



A. Wabash River at Delphi, Ind.



B. Stillwater River at Pleasant Hill, Ohio.



C. Nantahala River near Rainbow Springs, N. C.

FIGURE 1—GAGING-STATION STRUCTURES.

the stream, and a table of monthly and yearly discharge and runoff. Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the year was determined by the shifting-control method, the slope method, or other special methods.

The description of the station gives the type of gage, its latitude and longitude as determined from the best available maps, and information in regard to diversions that decrease the flow at the gage, artificial regulation from pondage or storage, and the accuracy of the records. Under "Average discharge" is given the average discharge for the number of years indicated. It is given only for stations for which there are 10 or more complete years of record. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). Unless otherwise qualified, the maximum discharge corresponds to the crest stage, obtained by use of a water-stage recorder or a nonrecording gage read at the time of the crest. Likewise the minimum discharge represents the lowest stage, unless otherwise qualified. Selected peak discharges with the times of their occurrence are given, below the table of monthly discharge, for some stations. This supplementary information is generally omitted for a station at which the drainage area of the stream is less than 10 or more than 10,000 square miles or at which, on most days, the peak discharge exceeds the mean discharge by less than 10 percent.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing as an essential element a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to either once-daily readings of the gage, the mean of twice-daily readings, or the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of monthly discharge the column headed "Second-foot-days" gives the sum for each month of the figures given in the table of daily discharge. The column headed "Maximum" gives the maximum daily discharge, not the momentary discharge when the water surface was at crest stage. Likewise, in the column headed "Minimum" the quantity given is the minimum daily discharge. The column headed "Mean" gives the average flow in cubic feet per second during the month.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents is given. A skeleton table of capacity at given stages is usually given in the first report in which data for a station are published but is omitted from succeeding reports.

Buffalo River near Lobelville, Tenn.

Location.- Water-stage recorder, lat. 35°48'46", long. 87°47'51", at Standing Rock Bridge on State Highway 13, 3 miles north of Lobelville, Perry County, and 13 miles downstream from Cane Creek. Datum of gage is 403.15 feet above mean sea level, datum of 1929.

Drainage area.- 707 square miles.

Records available.- November 1927 to September 1947.

Average discharge.- 19 years, 1,101 second-feet.

Extremes.- Maximum discharge during year, 8,540 second-feet Jan. 4 (gage height, 12.34 feet); minimum, 231 second-feet Sept. 30 (gage height, 1.30 feet).

1927-47: Maximum discharge, 42,000 second-feet Jan. 8, 1946 (gage height, 18.20 feet); from rating curve extended above 15,000 second-feet; minimum, 142 second-feet Oct. 1-8, 1931 (gage height, 0.35 foot).

Remarks.- Records good.

Rating tables, water year 1946-47 (gage height, in feet,
and discharge, in second-feet)

(Shifting-control method used Nov. 11-23, Nov. 28 to
Dec. 1, Dec. 13-18, Dec. 30 to Jan. 1, Sept. 6-30)

Oct. 1 to Mar. 10

Mar. 11 to Sept. 30

1.5	265	6.0	2,420	1.2	229	5.5	1,020
2.0	415	8.0	3,790	1.6	310	5.0	1,840
2.5	575	10.0	5,520	2.0	425	6.0	2,420
3.5	980	12.0	7,980	2.5	595		
5.0	1,820	12.5	8,860				

