



— BUREAU OF — RECLAMATION

Lower Colorado Basin Stream Flow Records for Calendar Year 2018



Cover:

Photograph of the Colorado River tailwater at the United States Fish and Wildlife Service South Dike gaging station in the Topock Marsh. The Bureau of Reclamation photograph was taken by John Weiss on November 8, 2016.

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-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 Global Positioning System data 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. In a few locations, the grid system is not available on 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 that follows each station manuscript and discharge hydrograph provides mean daily discharge values presented in tabular format. Basic statistical information is provided near the bottom 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 and stage hydrograph provides mean daily stage values presented in tabular format. Basic statistical information is provided near the bottom 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





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.

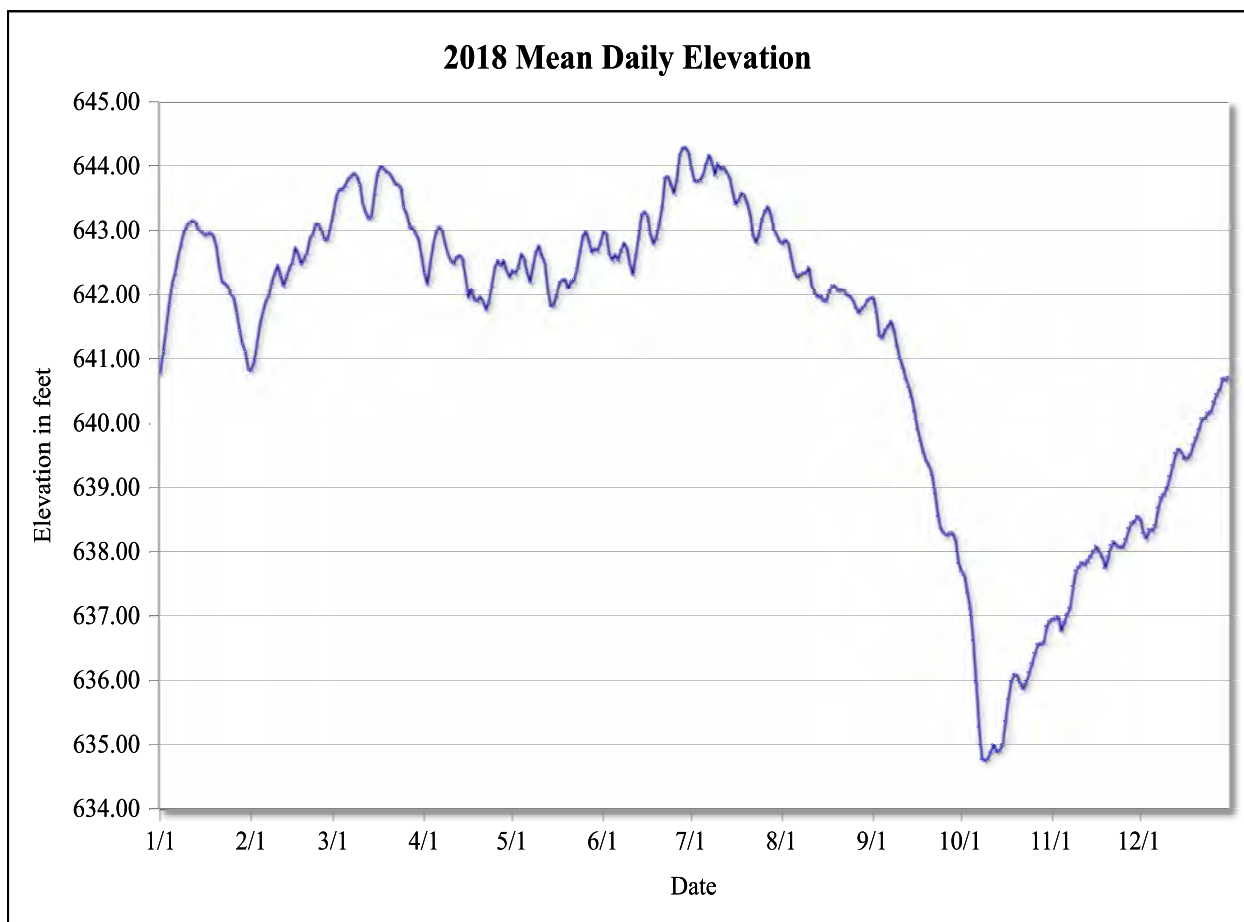
Drainage Area—171,200 mi².

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, 645.09 ft, Aug. 3, 2017; minimum daily elevation, 630.74 ft, Nov. 1, 2012; maximum hourly elevation, 645.36 ft, Aug. 4, 2017 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 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	640.78	640.83	643.29	642.35	642.39	642.99	643.96	642.80	641.96	637.70	636.96	638.50
2	641.12	640.96	643.53	642.18	642.35	642.96	643.77	642.86	641.73	637.64	636.97	638.30
3	641.49	641.26	643.64	642.50	642.45	642.64	643.77	642.81	641.37	637.37	636.99	638.22
4	641.85	641.55	643.64	642.78	642.64	642.55	643.78	642.58	641.34	637.12	636.78	638.36
5	642.18	641.74	643.70	642.99	642.57	642.63	643.87	642.38	641.46	636.63	636.91	638.34
6	642.35	641.91	643.80	643.06	642.36	642.55	644.04	642.28	641.52	635.97	637.03	638.42
7	642.59	641.99	643.84	643.02	642.21	642.70	644.18	642.32	641.59	635.28	637.13	638.69
8	642.78	642.21	643.89	642.81	642.46	642.81	644.06	642.35	641.45	634.78	637.47	638.85
9	642.98	642.36	643.84	642.64	642.67	642.73	643.86	642.36	641.21	634.75	637.71	638.90
10	643.07	642.47	643.72	642.54	642.77	642.49	644.05	642.44	641.01	634.78	637.77	639.00
11	643.13	642.31	643.43	642.50	642.60	642.33	643.95	642.15	640.87	634.89	637.84	639.18
12	643.16	642.15	643.29	642.59	642.52	642.62	643.98	642.04	640.70	635.01	637.80	639.35
13	643.13	642.29	643.19	642.62	642.11	642.90	643.90	641.97	640.57	634.89	637.87	639.54
14	643.02	642.43	643.23	642.57	641.83	643.25	643.82	641.99	640.41	634.91	637.94	639.60
15	642.99	642.52	643.59	642.29	641.84	643.30	643.60	641.91	640.19	635.01	638.02	639.55
16	642.94	642.74	643.88	641.96	641.99	643.24	643.42	641.91	639.91	635.37	638.10	639.45
17	642.95	642.64	643.99	642.09	642.20	642.95	643.48	642.07	639.73	635.71	638.00	639.46
18	642.97	642.49	643.97	641.93	642.24	642.80	643.58	642.15	639.55	635.99	637.92	639.51
19	642.93	642.57	643.91	641.91	642.25	642.90	643.55	642.15	639.42	636.10	637.75	639.67
20	642.78	642.66	643.89	641.97	642.10	643.11	643.43	642.07	639.34	636.09	637.93	639.78
21	642.47	642.89	643.82	641.90	642.22	643.37	643.26	642.09	639.20	635.96	638.11	639.91
22	642.22	642.95	643.73	641.77	642.24	643.82	642.93	642.07	638.91	635.87	638.17	640.08
23	642.19	643.11	643.71	641.89	642.42	643.84	642.82	642.00	638.56	635.96	638.10	640.08
24	642.14	643.09	643.66	642.17	642.68	643.71	642.95	641.98	638.37	636.13	638.09	640.17
25	642.01	643.01	643.36	642.44	642.92	643.58	643.18	641.92	638.31	636.27	638.09	640.18
26	641.96	642.86	643.26	642.54	642.99	643.79	643.31	641.80	638.27	636.43	638.20	640.34
27	641.73	642.87	643.06	642.47	642.85	644.18	643.38	641.72	638.30	636.57	638.37	640.46
28	641.46	643.06	643.05	642.54	642.67	644.29	643.26	641.79	638.30	636.58	638.46	640.52
29	641.24		642.96	642.39	642.72	644.30	643.03	641.83	638.20	636.59	638.48	640.70
30	641.12		642.87	642.29	642.69	644.22	642.94	641.92	637.83	636.85	638.56	640.67
31	640.84		642.61		642.82		642.84	641.95		636.93		640.72
Mean	642.28	642.35	643.53	642.39	642.44	643.19	643.55	642.15	639.99	636.00	637.78	639.50
Max	643.16	643.11	643.99	643.06	642.99	644.30	644.18	642.86	641.96	637.70	638.56	640.72
Min	640.78	640.83	642.61	641.77	641.83	642.33	642.82	641.72	637.83	634.75	636.78	638.22

Calendar Year Summary

Annual Mean 641.26 Daily Max 644.30 Daily Min 634.75

Maximum Elevation

Date	Time	Elev
Jun. 29	00:00	644.53

Minimum Elevation

Date	Time	Elev
Oct. 9	18:00	634.47

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.

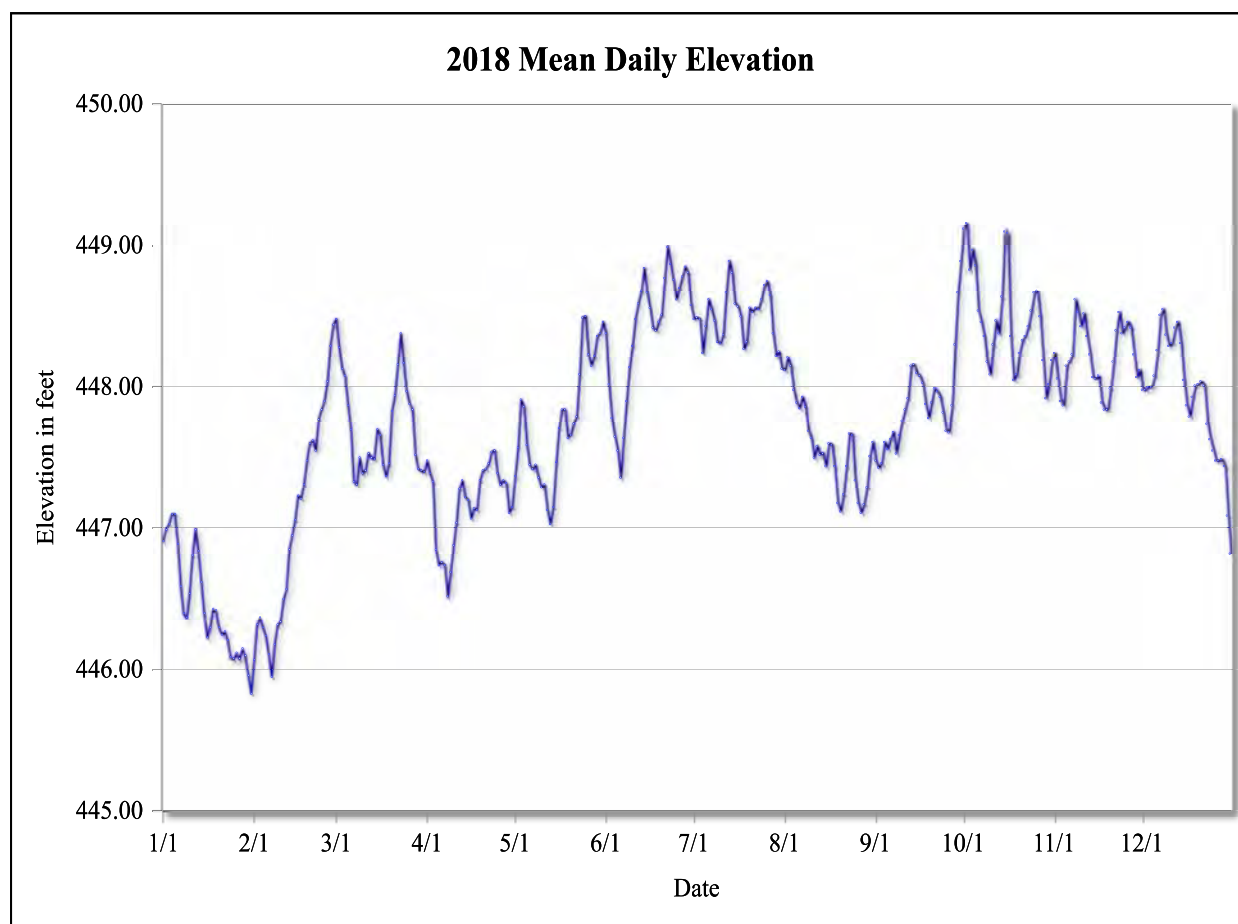
Drainage Area—180,800 mi².

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 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	446.91	446.07	448.48	447.48	447.37	448.38	448.48	448.12	447.48	449.12	448.24	447.98
2	446.99	446.32	448.28	447.39	447.57	448.02	448.49	448.21	447.43	449.16	448.06	447.98
3	447.03	446.37	448.13	447.33	447.91	447.78	448.48	448.15	447.46	448.83	447.90	448.00
4	447.10	446.30	448.08	446.85	447.86	447.65	448.24	447.98	447.61	448.97	447.87	448.00
5	447.10	446.24	447.87	446.74	447.59	447.55	448.43	447.89	447.56	448.86	448.15	448.08
6	446.89	446.11	447.70	446.76	447.45	447.36	448.62	447.85	447.63	448.54	448.18	448.26
7	446.59	445.95	447.33	446.74	447.42	447.64	448.55	447.93	447.68	448.46	448.23	448.51
8	446.40	446.18	447.31	446.52	447.45	447.90	448.47	447.86	447.53	448.36	448.62	448.55
9	446.37	446.32	447.50	446.69	447.36	448.14	448.32	447.69	447.66	448.18	448.53	448.37
10	446.54	446.34	447.39	446.88	447.29	448.29	448.31	447.64	447.76	448.09	448.43	448.29
11	446.81	446.50	447.41	447.04	447.31	448.48	448.37	447.50	447.84	448.30	448.52	448.31
12	446.99	446.57	447.53	447.28	447.13	448.59	448.67	447.58	447.92	448.47	448.36	448.42
13	446.84	446.85	447.50	447.34	447.03	448.68	448.89	447.52	448.15	448.38	448.23	448.46
14	446.62	446.95	447.49	447.22	447.15	448.84	448.81	447.53	448.16	448.64	448.07	448.31
15	446.40	447.06	447.70	447.20	447.47	448.67	448.59	447.44	448.10	449.10	448.06	448.05
16	446.23	447.23	447.66	447.07	447.71	448.56	448.57	447.60	448.08	449.09	448.08	447.87
17	446.30	447.21	447.45	447.14	447.84	448.42	448.50	447.59	448.03	448.36	447.89	447.79
18	446.43	447.31	447.37	447.13	447.84	448.40	448.27	447.44	447.88	448.05	447.84	447.93
19	446.42	447.48	447.46	447.34	447.64	448.46	448.32	447.18	447.78	448.09	447.84	448.01
20	446.30	447.60	447.83	447.41	447.66	448.51	448.56	447.12	447.89	448.24	447.99	448.02
21	446.25	447.62	447.94	447.42	447.74	448.77	448.53	447.24	447.99	448.33	448.18	448.04
22	446.27	447.55	448.16	447.46	447.79	448.99	448.56	447.44	447.97	448.36	448.40	448.01
23	446.21	447.77	448.38	447.54	448.09	448.87	448.55	447.67	447.93	448.43	448.53	447.74
24	446.09	447.84	448.17	447.55	448.49	448.76	448.62	447.66	447.82	448.54	448.38	447.63
25	446.08	447.90	447.97	447.39	448.50	448.62	448.72	447.34	447.69	448.67	448.42	447.55
26	446.12	448.04	447.88	447.31	448.23	448.70	448.75	447.18	447.68	448.68	448.46	447.48
27	446.08	448.29	447.84	447.34	448.15	448.78	448.65	447.11	447.87	448.50	448.42	447.48
28	446.15	448.44	447.52	447.32	448.22	448.85	448.38	447.17	448.30	448.19	448.23	447.49
29	446.10		447.42	447.11	448.36	448.81	448.22	447.29	448.67	447.92	448.07	447.44
30	445.96		447.41	447.15	448.38	448.58	448.25	447.51	448.89	448.02	448.12	447.09
31	445.83		447.40		448.46		448.13	447.61		448.19		446.82
Mean	446.46	447.01	447.73	447.17	447.76	448.40	448.49	447.58	447.88	448.49	448.21	447.93
Max	447.10	448.44	448.48	447.55	448.50	448.99	448.89	448.21	448.89	449.16	448.62	448.55
Min	445.83	445.95	447.31	446.52	447.03	447.36	448.13	447.11	447.43	447.92	447.84	446.82

Calendar Year Summary

Annual Mean 447.76 Daily Max 449.16 Daily Min 445.83

Maximum Elevation

Date	Time	Elev
Oct. 2	10:00	449.31

Minimum Elevation

Date	Time	Elev
Jan. 31	00:00	445.72

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 top section and a smooth metal bottom section. A small, dark, rectangular object is mounted on top of the structure. 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.

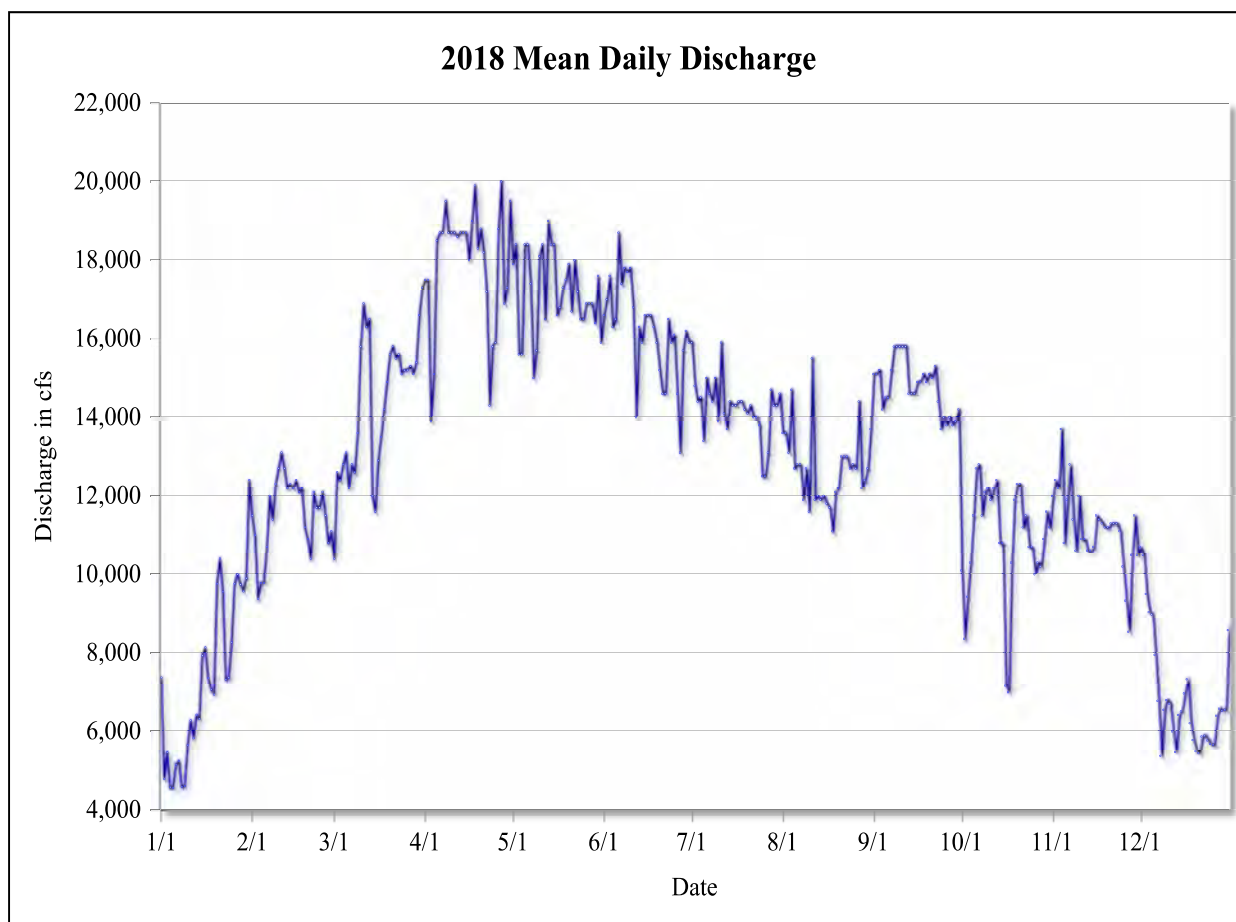
Drainage Area—171,300 mi².

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, 4,540 cfs, Feb. 1, 2010; maximum hourly discharge, 27,100 cfs, Apr. 1, 2010 at 22:00; minimum hourly discharge, 2,800 cfs, Dec. 22, 2011 at 14:00.

Remarks—None.



Colorado River Below Big Bend

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	7,370	11,500	10,400	17,500	17,900	16,600	15,900	13,600	15,100	10,100	12,000	10,700
2	4,790	11,000	12,600	17,500	18,400	17,000	14,800	13,600	15,100	8,360	12,400	10,500
3	5,470	9,380	12,400	13,900	15,600	17,600	14,400	13,100	15,200	9,430	12,200	9,500
4	4,580	9,780	12,800	15,100	15,600	16,300	14,500	14,700	14,200	10,300	13,700	9,040
5	4,560	9,780	13,100	18,500	18,400	16,500	13,400	12,700	14,500	11,500	10,800	8,980
6	5,150	10,700	12,200	18,700	18,400	18,700	15,000	12,800	14,500	12,700	11,900	7,950
7	5,250	12,000	12,800	18,700	17,400	17,400	14,600	12,800	15,200	12,800	12,800	6,780
8	4,590	11,400	12,600	19,500	15,000	17,800	14,400	11,900	15,800	11,500	11,400	5,380
9	4,610	12,300	13,600	18,700	15,700	17,700	15,000	12,700	15,800	12,100	10,600	6,550
10	5,650	12,700	15,800	18,700	18,100	17,800	13,900	11,600	15,800	12,200	12,000	6,800
11	6,280	13,100	16,900	18,700	18,400	16,800	15,900	15,500	15,800	11,900	10,900	6,710
12	5,830	12,700	16,300	18,600	16,500	14,000	14,100	11,900	15,800	12,200	10,900	6,000
13	6,420	12,200	16,500	18,700	19,000	16,300	13,700	12,000	14,600	12,400	10,600	5,480
14	6,320	12,300	12,000	18,700	18,400	15,900	14,400	11,900	14,600	10,800	10,600	6,420
15	7,930	12,200	11,600	18,700	18,400	16,600	14,300	12,000	14,600	10,800	10,700	6,510
16	8,140	12,400	12,900	18,000	16,600	16,600	14,300	11,800	14,900	7,170	11,500	6,970
17	7,360	12,100	13,500	19,000	16,800	16,600	14,400	11,700	14,900	7,000	11,400	7,330
18	7,070	12,200	14,200	19,900	17,300	16,300	14,400	11,100	15,100	10,300	11,300	6,210
19	6,940	11,200	14,900	18,300	17,500	15,900	14,200	12,100	14,900	11,900	11,200	5,780
20	9,760	10,900	15,600	18,800	17,900	15,200	14,100	12,200	15,100	12,300	11,200	5,500
21	10,400	10,400	15,800	18,200	16,700	14,600	14,300	13,000	15,000	12,300	11,300	5,450
22	9,560	12,100	15,500	17,200	18,000	14,600	14,000	13,000	15,300	11,200	11,300	5,870
23	7,320	11,700	15,600	14,300	17,200	16,500	14,000	13,000	14,400	11,500	11,300	5,890
24	7,370	11,700	15,100	15,800	16,500	15,900	13,800	12,700	13,700	10,700	11,100	5,770
25	8,270	12,100	15,200	15,900	16,500	16,100	12,500	12,800	14,000	10,700	10,200	5,680
26	9,760	11,500	15,200	18,800	16,900	14,600	12,500	12,700	13,800	10,000	9,330	5,660
27	10,000	10,800	15,300	20,000	16,900	13,100	13,100	14,400	14,000	10,300	8,540	6,400
28	9,740	11,100	15,100	16,900	16,900	15,700	14,700	12,200	13,800	10,200	10,500	6,580
29	9,570		15,400	17,300	16,400	16,200	14,300	12,400	13,900	10,900	11,500	6,530
30	9,900		16,600	19,500	17,600	15,900	14,300	12,700	14,200	11,600	10,500	6,550
31	12,400		17,300		15,900		14,600	13,700		11,200		8,580
Total	228,458	323,330	444,763	537,930	532,987	486,743	441,690	394,157	443,785	338,349	335,595	214,084
Mean	7,370	11,550	14,350	17,930	17,190	16,220	14,250	12,710	14,790	10,910	11,190	6,906
Max	12,400	13,100	17,300	20,000	19,000	18,700	15,900	15,500	15,800	12,800	13,700	10,700
Min	4,560	9,380	10,400	13,900	15,000	13,100	12,500	11,100	13,700	7,000	8,540	5,380
Ac-ft	453,141	641,315	882,175	1,066,970	1,057,164	965,440	876,079	781,799	880,235	671,105	665,643	424,630

Calendar Year Summary

Annual Total 4,721,871 Annual Mean 12,940 Daily Max 20,000 Daily Min 4,560 Annual Ac-ft 9,365,695

Maximum Discharge

Date	Time	Elev	Discharge
Sep. 8	21:00	488.85	25,141

Minimum Discharge

Date	Time	Elev	Discharge
Jan. 11	09:00	480.56	4,410

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.

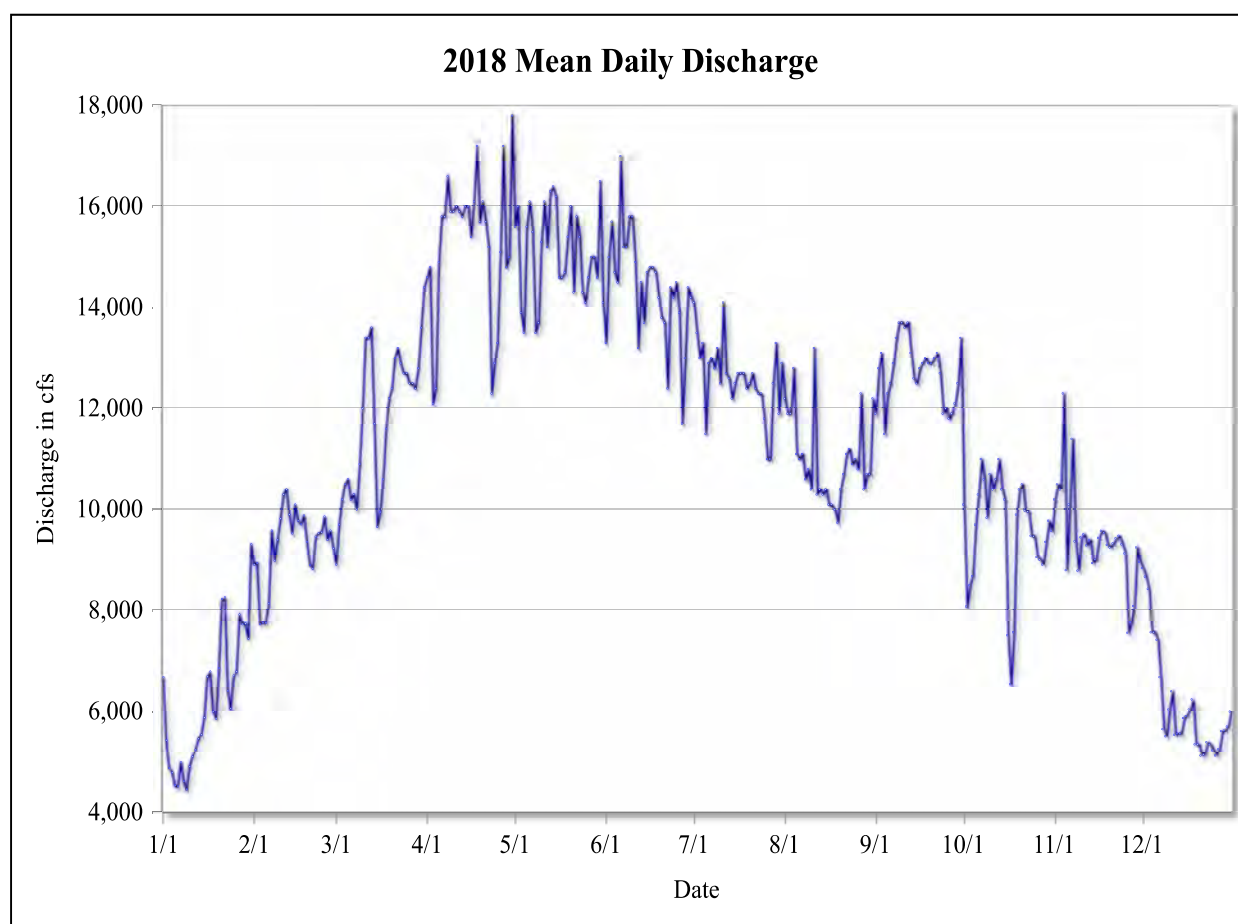
Drainage Area—171,700 mi².

