

TENTH ANNUAL REPORT

BEAR RIVER  
COMMISSION

1967



For the Report October 1, 1966 to

September 30, 1967

LOGAN, UTAH

April 1, 1968

## BEAR RIVER COMMISSION

P. O. BOX 413  
LOGAN, UTAH

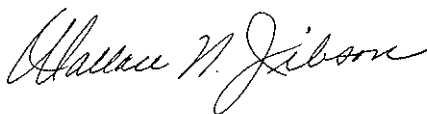
April 1, 1968

Mr. President:

Submitted herewith is the Tenth 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,

A handwritten signature in cursive script, reading "Wallace N. Jibson".

Wallace N. Jibson  
Assistant Secretary

The President  
*The White House*  
*Washington, D. C.*

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# TENTH ANNUAL REPORT of the BEAR RIVER COMMISSION

April 1, 1968

## INTRODUCTION

The Bear River Compact determines the rights and obligations of the signatory States of Wyoming, Idaho, and Utah with respect to the waters of Bear River. Federal consent to the Compact was given by the Congress and signed by the President, March 17, 1958. The Bear River Commission was organized as an interstate agency to administer 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, 1967 are summarized in this report. Financial report of the auditors and daily streamflow records are shown 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.

The entire group of Commissioners from Idaho was replaced on April 14, 1967 when Governor Samuelson appointed Cecil Foster, Ferris M. Kunz, and Stephen L. Smith to the Commission. R. Keith Higginson, Idaho State Reclamation Engineer, is now serving as an Ex officio member from that State.

S. Reed Dayton, Cokeville, was elected Vice-Chairman of the Commission at the annual meeting, April 17, 1967. Other officers were re-elected by acclamation.

## OFFICERS

Chairman .....E. O. Larson, Salt Lake City, Utah  
Vice-Chairman.....S. Reed Dayton, Cokeville, Wyoming  
Secretary-Treasurer .....Jay R. Bingham, Bountiful, Utah  
Assistant Secretary .....Wallace N. Jibson, Logan, Utah

## MEMBERS

### Idaho

Cecil Foster .....Whitney, Idaho  
Ferris M. Kunz .....Montpelier, Idaho  
Stephen L. Smith .....Malad, Idaho

### Utah

Jay R. Bingham .....Bountiful, Utah  
Lawrence B. Johnson .....Randolph, Utah  
Grover R. Harper .....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

### Budget

Grover R. Harper .....Corinne, Utah  
J. W. Myers .....Evanston, Wyoming  
Ferris M. Kunz .....Montpelier, Idaho

### Operations

Cecil Foster .....Whitney, Idaho  
Lawrence B. Johnson .....Randolph, Utah  
S. Reed Dayton .....Cokeville, Wyoming

## MEETINGS

Two meetings were held during the report year in accordance with the bylaws as follows:

Regular Meeting—December 5, 1966.....Salt Lake City, Utah  
 Annual Meeting—April 17, 1967.....Salt Lake City, Utah

## BUDGET AND FISCAL DISBURSEMENTS

### Adopted Budget

	<i>Fiscal Year Ending 6-30-1967</i>	<i>Fiscal Year Ending 6-30-1968</i>	<i>Total Biennium Ending 6-30-1968</i>
<b>Compact Administration</b>			
Personal Services .....	\$ 4,900	\$ 4,779	\$ 9,679
Travel and Subsistence .....	600	600	1,200
General Office Expense.....	400	429	829
Fiscal and Administrative.....	280	257	537
Washington Office Tech. Charge.....	620	585	1,205
Printing and Reproduction.....	500	500	1,000
Treasurer (Bond and Audit).....	300	300	600
Transcribing Minutes .....	150	150	300
Legal Retainer Fee.....	300	300	600
Miscellaneous .....	100	100	200
Sub-Total .....	8,150	\$ 8,000	\$ 16,150
<b>Stream-Gaging Program</b>			
U.S. Geological Survey .....	\$50,200	\$54,200	\$104,400
Total .....	\$58,350	\$62,200	\$120,550