Note.- Same as preceding
table above 6.0 feet.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	315	340	818	1,550	1,760	772	804	1,020	1,440	466	300	300
2	308	335	752	3,510	1,690	800	776	1,160	1,270	443	288	285
3	301	332	680	7,320	1,450	809	745	1,220	1,140	419	279	275
4	297	330	620	8,310	1,300	792	737	1,170	1,040	401	275	269
5	293	330	575	6,150	1,160	772	745	1,100	945	383	267	265
6	289	328	544	3,200	g1,060	863	862	1,040	866	377	261	254
7	287	335	508	2,320	g980	1,230	990	965	761	383	261	251
8	285	355	490	1,840	g922	2,010	1,140	907	717	395	261	249
9	285	368	472	1,550	g836	3,120	1,180	853	665	366	265	249
10	285	481	457	1,340	g768	3,820	1,200	794	630	377	271	249
11	287	804	466	1,180	728	3,190	3,220	741	596	362	271	265
12	303	1,490	550	1,080	690	2,490	5,210	701	574	350	267	273
13	308	1,460	840	1,020	652	2,080	5,100	781	546	341	260	275
14	330	1,070	1,040	985	634	1,890	3,620	1,180	536	338	263	283
15	322	850	1,060	2,070	614	1,770	2,710	1,170	553	413	269	290
16	305	716	948	2,200	596	1,660	3,610	1,010	584	398	318	286
17	303	804	858	2,050	575	1,520	4,130	907	542	395	353	277
18	299	1,240	800	g2,880	558	1,390	5,160	935	497	395	371	275
19	299	1,770	716	g3,570	550	1,290	3,340	680	469	369	344	267
20	301	1,450	662	64,090	575	1,180	2,470	916	466	368	318	260
21	301	1,150	648	4,670	659	1,090	2,110	2,270	458	347	298	251
22	303	962	676	4,640	827	1,010	2,010	4,770	469	335	285	249
23	303	840	656	3,450	930	940	1,880	4,790	508	325	285	243
24	305	752	620	2,490	935	995	1,670	3,500	522	315	298	238
25	348	670	596	2,070	908	1,060	1,500	3,250	528	308	362	240
26	391	645	575	1,740	863	1,040	1,390	4,230	568	300	407	240
27	412	716	554	1,500	814	985	1,310	4,250	564	295	483	238
28	436	922	536	1,330	776	955	1,200	2,690	556	298	419	236
29	409	980	780	1,190	-	916	1,100	2,170	532	300	362	233
30	373	899	1,150	1,280	-	880	1,040	2,060	532	302	330	231
31	352	-	1,480	1,480	-	840	-	1,700	-	308	315	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
October	9,935	436	265	320	0.453	0.52
November	23,744	1,770	328	791	1.12	1.25
December	22,127	1,480	457	714	1.01	1.16
Calendar year 1946	469,680	36,500	265	1,287	1.82	24.72
January	84,055	8,310	985	2,711	3.83	4.42
February	24,800	1,760	550	886	1.25	1.30
March	44,159	3,820	772	1,424	2.01	2.32
April	62,959	5,210	737	2,099	2.97	3.51
May	56,110	4,790	701	1,776	2.51	2.90
June	20,116	1,440	458	671	.949	1.06
July	11,232	486	295	362	.512	.59
August	9,604	483	260	310	.438	.51
September	7,796	300	231	260	.368	.41
Water year 1946-47	375,637	8,310	231	1,029	1.46	19.75

Peak discharge.- Jan. 4 (6 p.m.) 8,540 sec.-ft.; Apr. 12 (3 a.m.) 5,650 sec.-ft.; Apr. 13 (9 a.m.) 5,300 sec.-ft.; Apr. 18 (7 a.m.) 5,650 sec.-ft.; May 22 (5 a.m.) 5,290 sec.-ft.; May 23 (3 p.m.) 5,060 sec.-ft.

g Computed from graph based on gage readings.

Big Sandy River at Bruceton, Tenn.

Location.- Water-stage recorder, lat. 36°02'19", long. 88°13'42", at bridge on U. S. Highway 70, 0.6 mile upstream from Cherry Creek and 0.9 mile east of Bruceton, Carroll County. Datum of gage is 380.76 feet above mean sea level, datum of 1929.

Drainage area.- 205 square miles.

Records available.- July 1929 to September 1947.

Average discharge.- 18 years, 268 second-feet.

Extremes.- Maximum discharge during year, 3,980 second-feet Jan. 4 (gage height, 12.53 feet); minimum, 51 second-feet Aug. 6, 7, Sept. 29; minimum gage height, 2.36 feet Aug. 6, 7.

1929-47: Maximum discharge, 17,000 second-feet Jan. 21, 1935 (gage height, 16.16 feet, from graph based on gage readings), from rating curve extended above 9,000 second-feet; minimum, 28 second-feet Aug. 17-19, 22, Sept. 1, 1943.

Remarks.- Records good except those computed from graph based on gage readings, which are fair.

Rating table, water year 1946-47 (gage height, in feet,
and discharge, in second-feet)
(Shifting-control method used Oct. 24, Sept. 16-30)