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, 4,430 cfs, Dec. 11, 2013; maximum hourly discharge, 24,300 cfs, Apr. 24, 2009 at 10:00; minimum hourly discharge, 4,010 cfs, Dec. 22, 2011 at 19:00.

Remarks—Stage record is estimated as good. Discharge record is estimated as poor due to the lack of stream stability during the record period. Shifts were not applied to final record and discharge is computed from the base rating.



Colorado River Below Needles Bridge

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	6,680	8,910	8,910	14,600	15,600	13,300	14,100	12,200	11,900	10,100	10,200	8,840
2	5,430	8,940	9,700	14,800	16,000	15,000	13,500	11,900	12,800	8,080	10,500	8,670
3	4,880	7,730	10,200	12,100	13,900	15,700	13,000	11,900	13,100	8,500	10,400	8,430
4	4,790	7,760	10,500	12,400	13,500	14,700	13,300	12,800	11,500	8,680	12,300	7,570
5	4,540	7,760	10,600	14,900	15,600	14,500	11,500	11,100	12,300	9,700	8,800	7,570
6	4,520	8,140	10,200	15,800	16,100	17,000	12,900	11,000	12,500	10,300	10,100	7,420
7	4,990	9,580	10,300	15,800	15,500	15,200	13,000	11,100	12,900	11,000	11,400	6,680
8	4,620	8,990	10,000	16,600	13,500	15,200	12,800	10,600	13,400	10,600	9,370	5,650
9	4,460	9,400	10,900	15,900	13,700	15,800	13,200	10,800	13,700	9,840	8,790	5,510
10	4,910	9,820	12,000	15,900	15,300	15,800	12,500	10,400	13,700	10,700	9,450	6,040
11	5,110	10,300	13,400	16,000	16,100	14,900	14,100	13,200	13,600	10,400	9,510	6,400
12	5,240	10,400	13,400	15,900	15,200	13,200	12,700	10,300	13,700	10,600	9,290	5,540
13	5,460	9,900	13,600	15,800	16,300	14,500	12,600	10,400	13,100	11,000	9,400	5,560
14	5,540	9,530	11,700	16,000	16,400	13,700	12,200	10,300	12,600	10,400	8,940	5,560
15	5,880	10,100	9,660	16,000	16,200	14,700	12,500	10,400	12,500	10,200	9,010	5,870
16	6,690	9,780	9,950	15,400	14,600	14,800	12,700	10,100	12,800	7,510	9,440	5,910
17	6,790	9,710	10,600	16,100	14,600	14,800	12,700	10,100	12,900	6,540	9,580	6,040
18	6,000	9,880	11,600	17,200	14,700	14,700	12,700	10,000	13,000	7,570	9,540	6,240
19	5,860	9,360	12,200	15,700	15,400	14,200	12,400	9,740	12,900	9,900	9,300	5,350
20	6,860	8,900	12,400	16,100	16,000	13,800	12,500	10,400	12,900	10,400	9,250	5,350
21	8,230	8,830	13,000	15,700	14,300	13,700	12,700	10,700	13,000	10,500	9,330	5,130
22	8,260	9,460	13,200	15,200	15,800	12,400	12,400	11,100	13,100	9,980	9,430	5,150
23	6,410	9,530	12,900	12,300	15,400	14,400	12,300	11,200	12,700	9,960	9,480	5,390
24	6,060	9,550	12,700	12,900	14,300	14,200	12,300	10,900	11,900	9,480	9,310	5,350
25	6,710	9,860	12,700	13,300	14,100	14,500	11,800	11,000	12,000	9,470	9,130	5,230
26	6,790	9,400	12,500	15,100	14,600	13,900	11,000	10,800	11,800	9,060	7,560	5,130
27	7,920	9,580	12,500	17,200	15,000	11,700	11,000	12,300	11,900	9,010	7,770	5,250
28	7,730	9,230	12,400	14,800	15,000	13,000	12,500	10,400	12,100	8,910	8,090	5,610
29	7,740		12,800	15,000	14,600	14,400	13,300	10,700	12,500	9,360	9,250	5,620
30	7,440		13,600	17,800	16,500	14,200	11,900	10,700	13,400	9,780	8,960	5,700
31	9,310		14,400		14,100		12,900	12,200		9,580		6,000
Total	191,846	260,391	364,517	458,368	467,800	431,875	391,123	340,680	382,310	297,193	282,923	189,756
Mean	6,189	9,300	11,760	15,280	15,090	14,400	12,620	10,990	12,740	9,587	9,431	6,121
Max	9,310	10,400	14,400	17,800	16,500	17,000	14,100	13,200	13,700	11,000	12,300	8,840
Min	4,460	7,730	8,910	12,100	13,500	11,700	11,000	9,740	11,500	6,540	7,560	5,130
Ac-ft	380,521	516,478	723,008	909,159	927,869	856,612	775,781	675,729	758,300	589,474	561,169	376,376

Calendar Year Summary

Annual Total 4,058,782 Annual Mean 11,120 Daily Max 17,800 Daily Min 4,460 Annual Ac-ft 8,050,476

Maximum Discharge

Date	Time	Elev	Discharge
Jun. 9	01:00	461.44	20,571

Minimum Discharge

Date	Time	Elev	Discharge
Jan. 19	12:00	452.15	4,340

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.

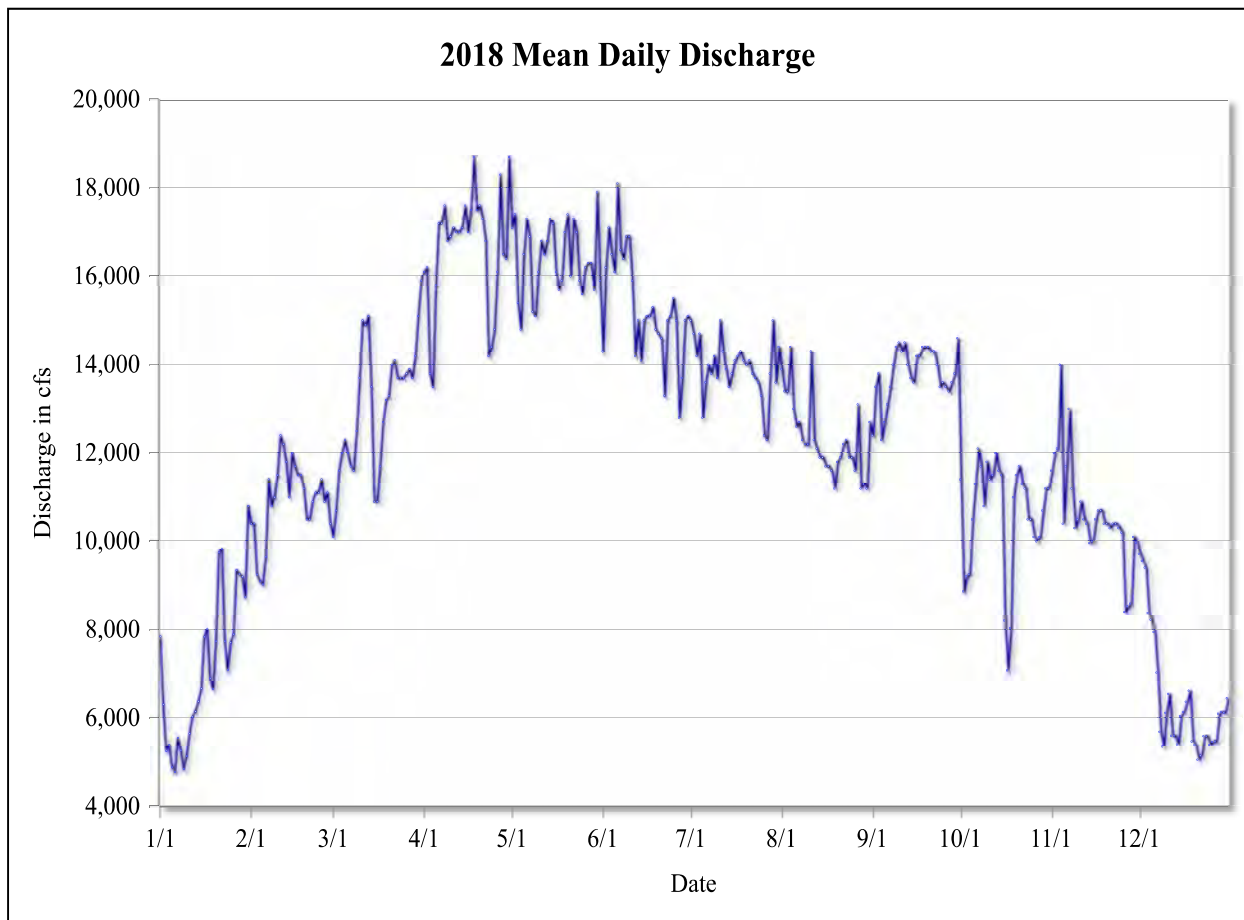
Drainage Area—174,300 mi².

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, 4,100 cfs, Dec. 8, 2007; maximum hourly discharge, 23,610 cfs, Apr. 24, 2009 at 12:00; minimum hourly discharge, 2,970 cfs, Dec. 22, 2011 at 23:00.

Remarks—The SonTek/YSI-SL current meter was fouled by muddy water and a model was used to predict discharge from Oct. 4, 2018 at 14:00 thru Oct. 4, 2018 at 22:00.



Colorado River at River Section 41

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	7,850	10,400	10,100	16,100	17,100	14,300	15,000	13,900	12,400	11,400	11,600	9,720
2	6,310	10,400	10,700	16,200	17,400	16,200	14,700	13,400	13,500	8,870	12,000	9,560
3	5,260	9,250	11,600	13,800	15,400	17,100	14,200	13,400	13,800	9,210	12,100	9,410
4	5,390	9,100	12,000	13,500	14,800	16,500	14,700	14,400	12,300	9,250	14,000	8,380
5	4,890	9,030	12,300	15,800	16,500	16,100	12,800	13,000	12,700	10,500	10,400	8,230
6	4,780	9,650	12,000	17,200	17,300	18,100	13,600	12,600	13,100	11,300	11,700	7,950
7	5,550	11,400	11,700	17,200	16,900	16,600	14,000	12,700	13,500	12,100	13,000	7,030
8	5,270	10,800	11,600	17,600	15,200	16,400	13,800	12,300	14,000	11,700	11,200	5,690
9	4,850	11,000	12,500	16,800	15,100	16,900	14,200	12,200	14,400	10,800	10,300	5,360
10	5,140	11,500	13,700	16,900	16,100	16,900	13,700	12,200	14,500	11,800	10,500	6,120
11	5,650	12,400	15,000	17,100	16,800	15,900	15,000	14,300	14,300	11,400	10,900	6,550
12	6,030	12,200	14,900	17,000	16,500	14,200	14,300	12,300	14,500	11,500	10,500	5,600
13	6,150	11,800	15,100	17,000	16,800	15,000	13,900	12,100	14,000	12,000	10,400	5,600
14	6,380	11,000	13,500	17,100	17,300	14,100	13,500	11,900	13,700	11,600	9,960	5,400
15	6,670	12,000	10,900	17,600	17,200	15,000	13,800	11,900	13,600	11,500	10,000	6,050
16	7,840	11,700	10,900	17,000	16,100	15,100	14,100	11,700	14,200	8,210	10,500	6,140
17	8,020	11,500	11,700	17,500	15,700	15,100	14,200	11,700	14,200	7,080	10,700	6,370
18	6,900	11,500	12,700	18,700	15,900	15,300	14,300	11,600	14,400	8,040	10,700	6,620
19	6,660	11,200	13,200	17,500	17,000	14,800	14,100	11,200	14,400	11,000	10,400	5,470
20	7,740	10,500	13,300	17,600	17,400	14,700	14,000	11,800	14,400	11,500	10,400	5,390
21	9,750	10,500	14,000	17,300	16,000	14,600	14,100	11,900	14,300	11,700	10,300	5,060
22	9,830	10,900	14,100	16,800	17,300	13,300	13,800	12,200	14,300	11,300	10,400	5,150
23	7,740	11,100	13,700	14,200	17,000	15,000	13,700	12,300	14,000	11,200	10,400	5,590
24	7,090	11,100	13,700	14,400	15,900	15,100	13,600	11,900	13,500	10,500	10,300	5,590
25	7,710	11,400	13,700	14,800	15,600	15,500	13,300	11,900	13,600	10,500	10,200	5,390
26	7,900	10,900	13,800	16,100	16,200	15,000	12,400	11,600	13,500	10,100	8,400	5,460
27	9,350	11,100	13,900	18,300	16,300	12,800	12,300	13,100	13,400	10,000	8,530	5,470
28	9,260	10,400	13,700	16,500	16,300	13,700	13,800	11,200	13,600	10,100	8,590	6,100
29	9,200		14,200	16,400	15,700	15,000	15,000	11,300	13,800	10,700	10,100	6,140
30	8,740		15,100	18,700	17,900	15,100	13,600	11,200	14,600	11,200	9,970	6,120
31	10,800		15,900		15,900		14,400	12,700		11,200		6,450
Total	220,673	305,435	405,162	498,503	508,668	459,626	432,026	381,797	414,733	329,251	318,508	199,150
Mean	7,118	10,910	13,070	16,620	16,410	15,320	13,940	12,320	13,820	10,620	10,620	6,424
Max	10,800	12,400	15,900	18,700	17,900	18,100	15,000	14,400	14,600	12,100	14,000	9,720
Min	4,780	9,030	10,100	13,500	14,800	12,800	12,300	11,200	12,300	7,080	8,400	5,060
Ac-ft	437,699	605,821	803,626	988,766	1,008,929	911,656	856,911	757,283	822,611	653,059	631,752	395,008

Calendar Year Summary

Annual Total 4,473,531 Annual Mean 12,260 Daily Max 18,700 Daily Min 4,780 Annual Ac-ft 8,873,120

Maximum Discharge

Date	Time	Elev	Discharge
Jun. 9	03:00	453.98	20,563

Minimum Discharge

Date	Time	Elev	Discharge
Jan. 6	11:00	448.81	4,576

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

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.

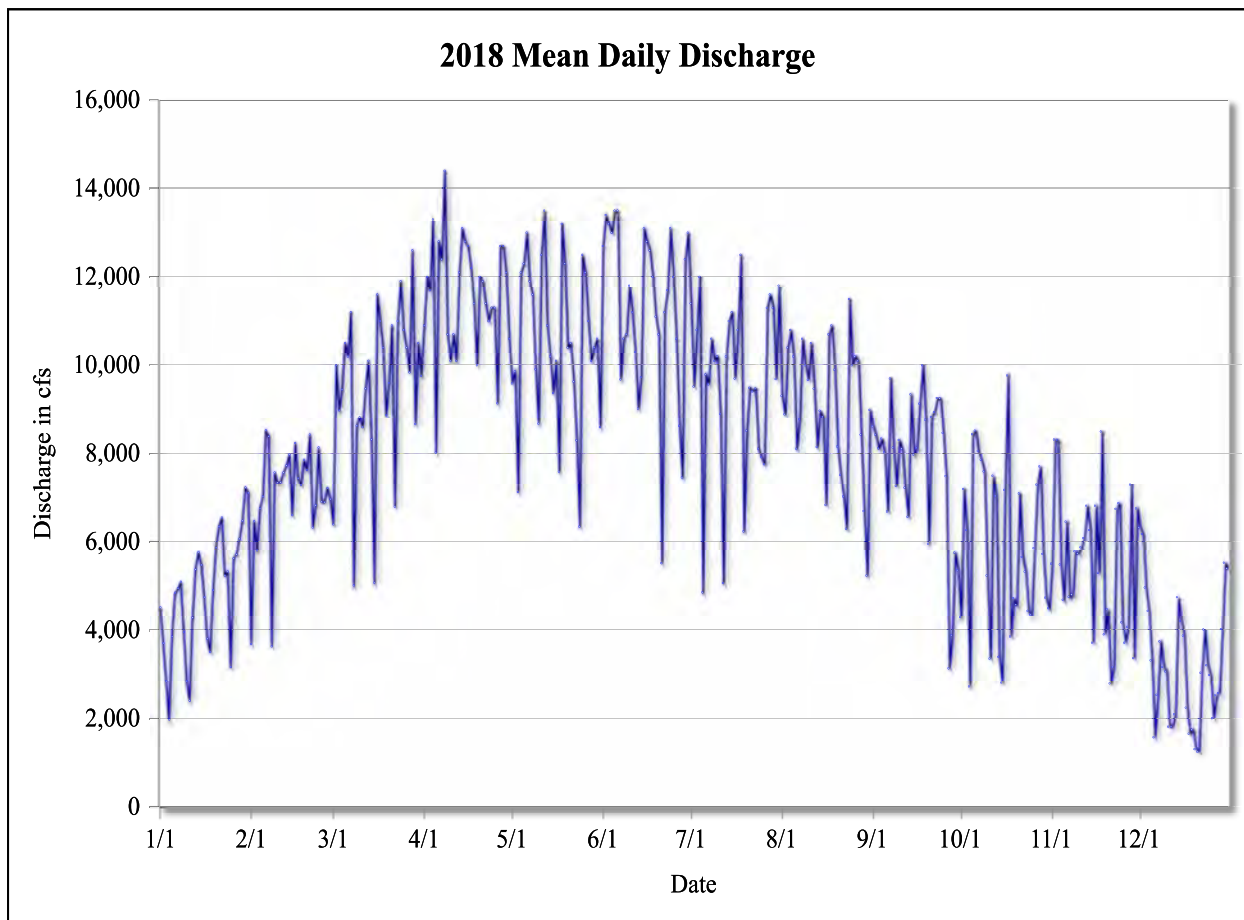
Drainage Area—181,000 mi².

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, 158 cfs, Dec. 25, 2018 at 05:00.

Remarks—None.



Colorado River at Parker Gage

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	4,520	3,690	6,400	10,900	9,590	12,700	11,400	9,310	8,620	4,300	5,510	6,330
2	3,710	6,470	10,000	12,000	9,860	13,400	9,520	8,890	8,430	7,200	8,320	6,180
3	2,850	5,810	8,980	11,700	7,130	13,200	10,800	10,400	8,120	6,270	8,310	4,970
4	1,980	6,760	9,450	13,300	12,100	13,000	12,000	10,800	8,340	2,730	5,490	4,440
5	3,860	7,030	10,500	8,020	12,300	13,500	4,860	10,200	8,030	8,440	4,690	3,320
6	4,850	8,530	10,200	12,800	13,000	13,500	9,790	8,110	6,690	8,520	6,460	1,580
7	4,950	8,390	11,200	12,400	11,900	9,680	9,570	8,780	9,700	8,060	4,760	2,540
8	5,100	3,640	5,020	14,400	11,600	10,600	10,600	10,600	8,140	7,860	4,810	3,750
9	3,960	7,570	8,630	10,700	9,910	10,700	10,100	10,000	7,270	7,600	5,790	3,170
10	2,850	7,340	8,820	10,100	8,680	11,800	10,200	9,670	8,310	5,240	5,740	3,070
11	2,410	7,350	8,600	10,700	12,500	11,200	8,900	10,500	8,110	3,360	5,880	1,820
12	4,290	7,570	9,470	10,100	13,500	10,300	5,070	9,470	7,230	7,500	6,090	1,820
13	5,380	7,730	10,100	12,100	10,900	9,020	10,200	8,150	6,570	7,040	6,820	2,100
14	5,770	7,980	8,320	13,100	10,200	9,730	11,000	8,970	9,340	3,400	6,270	4,750
15	5,480	6,610	5,080	12,800	9,370	13,100	11,200	8,830	7,980	2,820	3,720	4,210
16	4,750	8,240	11,600	12,700	10,100	12,800	9,700	6,840	8,130	7,180	6,820	3,880
17	3,810	7,440	11,000	12,200	7,590	12,600	10,800	10,700	9,130	9,770	5,300	2,250
18	3,510	7,290	10,400	11,400	13,200	12,000	12,500	10,900	10,000	3,860	8,500	1,660
19	4,910	7,860	8,870	10,000	12,300	11,100	6,240	9,900	8,770	4,730	3,910	1,750
20	5,870	7,630	9,600	12,000	10,400	10,700	8,520	8,160	5,960	4,580	4,480	1,310
21	6,350	8,430	10,900	11,900	10,500	5,520	9,490	7,520	8,830	7,100	2,800	1,250
22	6,550	6,330	6,800	11,400	9,630	11,200	9,410	7,030	8,940	5,660	3,170	3,040
23	5,240	6,830	11,000	11,000	8,300	11,700	9,470	6,300	9,260	5,330	6,750	4,020
24	5,330	8,140	11,900	11,300	6,350	13,100	8,110	11,500	9,250	4,440	6,880	3,210
25	3,170	6,910	10,800	11,300	12,500	12,000	7,920	10,000	8,470	4,350	4,180	2,990
26	5,630	6,900	10,400	9,140	12,100	10,600	7,760	10,200	7,490	5,860	3,720	2,010
27	5,720	7,220	9,840	12,700	11,000	8,630	11,300	10,100	3,140	7,300	4,080	2,530
28	6,070	6,970	12,600	12,700	10,100	7,460	11,600	8,430	3,890	7,710	7,300	2,580
29	6,480		8,670	12,100	10,400	12,400	11,300	6,700	5,760	5,730	3,370	4,030
30	7,230		10,500	10,600	10,600	13,000	9,690	5,240	5,360	4,740	6,760	5,530
31	7,110		9,760		8,600		11,800	8,990		4,500		5,400
Total	149,702	198,646	295,552	347,431	326,055	340,159	300,798	281,194	233,305	183,193	166,693	101,506
Mean	4,829	7,094	9,534	11,580	10,520	11,340	9,703	9,071	7,777	5,909	5,556	3,274
Max	7,230	8,530	12,600	14,400	13,500	13,500	12,500	11,500	10,000	9,770	8,500	6,330
Min	1,980	3,640	5,020	8,020	6,350	5,520	4,860	5,240	3,140	2,730	2,800	1,250
Ac-ft	296,929	394,008	586,219	689,120	646,720	674,695	596,624	557,741	462,753	363,359	330,630	201,333

Calendar Year Summary

Annual Total 2,924,233 Annual Mean 8,012 Daily Max 14,400 Daily Min 1,250 Annual Ac-ft 5,800,132

Maximum Discharge

Date	Time	Elev	Discharge
Jun. 4	21:00	345.75	19,720

Minimum Discharge

Date	Time	Elev	Discharge
Dec. 25	05:00	339.33	158

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.

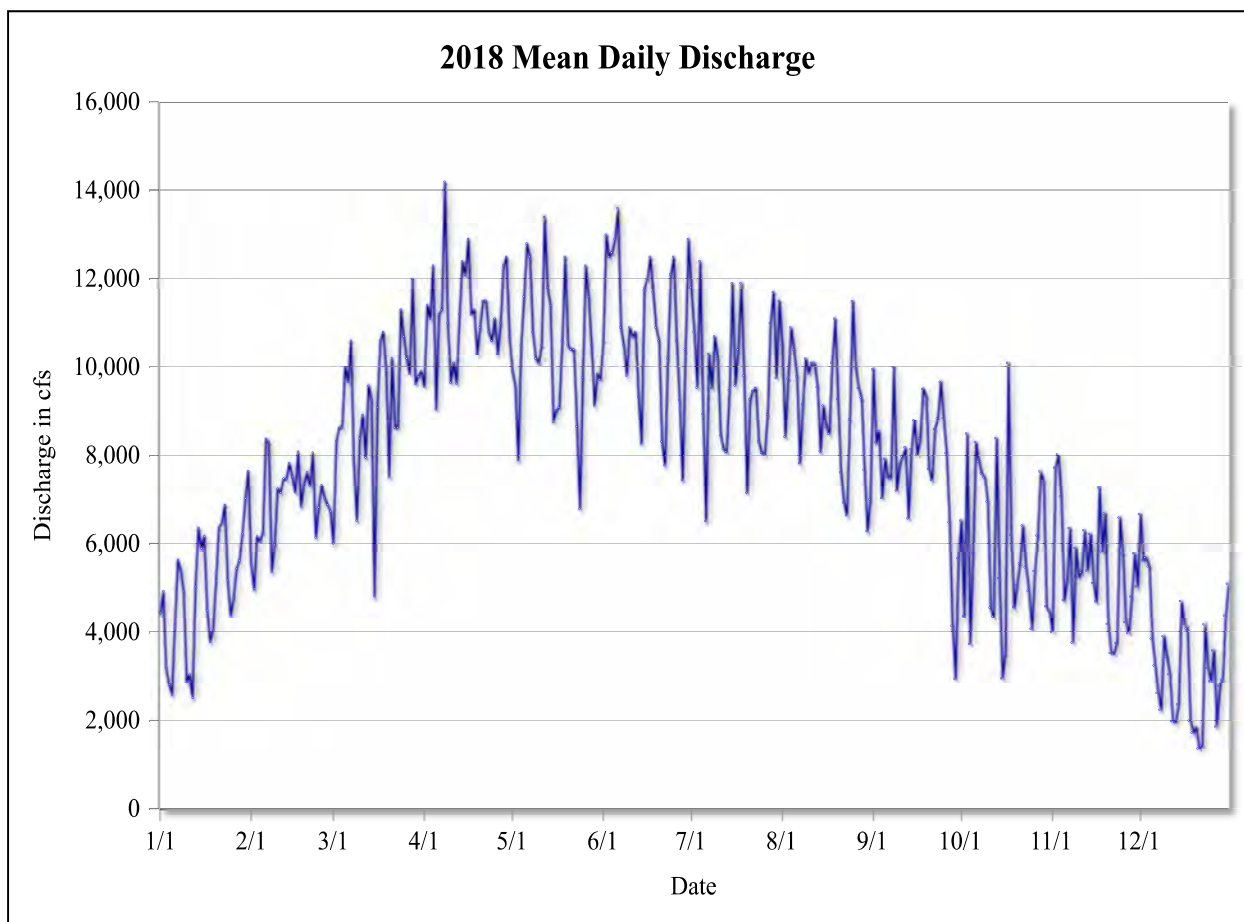
Drainage Area—181,600 mi².

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, 1,420 cfs, Dec. 29, 2016; maximum hourly discharge, 20,402 cfs, Apr. 22, 2015 at 03:00; minimum hourly discharge, 1,199 cfs, Dec. 29, 2016 at 11:00.

Remarks—None.



Colorado River at Water Wheel

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	4,440	5,520	6,010	9,560	9,910	10,600	11,800	10,500	9,960	6,530	4,010	6,680
2	4,930	4,990	8,330	11,400	9,570	13,000	10,800	8,430	8,300	4,370	7,730	5,630
3	3,190	6,170	8,630	11,100	7,900	12,500	9,540	9,740	8,550	8,500	8,030	5,690
4	2,820	6,060	8,640	12,300	10,500	12,600	12,400	10,900	7,040	3,740	7,080	5,490
5	2,590	6,270	10,000	9,050	11,600	12,900	8,940	10,400	7,930	5,790	4,730	3,860
6	4,190	8,380	9,670	11,200	12,800	13,600	6,520	9,790	7,520	8,310	5,180	3,250
7	5,640	8,310	10,600	11,300	12,500	10,900	10,300	7,830	7,490	7,870	6,360	2,630
8	5,410	5,370	7,790	14,200	10,800	10,500	9,530	9,160	10,000	7,600	3,770	2,250
9	4,930	5,980	6,530	11,000	10,200	9,810	10,700	10,200	7,210	7,510	5,910	3,910
10	2,870	7,250	8,380	9,650	10,100	10,900	10,200	9,860	7,810	6,960	5,250	3,450
11	3,040	7,160	8,920	10,100	10,500	10,700	8,460	10,100	7,980	4,560	5,360	3,050
12	2,520	7,480	7,960	9,630	13,400	10,800	8,160	10,100	8,190	4,360	6,310	1,990
13	5,030	7,470	9,580	11,200	11,800	9,330	8,090	9,550	6,580	8,400	5,400	1,970
14	6,360	7,830	9,260	12,400	11,400	8,280	9,480	8,100	8,150	5,230	6,230	2,370
15	5,900	7,520	4,820	12,100	8,770	11,800	11,900	9,130	8,800	2,960	5,120	4,710
16	6,170	7,170	9,090	12,900	9,030	12,000	9,590	8,650	8,030	3,520	4,700	4,190
17	4,500	8,090	10,600	11,200	9,090	12,500	10,400	8,500	8,390	10,100	7,280	4,090
18	3,780	6,850	10,800	11,300	10,600	11,700	11,900	10,100	9,510	6,210	5,830	2,000
19	4,050	7,360	9,930	10,300	12,500	10,900	9,810	11,100	9,350	4,570	6,690	1,730
20	5,170	7,620	7,530	10,900	10,500	10,600	7,160	9,280	7,700	5,070	4,190	1,860
21	6,360	7,320	10,200	11,500	10,400	8,320	9,270	7,620	7,450	5,560	3,530	1,370
22	6,480	8,070	8,640	11,500	10,400	7,780	9,460	6,940	8,600	6,420	3,510	1,430
23	6,880	6,150	8,630	10,800	8,660	10,200	9,520	6,650	8,840	5,470	3,760	4,180
24	5,180	6,830	11,300	10,600	6,800	12,100	8,320	8,820	9,670	4,940	6,600	3,190
25	4,390	7,330	10,700	11,100	9,770	12,500	8,070	11,500	8,850	4,080	5,790	2,890
26	4,780	7,040	10,200	10,300	12,300	10,600	8,030	10,000	8,060	5,390	4,230	3,590
27	5,440	6,890	9,850	11,000	11,600	9,260	8,930	9,530	6,490	6,190	3,980	1,870
28	5,630	6,740	12,000	12,300	10,500	7,450	11,000	9,310	4,150	7,640	4,810	2,790
29	6,230		9,620	12,500	9,140	10,400	11,700	7,680	2,950	7,430	5,790	2,930
30	7,030		9,790	10,700	9,850	12,900	9,760	6,290	5,680	4,590	5,040	4,380
31	7,650		9,900		9,720		11,500	7,010		4,490		5,100
Total	153,574	195,223	283,925	335,202	322,637	327,373	301,320	282,744	235,231	184,346	162,197	104,491
Mean	4,954	6,972	9,159	11,170	10,410	10,910	9,720	9,121	7,841	5,947	5,407	3,371
Max	7,650	8,380	12,000	14,200	13,400	13,600	12,400	11,500	10,000	10,100	8,030	6,680
Min	2,520	4,990	4,820	9,050	6,800	7,450	6,520	6,290	2,950	2,960	3,510	1,370
Ac-ft	304,610	387,219	563,156	664,863	639,941	649,334	597,660	560,814	466,573	365,645	321,714	207,255

Calendar Year Summary

Annual Total 2,888,262 Annual Mean 7,913 Daily Max 14,200 Daily Min 1,370 Annual Ac-ft 5,728,785

Maximum Discharge

Date	Time	Elev	Discharge
Jun. 6	02:00	304.63	17,427

Minimum Discharge

Date	Time	Elev	Discharge
Dec. 21	11:00	296.90	1,331

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.

