourly discharge, 1,978 cfs, Jan. 9, 2019 at 18:00.

Remarks—None.



Colorado River at Cibola Gage

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2,750	3,440	7,830	11,200	7,450	10,500	11,200	8,570	9,030	6,950	5,950	5,300
2	3,030	5,740	7,390	10,600	7,850	11,400	9,970	7,820	8,120	6,010	6,860	5,120
3	2,550	5,930	8,390	6,320	10,700	11,400	8,170	8,490	7,510	5,160	6,220	5,200
4	2,240	6,750	8,940	8,500	11,400	10,300	8,200	8,320	7,130	6,930	6,080	4,710
5	4,530	6,400	7,440	9,800	11,000	8,790	11,800	8,540	6,270	7,370	6,490	4,580
6	6,380	6,070	5,700	9,520	10,600	7,670	10,900	9,660	8,410	7,780	5,150	6,080
7	5,660	4,380	4,400	8,350	8,980	10,200	10,500	9,780	8,700	7,400	5,600	5,760
8	4,810	3,650	7,620	6,340	8,720	11,100	9,970	10,000	8,150	6,520	6,100	5,800
9	4,630	5,670	7,470	5,230	8,020	10,800	10,000	9,320	7,680	5,940	7,060	5,240
10	3,590	5,610	5,800	4,220	10,100	10,200	8,330	10,300	7,320	5,470	6,680	4,520
11	2,910	5,940	6,140	6,600	11,600	10,400	8,700	10,400	7,720	7,330	6,080	4,060
12	3,230	4,980	5,420	8,580	11,200	8,700	11,300	8,540	6,660	7,870	5,860	3,690
13	4,150	3,290	3,790	5,160	11,100	7,220	11,300	8,130	7,770	8,390	5,270	4,760
14	6,160	2,880	3,360	5,420	10,700	10,200	10,000	6,070	8,230	8,050	4,890	4,730
15	6,010	2,970	3,950	6,530	9,130	11,000	9,180	6,470	8,600	7,100	5,630	4,840
16	6,170	5,870	4,070	8,570	8,680	11,200	8,820	8,840	8,660	5,520	5,860	5,140
17	4,450	6,480	3,950	8,700	9,880	10,300	7,890	11,800	7,950	5,190	5,960	4,670
18	2,740	6,990	3,910	8,690	10,400	10,100	7,790	9,960	6,320	6,730	5,430	4,410
19	3,270	7,020	3,760	10,100	9,600	8,000	10,500	8,270	5,650	7,130	5,350	3,530
20	3,840	5,420	3,620	12,200	9,830	8,120	10,600	8,330	8,050	7,660	4,330	4,110
21	5,740	4,570	4,090	14,200	11,000	9,280	12,600	7,830	8,020	7,200	4,290	4,100
22	5,890	2,850	5,230	14,900	8,610	10,800	10,400	7,480	8,970	6,660	6,220	3,560
23	5,510	5,490	6,250	9,270	8,220	11,300	9,830	9,580	8,510	6,040	6,450	3,360
24	4,650	6,940	6,680	6,160	9,610	9,910	7,580	8,820	8,450	5,660	5,580	2,680
25	3,230	7,760	6,790	8,730	10,600	10,900	7,130	8,870	8,470	6,290	5,080	3,220
26	5,040	8,370	7,270	12,100	11,200	8,200	10,300	8,620	7,130	6,840	4,350	3,860
27	5,890	8,000	7,430	12,800	9,510	7,940	10,300	8,340	8,010	6,690	4,400	4,630
28	5,350	6,150	8,710	13,200	10,200	9,670	11,000	6,330	9,270	6,200	4,920	4,130
29	5,920	4,450	10,600	11,200	7,620	10,300	9,040	6,720	8,120	6,430	5,800	4,700
30	5,440		11,200	10,200	7,760	10,100	8,530	9,640	7,870	5,570	5,320	3,480
31	4,800		11,800		9,550		7,860	10,200		5,040		3,650
Total	140,546	160,029	198,992	273,228	300,551	296,063	299,804	270,060	236,730	205,098	169,257	137,616
Mean	4,534	5,158	6,419	9,108	9,695	9,869	9,671	8,712	7,891	6,616	5,642	4,439
Max	6,380	8,370	11,800	14,900	11,600	11,400	12,600	11,800	9,270	8,390	7,060	6,080
Min	2,240	2,850	3,360	4,220	7,450	7,220	7,130	6,070	5,650	5,040	4,290	2,680
Ac-ft	278,769	317,413	394,694	541,940	596,134	587,232	594,653	535,655	469,548	406,805	335,716	272,957

Calendar Year Summary

Annual Total 2,687,972 Annual Mean 7,344 Daily Max 14,900 Daily Min 2,240 Annual Ac-ft 5,331,516

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 22	10:00	210.05	15,446

Minimum Discharge

Date	Time	Elev	Discharge
Feb. 15	08:00	204.90	2,036

Colorado River at Picacho Park

Location—Latitude 33° 01.522', longitude -114° 36.692', in the SE ¼ of Section 24, T. 13 S., R. 22 E., Gila-Salt River meridian, Imperial County, California, Hydrologic Unit 15030104, river mi 67.8, 40.3 mi south of Blythe, California, 22.5 mi northeast of Yuma, Arizona, and 124.2 mi downstream of Parker Dam.

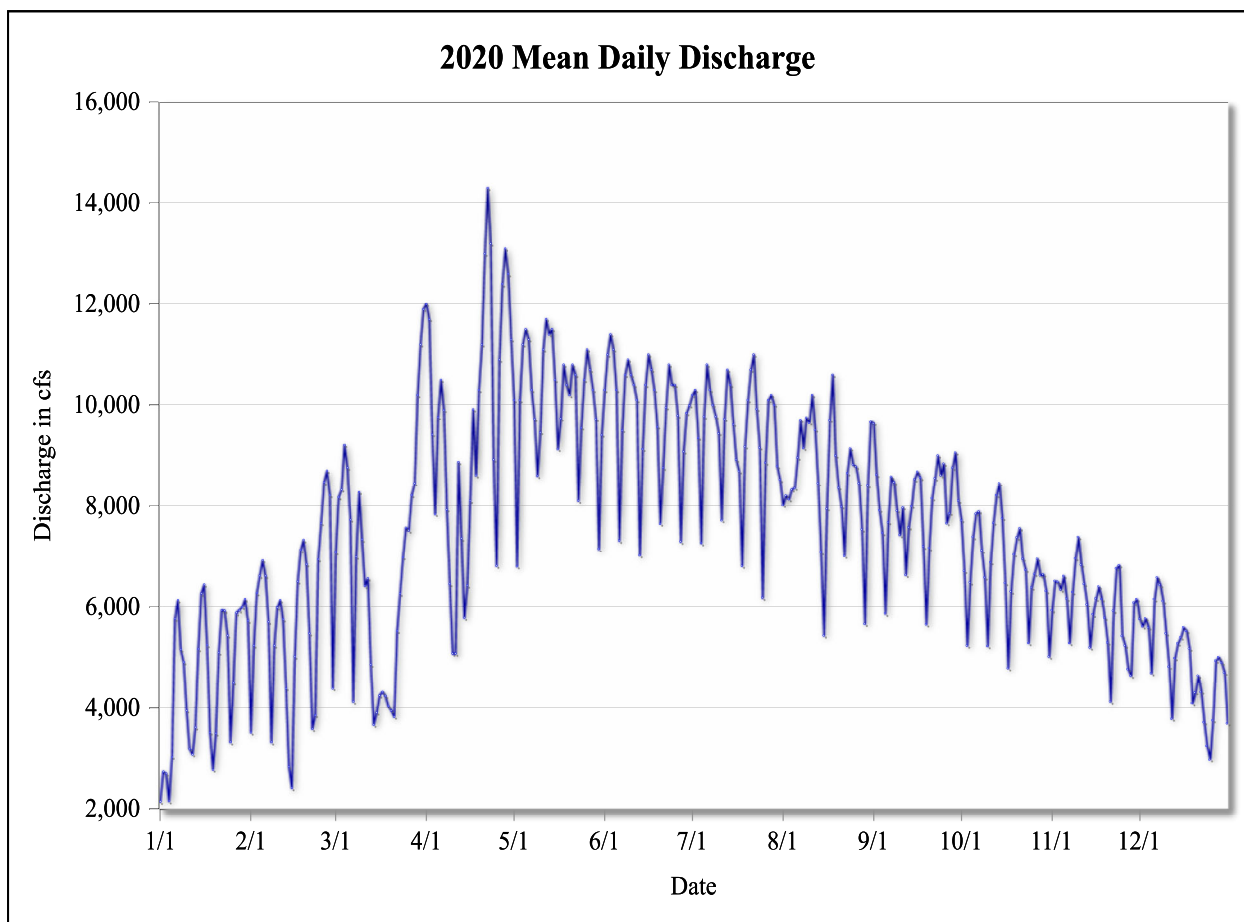
Drainage Area—185,900 mi².

Period of Record—March 27, 2012 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron multiple interface shaft encoder (Model 56-0540-400-DTR). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 16,000 cfs, Mar. 28, 2014; minimum daily discharge, 1,810 cfs, Dec. 23, 2018; maximum hourly discharge, 16,111 cfs, Mar. 28, 2014 at 08:00; minimum hourly discharge 1,740 cfs, Dec. 24, 2013 at 22:00.

Remarks—None.



Colorado River at Picacho Park

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2,150	3,520	7,090	12,000	10,100	10,300	10,200	8,020	9,640	7,720	5,940	5,770
2	2,740	5,240	8,180	11,700	6,810	11,000	10,300	8,210	8,620	6,720	6,520	5,620
3	2,700	6,280	8,330	9,420	10,100	11,400	9,350	8,140	7,920	5,240	6,500	5,780
4	2,160	6,620	9,210	7,840	11,200	11,100	7,270	8,330	7,470	6,490	6,350	5,600
5	3,030	6,930	8,760	9,760	11,500	10,300	9,770	8,360	5,880	7,390	6,620	4,690
6	5,770	6,620	7,730	10,500	11,300	7,320	10,800	8,960	7,680	7,850	6,170	6,160
7	6,140	5,710	4,130	9,900	10,300	9,500	10,300	9,700	8,580	7,890	5,290	6,590
8	5,160	3,330	7,000	7,930	9,720	10,600	10,000	9,150	8,470	7,120	6,300	6,440
9	4,910	5,240	8,280	6,460	8,600	10,900	9,770	9,750	7,910	6,590	6,970	6,120
10	3,950	5,990	7,340	5,080	9,460	10,600	9,440	9,650	7,430	5,230	7,390	5,480
11	3,190	6,140	6,420	5,080	11,100	10,400	7,720	10,200	7,970	6,890	6,840	4,820
12	3,080	5,760	6,570	8,870	11,700	10,100	9,720	9,510	6,640	7,670	6,460	3,790
13	3,620	4,390	4,860	7,360	11,400	7,030	10,700	8,450	7,580	8,220	6,050	4,990
14	5,170	2,840	3,670	5,790	11,500	9,130	10,400	7,090	8,000	8,450	5,200	5,280
15	6,270	2,420	3,910	6,430	10,500	10,400	9,620	5,440	8,530	7,760	5,860	5,400
16	6,450	5,020	4,250	8,110	9,130	11,000	8,920	7,950	8,680	6,480	6,170	5,600
17	5,250	6,510	4,320	9,910	9,730	10,700	8,690	9,700	8,560	4,790	6,410	5,530
18	3,520	7,130	4,240	8,610	10,800	10,300	6,820	10,600	7,200	6,310	6,160	5,180
19	2,780	7,330	4,040	10,300	10,400	9,570	9,180	9,000	5,660	7,050	5,790	4,100
20	3,500	6,850	3,950	11,200	10,200	7,650	10,100	8,370	7,170	7,380	5,300	4,310
21	5,100	5,480	3,830	13,000	10,800	8,760	10,700	7,990	8,160	7,560	4,130	4,640
22	5,940	3,590	5,530	14,300	10,600	9,950	11,000	7,020	8,550	6,960	5,930	4,320
23	5,930	3,860	6,270	13,200	8,110	10,800	9,920	8,650	9,000	6,740	6,770	3,720
24	5,440	6,950	6,990	8,920	9,550	10,400	9,160	9,140	8,610	5,290	6,830	3,250
25	3,330	7,660	7,570	6,820	10,500	10,400	6,190	8,820	8,840	6,390	5,430	2,980
26	4,500	8,470	7,520	10,900	11,100	9,790	8,860	8,780	7,660	6,660	5,240	3,760
27	5,890	8,700	8,220	12,400	10,700	7,300	10,100	8,450	7,860	6,960	4,770	4,940
28	5,940	8,220	8,450	13,100	10,300	9,080	10,200	7,540	8,760	6,630	4,640	5,010
29	6,000	4,390	10,200	12,600	9,720	9,840	10,000	5,670	9,060	6,650	6,090	4,900
30	6,160		11,200	11,300	7,150	9,990	8,790	8,410	8,110	6,320	6,160	4,700
31	5,730		11,900		9,410		8,520	9,670		5,020		3,700
Total	141,497	167,195	209,945	288,873	313,384	295,300	292,678	264,706	240,178	210,442	180,266	153,141
Mean	4,564	5,765	6,772	9,629	10,110	9,843	9,441	8,539	8,006	6,788	6,009	4,940
Max	6,450	8,700	11,900	14,300	11,700	11,400	11,000	10,600	9,640	8,450	7,390	6,590
Min	2,150	2,420	3,670	5,080	6,810	7,030	6,190	5,440	5,660	4,790	4,130	2,980
Ac-ft	280,656	331,627	416,421	572,971	621,589	585,720	580,519	525,036	476,385	417,405	357,552	303,750

Calendar Year Summary

Annual Total 2,757,605 Annual Mean 7,534 Daily Max 14,300 Daily Min 2,150 Annual Ac-ft 5,469,630

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 23	00:00	193.83	14,737

Minimum Discharge

Date	Time	Elev	Discharge
Jan. 5	03:00	187.35	1,932

Colorado River at Martinez Lake

Location—Latitude 32° 59.847', longitude -114° 29.821', in the NW¼ NE¼ of Section 14, T. 5 S., R. 22 W., Gila-Salt River meridian, Yuma County, Arizona, Hydrologic Unit 15030104, river mi 59.4, 42.6 mi south of Blythe, California, 21.9 mi north of Yuma, Arizona, and 132.6 mi downstream of Parker Dam.

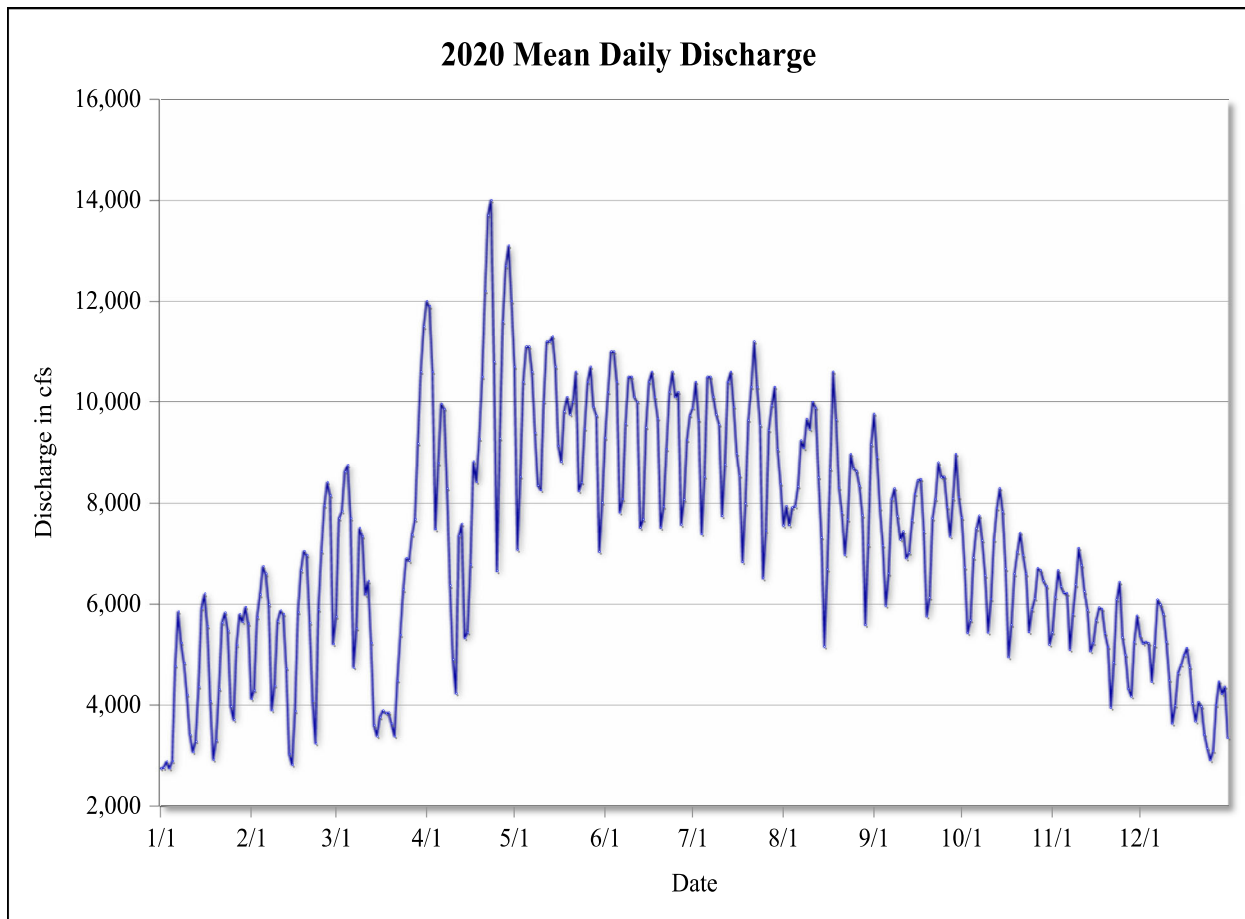
Drainage Area—186,200 mi².

Period of Record—January 1, 2012 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation measured with a Sutron multiple interface shaft encoder (Model 56-0540-400-DTR). Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 14,500 cfs, Mar. 28, 2014; minimum daily discharge, 2,040 cfs, Dec. 29, 2018; maximum hourly discharge, 14,628 cfs, Mar. 28, 2014 at 17:00; minimum hourly discharge 1,987 cfs, Dec. 30, 2018 at 17:00.