### Allocation of Budget

U.S. Geological Survey.....	25,100	\$27,100	\$ 52,200
State of Idaho .....	11,084	11,700	22,784
State of Utah .....	11,083	11,700	22,783
State of Wyoming .....	11,083	11,700	22,783
Total .....	\$58,350	\$62,200	\$120,550

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, 1967 and statement of budget revenue and appropriation accounts for the fiscal year ended June 30, 1967, 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 the collection of daily streamflow records at about 50 gaging stations. An additional eight gaging stations in the basin are operated by Utah Power & Light Company in connection with Federal Power Commission projects. Streamflow records of significance to the Commission are published herein as appendix B.

A gaging station on Deep Creek near Clifton, Idaho was installed as of October 1, 1966 to serve as a secondary station in the stream-gaging network. Such stations usually are operated long enough (5-10 years) to establish hydrologic correlation with longterm records. No stream-gaging stations were discontinued or other stations established during the water year.

## **ADMINISTRATION OF BEAR RIVER COMPACT**

Provisions of the Compact are administered and enforced by direction of 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 where the project office is also the principal office of the Commission.

The project engineer is Assistant Secretary to the Commission with responsibility of providing technical assistance and current streamflow information required to administer the Compact. He establishes operational procedures, conducts hydrologic studies, compiles annual reports, and maintains the records of the Commission.

Seasonal daily or weekly records were collected on about 130 diversions above Bear Lake by district water commissioners under the general supervision of the Geological Survey. These records include all of the diversions from Bear River main stem and Smiths Fork, as they are required to administer the Bear River Compact. Daily discharge records for canals in the Central Division (see frontispiece map) are listed in tables 1-5; those in the Upper Division are not published herein but are maintained in the Commission files.

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.

## WATER SUPPLY

Almost twice the 1966 supply was available to irrigators in 1967 as runoff in the May-September period exceeded longtime averages by nearly 30 percent. Forecasts of seasonal runoff were exceeded by 20 percent in the upper Bear River while runoff from Smiths Fork fell short of forecasts by about the same percentage.

Storage demand was small from reservoirs above Bear Lake with new reservoirs storing considerable holdover for next season. Irrigation demand on Bear Lake fluctuates less from year to year than on reservoirs serving the short-season meadow hay; even so, storage release was less than half of last year.

Monthly and yearly runoff in 1967 at three representative gaging stations is compared with a longtime average in the bar graphs of figure 1 and is summarized for the irrigation season and water year in the tables below. Runoff at two of these stations is the major supply to the Upper and Central Divisions so it is plotted also on daily hydrographs in figures 2 and 3.

### *Runoff in Acre-feet May-September*

	<i>Average 1943-67</i>	<i>1966</i>	<i>1967</i>
Upper Bear River .....	113,600	80,600	155,300
Smiths Fork .....	107,500	66,900	129,100
Logan River .....	117,800	83,000	141,400