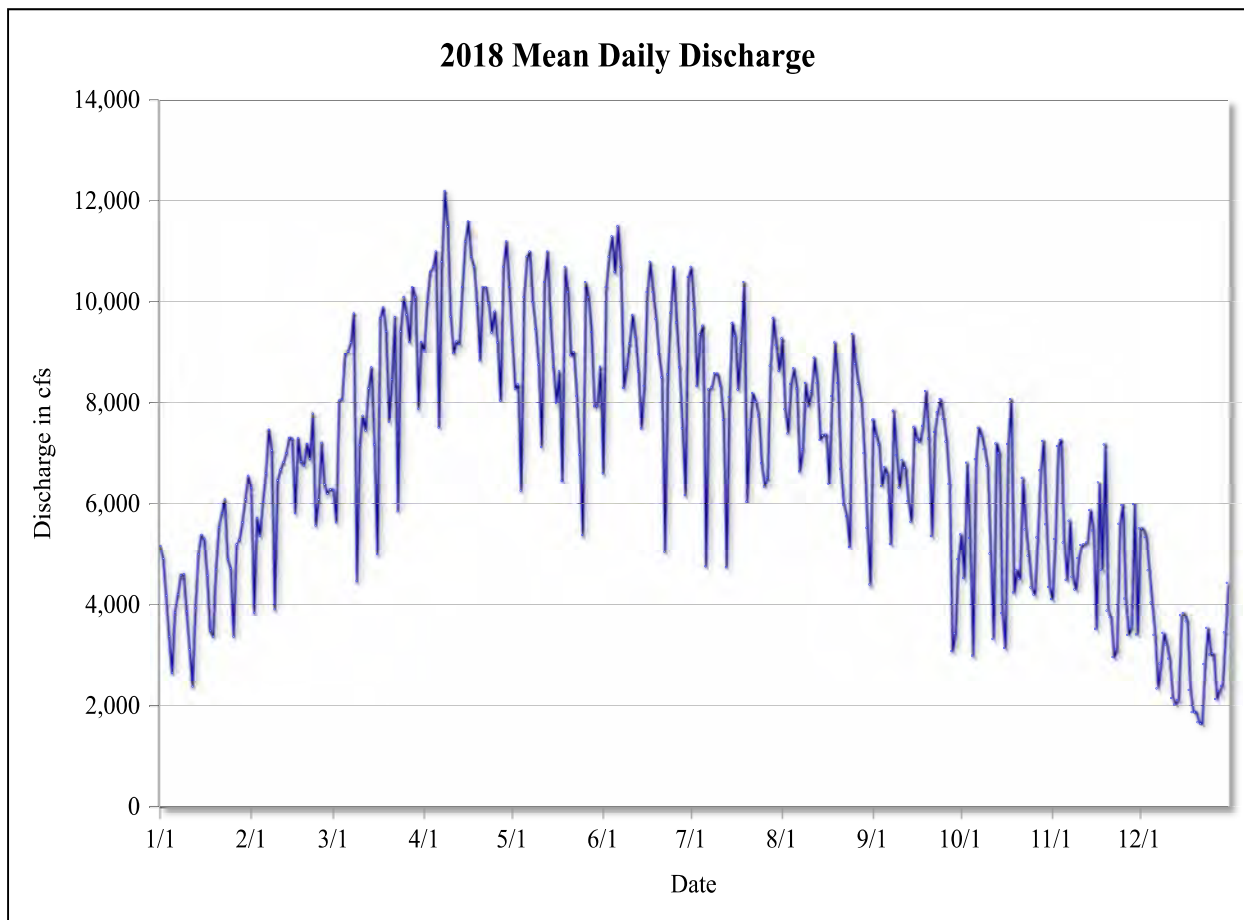
Drainage Area—184,300 mi².

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—None.



Colorado River Below Interstate Bridge

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	5,170	6,320	6,280	9,050	9,250	6,610	10,700	9,280	7,670	5,400	4,120	5,520
2	4,920	3,850	5,640	10,000	8,290	10,300	9,860	7,880	7,360	4,540	5,310	5,510
3	4,190	5,720	8,050	10,600	8,370	10,900	8,340	7,400	7,180	6,820	7,150	5,350
4	3,380	5,380	8,080	10,700	6,270	11,300	9,360	8,380	6,360	5,330	7,270	4,690
5	2,660	6,040	8,970	11,000	10,100	10,600	9,530	8,690	6,730	3,000	5,240	4,050
6	3,850	6,610	9,020	7,520	10,900	11,500	4,770	8,290	6,590	6,890	4,500	3,410
7	4,210	7,470	9,200	10,800	11,000	10,700	8,270	6,650	5,210	7,510	5,670	2,350
8	4,590	7,060	9,770	12,200	10,000	8,300	8,310	7,080	7,850	7,350	4,560	2,840
9	4,610	3,920	4,480	11,500	9,470	8,710	8,590	8,400	6,970	7,090	4,310	3,450
10	3,880	6,470	7,170	9,710	8,760	9,180	8,580	7,940	6,330	6,760	4,930	3,220
11	3,120	6,680	7,750	8,990	7,130	9,740	8,340	8,230	6,870	5,020	5,190	2,940
12	2,390	6,830	7,460	9,220	10,400	9,310	7,670	8,900	6,720	3,330	5,200	2,160
13	3,940	7,010	8,290	9,170	11,000	8,630	4,750	8,400	6,060	7,200	5,240	2,030
14	5,010	7,310	8,710	10,300	9,680	7,500	8,120	7,270	5,650	7,010	5,880	2,120
15	5,390	7,290	7,180	11,200	8,720	8,340	9,580	7,360	7,520	3,840	5,480	3,800
16	5,310	5,820	5,010	11,600	8,000	10,200	9,330	7,370	7,280	3,150	3,530	3,840
17	4,590	7,300	9,680	10,900	8,630	10,800	8,270	6,400	7,230	7,190	6,430	3,680
18	3,490	6,840	9,890	10,700	6,460	10,200	9,180	8,140	7,550	8,080	4,700	2,320
19	3,380	6,770	9,420	9,950	10,700	9,670	10,400	9,200	8,240	4,250	7,180	1,880
20	4,710	7,190	7,630	8,850	10,200	8,970	6,050	8,400	7,300	4,690	3,890	1,880
21	5,540	6,900	8,470	10,300	8,950	8,510	7,470	6,700	5,370	4,530	3,760	1,680
22	5,820	7,790	9,700	10,300	9,010	5,060	8,200	5,990	7,430	6,520	2,970	1,650
23	6,090	5,580	5,860	9,980	8,140	8,570	8,030	5,760	7,820	5,500	3,130	2,830
24	4,910	6,090	9,420	9,400	6,980	9,790	7,760	5,150	8,080	4,980	5,610	3,550
25	4,730	7,210	10,100	9,810	5,390	10,700	6,810	9,370	7,690	4,350	5,980	3,020
26	3,380	6,390	9,750	9,200	10,400	9,600	6,350	8,780	7,240	4,210	4,130	3,040
27	5,200	6,210	9,210	8,050	10,100	8,710	6,520	8,390	6,400	5,340	3,410	2,140
28	5,290	6,290	10,300	10,700	9,410	7,500	8,740	8,040	3,090	6,670	3,570	2,300
29	5,640		10,100	11,200	7,940	6,180	9,680	7,010	3,440	7,250	6,000	2,400
30	6,090		7,890	10,300	7,940	10,500	9,150	5,530	4,910	5,600	3,420	3,460
31	6,560		9,210		8,720		8,640	4,410		4,360		4,440
Total	142,044	180,387	257,685	303,154	276,311	276,624	255,292	234,791	200,159	173,747	147,768	97,556
Mean	4,582	6,442	8,312	10,110	8,913	9,221	8,235	7,574	6,672	5,605	4,926	3,147
Max	6,560	7,790	10,300	12,200	11,000	11,500	10,700	9,370	8,240	8,080	7,270	5,520
Min	2,390	3,850	4,480	7,520	5,390	5,060	4,750	4,410	3,090	3,000	2,970	1,650
Ac-ft	281,740	357,792	511,111	601,298	548,055	548,677	506,365	465,702	397,010	344,622	293,094	193,500

Calendar Year Summary

Annual Total 2,545,520 Annual Mean 6,974 Daily Max 12,200 Daily Min 1,650 Annual Ac-ft 5,048,966

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 8	16:00	251.88	14,390

Minimum Discharge

Date	Time	Elev	Discharge
Dec. 21	14:00	244.30	1,591

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.

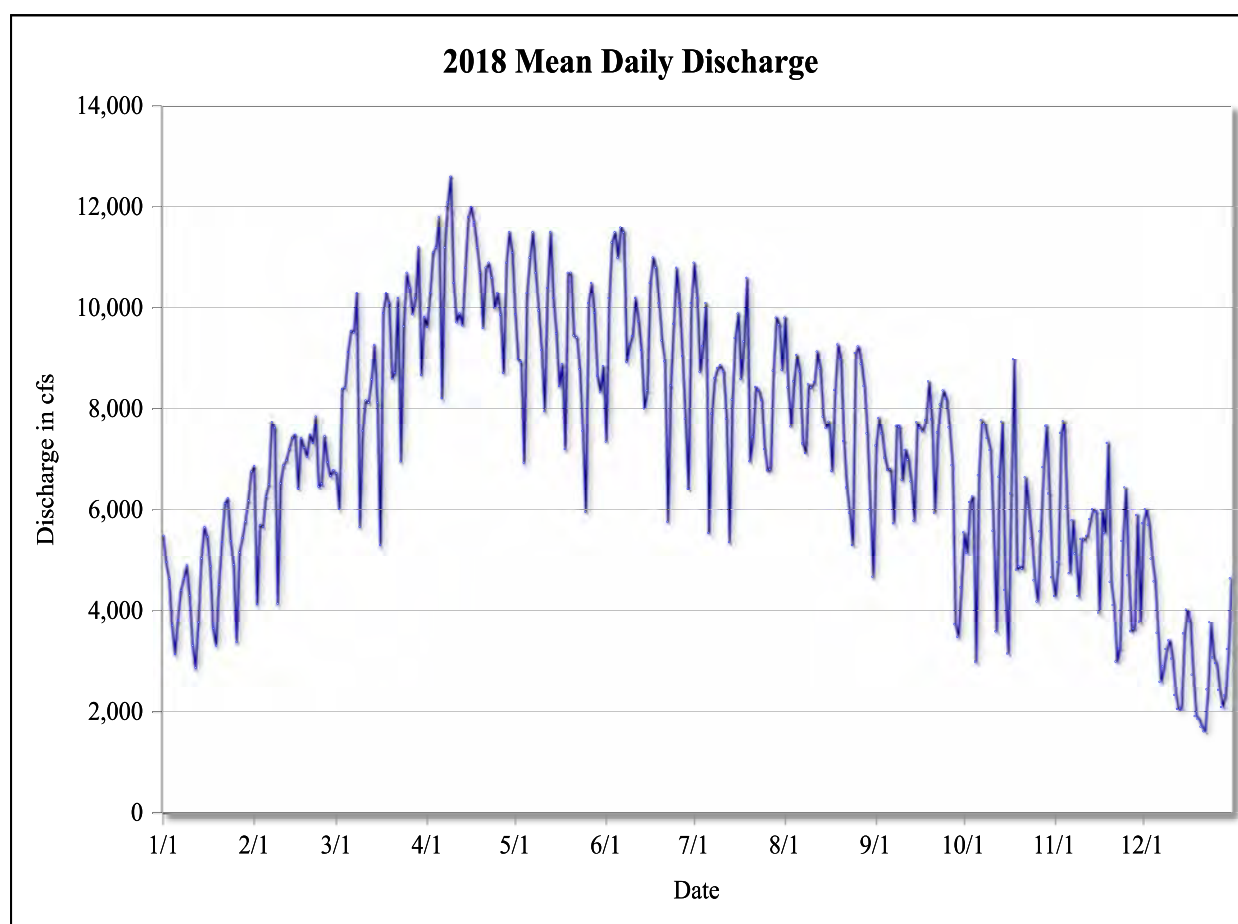
Drainage Area—184,400 mi².

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 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	5,490	6,870	6,730	9,630	9,880	7,360	10,900	9,810	7,280	5,560	4,300	5,740
2	4,970	4,140	6,020	10,300	8,990	10,200	10,200	8,430	7,820	5,160	4,970	6,020
3	4,640	5,700	8,400	11,100	8,930	11,300	8,740	7,660	7,520	6,160	7,530	5,710
4	3,720	5,670	8,430	11,200	6,940	11,500	9,250	8,550	7,040	6,270	7,760	5,040
5	3,150	6,270	9,130	11,800	10,300	11,000	10,100	9,070	6,800	3,000	6,070	4,590
6	3,820	6,510	9,540	8,220	11,000	11,600	5,550	8,750	6,810	6,690	4,750	3,570
7	4,410	7,740	9,520	11,200	11,500	11,500	7,910	7,320	5,740	7,780	5,800	2,600
8	4,640	7,630	10,300	12,100	10,700	8,940	8,610	7,130	7,670	7,710	5,140	2,900
9	4,900	4,150	5,670	12,600	9,950	9,290	8,810	8,490	7,650	7,430	4,300	3,250
10	4,310	6,530	7,570	10,500	9,170	9,450	8,870	8,430	6,600	7,190	5,430	3,420
11	3,320	6,890	8,170	9,720	7,960	10,200	8,750	8,540	7,190	5,590	5,410	3,060
12	2,880	6,990	8,130	9,890	10,400	9,740	7,810	9,140	7,000	3,600	5,490	2,340
13	3,780	7,210	8,590	9,660	11,500	9,170	5,370	8,810	6,570	6,660	5,820	2,060
14	5,040	7,430	9,270	10,800	10,200	8,010	8,190	7,850	5,790	7,750	6,020	2,080
15	5,660	7,490	8,130	11,800	9,500	8,370	9,410	7,630	7,740	4,420	5,960	3,560
16	5,470	6,430	5,310	12,000	8,460	10,500	9,890	7,750	7,630	3,160	3,970	4,030
17	4,890	7,420	9,900	11,700	8,890	11,000	8,600	6,780	7,560	6,330	6,000	3,780
18	3,660	7,240	10,300	11,200	7,210	10,800	9,340	8,380	7,780	8,990	5,550	2,740
19	3,320	7,060	10,100	10,700	10,700	10,100	10,600	9,280	8,550	4,820	7,330	1,920
20	4,520	7,490	8,610	9,610	10,700	9,360	6,970	8,990	7,800	4,880	4,580	1,860
21	5,370	7,330	8,720	10,800	9,460	8,950	7,450	7,370	5,950	4,840	4,120	1,710
22	6,130	7,850	10,200	10,900	9,420	5,770	8,440	6,450	7,540	6,650	3,000	1,620
23	6,230	6,470	6,970	10,600	8,790	8,470	8,380	5,950	8,090	6,030	3,270	2,450
24	5,390	6,520	9,640	10,000	7,570	9,690	8,180	5,310	8,370	5,440	5,390	3,780
25	4,920	7,460	10,700	10,300	5,970	10,800	7,210	9,110	8,200	4,610	6,450	3,080
26	3,390	6,950	10,400	9,870	10,100	10,100	6,790	9,240	7,640	4,190	4,710	2,970
27	5,160	6,680	9,880	8,720	10,500	9,050	6,810	8,900	6,890	5,580	3,600	2,440
28	5,450	6,790	10,200	10,900	9,910	7,810	8,760	8,460	3,740	6,850	3,650	2,100
29	5,770		11,200	11,500	8,660	6,420	9,810	7,520	3,490	7,670	5,900	2,330
30	6,190		8,680	11,100	8,350	10,100	9,670	6,010	4,470	6,330	3,790	3,250
31	6,760		9,820		8,850		8,780	4,680		4,670		4,650
Total	147,335	188,912	274,135	320,409	290,430	286,547	264,185	245,783	208,950	181,989	156,043	100,613
Mean	4,753	6,747	8,843	10,680	9,369	9,552	8,522	7,928	6,965	5,871	5,201	3,246
Max	6,760	7,850	11,200	12,600	11,500	11,600	10,900	9,810	8,550	8,990	7,760	6,020
Min	2,880	4,140	5,310	8,220	5,970	5,770	5,370	4,680	3,490	3,000	3,000	1,620
Ac-ft	292,235	374,701	543,738	635,521	576,059	568,358	524,004	487,503	414,446	360,969	309,507	199,563

Calendar Year Summary

Annual Total 2,665,329 Annual Mean 7,302 Daily Max 12,600 Daily Min 1,620 Annual Ac-ft 5,286,603

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 8	19:00	242.61	14,491

Minimum Discharge

Date	Time	Elev	Discharge
Dec. 22	07:00	234.94	1,502

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.

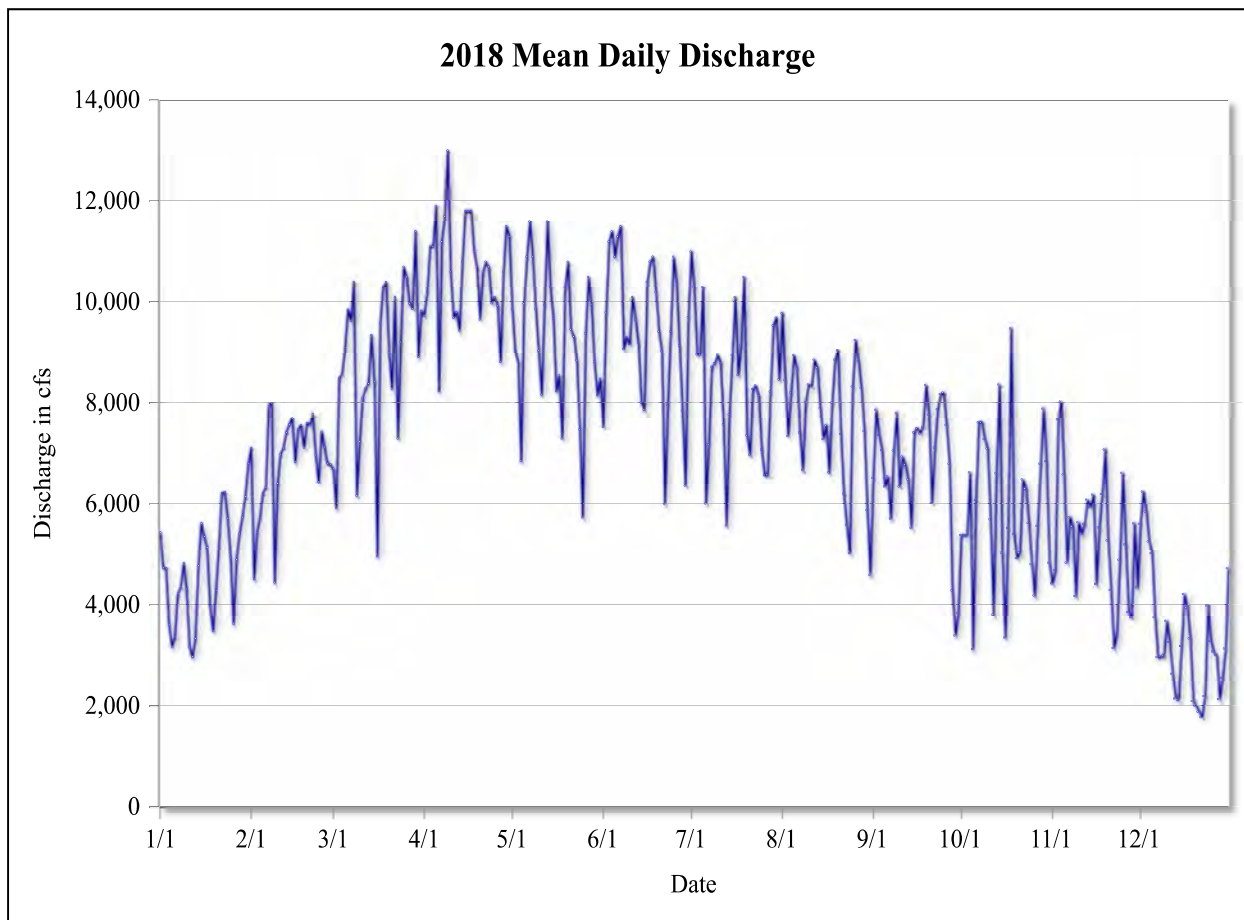
Drainage Area—184,400 mi².

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 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	5,440	7,110	6,700	9,730	9,860	7,530	11,000	9,780	6,520	5,390	4,430	5,610
2	4,740	4,520	5,920	10,200	9,030	9,800	10,300	8,460	7,870	5,390	4,690	6,250
3	4,730	5,440	8,500	11,100	8,830	11,200	8,970	7,350	7,370	5,390	7,680	5,850
4	3,620	5,730	8,580	11,100	6,860	11,400	8,970	8,210	7,070	6,630	8,030	5,260
5	3,180	6,220	9,100	11,900	9,970	10,900	10,300	8,950	6,350	3,130	6,590	5,030
6	3,370	6,330	9,850	8,240	10,900	11,300	6,010	8,690	6,550	6,080	4,840	3,760
7	4,230	7,940	9,630	11,200	11,600	11,500	7,180	7,420	5,710	7,620	5,740	2,970
8	4,370	8,000	10,400	11,700	10,900	9,070	8,720	6,680	7,060	7,620	5,560	2,990
9	4,830	4,450	6,170	13,000	9,860	9,310	8,790	8,020	7,800	7,290	4,180	3,000
10	4,320	6,410	7,240	10,600	9,040	9,170	8,960	8,370	6,350	7,100	5,640	3,690
11	3,170	6,990	8,100	9,690	8,170	10,100	8,800	8,340	6,940	5,700	5,410	3,270
12	2,980	7,110	8,300	9,800	9,940	9,650	7,580	8,860	6,780	3,810	5,610	2,640
13	3,340	7,420	8,390	9,440	11,600	9,190	5,580	8,700	6,490	6,610	6,090	2,150
14	4,780	7,580	9,350	10,800	10,300	8,010	7,770	7,900	5,530	8,370	5,940	2,130
15	5,620	7,700	8,430	11,800	9,680	7,870	8,950	7,290	7,420	5,040	6,190	3,190
16	5,360	6,840	4,970	11,800	8,240	10,400	10,100	7,560	7,500	3,360	4,420	4,220
17	5,140	7,470	9,580	11,800	8,550	10,800	8,560	6,630	7,400	5,530	5,540	3,950
18	3,980	7,560	10,300	11,000	7,300	10,900	9,150	8,010	7,530	9,480	6,200	3,340
19	3,490	7,120	10,400	10,700	10,300	10,200	10,500	8,860	8,360	5,410	7,080	2,100
20	4,290	7,600	9,000	9,660	10,800	9,420	7,360	9,050	7,770	4,930	5,280	2,000
21	5,170	7,560	8,290	10,600	9,460	9,030	6,980	7,390	6,020	5,040	4,300	1,890
22	6,220	7,780	10,100	10,800	9,320	6,000	8,280	6,210	7,120	6,490	3,150	1,780
23	6,240	6,970	7,300	10,700	8,850	7,960	8,350	5,590	7,880	6,310	3,450	2,200
24	5,720	6,440	9,210	9,980	7,480	9,420	8,150	5,030	8,180	5,630	4,900	3,990
25	4,950	7,430	10,700	10,100	5,740	10,900	7,080	8,330	8,210	4,810	6,620	3,290
26	3,630	7,130	10,500	9,930	9,380	10,400	6,580	9,250	7,570	4,190	5,200	3,080
27	4,900	6,810	9,970	8,820	10,500	9,140	6,580	8,830	6,800	5,570	3,860	3,010
28	5,410	6,790	9,870	10,600	9,950	7,850	8,230	8,300	4,290	6,800	3,760	2,140
29	5,740		11,400	11,500	8,820	6,370	9,540	7,450	3,400	7,890	5,620	2,560
30	6,150		8,920	11,300	8,160	9,700	9,690	5,880	3,840	6,850	4,350	3,140
31	6,800		9,820		8,480		8,470	4,600		4,840		4,730
Total	145,919	192,453	275,021	319,313	287,782	284,573	261,435	240,016	203,677	184,293	160,356	105,206
Mean	4,707	6,873	8,872	10,640	9,283	9,486	8,433	7,742	6,789	5,945	5,345	3,394
Max	6,800	8,000	11,400	13,000	11,600	11,500	11,000	9,780	8,360	9,480	8,030	6,250
Min	2,980	4,450	4,970	8,240	5,740	6,000	5,580	4,600	3,400	3,130	3,150	1,780
Ac-ft	289,426	381,726	545,495	633,348	570,807	564,443	518,549	476,064	403,987	365,540	318,062	208,672

Calendar Year Summary

Annual Total 2,660,043 Annual Mean 7,288 Daily Max 13,000 Daily Min 1,780 Annual Ac-ft 5,276,119

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 8	21:00	234.58	14,286

Minimum Discharge

Date	Time	Elev	Discharge
Dec. 22	10:00	225.15	1,660

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.