Remarks—The discharge record was rated poor from Feb. 14, 2020 at 13:00 to Feb. 16, 2020 at 0500, Feb. 23, 2020 at 05:00 to Feb. 23, 2020 at 14:00, and Dec. 24, 2020 at 13:00 to Dec. 26, 2020 at 21:00 as visual observation indicates the stilling well was no longer connected to the channel at low water.



Colorado River at Martinez Lake

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	2,750	4,120	5,750	12,000	10,700	9,290	9,880	7,560	9,760	7,710	5,440	5,370
2	2,760	4,290	7,700	11,900	7,080	10,200	10,400	7,940	8,910	6,730	6,140	5,220
3	2,880	5,740	7,840	10,600	8,520	11,000	9,640	7,570	7,900	5,430	6,670	5,250
4	2,750	6,190	8,620	7,490	10,400	11,000	7,390	7,910	7,160	5,680	6,350	5,220
5	2,890	6,750	8,750	8,790	11,100	10,400	8,520	7,940	5,970	6,920	6,230	4,460
6	4,770	6,600	7,700	9,960	11,100	7,820	10,500	8,330	6,610	7,500	6,220	5,180
7	5,850	5,990	4,740	9,860	10,600	8,080	10,500	9,240	8,080	7,750	5,100	6,090
8	5,230	3,900	5,520	8,290	9,390	9,570	10,100	9,090	8,290	7,260	5,800	5,990
9	4,830	4,380	7,510	6,370	8,350	10,500	9,750	9,660	7,740	6,570	6,390	5,800
10	4,200	5,660	7,340	4,900	8,260	10,500	9,550	9,460	7,280	5,440	7,110	5,250
11	3,410	5,870	6,200	4,230	10,000	10,100	7,750	10,000	7,440	6,100	6,770	4,490
12	3,070	5,800	6,460	7,350	11,200	10,000	8,760	9,880	6,910	7,270	6,250	3,640
13	3,280	4,720	5,230	7,590	11,200	7,520	10,400	8,510	7,020	7,900	5,880	3,990
14	4,360	3,030	3,600	5,330	11,300	7,680	10,600	7,320	7,660	8,290	5,070	4,630
15	5,920	2,820	3,380	5,440	10,700	9,500	9,900	5,160	8,180	7,830	5,230	4,790
16	6,210	3,880	3,760	6,780	9,130	10,400	8,980	6,690	8,450	6,700	5,680	4,990
17	5,560	5,840	3,890	8,820	8,820	10,600	8,540	8,670	8,470	4,950	5,930	5,130
18	4,070	6,670	3,840	8,420	9,810	10,100	6,840	10,600	7,440	5,590	5,900	4,740
19	2,920	7,050	3,850	9,270	10,100	9,670	7,990	9,650	5,760	6,600	5,420	4,030
20	3,300	6,970	3,630	10,500	9,750	7,520	9,640	8,300	6,130	7,030	5,150	3,680
21	4,310	5,630	3,380	12,200	10,000	7,930	10,300	7,810	7,700	7,410	3,950	4,060
22	5,630	4,080	4,480	13,700	10,600	9,070	11,200	6,980	8,080	6,970	4,840	3,970
23	5,830	3,240	5,390	14,000	8,240	10,200	10,300	7,680	8,800	6,600	6,090	3,410
24	5,470	5,890	6,290	10,800	8,410	10,600	9,540	8,970	8,510	5,450	6,440	3,140
25	3,970	7,040	6,910	6,660	9,470	10,100	6,520	8,680	8,520	5,890	5,340	2,910
26	3,710	7,950	6,860	9,280	10,400	10,200	7,450	8,630	7,920	6,110	4,990	3,090
27	5,190	8,410	7,370	11,600	10,700	7,580	9,440	8,340	7,340	6,710	4,320	4,000
28	5,800	8,150	7,680	12,700	9,900	8,070	9,930	7,760	8,090	6,670	4,170	4,460
29	5,650	5,210	9,180	13,100	9,730	9,250	10,300	5,590	8,970	6,460	5,250	4,220
30	5,940		10,600	12,000	7,040	9,730	9,060	7,170	8,120	6,360	5,770	4,360
31	5,610		11,500		8,010		8,380	9,160		5,200		3,350
Total	138,146	161,857	194,907	279,887	300,027	284,182	287,984	256,258	233,218	205,086	169,895	138,896
Mean	4,456	5,581	6,287	9,330	9,678	9,473	9,290	8,266	7,774	6,616	5,663	4,481
Max	6,210	8,410	11,500	14,000	11,300	11,000	11,200	10,600	9,760	8,290	7,110	6,090
Min	2,750	2,820	3,380	4,230	7,040	7,520	6,520	5,160	5,760	4,950	3,950	2,910
Ac-ft	274,008	321,038	386,593	555,149	595,094	563,666	571,208	508,280	462,581	406,783	336,982	275,497

Calendar Year Summary

Annual Total 2,650,342 Annual Mean 7,241 Daily Max 14,000 Daily Min 2,750 Annual Ac-ft 5,256,878

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 23	08:00	187.87	14,387

Minimum Discharge

Date	Time	Elev	Discharge
Jan. 5	16:00	182.44	2,739



Diversion and Return Gaging Stations

Fort Mojave Tribe-Nevada

Location—Latitude 35° 02.940', longitude -114° 37.360', in the NW¼ NW¼ of Section 27, T. 33 S., R. 66 E., Mount Diablo meridian, Clark County, Nevada, Hydrologic Unit 15030101, river mi 261.0, 4.8 mi south of Bullhead City, Arizona, 14.5 mi north of Needles, California, and 14.9 river mi downstream of Davis Dam.

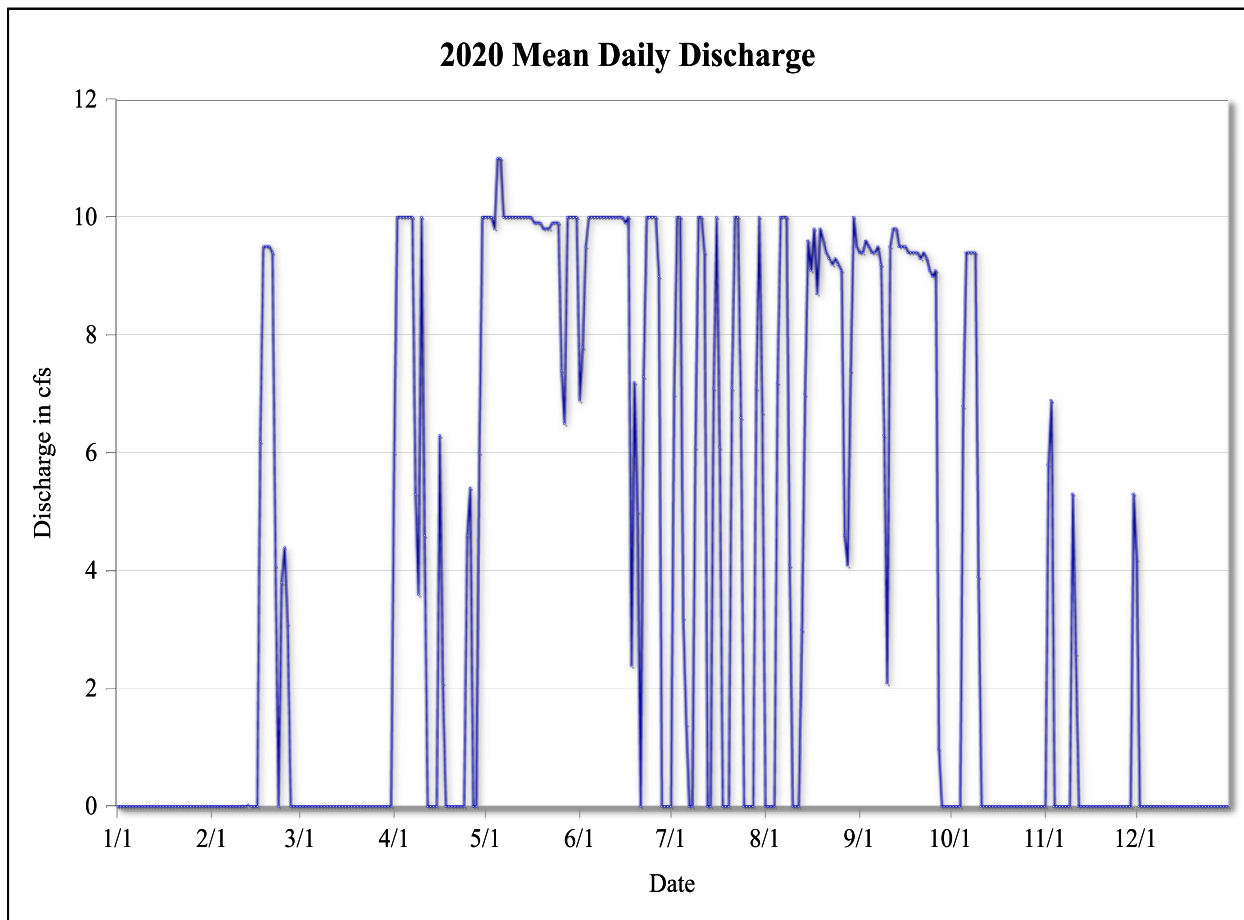
Drainage Area—Not applicable.

Period of Record—January 1, 2006 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records discharge values measured with a SeaMetrics insertion magnetic flow meter (Model EX-201-S) mounted in the discharge side of the diversion pipe. Discharge is calculated using a discharge-index relationship.

Extremes—Maximum daily discharge, 15 cfs, Apr. 15, 2008; minimum daily discharge, no diversion at times; maximum hourly discharge, 16 cfs, Feb. 14, 2008 at 13:00; minimum hourly discharge, no diversion at times.

Remarks—The discharge record was estimated for several short duration periods due to equipment failure.



Fort Mojave Tribe-Nevada

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	0	6.0	10	6.9	0	0	9.4	0	0	4.2
2	0	0	0	10	10	7.8	7.0	0	9.4	0	5.8	0
3	0	0	0	10	10	9.5	10	0	9.6	0	6.9	0
4	0	0	0	10	9.8	10	10	0	9.5	0	0	0
5	0	0	0	10	11	10	3.2	7.2	9.4	6.8	0	0
6	0	0	0	10	11	10	1.4	10	9.4	9.4	0	0
7	0	0	0	10	10	10	0	10	9.5	9.4	0	0
8	0	0	0	5.3	10	10	0	10	9.2	9.4	0	0
9	0	0	0	3.6	10	10	6.1	4.1	6.3	9.4	0	0
10	0	0	0	10	10	10	10	0	2.1	3.9	5.3	0
11	0	0	0	4.6	10	10	10	0	9.5	0	2.6	0
12	0	0	0	0	10	10	9.4	0	9.8	0	0	0
13	0	0.03	0	0	10	10	0	3.0	9.8	0	0	0
14	0	0	0	0	10	10	0	7.0	9.5	0	0	0
15	0	0	0	0	10	10	7.1	9.6	9.5	0	0	0
16	0	0	0	6.3	10	9.9	10	9.1	9.5	0	0	0
17	0	6.2	0	2.1	9.9	10	6.1	9.8	9.4	0	0	0
18	0	9.5	0	0	9.9	2.4	0	8.7	9.4	0	0	0
19	0	9.5	0	0	9.9	7.2	0	9.8	9.4	0	0	0
20	0	9.5	0	0	9.8	5.0	0	9.6	9.4	0	0	0
21	0	9.4	0	0	9.8	0	7.1	9.4	9.3	0	0	0
22	0	4.1	0	0	9.8	7.3	10	9.3	9.4	0	0	0
23	0	0	0	0	9.9	10	10	9.2	9.3	0	0	0
24	0	3.8	0	0	9.9	10	6.6	9.3	9.1	0	0	0
25	0	4.4	0	4.6	9.9	10	0	9.2	9.0	0	0	0
26	0	3.1	0	5.4	7.4	10	0	9.1	9.1	0	0	0
27	0	0	0	0	6.5	9.0	0	4.6	0.97	0	0	0
28	0	0	0	0	10	0	0	4.1	0	0	0	0
29	0	0	0	6.0	10	0	7.1	7.4	0	0	0	0
30	0		0	10	10	0	10	10	0	0	5.3	0
31	0		0		10		6.7	9.5		0		0
Total	0	59.42	0	124.5	309.3	238.1	148.2	199.5	234.90	48.3	26.0	4.2
Mean	0	2.05	0	4.15	9.98	7.94	4.78	6.44	7.83	1.56	0.87	0.13
Max	0	9.5	0	10	11	10	10	10	9.8	9.4	6.9	4.2
Min	0	0	0	0	6.5	0	0	0	0	0	0	0
Ac-ft	0	118	0	247	614	472	294	396	466	96	51	8.3

Calendar Year Summary

Annual Total 1,392.39 Annual Mean 3.80 Daily Max 11 Daily Min 0 Annual Ac-ft 2,762

Maximum Discharge

Date	Time	GH	Discharge
May 6	00:00	N/A	11

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	N/A	0

Bold values indicate the daily value was derived from hourly data that contained 6 or more consecutive hours of estimated record.

Fort Mojave Tribe-North Casino

Location—Latitude 35° 01.749', longitude -114° 38.101', in the SE¼ SE¼ of Section 17, T. 19 N., R. 22 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, river mi 259.4, 6.3 mi south of Bullhead City, Arizona, 13.1 mi north of Needles, California, and 16.5 river mi downstream of Davis Dam.

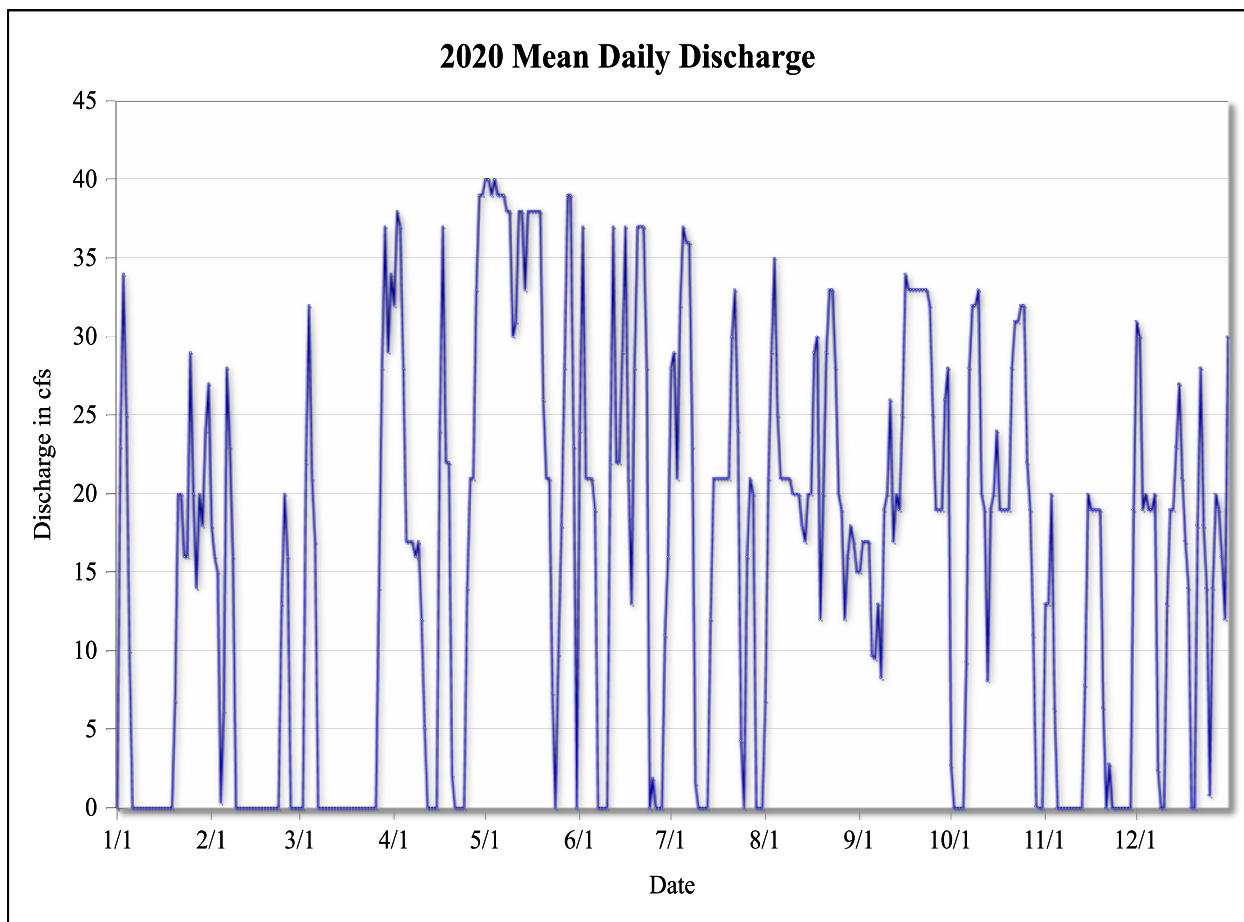
Drainage Area—Not applicable.

Period of Record—February 23, 2006 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water stage and velocity measured with a SonTek/YSI Argonaut-SW current meter. Discharge is calculated using a velocity-index relationship.

Extremes—Maximum daily discharge, 48 cfs, Mar. 25, 2014; minimum daily discharge, no diversion at times; maximum hourly discharge, 51 cfs, Apr. 23, 2014 at 18:00; minimum hourly discharge, no diversion at times.

Remarks—None.



