

NATIONAL PARK SERVICE
Kalaupapa National Historical Park – Water Year 1993
 210832156551401 Upper Waikolu Stream, Hawaii

LOCATION –Lat 21° 08' 32"N, Long 156° 55' 14"W, Island of Molokai, Maui County, Hydrologic Unit 20050000, 6.8 miles east northeast of Kaunakakai, Molokai, HI, 2.5 miles south of confluence with Pacific Ocean, about 100 feet above upper diversion structure for Molokai Irrigation System.

DRAINAGE AREA – 1.0 mi².

PERIOD OF RECORD – June 1992 to September 1996.

GAGE – Water-stage recorder. Elevation of gage is 1,050 feet above mean sea level, as determined by USGS 7.5 minute map (NAD 27).

REMARKS – Daily discharge values are considered poor due to numerous data corrections.

Discharge, cubic feet per second
 WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	1.7	1.8	9.3
2	---	---	---	---	---	---	---	---	---	2.3	1.6	2.2
3	---	---	---	---	---	---	---	---	---	1.9	1.6	1.7
4	---	---	---	---	---	---	---	---	---	3.2	2.3	1.6
5	---	---	---	---	---	---	---	---	---	2.0	2.4	1.5
6	---	---	---	---	---	---	---	---	---	1.7	1.8	1.5
7	---	---	---	---	---	---	---	---	---	1.6	1.6	1.4
8	---	---	---	---	---	---	---	---	---	1.6	1.5	1.4
9	---	---	---	---	---	---	---	---	---	1.5	1.6	1.4
10	---	---	---	---	---	---	---	---	---	1.5	3.0	1.4
11	---	---	---	---	---	---	---	---	---	1.5	3.6	1.4
12	---	---	---	---	---	---	---	---	---	1.5	2.2	1.9
13	---	---	---	---	---	---	---	---	---	1.5	2.2	1.5
14	---	---	---	---	---	---	---	---	---	1.5	2.0	1.4
15	---	---	---	---	---	---	---	---	---	1.5	2.6	1.5
16	---	---	---	---	---	---	---	---	1.5	1.6	8.2	1.4
17	---	---	---	---	---	---	---	---	1.5	1.6	3.1	1.4
18	---	---	---	---	---	---	---	---	1.7	1.7	2.0	1.4
19	---	---	---	---	---	---	---	---	1.8	2.5	1.7	1.4
20	---	---	---	---	---	---	---	---	1.7	2.9	1.6	1.4
21	---	---	---	---	---	---	---	---	1.6	2.1	1.5	1.4
22	---	---	---	---	---	---	---	---	1.5	7.1	1.6	1.4
23	---	---	---	---	---	---	---	---	1.4	4.2	1.9	1.4
24	---	---	---	---	---	---	---	---	1.4	9.7	3.0	1.6
25	---	---	---	---	---	---	---	---	2.7	4.5	2.3	1.4
26	---	---	---	---	---	---	---	---	3.1	5.2	1.6	1.7
27	---	---	---	---	---	---	---	---	1.7	5.7	1.5	1.8
28	---	---	---	---	---	---	---	---	1.5	3.5	1.5	1.5
29	---	---	---	---	---	---	---	---	1.4	2.4	1.4	1.5
30	---	---	---	---	---	---	---	---	1.5	2.2	1.5	1.8
31	---	---	---	---	---	---	---	---	1.9	1.9	7.5	---
TOTAL	---	---	---	---	---	---	---	---	---	85.3	73.7	53.6
MEAN	---	---	---	---	---	---	---	---	---	2.75	2.38	1.79
MAX	---	---	---	---	---	---	---	---	---	9.7	8.2	9.3
MIN	---	---	---	---	---	---	---	---	---	1.5	1.4	1.4
AC-FT	---	---	---	---	---	---	---	---	---	169	146	106

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1993, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	---	---	---	---	2.75	2.38	1.79
MAX	---	---	---	---	---	---	---	---	---	2.75	2.38	1.79
(WY)	---	---	---	---	---	---	---	---	---	1993	1993	1993
MIN	---	---	---	---	---	---	---	---	---	2.75	2.38	1.79
(WY)	---	---	---	---	---	---	---	---	---	1993	1993	1993

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REMARKS – Daily discharge values are considered poor due to numerous data corrections.