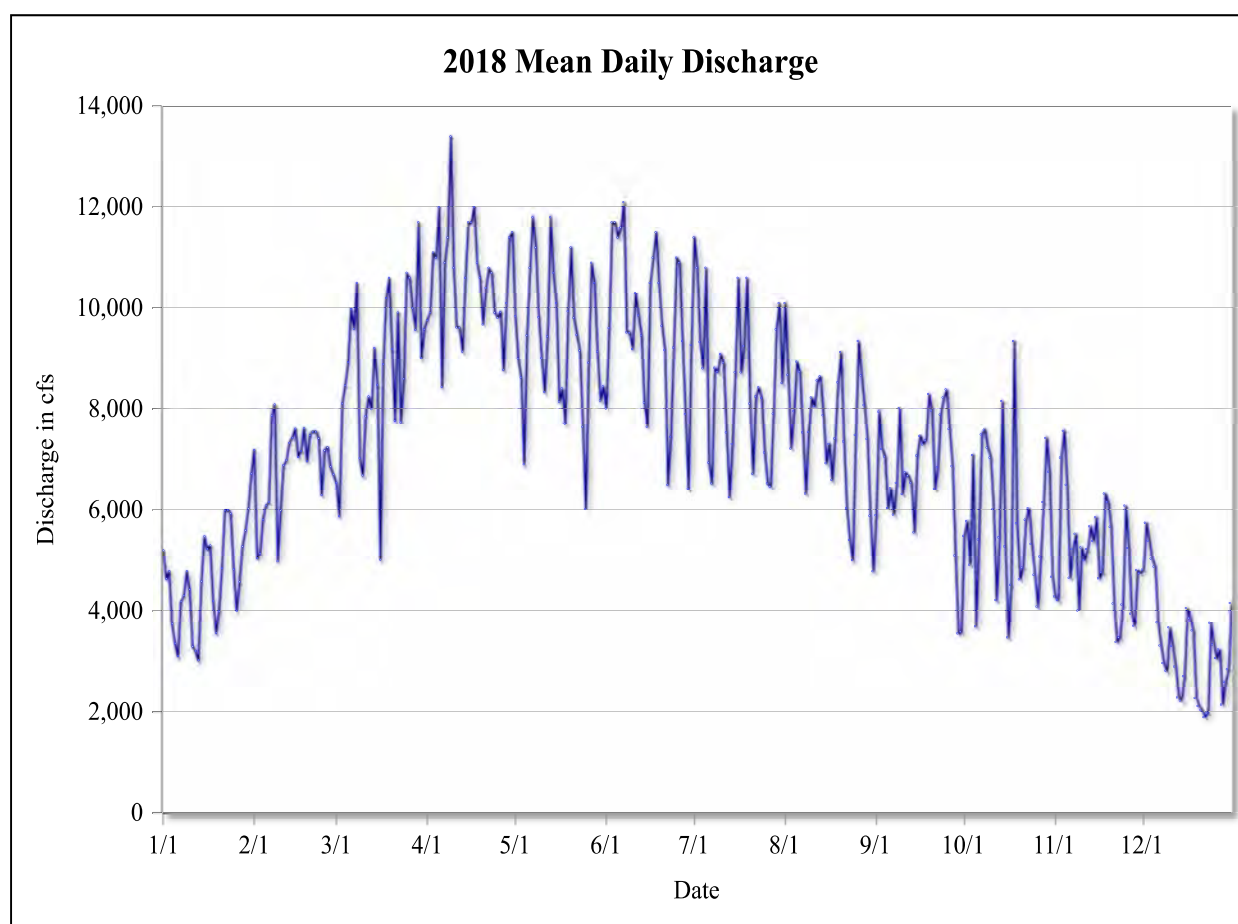
Drainage Area—184,700 mi².

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 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	5,200	7,190	6,540	9,760	9,840	8,010	11,400	10,100	5,900	5,490	4,290	4,820
2	4,640	5,050	5,880	9,910	9,000	9,610	10,800	8,680	7,950	5,780	4,220	5,750
3	4,790	5,140	8,110	11,100	8,630	11,700	9,330	7,220	7,210	4,920	7,040	5,390
4	3,750	5,810	8,470	11,000	6,910	11,700	8,810	7,960	7,060	7,090	7,570	5,040
5	3,360	6,090	8,930	12,000	9,460	11,400	10,800	8,940	6,040	3,700	6,500	4,880
6	3,110	6,160	9,980	8,440	10,800	11,600	6,940	8,740	6,430	5,420	4,660	3,780
7	4,190	7,870	9,590	10,900	11,800	12,100	6,530	7,540	5,910	7,500	5,230	3,320
8	4,310	8,090	10,500	11,400	11,200	9,520	8,820	6,330	6,540	7,590	5,530	2,970
9	4,790	4,990	7,030	13,400	9,820	9,510	8,740	7,550	8,020	7,240	4,010	2,820
10	4,430	5,990	6,690	10,800	9,010	9,190	9,090	8,230	6,320	7,040	5,260	3,680
11	3,300	6,890	7,860	9,620	8,340	10,300	8,920	8,060	6,750	6,020	5,010	3,310
12	3,210	6,990	8,250	9,610	9,440	9,860	7,540	8,570	6,680	4,220	5,230	2,900
13	3,030	7,330	8,000	9,140	11,800	9,460	6,260	8,650	6,540	5,460	5,680	2,290
14	4,590	7,430	9,210	10,600	10,700	8,130	7,310	7,880	5,560	8,160	5,390	2,230
15	5,480	7,610	8,480	11,700	10,100	7,650	8,730	6,930	7,080	5,280	5,860	2,710
16	5,230	7,050	5,020	11,700	8,150	10,500	10,600	7,310	7,470	3,480	4,650	4,060
17	5,300	7,170	8,890	12,000	8,410	11,000	8,730	6,600	7,300	4,520	4,770	3,860
18	4,200	7,620	10,200	10,900	7,710	11,500	9,250	7,420	7,380	9,350	6,330	3,620
19	3,570	6,970	10,600	10,600	9,940	10,500	10,600	8,530	8,300	5,740	6,160	2,280
20	3,990	7,480	9,190	9,680	11,200	9,650	8,110	9,130	7,970	4,630	5,670	2,120
21	4,850	7,550	7,770	10,400	9,810	9,170	6,720	7,360	6,420	4,860	4,150	2,040
22	5,990	7,550	9,910	10,800	9,470	6,500	8,250	6,040	6,850	5,810	3,390	1,900
23	6,000	7,420	7,740	10,700	9,160	7,450	8,430	5,410	7,890	6,040	3,480	1,980
24	5,930	6,300	8,600	9,910	7,650	9,220	8,220	5,010	8,230	5,330	4,130	3,770
25	4,830	7,180	10,700	9,810	6,020	11,000	7,140	7,490	8,390	4,720	6,090	3,340
26	4,000	7,240	10,600	9,920	8,920	10,900	6,530	9,350	7,610	4,090	5,250	3,070
27	4,580	6,860	10,000	8,780	10,900	9,350	6,470	8,670	6,870	5,080	3,950	3,240
28	5,280	6,710	9,570	10,100	10,500	7,900	7,910	8,080	5,100	6,160	3,710	2,150
29	5,600		11,700	11,400	9,140	6,420	9,580	7,410	3,560	7,430	4,810	2,600
30	6,030		9,010	11,500	8,170	9,270	10,100	5,890	3,590	6,760	4,750	2,850
31	6,720		9,580		8,450		8,520	4,790		4,680		4,160
Total	144,276	191,735	272,598	317,710	290,412	290,001	265,226	235,819	202,937	179,619	152,760	102,945
Mean	4,654	6,848	8,793	10,590	9,368	9,667	8,556	7,607	6,765	5,794	5,092	3,321
Max	6,720	8,090	11,700	13,400	11,800	12,100	11,400	10,100	8,390	9,350	7,570	5,750
Min	3,030	4,990	5,020	8,440	6,020	6,420	6,260	4,790	3,560	3,480	3,390	1,900
Ac-ft	286,167	380,301	540,691	630,169	576,023	575,209	526,067	467,740	402,519	356,269	302,996	204,188

Calendar Year Summary

Annual Total 2,646,038 Annual Mean 7,249 Daily Max 13,400 Daily Min 1,900 Annual Ac-ft 5,248,339

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 9	01:00	223.20	14,226

Minimum Discharge

Date	Time	Elev	Discharge
Dec. 22	15:00	216.02	1,862

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.

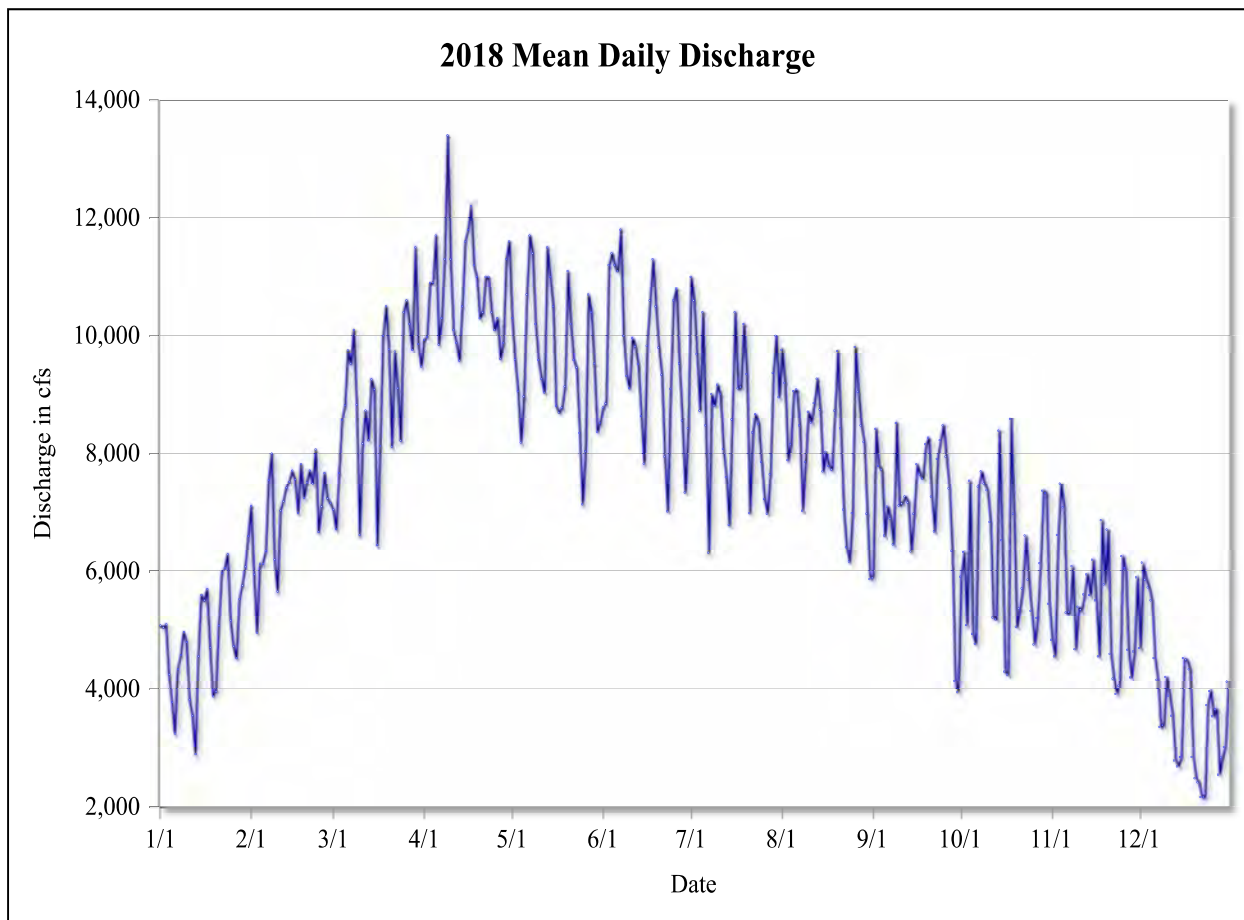
Drainage Area—185,100 mi².

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, 2,170 cfs, Dec. 22, 2018; maximum hourly discharge, 17,615 cfs, Mar. 27, 2014 at 19:00; minimum hourly discharge, 2,047 cfs, Jan. 14, 2016 at 15:00.

Remarks—Record was modeled Sep. 11, 2018 at 11:00 to Sep. 12, 2018 at 08:00 due to site failure.



Colorado River at Cibola Gage

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	5,080	7,110	7,050	9,930	10,300	8,780	11,000	9,760	5,890	5,910	4,840	4,700
2	5,050	5,950	6,720	9,980	9,600	8,850	10,600	9,200	8,420	6,330	4,560	6,150
3	5,100	4,960	7,670	10,900	9,060	11,200	9,690	7,890	7,790	5,090	6,620	5,860
4	4,250	6,130	8,570	10,900	8,190	11,400	8,730	8,160	7,730	7,540	7,490	5,730
5	3,780	6,130	8,820	11,700	8,970	11,200	10,400	9,060	6,610	4,940	7,090	5,510
6	3,250	6,350	9,750	9,850	10,700	11,100	8,480	9,090	7,100	4,770	5,300	4,530
7	4,340	7,550	9,530	10,300	11,700	11,800	6,320	8,480	6,900	7,440	5,310	4,160
8	4,580	8,000	10,100	11,300	11,400	10,000	9,010	7,030	6,460	7,700	6,090	3,360
9	4,970	6,200	8,830	13,400	10,200	9,320	8,820	7,860	8,520	7,490	4,680	3,390
10	4,800	5,660	6,620	11,300	9,590	9,110	9,170	8,710	7,120	7,380	5,400	4,210
11	3,820	7,030	8,170	10,100	9,270	9,960	9,010	8,530	7,150	6,840	5,350	3,890
12	3,550	7,190	8,730	9,880	9,040	9,820	8,080	8,860	7,270	5,220	5,610	3,550
13	2,900	7,420	8,230	9,580	11,500	9,520	7,600	9,270	7,170	5,190	5,950	2,790
14	4,560	7,520	9,260	10,500	11,000	8,640	6,790	8,750	6,340	8,390	5,600	2,690
15	5,600	7,710	9,090	11,600	10,500	7,830	8,580	7,700	6,980	6,530	6,200	2,850
16	5,510	7,560	6,450	11,800	8,810	9,830	10,400	8,030	7,820	4,300	5,510	4,530
17	5,700	6,990	8,130	12,200	8,700	10,600	9,110	7,790	7,650	4,250	4,560	4,500
18	4,710	7,820	10,000	11,200	8,780	11,300	9,130	7,730	7,580	8,590	6,870	4,340
19	3,880	7,250	10,500	11,000	9,140	10,500	10,200	8,730	8,160	6,980	5,780	2,850
20	3,960	7,510	9,770	10,300	11,100	9,800	9,350	9,740	8,270	5,060	6,710	2,490
21	5,080	7,710	8,120	10,400	10,200	9,340	6,990	8,430	7,270	5,370	4,600	2,420
22	5,970	7,490	9,730	11,000	9,590	7,950	8,360	7,050	6,680	5,710	4,180	2,170
23	6,060	8,070	9,110	11,000	9,460	7,020	8,670	6,410	7,910	6,610	3,920	2,170
24	6,290	6,670	8,220	10,400	8,350	9,100	8,500	6,170	8,230	5,860	4,060	3,730
25	5,170	7,100	10,400	10,100	7,140	10,600	7,860	6,990	8,480	5,330	6,260	3,970
26	4,730	7,670	10,600	10,300	8,040	10,800	7,230	9,810	7,950	4,760	6,060	3,540
27	4,530	7,240	10,200	9,610	10,700	9,530	6,980	9,050	7,410	5,210	4,670	3,660
28	5,530	7,160	9,760	9,880	10,400	8,560	7,650	8,480	6,350	6,140	4,200	2,550
29	5,760		11,500	11,300	9,530	7,340	9,370	8,200	4,140	7,370	4,640	2,840
30	6,080		9,860	11,600	8,370	8,430	10,000	6,980	3,950	7,330	5,900	3,020
31	6,600		9,480		8,520		8,960	5,870		5,450		4,130
Total	151,197	197,146	279,084	323,129	297,883	289,152	271,133	253,807	215,308	191,070	163,999	116,258
Mean	4,877	7,041	9,003	10,770	9,609	9,638	8,746	8,187	7,177	6,164	5,467	3,750
Max	6,600	8,070	11,500	13,400	11,700	11,800	11,000	9,810	8,520	8,590	7,490	6,150
Min	2,900	4,960	6,450	9,580	7,140	7,020	6,320	5,870	3,950	4,250	3,920	2,170
Ac-ft	299,895	391,034	553,556	640,917	590,843	573,525	537,784	503,419	427,058	378,983	325,288	230,594

Calendar Year Summary

Annual Total 2,749,168 Annual Mean 7,532 Daily Max 13,400 Daily Min 2,170 Annual Ac-ft 5,452,895

Maximum Discharge

Date Time Elev Discharge
Apr. 9 06:00 209.66 13,811

Minimum Discharge

Date Time Elev Discharge
Dec. 22 20:00 204.90 2,079

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

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.

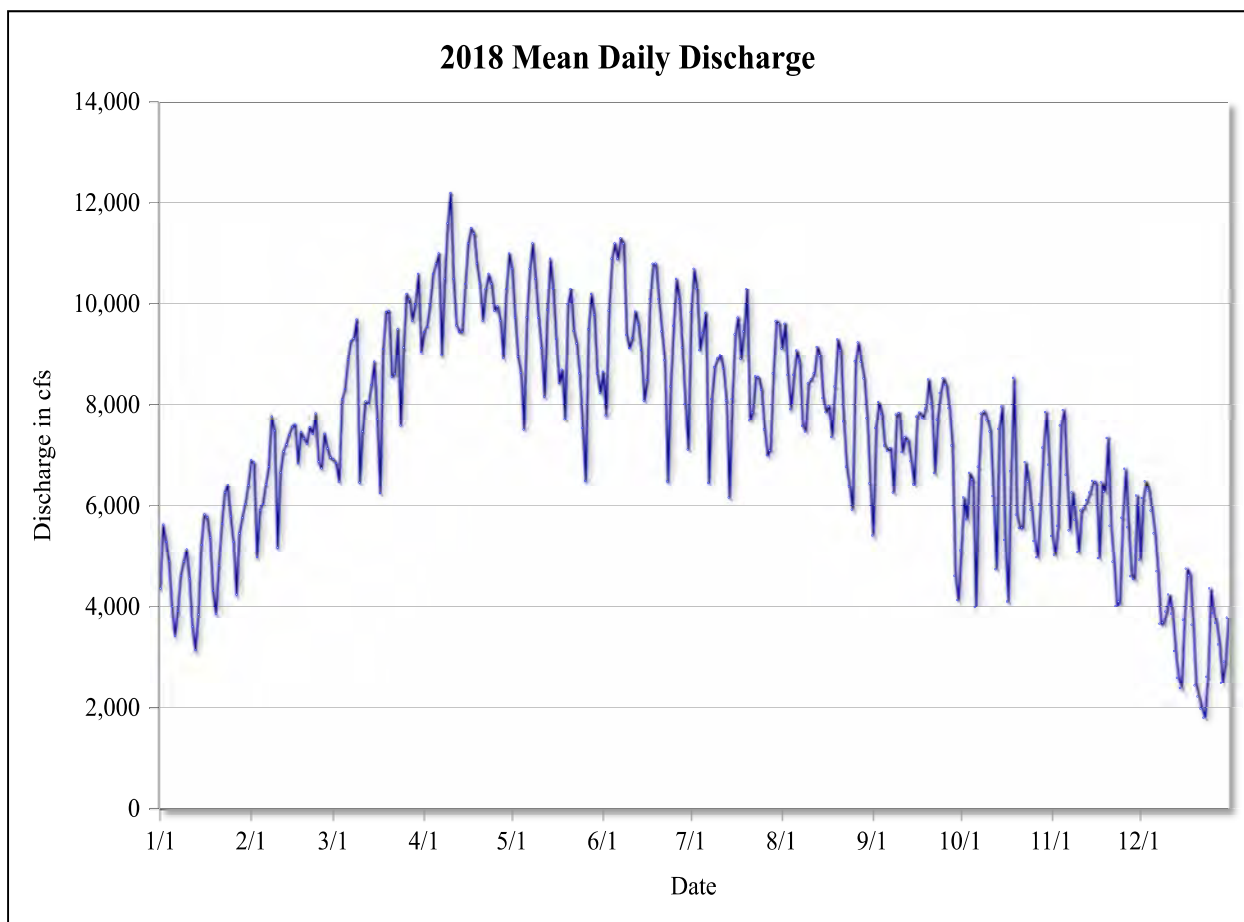
Drainage Area—185,900 mi².

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—The discharge record was modeled from Dec. 13, 2018 at 09:00 to Dec. 17, 2018 at 08:00 due to site failure.



Colorado River at Picacho Park

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	4,370	6,910	6,930	9,450	10,700	8,660	9,840	9,120	5,420	5,120	5,410	4,940
2	5,630	6,860	6,850	9,550	9,740	7,800	10,700	9,610	7,550	6,170	5,040	6,160
3	5,290	4,990	6,490	9,980	8,960	9,870	10,300	8,600	8,060	5,740	5,610	6,490
4	4,910	5,910	8,110	10,600	8,640	10,900	9,090	7,920	7,820	6,660	7,600	6,310
5	4,010	6,040	8,320	10,800	7,520	11,200	9,430	8,600	7,200	6,530	7,900	5,910
6	3,430	6,430	8,900	11,000	9,740	10,900	9,820	9,080	7,100	4,000	6,620	5,460
7	3,920	6,780	9,270	8,990	10,700	11,300	6,460	8,850	7,140	6,780	5,520	4,710
8	4,620	7,770	9,320	10,500	11,200	11,200	8,120	7,590	6,270	7,830	6,270	3,670
9	4,900	7,490	9,690	11,600	10,500	9,390	8,750	7,480	7,810	7,870	5,730	3,690
10	5,140	5,180	6,470	12,200	9,730	9,130	8,920	8,430	7,840	7,700	5,090	3,910
11	4,560	6,660	7,480	10,500	9,130	9,330	8,990	8,510	7,070	7,480	5,910	4,250
12	3,610	7,080	8,070	9,580	8,170	9,850	8,730	8,630	7,360	6,200	5,950	3,870
13	3,150	7,220	8,020	9,450	9,890	9,600	8,090	9,150	7,290	4,750	6,120	3,130
14	3,850	7,410	8,400	9,450	10,900	9,090	6,170	8,980	6,890	7,530	6,270	2,600
15	5,230	7,570	8,860	10,400	10,300	8,090	8,120	8,140	6,430	7,970	6,500	2,400
16	5,830	7,610	7,720	11,200	9,310	8,500	9,400	7,860	7,770	5,330	6,470	3,750
17	5,780	6,850	6,260	11,500	8,440	10,100	9,730	7,970	7,850	4,110	4,970	4,760
18	5,380	7,460	9,110	11,400	8,700	10,800	8,920	7,370	7,750	6,690	6,470	4,630
19	4,320	7,340	9,840	10,800	7,720	10,800	9,460	8,370	7,930	8,540	6,290	3,650
20	3,870	7,240	9,860	10,400	10,000	10,100	10,300	9,300	8,510	5,830	7,350	2,450
21	4,820	7,560	8,570	9,670	10,300	9,460	7,700	9,080	8,030	5,570	5,610	2,230
22	5,650	7,430	8,620	10,300	9,470	8,890	7,850	7,680	6,660	5,570	4,900	1,990
23	6,270	7,830	9,500	10,600	9,220	6,490	8,570	6,780	7,710	6,870	4,020	1,810
24	6,420	6,880	7,600	10,400	8,630	8,370	8,550	6,390	8,240	6,490	4,110	2,620
25	5,800	6,750	9,140	9,870	7,550	9,570	8,310	5,930	8,530	5,930	5,770	4,370
26	5,290	7,430	10,200	9,950	6,500	10,500	7,520	8,870	8,400	5,310	6,740	3,880
27	4,250	7,140	10,100	9,670	9,500	10,100	7,010	9,240	7,940	4,990	5,580	3,690
28	5,460	6,960	9,670	8,940	10,200	9,140	7,100	8,860	7,200	6,040	4,610	3,260
29	5,770		10,000	10,300	9,790	8,020	8,630	8,530	4,620	7,160	4,560	2,500
30	6,040		10,600	11,000	8,630	7,120	9,660	7,740	4,140	7,860	6,210	2,920
31	6,410		9,050		8,250		9,610	6,450		6,820		3,790
Total	154,008	194,756	266,954	310,062	288,149	284,278	269,802	255,084	218,541	197,468	175,204	119,824
Mean	4,968	6,956	8,611	10,340	9,295	9,476	8,703	8,229	7,285	6,370	5,840	3,865
Max	6,420	7,830	10,600	12,200	11,200	11,300	10,700	9,610	8,530	8,540	7,900	6,490
Min	3,150	4,990	6,260	8,940	6,500	6,490	6,170	5,930	4,140	4,000	4,020	1,810
Ac-ft	305,471	386,293	529,495	614,998	571,536	563,858	535,144	505,951	433,469	391,672	347,513	237,667

Calendar Year Summary

Annual Total 2,734,129 Annual Mean 7,491 Daily Max 12,200 Daily Min 1,810 Annual Ac-ft 5,423,066

Maximum Discharge

Date Time Elev Discharge
Apr. 10 08:00 192.99 12,738

Minimum Discharge

Date Time Elev Discharge
Dec. 23 06:00 187.14 1,758

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

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.

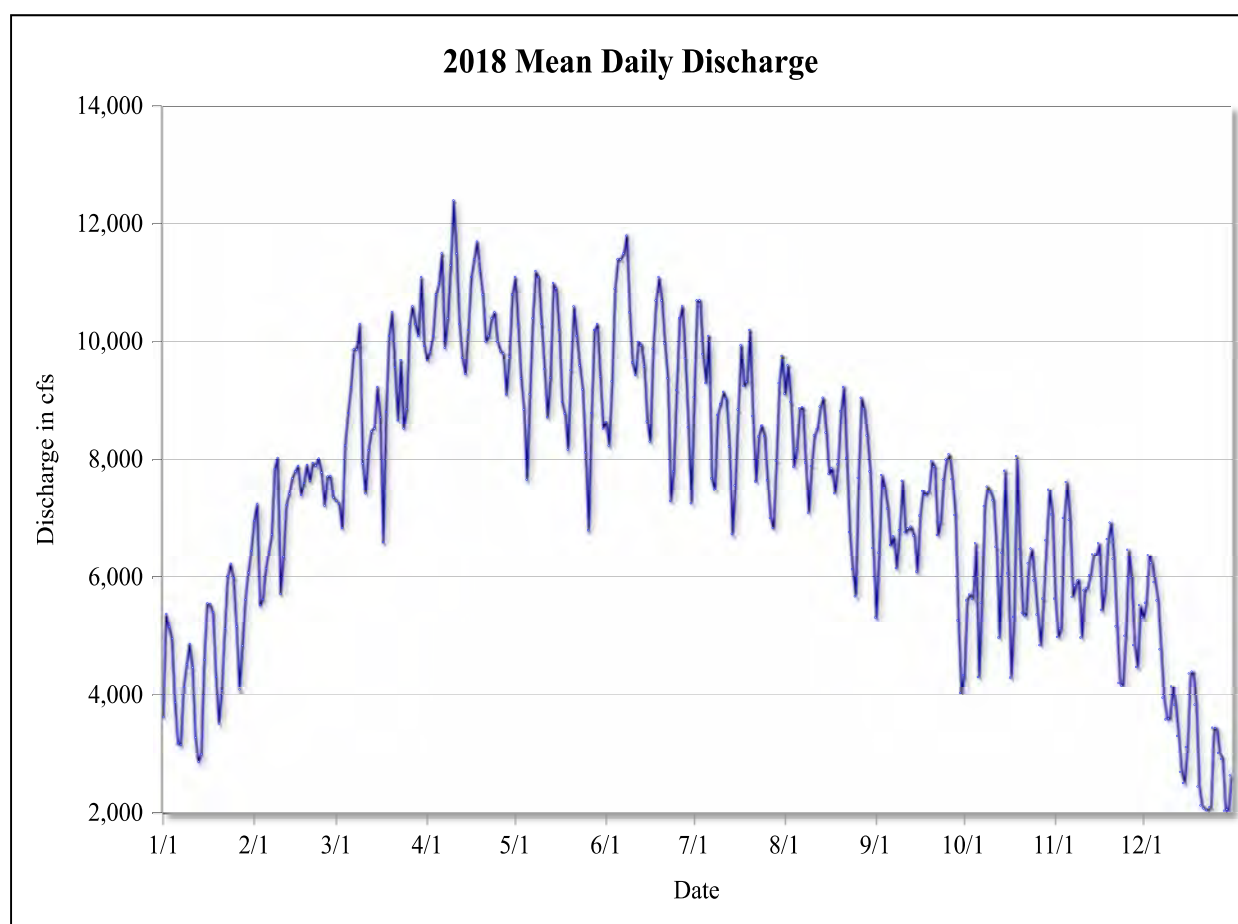
Drainage Area—186,200 mi².

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—None.