Fort Mojave Tribe-North Casino

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	18	0	32	40	24	28	6.8	15	2.7	13	31
2	23	16	0	38	40	37	29	21	17	0	13	30
3	34	15	22	37	39	21	21	29	17	0	20	19
4	25	0.38	32	28	40	21	32	35	17	0	6.3	20
5	10	6.2	21	17	39	21	37	25	9.7	0	0	19
6	0	28	17	17	39	19	36	21	9.5	9.3	0	19
7	0	23	0	17	39	0	36	21	13	28	0	20
8	0	16	0	16	38	0	23	21	8.3	32	0	2.4
9	0	0	0	17	38	0	1.6	21	19	32	0	0
10	0	0	0	12	30	0	0	20	20	33	0	0
11	0	0	0	5.1	31	22	0	20	26	20	0	13
12	0	0	0	0	38	37	0	20	17	19	0	19
13	0	0	0	0	38	22	0	18	20	8.1	0	19
14	0	0	0	0	33	22	12	17	19	19	7.8	23
15	0	0	0	0	38	29	21	20	25	20	20	27
16	0	0	0	24	38	37	21	20	34	24	19	21
17	0	0	0	37	38	21	21	29	33	19	19	17
18	0	0	0	22	38	13	21	30	33	19	19	14
19	0	0	0	22	38	28	21	12	33	19	19	0
20	6.8	0	0	2.1	26	37	21	20	33	19	6.4	0
21	20	0	0	0	21	37	30	29	33	28	0	18
22	20	0	0	0	21	37	33	33	33	31	2.8	28
23	16	0	0	0	7.3	28	24	33	33	31	0	18
24	16	13	0	0	0	0	4.3	28	32	32	0	14
25	29	20	0	14	9.8	1.9	0	20	25	32	0	0.82
26	20	16	0	21	18	0	16	19	19	22	0	14
27	14	0	14	21	28	0	21	12	19	19	0	20
28	20	0	28	33	39	0	20	16	19	11	0	19
29	18	0	37	39	39	11	0	18	26	0.10	0	16
30	24		29	39	23	16	0	17	28	0	19	12
31	27		34		0		0	15		0		30
Total	324.5	171.70	234	512.7	947.4	543.8	530.3	666.6	683.9	527.16	183.4	504.21
Mean	10.5	5.92	7.55	17.1	30.6	18.1	17.1	21.5	22.8	17.0	6.11	16.3
Max	34	28	37	39	40	37	37	35	34	33	20	31
Min	0	0	0	0	0	0	0	6.8	8.3	0	0	0
Ac-ft	644	341	464	1,017	1,879	1,079	1,052	1,322	1,356	1,046	364	1,000

Calendar Year Summary

Annual Total 5,829.84 Annual Mean 15.9 Daily Max 40 Daily Min 0 Annual Ac-ft 11,563

Maximum Discharge

Date	Time	GH	Discharge
May 5	01:00	3.33	41

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	0.00	0

Fort Mojave Tribe-North Casino (North Event Center)

Location—Latitude 35° 01.749', longitude -114° 38.101', in the SE¼ SE¼ of Section 17, T. 19 N., R. 22 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, river mi 259.4, 6.3 mi south of Bullhead City, Arizona, 13.1 mi north of Needles, California, and 16.5 river mi downstream of Davis Dam.

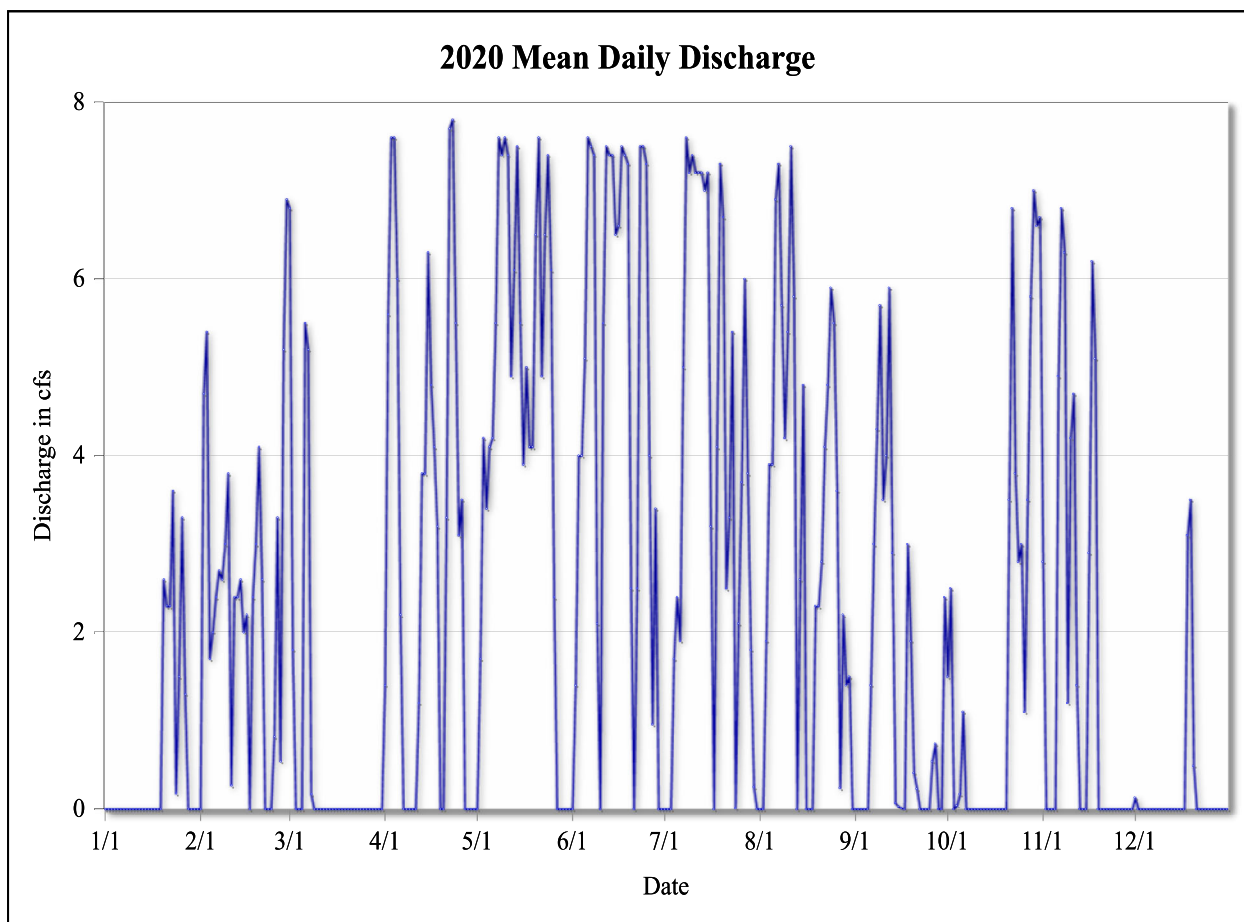
Drainage Area—Not applicable.

Period of Record—September 9, 2011 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records discharge measured with a Mace Series 3 FloPro flow meter mounted in the discharge side of the diversion pipe. Discharge is calculated using a discharge-index relationship.

Extremes—Maximum daily discharge, 7.8 cfs, Apr. 23, 2020; minimum daily discharge, no diversion at times; maximum hourly discharge, 9.8 cfs, Oct. 22, 2011 at 23:00; minimum hourly discharge, no diversion at times.

Remarks—The discharge record was estimated from Aug. 19, 2020 to Aug. 24, 2020 due to equipment failure.



Fort Mojave Tribe-North Casino (North Event Center)

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	6.8	1.4	0	0	0	0	0	1.5	2.8	0.13
2	0	4.7	1.8	5.6	1.7	1.4	0	0	0	2.5	0	0
3	0	5.4	0	7.6	4.2	4.0	0	1.9	0	0	0	0
4	0	1.7	0	7.6	3.4	4.0	1.7	3.9	0	0.04	0	0
5	0	2.0	0	6.0	4.1	5.1	2.4	3.9	0	0.17	0	0
6	0	2.4	5.5	2.2	4.2	7.6	1.9	6.9	1.4	1.1	4.9	0
7	0	2.7	5.2	0	5.5	7.5	5.0	7.3	3.0	0	6.8	0
8	0	2.6	0.17	0	7.6	7.4	7.6	5.7	4.3	0	6.3	0
9	0	3.0	0	0	7.4	2.1	7.2	4.2	5.7	0	1.2	0
10	0	3.8	0	0	7.6	0	7.4	5.4	3.5	0	4.2	0
11	0	0.27	0	0	7.4	5.5	7.2	7.5	4.0	0	4.7	0
12	0	2.4	0	1.2	4.9	7.5	7.2	5.8	5.9	0	1.4	0
13	0	2.4	0	3.8	6.1	7.4	7.2	0	2.9	0	0	0
14	0	2.6	0	3.8	7.5	7.4	7.0	2.6	0.07	0	0	0
15	0	2.0	0	6.3	5.5	6.5	7.2	4.8	0.03	0	0	0
16	0	2.2	0	4.8	3.9	6.6	3.2	0	0.01	0	2.9	0
17	0	0	0	4.1	5.0	7.5	0	0	0	0	6.2	0
18	0	2.4	0	3.2	4.1	7.4	4.1	0	3.0	0	5.1	3.1
19	0	3.0	0	0	4.1	7.3	7.3	2.3	1.9	0	0	3.5
20	2.6	4.1	0	0	6.5	2.5	6.7	2.3	0.41	0	0	0.49
21	2.3	2.6	0	3.3	7.6	0	2.5	2.8	0.23	3.5	0	0
22	2.3	0	0	7.7	4.9	2.5	3.3	4.1	0	6.8	0	0
23	3.6	0	0	7.8	6.5	7.5	5.4	4.8	0	3.8	0	0
24	0.18	0	0	5.5	7.4	7.5	0.01	5.9	0	2.8	0	0
25	1.5	0.82	0	3.1	6.1	7.3	2.1	5.5	0	3.0	0	0
26	3.3	3.3	0	3.5	2.4	4.0	3.7	3.6	0.54	1.1	0	0
27	1.3	0.54	0	0	0	0.96	6.0	0.24	0.74	3.5	0	0
28	0	5.2	0	0	0	3.4	3.8	2.2	0	5.8	0	0
29	0	6.9	0	0	0	0	1.8	1.4	0	7.0	0	0
30	0		0	0	0	0	0.25	1.5	2.4	6.6	0	0
31	0		0		0		0	0		6.7		0
Total	17.12	69.08	19.43	88.5	135.7	137.97	119.54	96.63	40.13	56.10	46.5	7.24
Mean	0.55	2.38	0.63	2.95	4.38	4.60	3.86	3.12	1.34	1.81	1.55	0.23
Max	3.6	6.9	6.8	7.8	7.6	7.6	7.6	7.5	5.9	7.0	6.8	3.5
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	34	137	39	176	269	274	237	192	80	111	92	14

Calendar Year Summary

Annual Total 833.93 Annual Mean 2.28 Daily Max 7.8 Daily Min 0 Annual Ac-ft 1,654

Maximum Discharge

Date	Time	GH	Discharge
May 12	03:00	N/A	9.2

Minimum Discharge

Date	Time	GH	Discharge
Feb. 16	22:00	N/A	-0.06

Bold values indicate the daily value was derived from hourly data that contained 6 or more consecutive hours of estimated record.

Fort Mojave Tribe-South Casino

Location—Latitude 34° 59.160', longitude -114° 37.622', in the SE¼ SW¼ of Section 33, T. 19 N., R. 22 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, river mi 256.3, 9.1 mi south of Bullhead City, Arizona, 10.1 mi north of Needles, California, and 19.6 river mi downstream of Davis Dam.

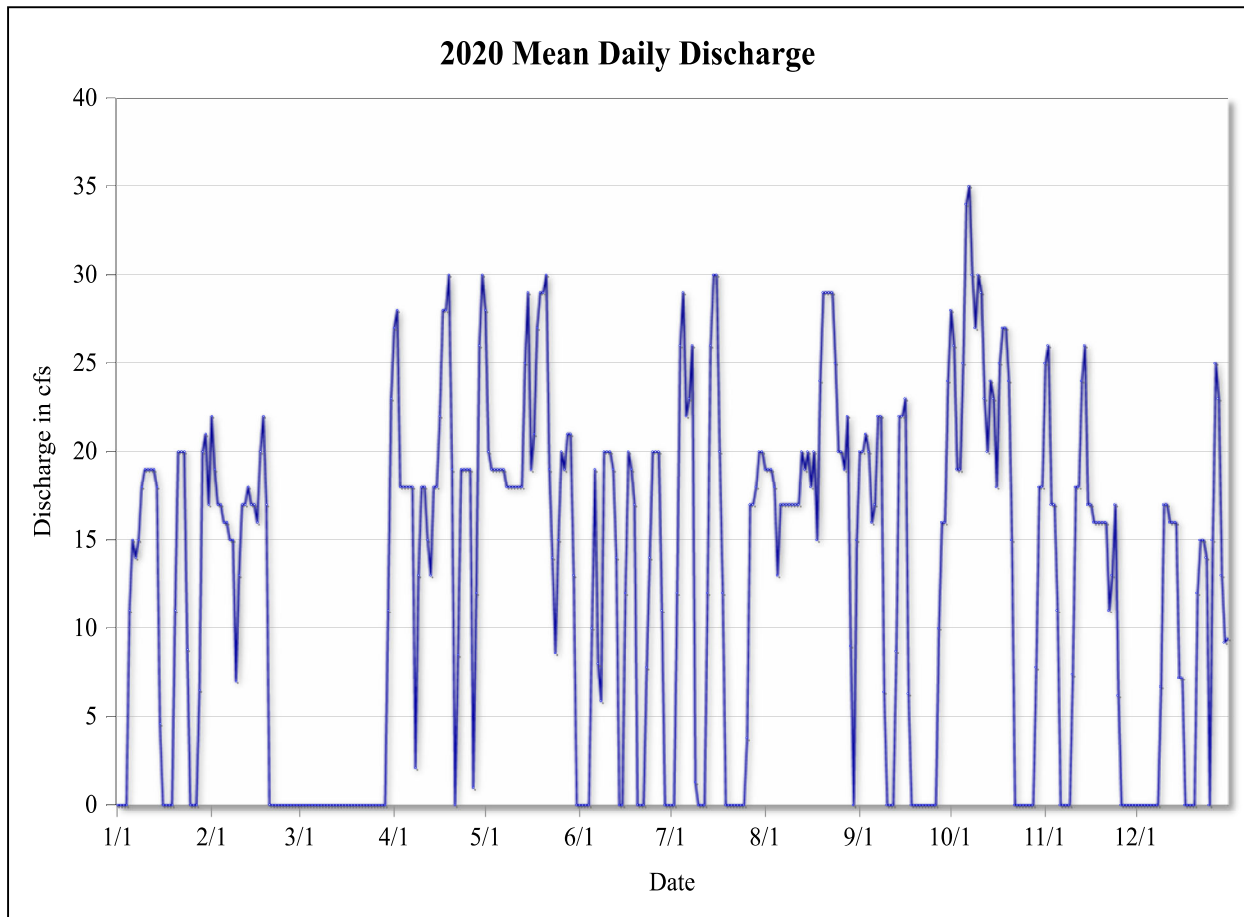
Drainage Area—Not applicable.

Period of Record—April 10, 2006 to current year.

Gage—Sutron Xlite datalogger (Model 9210-0000-2B) records water stage measured with a Sutron AccuBubble self-contained bubbler system (Model 5600-0131-4) upstream of a fixed abrupt-expansion type, long-throated flume. Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 39 cfs, Jul. 26, 2010; minimum daily discharge, no diversion at times; maximum hourly discharge, 41 cfs, Jul. 25, 2010 at 20:00; minimum hourly discharge, no diversion at times.

Remarks—Data were estimated from Oct. 10, 2020 at 17:00 to Oct. 13, 2020 at 13:00 due to a partially blocked bubbler orifice line.



Fort Mojave Tribe-South Casino

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	22	0	27	28	0	0	19	20	28	25	0
2	0	19	0	28	20	0	0	19	20	26	26	0
3	0	17	0	18	19	0	12	19	21	19	17	0
4	0	17	0	18	19	0	26	18	20	19	17	0
5	11	16	0	18	19	10	29	13	16	25	11	0
6	15	16	0	18	19	19	22	17	17	34	0	0
7	14	15	0	18	19	8.0	23	17	22	35	0	0
8	15	15	0	2.1	18	5.9	26	17	22	30	0	0
9	18	7.0	0	13	18	20	1.3	17	6.4	27	0	6.7
10	19	13	0	18	18	20	0	17	0	30	7.4	17
11	19	17	0	18	18	20	0	17	0	29	18	17
12	19	17	0	15	18	19	0	17	0	23	18	16
13	19	18	0	13	18	14	12	20	8.7	20	24	16
14	18	17	0	18	25	0	26	19	22	24	26	16
15	4.6	17	0	18	29	0	30	20	22	23	17	7.2
16	0	16	0	22	19	12	30	18	23	18	17	7.2
17	0	20	0	28	21	20	20	20	6.3	25	16	0
18	0	22	0	28	27	19	12	15	0	27	16	0
19	0	17	0	30	29	17	0	24	0	27	16	0
20	11	0.02	0	19	29	0.01	0	29	0	24	16	0
21	20	0	0	0.01	30	0	0	29	0	15	16	12
22	20	0	0	8.5	19	0	0	29	0	0	11	15
23	20	0	0	19	14	7.8	0	29	0	0	13	15
24	8.8	0	0	19	8.6	14	0	25	0	0	17	14
25	0	0	0	19	15	20	0	20	0	0	6.2	0
26	0	0	0	19	20	20	3.8	20	0	0	0	15
27	0	0	0	1.0	19	20	17	19	10	0	0	25
28	6.5	0	0	12	21	11	17	22	16	0	0	23
29	20	0	0	26	21	0	18	9.0	16	7.8	0	13
30	21		11	30	13	0	20	0	24	18	0	9.2
31	17		23		0		20	15		18		9.4
Total	315.6	317.77	34	542.94	609.6	295.34	364.2	591.5	313.3	570.0	351.7	254.0
Mean	10.2	11.0	1.08	18.1	19.7	9.84	11.7	19.1	10.4	18.4	11.7	8.19
Max	21	22	23	30	30	20	30	29	24	35	26	25
Min	0	0	0	0.01	0	0	0	0	0	0	0	0
Ac-ft	626	630	67	1,077	1,209	586	722	1,173	621	1,131	698	504

Calendar Year Summary

Annual Total 4,559.45 Annual Mean 12.5 Daily Max 35 Daily Min 0 Annual Ac-ft 9,044

Maximum Discharge

Date	Time	GH	Discharge
Oct. 8	00:00	1.49	41

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	0.00	0

Bold values indicate the daily value was derived from hourly data that contained 6 or more consecutive hours of estimated record.

Fort Mojave Tribe-California 2 (North)

Location—Latitude 34° 58.022', longitude -114° 38.173', in the NE¼ NW¼ of Section 13, T. 10 N., R. 22 E., San Bernardino meridian, San Bernardino County, California, Hydrologic Unit 15030101, river mi 254.9, 10.4 mi south of Bullhead City, Arizona, 8.9 mi north of Needles, California, and 21.0 river mi downstream of Davis Dam.