Discharge, cubic feet per second
 WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.2	9.1	2.4	1.3	1.3	0.37	---	---	---	---	3.6
2	1.4	0.87	5.9	2.7	1.3	1.2	0.35	---	---	---	---	4.1
3	1.4	1.3	8.0	2.6	2.5	1.3	0.34	---	---	---	---	5.2
4	1.4	1.6	21	2.4	11	1.3	0.33	---	---	---	1.8	3.0
5	1.4	0.81	11	2.2	6.5	1.3	0.33	---	---	---	1.8	2.1
6	1.4	0.67	6.5	12	6.9	1.3	0.32	---	---	---	1.8	3.1
7	1.4	0.64	11	5.6	2.2	1.3	0.36	---	---	---	1.8	2.1
8	1.3	1.5	7.1	2.7	5.0	1.3	0.54	---	---	---	1.8	4.2
9	1.3	8.4	4.8	2.2	4.9	1.3	0.46	---	---	---	1.8	4.9
10	1.3	2.3	4.2	2.0	3.0	1.3	0.77	---	---	---	1.8	2.8
11	1.4	1.2	3.9	1.8	6.9	10	1.4	---	---	---	1.8	2.3
12	1.4	0.96	4.1	1.7	12	13	2.6	---	---	---	3.1	8.0
13	---	0.89	8.2	1.8	2.2	3.8	1.2	---	---	---	2.9	5.6
14	---	1.2	5.0	1.7	23	6.4	0.66	---	---	---	2.0	2.5
15	---	0.97	5.3	1.6	2.7	4.2	0.57	---	---	---	1.9	1.9
16	1.5	1.1	6.1	1.6	3.2	3.7	0.40	---	---	---	1.9	1.7
17	3.2	3.1	10	1.8	7.7	3.5	---	---	---	---	1.9	1.6
18	2.2	1.4	12	6.8	2.2	2.1	---	---	---	---	2.1	3.7
19	1.8	1.3	12	30	1.6	1.8	---	---	---	---	5.0	5.2
20	1.9	1.5	5.6	15	1.4	3.7	---	---	---	---	4.9	2.1
21	1.8	1.6	5.1	9.6	1.3	4.5	---	---	---	---	2.6	1.8
22	1.8	4.5	3.6	4.1	1.3	6.9	---	---	---	---	3.4	1.8
23	1.9	63	3.2	6.4	1.5	38	---	---	---	---	6.4	2.0
24	2.3	15	3.0	5.1	1.5	38	---	---	---	---	5.1	1.8
25	33	12	3.0	8.3	1.3	30	---	---	---	---	3.1	1.7
26	6.5	17	2.9	2.9	1.3	4.4	---	---	---	---	8.7	1.9
27	0.78	16	2.7	1.9	1.3	5.7	---	---	---	---	2.9	1.7
28	0.90	9.8	2.7	1.5	1.3	3.9	---	---	---	---	1.9	1.6
29	1.8	13	2.6	1.4	---	1.6	---	---	---	---	1.7	1.6
30	2.9	13	2.5	1.4	---	1.0	---	---	---	---	1.7	1.5
31	2.3	---	2.4	1.4	---	0.53	---	---	---	---	2.2	---
TOTAL	---	197.81	194.5	144.6	118.3	199.63	---	---	---	---	---	87.1
MEAN	---	6.59	6.27	4.66	4.22	6.44	---	---	---	---	---	2.90
MAX	---	63	21	30	23	38	---	---	---	---	---	8.0
MIN	---	0.64	2.4	1.4	1.3	0.53	---	---	---	---	---	1.5
AC-FT	---	392	386	287	235	396	---	---	---	---	---	173

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1994, BY WATER YEAR (WY)

MEAN	---	6.59	6.27	4.66	4.22	6.44	---	---	---	2.75	2.38	2.35
MAX	---	6.59	6.27	4.66	4.22	6.44	---	---	---	2.75	2.38	2.90
(WY)	---	1994	1994	1994	1994	1994	---	---	---	1993	1993	1994
MIN	---	6.59	6.27	4.66	4.22	6.44	---	---	---	2.75	2.38	1.79
(WY)	---	1994	1994	1994	1994	1994	---	---	---	1993	1993	1993