Colorado River at Martinez Lake

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	3,630	6,960	7,300	9,690	11,100	8,640	9,060	9,120	5,320	4,340	5,640	5,320
2	5,380	7,240	7,250	9,830	10,300	8,240	10,700	9,600	6,420	5,610	4,990	5,570
3	5,160	5,530	6,840	10,100	9,380	9,330	10,700	8,980	7,740	5,710	5,130	6,380
4	4,960	5,630	8,240	10,800	8,850	10,900	9,790	7,880	7,520	5,640	7,010	6,250
5	3,880	6,150	8,790	11,000	7,660	11,400	9,300	8,190	7,170	6,580	7,620	5,920
6	3,190	6,430	9,230	11,500	9,110	11,400	10,100	8,870	6,550	4,310	6,980	5,610
7	3,160	6,730	9,870	9,900	10,400	11,500	7,680	8,890	6,700	5,570	5,670	4,780
8	4,140	7,840	9,870	10,400	11,200	11,800	7,490	7,950	6,160	7,210	5,860	3,960
9	4,520	8,030	10,300	11,300	11,100	10,500	8,760	7,100	6,800	7,540	5,950	3,590
10	4,870	5,720	7,930	12,400	10,300	9,650	8,940	7,890	7,640	7,450	4,980	3,600
11	4,470	6,350	7,430	11,500	9,540	9,440	9,150	8,410	6,770	7,310	5,780	4,150
12	3,280	7,230	8,160	10,300	8,720	10,000	9,030	8,520	6,830	6,520	5,810	3,840
13	2,870	7,420	8,480	9,730	9,390	9,940	8,220	8,900	6,860	4,980	6,040	3,310
14	3,000	7,680	8,530	9,460	11,000	9,580	6,740	9,050	6,710	6,420	6,390	2,700
15	4,600	7,800	9,230	10,200	10,900	8,650	7,560	8,460	6,100	7,810	6,390	2,510
16	5,560	7,890	8,720	11,100	10,200	8,310	8,850	7,760	7,050	6,070	6,580	3,120
17	5,550	7,400	6,600	11,400	8,980	9,880	9,940	7,850	7,470	4,300	5,450	4,370
18	5,410	7,600	8,810	11,700	8,780	10,700	9,250	7,430	7,400	5,330	5,770	4,400
19	4,310	7,910	10,100	11,200	8,170	11,100	9,320	7,920	7,450	8,060	6,650	3,840
20	3,520	7,640	10,500	10,800	9,520	10,700	10,200	8,820	7,970	6,480	6,930	2,450
21	4,080	7,940	9,570	10,000	10,600	9,970	8,740	9,230	7,880	5,400	6,320	2,130
22	5,130	7,900	8,670	10,100	10,100	9,380	7,630	8,030	6,720	5,360	5,170	2,080
23	6,020	8,020	9,690	10,400	9,600	7,300	8,390	6,770	6,940	6,240	4,210	2,050
24	6,230	7,780	8,530	10,500	9,190	7,800	8,570	6,140	7,660	6,490	4,160	2,100
25	5,990	7,220	8,860	10,000	8,120	9,180	8,400	5,680	8,000	5,950	5,010	3,450
26	5,170	7,710	10,300	9,840	6,800	10,400	7,650	7,690	8,090	5,370	6,470	3,440
27	4,100	7,720	10,600	9,800	8,790	10,600	7,010	9,050	7,670	4,850	6,000	3,020
28	4,840	7,360	10,300	9,110	10,200	9,720	6,840	8,860	7,060	5,640	4,850	2,920
29	5,620		10,100	9,750	10,300	8,550	7,980	8,410	5,270	6,630	4,480	2,040
30	6,080		11,100	10,800	9,410	7,260	9,300	7,800	4,040	7,490	5,530	2,060
31	6,450		9,930		8,530		9,760	6,500		7,070		2,640
Total	145,191	202,823	279,698	314,423	296,097	291,580	271,004	251,745	207,973	189,734	173,831	113,577
Mean	4,684	7,244	9,023	10,480	9,552	9,719	8,742	8,121	6,932	6,120	5,794	3,664
Max	6,450	8,030	11,100	12,400	11,200	11,800	10,700	9,600	8,090	8,060	7,620	6,380
Min	2,870	5,530	6,600	9,110	6,800	7,260	6,740	5,680	4,040	4,300	4,160	2,040
Ac-ft	287,983	402,293	554,773	623,649	587,299	578,341	537,529	499,329	412,508	376,332	344,789	225,277

Calendar Year Summary

Annual Total 2,737,676 Annual Mean 7,500 Daily Max 12,400 Daily Min 2,040 Annual Ac-ft 5,430,102

Maximum Discharge

Date	Time	Elev	Discharge
Apr. 10	13:00	187.27	12,615

Minimum Discharge

Date	Time	Elev	Discharge
Dec. 30	17:00	182.43	1,987



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.

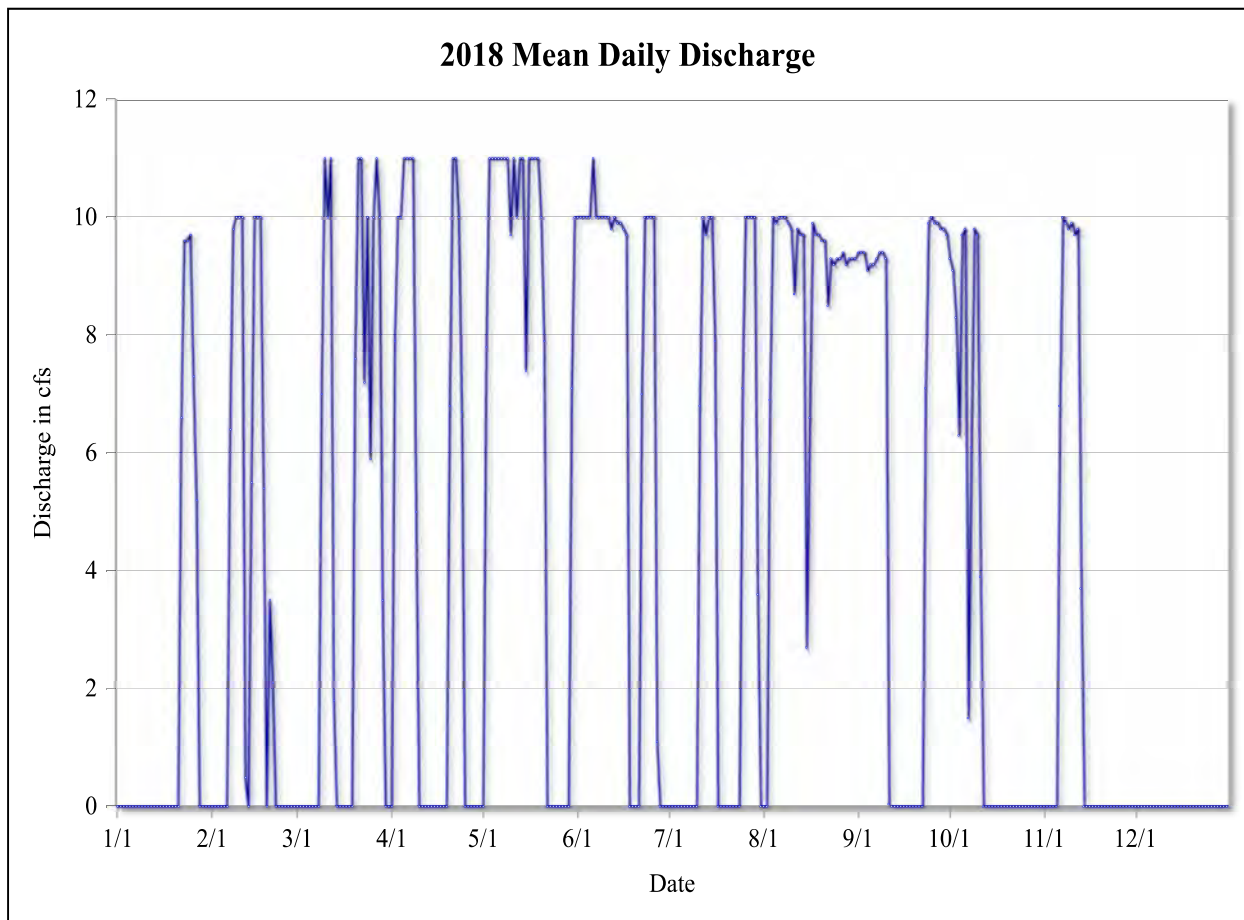
Drainage Area—Not applicable.

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—Record was estimated for several short duration periods when values reported erroneously.



Fort Mojave Tribe-Nevada

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	0	0	0	10	0	0	9.4	9.3	0	0
2	0	0	0	7.9	7.8	10	0	0	9.4	9.1	0	0
3	0	0	0	10	11	10	0	6.9	9.4	8.3	0	0
4	0	0	0	10	11	10	0	10	9.1	6.3	0	0
5	0	0	0	11	11	10	0	9.9	9.2	9.7	0	0
6	0	0	0	11	11	11	0	10	9.2	9.8	6.8	0
7	0	6.4	0	11	11	10	0	10	9.3	1.5	10	0
8	0	9.8	0	11	11	10	0	10	9.4	6.1	9.9	0
9	0	10	7.0	5.0	11	10	0	9.9	9.4	9.8	9.8	0
10	0	10	11	0	9.7	10	0	9.8	9.3	9.7	9.9	0
11	0	10	10	0	11	10	6.8	8.7	0.04	3.9	9.7	0
12	0	0.49	11	0	10	9.8	10	9.8	0	0	9.8	0
13	0	0	1.8	0	11	10	9.7	9.7	0	0	3.7	0
14	0	5.5	0	0	11	9.9	10	9.7	0	0	0	0
15	0	10	0	0	7.4	9.9	10	2.7	0	0	0	0
16	0	10	0	0	11	9.8	7.9	6.6	0	0	0	0
17	0	10	0	0	11	9.7	0	9.9	0	0	0	0
18	0	5.4	0	0	11	0	0	9.7	0	0	0	0
19	0	0	0	0	11	0	0	9.7	0	0	0	0
20	0	3.5	7.6	6.8	10	0	0	9.6	0	0	0	0
21	0	2.1	11	11	7.9	0	0	9.6	0	0	0	0
22	6.6	0	11	11	0	7.0	0	8.5	0	0	0	0
23	9.6	0	7.2	10	0	10	0	9.3	7.1	0	0	0
24	9.6	0	10	6.7	0	10	0	9.2	9.9	0	0	0
25	9.7	0	5.9	0	0	10	7.1	9.3	10	0	0	0
26	7.3	0	10	0	0	10	10	9.3	9.9	0	0	0
27	5.2	0	11	0	0	1.1	10	9.4	9.9	0	0	0
28	0	0	10	0	0	0	10	9.2	9.8	0	0	0
29	0		3.5	0	0	0	10	9.3	9.8	0	0	0
30	0		0	0	7.1	0	3.6	9.3	9.7	0	0	0
31	0		0		10		0	9.3		0		0
Total	48.1	94.54	127.1	122.1	219.6	222.7	106.8	264.6	169.20	83.7	69.7	0
Mean	1.55	3.38	4.10	4.07	7.08	7.42	3.45	8.54	5.64	2.70	2.32	0
Max	9.7	10	11	11	11	11	10	10	10	9.8	10	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	95	188	252	242	435	442	212	525	336	166	138	0

Calendar Year Summary

Annual Total 1,528.17 Annual Mean 4.19 Daily Max 11 Daily Min 0 Annual Ac-ft 3,031

Maximum Discharge

Date	Time	GH	Discharge
Apr. 22	13:00	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.

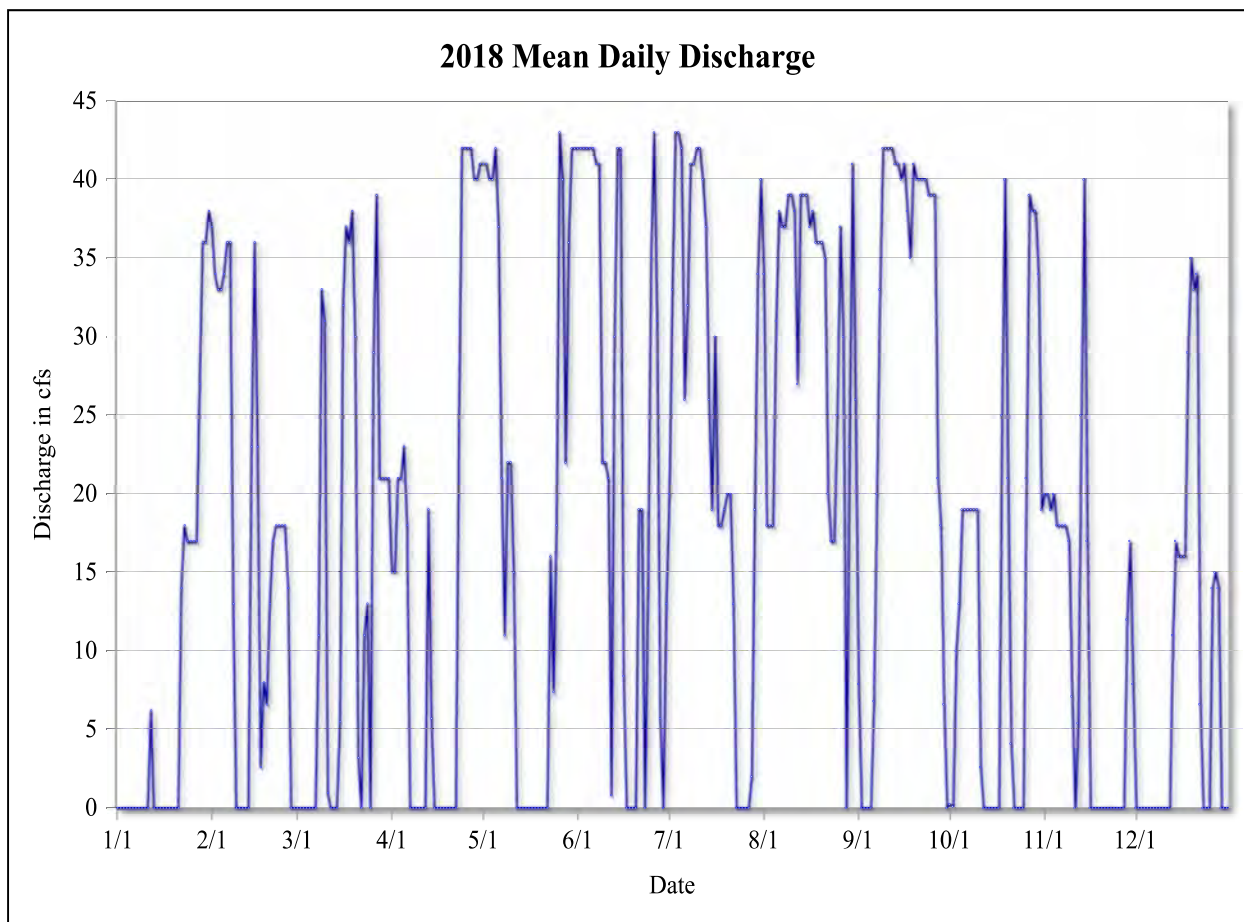
Drainage Area—Not applicable.

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—Discharge data were modeled from Aug. 22, 2018 at 09:00 to Aug. 23, 2018 at 10:00 due to sensor failure.



Fort Mojave Tribe-North Casino

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	37	0	15	41	42	20	34	7.9	0.24	20	0
2	0	34	0	15	41	42	33	18	0	0.10	20	0
3	0	33	0	21	40	42	43	18	0	10	19	0
4	0	33	0	21	40	42	43	18	0	13	20	0
5	0	34	0	23	42	42	42	31	0	19	18	0
6	0	36	0	18	37	42	26	38	6.8	19	18	0
7	0	36	0	0	21	41	32	37	20	19	18	0
8	0	13	11	0	11	41	41	37	33	19	18	0
9	0	0	33	0	22	22	41	39	42	19	17	0
10	0	0	31	0	22	22	42	39	42	19	7.1	0
11	0	0	0.96	0	15	21	42	38	42	2.6	0	0
12	6.2	0	0	0	0	0.82	40	27	42	0	5.4	0
13	0	0	0	19	0	30	37	39	41	0	25	11
14	0	23	0	5.7	0	42	26	39	41	0	40	17
15	0	36	5.5	0	0	42	19	39	40	0	17	16
16	0	23	32	0	0	8.4	30	37	41	0	0	16
17	0	2.6	37	0	0	0	18	38	38	0	0	16
18	0	8.0	36	0	0	0	18	36	35	25	0	29
19	0	6.6	38	0	0	0	19	36	41	40	0	35
20	0	13	30	0	0	0	20	36	40	21	0	33
21	0	17	3.2	0	0	19	20	35	40	4.1	0	34
22	14	18	0	0	0	19	13	20	40	0	0	6.6
23	18	18	11	24	16	0	0	17	40	0	0	0
24	17	18	13	42	7.4	14	0	17	39	0	0	0
25	17	18	0	42	18	35	0	25	39	0	0	0
26	17	14	29	42	43	43	0	37	39	21	0	14
27	17	0	39	42	40	31	0	30	21	39	0	15
28	27	0	21	40	22	5.7	2.0	0	18	38	12	14
29	36		21	40	36	0	19	23	6.6	38	17	0
30	36		21	41	42	13	34	41	0	34	7.9	0
31	38		21		42		40	26		19		0
Total	243.1	471.3	433.98	452.2	599.3	700.95	760.1	945	835.4	418.20	299.5	255.8
Mean	7.84	16.8	14.0	15.1	19.3	23.4	24.5	30.5	27.8	13.5	9.98	8.25
Max	38	37	39	42	43	43	43	41	42	40	40	35
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	482	935	861	897	1,189	1,390	1,508	1,874	1,657	829	594	507

Calendar Year Summary

Annual Total 6,414.61 Annual Mean 17.6 Daily Max 43 Daily Min 0 Annual Ac-ft 12,723

Maximum Discharge

Date	Time	GH	Discharge
Jul. 9	22:00	3.06	46

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-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.

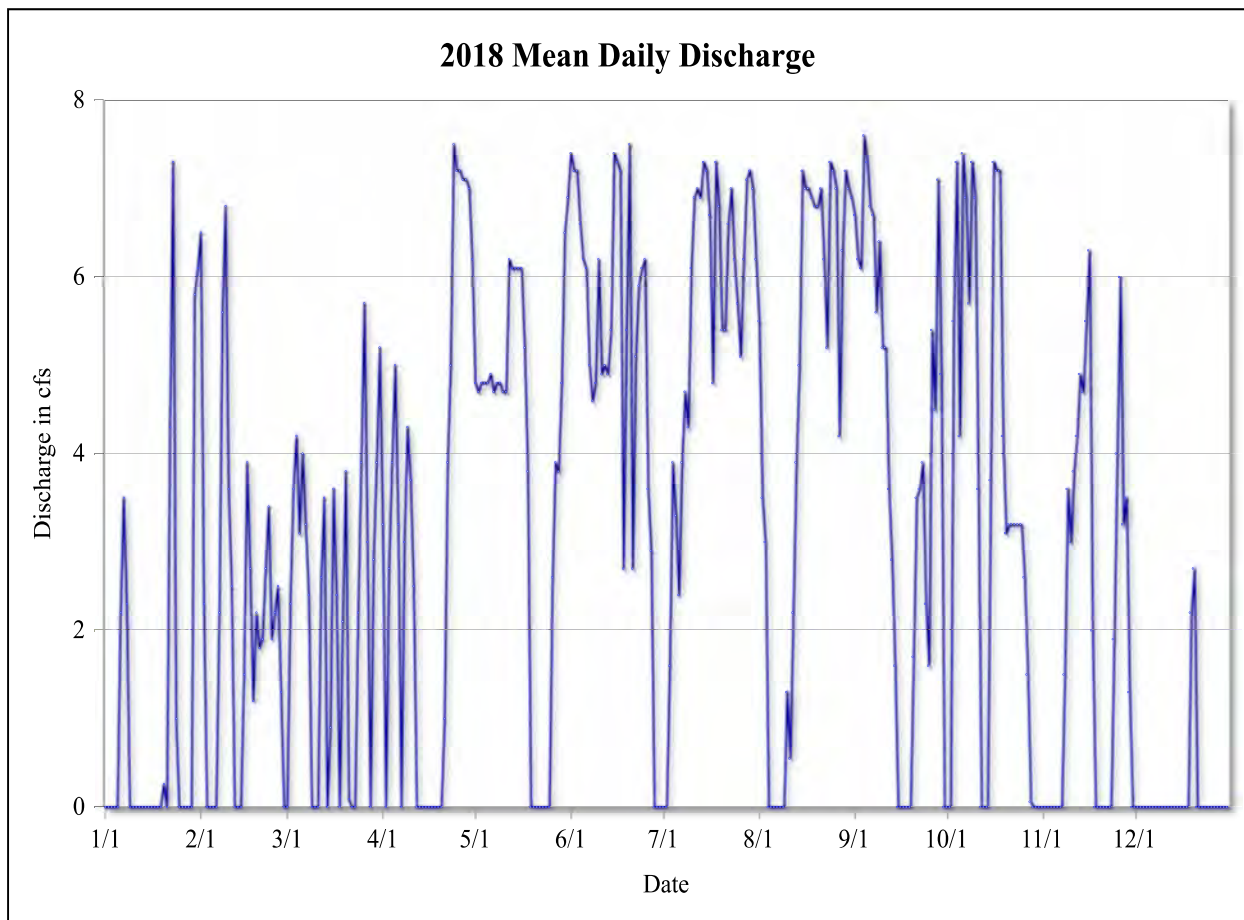
Drainage Area—Not applicable.

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, 7.6 cfs, Oct. 28, 2011; 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—None.



Fort Mojave Tribe-North Casino (North Event Center)

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	6.5	0	3.2	4.8	7.4	0	5.5	6.7	0	0	0
2	0	2.3	2.3	0	4.7	7.2	0	3.5	6.2	0	0	0
3	0	0	3.6	2.7	4.8	7.2	1.6	3.0	6.1	5.5	0	0
4	0	0	4.2	3.9	4.8	6.6	3.9	0	7.6	7.3	0	0
5	0	0	3.1	5.0	4.8	6.2	3.3	0	7.3	4.2	0	0
6	2.2	0	4.0	3.2	4.9	6.1	2.4	0	6.8	7.4	0	0
7	3.5	2.2	3.2	0	4.7	5.0	3.9	0	6.7	6.9	0	0
8	2.3	5.6	2.4	3.0	4.8	4.6	4.7	0	5.6	5.7	1.5	0
9	0	6.8	0	4.3	4.8	4.8	4.3	0	6.4	7.3	3.6	0
10	0	3.6	0	3.7	4.7	6.2	6.1	1.3	5.2	6.9	3.0	0
11	0	2.5	0	2.5	4.7	4.9	6.9	0.55	5.2	3.6	3.8	0
12	0	0	2.6	0	6.2	5.0	7.0	2.2	3.6	0	4.2	0
13	0	0	3.5	0	6.1	4.9	6.9	3.9	2.8	0	4.9	0
14	0	0	0	0	6.1	5.4	7.3	5.0	1.6	0	4.7	0
15	0	1.5	0.90	0	6.1	7.4	7.2	7.2	0	3.7	5.5	0
16	0	3.9	3.6	0	6.1	7.3	6.7	7.0	0	7.3	6.3	0
17	0	2.7	2.4	0	5.2	7.2	4.8	7.0	0	7.2	2.0	0
18	0	1.2	0	0	3.8	2.7	7.3	6.9	0	7.2	0	0
19	0	2.2	2.1	0	0	5.4	6.8	6.8	0	4.2	0	2.2
20	0.26	1.8	3.8	0	0	7.5	5.4	6.8	1.7	3.1	0	2.7
21	0	1.9	0.09	1.0	0	2.7	5.4	7.0	3.5	3.2	0	0
22	4.3	2.7	0	3.9	0	5.1	6.6	6.2	3.6	3.2	0	0
23	7.3	3.4	0	5.0	0	5.9	7.0	5.2	3.9	3.2	0	0
24	1.0	1.9	2.2	7.5	0	6.1	6.2	7.3	2.3	3.2	1.9	0
25	0	2.2	3.9	7.2	0	6.2	5.7	7.2	1.6	3.2	4.0	0
26	0	2.5	5.7	7.2	2.6	3.6	5.1	7.0	5.4	2.6	6.0	0
27	0	1.3	3.0	7.1	3.9	2.9	6.2	4.2	4.5	1.5	3.2	0
28	0	0	0	7.1	3.8	0	7.1	6.3	7.1	0.06	3.5	0
29	0		2.8	7.0	4.8	0	7.2	7.2	4.9	0	1.3	0
30	5.8		3.9	6.2	6.5	0	7.0	7.0	0	0	0	0
31	6.1		5.2		6.9		6.2	6.9		0		0
Total	32.82	59.0	68.67	90.8	120.5	151.4	166.2	138.13	116.4	107.87	59.4	4.9
Mean	1.06	2.11	2.22	3.03	3.89	5.05	5.36	4.46	3.88	3.48	1.98	0.16
Max	7.3	6.8	5.7	7.5	6.9	7.5	7.3	7.3	7.6	7.4	6.3	2.7
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	65	117	136	180	239	300	330	274	231	214	118	9.7

Calendar Year Summary

Annual Total 1,116.04 Annual Mean 3.06 Daily Max 7.6 Daily Min 0 Annual Ac-ft 2,214

Maximum Discharge

Date	Time	GH	Discharge
Apr. 30	00:00	N/A	9.2

Minimum Discharge

Date	Time	GH	Discharge
Jan. 7	12:00	N/A	-0.12

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.

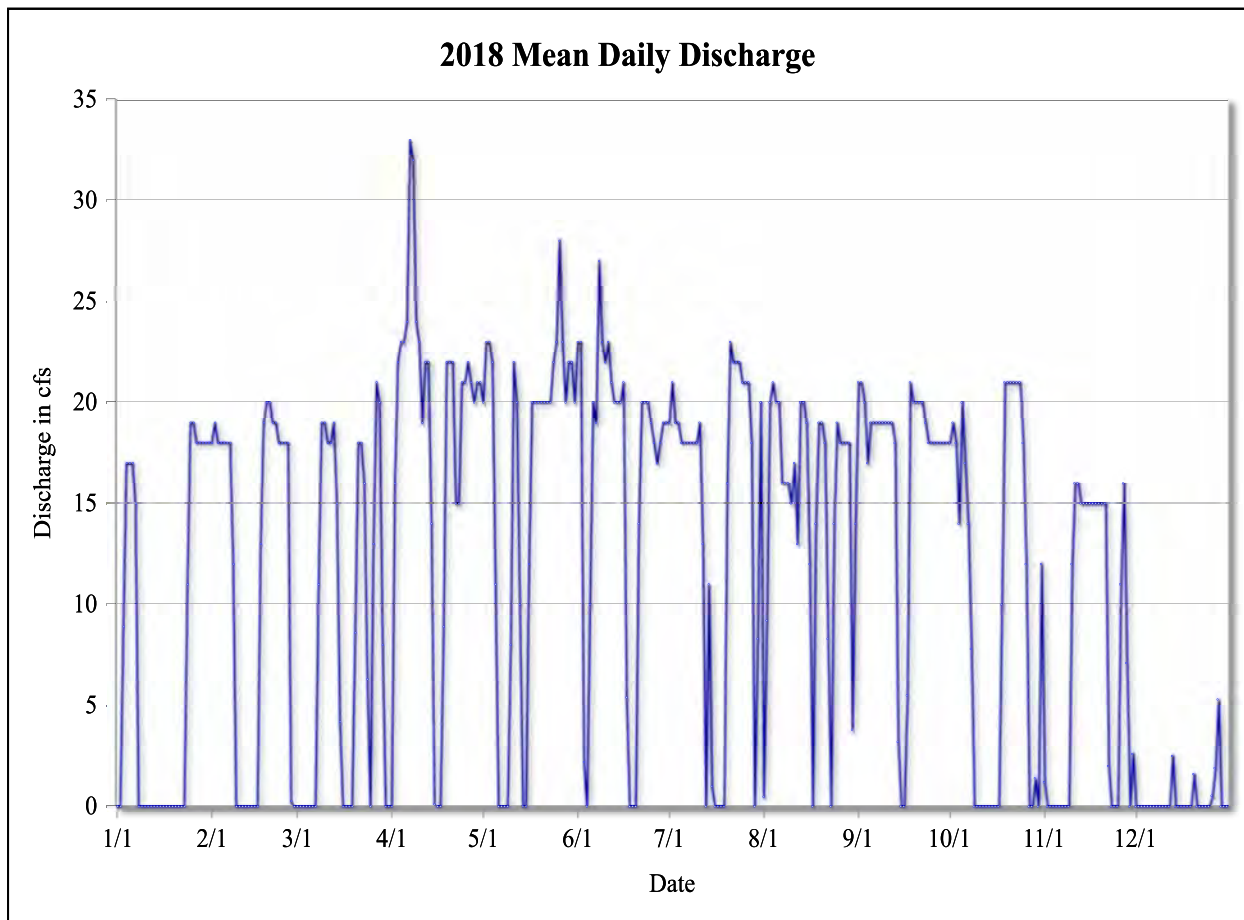
Drainage Area—Not applicable.

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—None.



