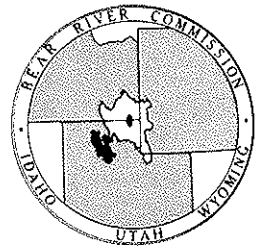
SIXTH ANNUAL REPORT

BEAR RIVER COMMISSION

1963



For the Report Year October 1, 1962 to September 30, 1963

LOGAN, UTAH

April 1, 1964

IN MEMORIAM

GEORGE N. CARTER

Idaho State Reclamation Engineer

Bear River Commission, 1958-63

BEAR RIVER COMMISSION
P. O. BOX 413
LOGAN, UTAH

April 1, 1964

Mr. President:

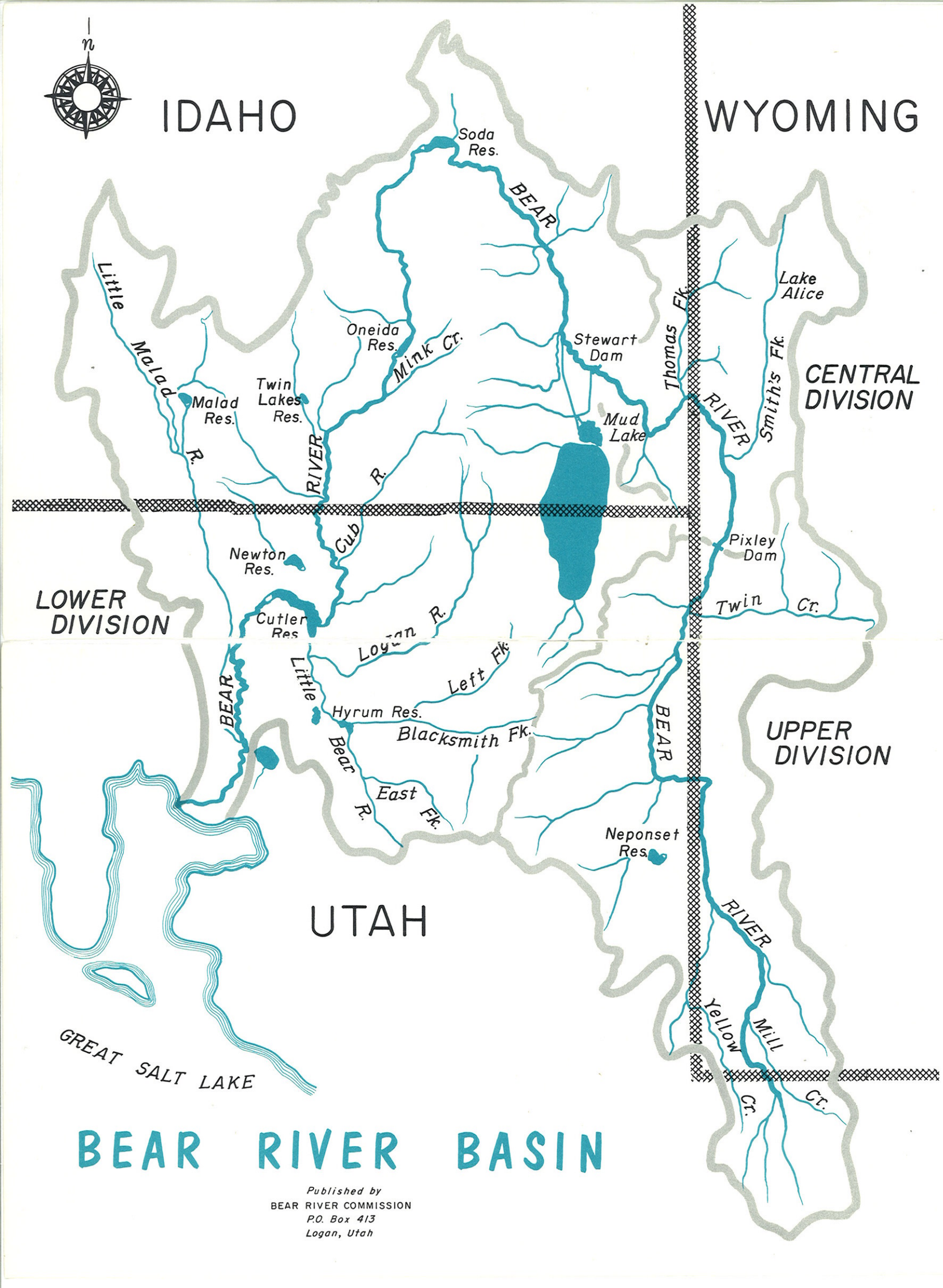
Submitted herewith is the Sixth Annual Report of the Bear River Commission, as required by Article III D 2 of the Bear River Compact.

A copy of the report is being transmitted to the Governor of each signatory State to the Bear River Compact.

Very truly yours,

Wallace N. Jibson
Assistant Secretary

THE PRESIDENT
The White House
Washington, D. C.



BEAR RIVER BASIN

Published by
BEAR RIVER COMMISSION
P.O. Box 413
Logan, Utah

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ILLUSTRATIONS AND TABLES

SIXTH ANNUAL REPORT
OF THE
BEAR RIVER COMMISSION

April 1, 1964

INTRODUCTION

The Bear River Compact is an interstate pact which determines the rights and obligations of the signatory States of Wyoming, Idaho, and Utah with respect to the waters of Bear River. Federal consent was given by the Congress, and legislation was approved March 17, 1958 by the President. The Bear River Commission was established as the interstate administrative agency to carry out provisions of the Compact.

Article III D 2 of the Compact provides that the Bear River Commission shall compile annually a report covering the work of the Commission for the water year ending the previous September 30 and transmit it to the President of the United States and to the Governors of the signatory States on or before April 1 of each year.

Activities of the Bear River Commission during the water year ending September 30, 1963 are summarized in this report. Financial report of the auditors and daily stream-gaging records are included in the appendixes.

ORGANIZATION

Ten commissioners, three representing each State and one the United States, constitute the Bear River Commission. The Federal representative serves as Chairman without vote.

Commission members and officers were grieved to learn of the passing in May 1963 of George N. Carter, Idaho State Reclamation Engineer, who had served as a member of the Bear River Commission since 1958. Carl E. Tappan, who has been Acting State Engineer and commissioner during Mr. Carter's illness, was appointed to fill this vacancy.

Floyd A. Bishop, State Engineer of Wyoming, was appointed in May 1963 by Governor Hansen to serve on the Commission. Mr. Bishop replaces Earl Lloyd, retired State Engineer, who will continue to serve as an adviser from Wyoming.

OFFICERS

Chairman ..... E. O. Larson, Salt Lake City, Utah
Vice-Chairman ..... Lawrence B. Johnson, Randolph, Utah
Secretary-Treasurer ..... Jay R. Bingham, Bountiful, Utah
Assistant Secretary ..... Wallace N. Jibson, Logan, Utah

MEMBERS

Idaho

Cleo L. Swenson ..... Preston, Idaho
Melvin Lauridsen ..... Montpelier, Idaho
Carl E. Tappan ..... Boise, Idaho

Utah

Jay R. Bingham ..... Bountiful, Utah
Lawrence B. Johnson ..... Randolph, Utah
A. V. Smoot ..... Corinne, Utah

Wyoming

Floyd A. Bishop ..... Cheyenne, Wyoming
S. Reed Dayton ..... Cokeville, Wyoming
J. W. Myers ..... Evanston, Wyoming

United States

E. O. Larson ..... Salt Lake City, Utah

COMMITTEES

Budget

A. V. Smoot ..... Corinne, Utah
J. W. Myers ..... Evanston, Wyoming
Melvin Lauridsen ..... Montpelier, Idaho

Operations

Cleo L. Swenson ..... Preston, Idaho
Lawrence B. Johnson ..... Randolph, Utah
S. Reed Dayton ..... Cokeville, Wyoming

MEETINGS

Meetings of the Commission were held in accordance with the bylaws as follows:

Regular Meeting — November 2, 1962 — Salt Lake City, Utah

Annual Meeting — May 3, 1963 — Salt Lake City, Utah

BUDGET AND FISCAL DISBURSEMENTS

ADOPTED BUDGET

Compact Administration	*Fiscal Year Ending* 6-30-1964	*Fiscal Year Ending* 6-30-1965	*Total Biennium Ending* 6-30-1965
Personal Services	$ 7,180	$ 7,180	$14,360
Travel and Subsistence	1,400	1,400	2,800
General Office Expense	450	450	900
Fiscal and Administrative	920	920	1,840
Washington Office Tech. Charge	400	400	800
Printing and Reproduction	700	700	1,400
Treasurer (Bond and Audit)	400	400	800
Transcribing Minutes	150	150	300
Legal Retainer Fee	300	300	600
Miscellaneous	100	100	200
Sub-Total	$12,000	$12,000	$24,000
Stream-Gaging Program			
Geological Survey	$37,500	$37,500	$75,000
Total	$49,500	$49,500	$99,000

ALLOCATION OF BUDGET

U. S. Geological Survey	$18,750	$18,750	$37,500
State of Idaho	10,250	10,250	20,500
State of Utah	10,250	10,250	20,500
State of Wyoming	10,250	10,250	20,500
Total	$49,500	$49,500	$99,000

All disbursements of Commission funds are made by check on vouchers signed by the Secretary-Treasurer, and approved and countersigned by the Chairman or Vice-Chairman.

The audit of accounts and records, including balance sheet of June 30, 1963, statement of budget revenue and appropriation accounts for the fiscal year ended June 30, 1963, are included in this report as appendix A.

STREAM-GAGING PROGRAM

A cooperative, basin-wide program of stream gaging is administered by the Geological Survey project engineer at Logan, Utah. The Geological Survey and Bear River Commission contribute equally to finance this program of daily streamflow records at 38 (1963) gaging stations. An additional eight gaging stations in the basin are operated by Utah Power & Light Company in connection with Federal Power Commission projects.

Gaging stations on Cub River, Worm Creek, and Cub River Canal, installed in 1962 for the Public Health Service, were discontinued September 30, 1963. A gaging station on East Fork Little Bear River above Porcupine Reservoir was installed October 1, 1963.

Water commissioners, employed by irrigation district or State, collected seasonal daily or partial records on about 130 irrigation canals above Bear Lake. Geological Survey personnel spot checked discharge measurements and gaging procedures on these canals for adherence to standards of the Commission. Daily discharge records for canals in the Central Division (see map) are shown in tables 1-5; those in the Upper Division are maintained in the Commission file but are not published herein.

WATER SUPPLY

The prospect of a deficient runoff for the 1963 irrigation season suddenly changed in April when heavy precipitation with snow accumulation on the higher watersheds considerably improved the outlook. Though seasonal and water-year supply ranged from 78 to 89 percent of average, timely rainfall and an excellent growing season produced above-average crop yield in most of Bear River basin.

Monthly and annual discharge in cubic feet per second at three representative gaging stations in the basin compared with longtime averages is shown in figure 1. Hydrographs of Bear River and Smiths Fork runoff are show in figures 2 and 3 and the data are summarized in the following tables:

Runoff in Acre-feet
May-September

	Average 1943-1963	1962	1963
Upper Bear River	109,200	128,500	87,200
Smiths Forks	101,000	121,200	89,700
Total	210,200	249,700	176,900

Runoff in Acre-feet
Water Year

Upper Bear River	131,200	162,600	102,400
Smiths Fork	137,200	164,200	120,700
Total	268,400	326,800	223,100

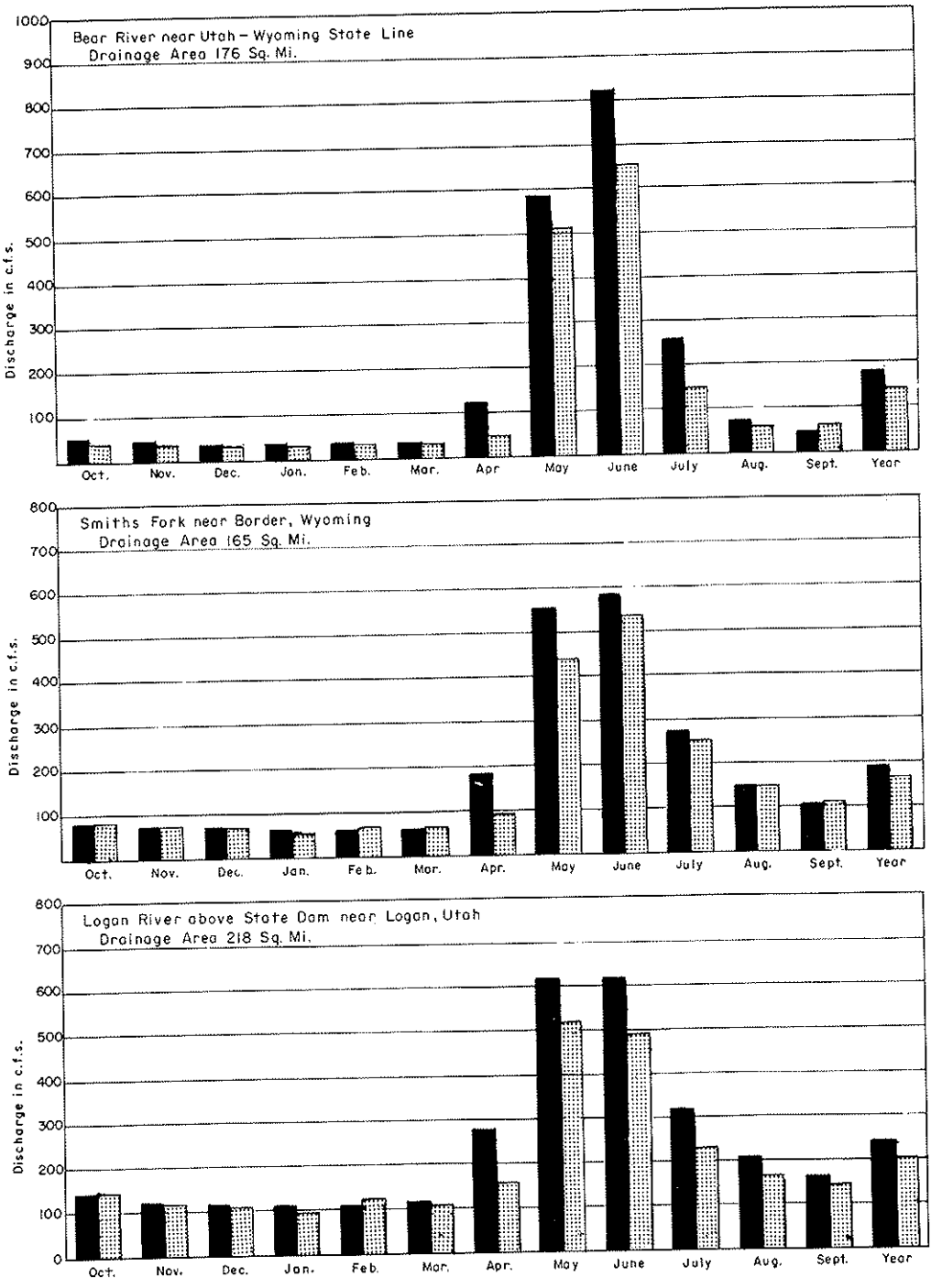

Fig. 1 Comparison of discharge at three representative gaging stations during 1963 with average discharge for period 1943 – 1963.

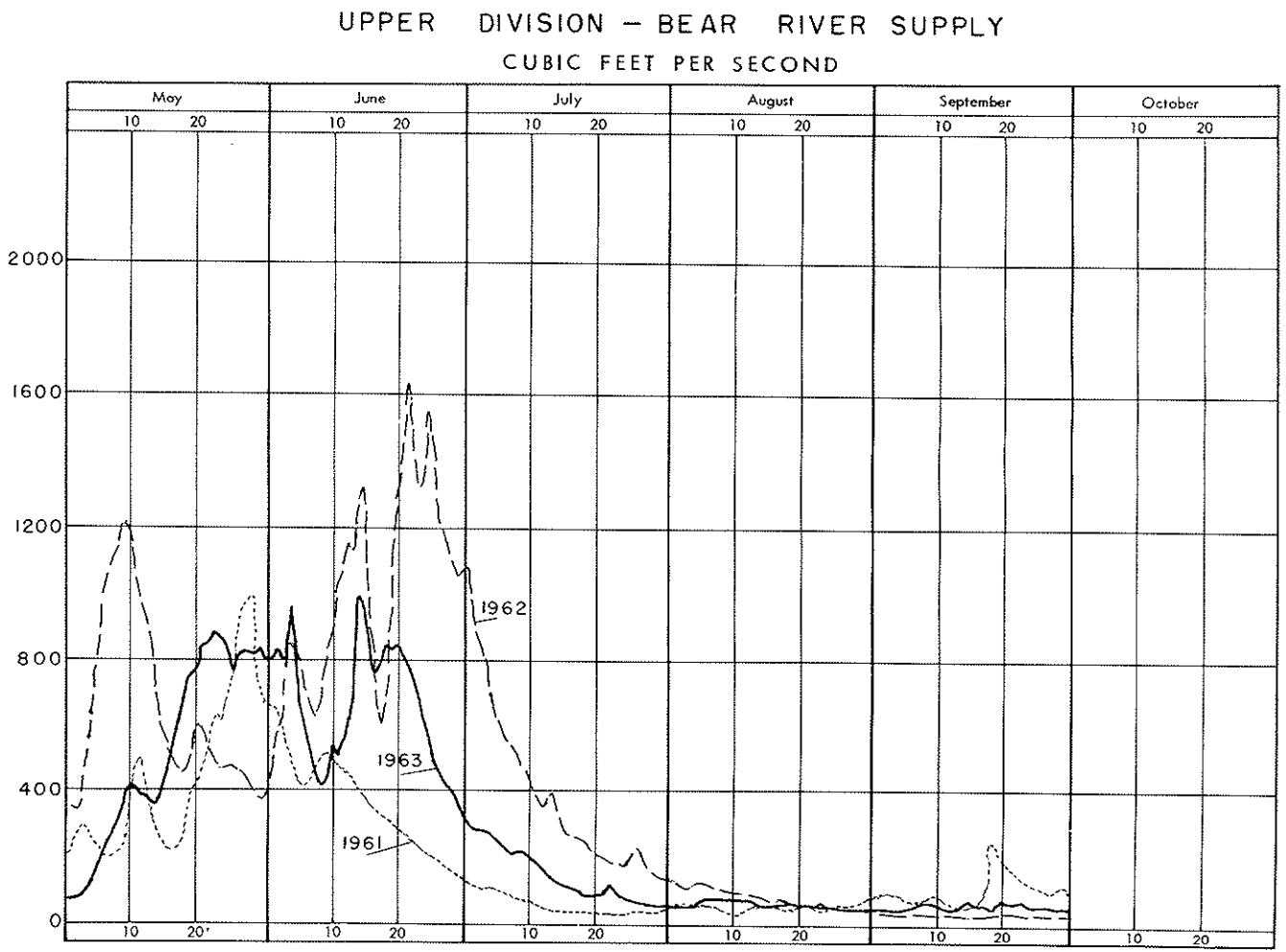
UPPER DIVISION – BEAR RIVER SUPPLY
CUBIC FEET PER SECOND
May
June
July
August
September
October
10
20
2000
1600
1200
800
400
0
1962
1963
1961

Figure 2

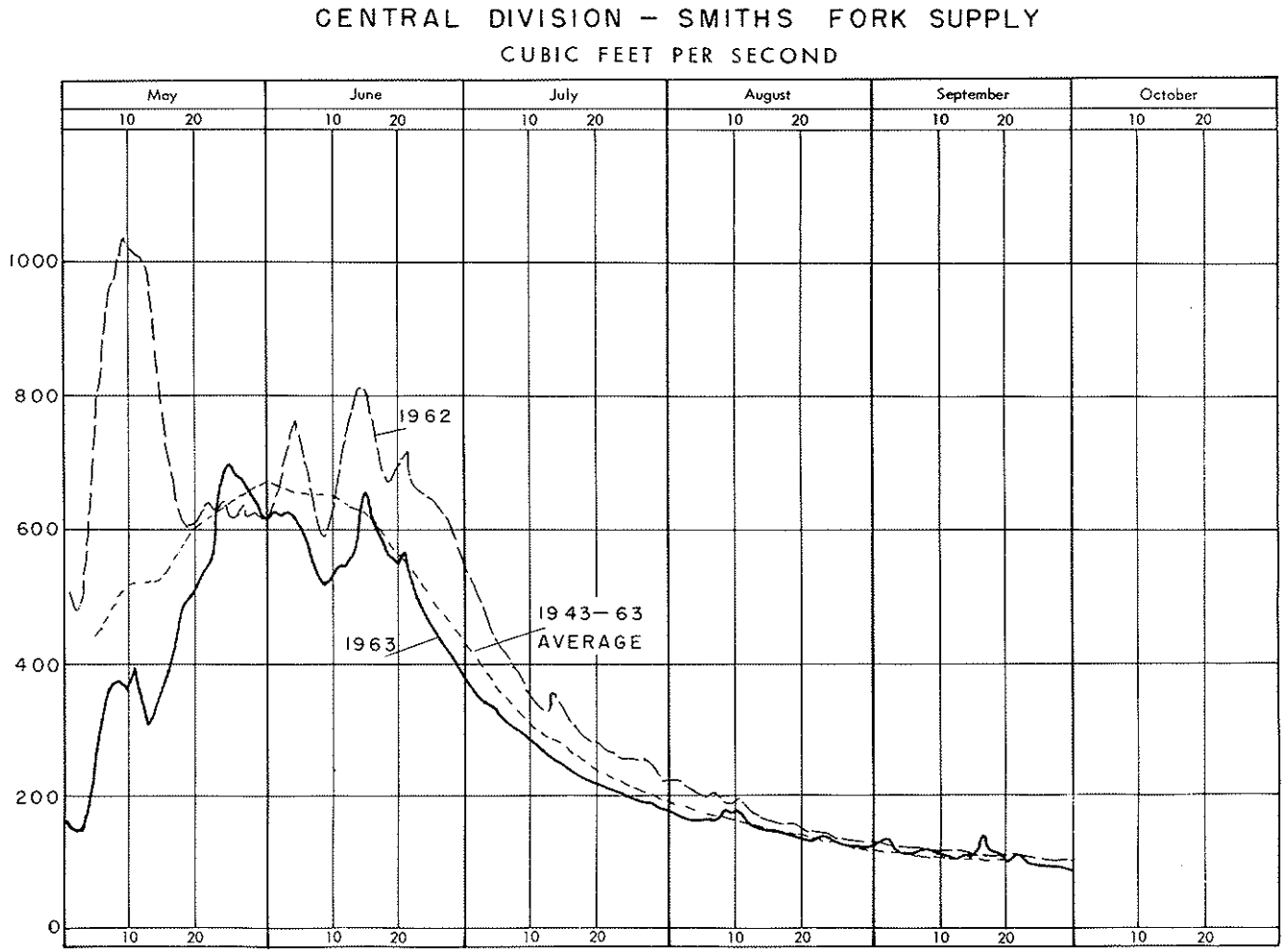
CENTRAL DIVISION – SMITHS FORK SUPPLY
CUBIC FEET PER SECOND
May
June
July
August
September
October
10
20
1000
800
600
400
200
0
1962
1963
1943–63
AVERAGE

Figure 3

Bear Lake made a relatively small gain of 147,000 acre-feet during the storage period and was drawn down 180,000 acre-feet during the irrigation season to sustain a net loss of 33,000 acre-feet. The bar graph in figure 4 illustrates 1963 operation in comparison with long-time averages. Hydrographs of the lake are shown in figure 5, daily contents are tabulated in appendix B, and comparative elevations are shown in the following table:

Bear Lake elevation

Utah Power & Light Co. datum

Water Year	*Beginning of Water Year*	*End of Storage Period*	*End of Water Year*
1961	5,914.25	5,914.90	5,909.75
1962	5,909.75	5,915.70	5,913.44
1963	5,913.43	5,915.63	5,912.93

ADMINISTRATION OF BEAR RIVER COMPACT

Provisions of the Compact are administered and enforced by direction of the Bear River Commission. However, water rights within each State are adjudicated and administered in accordance with State law subject to limitations provided in the Compact.

Cooperative stream-gaging agreements with the Geological Survey include a program of administrative and technical assistance to the Commission financed without matching Federal funds. This program is directed by the Geological Survey project engineer at Logan with the project office serving also as principal office for the Commission.

The project engineer serves as Assistant Secretary to the Commission with responsibility to provide technical assistance and current streamflow data as required to operate under terms of the Compact. He establishes operational procedures, conducts hydrologic studies, and maintains the files and records of the Commission. Annual reports are compiled by the Assistant Secretary and Secretary-Treasurer.

Expenses incurred by the Bear River Commission are paid equally by the signatory States. Compensation and expenses of the Federal representative, each commissioner, and each adviser are paid by the Government which he represents.