2.3	46	6.0	599	11.2	1,850
2.7	84	9.0	1,130	11.8	2,420
3.3	156	10.0	1,340	12.4	3,650
4.0	259	10.8	1,610		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	99	129	1,270	436	276	135	266	194	90	58	64
2	69	98	118	1,800	210	202	159	284	169	79	56	65
3	69	98	114	2,840	193	156	138	179	147	72	54	62
4	69	96	114	3,550	182	152	160	147	130	68	53	60
5	67	95	114	2,090	147	194	232	124	116	67	52	59
6	66	95	116	553	162	555	434	110	104	66	51	58
7	67	221	114	356	170	329	190	106	97	128	51	58
8	68	220	112	330	135	596	186	99	92	136	148	57
9	67	123	111	254	120	652	274	97	87	71	72	255
10	68	819	126	210	113	378	196	93	84	72	60	431
11	73	1,200	402	203	118	243	1,400	92	78	70	68	136
12	65	937	1,000	224	142	196	1,530	90	77	68	77	65
13	74	344	955	212	160	189	1,380	165	164	64	66	76
14	73	176	390	218	161	198	528	416	169	62	86	69
15	73	150	202	1,300	160	168	350	218	91	436	203	228
16	75	157	172	1,330	147	152	1,160	123	81	691	771	88
17	75	594	156	1,480	136	150	1,160	113	77	153	626	66
18	79	302	135	1,490	133	143	963	131	73	87	222	60
19	81	175	129	1,080	150	139	296	188	71	90	96	58
20	81	153	156	1,090	182	136	254	359	143	77	83	55
21	80	144	214	682	173	134	324	831	144	70	76	53
22	81	135	156	312	152	126	220	653	196	66	86	72
23	86	124	139	274	164	129	193	191	133	66	249	65
24	103	123	135	281	155	298	173	798	111	66	144	58
25	296	122	128	346	144	183	180	1,360	128	66	88	55
26	227	328	124	271	136	136	190	1,070	636	65	99	53
27	119	346	126	220	147	134	180	570	532	62	85	52
28	103	176	216	196	150	161	138	187	238	61	77	52
29	100	146	1,930	190	-	139	133	857	143	68	73	51
30	100	136	1,910	864	-	130	139	1,060	107	63	69	54
31	99	-	1,880	890	-	123	-	658	-	59	65	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
October	2,842	296	66	91.7	0.447	0.52
November	7,932	1,200	95	264	1.29	1.44
December	11,822	1,930	111	361	1.86	2.14
Calendar year 1946	129,161	10,400	57	354	1.73	23.43
January	26,376	3,550	190	851	4.15	4.78
February	4,578	436	113	164	.800	.83
March	6,897	652	123	222	1.08	1.25
April	12,965	1,530	133	432	2.11	2.50
May	11,635	1,360	90	375	1.83	2.11
June	4,632	636	71	154	.751	.84
July	3,359	691	59	108	.637	.61
August	4,064	771	51	131	.639	.74
September	2,655	431	51	88.5	.432	.48
Water year 1946-47	99,757	3,550	51	273	1.33	18.09

Peak discharge.- Dec. 29 (6 p.m.) 2,150 sec.-ft.; Dec. 31 (4 p.m.) 1,930 sec.-ft.; Jan. 4 (7 a.m.) 3,980 sec.-ft.; Jan. 15 (5 p.m.) 1,850 sec.-ft.; Jan. 18 (4 p.m.) 1,640 sec.-ft.; Apr. 11 (5 p.m.) 1,860 sec.-ft.

Note.- Discharge computed from graph based on gage readings and recorded range in stage June 28 to July 25.

East Fork Clarks River near Benton, Ky.

Location.- Wire-weight gage, lat. 36°52'24", long. 88°20'48", at bridge on U. S. Highway 68 and State Highway 95, 1 mile north of Benton, Marshall County, and 6.8 miles upstream from Middle Fork Creek. Datum of gage is 344.53 feet above mean sea level, datum of 1929 (Tennessee Valley Authority bench mark).

Drainage area.- 227 square miles.

Records available.- May 1938 to September 1947.

Extremes.- Maximum discharge during year, 6,640 second-feet Jan. 4 (gage height, 14.0 feet, from graph based on gage readings), from rating curve extended above 3,700 second-feet; minimum observed, 1.9 second-feet Sept. 7-9 (gage height, 2.00 feet).
1938-47: Maximum discharge, 7,750 second-feet May 5, 1944 (gage height, 14.5 feet, from graph based on gage readings), from rating curve extended above 3,700 second-feet; minimum observed, 1.9 second-feet Oct. 22, 1944, Sept. 7-9, 1947.
Maximum stage known, 17.8 feet in February 1937, from floodmarks.

Remarks.- Records good above 300 second-feet, fair below. Gage read twice daily.