Fort Mojave Tribe-South Casino

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	18	0	0	20	23	19	0.48	21	18	1.2	0
2	0	19	0	16	23	23	21	9.2	21	19	0	0
3	8.9	18	0	22	23	2.2	19	20	20	18	0	0
4	17	18	0	23	22	0	19	21	17	14	0	0
5	17	18	0	23	11	10	18	20	19	20	0	0
6	17	18	0	24	0	20	18	20	19	17	0	0
7	15	18	0	33	0	19	18	16	19	14	0	0
8	0	12	11	32	0	27	18	16	19	7.8	0	0
9	0	0	19	24	0	23	18	16	19	0	0	0
10	0	0	19	23	8.0	22	18	15	19	0	12	0
11	0	0	18	19	22	23	19	17	19	0	16	0
12	0	0	18	22	20	21	13	13	19	0	16	0
13	0	0	19	22	10	20	0	20	18	0	15	2.5
14	0	0	15	14	0	20	11	20	3.2	0	15	0
15	0	0	4.2	0.11	0	20	1.0	19	0	0	15	0
16	0	0	0	0	12	21	0	12	0	0	15	0
17	0	13	0	0	20	5.4	0	0	5.5	0	15	0
18	0	19	0	8.9	20	0	0	14	21	10	15	0
19	0	20	0	22	20	0	0	19	20	21	15	0
20	0	20	8.6	22	20	0	16	19	20	21	15	1.6
21	0	19	18	22	20	14	23	18	20	21	15	0
22	0	19	18	15	20	20	22	8.3	20	21	2.0	0
23	0	18	16	15	20	20	22	0	19	21	0	0
24	11	18	6.3	21	22	20	22	14	18	21	0	0
25	19	18	0	21	23	19	21	19	18	18	0	0
26	19	18	13	22	28	18	21	18	18	12	11	0.53
27	18	0.27	21	21	23	17	21	18	18	0	16	1.9
28	18	0	20	20	20	18	18	18	18	0	7.1	5.3
29	18		8.0	21	22	19	0	18	18	1.4	0	0
30	18		0	21	22	19	8.3	3.8	18	0	2.6	0
31	18		0		20		20	14		12		0
Total	213.9	322.56	250.9	550.74	493.5	484.6	446.4	457.61	504.8	308.6	220.5	11.82
Mean	6.90	11.5	8.09	18.4	15.9	16.2	14.4	14.8	16.8	9.95	7.35	0.38
Max	19	20	21	33	28	27	23	21	21	21	16	5.3
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	424	640	498	1,092	979	961	885	908	1,001	612	437	23

Calendar Year Summary

Annual Total 4,266.04 Annual Mean 11.7 Daily Max 33 Daily Min 0 Annual Ac-ft 8,462

Maximum Discharge

Date	Time	GH	Discharge
Apr. 6	13:00	1.38	34

Minimum Discharge

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

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.

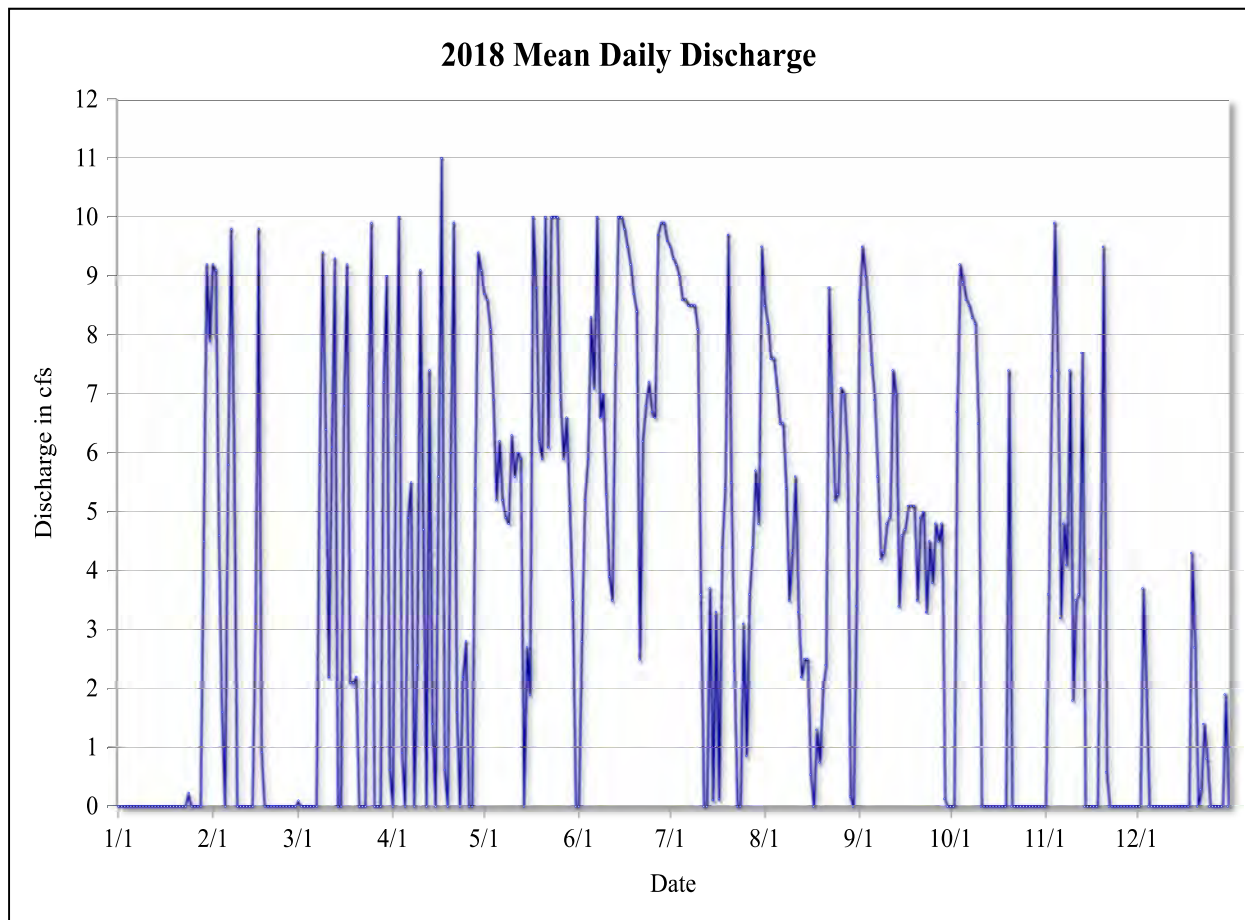
Drainage Area—Not applicable.

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—The gage experienced instances where flow values would appear when the pump was off. These periods were manually corrected.



Fort Mojave Tribe-California 2 (North)

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	9.2	0.10	0	8.7	0	9.5	8.5	8.6	0	0	0
2	0	9.1	0	6.3	8.6	2.8	9.3	8.2	9.5	0	3.6	0
3	0	4.6	0	10	8.1	5.2	9.2	7.6	9.0	6.7	7.3	3.7
4	0	1.6	0	0.91	6.9	5.9	9.0	7.6	8.4	9.2	9.9	2.0
5	0	0	0	0	5.2	8.3	8.6	7.1	7.5	8.9	7.4	0
6	0	5.8	0	4.9	6.2	7.1	8.6	6.5	6.9	8.6	3.2	0
7	0	9.8	0	5.5	5.2	10	8.5	6.5	5.6	8.5	4.8	0
8	0	6.0	5.8	0	4.9	6.6	8.5	5.4	4.2	8.3	4.1	0
9	0	0	9.4	2.4	4.8	7.0	8.5	3.5	4.3	8.2	7.4	0
10	0	0	6.4	9.1	6.3	5.3	8.1	4.3	4.8	6.5	1.8	0
11	0	0	2.2	4.7	5.6	3.9	3.6	5.6	4.9	0	3.5	0
12	0	0	6.1	0	6.0	3.5	0	3.3	7.4	0	3.6	0
13	0	0	9.3	7.4	5.9	7.5	0	2.2	7.0	0	7.7	0
14	0	0	0	1.4	0	10	3.7	2.5	3.4	0	0	0
15	0	3.1	0	0	2.7	10	0.11	2.5	4.6	0	0	0
16	0	9.8	6.8	5.6	1.9	9.8	3.3	0.54	4.7	0	0	0
17	0	0.92	9.2	11	10	9.5	0.13	0	5.1	0	0	0
18	0	0	2.1	0.62	8.8	9.2	4.4	1.3	5.1	0	0	0
19	0	0	2.1	0	6.2	8.7	5.4	0.75	5.1	0	4.2	4.3
20	0	0	2.2	6.0	5.9	8.4	9.7	2.0	3.5	7.4	9.5	2.7
21	0	0	0	9.9	10	2.5	5.5	2.4	4.9	0	0.58	0
22	0	0	0	1.6	6.1	6.2	2.3	8.8	5.0	0	0	0.29
23	0	0	0	0	10	6.8	0	6.7	3.3	0	0	1.4
24	0.23	0	6.8	2.2	10	7.2	0	5.2	4.5	0	0	0.81
25	0	0	9.9	2.8	10	6.7	3.1	5.3	3.8	0	0	0
26	0	0	0	0	6.9	6.6	0.86	7.1	4.8	0	0	0
27	0	0	0	0	5.9	9.7	3.6	7.0	4.5	0	0	0
28	0	0	0	5.4	6.6	9.9	4.4	6.0	4.8	0	0	0
29	4.5		7.2	9.4	5.1	9.9	5.7	0.17	0.13	0	0	0
30	9.2		9.0	9.1	3.5	9.6	4.8	0	0	0	0	1.9
31	7.9		0.62		0		9.5	3.4		0		0
Total	21.90	60.04	95.21	115.74	193.3	213.9	158.13	137.91	155.12	72.3	78.59	17.07
Mean	0.71	2.14	3.07	3.86	6.24	7.13	5.10	4.45	5.17	2.33	2.62	0.55
Max	9.2	9.8	9.9	11	10	10	9.7	8.8	9.5	9.2	9.9	4.3
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	43	119	189	230	383	424	314	274	308	143	156	34

Calendar Year Summary

Annual Total 1,319.25 Annual Mean 3.61 Daily Max 11 Daily Min 0 Annual Ac-ft 2,617

Maximum Discharge

Date	Time	GH	Discharge
Jun. 3	23:00	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.

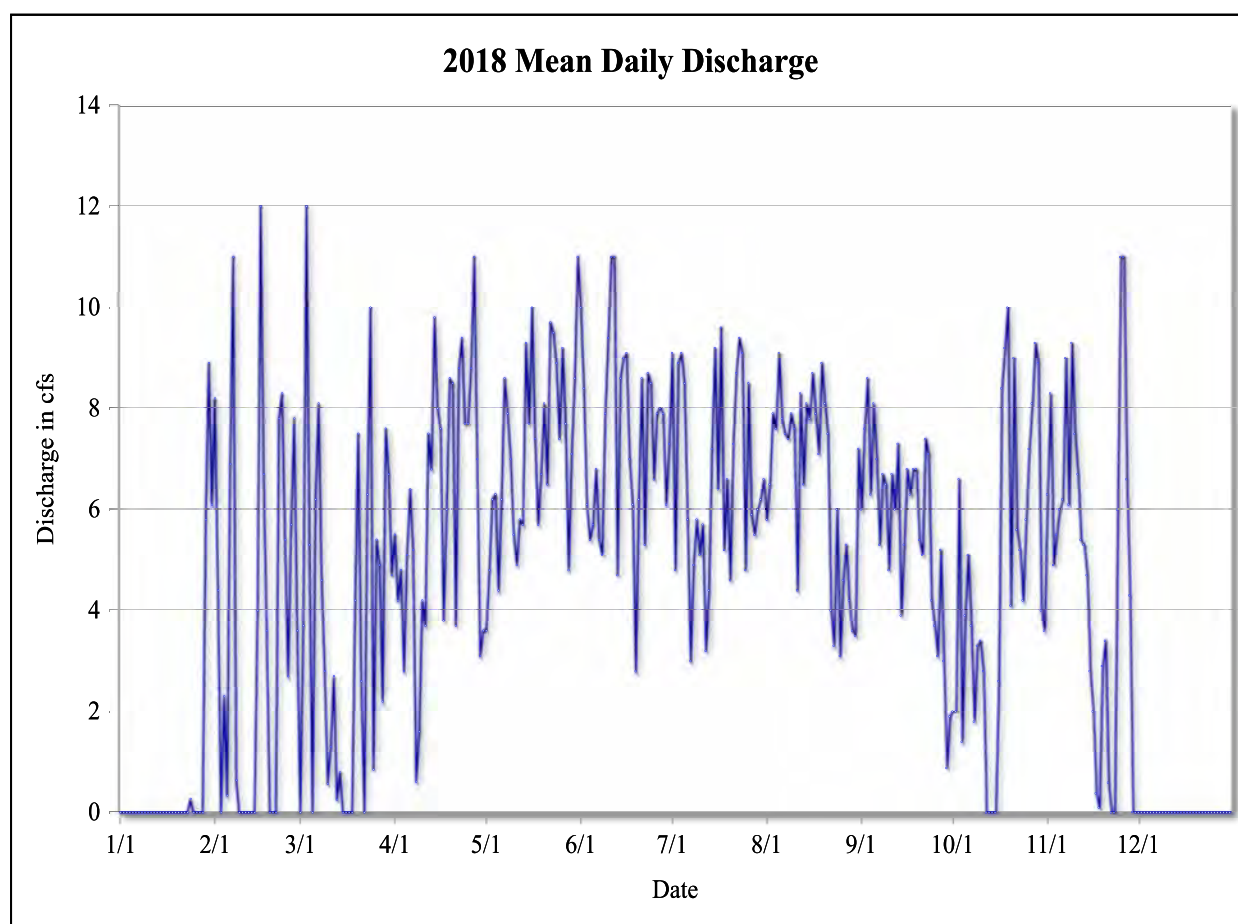
Drainage Area—Not applicable.

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—The gage experienced instances where flow values would appear when the pump was off. These periods were manually corrected.



Fort Mojave Tribe-California 2 (West)

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	8.2	0	5.5	3.6	10	9.1	5.8	6.0	2.0	6.3	0
2	0	4.4	3.7	4.2	4.8	8.4	4.8	6.5	7.6	2.0	8.3	0
3	0	0	12	4.8	6.2	6.1	8.9	7.9	8.6	6.6	4.9	0
4	0	2.3	5.3	2.8	6.3	5.4	9.1	7.6	6.3	1.4	5.5	0
5	0	0.34	0	5.1	4.4	5.7	8.5	9.1	8.1	3.9	6.0	0
6	0	6.9	6.2	6.4	6.2	6.8	5.8	7.8	7.0	5.1	6.2	0
7	0	11	8.1	5.2	8.6	5.4	3.0	7.5	5.3	3.7	9.0	0
8	0	0.64	4.6	0.61	7.9	5.1	4.9	7.4	6.7	1.8	6.1	0
9	0	0	2.8	1.6	7.0	7.9	5.8	7.9	6.5	3.3	9.3	0
10	0	0	0.57	4.2	5.5	9.4	5.1	7.6	4.8	3.4	7.5	0
11	0	0	1.3	3.7	4.9	11	5.7	4.4	6.7	2.8	6.7	0
12	0	0	2.7	7.5	5.8	11	3.2	8.3	6.0	0	5.4	0
13	0	0	0.26	6.8	5.7	4.7	4.4	6.5	7.3	0	5.3	0
14	0	0	0.79	9.8	9.3	8.6	7.2	8.1	3.9	0	4.7	0
15	0	4.0	0	8.0	7.7	9.0	9.2	7.8	5.3	0	2.8	0
16	0	12	0	7.6	10	9.1	6.4	8.7	6.8	2.6	2.0	0
17	0	6.7	0	3.8	7.4	7.0	9.6	7.9	6.3	8.4	0.38	0
18	0	3.6	0	6.0	5.7	6.1	5.2	7.1	6.8	9.2	0.10	0
19	0	0	4.2	8.6	6.7	2.8	6.6	8.9	6.8	10	2.9	0
20	0	0	7.5	8.5	8.1	6.2	4.6	8.1	5.4	4.1	3.4	0
21	0	0	2.6	3.7	6.5	8.6	7.3	7.5	5.1	9.0	0.59	0
22	0	7.8	0	8.8	9.7	5.3	8.7	4.0	7.4	5.6	0	0
23	0	8.3	6.3	9.4	9.5	8.7	9.4	3.3	7.1	5.2	0	0
24	0.27	5.4	10	7.7	8.9	8.5	9.1	6.0	4.2	4.2	6.0	0
25	0	2.7	0.85	7.7	7.4	6.6	4.8	3.1	3.7	5.8	11	0
26	0	5.7	5.4	8.8	9.2	7.9	8.5	4.6	3.1	7.2	11	0
27	0	7.8	4.9	11	7.7	8.0	5.9	5.3	5.2	8.1	6.6	0
28	0	3.6	2.2	7.0	4.8	7.9	5.5	4.2	3.0	9.3	4.3	0
29	5.8		7.6	3.1	7.1	6.1	6.0	3.6	0.88	8.9	0.01	0
30	8.9		6.7	3.6	8.6	7.3	6.2	3.5	1.9	4.0	0	0
31	6.1		4.7		11		6.6	7.2		3.6		0
Total	21.04	100.98	111.34	181.00	221.9	220.1	205.3	203.5	170.08	141.7	142.03	0
Mean	0.68	3.61	3.59	6.03	7.16	7.34	6.62	6.56	5.67	4.57	4.73	0
Max	8.9	12	12	11	11	11	9.6	9.1	8.6	10	11	0
Min	0	0	0	0.61	3.6	2.8	3.0	3.1	0.88	0	0	0
Ac-ft	42	200	221	359	440	436	407	404	337	281	282	0

Calendar Year Summary

Annual Total 1,718.94 Annual Mean 4.71 Daily Max 12 Daily Min 0 Annual Ac-ft 3,409

Maximum Discharge

Date	Time	GH	Discharge
Jun. 9	21:00	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.

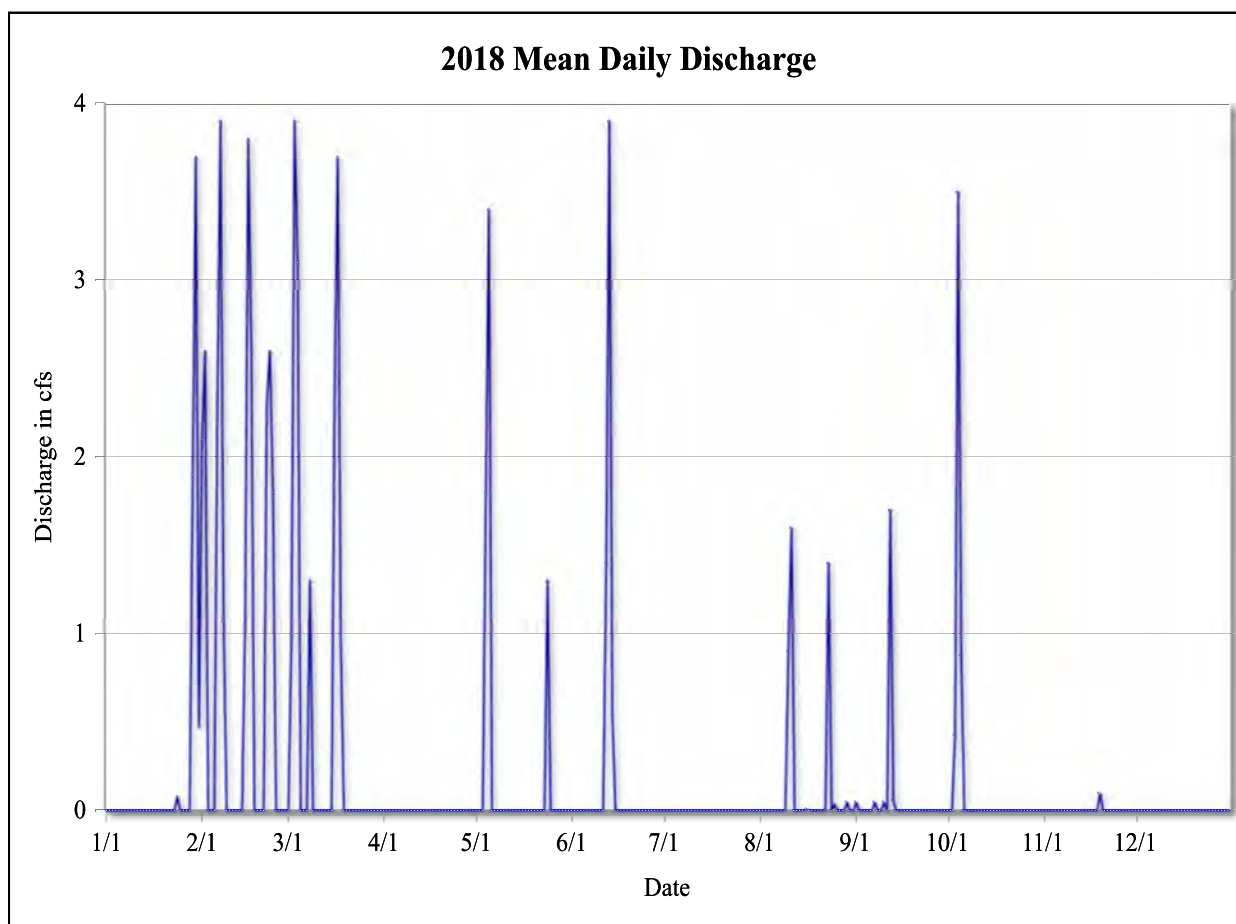
Drainage Area—Not applicable.

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—The gage experienced instances where flow values would appear when the pump was off. These periods were manually corrected.



Fort Mojave Tribe-California 2 (South)

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	2.1	0	0	0	0	0	0	0.05	0	0	0
2	0	2.6	1.0	0	0	0	0	0	0	0	0	0
3	0	0	3.9	0	0	0	0	0	0	0.43	0	0
4	0	0	3.1	0	1.8	0	0	0	0	3.5	0	0
5	0	0	0	0	3.4	0	0	0	0	0.88	0	0
6	0	2.3	0	0	0	0	0	0	0	0	0	0
7	0	3.9	0	0	0	0	0	0	0.05	0	0	0
8	0	1.1	1.3	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	0.90	0.05	0	0	0
11	0	0	0	0	0	0	0	1.6	0	0	0	0
12	0	0	0	0	0	1.4	0	0	1.7	0	0	0
13	0	0	0	0	0	3.9	0	0	0.06	0	0	0
14	0	0	0	0	0	0.54	0	0	0	0	0	0
15	0	1.1	0	0	0	0	0	0	0	0	0	0
16	0	3.8	2.4	0	0	0	0	0.01	0	0	0	0
17	0	2.6	3.7	0	0	0	0	0	0	0	0	0
18	0	0	0.93	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0.10	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	2.3	0	0	0	0	0	0	0	0	0	0
23	0	2.6	0	0	0	0	0	1.4	0	0	0	0
24	0.08	1.8	0	0	1.3	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0.04	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	1.9		0	0	0	0	0	0.05	0	0	0	0
30	3.7		0	0	0	0	0	0	0	0	0	0
31	0.48		0		0		0	0		0		0
Total	6.14	26.2	16.37	0	6.4	5.79	0	3.97	1.94	4.84	0.10	0
Mean	0.20	0.93	0.53	0	0.21	0.19	0	0.13	0.065	0.16	0.003	0
Max	3.7	3.9	3.9	0	3.4	3.9	0	1.6	1.7	3.5	0.10	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	12	52	32	0	13	11	0	7.9	3.8	9.6	0.2	0

Calendar Year Summary

Annual Total 71.77 Annual Mean 0.20 Daily Max 3.9 Daily Min 0 Annual Ac-ft 142

Maximum Discharge

Date	Time	GH	Discharge
Jun. 13	04:00	N/A	5.0

Minimum Discharge

Date	Time	GH	Discharge
Mar. 19	09:00	N/A	-0.10

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.

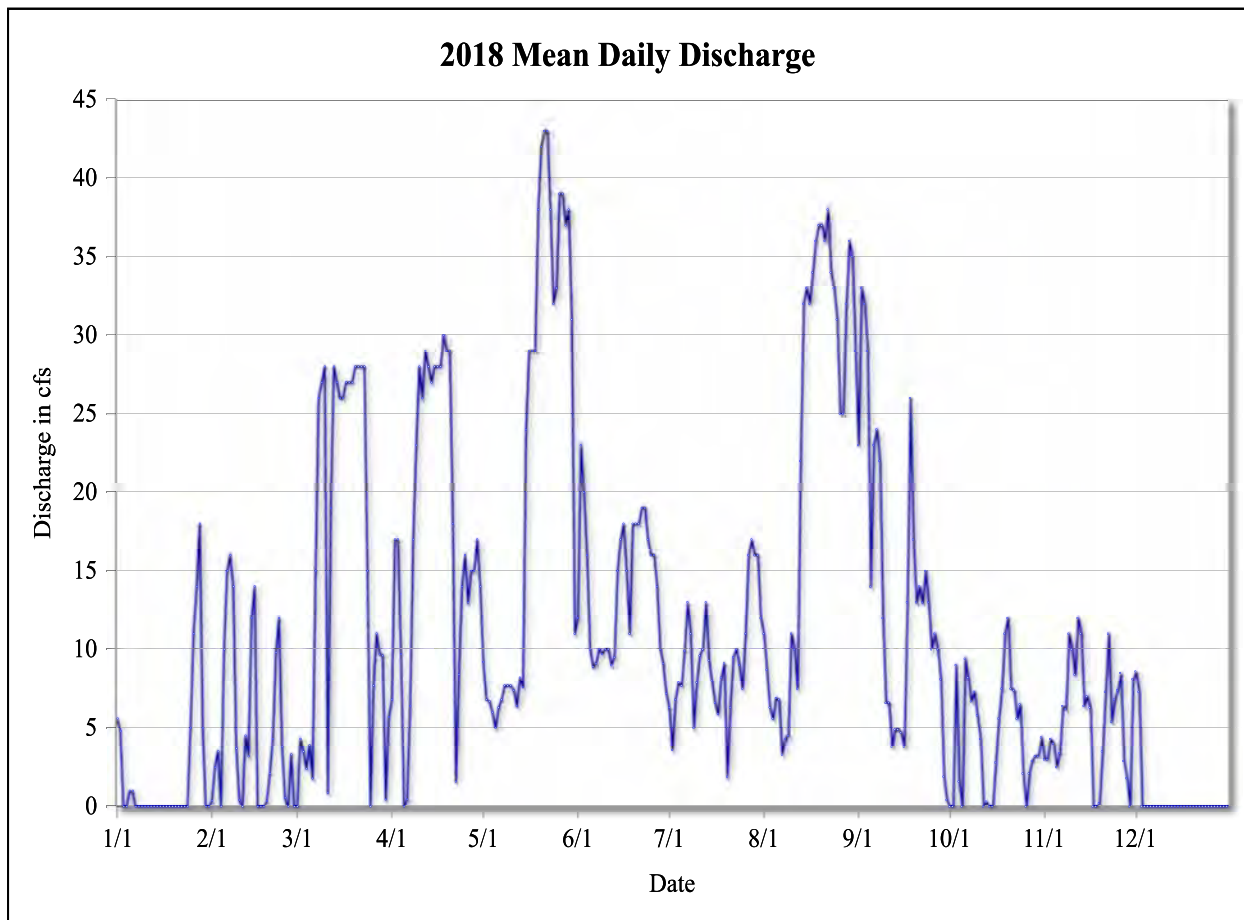
Drainage Area—Not applicable.

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-SW current meter until Jan. 2, 2018 then a SonTek/YSI Argonaut-IQ Plus current meter throughout the remainder of the year. Discharge is calculated using a velocity-index relationship.

Extremes—Maximum daily discharge, 58 cfs, Jun. 12, 2007; minimum daily discharge, no diversion at times; maximum hourly discharge, 64 cfs, Jun. 30, 2007 at 20:00; minimum hourly discharge, no diversion at times.

Remarks—None.



Fort Mojave Tribe-California 1

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	5.6	0.37	0	6.8	9.2	12	6.3	11	23	0	3.0	8.6
2	4.8	2.5	4.3	17	6.8	23	3.6	8.7	33	0	3.0	7.3
3	0	3.5	3.5	17	6.7	20	6.8	6.3	32	9.0	4.3	0
4	0	0	2.4	9.7	6.0	16	7.9	5.6	29	1.6	4.0	0
5	1.0	10	3.9	0	5.0	10	7.7	6.9	14	0	2.5	0
6	1.0	15	1.8	0.46	6.3	8.9	9.9	6.8	23	9.4	3.4	0
7	0	16	15	6.4	6.8	9.1	13	3.3	24	8.2	6.4	0
8	0	14	26	17	7.7	10	11	4.3	22	6.7	6.2	0
9	0	3.7	27	23	7.7	9.7	5.0	4.5	12	7.3	11	0
10	0	0.41	28	28	7.7	10	7.9	11	6.6	5.8	10	0
11	0	0	0.88	26	7.4	10	9.6	10	6.6	4.3	8.4	0
12	0	4.5	19	29	6.4	9.0	10	7.5	3.8	0	12	0
13	0	3.2	28	28	8.2	9.5	13	22	4.9	0.31	11	0
14	0	12	27	27	7.6	15	9.3	32	4.9	0	6.4	0
15	0	14	26	28	24	17	8.0	33	4.7	0	7.0	0
16	0	0	26	28	29	18	6.6	32	3.8	2.8	6.3	0
17	0	0	27	28	29	15	5.9	34	13	5.6	0	0
18	0	0	27	30	29	11	8.2	36	26	7.5	0	0
19	0	0.35	27	29	38	18	9.1	37	17	11	0.21	0
20	0	2.1	28	29	42	18	1.9	37	13	12	3.5	0
21	0	4.3	28	18	43	18	6.3	36	14	7.5	7.3	0
22	0	9.8	28	1.6	43	19	9.5	38	13	7.4	11	0
23	0	12	28	8.4	38	19	10	34	15	5.6	5.4	0
24	0	3.8	15	14	32	17	9.0	33	13	6.5	6.8	0
25	5.0	0.55	0	16	33	16	7.5	31	10	2.1	7.4	0
26	11	0	7.7	13	39	16	11	25	11	0	8.5	0
27	14	3.3	11	15	39	14	16	25	10	2.1	2.9	0
28	18	0	9.7	15	37	10	17	32	8.1	2.9	1.8	0
29	5.0		9.6	17	38	9.1	16	36	1.9	3.2	0	0
30	0		0.46	14	31	7.2	16	35	0.42	3.2	8.1	0
31	0		5.7		11		12	29		4.4		0
Total	65.6	134.23	489.03	540.73	676.2	414.2	292.7	703.1	412.54	136.76	168.15	16.0
Mean	2.12	4.79	15.8	18.0	21.8	13.8	9.44	22.7	13.8	4.41	5.61	0.52
Max	18	16	28	30	43	23	17	38	33	12	12	8.6
Min	0	0	0	0	5.0	7.2	1.9	3.3	0.42	0	0	0
Ac-ft	130	266	970	1,073	1,341	822	581	1,395	818	271	334	32

Calendar Year Summary

Annual Total 4,049.19 Annual Mean 11.1 Daily Max 43 Daily Min 0 Annual Ac-ft 8,031

Maximum Discharge

Date	Time	GH	Discharge
May 21	14:00	2.81	50

Minimum Discharge

Date	Time	GH	Discharge
Jan. 1	02:00	2.04	0

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.