### *Water Year*

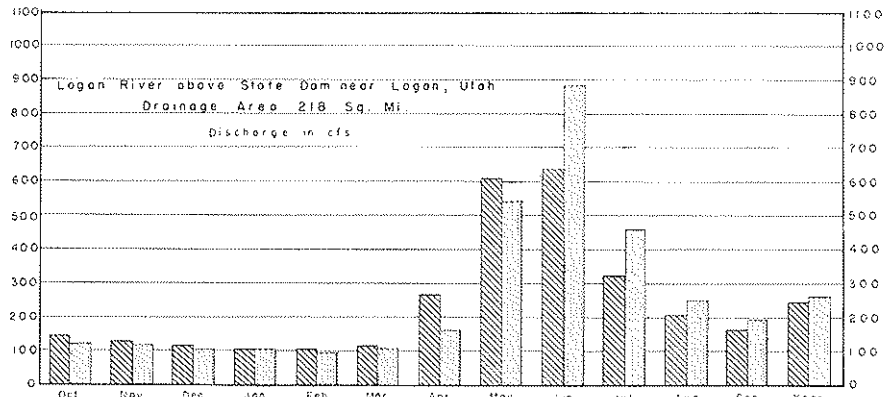
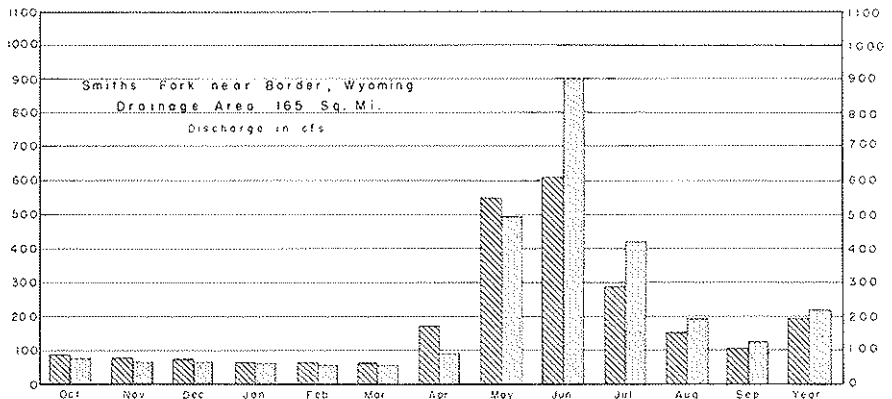
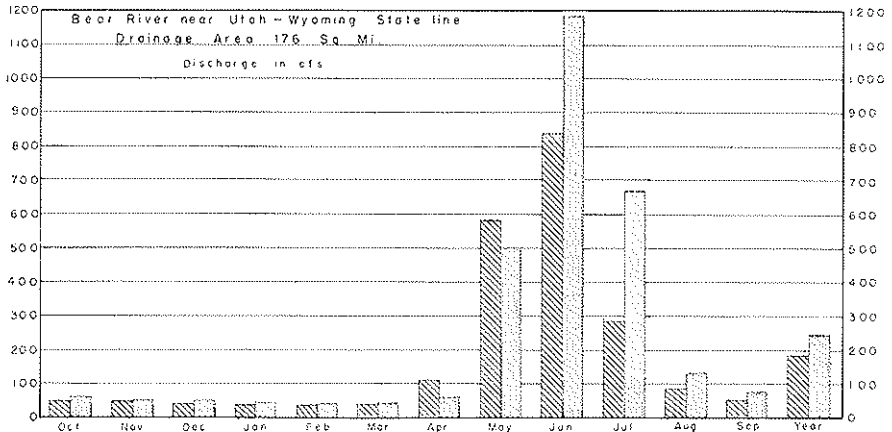
	<i>Average 1943-67</i>	<i>1966</i>	<i>1967</i>
Upper Bear River.....	135,600	116,200	176,200
Smiths Fork .....	139,300	105,000	157,200
Logan River .....	177,200	153,500	189,600

Bear Lake operation is illustrated in figure 4 in which is shown by bar graphs a comparison of 1967 with the longtime average of inflow, outflow, and gain. Hydrographs of content and surface elevation for the past two years are shown in figure 5. The 1967 peak, on several days in July, reached 5,922.92 feet in elevation (1,369,700 ac-ft) the highest level since 1950. Inflow from Bear River and peripheral tributaries (see fig. 4) far exceeded irrigation demand from the lake (Bear Lake outflow), so water was released after the 1967 irrigation season to provide adequate space for 1968 runoff.

### *Bear Lake Elevation Utah Power & Light Co. Datum*

<i>Water Year</i>	<i>Beginning of Water Year</i>	<i>End of Storage Period</i>	<i>End of Water Year</i>
1965 .....	5,915.23	5,922.74	5,921.83
1966 .....	5,921.83	5,921.92	5,918.29
1967 .....	5,918.29	5,922.92	5,920.36