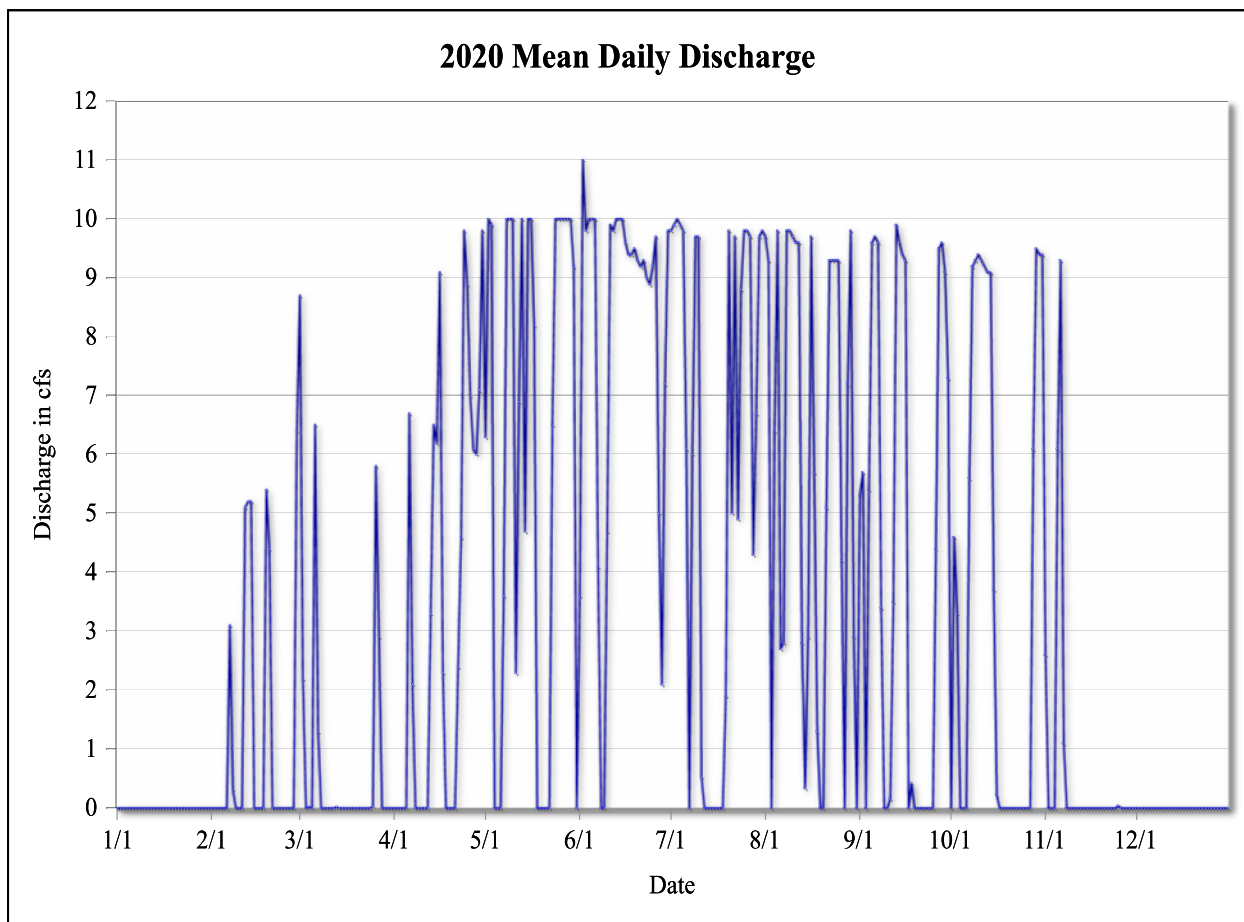
Drainage Area—Not applicable.

Period of Record—January 1, 2006 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records discharge measured using a Mace Series3 FloPro flow meter mounted in the discharge side of the diversion pipe. Discharge is calculated using a discharge-index relationship.

Extremes—Maximum daily discharge, 14 cfs, Apr. 27, 2007; minimum daily discharge, no diversion at times; maximum hourly discharge, 26 cfs, Sep. 21, 2006 at 08:00; minimum hourly discharge, no diversion at times.

Remarks—None.



Fort Mojave Tribe-California 2 (North)

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	8.7	0	6.3	3.6	9.8	9.7	5.3	0	2.6	0
2	0	0	2.2	0	10	11	9.9	9.3	5.7	4.6	0	0
3	0	0	0	0	9.9	9.8	10	0	0	3.3	0	0
4	0	0	0.02	0	0	10	9.9	6.4	5.4	0	0	0
5	0	0	0	0	0	10	9.8	9.8	9.6	0	6.1	0
6	0	0	6.5	6.7	0	10	6.1	2.7	9.7	0	9.3	0
7	0	3.1	1.3	2.1	3.6	4.1	0	2.8	9.6	5.6	1.1	0
8	0	0.32	0	0	10	0	6.0	9.8	3.4	9.2	0	0
9	0	0	0	0	10	0	9.7	9.8	0	9.3	0	0
10	0	0	0	0	10	4.7	9.7	9.7	0	9.4	0	0
11	0	0	0	0	2.3	9.9	0.53	9.6	0.16	9.3	0	0
12	0	5.1	0	0	6.9	9.8	0	9.6	3.5	9.2	0	0
13	0	5.2	0.02	3.3	10	10	0	2.8	9.9	9.1	0	0
14	0	5.2	0	6.5	4.7	10	0	0.34	9.6	9.1	0	0
15	0	0	0	6.2	10	10	0	2.9	9.4	3.7	0	0
16	0	0	0	9.1	10	9.6	0	9.7	9.3	0.22	0	0
17	0	0	0	2.3	8.2	9.4	0	5.7	0	0	0	0
18	0	0	0	0	0	9.4	0	1.3	0.42	0	0	0
19	0	5.4	0	0	0	9.5	1.9	0	0	0	0	0
20	0	4.4	0	0	0	9.3	9.8	0	0	0	0	0
21	0	0	0	0	0	9.2	5.0	5.1	0	0	0	0
22	0	0	0	2.4	0	9.3	9.7	9.3	0	0	0	0
23	0	0	0	4.6	6.5	9.0	4.9	9.3	0	0	0	0
24	0	0	0	9.8	10	8.9	8.8	9.3	0	0	0	0
25	0	0	0.03	8.9	10	9.2	9.8	9.3	0	0	0.04	0
26	0	0	5.8	7.0	10	9.7	9.8	4.2	4.4	0	0	0
27	0	0	2.9	6.1	10	5.0	9.7	0	9.5	0	0	0
28	0	0	0	6.0	10	2.1	4.3	7.2	9.6	6.1	0	0
29	0	6.4	0	7.1	10	7.2	6.7	9.8	9.1	9.5	0	0
30	0	0	0	9.8	9.2	9.8	9.7	2.9	7.3	9.4	0	0
31	0	0	0	0	0	0	9.8	0	0	9.4	0	0
Total	0	35.17	27.38	98.0	188.6	238.9	181.24	178.17	130.86	116.40	19.23	0
Mean	0	1.21	0.88	3.27	6.08	7.96	5.85	5.75	4.36	3.75	0.64	0
Max	0	6.4	8.7	9.8	10	11	10	9.8	9.9	9.5	9.3	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	70	54	194	374	474	359	353	260	231	38	0

Calendar Year Summary

Annual Total 1,213.88 Annual Mean 3.32 Daily Max 11 Daily Min 0 Annual Ac-ft 2,408

Maximum Discharge

Date	Time	GH	Discharge
Jun. 2	03:00	N/A	11

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	N/A	0

Fort Mojave Tribe-California 2 (West)

Location—Latitude 34° 58.022', longitude -114° 38.173', in the NE¼ NW¼ of Section 13, T. 10 N., R. 22 E., San Bernardino meridian, San Bernardino County, California, Hydrologic Unit 15030101, river mi 254.9, 10.4 mi south of Bullhead City, Arizona, 8.9 mi north of Needles, California, and 21.0 river mi downstream of Davis Dam.

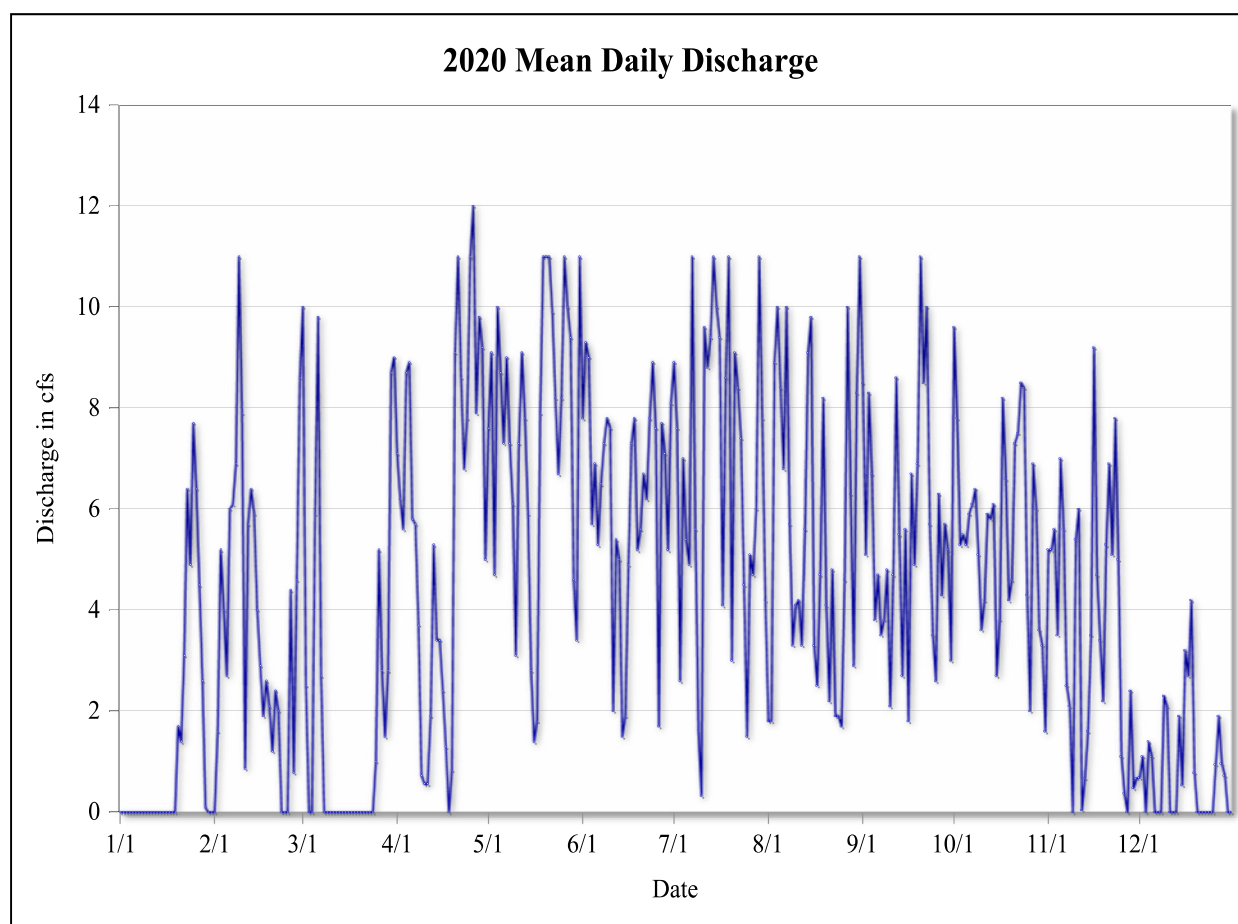
Drainage Area—Not applicable.

Period of Record—January 1, 2006 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records discharge measured using a Mace Series3 FloPro flow meter mounted in the discharge side of the diversion pipe. Discharge is calculated using a discharge-index relationship.

Extremes—Maximum daily discharge, 13 cfs, Jul. 12, 2008; minimum daily discharge, no diversion at times; maximum hourly discharge, 20 cfs, Sep. 20, 2006 at 13:00; minimum hourly discharge, no diversion at times.

Remarks—None.



Fort Mojave Tribe-California 2 (West)

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	10	7.1	7.6	7.8	8.9	1.8	8.5	9.6	5.2	0.68
2	0	1.6	2.5	6.2	9.1	9.3	7.6	1.8	5.1	7.8	5.2	1.1
3	0	5.2	0	5.6	4.7	9.0	2.6	8.9	8.3	5.3	5.6	0
4	0	4.0	0	8.7	10	5.7	7.0	10	6.7	5.5	3.5	1.4
5	0	2.7	5.9	8.9	8.7	6.9	5.4	8.4	3.8	5.3	7.0	1.1
6	0	6.0	9.8	5.8	7.3	5.3	4.9	6.8	4.7	5.9	5.6	0
7	0	6.1	2.7	5.7	9.0	6.5	11	10	3.5	6.1	2.5	0
8	0	6.9	0	3.7	7.3	7.3	5.6	5.7	3.8	6.4	2.1	0
9	0	11	0	0.72	6.1	7.8	1.6	3.3	4.8	5.1	0	2.3
10	0	7.9	0	0.56	3.1	7.6	0.33	4.1	2.1	3.6	5.4	2.1
11	0	0.86	0	0.56	7.3	2.0	9.6	4.2	4.7	4.2	6.0	0
12	0	5.7	0	1.9	9.1	5.4	8.8	3.3	8.6	5.9	0.04	0
13	0	6.4	0	5.3	7.8	5.0	9.4	5.6	5.5	5.8	0.67	0
14	0	5.9	0	3.4	5.9	1.5	11	9.1	2.7	6.1	1.6	1.9
15	0	4.0	0	3.4	2.8	1.9	10	9.8	5.6	2.7	3.5	0.54
16	0	2.9	0	2.4	1.4	4.9	9.4	3.3	1.8	3.8	9.2	3.2
17	0	1.9	0	1.3	1.8	7.3	4.1	2.5	6.7	8.2	4.7	2.7
18	0	2.6	0	0	7.9	7.8	8.6	4.7	4.9	6.6	3.4	4.2
19	0	2.1	0	0.83	11	5.2	11	8.2	6.9	4.2	2.2	0.78
20	1.7	1.2	0	9.1	11	5.6	3.0	4.1	11	4.6	5.3	0
21	1.4	2.4	0	11	11	6.7	9.1	2.2	8.5	7.3	6.9	0
22	3.1	2.0	0	8.6	9.9	6.2	8.4	4.8	10	7.5	5.1	0
23	6.4	0	0	6.8	8.2	7.8	7.4	1.9	5.7	8.5	7.8	0
24	4.9	0	0	7.8	6.7	8.9	4.5	1.9	3.5	8.4	5.0	0
25	7.7	0	1.0	11	8.2	7.6	1.5	1.7	2.6	4.3	1.1	0
26	6.4	4.4	5.2	12	11	1.7	5.1	4.6	6.3	2.0	0.37	0.94
27	4.5	0.78	2.8	7.9	10	7.7	4.7	10	4.3	6.9	0	1.9
28	2.6	4.6	1.5	9.8	9.4	7.1	6.0	6.3	5.7	6.0	2.4	0.96
29	0.10	8.6	2.8	9.2	4.6	5.2	11	2.9	5.2	3.6	0.48	0.72
30	0		8.7	5.0	3.4	8.1	7.8	8.3	3.0	3.3	0.67	0
31	0		9.0		11		4.2	11		1.6		0
Total	38.70	107.65	62.1	169.99	232.5	186.9	210.59	171.6	164.1	172.1	108.44	26.39
Mean	1.25	3.71	2.00	5.67	7.50	6.23	6.79	5.54	5.47	5.55	3.61	0.85
Max	7.7	11	10	12	11	9.3	11	11	11	9.6	9.2	4.2
Min	0	0	0	0	1.4	1.5	0.33	1.7	1.8	1.6	0	0
Ac-ft	77	214	123	337	461	371	418	340	325	341	215	52

Calendar Year Summary

Annual Total 1,651.18 Annual Mean 4.51 Daily Max 12 Daily Min 0 Annual Ac-ft 3,275

Maximum Discharge

Date	Time	GH	Discharge
May 12	03:00	N/A	14

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	N/A	0

Fort Mojave Tribe-California 2 (South)

Location—Latitude 34° 58.022', longitude -114° 38.173', in the NE¼ NW¼ of Section 13, T. 10 N., R. 22 E., San Bernardino meridian, San Bernardino County, California, Hydrologic Unit 15030101, river mi 254.9, 10.4 mi south of Bullhead City, Arizona, 8.9 mi north of Needles, California, and 21.0 river mi downstream of Davis Dam.

