

OTHER USGS
STREAM FLOW DATA
FOR 'IAO

EXHIBIT 9

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

WATER-SUPPLY PAPER 318

WATER RESOURCES OF HAWAII

1909-1911

PREPARED UNDER THE DIRECTION OF M. O. LEIGHTON

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1913

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IAO STREAM BASIN.

GENERAL FEATURES.

Iao basin is situated on the eastern slope of West Maui, south of Waiehu basin and north of Waikapu basin. It is a deep basin with almost vertical walls which widen out toward the upper end to form a sort of amphitheater tableland lying about 4,000 feet below the summit of Puu Kukui, the highest point on West Maui. Iao Valley is the most striking topographic feature in West Maui, and is frequently described as the Yosemite of Maui. (See Pl. VIII, A.)

The basin is 7 or 8 miles long about 2 miles wide, and has an area of approximately 15 square miles. The upper part is contiguous to Waihee basin on the north, Kahoma, Kaula, and Lanipoko on the west, and Olowalu on the south.

The main stream has several tributaries or branches. It derives water also from several development tunnels which have been driven in the upper part of the basin.

Water is diverted from Iao Stream through several ditches on each side at various levels.

Gaging stations have been established on the main stream above all diversions and on Maniania ditch, which is the largest diversion from the stream.

IAO STREAM NEAR WAILUKU, MAUI.

A gaging station was established on Iao Stream at a point 2.9 miles above Wailuku, May 7, 1910. The station is below the two main branches of the stream and above the intake of the highest ditch at an elevation of 810 feet.

A Friez weekly clock register is used to obtain gage heights, individual readings being made by a chain gage attached to the clock register house.

Measurements are made from a cable or by wading at low stages. Ordinarily the stream is 25 to 40 feet wide and the total range in stage is 6 or 7 feet.

The discharge at this point gives the total flow above all diversions.

Discharge measurements of Iao Stream near Wailuku, Maui, in 1910-11.

Date.	Hydrographer.	Width.		Area of section.	Gage height.		Discharge.
		Feet.	Sq. ft.		Feet.	Sec./ft.	
1910.							
Oct. 8	Martin and Pierce.	25	27.9	4.25	4.72	20.4	
21	C. H. Pierce.	27	43.5	3.68	76	21.8	
22	do.	25.5	27.9	3.04	22.8	21.2	
27	do.	26	23.3	2.91	183	30	
Nov. 16	do.	34.5	34.5	3.09	4.40	189	
17	do.	35	27.5	4.40	4.40	429	
23	do.	36	126	5.30	44.3		
28	do.	31.3	51	3.06	45		
Dec. 22	do.	36	94	4.33	247		
24	do.	36	104	4.00	230		
26	do.	33.5	73	3.71	122		
30	Pierce and Schulz.						
1911.							
Jan. 4	do.	35.5	90	4.22	192		
Jan. 26	C. H. Pierce.	31.5	73	2.88	31.3		
Mar. 27	do.	31.5	73	2.80	31.5		
31	do.	31.5	83	3.10	49.4		
Apr. 12	do.	18.5	61	2.85	30.5		
Aug. 31	J. B. Stewart.	32.5	89	3.50	89		
Sept. 19	do.	34	34	3.00	53		
Oct. 9	do.	33	32	3.10	58		
Nov. 25	do.	31.5	31.1	2.93	38.3		

^a Discharge is the difference between measurement of stream below Culvert Creek and flow of creek which was estimated at 2.5 second-feet.

^b Weir removed Oct. 2, causing change of section.

NOTE.—Measurement of Nov. 17, 1910, and those from Nov. 23, 1910, to Aug. 31, 1911, made at regular section; all others by wading at various sections.

Daily gage height, in feet, of Iao Stream near Wailuku, Maui, for 1910-11.

(F. G. Duarte, observer.)