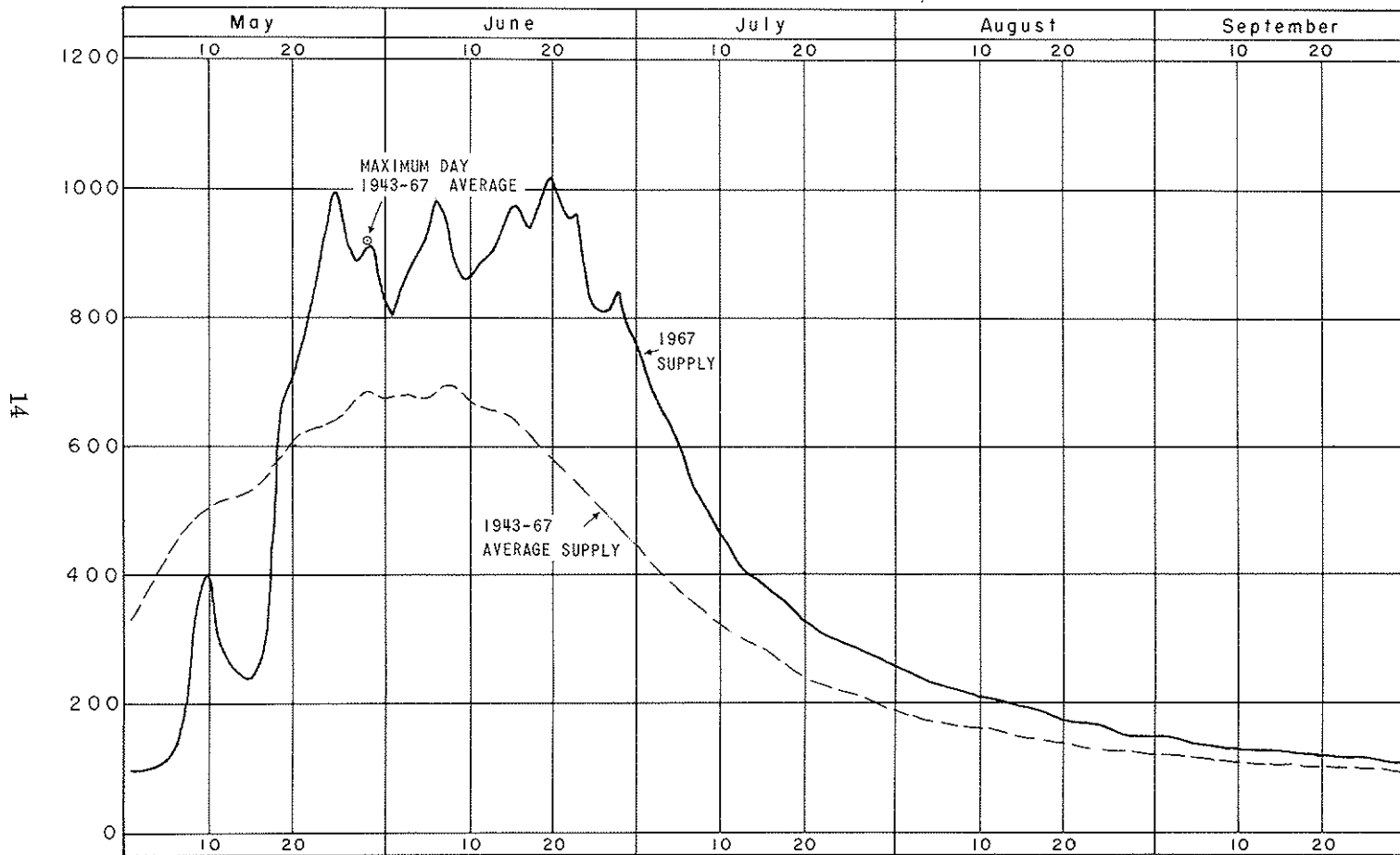
 Monthly and Yearly Mean Discharge for Period 1943-1967  
 Monthly and Yearly Mean Discharge for 1967 Water Year

Figure 1. Comparison of discharge at three representative gaging stations in 1967 with average discharge for period 1943-67