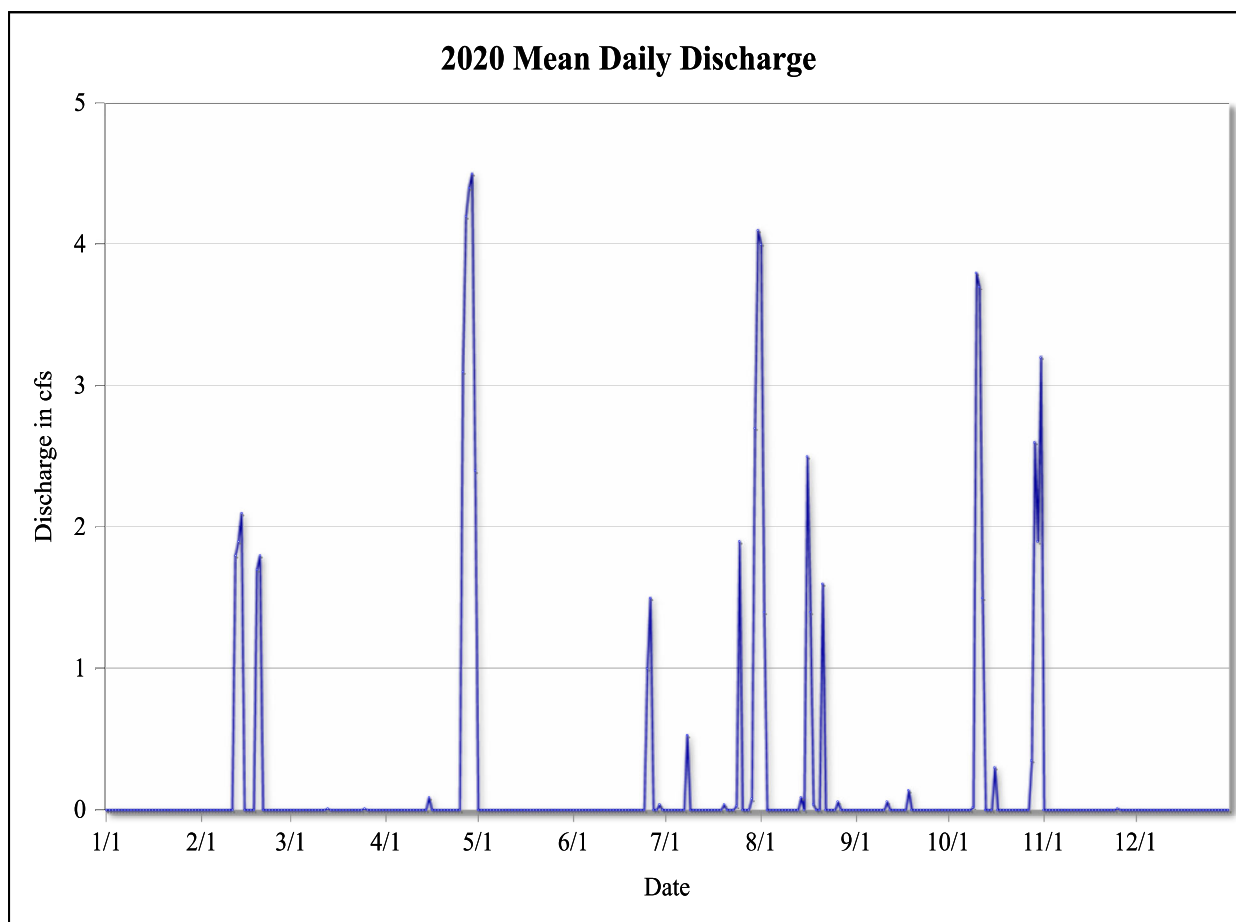
Drainage Area—Not applicable.

Period of Record—January 1, 2006 to current year.

Gage—Sutron Xlite datalogger (Model 9210-0000-2B) records discharge measured with a Mace Series 3 FloPro flow meter mounted in the discharge side of the diversion pipe. Discharge is calculated using a discharge-index relationship.

Extremes—Maximum daily discharge, 5.8 cfs, May 30, 2012; minimum daily discharge, no diversion at times; maximum hourly discharge, 13 cfs, May 26, 2006 at 05:00; minimum hourly discharge, no diversion at times.

Remarks—None.



Fort Mojave Tribe-California 2 (South)

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	4.0	0	0	0	0
2	0	0	0	0	0	0	0	1.4	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0.53	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0.02	0	0
10	0	0	0	0	0	0	0	0	0	3.8	0	0
11	0	0	0	0	0	0	0	0	0.06	3.7	0	0
12	0	1.8	0	0	0	0	0	0	0	1.5	0	0
13	0	1.9	0.01	0	0	0	0	0	0	0	0	0
14	0	2.1	0	0	0	0	0	0.09	0	0	0	0
15	0	0	0	0.09	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	2.5	0	0.30	0	0
17	0	0	0	0	0	0	0	1.4	0	0	0	0
18	0	0	0	0	0	0	0	0.04	0.14	0	0	0
19	0	1.7	0	0	0	0	0	0	0	0	0	0
20	0	1.8	0	0	0	0	0.04	0	0	0	0	0
21	0	0	0	0	0	0	0	1.6	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0.03	0	0	0	0	0
25	0	0	0.01	0	0	1.0	1.9	0	0	0	0.01	0
26	0	0	0	3.1	0	1.5	0	0.06	0	0	0	0
27	0	0	0	4.2	0	0	0	0	0	0	0	0
28	0	0	0	4.4	0	0	0	0	0	0.35	0	0
29	0	0	0	4.5	0	0.04	0.08	0	0	2.6	0	0
30	0	0	0	2.4	0	0	2.7	0	0	1.9	0	0
31	0	0	0	0	0	0	4.1	0	0	3.2	0	0
Total	0	9.1	0.01	18.71	0	2.55	9.30	11.07	0.19	17.27	0.01	0
Mean	0	0.32	0	0.62	0	0.085	0.30	0.36	0.006	0.56	0	0
Max	0	2.1	0.01	4.5	0	1.5	4.1	4.0	0.14	3.8	0.01	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	18	0.0	37	0	5.1	18	22	0.4	34	0.0	0

Calendar Year Summary

Annual Total 68.25 Annual Mean 0.19 Daily Max 4.5 Daily Min 0 Annual Ac-ft 135

Maximum Discharge

Date	Time	GH	Discharge
Apr. 30	03:00	N/A	5.2

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	N/A	0

Fort Mojave Tribe-California 1

Location—Latitude 34° 57.171', longitude -114° 38.037', in the NW¼ NE¼ of Section 24, T. 10 N., R. 22 E., San Bernardino meridian, San Bernardino County, California, Hydrologic Unit 15030101, river mi 253.9, 11.4 mi south of Bullhead City, Arizona, 7.9 mi north of Needles, California, and 22.0 river mi downstream of Davis Dam.

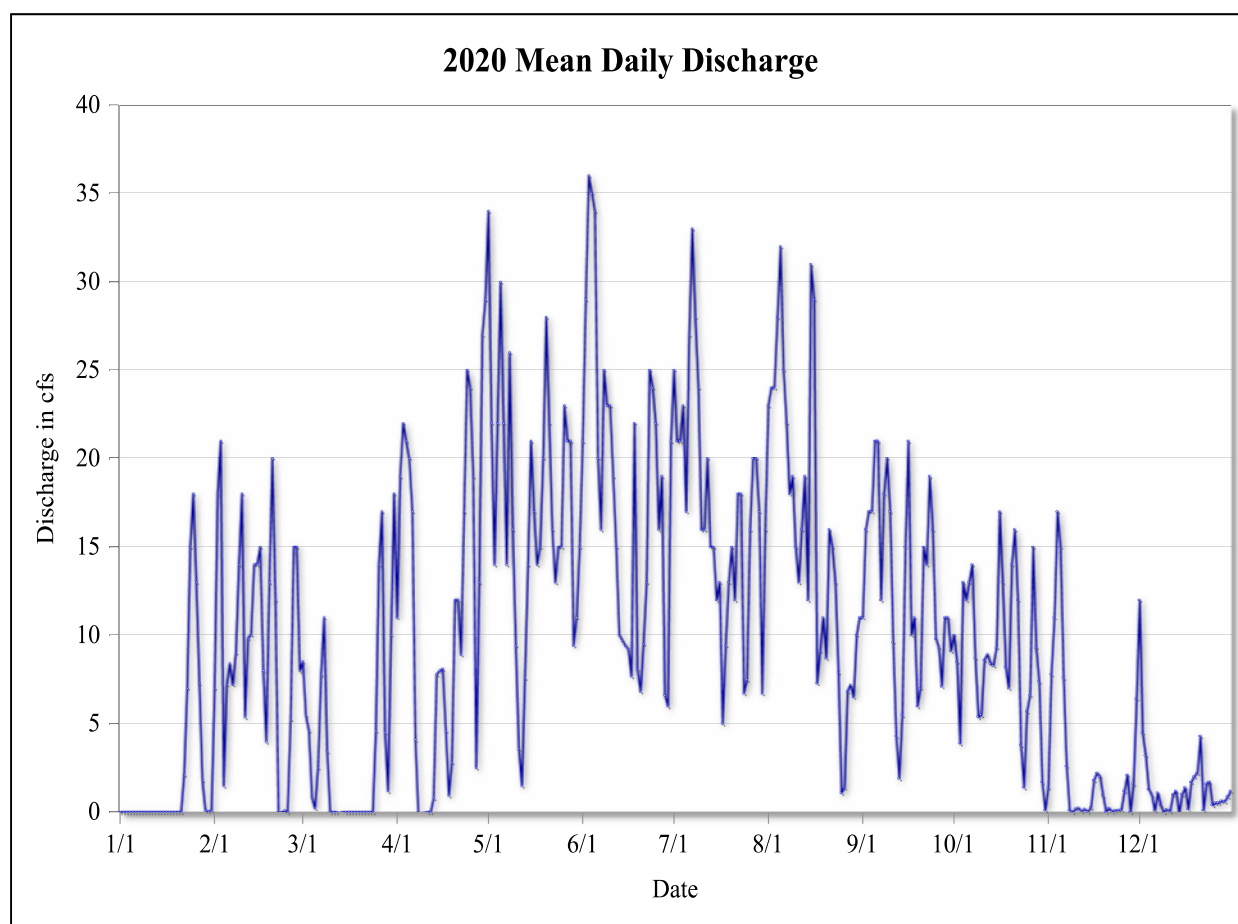
Drainage Area—Not applicable.

Period of Record—January 1, 2006 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water stage and velocity measured with a SonTek/YSI Argonaut-IQ Plus current meter. Discharge is calculated using a velocity-index relationship.

Extremes—Maximum daily discharge, 58 cfs, Jun. 12, 2007; minimum daily discharge, -0.20 cfs, Apr. 8, 2020; maximum hourly discharge, 64 cfs, Jun. 30, 2007 at 20:00; minimum hourly discharge, -2.1 cfs, Jul. 24, 2020 at 17:00.

Remarks—None.



Fort Mojave Tribe-California 1

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	7.0	8.5	11	34	21	25	23	11	10	1.4	12
2	0	18	5.5	19	22	29	21	24	16	8.5	7.8	4.5
3	0	21	4.6	22	14	36	21	24	17	3.9	11	3.2
4	0	1.5	0.84	21	22	35	23	28	17	13	17	1.3
5	0	7.2	0.23	20	30	34	17	32	21	12	15	1.0
6	0	8.4	2.5	17	22	20	27	25	21	13	7.6	0.09
7	0	7.2	7.8	4.1	14	16	33	22	12	14	2.6	1.1
8	0	9.0	11	-0.20	26	25	28	18	18	8.7	0.11	0.39
9	0	14	3.4	-0.13	16	23	24	19	20	5.4	0	0
10	0	18	0	-0.06	9.4	23	16	15	17	5.5	0.19	0.16
11	0	5.4	0	0	3.6	19	16	13	9.6	8.6	0.24	0.04
12	0	9.8	0	0	1.5	15	20	16	4.3	8.9	0.05	0.99
13	0	10	-0.10	0.80	7.6	10	15	19	1.9	8.4	0.18	1.2
14	0	14	-0.01	7.8	14	9.7	15	12	5.5	8.3	0.02	-0.06
15	0	14	0	8.0	21	9.4	12	31	15	9.3	0.27	1.0
16	0	15	0	8.1	17	9.2	13	29	21	17	1.8	1.4
17	0	8.0	0	4.6	14	7.7	5.0	7.3	10	13	2.2	0.18
18	0	4.0	0	0.95	15	22	9.4	9.1	11	8.2	2.0	1.7
19	0	13	0	2.8	20	8.1	13	11	6.0	7.0	0.94	2.0
20	0	20	0	12	28	6.8	15	8.7	7.0	14	0.02	2.2
21	0	12	0	12	22	9.5	12	16	15	16	0.23	4.3
22	2.1	-0.12	0	8.9	16	13	18	15	14	12	0.03	0.11
23	7.0	-0.03	0	17	13	25	18	13	19	3.8	0.10	1.6
24	15	0.08	0	25	15	24	6.7	7.9	16	1.4	0.12	1.7
25	18	0	4.6	24	15	22	7.5	1.1	9.8	5.7	0.13	0.41
26	13	5.3	14	19	23	16	16	1.4	9.3	6.6	1.2	0.53
27	7.3	15	17	2.5	21	19	20	6.8	7.1	15	2.1	0.53
28	1.8	15	4.5	13	21	6.6	20	7.2	11	9.3	0	0.64
29	0.08	8.0	1.2	27	9.4	6.0	17	6.5	11	7.4	1.6	0.62
30	0.04		10	29	11	21	6.7	10	9.1	1.7	6.4	0.89
31	0.09		18		15		16	11		0.10		1.2
Total	63.80	278.72	113.56	336.62	533.3	539.0	526.4	481.3	382.4	274.56	81.86	47.22
Mean	2.06	9.61	3.66	11.2	17.2	18.0	17.0	15.5	12.7	8.86	2.73	1.52
Max	18	21	18	29	34	36	33	32	21	17	17	12
Min	0	-0.12	-0.10	-0.20	1.5	6.0	5.0	1.1	1.9	0.10	0	-0.06
Ac-ft	127	553	225	668	1,058	1,069	1,044	955	759	545	162	94

Calendar Year Summary

Annual Total 3,658.83 Annual Mean 10.0 Daily Max 36 Daily Min -0.20 Annual Ac-ft 7,257

Maximum Discharge

Date	Time	GH	Discharge
Jun. 2	14:00	2.80	46

Minimum Discharge

Date	Time	GH	Discharge
Jul. 24	17:00	1.79	-2.1

Fort Mojave Tribe-Cimmaron

Location—Latitude 34° 56.347', longitude -114° 37.699', in the SE¼ SW¼ of Section 16, T. 18 N., R. 22 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, river mi 252.9, 12.3 mi south of Bullhead City, Arizona, 6.9 mi north of Needles, California, and 23.0 river mi downstream of Davis Dam.

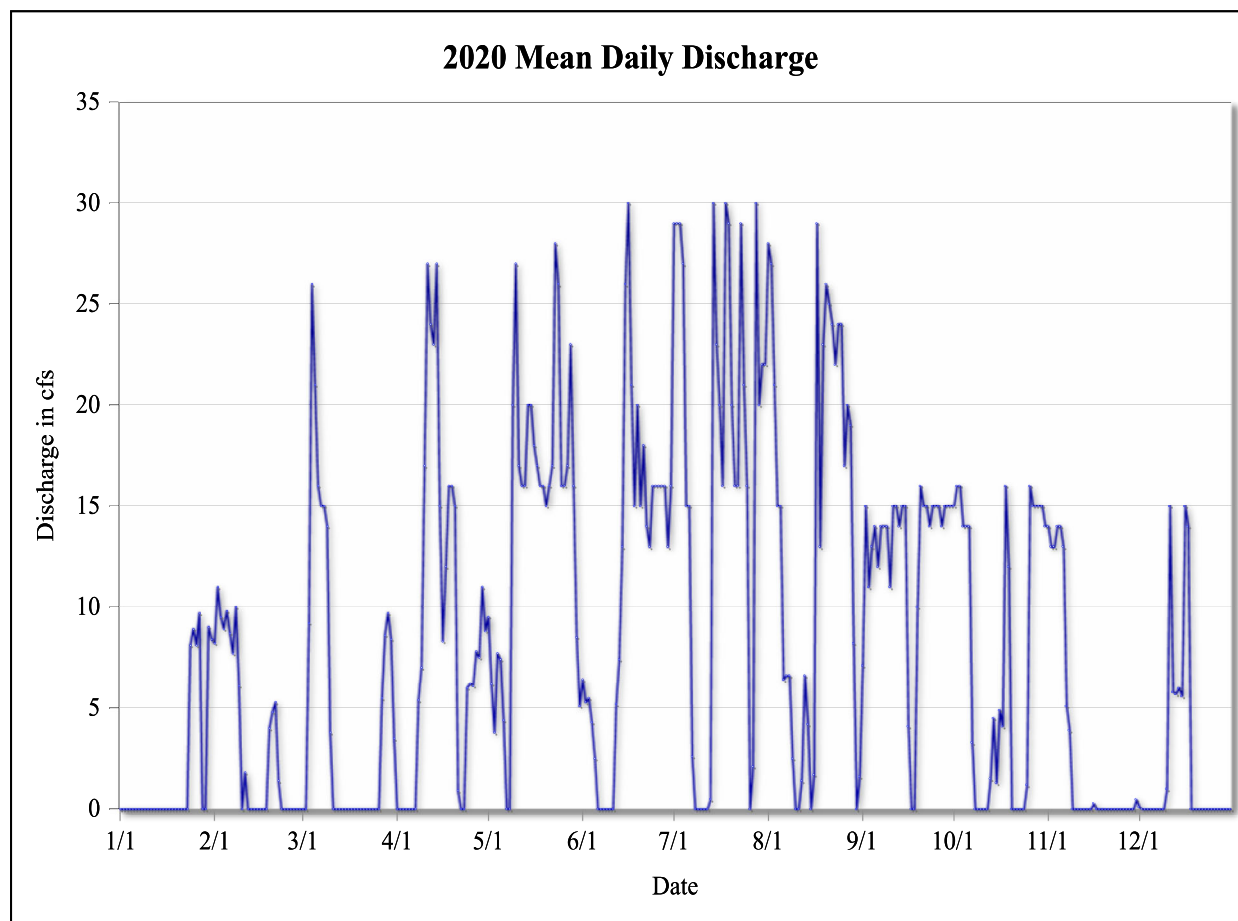
Drainage Area—Not applicable.

Period of Record—April 10, 2006 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water stage measured with a Sutron AccuBubble self-contained bubbler system (Model 56-0133-25-1) upstream of a fixed abrupt-expansion type, long-throated flume. Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 41 cfs, Jun. 15, 2007; minimum daily discharge, no diversion at times; maximum hourly discharge, 52 cfs, Jun. 12, 2007 at 17:00; minimum hourly discharge, no diversion at times.

Remarks—The discharge record was estimated for several sporadic periods from May 5, 2020 to Jun. 26, 2020 due to battery failure.