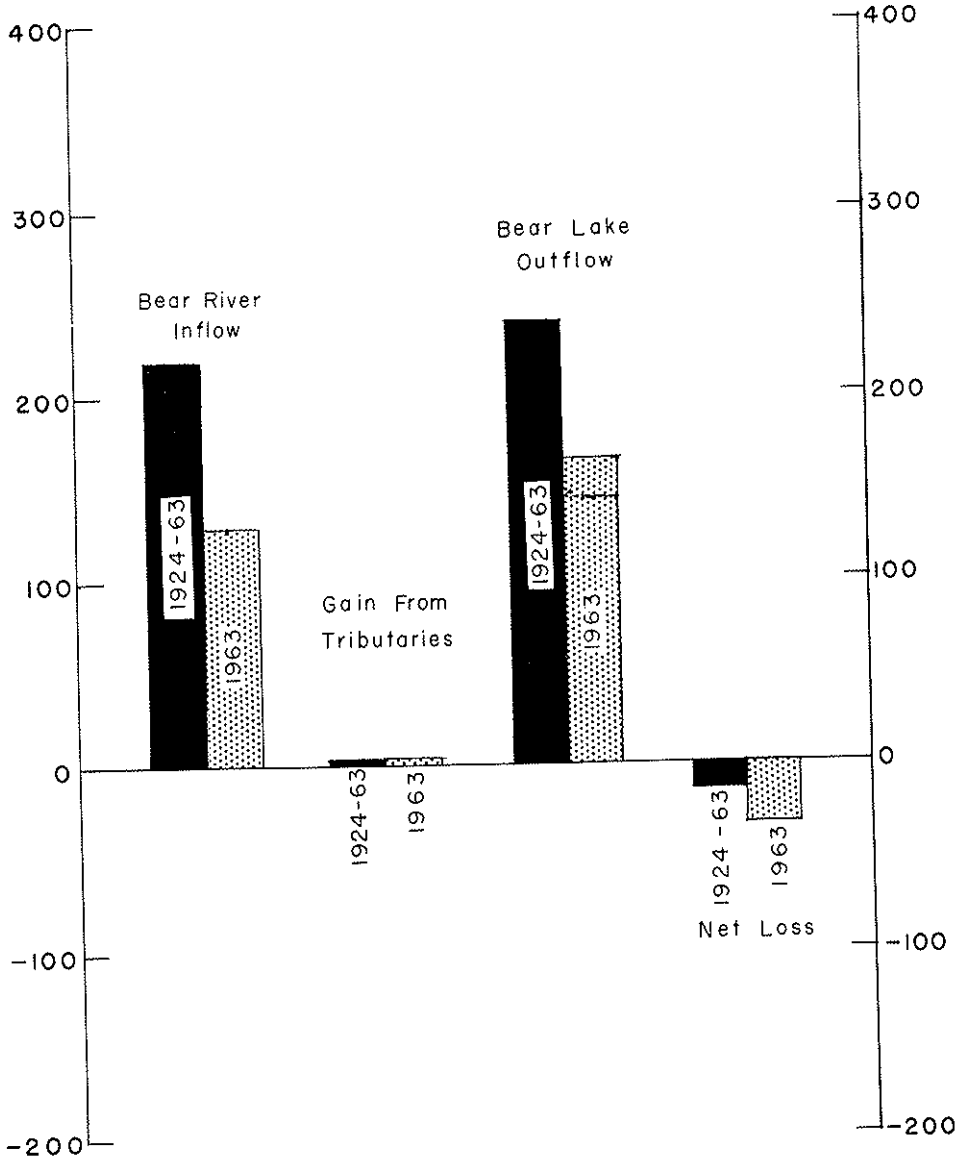

Fig 4. BEAR LAKE

Annual Quantities in Thousands of Acre-Feet

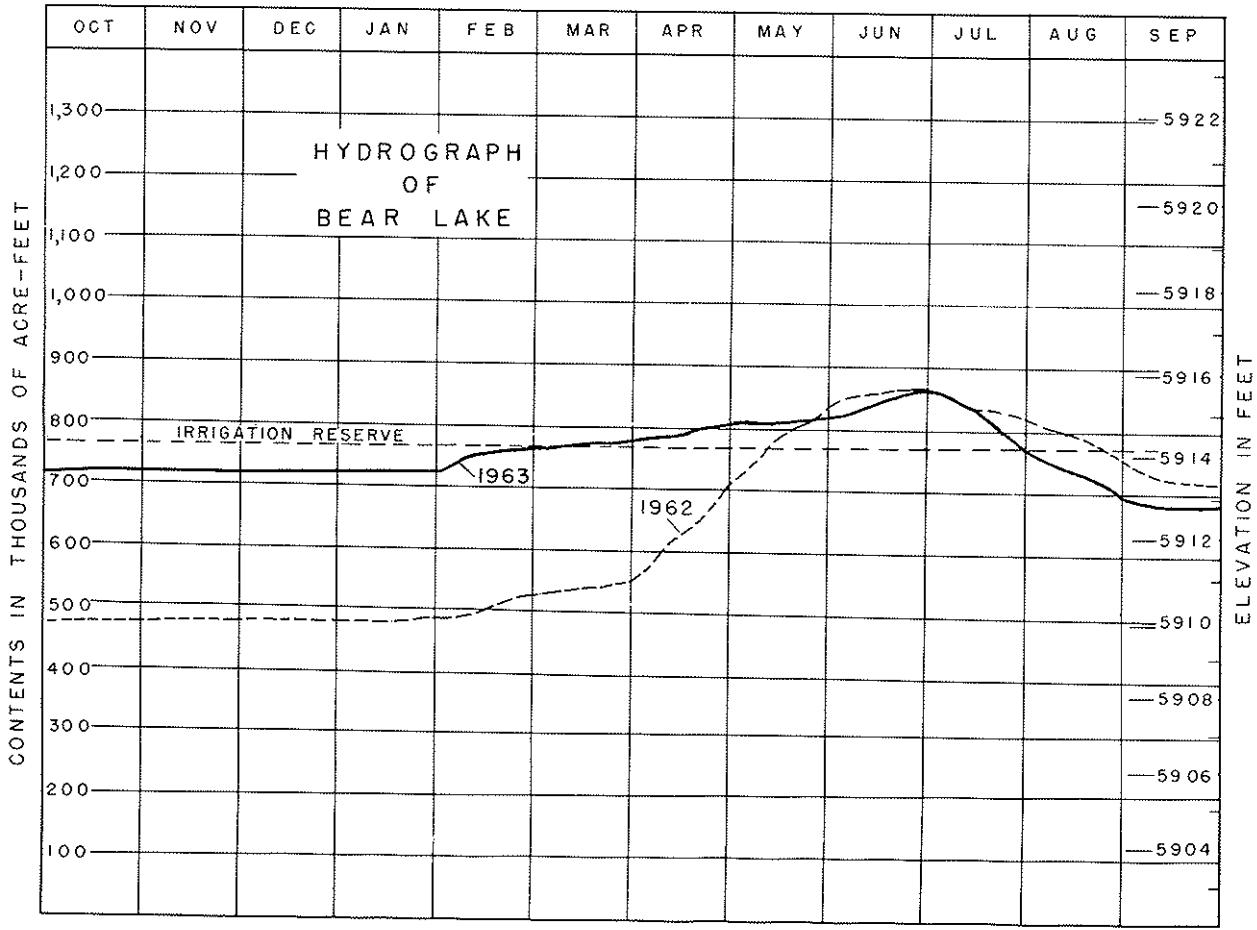
HYDROGRAPH
OF
BEAR LAKE
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
IRRIGATION RESERVE
1963
1962
5922
5920
5918
5916
5914
5912
5910
5908
5906
5904
CONTENTS IN THOUSANDS OF ACRE-FEET
ELEVATION IN FEET

Figure 5

STREAMFLOW DISTRIBUTION

Streamflow records of individual diversions and of the river flow at designated points were collected by the Geological Survey, local water commissioners, and Utah Power and Light Company. Records were submitted currently to the Assistant Secretary for computation of diversion and allocation data which were then reported to the Commission and local water commissioners for such regulatory action as required for compliance with the Compact.

Upper Division

The Upper Division comprises that portion of the basin above and including Pixley Dam and includes two sections in Wyoming and two in Utah. The Compact provides that when the total diversions in the division plus the flow passing Pixley Dam is less than 1,250 cfs (divertible flow), a water emergency exists and such divertible flow is allocated to sections as follows:

Upper Utah Section Diversions	0.6 percent
Upper Wyoming Section Diversions	49.3 percent
Lower Utah Section Diversions	40.5 percent
Lower Wyoming Section Diversions	9.6 percent

A water emergency requiring allocations to State sections existed prior to May 25 and subsequent to June 25. During the emergency in May, total diversions in the Upper Wyoming Section averaged about 150 cfs less than the allocation to this section. (See figure 6.) The unused allocation thereby became available to the Lower Wyoming Section (article IV 1 e) but it was impractical physically to deliver this additional supply through Lower Utah to the section. Supply was adequate however to divert the section's basic allocation of 9.6 percent of the divertible flow. Total diversions in Upper Wyoming from June 25 to July 5 exceeded its allocation by about 50 cfs. Thereafter the allocation was increased by the unused portion in Lower Wyoming and diversions were less than allocated.

Diversion data for the lower sections in the Upper Division are shown in figure 7 in which the shaded portion of the hydrograph represents storage water released from Woodruff Narrows Reservoir. The total diversion graphs then would include storage water plus natural flow plus return flows available from each source. The Woodruff Narrows Reservoir hydrograph is shown in figure 8.

Central Division

The Central Division comprises that part of the basin from Pixley Dam down to and including Stewart Dam (the point of diversion to Bear Lake). It includes a section in Wyoming and one in Idaho.

Divertible flow in the Central Division is the sum of diversions from Smiths Fork and designated tributaries, diversions from Bear River in the division, and flow passing Stewart Dam. A water emergency shall exist when this divertible flow is less than 870 cfs, or when Bear River entering Idaho (gaging station at Border) is discharging less than 350 cfs. Wyoming diversions are limited to 43 percent of the divertible flow during periods of such emergency.

A water emergency as defined above existed prior to May 20 and subsequent to July 15 when on these dates the divertible flow and discharge past Border became less than 870 cfs and 350 cfs respectively. Compliance with Compact allocation in the Wyoming Section (figure 9) was somewhat erratic during early August due in part to the inexperience of a new water commissioner and in part to heavy rainfall that increased river stage and offset reductions made in the first week of the month. Interstate regulation however was not required during the critical part of the irrigation season, and no particular problems arose.

Diversion and allocation data for the Idaho Section of this division are shown in figure 10.

Diversion in acre-feet per acre
June-September

	1958	*1959*	*1960*	*1961**	*1962**	*1963**
Wyoming Section	4.00	3.83	2.99	2.16	5.82	5.06
Idaho Section**	2.54	2.52	2.30	1.72	3.26	3.28

*May-September
**Excludes flow passing Stewart Dam and flow diverted to Bear Lake.

Lower Division

Authority is given the Commission upon its own motion to declare a water emergency in any division, and in the Lower Division such a declaration also may be made upon petition of an aggrieved Utah user against an Idaho user. Upon declaration of an emergency, the Commission is required to enforce water-delivery schedules based on priority of rights without regard to State lines.

There were no petitions filed with the Commission or water emergencies declared in the Lower Division in 1963.

Interstate Tributaries

An aggrieved lower-State user on an interstate tributary may petition for declaration of a water emergency and distribution of flow under direction of the Commission. Interstate arbitration on tributaries was not requested in 1963.

STORAGE

New Storage

The Compact defines storage rights in existing reservoirs above Bear Lake and provides for an additional storage allowance of 36,500 acre-feet annually. Idaho users on Thomas Fork are allotted 1,000 acre-feet of this amount and the remainder is divided equally between Wyoming and Utah.

The reservoirs shown below have been constructed under additional storage provisions of the Compact, and all were filled to capacity in 1963. A total allocation to Woodruff Narrows Reservoir for storage

of 18,240 acre-feet includes 15,240 acre-feet from Utah and 3,000 acre-feet from Wyoming.

Reservoir	*Allocation*
Sulphur Creek Reservoir (Wyoming)	4,615 ac-ft
J. L. Martin Reservoir, Sulphur Creek (Wyoming)	88 ac-ft
A. J. Barker Reservoir, Yellow Creek (Utah)	162 ac-ft
Hatch Brothers Reservoir (Utah)	350 ac-ft
Woodruff Narrows Reservoir (Utah-Wyoming)	18,240 ac-ft
Total Allocation	23,455 ac-ft

Bear Lake

An irrigation reserve in Bear Lake is provided by article V of the Compact which provides further that the reserve will be increased by steps as additional storage is developed above the lake. By Commission resolution adopted April 30, 1962, the irrigation reserve was increased to include the waters of Bear Lake below elevation 5,914.15 feet (764,000 ac-ft.)

Bear Lake was below the irrigation reserve elevation during 1963 except March 5 to August 3. Article V provides that water of such reserve shall not be released solely for generation of power, except in emergency, but after release for irrigation it may be used for generation of power as it is conveyed to irrigation diversion works. Water was not released solely for generation of power at any time in 1963.

APPLICATIONS FOR APPROPRIATION

Article X of the Compact states, "Applications for appropriation, for change of point of diversion, place and nature of use, and for exchange of Bear River water shall be considered and acted upon in accordance with the law of the State in which the point of diversion is located, but no such application shall be approved if the effect thereof will be to deprive any water user in another State of water to which he is entitled. The official of each State in charge of water administration shall, upon the filing of an application affecting Bear River water, transmit a copy thereof to the Commission."

Applications presented to the Commission in 1963 included a number of filings for storage in Caribou and Franklin Counties, Idaho. This development at three damsites (two on Bear River) would impound 367,500 acre-feet of water originating below Bear Lake. In general, other applications were for ground water development to supplement irrigation supplies in the basin below Bear Lake. The extent of ground water used in recent years and its potential adverse effect on downstream users continued under study by a committee of State Engineers.

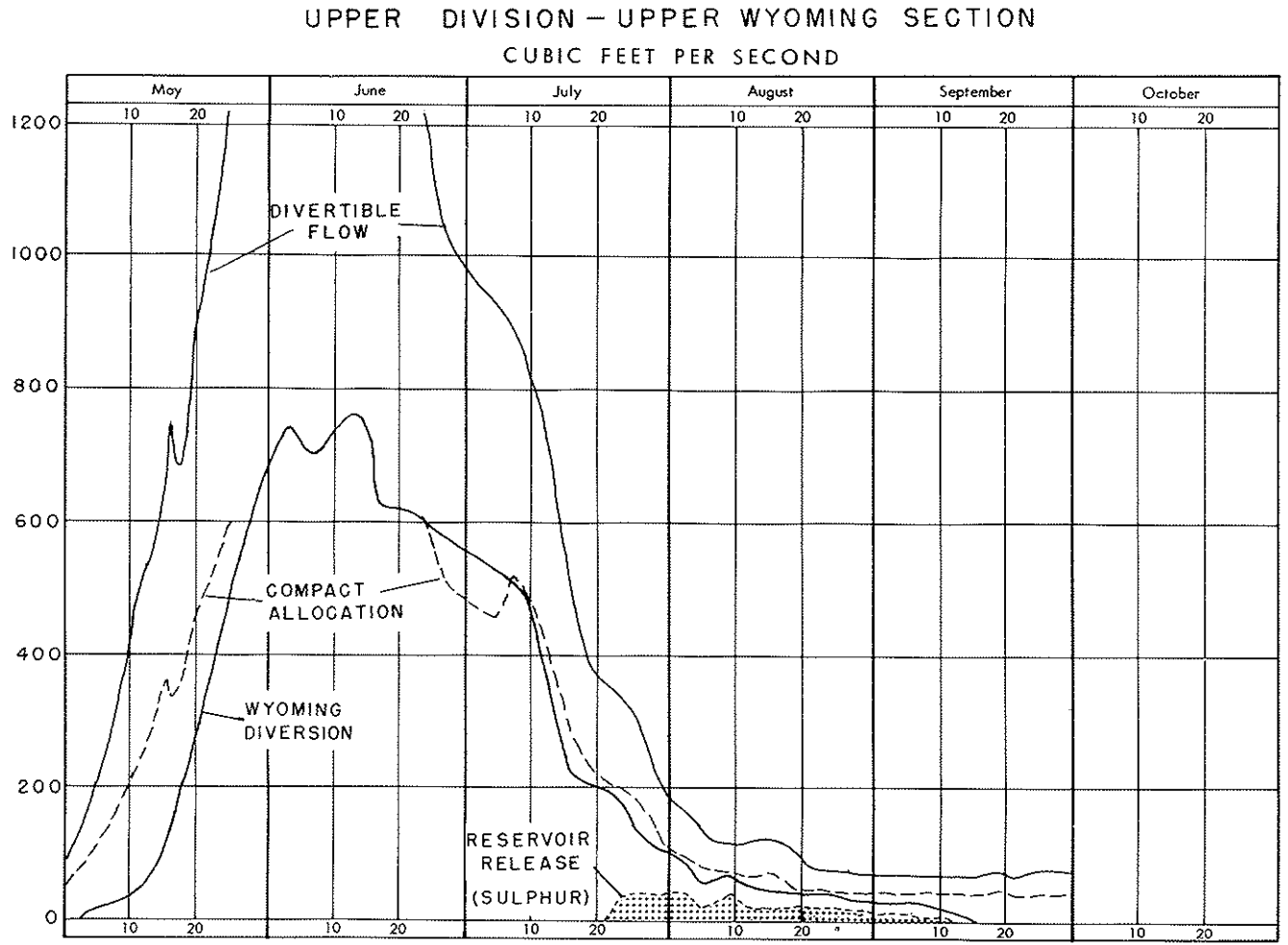
UPPER DIVISION — UPPER WYOMING SECTION
CUBIC FEET PER SECOND
May
June
July
August
September
October
10
20
1200
1000
800
600
400
200
0
DIVERTIBLE FLOW
COMPACT ALLOCATION
WYOMING DIVERSION
RESERVOIR RELEASE (SULPHUR)

Figure 6

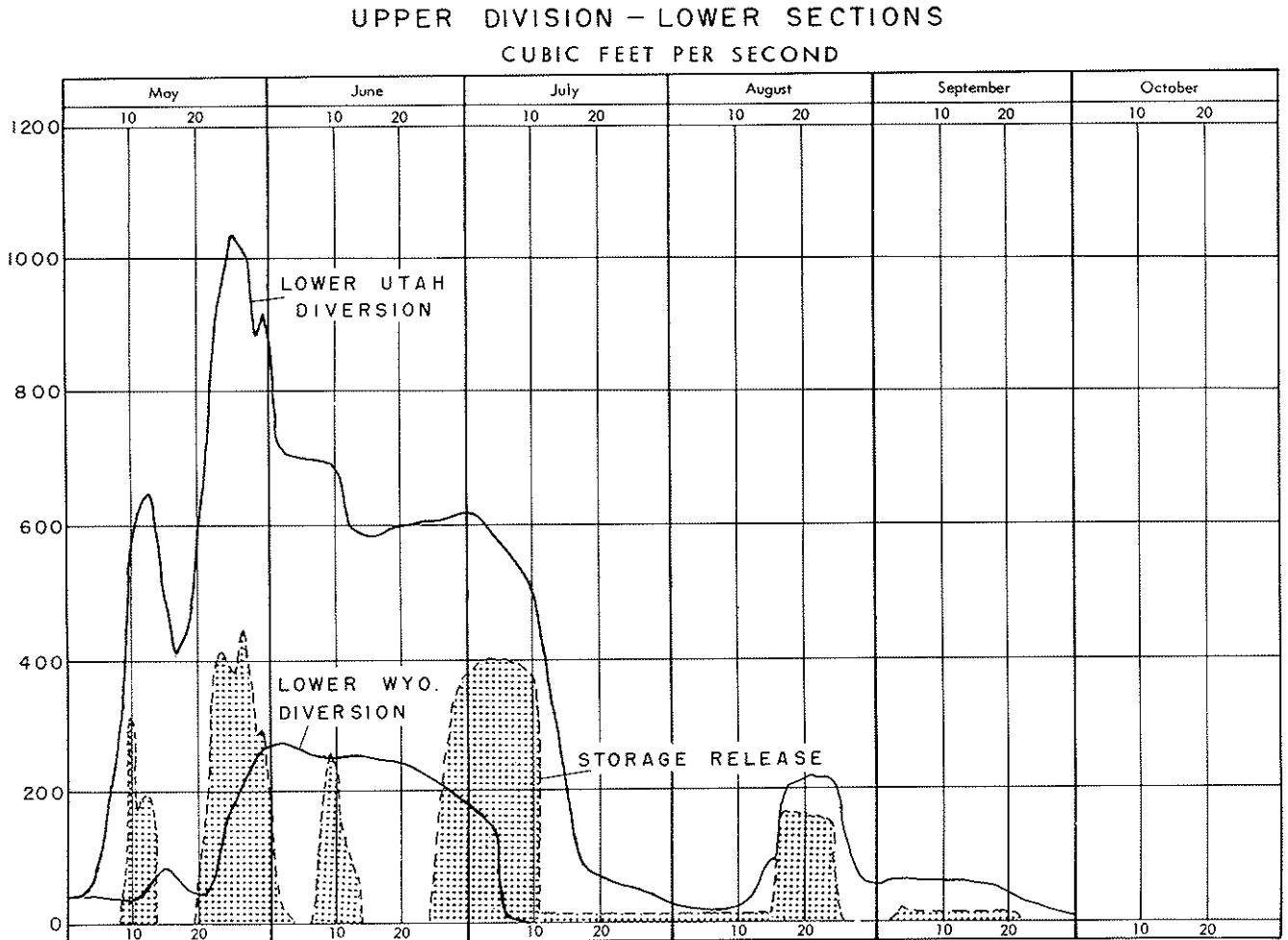
UPPER DIVISION – LOWER SECTIONS
CUBIC FEET PER SECOND
May
June
July
August
September
October
10
20
1200
1000
800
600
400
200
0
LOWER UTAH DIVERSION
LOWER WYO. DIVERSION
STORAGE RELEASE

Figure 7

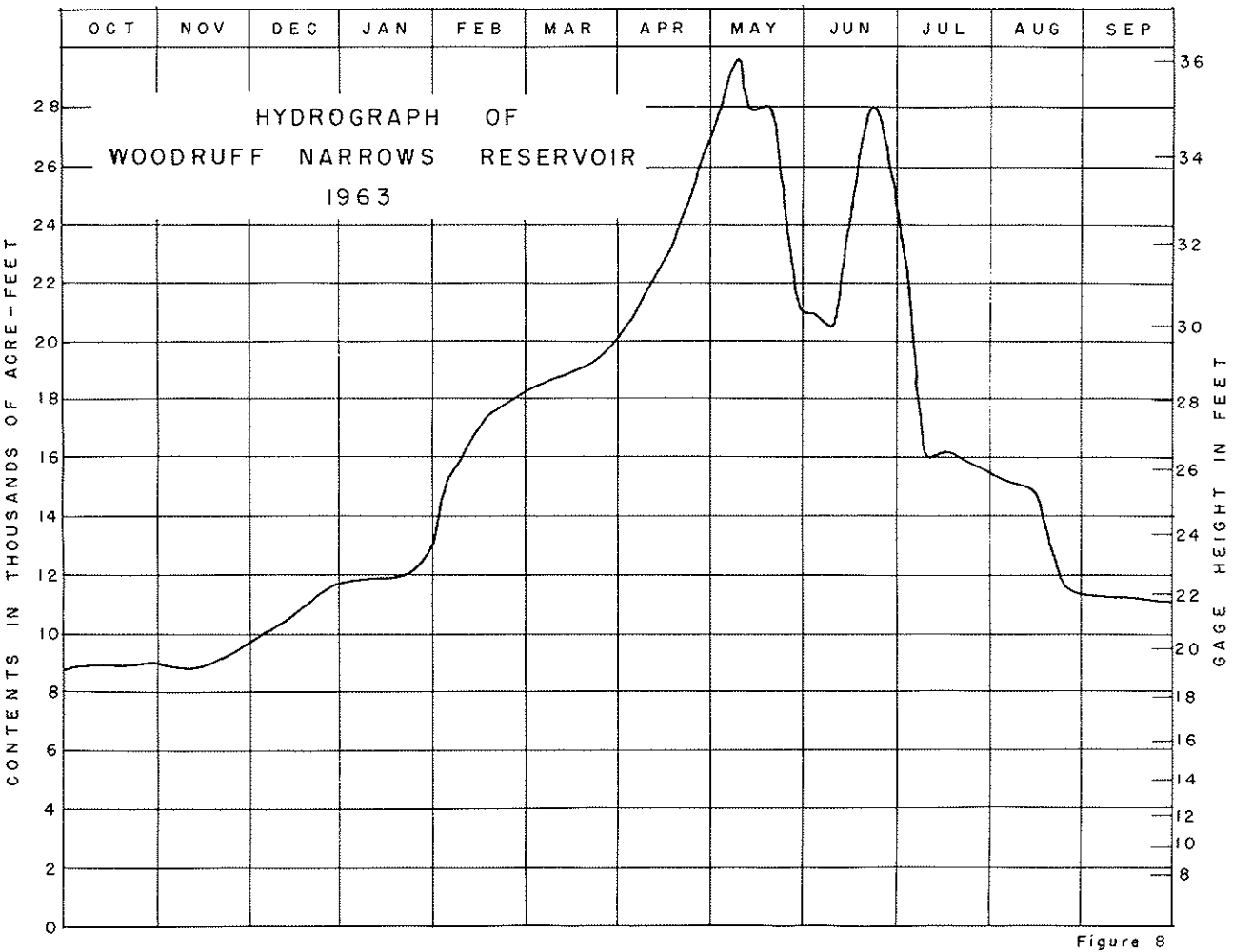
HYDROGRAPH OF
WOODRUFF NARROWS RESERVOIR
1963
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
CONTENTS IN THOUSANDS OF ACRE-FEET
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
GAGE HEIGHT IN FEET
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36