# CENTRAL DIVISION - SMITHS FORK SUPPLY \*

CUBIC FEET PER SECOND

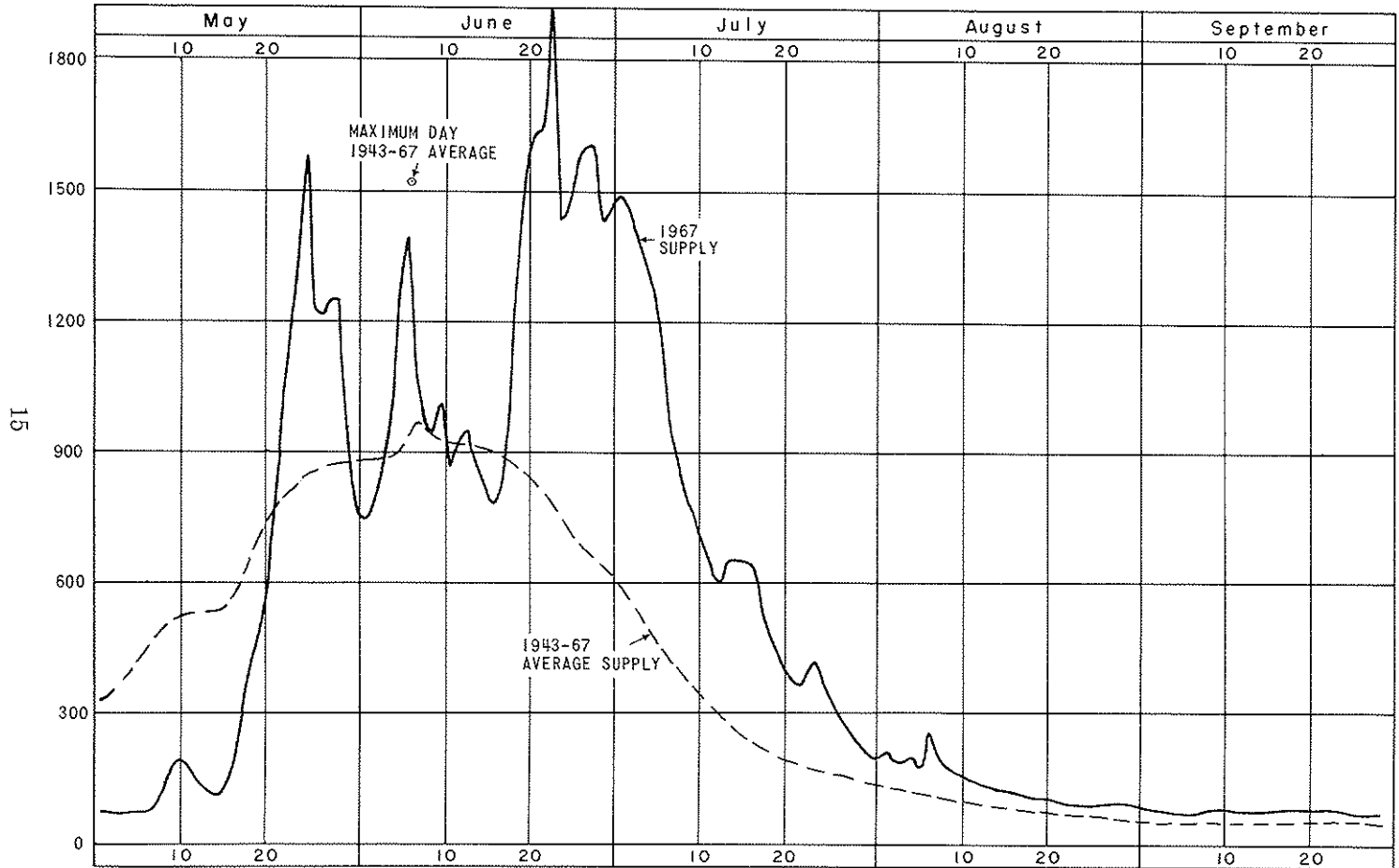


\* Smiths Fork near Border, Wyoming

Figure 3