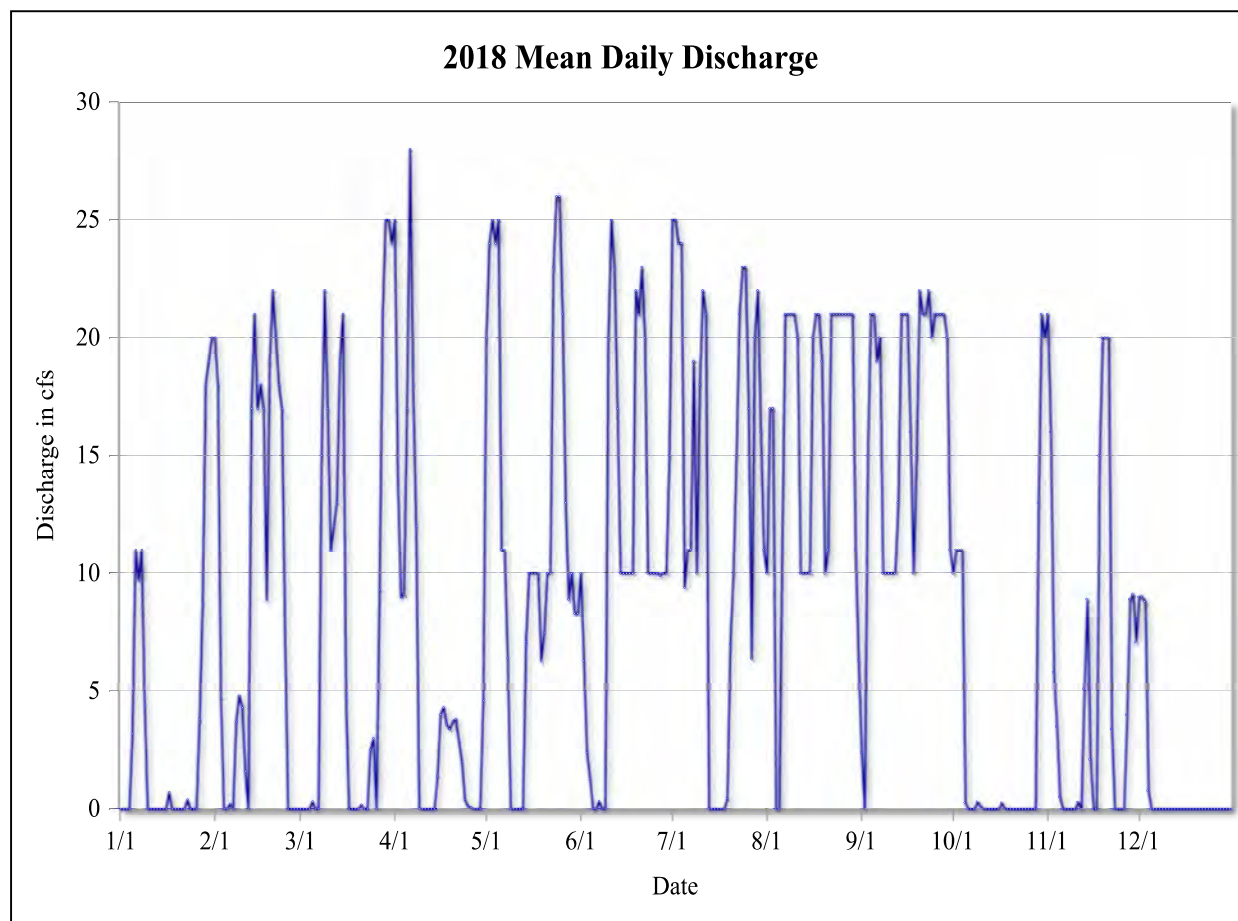
Drainage Area—Not applicable.

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 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, 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 period from Apr. 3, 2018 to Apr. 30, 2018 experienced a greater uncertainty due to a suspected issue with the bubbler orifice causing calibration problems with the sensor.



Fort Mojave Tribe-Cimmaron

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	20	0	25	20	10	25	10	2.4	10	21	9.0
2	0	18	0	14	24	6.3	25	17	0	11	16	9.0
3	0	4.7	0	9.0	25	2.4	24	17	15	11	5.8	8.8
4	0	0	0	9.1	24	1.3	24	0	21	11	3.5	0.78
5	3.2	0	0.32	17	25	0	9.4	0	21	0.27	0.52	0
6	11	0.22	0	28	11	0	11	11	19	0	0	0
7	9.7	0	0	18	11	0.33	11	21	20	0	0	0
8	11	3.7	15	12	6.4	0	19	21	10	0	0	0
9	4.4	4.8	22	0.03	0	0	10	21	10	0.31	0	0
10	0	4.3	17	0	0	20	18	21	10	0.12	0	0
11	0	1.6	11	0	0	25	22	20	10	0	0.30	0
12	0	0	12	0	0	23	21	10	10	0	0	0
13	0	17	13	0	0	17	0	10	13	0	5.1	0
14	0	21	19	0	7.1	10	0	10	21	0	8.9	0
15	0	17	21	1.4	10	10	0	10	21	0	2.1	0
16	0	18	4.7	4.0	10	10	0	20	21	0	0	0
17	0.71	17	0	4.3	10	10	0	21	16	0.27	0	0
18	0	8.9	0	3.6	10	10	0	21	10	0	15	0
19	0	19	0	3.4	6.3	22	0.44	19	15	0	20	0
20	0	22	0	3.7	7.5	21	7.0	10	22	0	20	0
21	0	20	0.18	3.8	10	23	10	11	21	0	20	0
22	0	18	0	2.9	10	20	15	21	21	0	3.4	0
23	0.40	17	0	2.0	23	10	21	21	22	0	0	0
24	0	7.6	2.5	0.39	26	10	23	21	20	0	0	0
25	0	0	3.0	0.13	26	10	23	21	21	0	0	0
26	0	0	0	0.06	21	10	17	21	21	0	0	0
27	3.8	0	9.3	0	13	9.9	6.4	21	21	0	4.0	0
28	8.7	0	21	0	8.9	10	20	21	21	0	8.9	0
29	18		25	0	10	10	22	21	20	13	9.1	0
30	19		25	4.6	8.3	15	16	11	11	21	7.1	0
31	20		24		8.3		11	6.3		20		0
Total	108.94	260.31	244.54	166.17	374.7	329.26	411.26	489.9	488.2	97.67	168.79	27.61
Mean	3.51	9.30	7.89	5.54	12.1	11.0	13.3	15.8	16.3	3.15	5.63	0.89
Max	20	22	25	28	26	25	25	21	22	21	21	9.0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	216	516	485	330	743	653	816	972	968	194	335	55

Calendar Year Summary

Annual Total 3,167.37 Annual Mean 8.68 Daily Max 28 Daily Min 0 Annual Ac-ft 6,282

Maximum Discharge

Date	Time	GH	Discharge
Apr. 6	09:00	0.85	31

Minimum Discharge

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

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.

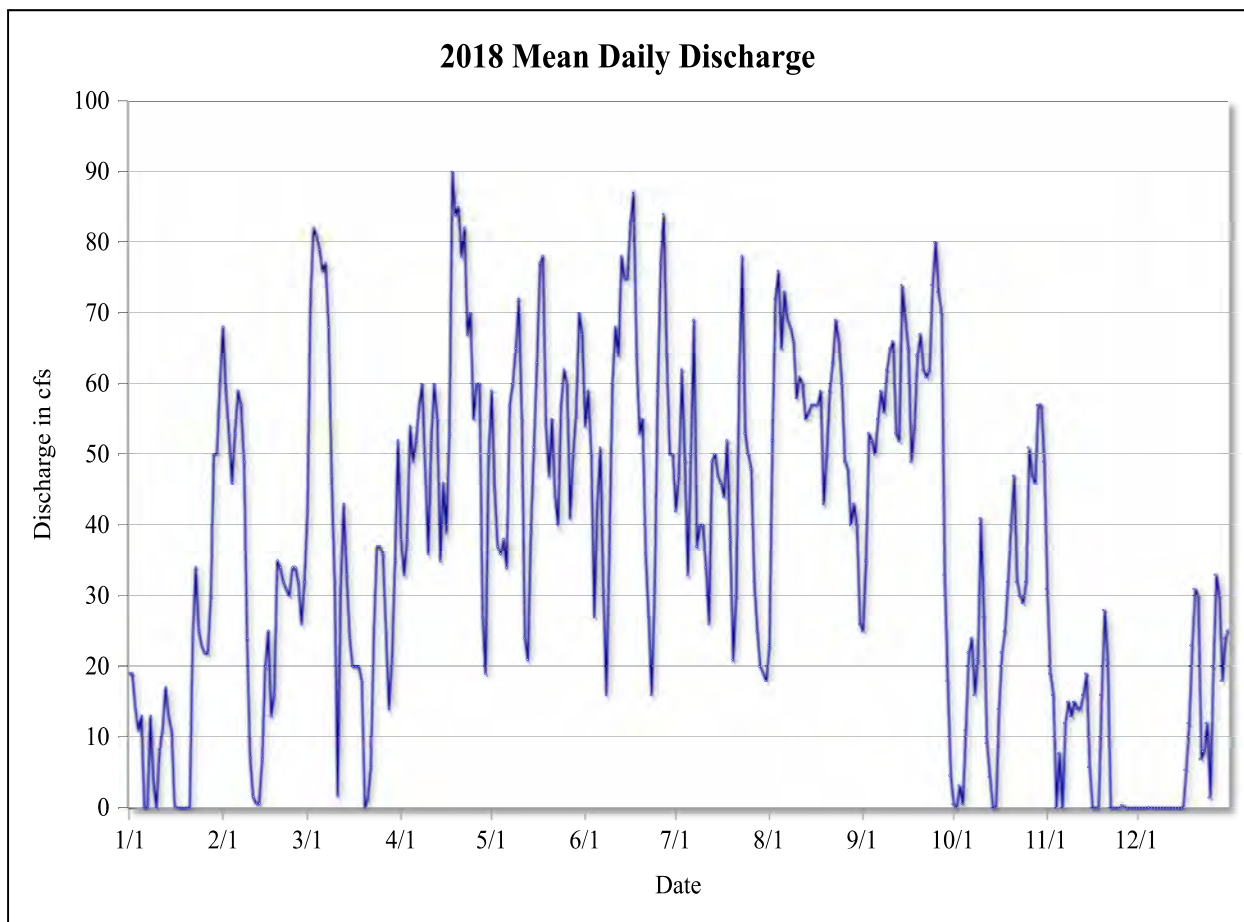
Drainage Area—Not applicable.

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 multiple input velocity regression.

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 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	19	68	42	38	59	54	42	23	25	0.53	31	0
2	19	59	72	33	45	59	47	52	35	0	19	0
3	14	53	82	38	37	50	62	72	53	3.2	16	0
4	11	46	81	54	36	27	49	76	52	0.61	0	0
5	13	53	79	49	38	43	33	65	50	11	7.7	0.07
6	0	59	76	52	34	51	50	73	55	22	0	0
7	0	57	77	57	57	31	69	69	59	24	12	0
8	13	49	68	60	60	16	37	68	56	16	15	0
9	3.8	24	47	48	65	37	40	66	62	21	13	0
10	0	7.1	32	36	72	60	40	58	65	41	15	0
11	8.0	1.6	1.8	52	55	68	34	61	66	27	14	0
12	11	0.69	31	60	24	64	26	60	53	9.2	14	0
13	17	0.63	43	55	21	78	49	55	52	4.4	16	0
14	13	6.9	33	35	39	75	50	56	74	0	19	0
15	11	20	24	46	51	75	47	57	69	0	5.8	0
16	0.31	25	20	39	63	83	46	57	65	14	0	0
17	0	13	20	53	77	87	44	57	49	22	0	5.4
18	0	16	20	90	78	64	52	59	54	25	0	12
19	0	35	18	84	54	53	38	43	64	32	16	23
20	0	34	0	85	47	55	21	50	67	40	28	31
21	0	32	1.4	78	55	36	30	59	62	47	21	30
22	24	31	5.7	82	44	27	61	63	61	32	0	6.9
23	34	30	25	67	40	16	78	69	62	30	0	8.0
24	25	34	37	70	57	31	53	66	74	29	0	12
25	23	34	37	55	62	59	50	60	80	32	0	1.5
26	22	32	36	60	60	77	48	49	73	51	0.40	20
27	22	26	25	60	41	84	32	48	70	47	0	33
28	30	32	14	27	50	64	25	40	33	46	0	30
29	50		21	19	56	50	20	43	18	57	0	18
30	50		35	50	70	50	19	40	4.6	57	0	24
31	60		52		67		18	26		49		25
Total	494.65	880.35	1,155.3	1,633	1,615	1,622	1,307	1,740	1,663.4	789.07	261.82	280.21
Mean	16.0	31.4	37.3	54.4	52.1	54.1	42.2	56.1	55.4	25.5	8.73	9.04
Max	60	68	82	90	78	87	78	76	80	57	31	33
Min	0	0.63	0	19	21	16	18	23	4.6	0	0	0
Ac-ft	981	1,746	2,291	3,238	3,203	3,217	2,592	3,452	3,299	1,565	519	556

Calendar Year Summary

Annual Total 13,441.28 Annual Mean 36.8 Daily Max 90 Daily Min 0 Annual Ac-ft 26,660

Maximum Discharge

Date	Time	GH	Discharge
Jun. 27	20:00	4.14	110

Minimum Discharge

Date	Time	GH	Discharge
Jan. 4	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.

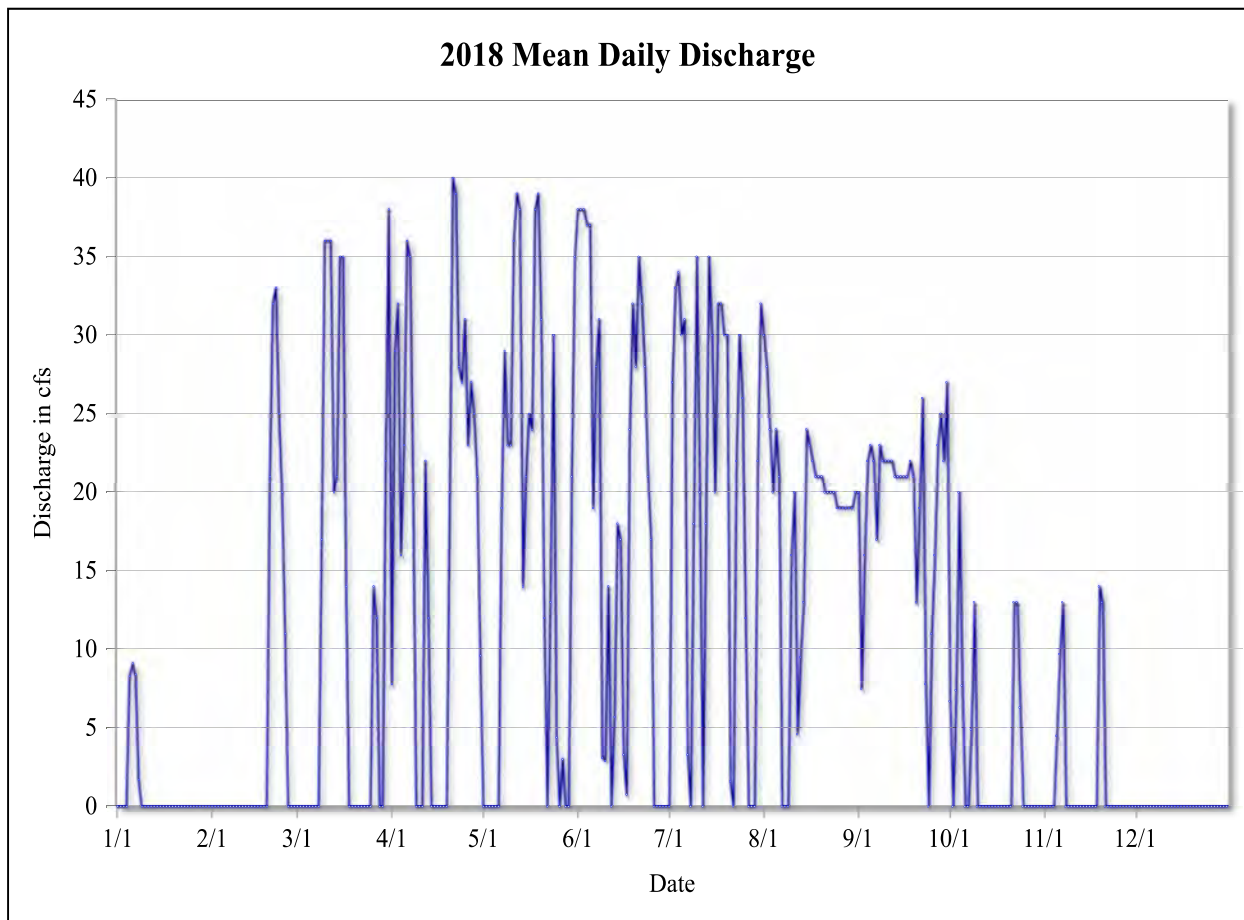
Drainage Area—Not applicable.

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 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	0	7.8	0	38	0	30	20	6.7	0	0
2	0	0	0	29	0	38	27	28	7.5	0	0	0
3	0	0	0	32	0	38	33	24	16	7.4	0	0
4	0	0	0	16	0	37	34	20	22	20	0	0
5	8.3	0	0	23	0	37	30	24	23	7.7	4.5	0
6	9.1	0	0	36	0	19	31	21	22	0	9.7	0
7	8.4	0	0	35	19	28	3.3	0	17	0	13	0
8	1.7	0	0	20	29	31	0	0	23	4.9	0	0
9	0	0	17	0	23	3.1	18	0	22	13	0	0
10	0	0	36	0	23	2.9	35	16	22	0	0	0
11	0	0	36	0	36	14	20	20	22	0	0	0
12	0	0	36	22	39	0	0	4.6	22	0	0	0
13	0	0	20	12	38	5.7	18	9.5	21	0	0	0
14	0	0	21	0	14	18	35	13	21	0	0	0
15	0	0	35	0	21	17	30	24	21	0	0	0
16	0	0	35	0	25	3.3	20	23	21	0	0	0
17	0	0	14	0	24	0.77	32	22	21	0	0	0
18	0	0	0	0	38	24	32	21	22	0	0	0
19	0	0	0	0	39	32	30	21	21	0	14	0
20	0	21	0	20	31	28	30	21	13	0	13	0
21	0	32	0	40	12	35	1.6	20	19	0	0	0
22	0	33	0	39	0	32	0.01	20	26	13	0	0
23	0	25	0	28	13	28	22	20	7.8	13	0	0
24	0	20	0	27	30	21	30	20	0	6.3	0	0
25	0	11	0	31	4.4	17	26	19	11	0	0	0
26	0	0	14	23	0	0	12	19	16	0	0	0
27	0	0	12	27	3.0	0.01	0	19	23	0	0	0
28	0	0	0	25	0	0	0	19	25	0	0	0
29	0		0	21	0	0	0	19	22	0	0	0
30	0		22	9.6	21	0	22	19	27	0	0	0
31	0		38		35		32	20		0		0
Total	27.6	140	336	522.3	518.8	550.07	605.70	556.1	577.5	92.2	53.9	0
Mean	0.89	5.01	10.8	17.4	16.7	18.3	19.5	17.9	19.2	2.97	1.80	0
Max	9.1	33	38	40	39	38	35	30	27	20	14	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	55	278	667	1,036	1,029	1,091	1,201	1,103	1,145	183	107	0

Calendar Year Summary

Annual Total 3,980.61 Annual Mean 10.9 Daily Max 40 Daily Min 0 Annual Ac-ft 7,895

Maximum Discharge

Date	Time	GH	Discharge
May 8	03:00	0.90	43

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.

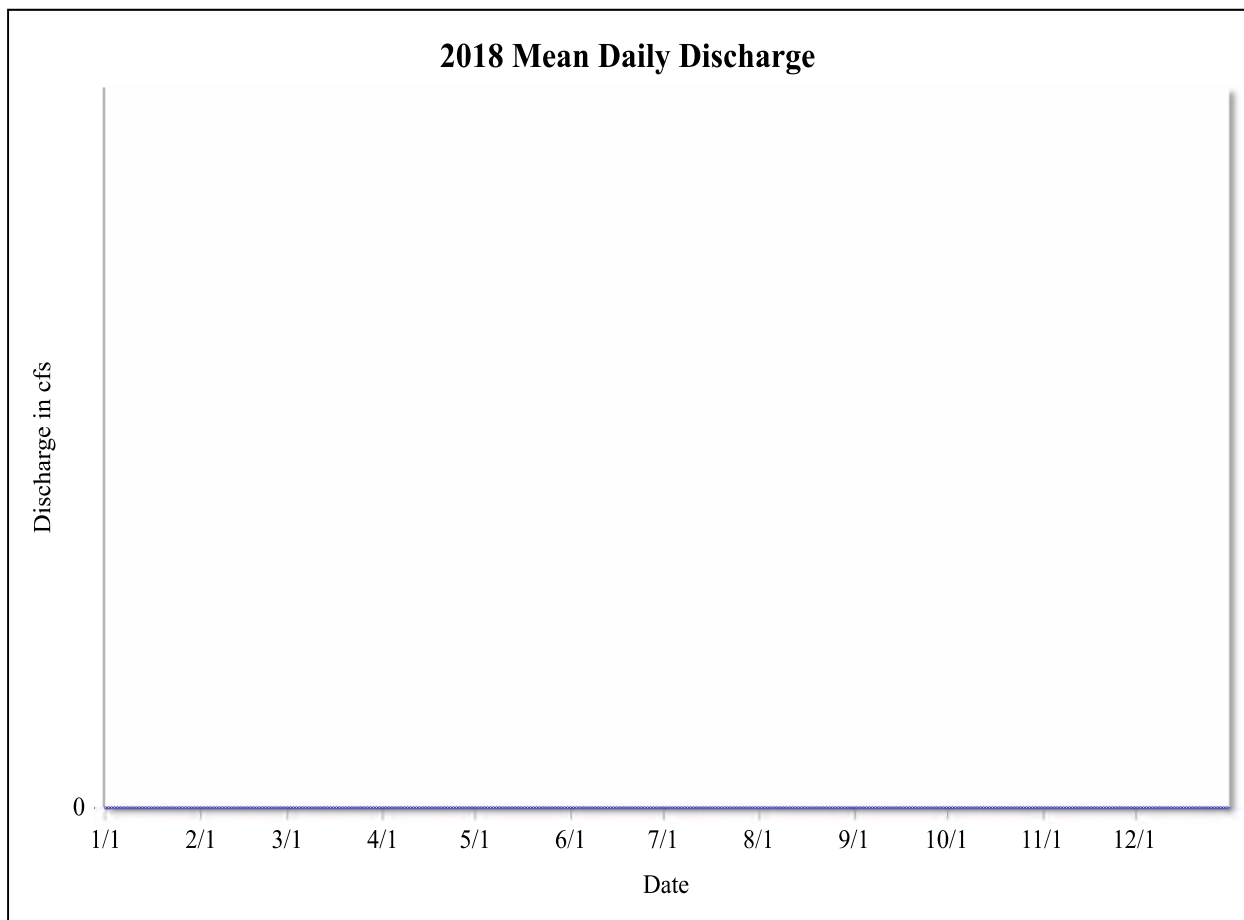
Drainage Area—Not applicable.

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—During 2018 there was zero reported flow.



Fort Mojave Tribe-Refuge (Fort Mojave Tribe)

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

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
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.

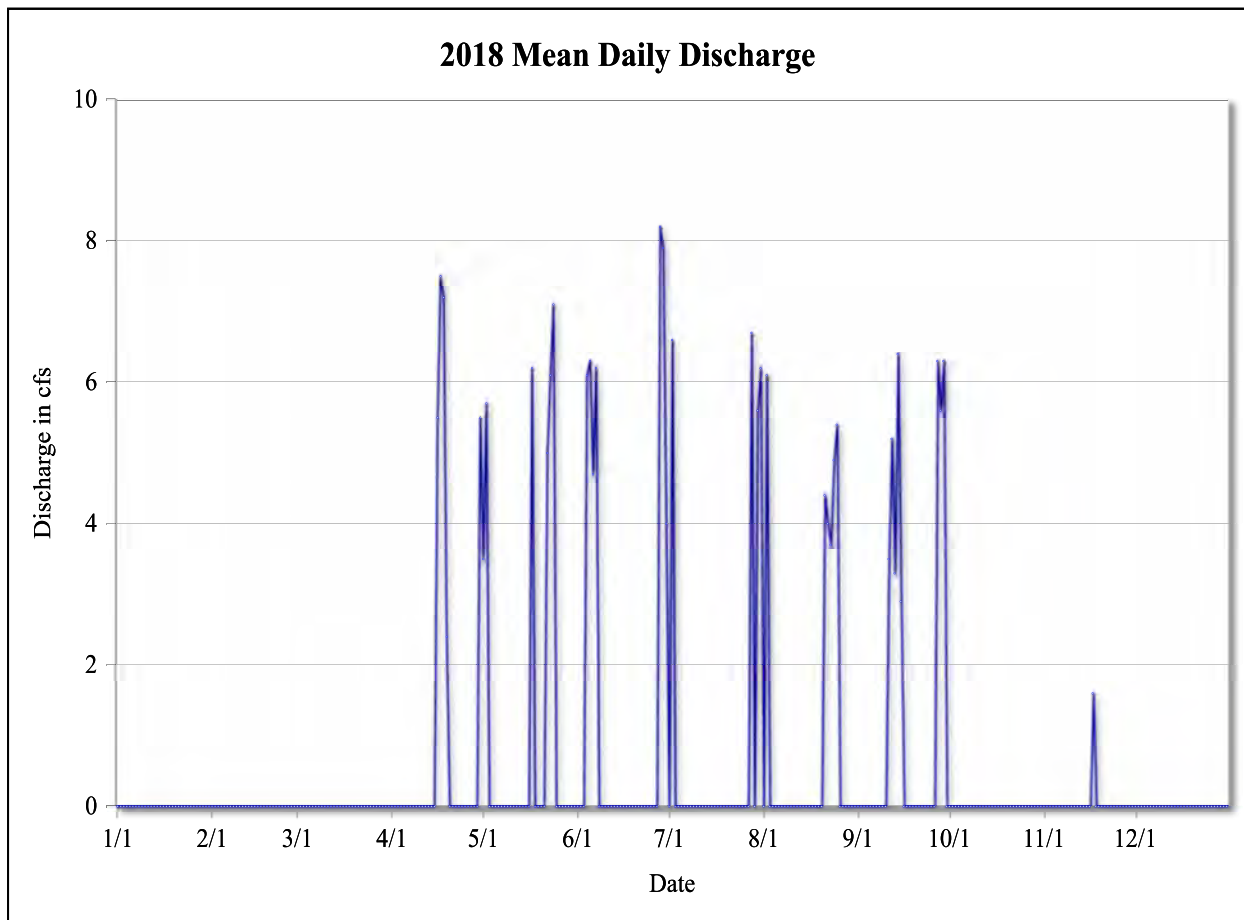
Drainage Area—Not applicable.