Fort Mojave Tribe-Cimmaron

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	8.2	0	0	9.5	6.4	29	28	7.1	15	14	0.10
2	0	11	0	0	6.2	5.3	29	27	15	16	13	0
3	0	9.5	9.2	0	3.8	5.5	29	21	11	16	13	0
4	0	8.9	26	0	7.7	4.3	27	15	13	14	14	0
5	0	9.8	21	0	7.4	2.5	15	15	14	14	14	0
6	0	8.7	16	0	4.4	0	15	6.4	12	14	13	0
7	0	7.7	15	0	0	0	2.6	6.6	14	3.3	5.1	0
8	0	10	15	5.4	0	0	0	6.6	14	0	3.9	0
9	0	6.1	14	7.0	20	0	0	2.5	14	0	0	0
10	0	0	3.8	17	27	0	0	0	11	0	0	1.0
11	0	1.8	0	27	17	0	0	0	15	0	0	15
12	0	0	0	24	16	5.2	0	1.4	15	0	0	5.8
13	0	0	0	23	16	7.4	0.49	6.6	14	1.5	0	5.7
14	0	0	0	27	20	13	30	4.2	15	4.5	0	6.0
15	0	0	0	15	20	26	23	0	15	1.3	0	5.6
16	0	0	0	8.3	18	30	20	1.7	4.1	4.9	0.28	15
17	0	0	0	12	17	21	16	29	0	4.1	0	14
18	0	0	0	16	16	15	30	13	0	16	0	0
19	0	4.0	0	16	16	20	29	23	10	12	0	0
20	0	4.8	0	15	15	15	20	26	16	0	0	0
21	0	5.3	0	0.92	16	18	16	25	15	0	0	0
22	0	1.4	0	0	17	14	16	24	15	0	0	0
23	0	0	0	0	28	13	29	22	14	0	0	0
24	8.1	0	0	6.0	26	16	21	24	15	0	0	0
25	8.9	0	0	6.2	16	16	16	24	15	1.2	0	0
26	8.1	0	0	6.1	16	16	0	17	15	16	0	0
27	9.7	0	5.5	7.8	17	16	2.1	20	14	15	0	0
28	0	0	8.6	7.5	23	16	30	19	15	15	0	0
29	0	0	9.7	11	16	13	20	8.2	15	15	0	0
30	9.0		8.4	8.8	8.5	16	22	0	15	15	0.48	0
31	8.4		3.5		5.1		22	1.6		14		0
Total	52.2	97.6	155.4	265.28	446.2	328.4	510.66	417.3	378.9	226.4	90.63	67.64
Mean	1.68	3.37	5.01	8.84	14.4	10.9	16.5	13.5	12.6	7.30	3.02	2.18
Max	9.7	11	26	27	28	30	30	29	16	16	14	15
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	103	194	308	526	885	651	1,013	828	751	449	180	134

Calendar Year Summary

Annual Total 3,036.50 Annual Mean 8.30 Daily Max 30 Daily Min 0 Annual Ac-ft 6,023

Maximum Discharge

Date	Time	GH	Discharge
Jun. 16	02:00	0.97	32

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	0.00	0

Bold values indicate the daily value was derived from hourly data that contained 6 or more consecutive hours of estimated record.

Fort Mojave Tribe-Willow

Location—Latitude 34° 54.572', longitude -114° 37.733', in the SW¼ SW¼ of Section 28, T. 18 N., R. 22 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, river mi 250.8, 14.3 mi south of Bullhead City, Arizona, 4.9 mi north of Needles, California, and 25.1 mi downstream of Davis Dam.

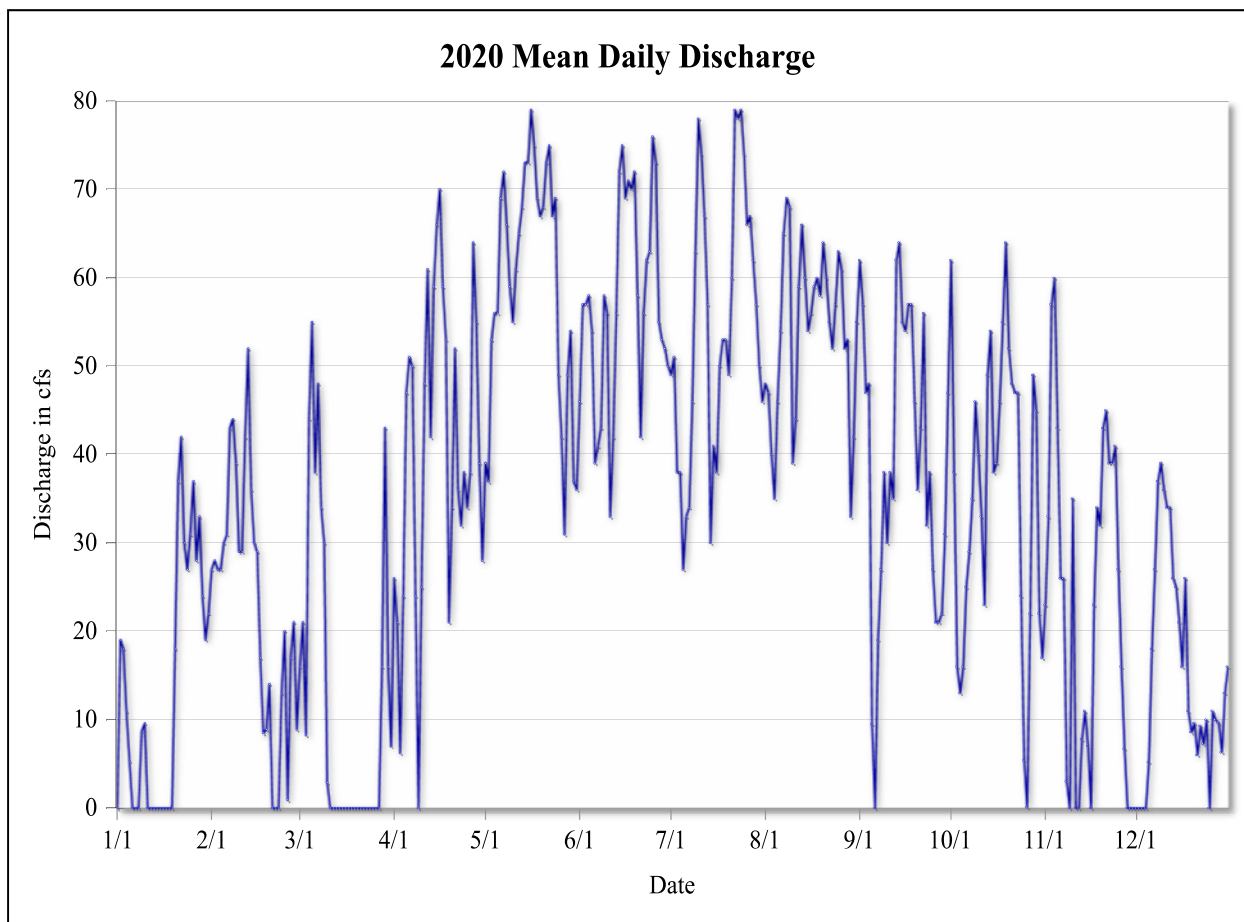
Drainage Area—Not applicable.

Period of Record—July 12, 2006 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water stage and velocity measured by a SonTek/YSI Argonaut-SW current meter. Discharge is calculated using a velocity-index relationship.

Extremes—Maximum daily discharge, 104 cfs, May 23, 2017; minimum daily discharge, no diversion at times; maximum hourly discharge, 117 cfs, May 23, 2017 at 02:00; minimum hourly discharge, no diversion at times.

Remarks—None.



Fort Mojave Tribe-Willow

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	27	16	26	39	46	49	48	62	62	23	0
2	19	28	21	21	37	57	51	47	57	38	33	0
3	18	27	8.3	6.2	53	57	38	40	47	16	57	0
4	11	27	44	24	56	58	38	35	48	13	60	0
5	5.3	30	55	47	56	54	27	46	9.5	16	43	5.2
6	0	31	38	51	69	39	33	54	0	25	26	18
7	0	43	48	50	72	41	34	65	19	29	26	27
8	0	44	34	24	66	43	46	69	27	35	3.0	37
9	8.7	39	30	0	59	58	63	68	38	46	0	39
10	9.6	29	2.9	25	55	56	78	39	30	40	35	36
11	0	29	0	48	61	33	74	44	38	33	0	34
12	0	42	0	61	65	42	67	59	35	23	0	34
13	0	52	0	42	68	56	57	66	62	49	7.8	26
14	0	36	0	59	73	72	30	60	64	54	11	25
15	0	30	0	66	73	75	41	54	55	38	7.0	21
16	0	29	0	70	79	69	38	56	54	39	0	16
17	0	17	0	59	75	71	50	59	57	46	23	26
18	0	8.5	0	53	69	70	53	60	57	55	34	11
19	0	8.9	0	21	67	72	53	58	46	64	32	8.6
20	18	14	0	34	68	58	49	64	36	52	43	9.6
21	37	0	0	52	73	42	60	60	43	48	45	6.0
22	42	0	0	36	75	56	79	55	56	47	39	9.3
23	30	0	0	32	67	62	78	52	32	47	39	7.3
24	27	13	0	38	69	63	79	57	38	24	41	10
25	31	20	0	34	49	76	74	63	27	5.4	27	0
26	37	0.95	0	38	42	73	66	61	21	0.08	16	11
27	28	17	0	64	31	55	67	52	21	22	6.7	10
28	33	21	16	55	49	53	62	53	22	49	0	9.6
29	24	8.9	43	39	54	52	57	33	31	45	0	6.3
30	19		16	28	37	50	50	42	47	22	0	13
31	22		7.0		36		46	55		17		16
Total	418.8	670.32	380.0	1,204.2	1,846	1,707	1,688	1,675	1,181.0	1,099.38	676.6	471.5
Mean	13.5	23.1	12.3	40.1	59.5	56.9	54.5	54.0	39.4	35.5	22.6	15.2
Max	42	52	55	70	79	76	79	69	64	64	60	39
Min	0	0	0	0	31	33	27	33	0	0.08	0	0
Ac-ft	831	1,330	754	2,389	3,661	3,386	3,349	3,322	2,343	2,181	1,342	935

Calendar Year Summary

Annual Total 13,017.86 Annual Mean 35.6 Daily Max 79 Daily Min 0 Annual Ac-ft 25,821

Maximum Discharge

Date	Time	GH	Discharge
Jun. 26	00:00	3.40	95

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	0.00	0

Fort Mojave Tribe-Barrackman

Location—Latitude 34° 50.931', longitude -114° 35.892', in the NE¼ NE¼ of Section 22, T. 17 N., R. 22 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, river mi 245.4, 1.0 mi east of Needles, California, 18.4 mi south of Bullhead City, Arizona, and 30.5 river mi downstream of Davis Dam.

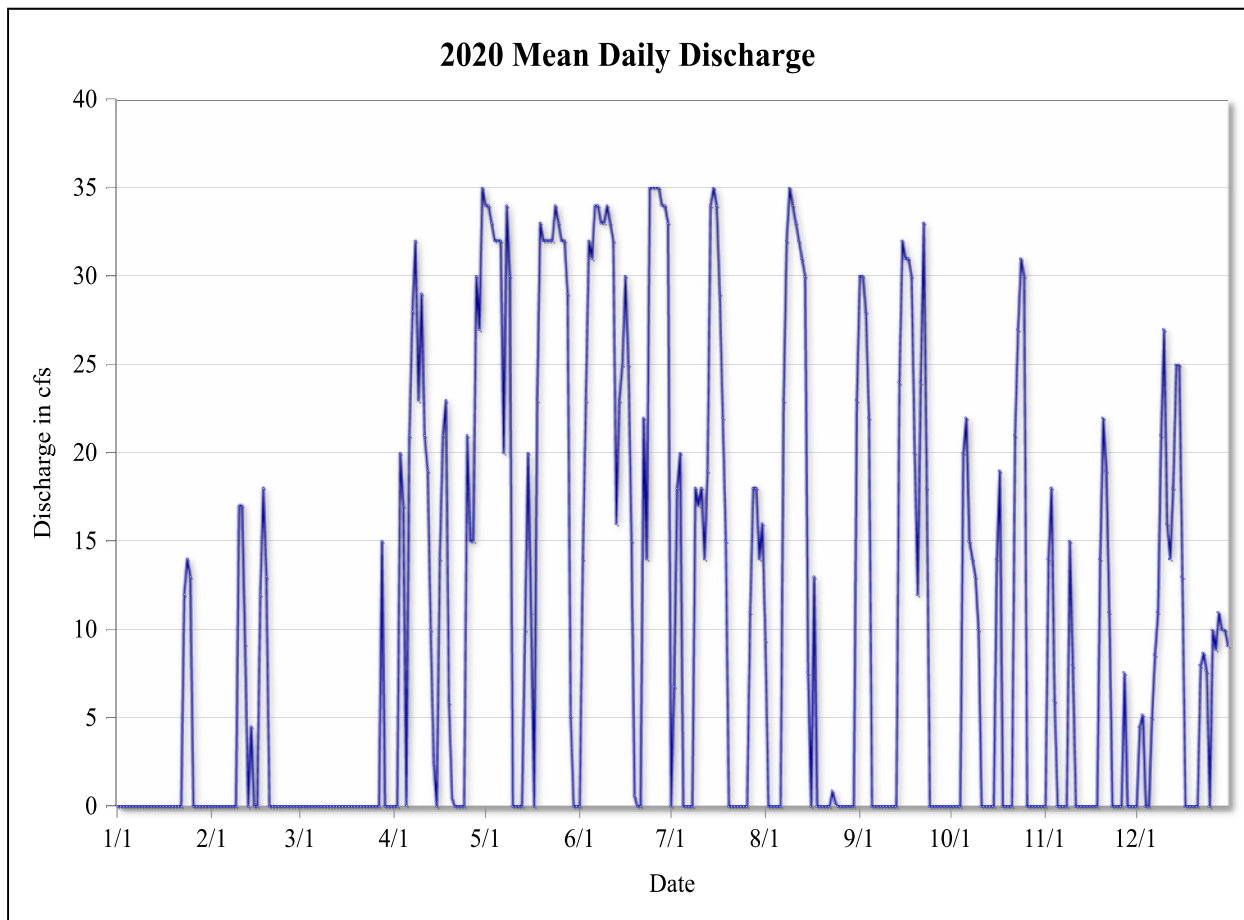
Drainage Area—Not applicable.

Period of Record—April 21, 2006 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water stage measured with a Sutron multiple interface shaft encoder (Model 56-0540-400-DTR) upstream from a fixed abrupt-expansion type, long-throated flume. Discharge is calculated using a stage-discharge relationship.

Extremes—Maximum daily discharge, 41 cfs, Jun. 15, 2017; minimum daily discharge, no diversion at times; maximum hourly discharge, 47 cfs, May 9, 2006 at 12:00; minimum hourly discharge, no diversion at times.

Remarks—None.



Fort Mojave Tribe-Barrackman

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	0	0	34	0	0.01	9.4	30	0	0	0
2	0	0	0	0	34	14	6.8	0	30	0	14	4.5
3	0	0	0	20	33	23	18	0	28	0	18	5.2
4	0	0	0	17	32	32	20	0	22	0	6.0	0
5	0	0	0	0.05	32	31	0.01	0	0	20	0	0
6	0	0	0	21	32	34	0	0	0	22	0	5.0
7	0	0	0	28	20	34	0	23	0	15	0	8.6
8	0	0	0	32	34	33	0	32	0	14	0	11
9	0	0	0	23	30	33	18	35	0	13	15	21
10	0	17	0	29	0	34	17	34	0	10	8.0	27
11	0	17	0	21	0	33	18	33	0	0	0	16
12	0	9.2	0	19	0	32	14	32	0	0	0	14
13	0	0	0	10	0	16	19	31	0	0	0	18
14	0	4.5	0	2.4	10	23	34	30	24	0	0	25
15	0	0	0	0	20	25	35	7.6	32	0	0	25
16	0	0	0	14	11	30	34	0	31	14	0	13
17	0	12	0	21	0	25	29	13	31	19	0	0
18	0	18	0	23	23	15	22	0	30	0	0	0
19	0	13	0	5.9	33	0.63	15	0	20	0	14	0
20	0	0	0	0.53	32	0	0	0	12	0	22	0
21	0	0	0	0	32	0	0	0	24	0	19	0
22	0	0	0	0	32	22	0	0	33	21	11	8.0
23	12	0	0	0	32	14	0	0.90	18	27	0	8.7
24	14	0	0	0	34	35	0	0.25	0	31	0	7.7
25	13	0	0	21	33	35	0	0	0	30	0	0
26	0	0	0	15	32	35	0	0	0	0	0	10
27	0	0	0	15	32	35	11	0	0	0	7.6	8.9
28	0	0	15	30	29	34	18	0	0	0	0	11
29	0	0	0	27	5.1	34	18	0	0	0	0	10
30	0	0	0	35	0	33	14	0	0	0	0	10
31	0	0	0	0	0	0	16	23	0	0	0	9.1
Total	39	90.2	15	428.88	672.2	744.59	378.64	302.51	365	237	135.1	278.2
Mean	1.26	3.11	0.49	14.3	21.7	24.8	12.2	9.76	12.2	7.65	4.50	8.97
Max	14	18	15	35	34	35	35	35	33	31	22	27
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	77	179	30	851	1,333	1,477	751	600	725	470	268	552

Calendar Year Summary

Annual Total 3,687.01 Annual Mean 10.1 Daily Max 35 Daily Min 0 Annual Ac-ft 7,313

Maximum Discharge

Date	Time	GH	Discharge
Apr. 28	04:00	0.84	38

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	0.00	0

Fort Mojave Tribe-Refuge (Fort Mojave Tribe)

Location—Latitude 34° 50.286', longitude -114° 34.237', in the SW¼ SE¼ of Section 24, T. 17 N., R. 22 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, 19.2 mi south of Bullhead City, Arizona, 2.9 mi east of Needles, California, and 31.5 river mi downstream of Davis Dam.