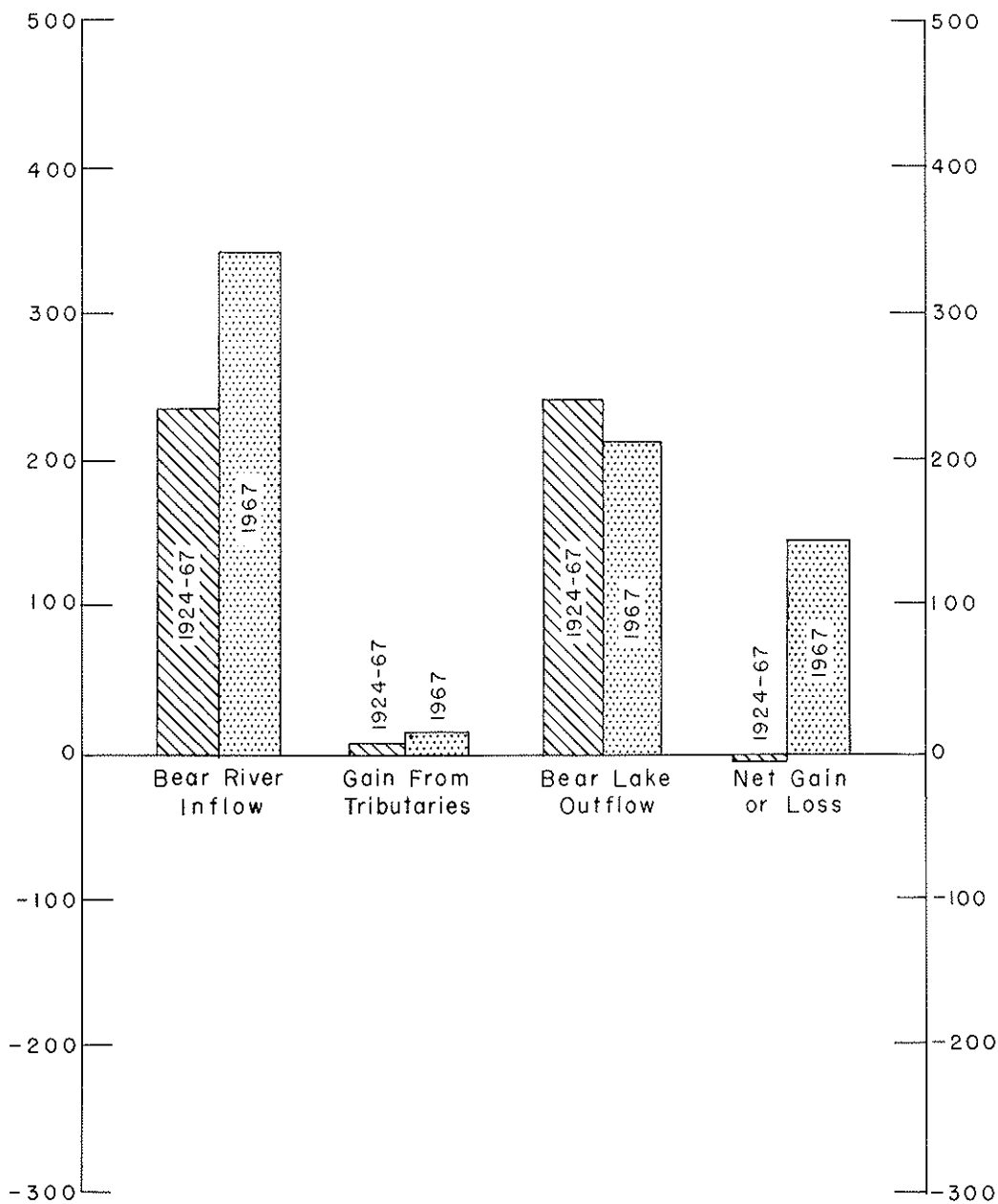
# UPPER DIVISION - BEAR RIVER SUPPLY \*

CUBIC FEET PER SECOND



\*Bear River near Utah-Wyoming State Line

Figure 2