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 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	0	0	0	3.5	0	0	0	0	0	0	0
2	0	0	0	0	5.7	0	6.6	6.1	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	6.1	0	0	0	0	0	0
5	0	0	0	0	0	6.3	0	0	0	0	0	0
6	0	0	0	0	0	4.7	0	0	0	0	0	0
7	0	0	0	0	0	6.2	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	3.5	0	0	0
12	0	0	0	0	0	0	0	0	5.2	0	0	0
13	0	0	0	0	0	0	0	0	3.3	0	0	0
14	0	0	0	0	0	0	0	0	6.4	0	0	0
15	0	0	0	0	0	0	0	0	2.9	0	0	0
16	0	0	0	5.5	0	0	0	0	0	0	0	0
17	0	0	0	7.5	6.2	0	0	0	0	0	1.6	0
18	0	0	0	7.2	0	0	0	0	0	0	0	0
19	0	0	0	2.4	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	4.4	0	0	0	0
22	0	0	0	0	5.0	0	0	4.0	0	0	0	0
23	0	0	0	0	6.1	0	0	3.7	0	0	0	0
24	0	0	0	0	7.1	0	0	4.9	0	0	0	0
25	0	0	0	0	0	0	0	5.4	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	6.3	0	0	0
28	0	0	0	0	0	8.2	6.7	0	5.6	0	0	0
29	0		0	0	0	7.9	0	0	6.3	0	0	0
30	0		0	5.5	0	4.0	5.6	0	0	0	0	0
31	0		0		0		6.2	0		0		0
Total	0	0	0	27.9	33.5	43.5	25.0	28.5	39.7	0	1.6	0
Mean	0	0	0	0.93	1.08	1.45	0.81	0.92	1.32	0	0.053	0
Max	0	0	0	7.5	7.1	8.2	6.7	6.1	6.4	0	1.6	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	55	66	86	50	57	79	0	3.2	0

Calendar Year Summary

Annual Total 199.8 Annual Mean 0.55 Daily Max 8.2 Daily Min 0 Annual Ac-ft 396

Maximum Discharge

Date	Time	GH	Discharge
Jun. 30	17:00	N/A	16

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.

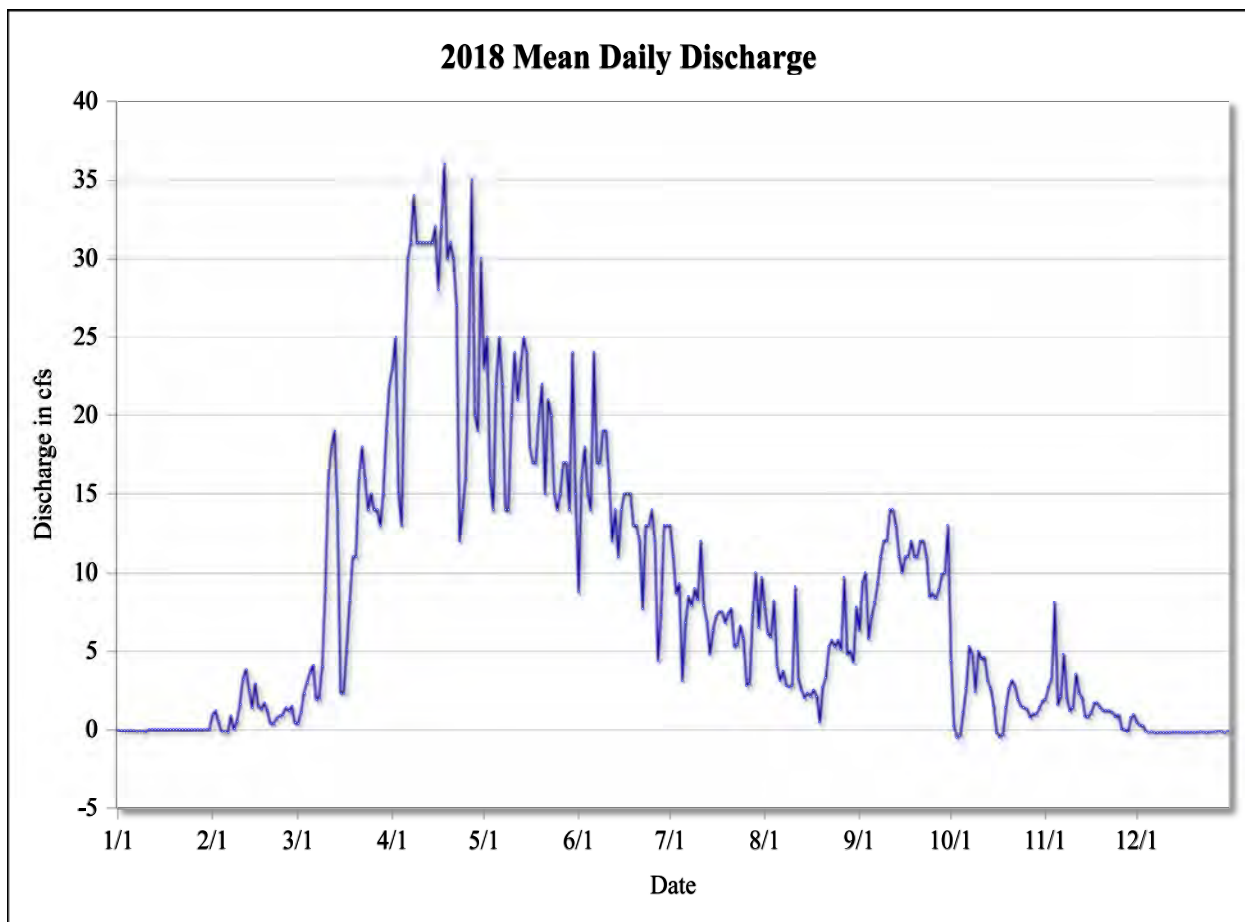
Drainage Area—Not applicable.

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—Record was modeled Jul. 21, 2018 at 21:00 to Jul. 23, 2018 at 11:00 and Sep. 1, 2018 at 08:00 to Sep. 10, 2018 at 11:00 due to sensor failure.



United States Fish and Wildlife Service-Farm Ditch

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	-0.04	0.94	0.39	23	23	8.8	13	7.8	6.3	4.4	1.9	0.46
2	-0.07	1.2	1.1	25	25	16	11	6.1	9.4	0.22	2.7	0.28
3	-0.07	0.51	2.3	15	16	18	8.7	5.9	10	-0.50	3.2	0.26
4	-0.08	-0.14	3.0	13	14	15	9.3	8.2	5.8	-0.41	8.1	-0.13
5	-0.06	-0.12	3.6	23	22	14	3.1	4.0	7.2	1.1	1.6	-0.18
6	-0.07	-0.20	4.1	30	25	24	6.8	3.1	8.1	2.6	2.1	-0.14
7	-0.12	0.87	1.9	31	22	17	8.5	3.7	9.4	5.3	4.8	-0.21
8	-0.08	0.05	2.0	34	14	17	7.9	2.8	11	4.8	2.0	-0.19
9	-0.10	0.52	4.0	31	14	19	9.0	2.7	12	2.4	1.2	-0.17
10	-0.16	1.6	9.0	31	20	19	8.3	2.8	12	5.0	1.4	-0.20
11	0.01	3.2	16	31	24	16	12	9.1	14	4.5	3.5	-0.18
12	0	3.8	18	31	21	12	7.9	3.2	14	4.6	2.3	-0.19
13	0	2.5	19	31	23	14	6.9	2.5	13	3.1	2.0	-0.15
14	0	1.4	14	31	25	11	4.8	2.0	11	2.6	0.85	-0.17
15	0	2.9	2.3	32	24	14	6.3	2.3	10	1.5	0.81	-0.17
16	0	1.5	2.3	28	18	15	7.2	2.1	11	-0.20	1.1	-0.19
17	0	1.3	5.1	32	17	15	7.5	2.5	11	-0.49	1.7	-0.18
18	0	1.7	8.2	36	17	15	7.5	2.1	12	-0.33	1.7	-0.18
19	0	1.2	11	30	20	13	6.8	0.48	11	1.4	1.4	-0.17
20	0	0.40	11	31	22	13	7.4	2.7	11	2.6	1.2	-0.19
21	0	0.39	16	30	15	12	7.7	3.3	12	3.1	1.2	-0.16
22	0	0.72	18	27	21	7.7	5.3	5.3	12	2.7	1.2	-0.13
23	0	0.89	16	12	20	13	5.4	5.7	11	1.9	1.1	-0.18
24	0	0.94	14	14	15	13	6.6	5.3	8.5	1.5	0.81	-0.19
25	0	1.4	15	16	14	14	5.8	5.7	8.7	1.4	0.94	-0.15
26	0	1.2	14	24	15	12	2.8	5.1	8.4	1.3	0.05	-0.16
27	0	1.5	14	35	17	4.4	2.9	9.7	8.9	0.79	-0.01	-0.14
28	0	0.44	13	20	17	7.3	7.3	4.8	9.9	1.0	-0.15	-0.10
29	0		15	19	14	13	10	5.0	10	1.0	0.77	-0.13
30	0		19	30	24	13	6.5	4.3	13	1.4	0.96	-0.21
31	0		22		15		9.7	7.8		1.8		-0.09
Total	-0.85	32.61	313.11	798	593	417.6	230.0	138.21	312.6	62.20	52.48	-3.63
Mean	-0.027	1.16	10.1	26.6	19.1	13.9	7.42	4.46	10.4	2.01	1.75	-0.12
Max	0.01	3.8	22	36	25	24	13	9.7	14	5.3	8.1	0.46
Min	-0.16	-0.20	0.39	12	14	4.4	2.8	0.48	5.8	-0.50	-0.15	-0.21
Ac-ft	-1.7	65	621	1,583	1,177	828	456	274	620	123	104	-7.2

Calendar Year Summary

Annual Total 2,945.99 Annual Mean 8.07 Daily Max 36 Daily Min -0.50 Annual Ac-ft 5,843

Maximum Discharge

Date	Time	GH	Discharge
Apr. 27	06:00	N/A	40

Minimum Discharge

Date	Time	GH	Discharge
Jul. 22	17:00	N/A	-7.3

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.

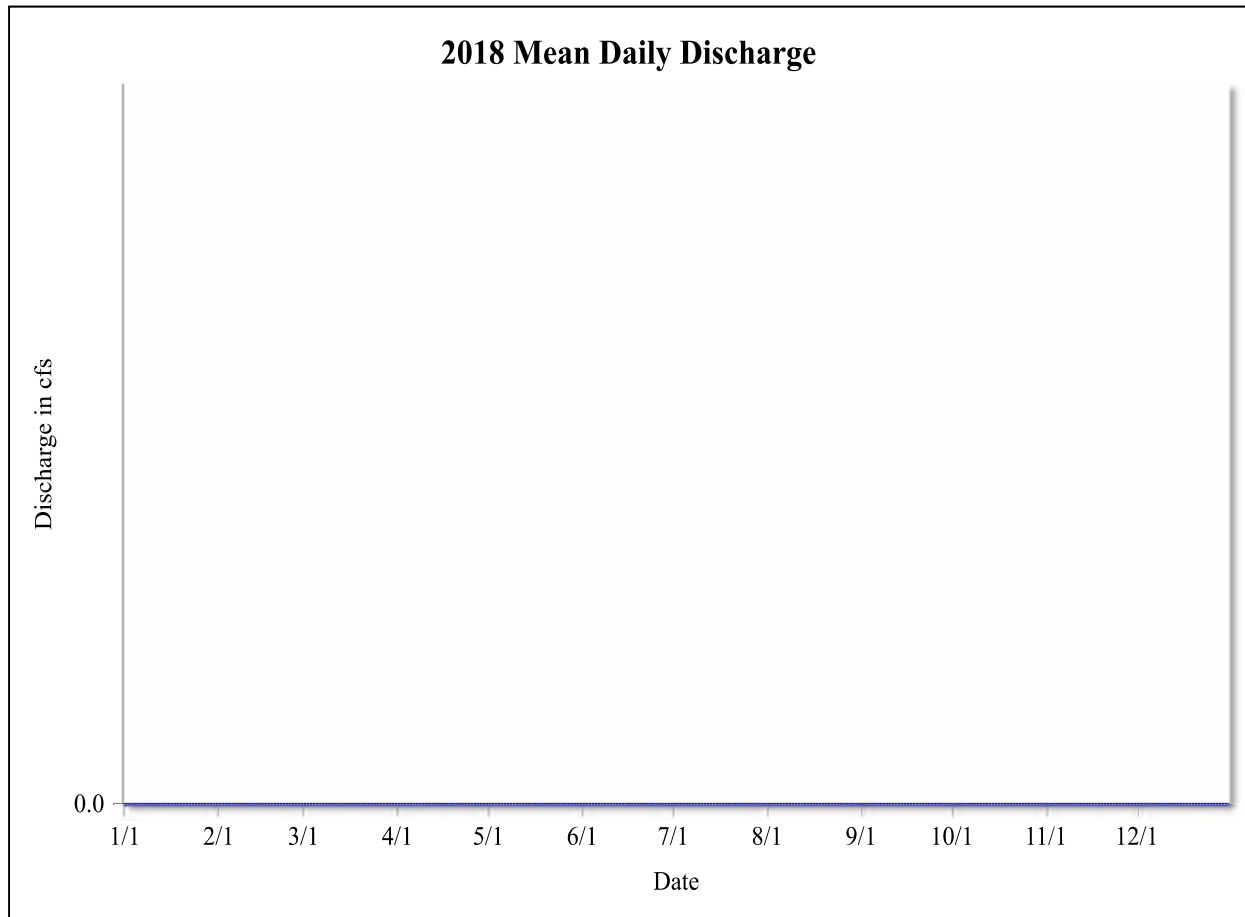
Drainage Area—Undetermined.

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—Values were estimated from May 12, 2018 at 21:00 to May 13, 2018 at 07:00 due to equipment failure.



United States Fish and Wildlife Service-South Dike

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

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
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	453.40	0

Minimum Discharge

Date	Time	Elev	Discharge
Jan. 1	01:00	453.40	0

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

Palo Verde Irrigation District-Main Canal

Location—Latitude 33° 43.801', longitude -114° 30.717', in the SW¼ NE¼ of Section 19, T. 5 S., R. 24 E., San Bernardino meridian, Riverside County, California, Hydrologic Unit 15030104, river mi 133.8, 31.7 mi south of Parker, Arizona, 9.2 mi north of Blythe, California, and 58.2 river mi downstream of Parker Dam.

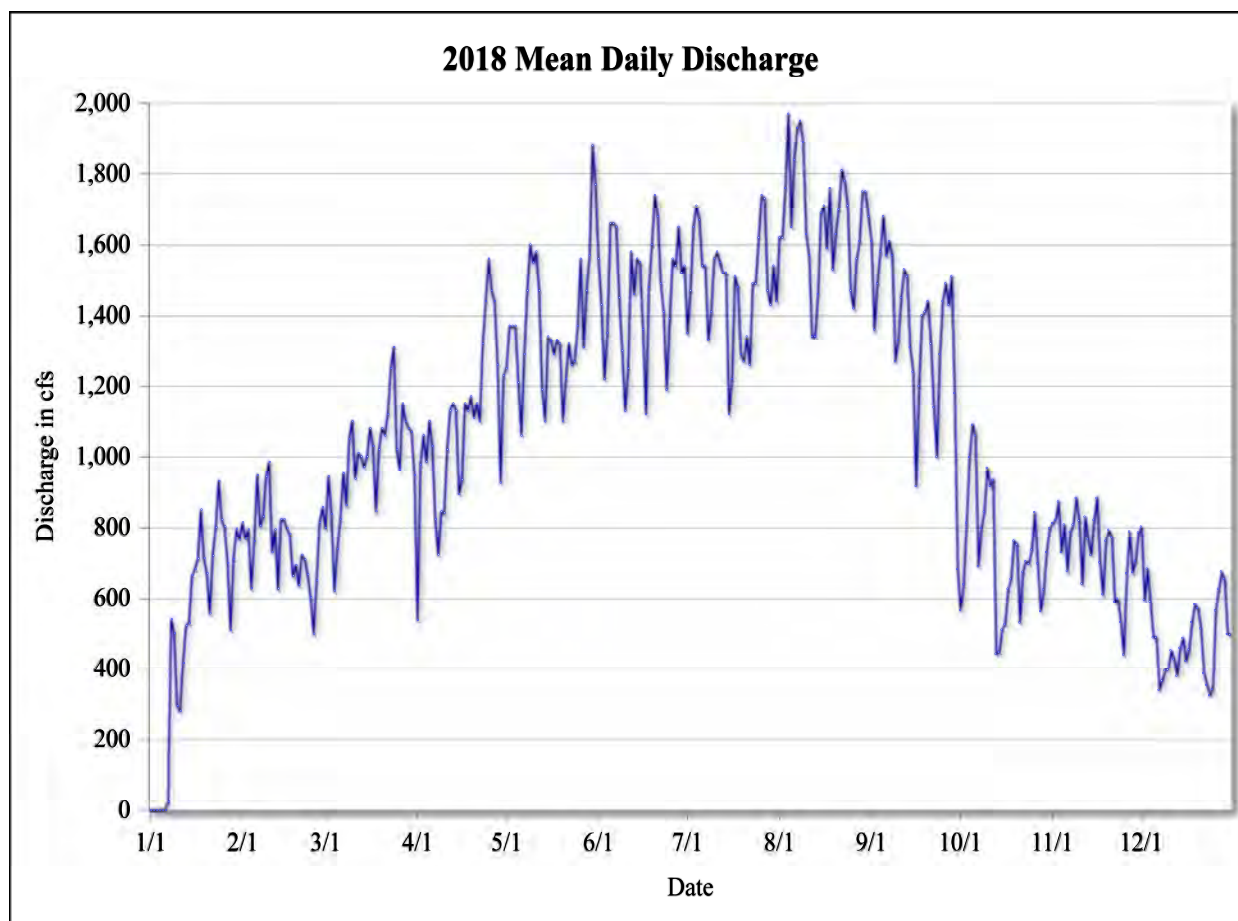
Drainage Area—Not applicable.

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, 2,240 cfs, Jun. 27, 2013; minimum daily discharge, -89 cfs, Jan. 2, 2016; maximum hourly discharge, 2,530 cfs, Jun. 25, 2008 at 15:00; minimum hourly discharge, -1,040 cfs, Jan. 2, 2015 at 10:00.

Remarks—Due to the Palo Verde Irrigation District annual outage, there were no diversions for the period of Jan. 1, 2018 at 01:00 to Jan. 7, 2018 at 23:00. Discharge was furnished by Palo Verde Irrigation District for short duration periods on Aug.16, 2018, Aug. 17, 2018, and Aug. 22, 2018 due to lighting induced equipment failure.



Palo Verde Irrigation District-Main Canal

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	0	814	799	538	1,250	1,560	1,350	1,620	1,610	566	812	802
2	0	769	944	977	1,370	1,430	1,470	1,620	1,360	639	821	595
3	0	794	838	1,060	1,370	1,220	1,650	1,760	1,490	813	873	683
4	0	628	621	986	1,370	1,350	1,710	1,970	1,580	999	730	590
5	0	761	739	1,100	1,210	1,660	1,670	1,650	1,680	1,090	808	489
6	0	948	823	1,030	1,060	1,660	1,540	1,840	1,570	1,060	677	489
7	24	805	953	823	1,290	1,650	1,540	1,930	1,610	690	787	340
8	540	831	863	723	1,470	1,450	1,330	1,950	1,570	798	808	366
9	500	944	1,050	845	1,600	1,300	1,410	1,890	1,270	844	883	396
10	295	985	1,100	841	1,550	1,130	1,560	1,630	1,330	968	819	398
11	281	730	938	1,020	1,580	1,250	1,580	1,570	1,450	917	641	452
12	416	794	1,010	1,130	1,470	1,580	1,550	1,340	1,530	934	830	427
13	522	627	1,000	1,150	1,190	1,460	1,520	1,340	1,510	442	767	380
14	529	823	971	1,130	1,100	1,560	1,520	1,460	1,310	447	722	459
15	665	823	1,000	894	1,340	1,550	1,120	1,690	1,240	510	821	487
16	682	798	1,080	935	1,330	1,360	1,220	1,710	917	526	883	422
17	712	781	1,030	1,150	1,290	1,120	1,510	1,590	1,200	626	701	454
18	850	663	846	1,130	1,330	1,480	1,480	1,760	1,400	654	611	532
19	713	693	1,020	1,170	1,320	1,600	1,290	1,530	1,410	762	762	583
20	670	637	1,080	1,110	1,100	1,740	1,270	1,630	1,440	752	793	572
21	557	722	1,060	1,150	1,220	1,680	1,340	1,700	1,320	531	772	514
22	720	709	1,120	1,100	1,320	1,490	1,260	1,810	1,140	674	589	388
23	800	667	1,250	1,320	1,260	1,410	1,490	1,780	1,000	704	598	354
24	931	602	1,310	1,440	1,270	1,190	1,490	1,710	1,290	697	532	325
25	822	499	1,020	1,560	1,370	1,390	1,620	1,470	1,440	737	440	342
26	802	650	963	1,470	1,560	1,560	1,740	1,420	1,490	843	670	565
27	699	814	1,150	1,440	1,310	1,540	1,730	1,560	1,430	698	788	626
28	509	857	1,100	1,260	1,470	1,650	1,470	1,610	1,510	563	674	675
29	710		1,080	927	1,570	1,520	1,430	1,750	1,180	624	705	654
30	796		1,070	1,230	1,880	1,540	1,540	1,750	682	730	785	498
31	766		948		1,770		1,440	1,680		797		496
Total	15,511	21,165	30,790	32,641	42,569	44,083	45,791	51,738	40,975	22,639	22,101	15,353
Mean	500	756	993	1,088	1,373	1,469	1,477	1,669	1,366	730	737	495
Max	931	985	1,310	1,560	1,880	1,740	1,740	1,970	1,680	1,090	883	802
Min	0	499	621	538	1,060	1,120	1,120	1,340	682	442	440	325
Ac-ft	30,766	41,981	61,071	64,742	84,435	87,438	90,824	102,621	81,272	44,904	43,837	30,452

Calendar Year Summary

Annual Total 385,357 Annual Mean 1,056 Daily Max 1,970 Daily Min 0 Annual Ac-ft 764,344

Maximum Discharge

Date	Time	Elev	Discharge
Aug. 8	09:00	282.35	2,144

Minimum Discharge

Date	Time	Elev	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.

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.

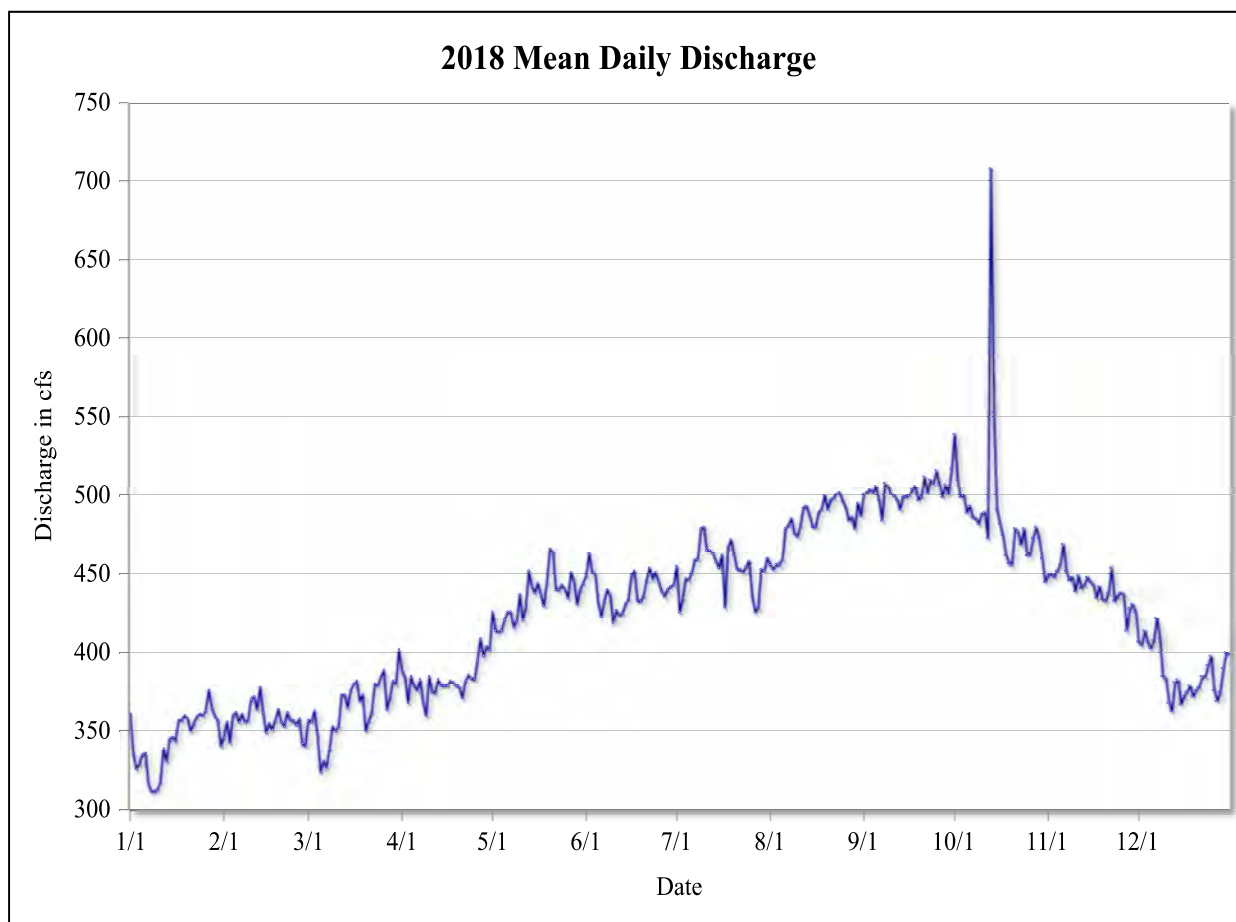
Drainage Area—Undetermined.

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—None.



Palo Verde Irrigation District-Outfall Drain

Mean daily discharge, in cubic-feet per second, Calendar Year 2018

Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	361	346	357	389	426	449	455	456	501	539	449	407
2	336	356	356	385	414	463	426	453	502	510	450	405
3	326	343	363	368	413	451	435	456	504	499	448	414
4	329	360	348	385	414	450	447	456	502	500	452	407
5	335	362	324	379	421	432	446	459	506	489	456	403
6	336	356	331	376	426	423	451	479	497	493	469	408
7	317	361	327	383	426	433	459	481	484	486	452	422
8	312	356	339	368	416	440	459	485	508	485	446	409
9	312	357	353	360	420	436	479	476	506	482	448	385
10	313	370	350	385	437	419	480	474	501	488	439	384
11	318	372	353	375	421	427	465	481	500	489	449	368
12	339	364	373	374	429	424	465	492	497	473	441	363
13	331	378	373	383	452	425	463	493	491	708	443	381
14	345	362	365	379	442	431	458	487	499	553	448	383
15	346	349	376	379	438	434	454	480	499	491	445	367
16	344	355	380	379	444	449	462	480	500	482	443	372
17	357	351	382	382	437	452	429	489	504	475	435	375
18	357	357	369	381	430	433	467	491	506	462	442	379
19	360	364	373	379	445	433	472	500	497	457	434	372
20	358	356	350	378	466	436	462	491	499	456	433	376
21	350	353	357	371	464	446	453	497	512	479	438	378
22	355	362	362	382	440	454	453	498	502	477	454	385
23	359	357	380	386	440	447	451	501	510	469	433	385
24	361	357	379	384	443	451	455	502	508	479	436	392
25	360	354	385	383	440	445	458	496	516	462	438	398
26	363	358	389	395	435	439	436	492	507	462	437	376
27	376	342	364	409	451	436	426	484	499	473	414	369
28	365	341	371	398	445	440	429	486	507	480	428	375
29	360		382	404	431	442	453	479	501	473	431	390
30	357		380	402	440	443	452	495	517	460	426	400
31	341		402		444		460	487		445		399
Total	10,676	10,001	11,293	11,479	13,488	13,183	14,059	14,975	15,083	15,176	13,255	12,027
Mean	344	357	364	383	435	439	454	483	503	490	442	388
Max	376	378	402	409	466	463	480	502	517	708	469	422
Min	312	341	324	360	413	419	426	453	484	445	414	363
Ac-ft	21,175	19,837	22,399	22,769	26,753	26,148	27,886	29,703	29,916	30,102	26,292	23,856

Calendar Year Summary

Annual Total 154,696 Annual Mean 424 Daily Max 708 Daily Min 312 Annual Ac-ft 306,836

Maximum Discharge

Date	Time	Elev	Discharge
Oct. 13	10:00	218.26	1,009

Minimum Discharge

Date	Time	Elev	Discharge
Jan. 9	13:00	214.45	299

Glossary

Acre-foot (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, per unit of time, 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—Provisional data that have been checked for completeness and accuracy and may have been adjusted and corrected based on 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, per unit of time, 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, computed from a discharge measurement, 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