Figure 8

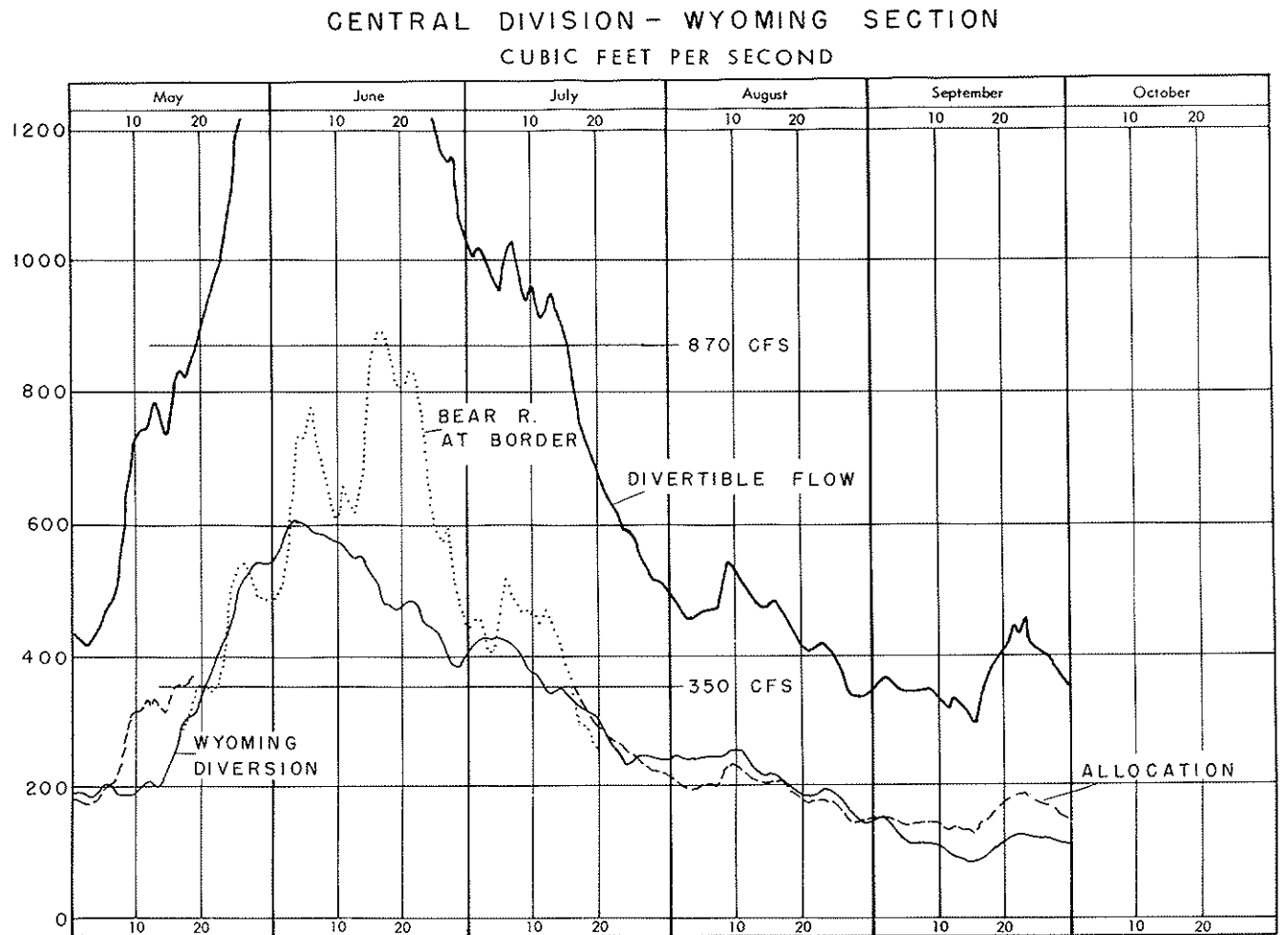
CENTRAL DIVISION – WYOMING SECTION
CUBIC FEET PER SECOND
May
June
July
August
September
October
10
20
1200
1000
800
600
400
200
0
870 CFS
350 CFS
BEAR R. AT BORDER
DIVERTIBLE FLOW
WYOMING DIVERSION
ALLOCATION

Figure 9

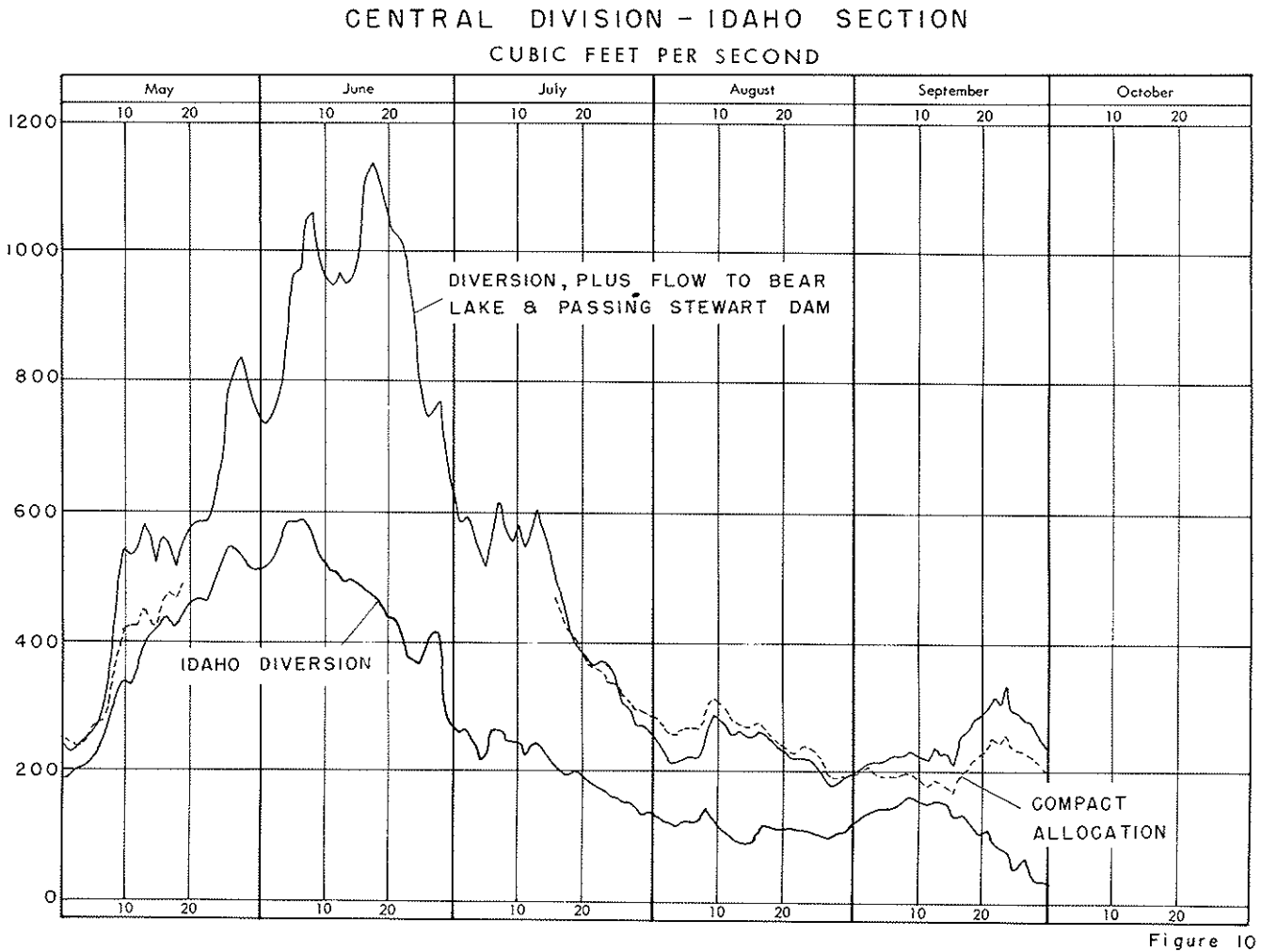
CENTRAL DIVISION - IDAHO SECTION
CUBIC FEET PER SECOND
May
June
July
August
September
October
10
20
1200
1000
800
600
400
200
0
DIVERSION, PLUS FLOW TO BEAR LAKE & PASSING STEWART DAM
IDAHO DIVERSION
COMPACT ALLOCATION

Figure 10

DAILY DISCHARGE IN C.F.S. OF SMITHS FORK & BEAR RIVER CANALS WITH COMPACT ALLOCATION IN CENTRAL DIVISION

MAY 1963	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WYOMING DIVERSIONS															
BEAR RIVER CANALS															
Garrett	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sights	4	4	8	3	3	5	8	10	11	11	12	11	9	8	9
Wyman East	5	5	5	5	6	6	6	7	7	7	8	7	8	7	10
Wyman West	10	10	10	10	11	12	12	11	11	10	10	10	10	10	10
Snyder	34	34	32	32	35	32	22	25	20	25	26	26	24	12	15
Rocky Point	14	14	12	12	15	20	18	7	7	8	6	6	6	6	6
Cook	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
J. R. Richards	0	0	0	0	0	0	0	0	0	0	3	6	6	6	6
TRIBUTARY CANALS															
Pine Cr. above Div.	16	16	16	16	16	16	16	16	16	17	17	17	17	17	17
Grade Creek Canal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diamond P&C 1-Bruner	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haggerty West-Pine Cr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sublette C at Thompson	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
SMITHS FORK CANALS															
Quinn-Bourne	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Button Flat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Perry Partridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Progress	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Smelle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Cooper	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheelock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Covey Canal at Head	55	64	60	61	64	62	60	63	53	62	63	60	62	59	63
Covey Canal--Pine Cr.	8	8	7	7	7	7	7	7	7	7	7	7	7	7	7
Covey Canal--Spring Cr	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Tanner, Hunt & Garrett	0	0	0	0	2	2	2	2	2	2	13	13	13	13	13
Whites Water	8	8	8	8	7	7	7	7	6	6	5	5	5	5	11
Martin (Collett Creek)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
John Bourne-Collett Cr.	3	3	3	3	3	3	2	2	3	3	3	4	4	4	4
Ferguson (Collett Cr)	0	0	0	0	3	5	6	6	6	7	7	7	7	7	7
Olson Canal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stoner-Nichols (So.Br)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Morgan (South Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cokeville Water-So Br	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanner 1 (South Br)	3	3	3	3	4	4	4	4	3	3	3	3	4	4	4
Smiths Fk Canal-So Br	12	12	11	10	8	8	6	4	5	5	5	4	4	4	3
South Br 2-Smiths Fork	0	0	0	0	2	4	4	4	4	4	4	4	4	4	4
South Br 1-Smiths Fork	4	4	4	5	5	5	5	6	8	5	8	8	11	13	14
TOTAL WYO. DIVERSIONS	125	194	182	184	200	209	194	190	192	190	209	209	207	202	217
IDAHO DIVERSIONS															
Miller Ditch	0	0	0	0	0	6	10	12	11	11	11	11	11	11	11
Huffer Canal	0	0	0	0	10	14	17	22	22	23	23	24	24	23	23
Sorensen Ditch	0	0	0	1	3	4	6	7	7	7	7	8	12	17	17
Jensen Ditch	0	0	0	0	0	0	0	0	0	6	8	8	8	8	8
Lloyd Ditch	0	0	0	1	3	3	4	5	6	7	7	7	7	7	7
Dingle Irrig. Canal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ream Crockett Canal	19	34	22	22	23	23	24	24	24	24	25	48	67	67	67
Black Otter Canal	40	43	50	51	52	54	55	66	85	92	89	90	90	87	86
Preston Montpelier Co	0	0	0	0	0	3	11	19	21	23	29	32	40	44	43
Lorocco Kent Canal	0	0	0	0	0	0	0	0	0	0	0	0	3	17	19
West Fork Canal	131	129	131	130	122	122	123	133	141	145	135	133	134	130	135
Pugmire Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	190	195	203	208	215	229	253	288	318	336	336	361	386	411	416
Rainbow Inlet Ca-Bear L.	64	30	29	34	38	39	40	77	141	199	196	174	181	181	99
Bear R below Stewart Dam	3	3	3	3	3	2	2	3	3	4	3	2	3	2	3
Idaho Divertible Flow	257	228	235	245	254	270	295	368	462	541	553	537	580	564	518
Wyoming Divertible Flow	135	194	182	184	200	209	194	190	192	190	209	209	207	202	217
Total Divertible Flow	432	422	417	429	454	479	489	558	654	731	762	749	787	766	735
Wyoming Allocation (43%)	186	181	179	185	195	206	210	240	281	314	319	321	339	329	316
Idaho Allocation (57%)	246	241	238	243	259	273	279	318	373	417	423	426	448	437	419

MAY 1963	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
WYOMING DIVERSIONS																	
BEAR RIVER CANALS																	
Garrett	0	0	0	0	0	0	0	0	0	0	0	1	3	3	3	3	13
Sights	9	10	13	14	16	15	14	18	18	19	20	20	20	18	18	18	388
Wyman East	12	12	12	12	12	14	16	16	16	17	18	18	18	17	18	16	[illegible]
Wyman West	10	18	33	33	33	34	35	35	38	39	40	41	42	41	40	40	710
Snyder	15	16	15	16	17	18	18	18	20	21	21	20	25	32	31	31	747
Rocky Point	7	7	8	5	9	8	28	44	49	52	54	53	52	51	51	51	587
Cook	15	27	23	32	43	53	50	51	57	57	55	54	51	48	44	42	702
J. R. Richards	6	6	5	6	6	6	7	8	8	10	12	14	16	16	16	17	187
TRIBUTARY CANALS																	
Pine Cr. above Div.	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	518
Grade Creek Canal	0	0	0	0	0	0	0	0	0	2	5	15	7	5	5	4	43
Diamond P&C 1-Bruner	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haggerty West-Pine Cr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sublette C at Thompson	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	109
SMITHS FORK CANALS																	
Quinn-Bourne	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	11	27
Button Flat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Perry Partridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Progress	0	0	0	0	0	0	0	0	0	0	0	6	6	6	6	6	30
Smelle	7	7	7	7	7	7	7	7	8	10	11	12	13	14	16	17	181
Cooper	0	0	0	0	0	0	0	0	0	0	0	4	4	4	5	5	22
Wheelock	0	0	0	0	0	0	0	0	0	7	7	7	7	7	7	7	49
Covey Canal at Head	63	57	55	64	65	74	74	76	80	85	93	91	94	100	99	98	2,217
Covey Canal--Pine Cr.	7	7	7	7	7	7	4	4	4	5	7	7	7	6	4	4	202
Covey Canal--Spring Cr	5	5	5	5	5	5	5	5	5	3	5	5	5	5	5	5	155
Tanner, Hunt & Garrett	13	13	10	10	10	10	14	17	8	8	8	8	8	8	8	8	222
Whites Water	20	28	30	26	22	21	29	26	21	25	46	46	46	46	45	45	628
Martin (Collett Creek)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
John Bourne-Collett Cr.	4	5	7	8	10	12	12	13	13	15	18	20	20	22	22	22	323
Ferguson (Collett Cr)	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	182
Olson Canal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stoner-Nichols (So.Br)	0	0	0	0	0	0	0	0	0	0	0	2	3	3	3	3	14
Morgan (South Branch)	0	0	1	1	1	1	2	4	5	5	5	5	4	4	5	4	55
Cokeville Water-So Br	1	2	2	2	2	2	2	2	3	3	3	3	4	4	4	4	43
Tanner 1 (South Br)	4	4	4	3	7	7	7	7	8	8	8	2	2	3	2	3	131
Smiths Fk Canal-So Br	3	4	4	4	6	6	6	6	6	6	7	7	6	4	8	8	200
South Br 2-Smiths Fork	5	5	6	7	9	9	10	10	10	10	10	10	10	10	10	10	192
South Br 1-Smiths Fork	14	14	15	16	17	18	19	20	20	23	27	30	33	36	32	28	467
TOTAL WYO. DIVERSIONS	240	284	307	309	325	355	384	411	423	460	506	526	536	547	550	559	2,678
IDAHO DIVERSIONS																	
Miller Ditch	11	11	11	11	10	5	5	5	5	6	7	8	8	8	9	8	[illegible]
Huffer Canal	23	23	22	24	25	25	25	25	25	26	27	28	28	27	26	25	631
Sorensen Ditch	17	17	17	18	19	19	19	19	10	10	11	11	11	11	11	11	[illegible]
Jensen Ditch	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	160
Lloyd Ditch	7	7	7	7	7	8	8	8	8	8	8	8	8	7	7	7	181
Dingle Irrig. Canal	10	19	19	27	35	35	36	36	37	40	36	37	32	33	33	33	504
Ream Crockett Canal	45	44	44	44	44	45	45	50	62	61	61	62	61	60	65	66	1,362
Black Otter Canal	88	82	83	85	85	93	94	96	104	114	122	123	121	118	116	114	2,678
Preston Montpelier Co	50	48	47	48	50	51	52	51	58	66	74	64	64	68	71	67	[illegible]
Lorocco Kent Canal	20	22	19	19	20	20	19	17	17	19	22	23	23	23	22	22	363
West Fork Canal	157	155	144	150	153	154	155	154	156	161	159	169	164	164	145	147	4,459
Pugmire Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	436	434	422	441	459	464	465	464	482	519	536	532	535	517	513	510	12,102
Rainbow Inlet Ca-Bear L.	118	113	98	102	102	113	113	115	114	155	228	258	235	276	243	221	4,148
Bear R below Stewart Dam	5	5	4	5	5	5	5	5	5	5	5	6	5	5	6	6	120
Idaho Divertible Flow	559	551	524	548	573	582	584	584	611	629	779	[illegible]	832	800	[illegible]	739	[illegible]
Wyoming Divertible Flow	248	284	307	309	329	355	384	411	423	460	506	[illegible]	536	547	[illegible]	538	[illegible]
Total Divertible Flow	807	835	821	857	901	937	968	995	1034	1139	1285	[illegible]	1368	1347	[illegible]	1277	[illegible]
Wyoming Allocation (43%)	347	359	353	369													
Idaho Allocation (57%)	460	476	468	488													

DAILY DISCHARGE IN C.F.S. OF SMITHS FORK & BEAR RIVER CANALS WITH COMPACT ALLOCATION IN CENTRAL DIVISION

JUNE 1963	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WYOMING DIVERSIONS															
BEAR RIVER CANALS															
Garrett	3	4	4	5	5	5	5	5	5	5	5	5	5	5	5
Sights	19	20	21	22	22	22	21	21	20	20	20	19	19	20	21
Wyman East	16	16	19	19	19	19	19	19	19	19	18	18	18	13	12
Wyman West	40	40	40	40	40	41	40	39	39	37	38	39	37	38	40
Snyder	31	33	36	38	37	47	35	38	37	36	35	35	34	38	40
Rocky Point	52	54	60	59	64	65	64	61	59	57	59	59	58	46	21
Cook	43	48	54	55	55	52	53	49	46	44	39	39	37	33	42
J. R. Richards	17	18	18	18	18	17	17	17	17	16	16	15	15	15	17
TRIBUTARY CANALS															
Pine Cr. above Div.	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Grade Creek Canal	4	4	4	5	4	4	4	4	4	4	4	4	3	3	2
Diamond P&C 1-Bruner	2	5	5	5	5	6	5	5	5	6	6	5	5	5	4
Haggerty West-Pine Cr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sublette C at Thompson	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3
SMITHS FORK CANALS															
Quinn-Bourne	10	11	9	6	6	5	5	5	4	4	4	4	10	19	5
Button Flat	0	2	5	4	4	4	4	3	3	3	2	2	1	1	1
Perry Partridge	3	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Progress	7	7	7	7	8	8	8	8	8	8	5	7	7	8	4
Emelle	19	22	24	24	24	24	23	22	21	20	21	21	22	21	20
Conner	5	6	6	6	6	5	7	7	7	8	8	7	7	7	7
Wheelock	10	14	17	15	12	10	10	11	13	13	13	14	14	13	12
Covey Canal at Head	99	100	99	96	95	91	88	85	85	86	82	76	75	75	74
Covey Canal--Pine Cr.	5	5	5	6	6	7	7	7	5	5	8	5	5	5	5
Covey Canal--Spring Cr.	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5
Tanner, Hunt & Carroll	3	3	3	7	7	5	6	12	12	12	12	12	11	13	13
Whiten Water	44	44	43	43	43	43	43	43	42	42	42	42	41	39	39
Martin (Collett Creek)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
John Bourne-Collett Cr	22	21	21	21	20	20	20	20	19	19	19	19	19	19	18
Ferguson (Collett Cr)	2	12	14	14	14	14	14	13	13	12	12	12	12	12	13
Olsen Canal	0	0	0	0	0	0	0	0	1	2	3	4	5	5	7
Stoner-Nichols (So.Br)	4	4	4	4	5	5	4	4	4	4	4	4	4	4	2
Morgan (South Branch)	4	4	4	4	6	6	6	6	6	6	6	6	6	6	6
Cokeville Water-So.Br.	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Tanner 1 (South Br)	3	3	3	3	3	5	5	5	5	4	4	4	4	4	4
Smiths Fk Canal-So.Br.	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
South Br. 2-Smiths Fork	10	10	10	10	7	6	6	6	6	0	6	6	6	6	6
South Br. 1-Smiths Fork	27	26	26	25	24	22	21	23	25	26	26	30	30	30	30
TOTAL WYO. DIVERSIONS	554	558	609	610	601	593	584	585	580	576	571	553	549	552	523
IDAHO DIVERSIONS															
Miller Ditch	9	8	8	9	9	9	6	9	6	6	0	0	0	0	0
Neffer Canal	27	27	28	29	29	30	30	29	29	28	27	27	28	27	28
Sorensen Ditch	11	18	21	22	22	22	22	17	13	13	13	13	13	13	13
Jensen Ditch	9	9	9	9	9	9	9	9	9	9	8	8	8	8	8
Loyd Ditch	7	8	8	10	10	10	10	10	2	2	2	2	2	2	2
Dingle Irrig. Canal	33	34	30	30	36	36	36	37	36	37	33	32	28	33	29
Ream Crockett Canal	66	66	66	69	70	74	74	74	74	73	73	73	67	67	59
Black Otter Canal	114	114	119	128	133	132	131	125	133	122	120	120	119	100	107
Preston Montpelier Co.	57	63	72	93	69	69	69	62	52	55	52	52	50	48	37
Laracee Kent Canal	22	23	24	28	27	28	29	29	28	27	25	28	26	26	25
West Fork Canal	151	151	154	157	169	168	168	164	159	157	155	156	154	153	155
Pugmire Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	515	529	544	582	592	585	587	586	540	523	502	502	492	497	493
Rainbow Inlet Ca-Bear L.	212	219	232	301	374	382	453	465	435	409	432	449	450	453	495
Bear R below Stewart Dam	5	5	5	5	6	7	8	6	5	5	5	5	5	5	5
Idaho Divertible Flow	732	742	780	888	972	974	1048	1057	980	954	935	958	948	955	993
Wyoming Divertible Flow	554	598	609	610	601	593	584	585	580	576	571	553	549	552	523
Total Divertible Flow	1286	1336	1389	1498	1554	1567	1632	1642	1560	1529	1517	1515	1497	1507	1506
Wyoming Allocation (43%)															
Idaho Allocation (57%)															

JUNE 1963	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
WYOMING DIVERSIONS																	
BEAR RIVER CANALS																	
Garrett	5	5	5	5	5	5	4	3	3	2	2	2	2	2	2		126
Sights	21	21	20	20	21	20	20	19	18	17	17	16	15	13	12		576
Wyman East	12	12	12	12	12	12	12	12	16	16	15	15	15	15	14		534
Wyman West	40	34	35	35	36	36	36	34	33	32	30	30	28	27	25		1,098
Snyder	41	40	32	32	33	33	32	35	35	34	33	32	30	29	27		1,075
Rocky Point	22	21	19	19	18	12	4	4	3	2	2	1	1	1	0		973
Cook	42	33	19	10	36	36	39	38	42	51	52	51	47	44	42		1,240
J. R. Richards	18	19	21	20	19	18	17	15	15	16	13	12	10	10	10		485
TRIBUTARY CANALS																	
Pine Cr. above Div.	17	17	17	17	17	16	16	16	16	16	15	15	15	10	15		476
Grade Creek Canal	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		102
Diamond P&C 1-Bruner	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0		79
Haggerty West-Pine Cr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Sublette C at Thompson	3	3	3	3	3	3	2	2	2	2	2	1	1	1	1		91
SMITHS FORK CANALS																	
Quinn-Bourne	4	3	3	3	5	7	10	12	12	11	11	10	10	9	9		227
Button Flat	1	1	1	1	1	1	1	0	0	2	3	4	4	3	2		68
Perry Partridge	8	9	8	8	7	7	8	9	10	10	9	9	9	9	8		222
Progress	3	2	2	2	2	2	2	0	0	0	0	0	0	0	4		127
Emelle	19	18	17	17	18	16	16	15	15	13	11	9	14	19	21		563
Conner	7	6	7	7	7	8	8	8	9	9	8	8	10	13	10		221
Wheelock	10	9	8	8	8	5	5	5	5	7	9	11	11	10	9		305
Covey Canal at Head	72	69	69	67	71	95	93	91	92	95	81	44	42	44	90		2,396
Covey Canal--Pine Cr.	5	5	5	7	7	6	6	6	5	5	6	7	7	7	4		180
Covey Canal--Spring Cr.	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4		138
Tanner, Hunt & Carroll	12	12	11	11	10	10	5	5	3	5	5	6	6	5	5		277
Whiten Water	37	21	34	34	35	33	32	31	29	27	27	27	29	29	29		1,083
Martin (Collett Creek)	2	2	2	2	2	2	2	2	1	1	2	3	3	2	2		60
John Bourne-Collett Cr	18	16	18	18	17	16	15	14	13	13	13	14	13	12	11		521
Ferguson (Collett Cr)	13	13	13	12	12	11	10	9	9	9	9	9	8	7	6		338
Olsen Canal	9	10	11	11	10	9	8	7	6	5	5	4	4	3	2		151
Stoner-Nichols (So.Br)	0	0	0	0	0	0	0	0	0	0	0	2	4	4	5		72
Morgan (South Branch)	6	6	6	7	7	7	7	6	6	6	5	5	5	5	5		168
Cokeville Water-So.Br.	4	4	4	4	4	3	3	3	3	2	2	2	2	2	2		89
Tanner 1 (South Br)	6	6	6	6	6	5	5	5	3	3	3	3	3	3	3		127
Smiths Fk Canal-So.Br.	8	8	9	8	8	7	9	9	9	9	10	9	9	9	9		247
South Br. 2-Smiths Fork	6	6	6	6	6	5	5	5	0	0	0	0	0	0	0		184
South Br. 1-Smiths Fork	30	30	20	30	30	22	27	24	22	20	18	22	22	23	24		776
TOTAL WYO. DIVERSIONS	517	481	481	470	476	487	482	456	444	444	424	390	386	382	404		15,355
IDAHO DIVERSIONS																	
Miller Ditch	0	0	2	2	9	8	8	7	7	5	6	9	6	5	4		155
Neffer Canal	28	28	27	25	24	24	24	23	22	20	20	20	18	16	16		756
Sorensen Ditch	13	14	14	18	21	21	21	21	20	20	20	20	19	18	10		514
Jensen Ditch	8	3	0	0	0	0	0	0	0	3	8	8	7	7	7		182
Loyd Ditch	2	2	2	2	2	2	2	1	0	0	0	0	0	0	0		105
Dingle Irrig. Canal	0	0	0	5	2	9	12	12	20	26	30	36	39	37	37		787
Ream Crockett Canal	69	70	70	69	69	82	36	3	3	3	47	63	63	62	62		1,811
Black Otter Canal	134	132	134	109	84	84	86	86	34	26	22	21	20	96	84		3,328
Preston Montpelier Co.	29	30	32	38	43	41	45	40	32	29	30	26	32	32	30		1,406
Laracee Kent Canal	25	20	20	14	14	14	14	14	15	19	16	10	7	7	6		619
West Fork Canal	173	168	158	166	164	153	154	166	152	144	135	134	130	15	13		4,445
Pugmire Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
SUBTOTAL	461	478	469	454	434	437	412	374	372	366	327	414	411	265	262		14,104
Rainbow Inlet Ca-Bear L.	617	649	642	629	598	579	592	574	491	405	340	338	351	376	342		13,303
Bear R below Stewart Dam	9	8	9	7	7	7	7	8	7	6	7	7	7	7	6		189
Idaho Divertible Flow	1106	1135	1119	1089	1033	1022	1011	956	870	777	764	759	769	668	623		27,505
Wyoming Divertible Flow	517	491	481	470	475	487	482	458	444	444	424	390	385	382	404		15,355
Total Divertible Flow	1623	1614	1600	1559	1508	1509	1493	1414	1314	1221	1188	1149	1155	1050	1027		42,842
Wyoming Allocation (43%)																	
Idaho Allocation (57%)																	