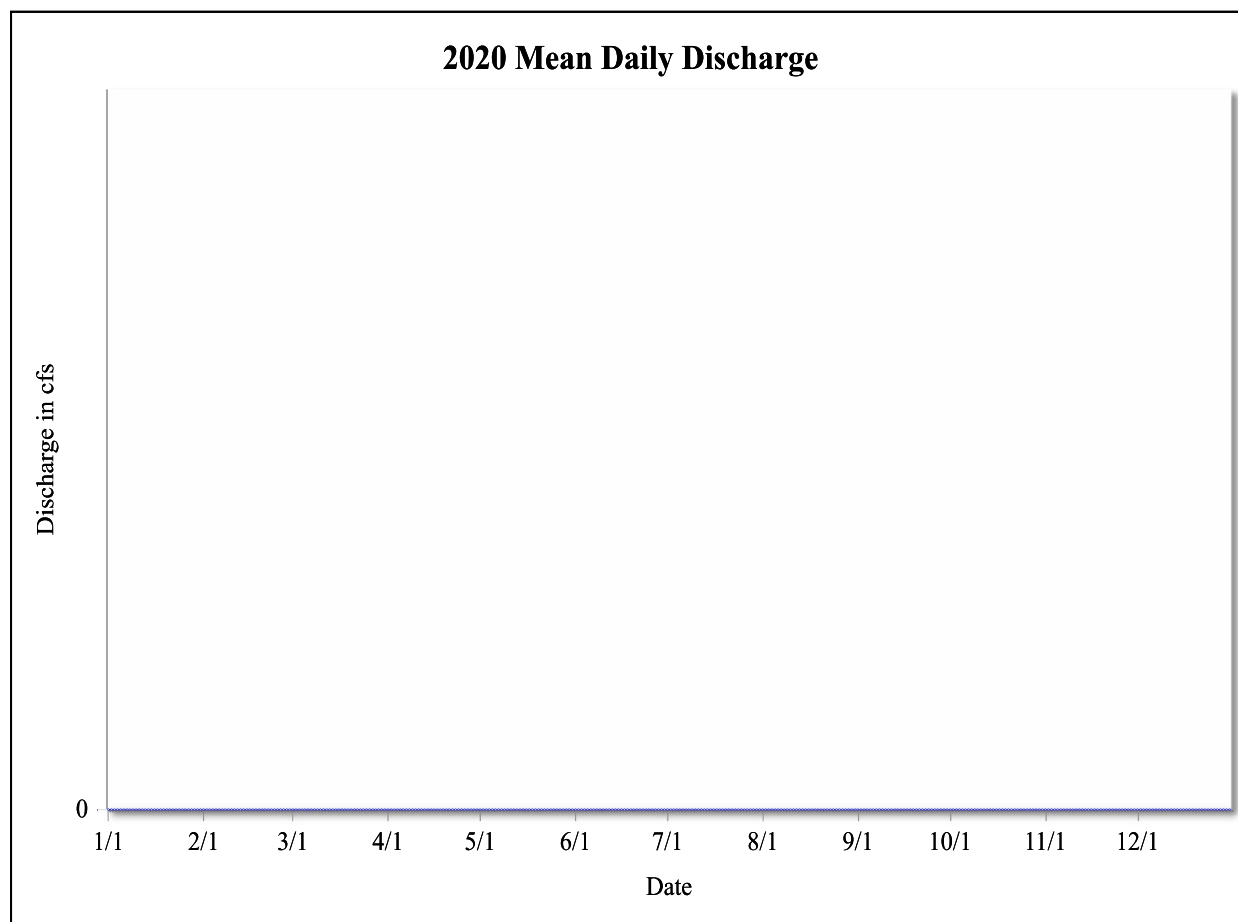
Drainage Area—Not applicable.

Period of Record—January 27, 2006 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records discharge measured with a SeaMetrics insertion magnetic flow meter (Model EX-201-S) mounted in the discharge side of the diversion pipe. Discharge is calculated using a discharge-index relationship.

Extremes—Maximum daily discharge, 20 cfs, Apr. 26, 2008; minimum daily discharge, no diversion at times; maximum hourly discharge, 27 cfs, Jul. 21, 2006 at 14:00; minimum hourly discharge, no diversion at times.

Remarks—The diversion pump was not operated this record period.



Fort Mojave Tribe-Refuge (Fort Mojave Tribe)

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0		0	0	0	0	0	0	0	0	0	0
31	0		0		0		0	0		0		0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Mean	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	0	0	0	0	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	0	0	0	0

Calendar Year Summary

Annual Total 0 Annual Mean 0 Daily Max 0 Daily Min 0 Annual Ac-ft 0

Maximum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	N/A	0

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	N/A	0

Fort Mojave Tribe-Refuge (Vanderslice Farms)

Location—Latitude 34° 50.286', longitude -114° 34.237', in the SW¼ SE¼ of Section 24, T. 17 N., R. 22 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, 19.2 mi south of Bullhead City, Arizona, 2.9 mi east of Needles, California, and 31.5 river mi downstream of Davis Dam.

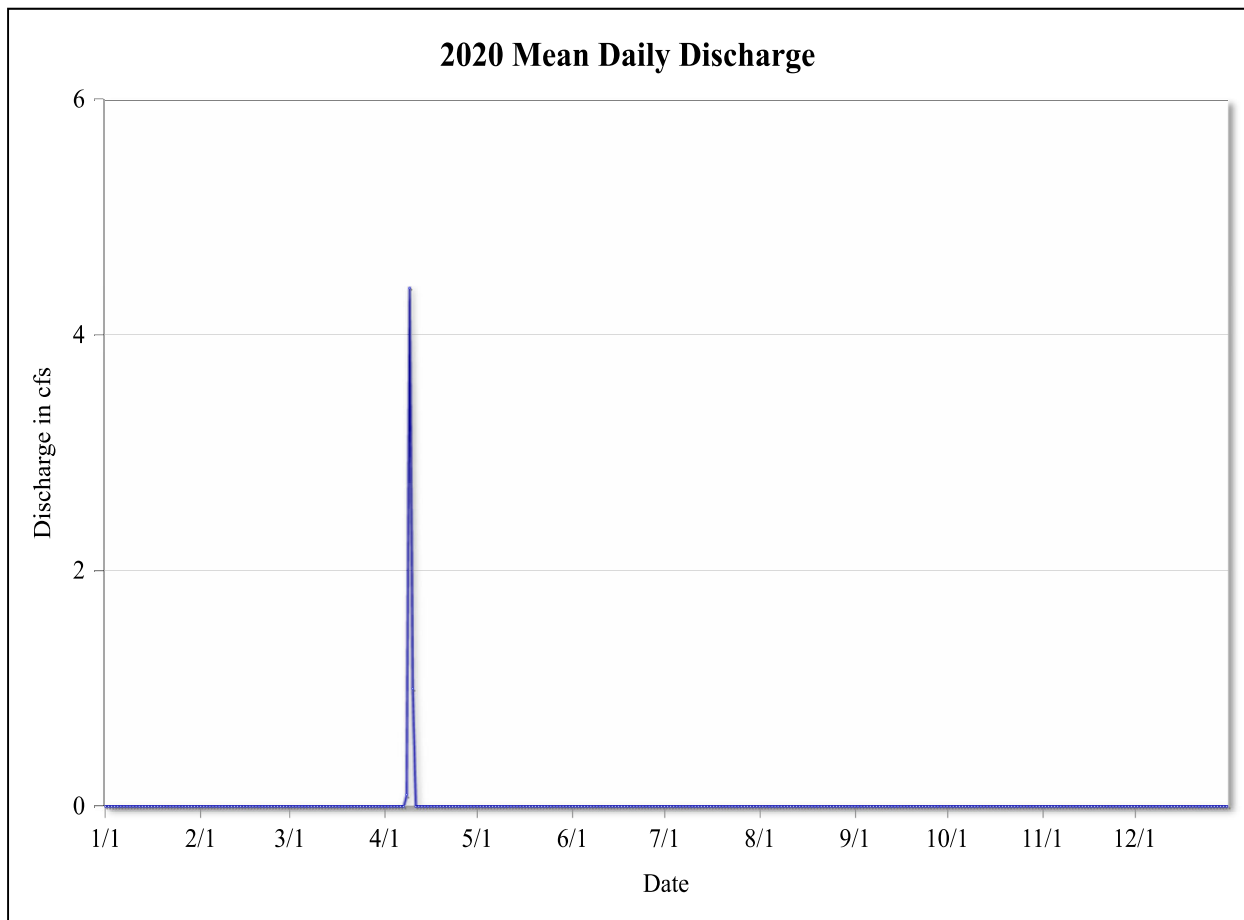
Drainage Area—Not applicable.

Period of Record—January 27, 2006 to current year.

Gage—Sutron Xlite datalogger (Model 9210-0000-2B) records discharge measured with a SeaMetrics insertion magnetic flow meter (Model EX-201-S) mounted in the discharge side of the diversion pipe. Discharge is calculated using a discharge-index relationship.

Extremes—Maximum daily discharge, 16 cfs, Aug. 16, 2006; minimum daily discharge, no diversion at times; maximum hourly discharge, 18 cfs, Aug. 2, 2006 at 11:00; minimum hourly discharge, no diversion at times.

Remarks—None.



Fort Mojave Tribe-Refuge (Vanderslice Farms)

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0.10	0	0	0	0	0	0	0	0
9	0	0	0	4.4	0	0	0	0	0	0	0	0
10	0	0	0	1.0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	5.50	0	0	0	0	0	0	0	0
Mean	0	0	0	0.18	0	0	0	0	0	0	0	0
Max	0	0	0	4.4	0	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	11	0	0	0	0	0	0	0	0

Calendar Year Summary

Annual Total 5.50 Annual Mean 0.015 Daily Max 4.4 Daily Min 0 Annual Ac-ft 11

Maximum Discharge

Date	Time	GH	Discharge
Apr. 9	09:00	N/A	12

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	01:00	N/A	0

United States Fish and Wildlife Service-Farm Ditch

Location—Latitude 34° 47.711', longitude -114° 33.275', in the SE¼ SE¼ of Section 1, T. 16 N., R. 22 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, 22.2 mi south of Bullhead City, Arizona, and 4.5 mi southeast of Needles, California.

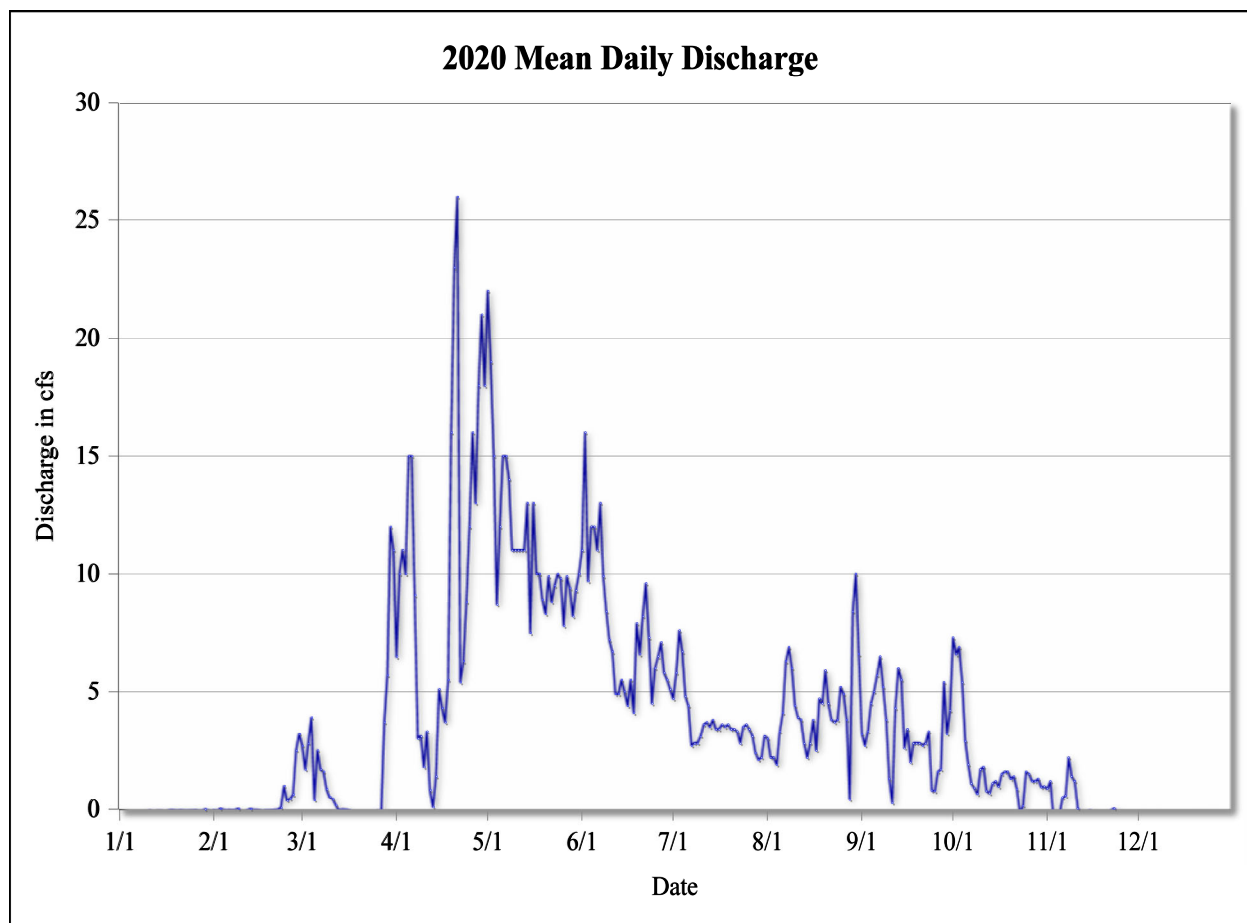
Drainage Area—Not applicable.

Period of Record—January 1, 2005 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water velocity measured with a SonTek/YSI Argonaut-SW current meter. Discharge is calculated using a velocity-index relationship.

Extremes—Maximum daily discharge, 42 cfs, Mar. 14, 2015; minimum daily discharge, -4.1 cfs, May 19, 2017; maximum hourly discharge, 47 cfs, Mar. 15, 2015 at 15:00; minimum hourly discharge, -9.2 cfs, May 2, 2012 at 18:00.

Remarks—The discharge record was estimated from Sep. 7, 2020 at 10:00 to Sep. 8, 2020 at 12:00, due to equipment failure.



United States Fish and Wildlife Service-Farm Ditch

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	-0.22	-0.03	2.7	6.5	22	11	4.7	3.0	3.2	7.3	0.88	-0.14
2	-0.11	-0.07	1.7	10	19	16	5.8	2.2	2.7	6.6	1.2	-0.15
3	-0.16	0.03	2.8	11	15	9.7	7.6	2.2	3.3	6.9	-0.35	-0.17
4	-0.17	-0.01	3.9	10	8.7	12	6.7	1.9	4.5	5.4	-0.35	-0.20
5	-0.15	-0.04	0.40	15	12	12	4.8	3.3	5.0	2.9	-0.23	-0.18
6	-0.12	-0.02	2.5	15	15	11	4.4	4.1	5.7	1.9	0.50	-0.18
7	-0.12	-0.03	1.7	9.1	15	13	2.7	6.3	6.5	1.1	0.58	-0.11
8	-0.13	-0.02	1.6	3.0	14	9.9	2.8	6.9	5.2	0.91	2.2	-0.19
9	-0.12	0.03	0.86	3.1	11	8.4	2.8	6.0	3.8	0.66	1.4	-0.26
10	-0.08	-0.08	0.53	1.8	11	7.2	3.1	4.4	1.3	1.7	1.2	-0.14
11	-0.05	-0.11	0.45	3.3	11	6.7	3.6	3.9	0.28	1.8	0.04	-0.16
12	-0.10	-0.03	0.19	0.82	11	4.9	3.7	3.8	4.3	0.78	-0.09	-0.15
13	-0.07	0.02	-0.03	0.10	11	4.9	3.5	2.8	6.0	0.69	-0.15	-0.23
14	-0.06	-0.02	-0.01	1.4	13	5.5	3.8	2.2	5.5	1.1	-0.12	-0.22
15	-0.07	-0.02	-0.01	5.1	7.5	5.0	3.4	2.8	2.6	1.2	-0.04	-0.22
16	-0.11	-0.03	-0.02	4.3	13	4.4	3.4	3.8	3.4	0.97	-0.13	-0.19
17	-0.05	-0.08	-0.06	3.7	10	5.5	3.6	2.5	2.0	1.5	-0.26	-0.28
18	-0.02	-0.04	-0.13	5.5	10	4.1	3.5	4.7	2.8	1.6	-0.22	-0.12
19	-0.04	-0.04	-0.13	16	8.9	7.9	3.6	4.5	2.8	1.6	-0.23	-0.19
20	-0.06	-0.03	-0.11	23	8.3	6.6	3.4	5.9	2.8	1.3	-0.25	-0.12
21	-0.03	-0.02	-0.09	26	9.9	8.2	3.4	4.5	2.7	1.4	-0.23	-0.11
22	-0.05	-0.01	-0.11	5.4	8.8	9.6	3.3	3.8	2.8	0.86	-0.03	-0.09
23	-0.06	0.07	-0.11	6.3	9.5	7.3	2.8	3.7	3.3	-0.19	0.04	-0.23
24	-0.05	1.0	-0.09	8.8	10	4.5	3.5	3.8	0.81	0.16	-0.12	-0.17
25	-0.05	0.38	-0.09	12	9.8	6.0	3.6	5.2	0.78	1.6	-0.17	-0.10
26	-0.03	0.45	-0.06	16	7.8	6.5	3.4	4.9	1.6	1.5	-0.13	-0.24
27	-0.07	0.63	-0.10	13	9.9	7.1	3.1	3.8	1.7	1.2	-0.19	-0.23
28	-0.07	2.5	3.7	18	9.4	5.8	2.4	0.43	5.4	1.2	-0.21	-0.19
29	0	3.2	5.7	21	8.2	5.5	2.1	8.4	3.2	1.3	-0.21	-0.15
30	-0.03		12	18	9.3	5.1	2.2	10	4.2	0.95	-0.14	-0.15
31	-0.09		11		10		3.1	6.6		0.97		-0.13
Total	-2.52	7.61	50.40	291.02	349.0	231.2	113.5	132.74	100.39	58.84	4.15	-5.39
Mean	-0.081	0.26	1.63	9.70	11.3	7.71	3.66	4.28	3.35	1.90	0.14	-0.17
Max	0	3.2	12	26	22	16	7.6	10	6.5	7.3	2.2	-0.09
Min	-0.22	-0.11	-0.13	0.10	7.5	4.1	2.1	0.43	0.28	-0.19	-0.35	-0.28
Ac-ft	-5.0	15	100	577	692	459	225	263	199	117	8.2	-11

Calendar Year Summary

Annual Total 1,330.91 Annual Mean 3.64 Daily Max 26 Daily Min -0.35 Annual Ac-ft 2,640

Maximum Discharge

Date Time GH Discharge
Apr. 21 16:00 N/A 30

Minimum Discharge

Date Time GH Discharge
Jun. 16 20:00 N/A -2.6

Bold values indicate the daily value was derived from hourly data that contained 6 or more consecutive hours of estimated record.

United States Fish and Wildlife Service-South Dike

Location—Latitude 34° 44.214', longitude -114° 29.407', in the SW¼ SE¼ of Section 27, T. 16 N., R. 21 W., Gila-Salt River meridian, Mohave County, Arizona, Hydrologic Unit 15030101, 26.8 mi south of Bullhead City, Arizona, and 9.9 mi southeast of Needles, California.