SUMMARY STATISTICS

WATER YEARS 1993 - 1994

HIGHEST DAILY MEAN	63	Nov 23 1993
LOWEST DAILY MEAN	0.32	Apr 6 1994
ANNUAL SEVEN-DAY MINIMUM	0.34	Apr 1 1994

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Discharge, cubic feet per second
 WATER YEAR OCTOBER 1994 TO SEPTEMBER 1995
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.5	8.7	1.4	1.5	27	0.70	1.8	1.5	---	---	---
2	1.6	4.1	3.8	1.4	1.3	5.3	0.48	1.6	1.8	---	---	---
3	1.6	2.5	7.9	1.3	1.2	4.1	2.9	1.6	1.7	---	---	---
4	1.5	5.7	2.8	1.3	1.3	1.5	23	1.6	1.7	---	---	---
5	1.5	4.1	7.1	2.2	3.4	6.2	1.6	1.6	3.5	---	---	---
6	1.5	2.0	6.2	2.0	7.3	5.4	0.63	4.0	3.5	---	---	---
7	1.5	4.5	20	1.4	1.6	1.5	0.47	3.5	5.1	---	---	---
8	1.5	3.2	12	1.3	1.3	1.1	0.39	1.9	2.2	---	---	---
9	1.5	4.4	11	1.3	1.2	1.8	0.44	1.7	1.8	---	---	---
10	1.5	7.7	16	1.2	6.4	1.1	0.36	1.6	1.7	---	---	---
11	1.5	4.9	6.5	1.3	2.0	0.96	0.30	2.2	1.6	---	---	1.2
12	1.5	6.2	3.7	3.4	1.3	3.0	1.3	5.1	2.3	---	---	1.3
13	1.5	6.2	2.5	4.3	1.2	4.6	1.0	3.2	2.2	---	---	1.3
14	1.6	4.4	1.9	8.1	19	1.1	1.8	2.1	2.2	---	---	1.4
15	1.5	3.8	2.1	4.4	3.3	0.87	4.1	4.9	1.7	---	---	1.4
16	1.5	12	2.3	2.5	1.6	0.77	2.2	5.2	1.6	---	---	1.4
17	1.9	8.0	4.3	1.9	1.4	0.72	0.93	3.5	1.5	---	---	1.4
18	1.7	8.3	2.1	1.5	1.5	0.67	1.2	2.1	---	---	---	1.4
19	2.4	3.5	1.8	1.4	2.2	0.65	1.1	1.8	---	---	---	1.4
20	1.7	2.4	1.7	1.2	1.3	0.61	1.0	1.7	---	---	---	1.4
21	1.6	2.8	1.5	1.2	1.2	0.60	1.1	1.6	---	---	---	1.5
22	2.8	2.7	1.5	1.2	1.1	2.2	11	1.6	---	---	---	1.5
23	1.9	3.0	1.6	1.2	1.1	1.1	6.8	1.6	---	---	---	1.5
24	1.6	3.6	1.7	1.2	1.1	0.73	2.5	1.6	---	---	---	1.5
25	1.6	3.1	1.5	1.2	1.8	0.59	5.7	1.6	---	---	---	1.5
26	1.5	3.9	1.5	1.2	1.8	0.53	---	1.5	---	---	---	1.5
27	2.7	2.2	1.7	1.4	1.3	0.81	---	1.5	---	---	---	1.5
28	1.8	1.8	1.8	19	2.9	5.5	3.1	1.5	---	---	---	1.5
29	1.6	4.3	5.6	21	---	3.3	2.2	1.5	---	---	---	4.6
30	1.5	2.5	3.1	5.0	---	6.3	1.9	1.5	---	---	---	3.8
31	1.5	---	1.6	2.0	---	1.6	---	1.5	---	---	---	---
TOTAL	52.1	129.3	147.5	100.4	73.6	92.21	---	69.7	---	---	---	---
MEAN	1.68	4.31	4.76	3.24	2.63	2.97	---	2.25	---	---	---	---
MAX	2.8	12	20	21	19	27	---	5.2	---	---	---	---
MIN	1.5	1.5	1.5	1.2	1.1	0.53	---	1.5	---	---	---	---
AC-FT	103	256	293	199	146	183	---	138	---	---	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1995, BY WATER YEAR (WY)

MEAN	1.68	5.45	5.52	3.95	3.43	4.71	---	2.25	---	2.75	2.38	2.35
MAX	1.68	6.59	6.27	4.66	4.22	6.44	---	2.25	---	2.75	2.38	2.90
(WY)	1995	1994	1994	1994	1994	1994	---	1995	---	1993	1993	1994
MIN	1.68	4.31	4.76	3.24	2.63	2.97	---	2.25	---	2.75	2.38	1.79
(WY)	1995	1995	1995	1995	1995	1995	---	1995	---	1993	1993	1993