Rating table, water year 1946-47 (gage height, in feet,
and discharge, in second-feet)

2.0	1.9	3.2	52	11.0	1,090
2.1	3.0	3.8	92	11.6	1,380
2.2	5.0	4.9	184	11.9	1,660
2.3	8.0	6.3	335	12.1	1,950
2.4	12	9.1	685	12.8	3,640
2.7	27	10.3	862	13.5	5,390

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.8	17	88	344	391	42	92	429	140	a40	12	2.8
2	3.8	64	64	2,000	184	44	156	672	1,320	37	10	3.6
3	3.8	22	58	4,890	140	40	124	311	574	32	6.8	2.9
4	3.8	14	52	5,390	124	40	96	194	174	27	6.2	2.6
5	3.8	15	50	1,310	99	42	107	132	107	24	5.6	2.3
6	3.8	16	47	311	86	115	194	107	99	24	4.8	2.1
7	4.0	50	44	224	88	234	184	96	78	24	4.2	1.9
8	3.8	58	42	214	71	156	784	67	64	34	9.5	1.9
9	3.8	52	42	214	58	115	2,180	58	56	22	52	31
10	3.8	96	44	174	58	92	2,890	52	47	18	19	412
11	6.2	245	308	140	52	82	1,950	47	42	16	10	71
12	5.6	126	1,790	132	52	67	2,400	44	40	14	6.8	74
13	4.4	71	1,950	115	52	a75	1,150	44	36	14	5.6	71
14	4.2	50	740	115	52	82	323	44	85	13	5.6	28
15	4.2	42	234	264	52	92	224	52	44	15	4.6	14
16	4.8	47	174	828	52	88	902	78	30	17	20	9.5
17	4.8	179	132	424	50	a70	844	50	27	18	58	6.8
18	5.0	115	107	245	58	267	42	a25	14	24	5.3	
19	4.2	74	a92	269	47	58	174	297	23	31	8.0	4.6
20	5.0	53	81	1,050	47	56	164	1,050	33	47	6.5	4.8
21	4.8	47	81	1,550	47	52	184	624	85	26	5.0	4.4
22	4.6	42	74	707	44	47	156	347	204	14	a4.6	13
23	5.0	39	71	289	44	50	124	164	107	11	4.2	24
24	6.2	39	64	224	42	107	124	164	64	9.5	3.0	12
25	51	116	58	184	42	267	184	692	67	8.8	3.8	7.1
26	48	1,340	58	164	40	148	174	1,450	164	7.7	3.4	5.9
27	23	1,380	56	148	40	103	132	664	124	6.8	3.0	4.8
28	14	338	111	124	40	97	103	214	81	67	2.7	4.2
29	13	140	1,110	115	-	174	92	330	67	107	2.3	3.8
30	16	99	987	400	-	124	174	767	47	42	2.1	3.6
31	16	-	347	1,110	-	92	-	245	-	20	2.6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Persquare mile	Runoff in inches
October	268.2	51	3.8	9.30	0.041	0.05
November	4,960	1,380	14	166	.751	.82
December	9,156	1,950	42	295	1.30	1.50
Calendar year 1946	99,781.7	5,040	3.8	273	1.20	16.34
January	23,688	5,390	115	764	3.37	3.88
February	2,146	391	40	76.6	.337	.35
March	2,909	267	40	93.8	.413	.48
April	16,652	2,690	92	554	2.44	2.72
May	9,527	1,450	42	307	1.35	1.56
June	4,054	1,320	23	135	.595	.66
July	800.8	107	6.8	25.8	.114	.13
August	315.9	58	2.1	10.2	.045	.05
September	834.9	412	1.9	27.8	.122	.14
Water year 1946-47	75,337.6	5,390	1.9	206	.907	12.34

No gage-height record; discharge computed on basis of weather records and records for stations on nearby streams.

Cache River at Forman, Ill.

Location.- Water-stage recorder and concrete control, lat. 37°21'00", long. 88°54'50", in NE $\frac{1}{4}$ sec. 31, T. 13 S., R. 3 E., at Chicago, Burlington & Quincy Railroad Bridge at Forman, 1 mile downstream from Dutchman Creek. Datum of gage is 333.77 feet above mean sea level, datum of 1929.

Drainage area.- 242 square miles.

Records available.- October 1922 to September 1947.

Average discharge.- 23 years (1924-47) 293 second-feet.

Extremes.- Maximum discharge during year, 1,830 second-feet Apr. 12 (gage height, 9.44 feet); minimum, 0.1 second-foot Sept. 13 (gage height, 0.14 foot).
1922-47: Maximum discharge observed, 9,120 second-foot Mar. 13, 1935 (gage height, 16.69 feet, present datum); no flow at times in dry years.

Remarks.- Records good except those for periods of no gage-height records, which are fair.