TABLE 2

DAILY DISCHARGE IN C.F.S. OF SMITHS FORK & BEAR RIVER CANALS WITH COMPACT ALLOCATION IN CENTRAL DIVISION

JULY 1963	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WYOMING DIVERSIONS															
BEAR RIVER CANALS															
Garrett	2	2	2	2	3	3	2	2	2	1	1	2	1	1	1
Sights	13	13	13	13	13	14	13	13	12	12	12	12	12	12	9
Wyman East	15	15	14	14	14	14	13	12	12	12	12	13	13	13	13
Wyman West	25	25	24	24	26	27	26	26	25	25	18	0	0	0	0
Snyder	28	28	28	28	32	32	31	30	30	32	30	30	30	22	23
Rocky Point	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cook	37	33	47	47	51	49	47	39	23	24	30	30	29	29	31
J. R. Richards	10	9	8	7	6	5	4	2	1	1	1	1	0	0	0
TRIBUTARY CANALS															
Pine Cr., Stove Div.	15	15	15	15	15	16	15	16	15	15	16	16	15	15	15
Crude Creek Canal	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Diamond P&C Lebonner	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haggerty West-Pine Cr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sublette & St. Thompson	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SMITHS FORK CANALS															
Quinn-Bourne	8	8	10	12	13	13	13	12	12	12	12	12	12	12	11
Button Flat	1	1	1	1	1	1	1	1	1	0	0	1	2	2	2
Perry Partridge	8	8	4	4	4	2	0	0	0	5	5	6	6	6	0
Progress	4	4	5	5	4	4	4	4	4	3	3	3	3	3	3
Emelle	27	27	28	28	28	29	30	30	29	29	28	28	27	25	26
Conner	10	10	9	9	9	9	9	9	8	8	8	8	14	13	13
Wheelock	9	10	12	13	14	16	17	18	13	8	3	3	1	0	0
Covey Canal at Head	88	88	87	87	85	85	84	84	84	82	81	90	80	90	93
Covey Canal--Pine Cr.	4	4	4	5	5	5	5	5	5	5	5	5	4	6	4
Covey Canal--Spring Cr	4	4	4	5	5	4	4	4	4	4	4	4	4	4	4
Tanner, Hunt & Garrett	1	1	2	2	2	1	1	1	1	1	1	1	1	1	0
Whites Water	33	44	44	33	23	23	24	25	26	25	20	25	25	24	23
Martin (Collett Creek)	2	1	1	2	1	1	1	1	1	1	1	1	1	0	0
John Bourne-Collett Cr	10	10	10	10	10	10	9	9	9	9	7	7	8	0	9
Ferguson (Collett Cr)	5	4	4	4	4	4	3	3	3	3	3	3	3	3	3
Olson Canal	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Stoner-Nichols (So. Br)	3	3	3	3	3	3	2	0	0	0	0	0	0	0	0
Morgan (South Branch)	5	5	5	5	5	5	5	5	5	5	4	3	4	4	4
Cokeville Water-So. Br.	2	2	2	2	2	2	2	2	2	2	2	3	3	0	0
Tanner 1 (South Br)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0
Smiths Fk Canal-So. Br.	9	9	9	9	9	10	10	10	11	11	11	11	9	8	6
South Br 2-Smiths Fork	0	1	1	1	2	4	5	6	7	9	7	6	6	6	6
South Br 1-Smiths Fork	25	26	27	29	29	28	28	27	26	26	26	25	24	23	27
TOTAL WYO. DIVERSIONS	420	425	429	425	427	425	414	402	378	375	365	347	344	350	345
IDAHO DIVERSIONS															
Miller Ditch	3	3	3	3	3	1	0	0	0	0	1	3	3	3	3
Nuffer Canal	19	18	15	13	13	14	15	15	15	15	14	14	14	15	11
Sorensen Ditch	7	7	5	5	5	0	4	0	0	0	0	0	0	0	0
Jensen Ditch	3	2	7	7	5	5	5	0	5	5	0	0	4	0	0
Lord Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dingle Irrig. Canal	37	30	38	38	35	35	35	39	41	41	33	43	48	46	45
Rout Crockett Canal	61	61	60	60	60	61	61	60	60	60	44	44	44	43	43
Black Otter Canal	80	82	80	78	77	84	84	64	55	55	54	55	55	52	50
Preston Montpelier Co.	27	22	16	0	10	35	38	40	40	55	55	56	57	53	48
Lucasse Kent Canal	5	5	5	5	5	8	8	7	7	7	7	8	8	7	6
West Fork Canal	12	12	12	12	12	12	11	11	11	11	11	11	11	11	10
Pugmire Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	258	254	242	219	222	262	263	247	247	250	225	240	245	228	216
Rainbow Inlet Cy-Bear L.	312	322	330	317	283	308	346	322	304	425	315	322	354	330	306
Bear R. below Stewart Dam	2	0	6	6	4	5	7	0	9	6	6	6	6	6	6
Idaho Divertible Flow	583	592	578	543	518	578	616	575	557	581	546	568	605	564	528
Wyoming Divertible Flow	420	425	429	420	427	425	414	402	378	375	365	347	344	350	345
Total Divertible Flow	1003	1017	1007	966	945	1003	1030	977	935	956	911	915	949	914	873
Wyoming Allocation (44%)															
Idaho Allocation (56%)															

JULY 1963	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
WYOMING DIVERSIONS																	
BEAR RIVER CANALS																	
Garrett	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	32
Sights	5	7	7	6	6	5	6	5	5	5	4	5	5	5	2	0	209
Wyman East	12	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	220
Wyman West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	272
Snyder	26	25	25	24	20	14	14	8	1	3	3	1	2	2	2	2	615
Rocky Point	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Cook	30	27	26	23	23	14	3	2	2	2	2	2	2	1	1	1	707
J. R. Richards	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55
TRIBUTARY CANALS																	
Pine Cr., Stove Div.	15	15	15	15	15	15	15	13	14	15	15	15	15	15	15	15	466
Crude Creek Canal	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	82
Diamond P&C Lebonner	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haggerty West-Pine Cr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sublette & St. Thompson	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	31
SMITHS FORK CANALS																	
Quinn-Bourne	11	11	10	10	10	10	10	10	10	9	9	9	9	9	9	9	327
Button Flat	3	4	5	4	4	4	4	3	3	2	3	3	3	4	3	3	70
Perry Partridge	6	6	6	6	5	5	5	5	5	5	5	5	5	6	6	5	154
Progress	3	4	4	4	1	1	1	1	1	1	1	1	3	3	3	3	103
Emelle	25	25	25	25	24	24	24	23	22	21	20	19	18	18	19	20	772
Conner	12	16	15	15	16	17	17	17	3	3	3	3	4	4	4	5	336
Wheelock	0	0	0	0	3	0	6	8	10	12	12	12	12	12	12	11	263
Covey Canal at Head	91	90	89	88	88	85	86	85	84	83	80	80	79	77	76	74	2,611
Covey Canal--Pine Cr.	4	5	5	5	5	5	5	5	5	5	5	6	6	6	6	6	152
Covey Canal--Spring Cr	4	4	5	5	2	2	2	2	3	4	4	4	4	4	4	4	120
Tanner, Hunt & Garrett	0	0	2	2	2	3	3	3	5	6	6	6	6	7	7	6	81
Whites Water	21	19	17	23	22	21	20	19	18	32	42	42	41	41	39	39	881
Martin (Collett Creek)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
John Bourne-Collett Cr	10	11	12	11	10	9	7	6	5	4	4	3	3	3	4	5	241
Ferguson (Collett Cr)	3	3	2	2	2	1	0	0	0	0	0	0	0	0	0	0	68
Olson Canal	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Stoner-Nichols (So. Br)	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	23
Morgan (South Branch)	4	4	4	4	3	3	3	3	2	2	2	3	3	4	4	4	119
Cokeville Water-So. Br.	0	1	1	1	1	3	3	3	2	2	2	2	2	2	2	2	57
Tanner 1 (South Br)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
Smiths Fk Canal-So. Br.	4	2	2	2	2	4	4	5	5	5	5	4	4	4	4	4	204
South Br 2-Smiths Fork	6	6	9	9	9	9	9	9	7	6	6	6	6	6	6	5	179
South Br 1-Smiths Fork	21	20	20	19	19	17	16	16	15	14	13	12	11	10	9	9	631
TOTAL WYO. DIVERSIONS	335	317	316	310	297	291	266	254	231	244	249	249	247	246	239	241	10,195
IDAHO DIVERSIONS																	
Miller Ditch	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	77
Nuffer Canal	10	10	10	10	9	9	7	4	3	0	0	0	0	0	0	0	289
Sorensen Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
Jensen Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Lord Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dingle Irrig. Canal	43	41	42	40	39	38	38	41	43	39	37	38	37	40	42	40	1,233
Rout Crockett Canal	42	41	36	28	25	25	19	19	19	31	37	40	39	17	17	17	1,273
Black Otter Canal	47	40	40	45	44	43	43	43	28	22	22	21	20	19	19	20	1,533
Preston Montpelier Co.	45	42	45	61	59	55	55	54	37	55	45	42	38	40	32	32	1,359
Lucasse Kent Canal	5	5	4	4	4	3	3	3	2	2	2	2	2	5	8	9	160
West Fork Canal	10	10	10	10	9	9	8	7	6	7	7	7	6	7	7	7	297
Pugmire Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	204	197	196	201	191	180	177	173	162	160	163	165	164	152	139	137	6,344
Rainbow Inlet Cy-Bear L.	275	252	212	195	185	177	182	194	195	183	169	137	122	135	124	216	7,539
Bear R. below Stewart Dam	5	5	5	4	4	4	5	5	5	5	5	5	5	5	5	6	163
Idaho Divertible Flow	484	454	413	401	380	356	364	372	362	360	307	297	271	278	258	258	11,151
Wyoming Divertible Flow	335	317	316	310	297	291	266	254	231	244	249	249	247	246	239	241	10,195
Total Divertible Flow	819	771	729	711	677	647	630	626	593	604	556	546	518	519	497	499	21,344
Wyoming Allocation (44%)	342	332	315	306	291	276	271	269	255	255	239	234	223	223	219	215	
Idaho Allocation (56%)	467	439	416	405	386	369	359	357	338	338	317	311	295	296	282	284	

TABLE 3

DAILY DISCHARGE IN C.F.S. OF SMITHS FORK & BEAR RIVER CANALS WITH COMPACT ALLOCATION IN CENTRAL DIVISION

AUGUST 1963	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
WYOMING DIVERSIONS															
BEAR RIVER CANALS															
Garrett	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sights	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wyman East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wyman West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Snyder	1	2	1	2	2	2	2	3	2	2	2	2	2	2	2
Rocky Point	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cook	8	8	9	8	8	11	17	19	29	33	36	35	33	34	33
J. R. Richards	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRIBUTARY CANALS															
Pine Cr. above Div.	15	16	15	16	15	15	15	16	16	15	15	13	14	15	16
Grade Creek Canal	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Diamond P&C 1-Kramer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haggerty West-Pine Cr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sublette C. at Thompson	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SMITHS FORK CANALS															
Quinn-Bourne	9	9	9	9	6	6	9	9	9	9	8	5	5	5	5
Patton Flat	3	3	3	3	3	2	2	1	1	1	0	0	0	0	0
Perry Partridge	5	5	5	5	5	5	5	5	5	5	5	3	4	7	8
Progress	9	9	9	8	8	9	8	8	3	3	3	3	2	2	1
Smelle	22	22	21	20	19	19	20	22	23	23	23	17	20	24	27
Cooper	5	5	4	4	4	2	3	3	2	1	0	0	0	0	0
Wheelock	11	12	13	14	15	16	13	10	9	7	6	6	5	6	6
Covey Canal at Head	75	71	69	70	70	64	59	59	59	57	54	52	48	47	45
Covey Canal--Pine Cr.	7	7	7	5	5	5	5	6	6	6	9	9	9	8	6
Covey Canal--Spring Cr.	4	4	4	4	4	4	5	5	5	5	5	5	5	4	4
Tanner, Hunt & Garrett	4	4	5	5	7	7	7	6	6	6	6	6	5	4	2
Whites Water	39	39	37	38	38	38	39	37	40	38	37	34	27	28	19
Martin (Collett Creek)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
John Bourne-Collett Cr.	7	7	7	7	7	7	7	10	9	7	6	5	3	2	3
Ferguson (Collett Cr.)	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0
Olsen Canal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stoner-Nichols (So. Br.)	0	0	0	0	2	4	4	4	4	4	4	4	4	3	2
Morgan (South Branch)	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Cokeville Water-So. Br.	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Tanner 1 (South Br.)	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3
Smiths Fk Canal-So. Br.	5	3	3	3	3	3	2	3	3	3	3	3	2	2	2
South Br. 2-Smiths Fork	4	2	3	4	4	5	5	6	6	7	7	8	9	10	6
South Br. 1-Smiths Fork	9	9	10	12	14	16	17	9	15	15	15	14	14	14	24
TOTAL WYO. DIVERSIONS	246	241	240	244	247	247	244	246	258	253	253	233	220	216	219
IDAHO DIVERSIONS															
Miller Ditch	3	3	2	2	4	5	5	5	5	5	5	5	5	5	5
Nuffer Canal	0	0	0	6	9	9	9	9	9	8	8	8	8	7	7
Sorensen Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jensen Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lord Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dingle Irrig. Canal	40	39	37	40	41	40	42	45	44	39	33	13	10	10	15
Roem Crockett Canal	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Black Otter Canal	20	20	20	19	19	18	18	20	20	20	22	33	33	32	32
Preston Montpelier Cr.	42	39	34	32	30	29	29	41	21	14	17	16	20	18	18
Lorocco Kent Canal	8	8	9	7	7	6	6	8	3	10	10	10	10	10	10
West Fork Canal	6	6	6	6	6	7	6	7	7	6	5	5	5	5	5
Pugmire Ditch	0	4	6	6	6	6	6	6	0	6	5	3	0	0	0
SUBTOTAL	123	122	117	122	126	124	125	145	125	112	105	97	99	91	96
Rainbow Inlet Ca-Bear L.	107	90	90	88	99	90	90	113	166	159	161	161	159	157	149
Bear R. below Stewart Dam	4	5	7	8	8	7	7	7	9	9	9	9	9	8	9
Idaho Divertible Flow	234	217	214	218	222	221	222	268	299	280	265	267	263	256	254
Wyoming Divertible Flow	246	241	240	244	247	247	244	246	258	253	253	233	220	216	219
Total Divertible Flow	480	458	454	462	469	468	466	514	546	533	518	490	483	472	473
Wyoming Allocation (43%)	206	197	195	199	202	201	200	221	235	229	223	211	208	203	203
Idaho Allocation (57%)	274	261	259	263	267	267	266	293	311	304	295	279	275	269	270

AUGUST 1963	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
WYOMING DIVERSIONS																	
BEAR RIVER CANALS																	
Garrett	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	5
Sights	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wyman East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wyman West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Snyder	2	1	3	2	3	2	2	2	2	3	3	3	3	2	2	2	70
Rocky Point	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cook	31	32	31	35	37	38	38	41	39	39	46	50	49	50	41	53	970
J. R. Richards	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRIBUTARY CANALS																	
Pine Cr. above Div.	16	15	16	15	16	15	16	14	15	15	15	15	15	15	15	15	471
Grade Creek Canal	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	62
Diamond P&C 1-Kramer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haggerty West-Pine Cr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sublette C. at Thompson	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	31
SMITHS FORK CANALS																	
Quinn-Bourne	4	4	4	4	4	4	3	3	2	2	1	0	0	0	0	0	152
Patton Flat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Perry Partridge	8	8	5	3	2	2	2	2	2	2	2	1	0	0	0	0	116
Progress	1	1	1	1	1	1	1	3	3	3	3	2	2	2	2	2	113
Smelle	25	24	22	21	21	22	22	22	19	18	10	3	3	4	7	6	571
Cooper	0	0	0	0	0	0	0	0	0	0	2	2	1	5	2	2	60
Wheelock	6	6	6	6	5	5	6	6	6	7	4	0	0	0	0	0	212
Covey Canal at Head	45	44	44	44	44	44	44	44	45	44	39	28	26	23	22	22	1,492
Covey Canal--Pine Cr.	6	6	6	6	6	6	6	6	6	6	5	5	6	6	6	6	198
Covey Canal--Spring Cr.	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	131
Tanner, Hunt & Garrett	2	2	2	2	2	1	1	3	3	3	4	4	5	6	6	6	136
Whites Water	18	18	17	16	16	16	16	16	16	15	15	15	15	15	15	15	702
Martin (Collett Creek)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
John Bourne-Collett Cr.	3	3	3	4	4	4	4	4	3	3	3	3	2	1	2	2	142
Ferguson (Collett Cr.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Olsen Canal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stoner-Nichols (So. Br.)	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	44
Morgan (South Branch)	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	58
Cokeville Water-So. Br.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Tanner 1 (South Br.)	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	49
Smiths Fk Canal-So. Br.	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	87
South Br. 2-Smiths Fork	2	2	2	2	2	2	1	1	1	1	1	0	0	0	0	0	103
South Br. 1-Smiths Fork	33	27	21	15	10	5	11	17	17	16	16	16	12	7	7	7	437
TOTAL WYO. DIVERSIONS	217	212	198	191	187	182	186	199	194	192	184	163	155	142	144	153	6,513
IDAHO DIVERSIONS																	
Miller Ditch	5	4	4	4	4	4	4	4	4	3	3	3	3	3	4	4	124
Nuffer Canal	7	6	6	6	5	5	5	5	4	4	4	4	4	5	6	7	178
Sorensen Ditch	4	8	7	7	7	7	7	7	6	6	5	5	5	5	6	7	99
Jensen Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lord Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dingle Irrig. Canal	19	19	19	19	19	19	19	19	19	18	18	18	18	18	12	12	790
Roem Crockett Canal	4	4	4	4	12	18	17	10	4	4	13	17	17	17	30	30	277
Black Otter Canal	31	30	29	29	28	27	27	28	22	22	28	28	34	35	31	31	820
Preston Montpelier Cr.	31	35	35	32	28	25	26	27	30	30	27	21	20	21	18	17	810
Lorocco Kent Canal	9	8	8	8	7	6	7	8	8	5	0	0	0	0	0	0	201
West Fork Canal	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	162
Pugmire Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
SUBTOTAL	115	120	117	114	115	116	114	112	103	104	102	100	105	108	118	122	3,522
Rainbow Inlet Ca-Bear L.	141	130	126	115	107	87	99	100	102	99	85	72	68	74	66	61	3,372
Bear R. below Stewart Dam	9	8	8	8	8	8	9	8	8	5	7	7	7	7	8	8	238
Idaho Divertible Flow	265	258	251	237	230	221	221	220	218	210	194	179	180	189	192	194	7,132
Wyoming Divertible Flow	217	212	198	191	187	182	186	199	194	192	184	163	155	149	144	153	6,533
Total Divertible Flow	482	470	449	428	417	403	407	419	412	402	378	342	335	338	336	347	13,652
Wyoming Allocation (43%)	207	202	193	184	179	173	175	180	178	173	163	147	144	145	144	149	5,869
Idaho Allocation (57%)	275	268	256	244	238	230	232	239	234	229	215	195	191	193	192	198	7,783

TABLE 4

DAILY DISCHARGE IN C.F.S. OF SMITHS FORK & BEAR RIVER CANALS
WITH COMPACT ALLOCATION IN CENTRAL DIVISION

SEPTEMBER 1963	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
WYOMING DIVERSIONS																																
BEAR RIVER CANALS																																
Garrett	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		7
Sights	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	3	3	3	3	3		22
Wyman East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Wyman West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Snyder	2	3	2	2	2	2	2	2	2	2	2	1	1	1	2	2	2	2	4	5	6	5	5	6	7	7	7	7	7	7		110
Rocky Point	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Cook	36	36	42	34	33	33	33	34	33	19	8	7	7	7	5	5	6	6	5	5	4	4	4	4	4	4	4	4	4	3		475
J. R. Richards	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
TRIBUTARY CANALS																																
Pine Cr. above Div.	15	15	16	15	16	16	16	16	15	16	15	15	15	16	16	16	16	16	16	15	16	16	15	16	16	16	16	16	15	16		473
Grade Creek Canal	2	2	2	2	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		56
Diamond D&C 1-Bruner	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Haggerty West-Pine Cr.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Sublette C at Thompson	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2		44
SMITHS FORK CANALS																																
Quinn-Bourne	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Button Flat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Perry Partridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Progress	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		25
Emelle	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1		60
Cooper	5	5	5	5	5	5	5	4	4	4	3	3	3	3	4	4	4	3	3	3	3	2	2	2	2	2	2	2	2	2		101
Wheelock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Covey Canal at Head	22	21	21	21	21	21	21	22	21	21	21	21	21	21	21	23	23	35	37	41	45	46	46	46	46	45	45	44	44	44		927
Covey Canal--Pine Cr.	6	6	6	6	6	6	7	7	7	7	7	9	8	8	4	4	4	5	5	5	5	6	7	6	6	5	6	6	6	6		184
Covey Canal--Spring Cr	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		136
Tanner, Hunt & Garrett	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0		52
Whites Water	17	17	15	14	11	11	10	10	9	10	15	15	15	12	9	8	11	12	17	23	24	26	26	25	24	24	23	23	22	22		499
Martin (Collett Creek)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1		13
John Bourne-Collett Cr	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1		33
Ferguson (Collett Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Olson Canal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Stoner-Nichols (So.Br)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Morgan (South Branch)	1	1	1	0	0	0	0	0	1	2	2	2	2	2	2	2	2	2	2	1	1	1	0	0	0	0	0	0	0	0		27
Cokeville Water-So.Br.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Tanner 1 (South Br)	0	0	0	0	0	0	0	0	0	5	4	2	2	3	3	3	3	4	4	4	4	4	2	0	0	0	0	0	0	0		47
Smiths Fk Canal-So.Br.	2	2	2	2	1	1	2	2	2	3	4	4	4	3	2	3	3	3	3	2	2	2	1	0	0	0	0	0	0	0		55
South Br 2-Smiths Fork	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
South Br 1-Smiths Fork	7	7	7	7	6	6	6	5	4	3	3	3	2	2	2	2	2	2	1	1	1	1	0	0	0	0	0	0	0	0		80
TOTAL WYO. DIVERSIONS	156	153	136	134	116	118	112	119	115	108	97	93	93	89	85	88	92	106	112	120	125	128	123	121	121	120	119	118	116	116		3,447
IDAHO DIVERSIONS																																
Miller Ditch	4	5	6	6	6	6	6	6	6	6	6	6	6	6	6	7	8	6	4	0	0	0	0	0	0	0	0	0	0	0		114
Nuffer Canal	9	9	10	10	10	10	10	11	11	10	10	10	10	10	10	11	13	13	13	13	11	9	8	7	6	5	5	5	5	3		279
Sorensen Ditch	8	8	9	9	9	9	9	9	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		75
Jensen Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Lloyd Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Dingle Irrig. Canal	20	20	20	20	20	20	31	39	38	38	38	38	38	38	20	4	4	4	4	4	4	4	1	0	0	0	0	0	0	0		456
Beam Crockett Canal	41	41	41	42	40	40	39	38	38	38	38	38	38	37	19	10	5	4	4	4	4	3	3	3	27	44	11	3	2	2		696
Black Otter Canal	33	33	33	33	35	32	37	40	40	40	38	40	39	40	45	54	58	61	58	60	62	53	65	54	19	17	19	19	19	18		1,193
Preston Montpelier Co.	17	17	19	19	20	20	17	18	18	19	17	18	17	17	23	30	30	15	13	20	10	9	8	8	8	8	8	4	4	10		480
Lorosco Kent Canal	0	0	0	0	0	0	0	0	0	0	0	4	6	6	7	3	11	11	11	12	4	0	0	0	0	0	0	0	0	0		81
Kent Fork Canal	4	4	4	4	4	4	4	4	3	3	3	3	2	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1		67
Pugmire Ditch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
SUBTOTAL	136	137	142	143	147	148	153	154	152	154	151	167	156	155	131	136	131	116	109	115	96	89	87	53	60	76	35	36	33	34		3,062
Rainbow Inlet Cn-Bear L.	65	58	55	56	59	62	65	53	51	54	62	77	69	71	77	115	135	160	170	177	221	212	245	240	226	203	253	221	206	176		4,350
Bear R below Stewart Dam	8	8	7	7	7	7	7	7	6	6	6	5	3	3	3	3	2	3	4	2	2	2	2	2	2	2	2	2	3	3		128
Idaho Divertible Flow	207	213	214	216	225	230	226	233	226	224	219	249	228	229	211	254	260	281	283	295	319	303	334	295	288	281	290	259	242	233		7,542
Wyoming Divertible Flow	156	153	136	134	116	118	118	118	115	108	97	93	93	89	85	88	92	106	112	120	125	128	123	121	121	120	119	118	116	116		3,447
Total Divertible Flow	363	366	350	340	341	348	345	351	341	332	316	332	321	318	296	342	352	387	395	415	444	431	457	416	409	401	399	377	358	349		10,989
Wyoming Allocation (43%)	156	157	151	146	147	147	148	151	147	143	136	143	138	137	127	147	151	166	170	178	191	185	197	179	176	172	172	162	154	150		4,726
Idaho Allocation (57%)	207	209	199	194	194	195	197	200	194	189	180	189	183	181	169	195	201	221	225	237	253	246	260	237	233	229	227	215	204	199		6,262

TABLE 5

APPENDIX A

T. J. CHRISTIANSEN & CO.
CERTIFIED PUBLIC ACCOUNTANTS
BENEFICIAL LIFE BUILDING
SALT LAKE CITY 1, UTAH

October 3, 1963

Bear River Commission
Utah State Capitol Building
Salt Lake City, Utah

Gentlemen:

In accordance with your instructions, we have examined the records and accounts of the Bear River Commission for the fiscal year ended June 30, 1963, and now submit our report thereon.