SUMMARY STATISTICS

WATER YEARS 1993 - 1995

HIGHEST DAILY MEAN	63	Nov 23 1993
LOWEST DAILY MEAN	0.30	Apr 11 1995
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1	1.9	1.3	2.1	2.0	1.3	2.7	---	---	---	2.2	1.3	1.2
2	1.6	1.1	1.2	1.3	1.7	2.0	---	---	---	3.4	1.3	1.2
3	1.6	1.0	1.0	1.1	1.8	30	---	---	---	3.0	1.3	1.2
4	1.5	1.0	0.94	1.1	1.2	15	---	---	---	4.0	1.3	1.2
5	1.4	1.0	0.94	7.6	1.2	4.7	---	---	---	10	1.3	1.2
6	1.4	1.0	0.94	2.0	1.1	---	---	---	---	3.0	1.7	1.2
7	3.1	1.0	1.0	3.6	21	---	---	---	---	2.1	1.7	1.3
8	7.7	1.1	1.1	3.3	7.4	---	---	---	---	1.7	1.5	1.4
9	2.7	1.2	1.2	1.5	1.6	---	---	---	---	1.6	1.4	1.2
10	4.2	1.1	1.1	1.4	3.3	---	---	---	---	1.5	1.4	1.2
11	3.5	1.0	0.99	2.8	1.7	---	---	---	---	1.5	1.9	2.5
12	3.7	1.5	0.96	1.3	1.4	---	---	---	---	1.5	1.6	2.6
13	1.6	5.3	0.97	1.1	1.3	---	---	---	---	1.5	3.1	1.9
14	1.3	9.9	1.7	1.1	4.6	---	---	---	---	1.4	1.7	1.3
15	1.6	2.3	1.3	1.0	15	---	---	---	---	1.5	1.4	1.2
16	1.3	4.3	1.1	1.0	6.5	---	---	---	---	2.5	1.4	1.2
17	1.2	2.0	1.0	2.6	2.3	---	---	---	---	1.8	1.3	1.2
18	1.1	1.1	1.0	2.0	1.9	---	---	---	---	1.9	1.3	---
19	1.1	1.0	1.0	1.6	1.6	---	---	---	---	5.5	1.3	---
20	1.9	0.97	1.0	1.4	1.4	---	---	---	1.9	3.2	1.3	---
21	3.1	0.94	1.0	1.3	1.4	---	---	---	1.7	1.9	1.3	---
22	1.6	0.91	1.0	1.3	1.5	---	---	---	1.5	1.6	1.2	---
23	1.3	0.89	1.0	1.2	1.5	---	---	---	1.9	1.4	1.2	---
24	1.2	0.89	1.0	1.2	1.6	---	---	---	2.7	1.4	1.2	---
25	2.1	0.89	1.1	1.9	5.4	---	---	---	2.8	1.4	1.2	---
26	1.8	0.89	1.1	1.6	4.7	---	---	---	1.9	1.4	1.2	---
27	1.1	0.91	1.1	1.3	12	---	---	---	1.9	1.4	1.2	---
28	1.5	0.90	1.0	2.6	47	---	---	---	1.7	1.3	1.2	---
29	14	0.94	1.0	1.6	6.1	---	---	---	1.7	1.3	1.2	---
30	2.9	3.4	12	1.3	---	---	---	---	2.4	1.3	1.2	---
31	2.1	---	17	3.0	---	---	---	---	---	1.3	1.3	---
TOTAL	78.1	51.73	60.84	59.1	160.5	---	---	---	---	70.5	43.9	---
MEAN	2.52	1.72	1.96	1.91	5.53	---	---	---	---	2.27	1.42	---
MAX	14	9.9	17	7.6	47	---	---	---	---	10	3.1	---
MIN	1.1	0.89	0.94	1.0	1.1	---	---	---	---	1.3	1.2	---
AC-FT	155	103	121	117	318	---	---	---	---	140	87	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1996, BY WATER YEAR (WY)

MEAN	2.10	4.21	4.33	3.27	4.15	4.71	---	2.25	---	2.51	1.90	2.35
MAX	2.52	6.59	6.27	4.66	5.53	6.44	---	2.25	---	2.75	2.38	2.90
(WY)	1996	1994	1994	1994	1996	1994	---	1995	---	1993	1993	1994
MIN	1.68	1.72	1.96	1.91	2.63	2.97	---	2.25	---	2.27	1.42	1.79
(WY)	1995	1996	1996	1996	1995	1995	---	1995	---	1996	1996	1993

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