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1910.												
1.						1.1	4.8	4.9		4.6	2.95	5.0
2.						1.85		4.85		5.75	2.95	6.25
3.						1.0		5.55		5.2	2.95	4.7
4.						1.2		5.95		4.9	2.95	3.7
5.								5.6		4.6	2.95	4.7
6.						.85		5.5		4.5	4.7	2.95
7.						1.05		4.45		4.85	4.0	3.9
8.						1.05		4.8		4.4	2.95	3.45
9.						.85		4.4		4.2	3.35	3.1
10.						1.35		4.55		4.3	3.35	3.1
11.						1.2		4.55		3.95	4.1	3.1
12.						1.0		4.75		3.95	4.2	2.95
13.						.9		5.1		4.0	2.95	3.1
14.						1.05		4.95		3.9	2.9	3.0
15.						.9		4.65		3.85	2.9	2.95
16.						1.3		4.5		3.9	3.8	3.1
17.						1.05		4.4		3.9	3.8	2.9
18.						1.15		4.35		3.95	3.75	2.95
19.						1.1		4.4		3.8	3.2	2.95
20.						.95		5.75		3.8	3.0	2.1
21.						.9		5.9		3.85	2.95	3.15
22.						.85		4.85		3.3	3.05	3.1
23.						.85		4.6		4.0	3.35	2.95
24.						.8		4.9		4.4	3.7	3.1
25.						.75		4.8		4.45	3.1	3.25
26.						.7		4.75		4.75	4.1	4.0
27.						4.65		4.6		4.75	3.05	3.35
28.						4.6		4.45		4.55	3.1	3.7
29.						4.8		4.4		4.50	3.0	4.9
30.						4.8		4.8		4.55	3.0	4.3
31.						2.75		5.1		2.95	3.0	3.45

Water Resources

Data Category: Surface Water Geographic Area: Hawaii go

Monthly Streamflow Statistics for Hawaii

USGS 16604500 Iao Stream at Kepaniwai Park nr Wailuku, Maui, HI

Available data for this site Surface-water: Monthly streamflow statistics GO

Maui County, Hawaii Hydrologic Unit Code 20020000 Latitude 20°53'08", Longitude 156°32'32" NAD27 Drainage area 5.98 square miles Gage datum 780 feet above sea level NGVD29	Output formats <input type="button" value="HTML table of all data"/> <input type="button" value="Tab-separated data"/> <input type="button" value="Reselect output format"/>
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YEAR	Monthly mean streamflow, in ft ³ /s											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1983					64.5	42.5	38.1	35.4	53.5	103	64.8	49.9
1984	69.8	56.5	35.7	55.3	27.9	25.0	25.2	26.0	15.8	11.9	20.5	18.3
1985	25.4	32.7	102	64.0	66.9	24.4	44.9	51.1	33.8	83.4	77.1	78.1
1986	38.2	39.4	169	172	105	93.9	69.2	62.5	30.9	72.4	88.0	73.4
1987	86.2	82.2	30.4	92.0	136	99.7	78.0	39.1	39.9	55.1	132	97.5
1988	149	67.2	73.0	89.8	89.6	49.8	57.7	43.1	23.0	24.6	58.5	75.9
1989	56.5	64.0	86.5	230	95.0	73.0	105	63.3	48.8	65.2	27.4	33.8
1990	87.3	72.0	99.1	35.8	82.9	65.9	59.7	71.1	56.8	66.5	87.9	77.6
1991	52.7	66.1	127	59.2	44.5	58.4	65.6	92.3	60.6	43.7	30.5	70.1
1992	33.0	60.1	35.0	20.8	30.3	26.2	88.1	87.9	133	53.9	72.4	88.3
1993	80.1	32.1	52.0	89.6	74.0	49.9	109	97.0	39.6	66.8	75.1	67.1
1994	99.0	108	176	101	38.5	94.6	137	78.5	78.6	31.2	65.8	52.6
1995	76.8	40.7	48.9	62.3	35.8	41.2	98.2	86.5	35.8	49.6	47.6	33.1
1996	44.7	61.9	64.8	97.4	53.0	54.7	47.5	37.0	25.0	12.8	74.1	103
1997	87.4	37.3	84.7	53.8	61.3	86.7	99.7	51.0	49.2	33.5	132	81.2
1998	37.1	24.6	23.6	110	82.3	110	54.1	48.2	69.8	66.8	77.4	47.4
1999	61.9	94.3	97.9	49.8	23.4	26.3	44.1	50.9	29.2	28.8	36.7	62.5
2000	111	24.0	32.1	56.4	24.5	29.8	44.8	63.8	56.5	53.2	87.0	26.1
2001	23.5	40.7	34.0	57.9	48.6	56.1	45.2	84.6	40.2	62.6	81.4	64.6
2002	92.3	74.9	73.7	37.4	73.6	36.8	76.5	46.2	45.4			

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Mean of monthly streamflows	69.0	56.8	76.1	80.8	62.9	57.2	69.4	60.8	48.3	51.8	70.3	63.2
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Questions about data gs-w-hi_NWISWeb_Data_Inquiries@usgs.gov
 Feedback on this website gs-w-hi_NWISWeb_Maintainer@usgs.gov
 Surface Water data for Hawaii: Monthly Streamflow Statistics
<http://waterdata.usgs.gov/hi/nwis/monthly/>

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