SCOPE OF EXAMINATION

Our audit included a review of the financial transactions, an examination of the statement of revenue and expenditures for the year and the budget estimates and related expenditures. The funds available at June 30, 1963, were confirmed by direct correspondence with the depository. Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. Cash receipts have been properly accounted for and all disbursements were duly authorized and appeared in order. Operational expenditures for the program are made directly by the United States Geological Survey and are set out in detail in our report. Administrative expenses in the amount of $1,382.60, were disbursed by the local office.

The results of our examination are presented herewith and include comments and explanatory detail as appropriate in the following described statements:

Exhibit "A" - Statement of revenue and expenditures for the fiscal year ended June 30, 1963.

Exhibit "B" - Statement of available revenue and appropriations thereof for the fiscal year, showing balances unexpended at June 30, 1963.

Schedule "A-1" - Statement of expenditures--stream-gauging program, allocated to the United States Geological Survey and to the Bear River Commission.

GENERAL COMMENTS

The Bear River Compact is a tri-state agreement between the signatory States of Wyoming, Idaho and Utah with respect to the development and utilization of the waters of Bear River. The Bear River Commission was organized on April 5, 1958, and by-laws adopted April 26, 1958, as an interstate administrative agency to carry out provisions of the Bear River Compact. The Commission is composed of ten Commissioners, three each with voting power, representing the States of Wyoming, Utah and Idaho, and one, the United States, without vote. All expenses are to be charged to and paid by the three States on an equal basis.

As in prior years, the Commission entered into a cooperative agreement with the Geological Survey, United States Department of the Interior, at the beginning of the year, for the operation and maintenance of a gauging-station network. The expenses pertaining to this work are shared equally by the Commission and the Geological Survey, while other expenses incurred by the United States Geological Survey, which pertain directly to the compact administration are wholly financed by the Commission. Details of the financial transactions relating to this agreement for the fiscal year ended June 30, 1963, are presented in Schedule "A-1".

In our opinion, the accompanying statements of revenue and expenditures and supplemental statement of budget appropriations and related disbursements present fairly the cash position of the Bear River Commission at June 30, 1963, and the results of the financial transactions for the period then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Very truly yours,

Exhibit "A"

BEAR RIVER COMMISSION

Statement of Revenue and Expenditures
For the Fiscal Year Ended June 30, 1963

REVENUE:			
State of Wyoming		$ 9,000.00	
State of Utah		9,000.00	
State of Idaho		9,000.00	
Sale of 1957 Chevrolet truck		300.00	
			$27,300.00
EXPENDITURES:			
Commission's portion of direct expenses of the stream-gauging program, exhibit "B":			
Personal services	$17,902.00		
Travel and subsistance	2,633.50		
General office	920.00		
Fiscal and administrative	1,209.00		
Washington office charges	2,323.00		
Miscellaneous	362.50		
Total--Schedule "A-1"		$25,350.00	
Administrative expenses:			
Stationery and postage	$ 80.00		
Treasurer's bond and audit	250.00		
Transcript of minutes	70.00		
Annual report	952.00		
Truck operation expense	30.60		
		1,382.60	
			26,732.60
EXCESS OF REVENUE OVER EXPENDITURES FOR THE FISCAL YEAR ENDED JUNE 30, 1963			$ 567.40
FUNDS AVAILABLE AT JULY 1, 1962			3,178.55
FUNDS AVAILABLE AT JUNE 30, 1963			$ 3,745.95
Expenditures as above			$26,732.60
Portion of expenditures incurred through stream-gauging program allocated and paid direct by United States Geological Survey			16,642.00
Total expenditures as per exhibit "B"			$43,374.60

Exhibit "B"

BEAR RIVER COMMISSION

Statement of Available Revenue and Appropriation Thereof
For the Fiscal Year, Showing Balances Unexpended at June 30, 1963

	Available Revenue and Budgeted Estimates of Expenditures	Revenue Expended	Balance or Deficit(-)
CASH REVENUES:			
Balance--funds on hand at July 1, 1962	$ 3,178.55	$ 3,178.55	$ -0-
Revenue receipts:			
State of Wyoming	9,000.00	9,000.00	-0-
State of Utah	9,000.00	9,000.00	-0-
State of Idaho	9,000.00	9,000.00	-0-
Sale of 1957 Chevrolet truck	300.00	300.00	-0-
	$30,478.55	$30,478.55	$ -0-
FUNDS FURNISHED DIRECT BY UNITED STATES GEOLOGICAL SURVEY	$16,642.00	$16,642.00	$ -0-
Total funds available	$47,120.55	$47,120.55	$ -0-
APPROPRIATION ACCOUNTS:			
Stream-gauging--schedule "A-1"	$33,284.00	$33,284.00	$ -0-
Personal services	6,108.00	6,108.00	-0-
Travel and subsistance	1,100.00	1,100.00	-0-
Fiscal unit charge	416.00	416.00	-0-
Washington office charge	864.00	864.00	-0-
General office expense	220.00	220.00	-0-
Printing annual report	700.00	952.00	*(252.00)
Treasurer's bond and audit	400.00	250.00	150.00
Transcribing minutes	150.00	70.00	80.00
Legal consultant	300.00	-0-	300.00
Miscellaneous	110.60	110.60	-0-
	$43,652.60	$43,374.60	$ 278.00
Unappropriated at July 1, 1962	3,178.55	-0-	3,178.55
Revenue received--unappropriated	300.00	-0-	300.00
	$47,131.15	$43,374.60	$3,756.55
Less transfer from unappropriated surplus authorized May 3, 1963-	10.60	-0-	10.60
	$47,120.55	$43,374.60	$3,745.75
BALANCE	$ -0-	$ 3,745.95	$3,745.95
FUNDS AVAILABLE AT JUNE 30, 1963		$ 3,745.95	$3,745.95

*Biennium budget for the period ending June 30, 1963, as revised, provided for a total expenditure of $1,295.00 for this category. The amount expended during the current fiscal year, $952.00, represents the entire expenditure for the biennium and therefore leaves a surplus for the entire period of $343.00.

Schedule "A-1"

BEAR RIVER COMMISSION

Statement of Expenditures--Stream-Gauging Program
Allocated to the United States Geological Survey and to the
Bear River Commission for the Fiscal Year Ended June 30, 1963

	Allocable Expenditures			Charged Direct to Bear River Commission	Total Expenses to Bear River Commission
	Total	United States Geological Survey 50%	Bear River Commission 50%		
Personal services	$23,588.00	$11,794.00	$11,794.00	$6,108.00	$17,902.00
Travel and subsistance	3,067.00	1,533.50	1,533.50	1,100.00	2,633.50
General office	1,400.00	700.00	700.00	220.00	920.00
Fiscal and administrative	1,586.00	793.00	793.00	416.00	1,209.00
Washington office charge	2,918.00	1,459.00	1,459.00	864.00	2,323.00
Miscellaneous	725.00	362.50	362.50	-0-	362.50
	$33,284.00	$16,642.00	$16,642.00	$8,708.00	$25,350.00

APPENDIX B

GAGING-STATION RECORDS

Records of streamflow for State line and other key stations are included herein. The record consists of description of the station and a table showing the daily discharge in cubic feet per second and monthly and yearly runoff in acre-feet for the 1963 water year.

The description of the station gives the location, drainage area, records available, type and history of gage, average discharge, extremes of discharge, general remarks, and a statement of cooperation where applicable. This is essentially the same data as published in annual water-supply papers of the Geological Survey.

In the table of daily discharge, the figures for the maximum day and the minimum day for each month are underlined. If the figure is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total second-foot-days for the month. The line headed "Mean" gives the average flow in cubic feet per second (second-feet) during the month. Runoff for the month is expressed in acre-feet (line-headed "Ac-ft").

Records included herein have been collected by the U. S. Geological Survey through cooperative agreement with the Bear River Commission and by the Utah Power & Light Company.

BEAR RIVER BASIN

10-0115. Bear River near Utah-Wyoming State Line

Location.--Lat 40°56', long 110°51', in SE¼ sec.30, T.3 N., R.10 E., on left bank just downstream from West Fork, 2.8 miles upstream from Utah-Wyoming State line.

Drainage area.--176 sq mi.

Records available.--July 1942 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 7,965 ft (from river-profile map).

Average discharge.--21 years, 181 cfs (131,000 acre-ft per year).

Extremes.-- Maximum discharge during year, 1,180 cfs June 14 (gage height, 2.94 ft); minimum, 21 cfs Nov. 6, 8. 1942-63: Maximum discharge, 2,800 cfs June 6, 1957 (gage height, 4.27 ft); minimum determined, 16 cfs Apr. 11, 1961, Nov. 6, 1954, Nov. 1, 1955, Oct. 30, 1956.

Remarks.--Records good except those for periods of no gage-height record or ice effect, which are poor. Two diversions above station for irrigation of about 200 acres above and 2,800 acres below station.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	32	40	30		31	40	76	833	284		59
2	40	32	40	29		b33	36	78	808	279		56
3	40	32	38	(*)		b33	40	94	792	279	58	52
4	40	32	36		(*)	b33	36	126	964	270		47
5	90	32					36	159	674	252	70	47
6	64	32			35		38	202	586	231	60	59
7	51	30					44	252	*490	210	78	74
8	46	29				(*)	47	*279	415	222	76	69
9	50	30					44	348	433	218	74	69
10	47	32					40	421	537	199	73	*56
11	42	30	*b35				40	398	503	180	78	54
12	*38	31				33	42	268	550	156	80	51
13	36	30					52	286	681	137	69	59
14	36	*35					71	354	1,000	126	*61	80
15	38	38					74	418	926	*116	61	61
16	38	28		30	30		55	496	751	106	59	61
17	38	38					50	564	783	110	64	56
18	38	40	35				44	644	945	86	66	73
19	38	b38	34			(*)	44	743	833	84	59	68
20	38	42				b33	42	759	833	96	61	73
21	36	42			(*)	32	42	*833	*800	94	58	71
22	36	38			b30	32	42	841	728	123	59	73
23	36	38	b35	(*)	b30	33	*40	894	681	88	73	66
24	35	40			32	32	42	856	600	78	59	62
25	34	40			32	b32	46	833	496	68	59	61
26	34	36			32	32	55	751	456	66	56	59
27	33	38			32	33	54	816	421		54	56
28	34	36	b33		33	40	47	816	404		54	65
29	33	35			----------	44	51	816	384	62	51	54
30	33	36			----------	36	59	833	312		51	52
31	33	----------			----------	40	----------	792	----------		55	----------
Total	1,263	1,039	1,086	929	901	1,046	1,395	16,057	19,603	4,470	1,970	1,842
Mean	40.7	34.6	35.0	30.0	32.2	33.7	46.5	518	653	144	63.5	61.4
Ac-ft	2,510	2,060	2,150	1,840	1,790	2,070	2,770	31,850	38,880	8,870	3,910	3,650

Calendar year 1962 Max 1,630 Min 28 Mean 216 Ac-ft 156,600
Water year 1962-63 Max 1,000 Min 28 Mean 141 Ac-ft 102,400

Peak discharge (base, 1,100 cfs).--June 14 (0900) 1,180 cfs (2.94 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Jan. 3 to Feb. 21, Mar. 5-19, July 27 to Aug. 8.

10-0157. Sulphur Creek above reservoir, near Evanston, Wyo.

Location.--Lat 41°09', long 110°48', in SW¼ sec.35, T.14 N., R.119 W., on right bank 1½ miles downstream from Willow Creek, 2 miles upstream from Sulphur Creek Dam, and 11½ miles southeast of Evanston.

Drainage area.--64 sq mi, approximately.

Records available.--December 1957 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 7,170 ft (from river-profile map).

Average discharge.--5 years (1958-63), 7.14 cfs (5,170 acre-ft per year).

Extremes.--Maximum discharge during year, 211 cfs Apr. 29 (gage height, 3.81 ft); maximum gage height, 4.86 ft Feb. 1 (backwater from ice); no flow Aug. 2.
1957-63: Maximum discharge, 560 cfs Apr. 18, 1958 (gage height, 5.07 ft), from rating curve extended above 100 cfs by logarithmic plotting; maximum gage height, 5.56 ft Apr. 8, 1962 (backwater from ice); no flow at times in each year.

Remarks.--Records good except those for periods of ice effect, which are poor. Several diversions for irrigation above station.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.4	0.4		20		6	55	6.8	0.4	0.1	0.3
2	.3	.4	.4		15		6	34	8.4	.4	0	.2
3	.3	.4	.4		15		4.4	25	19	.4	.1	.2
4	.3	.4	.5		14		7.1	26	42	.5	.6	.1
5	.5	.4	.5		10		11	29	27	.4	.4	.1
6	.5	.4	.4		9		21	24	29	.5	.3	.2
7	.4	.4	.3		8		36	25	25	1.9	.3	.4
8	.4	.4	.3*		7		45	*33	19	7.7	.3	.3
9	.3	.4	.3		6		29	25	17	9.0	.4	.2
10	.3	.4	.3		5		23	29	17	5.7	.3	**.2
11	.3	.4	*.3			3	24	29	17	3.0	.3	.2
12	**.3	.4	.2				37	17	14	2.0	.3	.2
13	.3	.4	.3				35	10	13	1.6	.2	.2
14	.3	*.4	.3				24	8.0	56	.9	.2	.3
15	.4	.5		0.4	4		22	7.7	44	*.4	**.2	.3
16	.4	.5					17	18	69	.3	.1	.3
17	.4	.5					22	24	26	.3	.1	.3
18	.4	.5					15	*22	51	.3	.2	.4
19	.4	.5					15	23	25	.2	.2	1.4
20	.4	.6					13	*21	17	.2	.3	.4
21	.4	.6					12	16	*13	.2	.3	.3
22	.4	.6					12	16	9.0	.3	.4	.3
23	.4	.6	.3	(*)			*12	18	8.7	.2	.4	.3
24	.4	.6					13	17	8.9	.2	.2	.3
25	.4	.5			3		17	15	8.5	.2	.2	.3
26	.4	.6			(*)	(*)	55	14	1.6	.1	.1	.3
27	.4	.6					55	10	.9	.1	.1	.3
28	.4	.5					30	9.0	.6	.1	.1	.3
29	.4	.4					71	7.7	.5	.1	.1	.3
30	.4	.4					96	8.7	.5	.1	.1	.3
31	.4							8.4		.1	.2	
Total	11.6	13.8	10.0	12.4	173	186	785.5	624.5	581.1	37.8	7.1	9.2
Mean	0.37	0.46	0.32	0.4	6.2	4.1	26.2	20.1	19.4	1.22	0.23	0.31
Ac-ft	23	27	20	25	343	250	1,560	1,240	1,150	75	14	18

Calendar year 1962 Max 206 Min 0 Mean 10.7 Ac-ft 7,710
Water year 1962-63 Max 96 Min 0 Mean 6.55 Ac-ft 4,740

* Discharge measurement made on this day.
** Field estimate made on this day.
Note.--Stage-discharge relation affected by ice Dec. 15 to Apr. 2 (no gage-height record Jan. 14-22, Feb. 11-18, 24-26).

BEAR RIVER BASIN

10-0159. Sulphur Creek below reservoir, near Evanston, Wyo.

Location.--Lat 41°09', long 110°49', in SE¼SE¼ sec.28, T.14 N., R.119 W., on left bank 400 ft downstream from Sulphur Creek Dam, 6.3 miles upstream from mouth, and 10½ miles southeast of Evanston.

Drainage area.--68 sq mi, approximately.

Records available.--March 1958 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 7,110 ft (from river-profile map).

Extremes.--Maximum discharge during year, 66 cfs June 17 (gage height, 2.53 ft); no flow most of year.
1958-63: Maximum discharge, 164 cfs June 29, 1959 (gage height, 3.67 ft); no flow at times in each year.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by Sulphur Creek Reservoir (capacity, 4,600 acre-ft) completed December 1957. Records herein do not include flow over spillway of the dam.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14							0	8.4	0	49	14
2	14							0	8.8	0	42	14
3	5.6							4	8.8	0	32	14
4	0								9.4	0	23	14
5	0								21	0	29	10
6	0								29	0	34	*8.4
7	0								29	0	34	9.1
8	0								31	0	46	8.8
9	0								28	0	42	8.4
10	0								28	0	30	*8.1
11	0		(*)						29	0	27	4.1
12	*0								29	0	25	0
13	0								26	0	23	0
14	0	(*)						7.5	16	0	24	0
15	0								38	*0	*24	0
16	0								63	0	23	0
17	0								63	0	24	0
18	0								64	0	24	0
19	0								64	2.8	24	0
20	0								*63	4.4	24	0
21	0							(*)	63	13	25	0
22	0								64	32	25	0
23	0			(*)			(*)		48	45	25	0
24	0								3.5	44	26	0
25	0								.8	*49	26	0
26	0				(*)	(*)		8.4	.3	51	22	0
27	0							8.4	.1	45	20	0
28	0							8.1	.1	43	20	0
29	0				---			8.4	0	43	20	0
30	0				---			8.4	0	*47	16	0
31	0	---			---		---	8.4	---	53	14	---
Total	33.6	0	0	0	0	0	0	219.1	838.2	472.2	842	112.9
Mean	1.08	0	0	0	0	0	0	7.07	27.9	15.2	27.2	3.76
Ac-ft	67	0	0	0	0	0	0	435	1,660	937	1,670	224

Calendar year 1962: Max 72 Min 0 Mean 13.0 Ac-ft 9,410
Water year 1962-63: Max 64 Min 0 Mean 6.90 Ac-ft 4,990

* Discharge measurement or observation of no flow made on this day.

BEAR RIVER BASIN

10-0195. Chapman Canal at State Line, near Evanston, Wyo.

Location.--Lat 41°24', long 111°02', in SE¼ sec.36, T.17 N., R.121 W., on left bank at highway bridge, 6½ miles downstream from headgates and 10 miles northwest of Evanston.

Records available.--April 1942 to September 1963 (prior to October 1944 irrigation seasons only). Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,570 ft (from river-profile map). Prior to Oct. 11, 1946, staff gage and Oct. 11, 1946, to Aug. 2, 1961, water-stage recorder at site 20 ft downstream at same datum.

Average discharge.--19 years (1944-63), 18.6 cfs (13,470 acre-ft per year).

Extremes.--1942-63: Maximum daily observed, 129 cfs Apr. 14, 1946; no flow at times each year.

Remarks.--Records fair except those Mar. 1-25 and Apr. 23 to May 19, which are poor. Canal diverts water from Bear River in NW¼ sec.36, T.16 N., R.121 W. Many diversions above station for irrigation in Wyoming. Flow at station is for storage in Neponset Reservoir, Utah, and irrigation in Saleratus basin, Utah.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.7	13			0		72	15	90	31	0	5.3
2	5.2	12		(*)	0		69	14	93	31	0	4.3
3	5.2	12			0	a15	58	13	89	20	0	3.5
4	6.6	9.8			0		55	13	92	14	0	1.0
5	8.4	9.2			0		61	13	90	12	0	1.3
6	19	9.5			0		67	13	86	4.5	0	1.3
7	24	10			0		81	13	*89	1.5	0	3.7
8	20	10			0		104	13	84	0	0	14
9	19	10			0		106	12	76	0	.6	9.2
10	*18	12	(*)		0		102	12	74	.4	13	6.6
11	17	14			0		89	11	84	4.3	10	*4.3
12	16	14			0		86	10	79	3.3	2.5	4.7
13	13	13			0		92	9.8	84	5.9	2.2	3.1
14	12	13			0		90	10	109	5.2	1.1	3.7
15	12	*16			0		93	10	105	2.3	2.1	8.2
16	14	18			0	a45	95	9.8	102	*1.1	0	8.2
17	14	18			0		82	9.5	87	0	0	6.6
18	14	17			0		63	a20	86	0	0	9.8
19	11	17			0		24	a50	89	0	12	14
20	12	21			0		24	*84	*83	0	3.5	31
21	12	12			0		24	77	95	0	6.6	22
22	10	0		(*)	0		24	66	100	0	5.9	19
23	9.0	0			a7		13	65	97	0	9.8	20
24	12	0		(*)	a15		*22	72	87	0	14	14
25	16	0			*a15	(*)	22	69	84	0	10	10
26	16	0			16	56	16	69	69	0	2.1	7.3
27	15	0			15	57	17	66	58	0	0	3.9
28	15	0			13	68	15	70	49	0	0	2.9
29	15	0			----------	66	15	81	39	0	0	3.3
30	14	0			----------	69	16	97	35	0	0	3.1
31	14	----------			----------	72	----------	90	----------			----------
Total	412.1	279.5	0	0	81	1,363	1,697	1,177.1	2,484	136.5	95.4	249.3
Mean	13.3	9.32	0	0	2.9	44.0	56.6	36.0	82.8	4.40	3.08	8.31
Ac-ft	817	554	0	0	161	2,700	3,370	2,330	4,930	271	189	494

Calendar year 1962: Max 103 Min 0 Mean 20.8 Ac-ft 15,080
Water year 1962-63: Max 109 Min 0 Mean 21.8 Ac-ft 15,820

* Discharge measurement or observation of no flow made on this day.
a No gage-height record.

BEAR RIVER BASIN

10-0201. Bear River above reservoir, near Woodruff, Utah

Location.--Lat 41°26'05", long 111°01'00", in NW¼NW¼ sec.29, T.17 N., R.120 W., in Wyoming on right bank 9.3 miles upstream from Woodruff Narrows Dam and 10 miles southeast of Woodruff.

Drainage area.--780 sq mi, approximately.

Records available.--October 1961 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 6,455 ft (from river-profile map).

Extremes.--Maximum discharge during year, 1,370 cfs June 16 (gage height, 4.37 ft); maximum gage height, 4.69 ft Feb. 2 (backwater from ice); minimum discharge, 1.4 cfs Aug. 1,2.
1961-63: Maximum discharge, 1,420 cfs May 10, 1962 (gage height, 4.44 ft); maximum gage height, 5.68 ft Mar. 28, 1962 (backwater from ice jam); minimum discharge, that of Aug. 1,2, 1963.

Remarks.--Records good except those for period of ice effect, which are fair. Diversions for irrigation of about 43,500 acres above station.

Rating table, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.9	0.4	2.1	170
1.0	2.3	2.5	318
1.1	6.0	3.0	548
1.2	12	4.0	1,130
1.5	43	4.3	1,320
1.8	92		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.5	8.6	51		100	55	61	331	452	52	1.5	3.0
2	5.3	8.6	68	(*)	600	55	68	273	500	40	1.7	2.3
3	8.6	8.6	63		400	50	47	234	510	29	1.7	3.8
4	11	8.0	55	25	250	40	40	250	614	25	2.1	3.4
5	12	8.0	54		*180	28	42	269	772	22	2.1	3.0
6	23	7.3	48		150		52	306	534	18	2.1	3.0
7	46	7.3	52		120		77	343	*462	18	2.1	3.4
8	23	7.3	51		90	25	161	*419	352	18	2.1	3.4
9	16	8.6	48		75		199	462	281	18	2.7	3.4
10	12	9.2	50				173	519	285	15	2.7	*5.3
11	13	12	*73				125	568	343	13	4.5	4.5
12	*13	18	61		65		110	495	314	13	4.5	3.8
13	12	18	58			20	123	414	343	11	3.4	4.2
14	8.6	18	51			(*)	120	414	588	9.2	3.0	4.9
15	6.6	*22	40				133	476	1,090	8.6	*3.8	4.9
16	6.0	28	43		(*)	20	161	519	1,290	*7.3	3.0	7.3
17	6.0	30	43			20	110	553	922	6.6	3.0	7.3
18	8.0	22	50		60	21	97	543	916	6.0	3.0	8.0
19	11	32	51			*21	113	608	1,050	5.6	2.7	8.0
20	11	25	55	20		24	136	661	*796	5.3	4.2	7.3
21	9.9	54	48			22	141	*716	722	4.9	3.8	9.2
22	11	65	37			30	128	705	624	4.5	3.0	8.6
23	11	56	47	(*)		77	*115	710	524	4.5	3.0	4.9
24	13	50	43			82	110	694	436	4.5	3.0	4.9
25	11	60	37		55	47	125	661	331	3.4	3.8	4.5
26	8.0	61	34		(*)	*40	176	573	234	2.7	3.8	4.9
27	7.3	63				41	298	510	*147	2.7	3.0	4.2
28	7.3	63				52	258	524	99	2.7	2.3	3.4
29	7.3	60	30		-------	61	246	490	75	2.3	2.3	2.7
30	8.0	50			-------	60	298	476	63	1.9	2.1	2.1
31	8.0	-------			-------	65	-------	466	-------	1.7	3.0	-------
Total	358.4	890.5	1,461	655	3,095	1,136	4,043	15,182	15,671	376.4	89.0	141.6
Mean	11.6	29.7	47.1	21.1	111	36.6	135	490	522	12.1	2.87	4.72
Ac-ft	711	1,770	2,900	1,300	6,140	2,250	8,020	30,110	31,080	747	177	281

Calendar year 1962 Max 1,360 Min 1.5 Mean 224 Ac-ft 162,300
Water year 1962-63 Max 1,290 Min 1.5 Mean 118 Ac-ft 85,490

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 27 to Mar. 17 (no gage-height record Jan. 12-23).