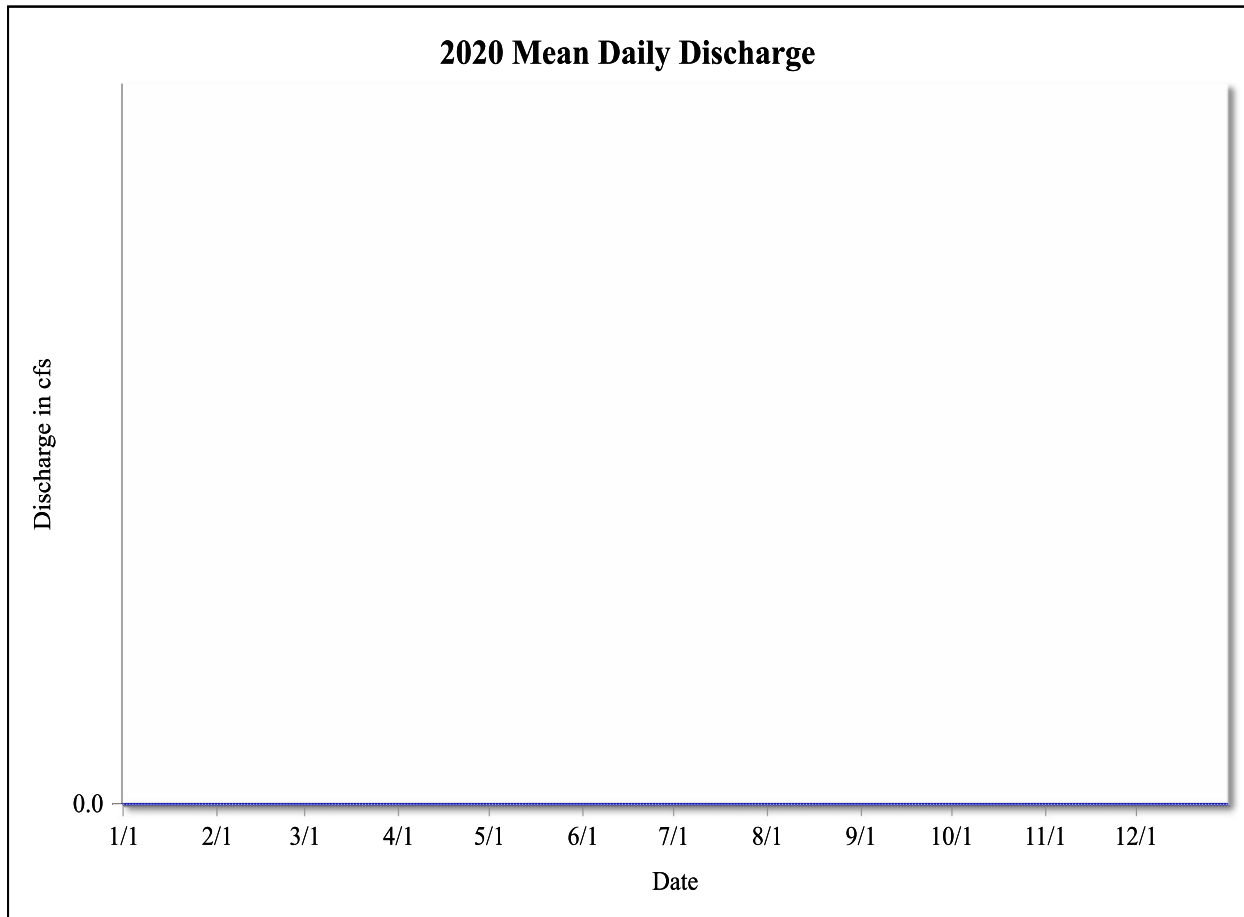
Drainage Area—Undetermined.

Period of Record—June 16, 2005 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records river and gate elevation measured with Sutron multiple interface shaft encoders (Model 56-0540-400-DTR) and marsh with Sutron SDI-12 submersible pressure sensor (Model 56-114). Discharge over the bi-fold lateral gate is computed by applying two theoretical and two empirical weir equations. Four flow conditions exist; forward free flow, forward submerged, reverse free flow, and reverse submerged. Forward free flow uses the manufacturers equation. Reverse submerged flow was developed with 13 discharge measurements. Forward submerged and reverse free flow are purely theoretical. The transitions between equations do not appear smooth and therefore the data should be considered poor.

Extremes—Maximum daily discharge, 9.1 cfs on Aug. 5, 2005; minimum daily discharge, -88 cfs on Apr. 8, 2011; maximum hourly discharge, 39 cfs on Apr. 27, 2011 at 18:00; minimum hourly discharge, -92 cfs on Apr. 7, 2011 at 23:00.

Remarks—None.



United States Fish and Wildlife Service-South Dike

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0		0	0	0	0	0	0	0	0	0	0
31	0		0		0		0	0		0		0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Mean	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	0	0	0	0	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	0	0	0	0	0

Calendar Year Summary

Annual Total 0 Annual Mean 0 Daily Max 0 Daily Min 0 Annual Ac-ft 0

Maximum Discharge

Date	Time	Elev	Discharge
Jan. 1	01:00	454.13	0

Minimum Discharge

Date	Time	Elev	Discharge
Jan. 1	01:00	454.13	0

Palo Verde Irrigation District-Outfall Drain

Location—Latitude 33° 20.308', longitude -114° 42.734', in the SW¼ NE¼ of Section 1, T. 10 S., R. 21 E., San Bernardino meridian, Imperial County, California, Hydrologic Unit 15030104, 20.2 mi south of Blythe, California, and 44.4 mi north of Yuma, Arizona.

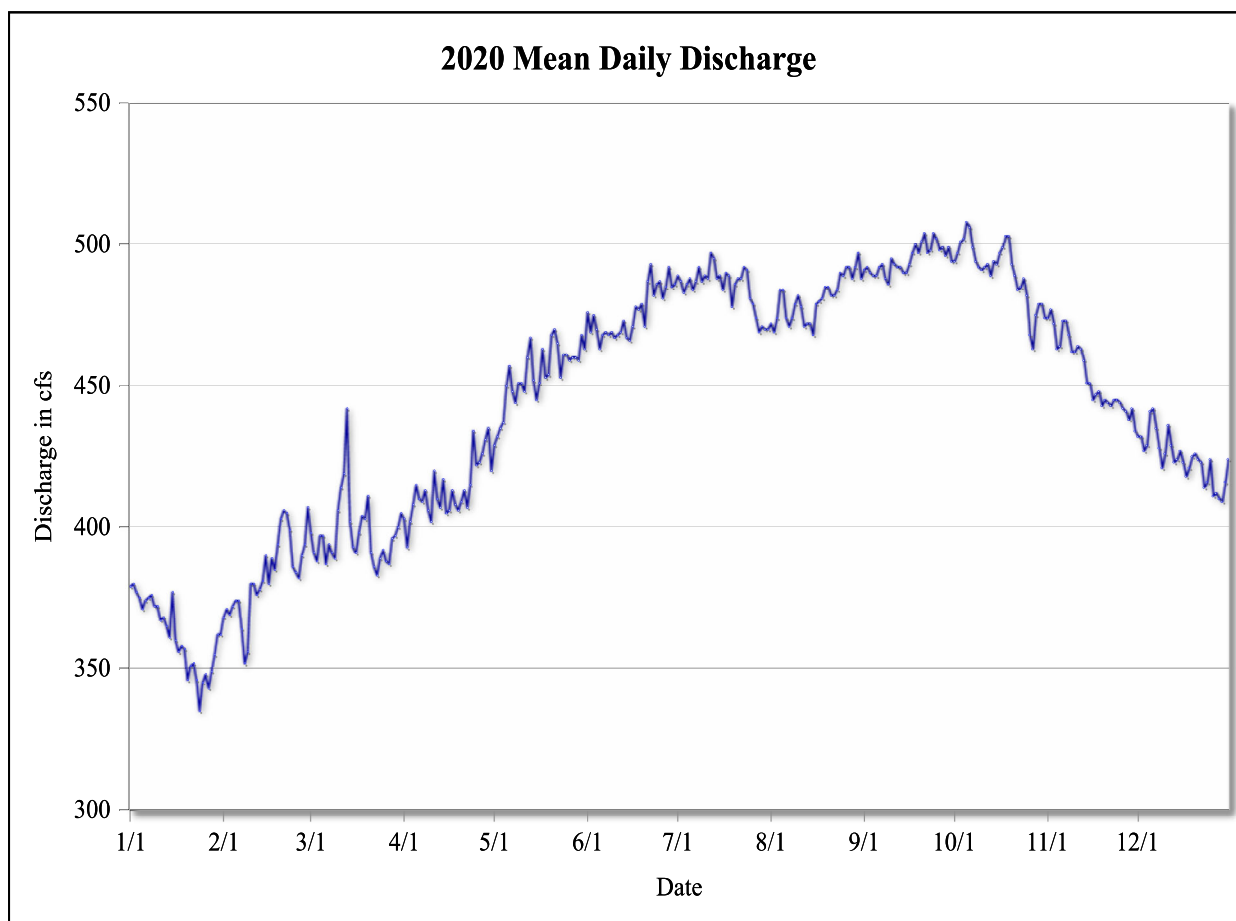
Drainage Area—Undetermined.

Period of Record—January 1, 2005 to current year.

Gage—A Sutron Xlite datalogger (Model 9210-0000-2B) records water elevation and velocity measured with a SonTek/YSI Argonaut-SL current meter. Discharge is calculated using a velocity-index relationship.

Extremes—Maximum daily discharge, 1,200 cfs, Aug. 10, 2005; minimum daily discharge, 299 cfs, Jan. 10, 2017; maximum hourly discharge, 3,230 cfs (estimated), Aug. 9, 2005 at 23:00, caused by an overbank condition created from significant side wash inflow; minimum hourly discharge, 225 cfs, Nov. 29, 2006 at 15:00.

Remarks—The discharge record was furnished by the Palo Verde Irrigation District from Feb. 7, 2020 at 14:00 to Feb. 10, 2020 at 10:00, Mar. 12, 2020 at 19:00 to Mar. 12, 2020 at 22:00, May 20, 2020 at 12:00 to May 20, 2020 at 15:00, and Oct. 16, 2020 at 21:00 to Oct. 19, 2020 at 18:00 due to equipment failure. Uncertainty is increased due to excessive aquatic growth throughout the record period.



Palo Verde Irrigation District-Outfall Drain

Mean daily discharge, in cubic-feet per second, Calendar Year 2020

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	379	368	398	403	429	476	489	472	491	494	474	432
2	380	371	391	393	432	469	487	469	492	497	477	432
3	377	369	388	402	435	475	483	474	490	501	472	427
4	375	372	397	408	437	470	486	484	489	502	463	429
5	371	374	397	415	450	463	488	484	489	508	464	441
6	374	374	387	410	457	468	484	474	492	506	473	442
7	375	364	394	409	448	469	487	471	493	499	473	435
8	376	352	391	413	444	468	492	474	488	494	468	428
9	372	356	389	406	451	469	487	479	486	492	462	421
10	372	380	406	402	451	467	489	482	495	491	462	426
11	367	380	414	420	448	468	488	478	493	492	464	436
12	368	376	419	410	460	469	497	471	492	493	463	429
13	365	378	442	407	467	473	495	472	492	489	459	423
14	361	381	402	417	452	467	488	472	490	494	451	424
15	377	390	393	405	445	466	489	468	490	493	451	427
16	360	380	391	406	451	471	484	479	493	497	445	423
17	356	389	398	413	463	478	490	480	497	499	447	418
18	358	385	404	408	453	477	489	481	500	503	448	421
19	357	394	403	406	454	479	478	485	497	503	443	425
20	346	403	411	409	468	471	486	485	501	493	445	426
21	351	406	391	413	470	487	488	482	504	489	444	424
22	352	405	386	407	465	493	488	482	497	484	443	423
23	346	399	383	415	453	482	492	484	498	485	445	414
24	335	386	389	434	461	486	491	490	504	488	445	416
25	345	384	392	422	461	487	481	489	502	482	444	424
26	348	382	388	423	459	481	479	492	498	468	442	411
27	343	390	387	426	460	485	474	492	499	463	441	412
28	349	394	396	431	460	492	469	488	496	475	438	410
29	355	407	397	435	459	485	471	492	499	479	442	409
30	362		400	420	468	486	470	497	494	479	434	416
31	362		405		463		470	488		474		424
Total	11,215	11,087	12,328	12,387	14,071	14,277	15,029	14,911	14,840	15,204	13,625	13,147
Mean	362	382	398	413	454	476	485	481	495	490	454	424
Max	380	407	442	435	470	493	497	497	504	508	477	442
Min	335	352	383	393	429	463	469	468	486	463	434	409
Ac-ft	22,245	21,992	24,452	24,569	27,908	28,319	29,809	29,575	29,434	30,158	27,025	26,077

Calendar Year Summary

Annual Total 162,121 Annual Mean 443 Daily Max 508 Daily Min 335 Annual Ac-ft 321,562

Maximum Discharge

Date	Time	Elev	Discharge
Mar. 12	19:00	215.09	521

Minimum Discharge

Date	Time	Elev	Discharge
Feb. 7	18:00	214.45	332

Bold values indicate the daily value was derived from hourly data that contained 6 or more consecutive hours of estimated record.

Glossary

Acre-foot/feet (ac-ft)—The quantity of water required to cover one acre to a depth of one foot, the equivalent of 43,560 cubic-feet or about 326,000 gallons.

Control—Channel features downstream of a gage which determine the stage-discharge relation at the gage. Controls can be either artificial or natural. Artificial controls consist of man-made structures like weirs and flumes, while natural controls consist of channel constrictions, outcroppings, rock or gravel beds, and uniform stretches of channel.

Cubic-Feet per Second (cfs)—The rate of discharge representing a volume of one cubic foot passing a given point during one second, the equivalent of approximately 7.48 gallons per second or 448.8 gallons per minute.

Data—Characteristic observations, often represented as numbers, made over specific points in time.

Datalogger—An electronic device that records data in time sequence with related events. Dataloggers take measurements from sensors and/or transducers located at a gaging station.

Datum—Any numerical quantity that serves as a reference or base for another comparable quantity.

Discharge—The volume of water that passes a given point within a given period of time.

Discharge-Index Relationship—The relationship between an indicator discharge and a volume of water flowing in a channel or pipe.

Drainage Area—The area of the associated drainage basin expressed in square miles.

Elevation—The height of water at a gage measured in reference to mean sea level.

Estimated Data or Record—Data that has been estimated to replace missing or erroneous gage data by a method of prediction that includes averaging, interpolation, or correlation.

Extremes—The maximum and minimum hourly and daily discharges recorded in the date range listed in the period of record.

Final Data—Data that have been reviewed and corrected based on field observations.

Gage—An instrument or device used to measure a medium's magnitude or position, such as water elevation or velocity.

Gage-Height (gh)—The height of water at a gage with no vertical datum reference applied.

Gaging Station—A particular location in a stream, canal, lake, pipe, or reservoir where systematic observations of hydrologic data are obtained.

Global Positioning System (gps)—A system of orbiting satellites and receiving devices used to compute positions on the earth.

Hydrologic Unit Code (huc)—A geographic area representing part or all of a surface drainage basin or distinct hydrologic feature that is represented as an eight digit number.

Latitude—The angular distance north or south of the earth's equator, measured in degrees along a meridian, as on a map or globe.

Longitude—The angular distance on the earth's surface, measured east or west from the prime meridian at Greenwich, England, to the meridian passing through a position, measured in degrees.

Location—The location of the gaging station with respect to physical features in the vicinity, and with respect to the reference plane mentioned in the station name.

Meridian—Lines measuring the distance east and west around the earth at right angles to the equator. Meridians are great circles of the earth passing through both poles also known as lines of *Longitude*.

Maximum Discharge—The maximum reported hourly or daily discharge for the calendar year.

Minimum Discharge—The minimum reported hourly or daily discharge for the calendar year.

Negative Discharge—The volume of water flowing in the opposite direction of normal flow. A negative discharge is subtracted from discharge and acre-feet totals.

Period of Record—A period for which published records exist for a gaging station.

Provisional Data—Data collected in real-time that have received little or no review. Inaccuracies in data may be present because of instrument malfunctions or physical changes at the measurement location. Significant revisions to the data may result upon review and computation of final data record.

Quarter-quarter—A method used to subdivide *sections*; each section is divided into four quarter sections: southeast, southwest, northeast, and northwest. Each subdivided section is then divided again into four quarter sections giving a total of 16 quadrants per section.

Real-Time Data—Provisional data that have been computed, and made available immediately.

River Mile—The curvilinear distance, in miles, measured upstream from the beginning of the stream along the path of the stream.

Section—A unit of land area, generally equal to one square mile or 640 acres. The section is part of a description of the location of land using the Public Land Survey System (PLSS) of the United States Government.

Sensor—Any device that senses a change in a physical or chemical quantity, and provides an electrical output for measurement by a datalogger.

Stage—The height of water above stream bed or an arbitrary datum.

Stage-Discharge Relationship—The relationship between gage height and the volume of water flowing in a channel.

Township—A territorial subdivision, generally considered six miles long, six miles wide, and containing 36 *sections*. The township designation is part of a description of the location of land using the PLSS, and includes the 40-acre subdivision within a *quarter*, *section*, township, and range. The PLSS is based on the concept of a township as a square parcel of land six miles on each side. Its location is established as being

so many six-mile units east of a north-south line (called a meridian), and so many six-mile units north or south of an east-west line (called the baseline). The township is described by township and range (e.g., T. 4 N., R. 23 E.). Each township is further divided into 36 parts called sections, each approximately one mile square in area. A lot consists of an expanse of land of no particular size, often irregular in form.

Transducer—Any device that converts energy from one form to another, as from acoustic energy to electric or mechanical energy.

Velocity-Index—Continuous velocity measurements made from an in-situ velocity sensor that measures a sample volume of a stream. Velocity-Index measurements are required when the channel has poor control or experiences backwater conditions.

Velocity-Index Relationship—The relationship between an index velocity and the mean stream velocity flowing in a channel.

World Geodetic System of 1984 —The World Geodetic System of 1984 is the datum that is used by the GPS. The datum is defined and maintained by the United States National Geospatial-Intelligence Agency.

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Disclaimer

The equipment manufacturer trade names mentioned in this report do not indicate endorsement by the United States Department of the Interior or the Bureau of Reclamation.

Notes