Rating table, water year 1946-47 (gage height, in feet,
and discharge, in second-feet)
(Shifting-control method used Nov. 12, 26-30;
Dec. 1, 11-20, 29-31; Jan. 1-2)

0.15	0.1	0.45	2.2	1.0	17	2.0	92	4.0	516
.2	.2	.5	3.0	1.1	21	2.4	146	4.5	665
.25	.4	.6	4.7	1.3	32	2.6	216	5.0	780
.3	.8	.7	7.0	1.5	46	3.0	257	7.0	1,220
.4	1.7	.8	9.8	1.8	71	3.5	377	9.3	1,800

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	3.6	114	130	284	22	516	1,000	117	109	0.7	2.0
2	1.7	4.0	85	489	149	20	1,180	1,220	135	.6	.6	3.6
3	1.3	7.8	63	1,130	113	19	780	1,000	1,060	92	.5	1.5
4	.9	10	52	665	96	24	665	650	473	42	.3	.8
5	.8	19	45	326	66	27	561	400	222	26	.2	1.7
6	.5	20	41	210	75	155	760	300	140	20	.2	1.5
7	.5	18	37	172	61	277	445	200	97	15	1.1	.9
8	.5	14	33	146	49	190	706	162	73	13	1.2	.5
9	.5	13	31	136	52	120	1,390	124	56	12	.5	.4
10	.5	27	72	136	38	89	1,020	100	44	9.2	.4	.2
11	.6	60	206	108	30	72	1,590	82	34	7.0	.3	.2
12	.5	109	848	118	30	62	1,800	69	26	5.8	.3	.1
13	.5	78	1,060	117	31	65	1,640	74	49	4.7	.2	1.7
14	.5	43	650	131	34	186	1,390	76	57	4.2	.2	4.9
15	.5	27	576	691	39	201	1,220	60	25	23	143	4.7
16	.6	22	459	975	41	148	1,360	53	16	68	64	3.0
17	.7	25	259	717	42	108	1,100	40	12	25	114	11
18	.7	40	167	546	41	86	700	200	9.8	13	54	12
19	.5	57	116	314	38	73	400	100	8.1	8.1	15	5.6
20	.5	38	94	997	37	66	800	300	7.6	4.7	6.5	3.0
21	.4	27	81	1,200	34	60	1,200	650	9.8	3.6	3.6	2.4
22	.4	22	60	717	32	56	700	500	12	2.5	2.2	50
23	1.1	16	69	30	58	58	546	242	10	1.9	1.5	159
24	2.1	15	62	351	25	208	550	120	17	1.7	.9	56
25	29	15	56	279	24	326	900	223	14	1.5	.7	17
26	90	665	51	234	21	272	1,300	431	15	1.2	3.4	8.7
27	71	576	46	192	21	183	700	270	134	.9	7.6	4.9
28	26	948	46	156	21	248	300	123	546	.8	6.3	3.3
29	15	404	131	-	-	975	200	338	390	.5	3.6	6.9
30	8.1	197	473	146	-	887	600	279	244	.5	2.4	8.4
31	.5	-	266	418	-	621	-	159	-	.6	1.7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
October	265.2	90	0.4	8.55	0.035	0.04
November	3,519.4	975	3.6	117	.483	.54
December	6,666	1,060	31	215	.688	1.02
Calendar year 1946	102,786.4	2,950	.4	282	1.17	15.80
January	12,624	1,200	108	407	1.68	1.94
February	1,534	264	21	54.8	.226	.24
March	5,906	975	19	191	.789	.91
April	26,823	1,800	200	694	3.69	4.12
May	9,725	1,400	40	314	1.30	1.49
June	5,138.3	1,220	7.6	171	.707	.79
July	653.4	136	.5	21.1	.087	.10
August	437.1	143	.2	14.1	.058	.07
September	375.9	159	.1	12.5	.052	.06
Water year 1946-47	73,667.3	1,800	.1	202	.835	11.32

Peak discharge.- Jan. 21 (1 a.m.) 1,360 sec.-ft.; Apr. 9 (3 p.m.) 1,390 sec.-ft.; Apr. 12 (6 p.m.) 1,830 sec.-ft.; Apr. 16 (1 p.m.) 1,530 sec.-ft.; May 2 (1 p.m.) 1,460 sec.-ft.; June 2 (11 p.m.) 1,340 sec.-ft.

Note.- No gage-height record Apr. 17 to May 7, May 17-22; discharge computed on the basis of recorded range in stage, weather records and records for Big Creek near Wetaug.