BEAR RIVER BASIN

10-0203. Bear River below reservoir, near Woodruff, Utah

Location.--Lat 41°30'20", long 111°00'50", in NW¼NW¼ sec.32, T.18 N., R.120 W., in Wyoming, on right bank, 1,100 ft below Woodruff Narrows Dam, 1.6 miles upstream from Salt Creek, 5.4 miles upstream from Wyoming-Utah State line, and 7.7 miles east of Woodruff.

Drainage area.--810 sq mi, approximately.

Records available.--October 1961 to September 1963.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 6,400 ft (from river-profile map). Prior to Sept. 26, 1962, at site 175 ft upstream at same datum.

Extremes.--Maximum discharge during year, 1,120 cfs May 22 (gage height, 6.20 ft); minimum daily, 0.9 cfs Sept. 25-30.
1961-63: Maximum discharge, 1,530 cfs May 10, 1962 (gage height, 6.32 ft); no flow July 4, 5, 1962.

Remarks.--Records excellent. Flow regulated by Woodruff Narrows Reservoir beginning January 1962 (capacity, 28,000 acre-ft). Diversions for irrigation of about 43,500 acres above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31		Apr. 1 to Sept. 30			
0.5	2.0	2.3	0.7	3.2	32
.6	4.0	2.4	1.4	3.8	100
.8	10	2.5	2.3	4.5	257
.9	14	2.6	3.7	5.0	457
		2.7	5.8	6.0	1,000
		2.9	13	6.2	1,120

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.5	8.5	10	4.3	9.4	9.4	10	12	522	435	16	1.0
2	5.8	8.5	10	4.3	9.4	9.4	10	12	522	431	16	1.0
3	5.8	8.5	10	4.6	9.7	9.1	10	20	522	426	16	11
4	5.8	8.8	10	4.6	9.7	9.1	10	*55	522	422	15	24
5	5.8	8.8	10	*7.9	10	9.1	10	111	527	417	12	18
6	5.8	8.8	10	12	10	9.1	10	161	527	413	12	14
7	5.5	9.1	10	12	10	9.1	10	227	527	409	12	12
8	5.5	9.4	10	12	10	9.1	10	288	532	404	12	10
9	5.8	9.4	10	12	10	9.1	10	*525	532	400	11	11
10	*5.8	9.4	10	*11	10	9.1	10	829	527	396	11	12
11	*7.9	9.4	*10	9.4	11	9.1	10	732	485	240	11	12
12	10	9.4	10	9.7	11	9.1	11	688	417	54	11	12
13	10	9.7	10	9.7	11	9.1	11	607	417	44	*11	12
14	9.7	9.7	10	9.7	11	9.1	11	435	417	21	11	12
15	9.7	*9.7	10	9.7	11	9.1	11	435	422	20	11	11
16	9.7	9.7	10	9.7	11	9.1	12	*435	426	*20	121	11
17	9.4	10	10	9.7	11	9.1	12	439	435	19	166	11
18	9.1	10	10	9.7	11	9.1	11	444	439	19	161	11
19	9.1	10	10	9.7	11	9.1	11	527	439	19	161	11
20	8.8	9.7	6.4	9.7	11	9.1	11	*704	*444	18	159	11
21	8.8	9.7	3.4	9.7	11	9.1	11	*864	448	17	159	11
22	8.8	9.7	4.0	9.7	11	9.1	11	1,020	453	17	159	6.5
23	8.8	9.7	3.8	9.7	11	9.1	*11	1,110	453	16	156	1.0
24	8.5	9.7	3.8	9.7	11	9.1	11	1,100	457	16	156	1.0
25	8.5	9.7	3.8	9.7	11	9.1	12	1,050	453	16	46	.9
26	8.5	9.7	4.0	9.7	*10	9.1	12	958	453	16	1.0	.9
27	8.5	9.7	4.0	9.7	9.4	9.4	12	952	448	16	1.0	.9
28	8.5	9.7	4.3	9.7	9.4	9.4	12	905	448	16	1.0	.9
29	8.2	10	4.3	9.7	---	9.4	12	777	444	16	1.0	.9
30	8.2	10	4.3	9.7	---	9.4	12	766	439	16	1.0	.9
31	8.2	---	4.3	9.4	---	9.7	---	613	---	16	1.0	---
Total	244.0	284.1	240.4	287.8	292.0	284.5	327	17,801	14,097	4,805	1,638.0	252.9
Mean	7.87	9.47	7.75	9.28	10.4	9.18	10.9	574	470	155	52.8	8.43
Ac-ft	484	564	477	571	579	564	649	35,310	27,960	9,530	3,250	502

Calendar year 1962 Max 1,510 Min 0 Mean 213 Ac-ft 154,300
Water year 1962-63 Max 1,110 Min 0.9 Mean 111 Ac-ft 80,440

* Discharge measurement made on this day.

BEAR RIVER BASIN

10-0265. Bear River near Randolph, Utah

Location.--Lat 41°48', long 111°06', in SE¼NE¼ sec.7, T.12 N., R.8 E., on left bank 3.5 miles upstream from Twin Creek, 4.8 miles upstream from Utah-Wyoming State line, and 11 miles northeast of Randolph.

Drainage area.--1,640 sq mi, approximately.

Records available.--October 1943 to September 1963. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,205 ft (from river-profile map).

Average discharge.--20 years, 175 cfs (126,700 acre-ft per year).

Extremes.--Maximum discharge during year, 383 cfs June 18 (gage height, 4.17 ft); minimum, 8.8 cfs Oct. 24, Aug. 24 to Sept. 5.
1943-63: Maximum discharge, 2,660 cfs May 8, 1952 (gage height, 8.80 ft); minimum, 1.6 cfs Nov. 12, 1961.

Remarks.--Records good except those for periods of ice effect, which are poor. Diversions for irrigation of about 94,500 acres above station. Flow regulated by Woodruff Narrows Reservoir beginning January 1962 (capacity 28,000 acre-ft).

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.2	32			150	46	21	25	295	201	44	8.8
2	9.2	32			250	45	22	25	274	261	41	8.8
3	9.6	32	30	14	160	43	23	24	242	228	40	8.8
4	9.6	32			140	41	23	23	246	206	39	8.8
5	12	32			125	38	23	20	253	201	39	8.8
6	18	32			110	37	29	18	265	201	39	11
7	12	31			95	36	33	17	*242	209	37	27
8	11	32	25		85	34	29	17	220	199	37	11
9	12	34			75	32	25	17	204	215	48	*11
10	*12	36			70	31	25	17	206	283	68	11
11	12	36			70	31	25	20	224	250	36	11
12	13	37	(*)		70	29	25	75	257	229	35	11
13	14	*36			*68	27	26	75	272	210	33	11
14	13	36			65	25	25	88	269	170	34	11
15	13	37			64	25	25	71	272	146	25	11
16	13	38	17		62	22	24	39	308	*131	12	18
17	11	39		18	60	23	22	27	328	115	9.2	20
18	10	40			59	22	21	20	373	99	9.6	11
19	10	34			58	22	22	14	*367	87	9.6	11
20	9.6	48			57	22	24	13	307	78	9.6	9.6
21	9.6	39			55	21	28	16	276	73	*9.2	31
22	10	35		(*)	54	14	28	56	253	70	9.2	41
23	9.6	32			53	27	26	122	226	66	9.2	41
24	8.8	36			52	28	*28	167	206	60	8.8	41
25	17	35	14		*52	*20	25	*183	197	59	8.8	41
26	32	33			51	18	26	199	195	57	8.8	41
27	32	33			50	20	25	224	190	54	8.8	36
28	32	34			48	21	26	246	192	52	8.8	34
29	32	36			----------	26	29	305	190	50	8.8	32
30	32	34		20	---------	22	26	284	174	48	8.8	31
31	32	----------		30	---------	21	----------	282	----------	45	8.8	---------
60												
Total	480.2	1,050	599	594	2,308	869	750	2,727	7,523	4,332	743.0	608.6
Mean	15.5	35.0	19.3	19.2	82.4	28.0	25.0	88.0	251	140	24.0	20.3
Ac-ft	952	2,080	1,190	1,180	4,580	1,720	1,490	5,410	14,920	8,590	1,470	1,210

Calendar year 1962 Max 1,780 Min - Mean 205 Ac-ft 147,200
Water year 1962-63 Max 373 Min 8.8 Mean 61.9 Ac-ft 44,790

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 1 to Mar. 9.

BEAR RIVER BASIN

10-0285. Bear River below Pixley Dam, near Cokeville, Wyo.

Location.--Lat 41°56'20", long 110°59'05", in SE¼SE¼ sec.25, T.23 N., R.120 W., 800 ft downstream from Pixley Dam, 11 miles south of Cokeville, and 17.5 miles downstream from Twin Creek.

Drainage area.--2,040 sq mi, approximately.

Records available.--October 1941 to November 1943 (published as Bear River near Cokeville), October 1952 to September 1956, May 1958 to September 1963 (irrigation seasons only). Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,135 ft (from river-profile map). Oct. 31, 1941, to Nov. 30, 1943, at site 200 ft downstream at different datum.

Average discharge.--6 years (1941-43, 1952-56), 137 cfs (99,180 acre-ft per year).

Extremes.--Maximum discharge during season, 388 cfs July 5 (gage height, 4.88 ft); minimum daily recorded, 0.9 cfs May 11, 12.
1941-43, 1952-56, 1958-63: Maximum daily discharge, 2,300 cfs Mar. 25, 1956; minimum daily recorded, 0.3 cfs Aug. 21, 1961.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Natural flow of stream affected by diversions for irrigation and return flow from irrigated areas. No diversion between station and Collett Creek Branch of Smiths Fork.

Discharge, in cubic feet per second, May to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								3.2	22	140	47	30
2								2.8	41	111	46	27
3								1.6		108	48	26
4								1.6		165	48	26
5								1.6		344	49	26
6								1.5		278	60	14
7								1.5		265	65	19
8								1.3	a60	256	57	22
9	†28							1.2		258	57	21
10								1.1		265	76	21
11								.9		282	74	21
12								.9		263	58	21
13								1.1		242	57	21
14								1.3		217	55	21
15								1.3	41	186	54	23
16								1.7	43	128	45	27
17								2.2	42	*137	35	32
18								2.2	*46	105	30	37
19								2.6	57	90	28	32
20								2.4	80	95	26	29
21								2.2	83	85	*24	28
22								*2.2	72	80	24	46
23								2.0	57	76	23	58
24								2.4	34	54	24	58
25								3.6	23	60	26	57
26								4.3	12	56	27	57
27								6.4	7.0	54	28	56
28								7.8	5.5	54	28	52
29								4.9	4.6	56	29	48
30								4.9	75	49	29	46
31								7.8		48	29	
Total								82.3	1,465.1	4,607	1,307	1,002
Mean								2.65	48.8	149	42.2	33.4
Ac-ft								163	2,910	9,140	2,590	1,990

Calendar year	: Max	Min	Mean	Ac-ft		
The season	: Max -	Min -	Mean -	Ac-ft	16,790	

* Discharge measurement made on this day.
† Result of discharge measurement.
a No gage-height record.

BEAR RIVER BASIN

10-0320. Smiths Fork near Border, Wyo.

Location.--Lat 42°17', long 110°52', in NW¼ sec.33, T.27 N., R.118 W., on left bank 4½ miles upstream from Howland Creek, 6 miles downstream from Hobble Creek, and 12 miles northeast of Border.

Drainage area.--165 sq mi.

Records available.--May 1942 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 6,650 ft (from topographic map). Prior to Oct. 16, 1945, at site 0.8 mile downstream at different datum.

Average discharge.--21 years, 189 cfs (136,800 acre-ft per year).

Extremes.--Maximum discharge during year, 728 cfs May 26 (gage height, 3.52 ft); maximum gage height, 3.96 ft Feb. 1 (backwater from ice); minimum discharge, 47 cfs Mar. 4.
1942-63: Maximum discharge, 1,500 cfs June 7, 1957 (gage height, 4.56 ft); minimum recorded, 35 cfs Mar. 21, 1955, result of freezeup.

Remarks.--Records good except those for periods of ice effect, which are fair. One diversion for irrigation of about 200 acres above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 1-10, Feb. 16 to Mar. 2)

1.5	49	2.7	345
1.8	83	3.0	471
2.2	169	4.0	1,060

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	97	80	b70		b110	57	97	161	627	361	169	133
2	97	79	b72		b95	56	89	147	621	353	166	124
3	96	79	75		86	b56	82	147	627	345	161	117
4	96	79	b73		79	b56	78	184	621	329	161	113
5	99	79	73		76	b56	76	239	594	322	161	113
6	97	79	73		76	b55	82	306	578	310	158	113
7	94	76	73		75	b55	93	345	542	302	161	117
8	94	76	75		68	58	89	374	522	302	181	119
9	*93	76	74		66	59	86	*370	517	291	175	113
10	93	78			b65	59	83	357	557	283	178	111
11	91	75			b64	58	80	394	547	276	164	*109
12	91	78	(*)		b63	59	80	341	547	268	156	107
13	91	76	b72		b62	b58	93	306	557	257	153	111
14	91	76			b61	58	105	322	616	250	147	111
15	94	78			b60	60	115	357	656	243	145	109
16	91	*74		b60	b60	57	99	378	610	236	142	142
17	89	76			b60	60	91	428	594	*229	142	121
18	88	74	69		59	58	91	467	567	225	140	113
19	88	b72	69		59	58	86	494	*557	222	137	107
20	88	b74	69		59	58	86	499	547	219	137	103
21	88	b74	b69		56	59	83	532	567	212	133	113
22	86	74	69		58	63	82	*542	527	206	*137	103
23	86	b72			58	68	80	567	485	206	140	97
24	86	73		(*)	57	69	80	667	476	199	133	94
25	86	74			56	65	*80	697	484	196	128	94
26	86	74	b65		57	69	91	679	441	190	128	93
27	85	73			*58	*73	113	679	428	190	126	93
28	82	73			56	93	103	656	415	187	124	91
29	82	73			------	94	113	644	394	181	121	89
30	80	b71			------	89	128	616	378	178	121	89
31	80	------			------	94	------	616	------	175	128	------
Total	2,765	2,265	2,162	1,860	1,859	1,987	2,734	13,511	16,149	7,743	4,553	3,262
Mean	89.8	75.5	69.7	60	66.4	64.1	91.1	436	538	250	147	109
Ac-ft	5,520	4,490	4,290	3,690	3,690	3,940	5,420	26,800	32,030	15,360	9,030	6,470

Calendar year 1962: Max 1,040 Min - Mean 230 Ac-ft 166,700
Water year 1962-63: Max 697 Min - Mean 167 Ac-ft 120,700

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

BEAR RIVER BASIN

10-0395. Bear River at Border, Wyo.

Location.--Lat 42°11', long 111°03', in NE¼NE¼ sec.15, T.14 S., R.46 E., in Idaho, on left bank a quarter of a mile west of Wyoming-Idaho State line, half a mile west of Border, and 2.1 miles upstream from Thomas Fork.

Drainage area.--2,490 sq mi, approximately.

Records available.--October 1937 to September 1963.

Gage.--Water-stage recorder. Datum of gage is 6,051.63 ft above mean sea level, unadjusted.

Average discharge.--26 years, 383 cfs (277,300 acre-ft per year).

Extremes.--Maximum discharge during year, 904 cfs June 17 (gage height, 4.10 ft); maximum gage height, 4.22 ft Feb. 4 (backwater from ice); minimum daily discharge, 80 cfs Jan. 14.
1937-63: Maximum discharge, 3,680 cfs May 11, 1952 (gage height, 8.69 ft); minimum daily, 30 cfs Aug. 18-22, 1940.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diversions for irrigation of about 122,000 acres above station.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 26 to May 4)

1.0	70	2.2	281
1.1	82	3.0	484
1.2	96	4.2	900
1.5	144		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	162	165	110	230	193	173	132	496	462	167	146
2	148	153	175	110	250	184	180	153	526	455	153	149
3	136	149	165	110	450	175	158	151	599	408	146	153
4	134	149	170	115	600	160	146	144	733	403	148	155
5	141	148	180	125	500	170	141	158	733	470	149	149
6	144	151	160	120	420	160	141	190	780	520	148	146
7	146	158	170	125	370	129	141	251	720	484	164	153
8	148	155	160	120	330	124	157	285	680	470	186	157
9	*139	155	165	120	310	122	160	*312	640	470	186	158
10	136	158	155	110	280	114	163	314	600	464	175	155
11	134	160	145	105	280	111	141	317	659	449	180	*162
12	134	162	140	95	280	108	134	336	629	470	186	157
13	132	164	*135	85	280	105	127	314	616	441	164	157
14	134	164	125	60	246	101	121	301	663	419	169	164
15	139	*169	125	67	215	116	130	305	836	382	169	167
16	142	171	135	86	205	106	137	294	868	336	162	195
17	144	162	145	90	200	114	127	283	888	298	155	216
18	144	164	155	95	200	119	125	301	*886	*284	146	203
19	144	153	160	100	200	113	119	328	813	270	141	199
20	141	160	155	100	210	104	121	355	798	257	*137	184
21	142	180	145	100	225	111	125	355	828	266	130	201
22	141	184	150	100	210	127	117	*348	828	272	127	195
23	141	171	145		190	146	111	362	754	266	130	186
24	139	155	130		210	153	108	419	676	255	127	195
25	141	167	90		215	130	*104	506	596	224	121	191
26	141	166	100	*105	218	124	92	538	580	210	110	188
27	136	173	110		212	*130	99	542	593	201	117	184
28	141	169	120		*199	148	122	526	520	195	122	180
29	148	166	120	115	---------	190	130	496	475	189	127	173
30	151	155	120	120	---------	196	132	480	441	170	129	164
31	162	---------	115	150	---------	166	---------	481	---------	160	———	---------
Total	4,367	4,853	4,450	3,298	7,739	4,237	3,972	10,279	20,484	10,665	4,610	5,191
Mean	142	162	144	106	276	137	132	332	682	344	149	173
Ac-ft	8,700	9,630	8,830	6,540	15,350	8,400	7,880	20,390	40,630	21,150	9,140	10,300

Calendar year 1962 Max 3,290 Min - Mean 511 Ac-ft 370,100
Water year 1962-63 Max 886 Min 80 Mean 231 Ac-ft 166,900

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 30 to Feb. 25, Mar. 4-6. No gage-height record June 6-10.

BEAR RIVER BASIN

10-0460. Rainbow inlet canal near Dingle, Idaho

Location.--Lat 42°13'00", long 111°17'30", in SW¼ sec.3, T.14 S., R.44 E., on left bank 1½ miles west of Dingle and 1-3/4 miles downstream from headworks at Stewart Dam.

Records available.--January 1922 to September 1963. Monthly discharge only prior to October 1945, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,950 ft (from topographic map). Prior to Oct. 1, 1923, at site 300 ft downstream at different datum. Oct. 1, 1923, to Oct. 27, 1944, at site half a mile downstream at different datum.

Average discharge.--41 years, 295 cfs (213,600 acre-ft per year).

Extremes.--Maximum discharge during year, 671 cfs June 16 (gage height, 3.15 ft); minimum daily, 14 cfs Apr. 28.
1922-63: Maximum discharge, 4,180 cfs May 7, 1952 (gage height, 8.62 ft); minimum daily, 1 cfs on several days in 1931, 1934, 1940, 1948.

Remarks.--Records good except for periods of ice effect, which are fair. Discharge measurements generally made three to six times a week. Canal diverts from Bear River at Stewart Dam in NE¼ sec.34, T.13 S., R.44 E., for storage in Bear Lake. At times flow in canal is augmented by surplus water from Black Otter Slough entering at the station and by seepage and wastage from irrigation lands on both sides of canal.

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	153	128	81	119	208	197	43	212	322	106	64
2	99	149	143	72	149	217	190	35	217	322	90	67
3	124	145	173	72	190	b200	210	30	231	328	89	66
4	130	141	163	74	325	b175	197	37	301	309	86	68
5	136	147	165	78	420	b165	188	37	381	283	86	70
6	145	141	149	89	441	171	184	40	387	309	87	68
7	139	143	153	90	420	b165	182	47	456	347	89	66
8	138	147	151	87	402	157	190	81	468	322	114	62
9	143	145	141	79	364	139	195	138	441	314	157	61
10	143	143	149	73	347	132	197	195	432	339	159	66
11	151	145	143	72	b305	119	192	180	438	317	153	61
12	149	147	132	57	b265	117	184	167	441	320	151	74
13	151	145	112	51	222	114	171	184	420	353	161	68
14	149	143	101	48	231	112	169	147	423	328	155	72
15	149	132	114	44	247	103	155	97	484	306	149	76
16	155	138	117	53	222	112	171	117	618	273	141	114
17	155	139	115	55	208	114	145	105	650	243	132	130
18	141	134	126	b60	210	114	82	78	642	212	126	167
19	138	161	138	b60	206	110	60	97	625	197	115	169
20	139	139	130	68	210	103	54	108	586	186	108	175
21	139	147	134	67	208	101	54	114	576	178	96	219
22	141	161	121	66	208	101	53	115	590	184	99	210
23	143	159	b120	67	222	110	50	115	593	195	101	243
24	141	145	b80	74	197	112	46	114	481	192	105	240
25	155	153	b50	81	222	149	30	159	405	184	99	226
26	159	151	b70	b80	235	143	16	224	331	149	86	206
27	145	159	76	b75	226	124	20	270	339	138	73	233
28	143	161	78	74	212	136	14	293	350	123	68	219
29	141	157	87	78	-------	145	27	278	376	155	73	203
30	147	139	94	86	-------	197	38	243	350	123	66	195
31	149	-------	87	68	-------	206	-------	224	-------	117	61	-------
Total	4,325	4,409	3,740	2,161	7,233	4,371	3,661	4,112	13,244	7,668	3,379	3,958
Mean	140	147	121	69.7	258	141	122	133	441	247	109	132
Ac-ft	8,580	8,750	7,420	4,290	14,350	8,670	7,260	8,160	26,270	15,210	6,700	7,850

Calendar year 1962: Max 2,770 Min 26 Mean 475 Ac-ft 343,800
Water year 1962-63: Max 650 Min 14 Mean 171 Ac-ft 123,500

b Stage-discharge relation affected by ice.

BEAR RIVER BASIN

10-0465. Bear River below Stewart Dam, near Montpelier, Idaho

Location.--Lat 42°15'30", long 111°17'30", in NE¼ sec.34, T.13 S., R.44 E., on right bank 300 ft downstream from Stewart Dam and 4½ miles south of Montpelier.

Drainage area.--2,620 sq mi, approximately.

Records available.--January 1922 to September 1963. Monthly discharge only January 1922 to September 1945, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,950 ft (from topographic map).

Average discharge.--41 years, 59.6 cfs (43,150 acre-ft per year).

Extremes.--Maximum discharge during year, 12 cfs June 16 (gage height, 1.18 ft); minimum daily, 1.2 cfs Oct. 19, Dec. 28.
1922-63: Maximum daily discharge, 3,080 cfs June 3, 1923; no flow July 15, 1956.

Remarks.--Records good except period of no gage-height record, which is fair. Discharge measurements generally made once a week. Water diverted at Stewart Dam through Rainbow inlet canal (see station 10-460) for storage and regulation in Bear Lake. Many diversions above station for irrigation.

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-17, June 27 to Sept. 30)

Oct. 1 to Dec. 31		Jan. 1 to Sept. 30			
0.7	0	0.6	1.0	0.9	5.0
.8	.9	.7	1.8	1.0	8.0
.9	4.3	.8	3.0	1.1	12
1.1	12				

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	4.0	2.6	3.4	3.4	6.2	4.6	3.0	4.4	5.3	4.4	7.7
2	7.3	3.6	2.6	3.6	3.4	5.6	4.8	2.9	4.6	5.3	5.3	8.4
3	7.7	2.9	3.3	3.8	2.8	5.6	4.8	3.0	5.0	5.9	7.1	8.0
4	8.1	3.3	2.9	3.6	3.2	5.0	4.4	2.9	4.8	5.3	7.7	8.0
5	8.5	3.6	2.6	3.8	3.0	4.8	3.2	2.6	6.5	5.6	8.0	7.7
6	8.1	3.3	2.3	4.0	3.0	5.6	4.4	2.5	6.8	5.6	7.7	a7.6
7	8.1	3.6	2.3	4.0	3.0	5.9	4.2	2.4	7.1	6.2	7.4	a7.2
8	8.1	3.6	2.6	4.0	3.0	5.3	3.0	2.6	6.2	5.3	7.4	a6.8
9	8.1	3.3	2.6	3.8	2.9	5.6	2.6	3.0	5.3	5.3	8.4	a6.4
10	8.8	2.9	2.6	3.8	2.8	5.6	1.8	3.6	5.3	5.6	8.8	a6.0
11	7.7	2.9	2.9	3.6	2.6	4.6	1.8	2.8	5.3	5.9	8.4	5.9
12	4.7	2.9	2.6	3.4	2.8	4.6	1.8	2.5	5.0	5.9	8.8	5.0
13	4.5	3.5	2.3	3.0	4.0	4.2	1.8	2.6	4.8	6.5	8.8	3.2
14	4.3	3.3	1.9	2.8	4.4	4.2	1.8	2.4	5.3	5.9	8.4	3.0
15	4.3	3.3	2.3	2.4	4.6	4.2	1.6	3.2	6.2	5.9	8.8	2.9
16	3.6	3.3	2.6	2.5	5.0	4.2	1.6	3.8	6.8	5.6	9.6	3.2
17	2.3	2.9	2.6	2.5	4.6	4.2	1.6	4.2	7.7	5.0	9.6	3.2
18	1.9	2.9	2.6	2.6	4.6	4.2	3.0	3.8	7.7	5.0	10	3.4
19	1.2	3.3	2.6	2.8	4.6	4.2	3.2	4.2	7.7	4.4	10	3.2
20	1.9	2.9	2.6	2.8	4.6	4.4	2.9	4.4	6.8	4.4	10	2.9
21	2.3	2.9	2.6	2.6	4.8	4.4	2.8	4.4	6.8	4.0	8.4	1.9
22	2.9	2.9	2.3	2.8	5.3	4.4	2.8	4.6	7.4	4.0	8.4	1.7
23	3.6	2.9	1.9	2.8	5.6	4.6	2.6	4.6	7.7	4.2	8.4	1.8
24	3.3	2.9	1.6	2.8	5.3	4.8	2.5	4.6	7.1	4.2	8.8	1.9
25	3.3	3.3	1.9	2.8	5.3	4.8	2.6	4.8	6.2	4.8	8.8	2.0
26	3.6	2.6	1.9	2.8	6.5	5.0	2.9	5.3	5.9	4.6	7.4	2.2
27	3.3	2.3	1.6	2.6	6.2	4.8	3.0	5.6	6.2	4.6	7.4	2.3
28	3.6	2.6	1.2	2.6	6.5	4.8	3.0	5.3	5.9	4.8	7.4	2.5
29	3.6	2.9	1.6	2.6	--------	4.6	3.0	5.0	5.9	5.0	7.4	2.9
30	3.6	2.6	1.6	2.6	--------	5.3	3.2	4.6	5.3	5.0	8.0	2.9
31	3.6	--------	2.9	2.9	--------	4.8	----------	4.4	----------	4.8	8.0	--------
Total	151.6	93.0	72.5	95.6	118.3	150.3	87.3	115.6	185.7	159.9	253.0	131.8
Mean	4.89	3.10	2.34	3.08	4.22	4.85	2.91	3.73	6.19	5.16	8.16	4.39
Ac-ft	301	184	144	190	235	298	173	229	368	317	502	261

Calendar year 1962: Max 22 Min 0.8 Mean 4.81 Ac-ft 3,480
Water year 1962-63: Max 10 Min 1.2 Mean 4.42 Ac-ft 3,200

a No gage-height record.

BEAR RIVER BASIN

10-0555. Bear Lake at Lifton, near St. Charles, Idaho

Location.--Lat 42°07'20", long 111°19'20", in NE¼ sec.16, T.15 S., R.44 E., in Lifton pumping plant of Utah Power & Light Company, 3½ miles east of St. Charles.

Drainage area.--435 sq mi, approximately (does not include Mud Lake drainage).

Records available.--October 1903 to June 1906 (gage heights only), January 1921 to September 1963. Monthly contents only January 1921 to September 1945 published in WSP 1314. Published as Bear Lake at Fish Haven 1903-6.

Gage.--Water-stage recorder. Datum of gage is 5,900 ft above mean sea level, unadjusted (levels by Utah Power & Light Company). October 1903 to June 1906, staff gage at different site and datum.

Extremes.--Maximum contents during year, 863,400 acre-ft June 28-30 (gage height, 15.63 ft); minimum, 682,200 acre-ft Sept. 15-27 (gage height, 12.92 ft).
1921-63: Maximum contents, 1,423,000 acre-ft June 10, 1923 (gage height, 23.66 ft); no usable contents Nov. 9-19, 1935 (gage height, 2.00 ft, lower limit of pumps).

Remarks.--Outflow regulated by gates and pumps at Bear Lake and by gages in dike at north end of Mud Lake. Inflow to lake augmented by water diverted from Bear River through Rainbow inlet canal and Dingle inlet canal, which empty into Mud Lake (see station 10-460). Water from Mud Lake reaches Bear Lake by a sluice at pumping plant or by gates in causeway at south end of Mud Lake. Capacity, 1,421,000 acre-ft between gage heights 2.00 (lower limit of pumps) and 23.65 ft (present feasible upper limit of storage with existing facilities). Storage water used for irrigation and power development. Figures given herein represent usable contents.

Cooperation.--Gage heights furnished by Utah Power & Light Company, under general supervision of Geological Survey, in connection with a Federal Power Commission project. Contents computed by Geological Survey from capacity table based on data furnished by Utah Power & Light Company.

Capacity table (gage height, in feet, and contents, in thousands of acre-feet)

12.0	621.8
13.0	687.5
14.0	754.0
15.0	821.0
16.0	888.6

Contents, in thousands of acre-feet, at 0700, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	716.0	716.0	716.0	717.3	721.3	761.4	777.4	804.2	821.7	862.8	770.8	696.1
2	715.3	716.0	716.0	717.3	722.6	762.0	777.4	804.2	823.0	862.8	767.4	694.8
3	715.3	716.0	716.0	717.3	724.0	762.7	778.1	804.9	823.7	862.1	764.0	692.1
4	714.7	716.0	716.0	717.3	726.0	763.4	778.8	805.6	825.0	860.7	761.4	689.5
5	715.3	716.0	716.0	717.3	728.0	764.7	779.5	806.3	825.7	858.7	758.0	687.5
6	715.3	716.0	716.6	717.3	738.6	766.1	780.1	806.9	827.0	856.6	755.3	685.5
7	715.3	716.0	716.6	717.3	743.3	766.7	781.5	806.9	828.4	854.6	752.0	685.5
8	715.3	716.0	716.6	717.3	746.0	767.4	783.5	807.6	829.7	852.6	750.6	684.9
9	715.3	716.0	716.6	718.0	748.6	768.0	784.8	807.6	831.0	849.8	750.6	684.2
10	715.3	716.0	716.6	718.0	750.6	768.7	785.5	808.3	833.1	847.8	749.3	683.5
11	715.3	716.0	716.6	718.0	752.0	769.4	786.8	808.3	836.4	844.4	748.0	683.5
12	715.3	716.0	716.6	718.0	754.0	770.1	787.5	808.3	838.4	841.8	746.0	683.5
13	715.3	716.0	716.6	718.0	754.0	770.8	788.8	808.9	839.1	838.4	744.0	683.5
14	716.0	716.0	716.6	718.0	754.7	771.4	790.2	808.9	841.1	835.1	741.3	682.9
15	716.0	716.0	716.6	718.0	754.7	772.1	790.8	809.6	844.4	831.0	739.9	682.2
16	716.0	716.0	716.6	718.0	754.7	772.8	791.5	809.6	847.1	827.0	736.6	682.2
17	716.0	716.0	716.6	718.0	755.3	772.8	791.5	810.3	848.5	823.0	736.6	682.2
18	716.0	716.0	716.6	718.0	755.3	773.4	792.2	811.0	849.2	819.0	734.6	682.2
19	716.0	716.0	716.6	718.0	755.3	773.4	792.9	811.0	851.2	815.0	732.6	682.2
20	716.0	716.0	716.6	718.0	756.0	773.4	793.5	811.6	852.6	811.0	730.6	682.2
21	716.0	716.0	717.3	718.0	756.7	773.4	794.9	812.3	853.9	806.9	728.0	682.2
22	716.0	716.0	717.3	718.0	757.4	773.4	796.9	813.0	855.3	802.2	724.6	682.2
23	716.0	716.0	717.3	718.0	758.0	773.4	797.6	813.6	856.6	798.9	721.9	682.2
24	716.0	716.0	717.3	718.0	758.7	774.1	798.2	814.3	856.6	796.9	719.3	682.2
25	716.0	716.0	717.3	718.0	758.7	774.1	798.9	815.0	857.3	794.9	716.0	682.2
26	716.0	716.0	717.3	718.0	759.4	774.8	799.6	816.3	858.7	792.2	713.3	682.2
27	716.0	716.0	717.3	718.6	760.0	774.8	801.6	817.6	861.4	788.8	710.0	682.2
28	716.0	716.0	717.3	718.6	760.7	774.8	802.2	818.3	863.4	785.5	706.6	682.9
29	716.0	716.0	717.3	718.6	--------	775.4	802.9	819.7	863.4	782.1	703.3	682.9
30	716.0	716.0	717.3	719.3	--------	776.1	803.6	820.3	863.4	778.1	700.7	682.9
31	716.0	--------	717.3	719.3	--------	776.8	--------	821.0	--------	774.1	698.1	--------
†	5,913.43	5,913.43	5,913.45	5,913.48	5,914.10	5,914.34	5,914.74	5,915.00	5,915.63	5,914.30	5,913.16	5,912.93
‡	-0.6	0	+1.3	+2.0	+41.4	+16.1	+26.8	+17.4	+42.4	-89.3	-76.0	-15.2

Calendar year 1962..... ‡ +237.8
Water year 1962-63..... ‡ -33.7

† Elevation, in feet, at end of month.
‡ Change in contents, in thousands of acre-feet.

BEAR RIVER BASIN

10-0586. Bloomington Creek at Bloomington, Idaho

Location.--Lat 42°11'05", long 111°25'30", in SE¼SE¼ sec.20, T.14 S., R.43 E., on left bank 1 mile west of Bloomington.

Drainage area.--24.4 sq mi.

Records available.--October 1960 to September 1963.

Gage.--Water stage recorder 4 feet above 8-foot concrete flume. Altitude of gage is 6,070 ft (from topographic map).

Extremes.--Maximum discharge during year, 174 cfs Feb. 1 (gage height, 4.23 ft); minimum, 11 cfs Jan. 26.
1960-63: Maximum discharge, that of Feb. 1, 1963; minimum, 9.4 cfs Jan. 27, 1961, Feb. 26, 1962.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.4	12
2.0	36
2.5	62
3.0	91
3.7	136

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	18	16	15	72	15	19	22	78	31	21	20
2	21	18	18	14	28	15	18	22	74	30	22	20
3	20	18	18	14	30	15	17	22	77	30	22	21
4	20	18	17	14	30	15	16	25	74	30	22	20
5	21	18	17	14	23	15	17	28	70	29	21	20
6	21	18	17	14	20	15	19	31	64	30	22	20
7	20	18	16	14	18	15	21	34	60	29	22	20
8	*20	*18	16	14	17	14	21	*38	56	28	22	20
9	20	18	16	14	17	14	20	43	54	28	22	20
10	20	19	16	14	16	14	19	46	62	27	21	20
11	20	18	16	14	16	14	18	47	56	27	21	19
12	20	18	16	14	16	14	16	42	52	26	21	*19
13	20	18	*16	14	16	14	18	40	51	26	21	19
14	20	16	16	14	16	14	19	46	52	26	21	19
15	20	16	17	14	16	14	22	55	51	25	21	20
16	20	18	16	14	15	14	20	63	47	24	20	22
17	20	18	16	14	15	14	20	68	*46	25	20	19
18	20	16	16	14	15	14	19	76	45	*25	19	20
19	18	16	16	14	15	14	19	84	43	25	20	19
20	19	18	16	14	22	14	19	85	42	24	20	19
21	19	18	16	14	18	15	19	86	43	24	19	19
22	19	18	16	14	16	17	*19	84	43	24	20	19
23	19	17	16	14	16	18	18	*88	40	24	*20	19
24	19	18	16	14	15	16	18	104	39	23	19	19
25	19	18	[illegible]	*14	16	15	18	89	37	23	19	19
26	19	18	15	14	16	16	21	85	36	22	19	19
27	19	18	15	14	15	16	21	86	35	22	19	19
28	19	18	15	14	*15	21	21	83	34	22	19	19
29	19	17	15	14	----------	19	21	82	33	22	19	19
30	19	18	16	14	----------	18	22	82	32	21	19	19
31	19	----------	15	25	----------	18	----------	80	----------	21	20	----------
Total	611	533	497	446	560	476	576	1,866	1,526	793	633	586
Mean	19.7	17.8	16.0	14.4	20.0	15.4	19.2	60.2	50.9	25.6	20.4	19.5
Ac-ft	1,210	1,060	986	885	1,110	944	1,140	3,700	3,030	1,570	1,260	1,160

Calendar year 1962: Max 132 Min 12 Mean 31.0 Ac-ft 22,420
Water year 1962-63: Max 104 Min 14 Mean 24.9 Ac-ft 18,060

* Discharge measurement made on this day.
Note.--No gage-height record Jan. 6-24, Apr. 20, 21, Apr. 23 to May 7.

BEAR RIVER BASIN

10-0595. Bear Lake outlet canal near Paris, Idaho

Location.--Lat 42°13'00", long 111°20'30", in SW¼ sec.8, T.14 S., R.44 E., on right bank 2,000 ft downstream from headgates (at dike) and 3 miles southeast of Paris.

Records available.--January 1922 to September 1963. Monthly discharge only January 1922 to September 1945, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,920 ft (from topographic map).

Average discharge.--41 years, 334 cfs (241,800 acre-ft per year).

Extremes.--Maximum daily discharge during year, 1,620 cfs July 16, 17; minimum daily, 1.4 cfs Sept. 20-30. 1922-63: Maximum daily discharge, 1,870 cfs Aug. 8, 1924; minimum daily, 1 cfs for many days in 1937, 1954, 1959, 1961.

Remarks.--Records good except those for period of no gage-height record, which are fair. Discharge measurements generally made six times a week during periods of release from Bear Lake.

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	2.6	2.9	2.2	1.9	1.6	1.8	1.7	1.7	372	1,180	1,030
2	2.6	2.6	2.9	2.2	1.9	1.6	1.8	1.7	1.7	494	1,110	1,030
3	2.6	2.7	3.0	2.2	1.9	1.6	1.8	1.7	1.7	817	1,180	964
4	2.6	2.7	3.0	2.2	1.8	1.6	1.8	1.7	1.7	944	1,180	886
5	2.6	2.7	3.0	2.2	1.9	1.6	1.8	1.7	1.7	984	1,140	777
6	2.6	2.7	3.0	2.1	1.8	1.6	1.8	1.7	1.7	915	1,130	583
7	2.6	2.7	3.0	2.1	1.8	1.7	1.8	1.7	1.7	934	1,110	453
8	2.6	2.7	3.0	2.1	1.8	1.7	1.8	1.7	1.7	1,120	1,120	451
9	2.6	2.7	2.9	2.1	1.8	1.7	1.8	1.7	1.7	1,370	1,130	327
10	2.6	2.7	2.9	2.1	1.8	1.7	1.8	1.7	1.7	1,390	1,120	229
11	2.6	2.7	2.8	2.1	1.8	1.7	1.8	1.7	1.7	1,400	1,120	225
12	2.6	2.7	2.8	2.1	1.8	1.7	1.8	1.7	1.7	1,440	1,070	231
13	2.6	2.8	2.7	2.1	1.8	1.7	1.8	1.7	1.7	1,500	1,010	224
14	2.6	2.8	2.7	2.1	1.7	1.7	1.8	1.7	1.7	1,550	993	231
15	2.6	2.8	2.6	2.1	1.7	1.7	1.7	1.7	1.7	1,570	970	236
16	2.6	2.8	2.6	2.0	1.7	1.7	1.7	1.7	1.7	1,620	960	164
17	2.6	2.8	2.6	2.0	1.7	1.7	1.7	1.7	1.7	1,620	937	70
18	2.6	2.8	2.5	2.0	1.7	1.7	1.7	1.7	1.7	1,610	944	34
19	2.6	2.8	2.5	2.0	1.7	1.7	1.7	1.7	1.7	1,600	941	18
20	2.6	2.8	2.4	2.0	1.7	1.7	1.7	1.7	1.7	1,590	934	1.4
21	2.6	2.8	2.4	2.0	1.7	1.8	1.7	1.7	1.7	1,590	980	1.4
22	2.6	2.8	2.3	2.0	1.7	1.8	1.7	1.7	1.7	1,570	1,030	1.4
23	2.6	2.9	2.3	2.0	1.6	1.8	1.7	1.7	1.7	1,450	1,030	1.4
24	2.6	2.9	2.3	2.0	1.6	1.8	1.7	1.7	1.7	1,410	1,030	1.4
25	2.6	2.9	2.3	1.9	1.6	1.8	1.7	1.7	1.7	1,410	1,030	1.4
26	2.6	2.9	2.3	1.9	1.6	1.8	1.7	1.7	1.7	1,400	1,030	1.4
27	2.6	2.9	2.3	1.9	1.6	1.8	1.7	1.7	258	1,420	1,020	1.4
28	2.6	2.9	2.3	1.9	1.6	1.8	1.7	1.7	439	1,410	1,020	1.4
29	2.6	2.9	2.3	1.9	------	1.8	1.7	1.7	385	1,410	1,040	1.4
30	2.6	2.9	2.3	1.9	------	1.8	1.7	1.7	372	1,400	1,020	1.4
31	2.6	------	2.3	1.9	------	1.8	------	1.7	------	1,360	1,030	------
Total	95.0	83.4	81.2	63.3	48.6	53.2	52.4	52.7	1,498.2	40,640	32,559	8,198.4
Mean	3.06	2.78	2.62	2.04	1.74	1.72	1.75	1.70	49.9	1,311	1,050	273
Ac-ft	188	165	161	126	96	106	104	105	2,970	80,610	64,540	16,260

Calendar year 1962: Max 1,480 Min 1.8 Mean 198 Ac-ft 143,200
Water year 1962-63: Max 1,620 Min 1.4 Mean 229 Ac-ft 165,400

Note.--No gage-height record Oct. 3 to June 26, Sept. 20-30.

BEAR RIVER BASIN

10-0905. Bear River near Preston, Idaho

Location.--Lat 42°10', long 111°51', in NW¼ sec.36, T.14 S., R.39 E., on left bank 600 ft downstream from headgates of West Cache Canal, 5 miles downstream from Mink Creek, 5 miles north of Preston, and 5½ miles upstream from Battle Creek.

Drainage area.--4,500 sq mi, approximately.

Records available.--October 1889 to December 1916, January to September 1917 (gage heights only), January 1944 to September 1963. Prior to 1903, published as "at Battlecreek." Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,540 ft (from topographic map). October 1889 to September 1917 staff or wire-weight gages at several sites within 5 miles downstream at different datums.

Average discharge.--20 years (1943-63), 784 cfs (567,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,600 cfs Feb. 1 (gage height, 5.11 ft); minimum, 1.5 cfs Apr. 6 (gage height, 0.13 ft); minimum daily, 38 cfs Oct. 13.
1889-1917: Maximum discharge, about 8,500 cfs June 9, 10, 1907, estimated on basis of records for station near Collinston, Utah; maximum gage height observed, 9.04 ft Jan. 17, 18, 1917 (backwater from ice), site and datum then in use; minimum discharge not determined.
1943-63: Maximum discharge, 4,420 cfs Apr. 17, 1950 (gage height, 5.61 ft); minimum, 0.6 cfs June 14, 1949; minimum daily, 9.5 cfs July 6, 1957.

Remarks.--Records excellent. Station is below all irrigation diversions from Bear River in Idaho except Cub River pumps in SE¼ sec.20, T.16 S., R.39 E. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	203	293	341	110	3,380	568	480	1,000	527	386	877	617
2	303	*440	191	512	3,060	438	502	939	269	236	945	658
3	275	478	411	459	2,350	376	590	854	394	584	779	688
4	263	125	532	566	1,260	484	1,410	1,050	640	581	662	730
5	257	170	*610	316	1,040	*295	277	765	1,380	808	402	*663
6	311	384	554	155	1,380	434	136	*994	286	995	915	532
7	308	380	377	441	1,170	407	421	784	87	1,120	937	587
8	283	374	213	393	855	333	622	883	364	1,080	934	452
9	286	493	55	*420	921	496	741	959	554	1,090	867	372
10	573	420	253	460	795	90	1,130	1,180	492	1,090	894	418
11	729	208	472	417	746	388	749	816	748	1,080	845	190
12	86	213	489	144	397	601	871	875	*761	1,070	813	175
13	38	331	509	73	659	512	512	1,020	870	1,020	632	278
14	39	380	548	253	481	605	606	1,160	810	1,030	786	305
15	326	452	529	335	554	499	670	726	501	1,020	805	179
16	200	450	86	450	584	239	552	1,170	441	1,080	812	315
17	288	468	156	406	363	236	780	1,060	523	902	840	383
18	201	63	453	489	413	510	794	600	829	1,000	814	385
19	301	295	492	331	739	413	702	169	756	846	720	315
20	432	252	599	142	874	505	623	407	528	759	813	347
21	63	403	472	434	536	596	562	689	608	881	822	308
22	312	428	511	346	844	442	863	642	656	818	844	255
23	540	498	292	455	441	402	764	487	430	788	868	277
24	411	502	271	298	293	295	491	807	417	777	865	230
25	44	292	111	464	409	332	602	217	639	860	604	357
26	218	345	353	357	681	477	685	487	245	862	746	298
27	305	410	306	397	717	511	868	601	609	948	959	323
28	75	447	463	343	710	834	727	497	633	964	853	277
29	357	491	274	457	--------	517	725	524	450	664	865	215
30	283	386	379	500	--------	627	1,110	446	836	817	943	248
31	229	--------	329	910	--------	319	--------	357	--------	822	912	--------
Total	8,539	10,871	11,631	11,813	26,652	13,583	20,565	23,165	17,281	26,958	25,372	11,377
Mean	275	362	375	381	952	438	685	747	576	870	818	379
Ac-ft	16,940	21,560	23,070	23,430	52,860	26,940	40,790	45,950	34,280	53,470	50,320	22,570

Calendar year 1962 Max 3,940 Min 38 Mean 609 Ac-ft 440,700
Water year 1962-63 Max 3,380 Min 38 Mean 569 Ac-ft 412,200

* Discharge measurement made on this day.

BEAR RIVER BASIN

10-0930. Cub River near Preston, Idaho

Location.--Lat 42°08', long 111°41', in SW¼ sec.5, T.15 S., R.41 E., on right bank 0.2 mile upstream from headgates of Cub River-Worm Creek Canal, 0.7 mile upstream from forest boundary, and 10 miles east of Preston.

Drainage area.--19.4 sq mi.

Records available.--March 1940 to September 1952, October 1955 to September 1963.

Gage.--Water-stage recorder. Altitude of gage is 5,320 ft (from topographic map).

Average discharge.--20 years, 82.1 cfs (59,440 acre-ft per year).

Extremes.--Maximum discharge during year, 442 cfs May 24 (gage height, 2.60 ft); minimum, 16 cfs Feb. 18, 19, 20.

1940-52, 1955-63: Maximum discharge, 715 cfs June 7, 1957 (gage height, 3.39 ft); maximum gage height, 3.85 ft June 2, 1943; minimum discharge, 11 cfs Jan. 22, 1951.

Remarks.--Records good except those for period of no gage-height record, which are fair. No diversion above station.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	24	21	19	35	18	35	63	385	98	47	33
2	*31	*24	22	19	30	18	32	65	360	95	46	32
3	31	24	22	18	26	18	*29	63	*352	93	45	32
4	31	24	21	18	23	18	28	72	348	90	45	32
5	31	24	21	18	20	*18	27	88	312	90	*43	*31
6	31	24	*21	18	*20	18	34	*101	280	87	43	31
7	31	24	21	18	20	18	47	134	261	82	43	31
8	31	24	21	18	19	18	50	161	249	81	43	31
9	31	24	21	*18	19	18	44	185	235	*78	42	30
10	30	24	21	18	18	18	40	190	246	77	42	30
11	29	24	21		18	18	37	197	252	74	41	30
12	29	24	21		17	18	33	180	252	71	40	29
13	29	24	21	18	17	18	33	149	249	69	40	29
14	30	24	21		17	18	36	149	241	69	39	29
15	28	24	20		17	18	46	176	232	67	38	29
16	28	24	20		17	18	46	213	210	65	38	30
17	28	23	20		17	18	42	255	205	64	38	29
18	28	23	20		17	18	40	308	207	63	38	28
19	27	23	20		17	18	38	352	197	60	37	28
20	27	23	20		18	18	37	368	188	59	37	29
21	27	23	20		18	20	36	*377	183	58	36	28
22	27	22	20		18	22	34	368	172	57	36	28
23	26	22	20	17	18	26	33	385	155	56	35	28
24	26	22	20		18	26	33	429	146	54	35	27
25	26	22	20		18	24	34	429	134	52	34	26
26	26	22	20		18	24	40	415	125	51	34	26
27	26	22	20		18	25	47	429	119	50	33	26
28	25	22	20		18	38	50	415	114	49	33	26
29	25	22	20		---	38	51	424	108	48	33	26
30	25	22	19		---	35	55	411	103	47	33	26
31	25	---	19		---	34	---	402	---	47	33	---
Total	877	697	634	544	546	672	1,167	7,953	6,620	2,101	1,200	870
Mean	28.3	23.2	20.5	17.5	19.5	21.7	38.9	257	221	67.8	38.7	29.0
Ac-ft	1,740	1,380	1,260	1,080	1,080	1,330	2,310	15,770	13,130	4,170	2,380	1,730

Calendar year 1962 Max 546 Min 17 Mean 87.3 Ac-ft 63,230
Water year 1962-63 Max 429 Min - Mean 65.4 Ac-ft 47,360

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 25-27, Jan. 11-15. No gage-height record Jan. 16 to Feb. 5.

BEAR RIVER BASIN

10-1060. Little Bear River near Paradise, Utah

Location.--Lat 41°35'25", long 111°51'10", in SE¼ sec.20, T.10 N., R.1 E., on right bank 1 mile upstream from backwater of Hyrum Reservoir, 2 miles northwest of Paradise, and 5 miles downstream from East Fork.

Drainage area.--203 sq mi.

Records available.--January 1937 to September 1963. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,680 ft (from topographic map). Prior to Nov. 28, 1945, at site 150 ft upstream at different datum. Nov. 28, 1945 to May 19, 1952 at present site at datum 1.50 ft higher.

Average discharge.--26 years, 83.1 cfs (60,160 acre-ft per year).

Extremes.--Maximum discharge during year not determined, occurred Feb. 1; minimum, 19 cfs Oct. 1, 4, 5. 1937-63: Maximum discharge, 2,000 cfs Feb. 11, 1962 (gage height, 6.52 ft), from rating curve extended above 600 cfs by logarithmic plotting; minimum, 4 cfs Aug. 14, 1940.

Remarks.--Records good except those for periods of ice effect, fragmentary gage-height, or no gage-height record, which are poor. Diversions above station for irrigation of about 400 acres above and 2,400 acres below station. Flow regulated slightly by trout farm about 2 miles upstream and by Porcupine Reservoir (capacity, 12,800 acre-ft) completed 1962. No diversion between station and Hyrum Reservoir.

Cooperation.--Three discharge measurements furnished by Little Bear River water commissioner.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*19	32	30	34	*f700	38	56	108	47	*70	34	28
2	20	32	30	34	128	38	56	95	70	67	32	32
3	20	33	34	34	79	37	56	89	60	49	29	32
4	20	33	33	33	67	34	55	98	70	27	29	30
5	20	34	32	33	65	36	51	114	77	23	28	30
6	20	33	30	32	60	37	77	*117	77	28	30	30
7	24	33	30	30	55	36	236	128	77	30	30	30
8	26	33	30	30	51	37	*165	131	79	30	28	28
9	25	34	32	30	46	37	103	128	70	32	28	27
10	27	38	32	30	44	37	100	128	87	38	29	26
11	27	36	30		38	37	74	128	84	37	30	25
12	27	34	30		37	37	58	111	65	36	30	24
13	26	33	30		36	33	55	84	56	33	28	26
14	27	32	33		39	36	53	65	65	30	*27	26
15	29	36	36		38	38	74	70	82	29	29	26
16	29	34	37	b29	38	36	65	89	74	30	32	*32
17	30	34	37		38	37	55	89	70	29	33	41
18	30	34	37		38	37	60	89	62	30	32	46
19	32	32	35		38	34	74	87	72	30	30	39
20	34	33	39		44	36	87	89	92	28	30	39
21	34	34	38		44	38	84	92	89	29	29	44
22	34	34	39		39	44	84	95	84	32	30	38
23	34	32	38		38	74	106	95	70	32	32	38
24	36	32	38		38	79	126	84	74	27	27	39
25	37	33	b37		38	60	131	92	111	29	28	37
26	37	32	b37	a28	38	65	159	178	103	32	28	37
27	36	30	b38		38	72	134	182	108	33	28	36
28	33	30	*36		*37	196	126	117	92	33	27	32
29	34	32	36		--------	*134	123	79	82	33	27	34
30	33	*32	36	29	----------	82	*117	65	82	32	*27	*34
31	*33	----------	36	*f267	----------	62	----------	53	----------	*34	27	----------
Total	893	994	1,070	1,159	1,991	1,634	2,800	3,169	2,329	1,052	906	986
Mean	28.8	33.1	34.5	37.4	71.1	52.7	93.3	102	77.6	33.9	29.2	32.9
Ac-ft	1,770	1,970	2,120	2,300	3,950	3,240	5,550	6,290	4,620	2,090	1,800	1,960

Calendar year 1962 Max 1,260 Min 17 Mean 111 Ac-ft 80,210
Water year 1962-63 Max 700 Min 19 Mean 52.0 Ac-ft 37,660

Peak discharge (base, 400 cfs).--Feb. 1 (discharge not determined); Mar. 28 (1530) 826 cfs (5.22 ft); Apr. 7 (0300) 450 cfs (4.74 ft); May 26 (1630) 474 cfs (4.75 ft) caused by spillway failure of Porcupine Dam 9.7 miles upstream.

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.
f Fragmentary gage-height record.

BEAR RIVER BASIN

10-1090. Logan River above State dam, near Logan, Utah

Location.--Lat 41°44'40", long 111°47'00", in NE¼ sec.36, T.12 N., R.1 E., on right bank at Logan plant of Utah Power & Light Co., 125 ft upstream from tailrace, half a mile upstream from State dam, and 2½ miles east of Logan.

Drainage area.--218 sq mi.

Records available.--June 1896 to September 1963. Published as Logan River near Logan prior to 1913. Records since May 1913 equivalent to earlier records if records for Utah Power & Light Co.'s tailrace near Logan are added. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,680 ft (from topographic map). Prior to May 7, 1913, staff gage at various sites within half a mile downstream, below confluence of tailrace, at Oct. 1, 1913, to Sept. 3, 1938, at datum about 2.3 ft lower than present datum.

Average discharge.--50 years (1913-63), 102 cfs (73,840 acre-ft per year). Average combined discharge of Logan River above State dam, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal, 67 years (1896-1963), 274 cfs (198,400 acre-ft per year).

Extremes.--Maximum discharge during year, 605 cfs Feb. 1 (gage height 3.52 ft); minimum daily, 14 cfs Nov. 20, Dec. 1,4-11.

Maximum combined discharge during year (Logan River above State dam, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal) 776 cfs May 25; minimum daily, 75 cfs Jan. 12.

1913-63: Maximum discharge, 2,000 cfs Mar. 21, 1916 (gage height, 5.6 ft, datum then in use), from rating curve extended above 1,000 cfs; minimum daily 6 cfs Nov. 7, 1940.

1896 1963: Maximum combined observed discharge (Logan River above State dam, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal), 2,480 cfs May 24, 1907; minimum daily, 50 cfs Jan. 21, 1935.

Remarks.--Records excellent. Water diverted from river and springs above station for power, irrigation, and municipal supply. Flow regulated by powerplants above station. For records of combined flow of Logan River, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal, see following page. Combined flow record excludes that in Logan City culinary pipe lines and one small irrigation diversion from Power flume that siphons canyon 400 ft upstream from station.

Cooperation.--Records collected in collaboration with Utah Power & Light Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	39	14	17	238	22	33	43	465	52	40	22
2	46	36	16	16	75	21	23	48	452	54	38	21
3	45	36	16	16	40	21	21	59	452	52	38	21
4	46	36	14	16	42	52	21	75	428	42	38	21
5	51	42	14	16	38	81	21	117	384	38	38	20
6	45	*35	*14	16	38	*40	22	153	347	33	35	22
7	45	34	14	16	*31	23	32	*182	317	28	*38	22
8	45	32	14	16	27	23	45	214	298	*27	42	22
9	42	31	14	16	28	22	34	252	276	25	40	22
10	40	34	14	*16	25	22	*25	276	306	*22	36	22
11	40	32	14	16	22	22	23	298	*306	22	33	23
12	40	32	15	17	25	22	22	231	291	22	31	22
13	38	31	16	18	28	22	27	175	287	22	27	23
14	39	28	15	17	26	22	23	178	284	22	26	22
15	40	29	16	17	25	22	42	242	284	22	26	22
16	39	28	15	*17	24	22	29	284	259	22	24	25
17	42	22	15	18	22	22	23	313	252	22	22	24
18	46	16	15	18	22	22	22	343	259	22	22	26
19	45	16	15	18	23	21	22	369	248	21	22	32
20	45	14	15	17	39	21	22	*384	242	21	23	27
21	45	15	15	19	35	21	22	408	238	21	23	28
22	43	16	15	18	22	23	22	404	217	21	23	26
23	42	16	15	18	22	33	22	416	175	22	24	24
24	*42	15	15	17	23	22	21	469	156	22	23	22
25	43	16	15	16	23	22	23	486	123	22	22	22
26	42	16	15	16	74	22	23	465	102	22	22	22
27	40	16	16	16	*106	22	23	*465	89	22	22	22
28	40	16	16	17	59	66	24	457	79	22	*22	20
29	40	16	16	16	----------	46	22	*473	64	22	21	20
30	40	16	17	16	----------	22	25	465	59	22	21	20
31	38	----------	17	34	----------	24	----------	473	----------	33	22	----------
Total	1,320	761	467	537	1,202	868	759	9,217	7,739	842	884	687
Mean	42.6	25.4	15.1	17.3	42.9	28.0	25.3	297	258	27.2	28.5	22.9
Ac-ft	2,620	1,510	926	1,070	2,380	1,720	1,510	18,280	15,350	1,670	1,750	1,360

Calendar year 1962 Max 838 Min 12 Mean 106 Ac-ft 76,480
Water year 1962-63 Max 486 Min 14 Mean 69.3 Ac-ft 50,150

* Discharge measurement made on this day.

BEAR RIVER BASIN

10-1090. Logan River above State dam, near Logan, Utah — continued

Combined discharge, in cubic feet per second, of Logan River above State dam, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal near Logan, Utah, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	156	139	116	100	339	100	182	212	711	304	182	154
2	156	136	119	97	182	101	145	218	698	306	177	152
3	156	136	117	100	148	96	136	229	697	301	177	147
4	158	134	109	100	148	78	132	248	670	284	177	145
5	163	134	117	98	137	85	128	290	614	276	177	143
6	157	134	116	98	133	96	139	343	574	271	174	146
7	157	133	114	97	125	95	164	382	541	262	176	149
8	157	131	115	97	121	96	181	414	520	259	178	147
9	154	131	114	100	122	94	172	451	497	257	175	143
10	150	134	112	100	118	94	163	473	527	249	173	138
11	150	132	110	88	108	96	146	494	527	247	171	139
12	150	129	110	75	102	97	151	426	512	244	169	137
13	148	131	109	78	106	92	152	370	510	235	165	141
14	146	128	108	89	105	95	172	379	506	236	163	144
15	146	129	112	98	107	97	204	452	506	232	161	143
16	147	128	110	96	106	93	191	503	478	226	156	154
17	146	129	111	92	102	95	172	552	470	223	153	152
18	146	130	110	89	104	94	160	590	473	220	155	147
19	144	128	110	80	104	93	153	625	463	215	154	148
20	144	122	110	96	121	94	153	646	456	211	154	142
21	144	124	107	96	116	103	151	671	454	208	154	143
22	144	125	107	93	104	108	146	674	431	208	157	141
23	143	123	106	90	104	122	148	689	401	206	157	139
24	141	122	108	93	108	107	146	732	398	200	156	137
25	141	124	89	97	108	107	154	744	364	197	155	136
26	140	124	86	94	105	106	171	720	346	196	153	136
27	138	122	94	91	107	113	175	718	339	196	154	136
28	138	123	95	99	90	161	179	709	332	195	151	133
29	138	120	97	97	------	157	174	724	322	192	149	133
30	140	119	102	97	------	146	185	715	313	189	150	133
31	138	------	101	128	------	148	------	721	------	184	153	------
Total	4,580	3,652	3,338	2,933	3,476	3,259	4,805	16,114	14,652	7,228	5,055	4,278
Mean	148	126	108	94.6	124	105	160	520	488	233	163	143
Ac-ft	9,080	7,640	6,620	5,820	6,890	6,460	9,530	31,960	29,060	14,340	10,030	8,490

Calendar year 1962: Max 1,080 Min 62 Mean 248 Ac-ft 179,200
Water year 1962-63: Max 744 Min 75 Mean 202 Ac-ft 145,900

BEAR RIVER BASIN

10-1135. Blacksmith Fork above Utah Power & Light Co.'s dam, near Hyrum, Utah

Location.--Lat 41°37'20", long 111°44'25", in NE¼ sec.8, T.10 N., R.2 E., on right bank three-quarters of a mile upstream from diversion dam, 3½ miles upstream from powerplant of Utah Power & Light Co., and 6 miles east of Hyrum.

Drainage area.--260 sq mi.

Records available.--October 1913 to September 1963. Monthly discharge only for October 1913, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,000 ft (from topographic map). Prior to Oct. 2, 1934, at site 1,000 ft upstream at different datum.

Average discharge.--50 years, 123 cfs (89,050 acre-ft per year).

Extremes.--Maximum discharge during year, 524 cfs Feb. 1 (gage height, 3.88 ft); minimum daily, 35 cfs Jan. 12, 13.

1913-63: Maximum discharge 1,620 cfs May 15, 1917 (gage height, 6.5 ft, from floodmarks, site and datum then in use), from rating curve extended above 800 cfs; minimum daily, 29 cfs Jan. 3, 1935.

Remarks.--Records good except those for period of no gage-height record, which are fair. A few small diversions for irrigation of about 200 acres above station. Low flow may be slightly regulated by powerplant above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 2 to Mar. 22)

1.9	22	2.5	145
2.0	40	3.0	271
2.1	58	3.2	323
2.2	79		

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*85	79	73	66	300	73	104	174	120	*85	73	66
2	83	79	73	66	189	73	94	174	122	83	*71	64
3	81	77	75	64	124	71	75	171	120	81	71	64
4	81	77	73	64	115	68	68	186	122	79	71	62
5	81	77	73	64	109	68	68	210	115	79	73	62
6	83	77	73	64	104	66	75	*218	113	79	73	62
7	81	77	73	64	94	66	138	228	111	79	73	66
8	81	75	71	64	90	71	162	234	111	77	77	64
9	81	75	71	62	90	71	124	234	109	79	77	62
10	81	77	71	62	81	71	115	239	113	79	77	62
11	79	77	71	53	79	56	104	234	109	77	73	62
12	81	77	71	35	77	66	98	210	104	77	73	60
13	79	77	66	35	79	64	109	183	102	75	71	64
14	77	77	68	62	77	66	115	176	107	77	71	66
15	83	75	68	71	75	71	136	181	109	77	68	66
16	81	73	68	79	75	68	118	179	104	77	68	83
17	81	75	68	66	75	66	107	179	98	77	68	73
18	81	77	68	64	75	66	104	181	96	77	66	68
19	73	73	68	47		66	104	174	92	77	66	68
20	81	64	68	56		71	109	169	87	75	68	66
21	79	77	68	71		79	113	*164	94	77	66	66
22	71	75	68	66		96	113	157	94	79	68	66
23	83	73	68	64	73	113	124	152	90	77	66	62
24	79	73	68	60		83	134	147	90	77	66	64
25	79	71	51	60		68	134	147	92	77	62	64
26	77	73	42	58		62	159	145	90	77	66	60
27	77	73	51	56		66	183	138	87	77	66	62
28	77	73	66	58	*73	136	169	134	85	75	66	62
29	77	73	71	60	----------	*122	159	129	83	75	66	60
30	77	*73	66	64	----------	98	*162	124	85	73	*64	*62
31	*77	----------	66	*96	----------	98	----------	122	----------	73	66	----------
Total	2,467	2,249	2,097	1,921	2,618	2,379	3,577	5,493	3,054	2,403	2,150	1,938
Mean	79.6	75.0	67.6	62.0	93.5	76.7	119	177	102	77.5	69.4	64.6
Ac-ft	4,890	4,460	4,160	3,810	5,190	4,720	7,090	10,900	6,060	4,770	4,260	3,840

Calendar year 1962: Max 641 Min 36 Mean 123 Ac-ft 88,850
Water year 1962-63: Max 300 Min 35 Mean 88.6 Ac-ft 64,150

Peak discharge (base, 140 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
2-1	1300	3.88	524				
3-28	1900	2.99	266				
5-10	1600	3.03	271				

* Discharge measurement made on this day.
Note.--No gage-height record Feb. 19-27.

BEAR RIVER BASIN

10-1170. Hammond (East Side) Canal near Collinston, Utah

Location.--Lat 41°50', long 112°03', in SE¼ sec.27, T.13 N., R.2 W., on right bank 3,600 ft downstream from Cutler Dam and 4 miles north of Collinston.

Records available.--June 1912 to September 1963. Prior to 1915, published as Hammond ditch near Collinston. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Prior to May 22, 1914, staff gage at same site and datum.

Average discharge.--51 years, 50.5 cfs (36,560 acre-ft per year).

Extremes.--1912-63: Maximum daily discharge, 184 cfs June 29, 1963; no flow at times in each year.

Remarks.--Records good. Canal diverts from east side of Bear River in NW¼SE¼ sec.26, T.13 N., R.2 W., at dam at which West Side Canal and intake of Cutler powerplant also divert. Water from this canal and West Side Canal used for irrigation of about 58,000 acres below station in eastern Box Elder County.

Cooperation.--Gage-height record and five discharge measurements furnished by Utah Power & Light Co.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.9	0	2.0	19
1.0	.7	2.5	38
1.1	1.6	3.0	64
1.2	2.7	4.0	128
1.4	5.5	4.7	188

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	14						0	153	166	152	148
2	48	14						0	152	164	153	149
3	*49	14						0	122	170	157	144
4	49	15	(*)					0	91	169	153	134
5	46	15						0	84	*168	154	119
6	41	14						.2	*68	166	155	*107
7	32	*13						*53	8.4	166	*153	101
8	36	13					(*)	49	7.9	169	154	99
9	36	13						49	24	169	156	100
10	36	14						49	33	*166	156	100
11	35	14						49	33	167	157	100
12	34	14						50	35	166	158	99
13	34	14						58	49	166	159	88
14	35	14						63	52	166	160	74
15	30	14						73	52	166	157	75
16	25	8.8						84	53	166	156	60
17	21	0						84	77	166	156	47
18	22	0						98	86	159	156	28
19	22	0						106	107	165	156	19
20	22	0						119	115	166	148	21
21	22	0						137	114	163	156	20
22	22	0						158	137	156	156	18
23	*22	0						*168	154	156	156	19
24	21	0						167	146	156	156	20
25	15	0			(*)			165	147	156	156	22
26	14	0						165	160	156	157	30
27	15	0						165	162	156	149	33
28	15	0						*165	179	156	148	33
29	13	0			-------			166	184	155	*150	33
30	14	0			-------			166	166	152	148	33
31	14	-------			-------		-------	161	-------	153	148	-------
Total	891	217.8	0	0	0	0	0	2,767.2	2,951.3	5,041	4,786	2,073
Mean	28.7	7.26	0	0	0	0	0	89.3	98.4	163	154	69.1
Ac-ft	1,770	432	0	0	0	0	0	5,490	5,850	10,000	9,490	4,110

Calendar year 1962: Max 175 Min 0 Mean 51.9 Ac-ft 37,600
Water year 1962-63: Max 184 Min 0 Mean 51.3 Ac-ft 37,140

* Discharge measurement or observation of no flow made on this day.

BEAR RIVER BASIN

10-1175. West Side Canal near Collinston, Utah

Location.--Lat 41°50', long 112°04', in SW¼ sec.27, T.13 N., R.2 W., on left bank 4,200 ft downstream from Cutler Dam and 4 miles north of Collinston.

Records available.--June 1912 to September 1963. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Prior to May 22, 1914 staff gage at same site and datum.

Average discharge.--51 years, 236 cfs (170,900 acre-ft per year).

Extremes.--1912-63: Maximum daily discharge, 751 cfs June 24, 25, 1959; no flow for periods in every year except 1914.

Remarks.--Records good except those for periods of ice effect, which are fair. Canal diverts from west side of Bear River in NW¼SW¼ sec.26, T.13 N., R.2 W., at dam at which Hammond (East Side) Canal and intake of Cutler powerplant also divert. Water from this canal and Hammond (East Side) Canal used for irrigation of about 58,000 acres below station in eastern Box Elder County.

Cooperation.--Gage-height record and 9 discharge measurements furnished by Utah Power & Light Co.

Rating table, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used May 7 to July 31)

0.2	0	2.0	82
.4	3.0	3.0	190
.6	6.9	4.0	329
.9	16	5.0	495
1.3	35	6.4	765

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	306	107	55	37	10	9.6		0	727	743	615	683
2	292	106	55	34	10	9.6		0	725	747	647	673
3	*287	105	55	30	10	9.6		0	640	749	665	657
4	281	105	*55	30	9.9	9.3		0	430	749	665	630
5	277	106	55	30	9.9	9.1		0	360	*749	663	605
6	264	106	55	30	*9.6	*9.1		0	*354	749	657	*578
7	249	*106	55	30	9.9	9.1		*266	365	749	*653	544
8	236	105	55	29	9.9	9.1	(*)	287	400	749	637	546
9	234	104	55	28	9.9	9.1		287	394	749	643	537
10	234	104	55	*23	9.6	9.1		270	330	*739	651	524
11	234	105	54		10	9.3		236	312	729	656	522
12	232	105	54		10	7.4		236	323	725	657	515
13	232	100	54		9.9	0		234	352	719	657	481
14	230	96	54	*12	9.9	0		263	336	717	667	459
15	203	94	54		9.9	0		296	308	705	685	413
16	176	86	55		9.9	0		326	310	697	683	328
17	158	79	55		9.9	0		347	365	693	697	278
18	158	80	54		10	0		435	463	695	707	158
19	157	80	54		10	0		546	561	697	707	155
20	155	80	54		9.9	0		613	598	695	697	228
21	154	80	54		9.6	0		645	575	685	687	198
22	154	80	54		9.6	0		703	634	669	685	185
23	*148	80	54		9.9	0		*717	677	663	683	160
24	141	80	54	10	9.9	0		717	624	649	683	157
25	128	80	55		*9.9	0		703	586	639	683	172
26	119	61	55		9.9	0		701	661	626	677	200
27	120	75	45		9.9	0		703	697	626	671	229
28	121	66	37		9.6	0		*705	727	626	673	243
29	120	60	36		--------	0		705	729	615	*673	243
30	118	56	37		--------	0		717	737	603	687	242
31	115	--------	37		--------	0	----------	727	--------	605	689	--------
Total	6,033	2,697	1,610	527	276.4	109.4	0	12,385	15,300	21,550	20,799	11,521
Mean	195	89.9	51.9	17.0	9.87	3.53	0	400	510	695	671	384
Ac-ft	11,970	5,350	3,190	1,050	548	217	0	24,570	30,350	42,740	41,250	22,850

Calendar year 1962: Max 731 Min 0 Mean 250 Ac-ft 181,300
Water year 1962-63: Max 749 Min 0 Mean 254 Ac-ft 184,100

* Discharge measurement or observation of no flow made on this day.
Note.--Stage-discharge relation affected by ice Jan. 11 to Feb. 2, Feb. 11, 12.

BEAR RIVER BASIN

10-1180. Bear River near Collinston, Utah

Location.--Lat 41°50', long 112°03', in NW¼SE¼ sec.27, T.13 N., R.2 W., on right bank 800 ft downstream from Cutler plant of Utah Power & Light Co., 2,000 ft downstream from Cutler Dam, and 5½ miles north of Collinston.

Drainage area.--6,000 sq mi, approximately.

Records available.--July 1889 to September 1963. Published as "at Collinston" prior to 1900. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 4,276.13 ft above mean sea level (levels by Bureau of Reclamation). Prior to Nov. 8, 1913, staff gage and Nov. 8, 1913, to Sept. 10, 1936, water-stage recorder, at site three-quarters of a mile downstream at different datums.

Extremes.--Maximum discharge during year, 3,900 cfs May 13 (gage height, 4.63 ft); minimum daily 15 cfs several days.
1889-1963: Maximum discharge observed, 11,600 cfs June 7-10, 1909 (gage height, 7.70 ft, site and datum then in use); minimum daily, 10 cfs Aug. 4-12, 16-23, 1905; practically no flow at 12 p.m. Aug 5, 1920.

Remarks.--Records excellent. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Eight discharge measurements furnished by Utah Power & Light Co.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	926	749	632	3,700	1,290	1,190	1,860	636	23	15	21
2	22	895	423	830	3,110	1,080	1,360	1,880	760	23	15	21
3	*22	740	338	1,100	3,270	857	1,510	1,840	1,160	23	16	21
4	26	391	*912	979	3,660	1,330	1,470	2,490	402	23	16	21
5	22	519	703	655	3,840	1,160	1,670	2,000	766	*23	16	21
6	22	688	880	489	*3,350	1,200	632	1,470	1,610	22	16	21
7	22	1,120	1,180	721	2,270	1,140	1,200	1,130	2,160	23	15	21
8	764	1,220	627	874	1,750	1,130	*1,770	1,170	1,180	23	15	21
9	830	1,170	923	861	1,880	316	1,710	2,010	537	23	15	18
10	428	295	799	876	1,710	23	2,110	1,690	1,250	*22	15	16
11	1,140	a81	707	855	1,560	897	1,460	2,410	1,710	22	15	15
12	1,080	a832	876	a440	399	890	1,840	2,080	1,540	22	15	17
13	1,150	950	724	a120	651	1,240	2,250	2,250	1,630	22	33	21
14	805	973	a886	a850	615	1,280	1,660	2,380	1,580	21	20	21
15	250	1,400	a680	886	1,050	1,260	1,440	2,320	1,660	20	23	21
16	181	1,330	a114	684	845	208	1,600	1,740	1,880	17	20	691
17	88	483	a1,140	987	247	109	1,430	1,680	1,340	16	20	20
18	274	28	1,200	913	1,070	1,380	1,390	1,490	1,220	17	20	20
19	359	779	1,340	a320	1,470	1,460	1,550	217	875	18	21	1,020
20	555	764	1,340	a120	1,490	1,140	1,550	199	1,260	16	21	1,410
21	340	966	1,230	a970	1,400	1,270	1,510	450	1,240	16	21	21
22	780	569	942	827	1,180	1,180	1,690	24	458	16	21	850
23	*721	807	358	921	1,140	573	1,470	812	282	16	21	710
24	980	847	24	627	512	322	1,740	932	587	16	21	956
25	1,240	320	153	704	*1,090	1,160	1,560	438	785	16	21	687
26	1,200	663	613	568	1,200	1,160	1,840	754	22	16	21	307
27	78	978	657	372	1,240	1,100	1,470	803	22	16	21	a650
28	22	1,150	858	733	1,260	1,350	1,610	*733	22	16	21	a490
29	440	1,030	701	1,290	-------	1,030	2,090	710	22	16	*21	a540
30	577	858	367	1,030	-------	331	2,210	725	23	15	21	a600
31	591	-------	730	1,420	-------	514	-------	122	-------	15	21	-------
Total	15,031	23,771	23,774	23,883	47,189	29,180	47,982	40,809	28,619	591	593	9,269
Mean	485	792	767	769	1,684	941	1,599	1,316	954	19.1	19.1	309
Ac-ft	29,810	47,150	47,160	47,310	93,540	57,880	95,170	80,940	56,760	1,170	1,180	18,380

Calendar year 1962: Max 8,210 Min 19 Mean 1,118 Ac-ft 809,100
Water year 1962-63: Max 3,840 Min 15 Mean 796 Ac-ft 576,400

* Discharge measurement made on this day.
a No gage-height record.