## BEAR LAKE

Annual Quantities in Thousands of Acre-Feet

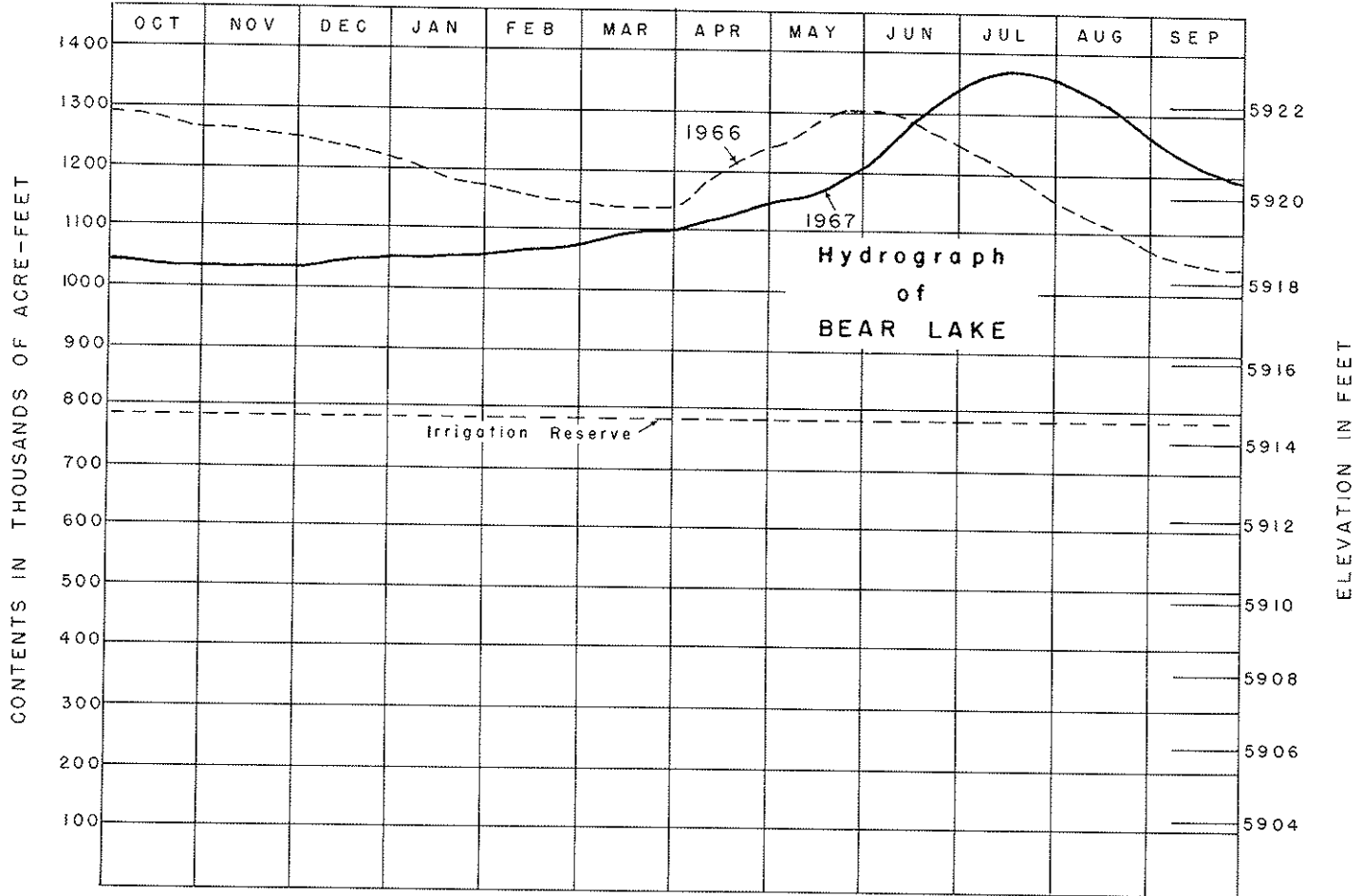


Figure 5

## STREAMFLOW DISTRIBUTION

Records of diversions from Bear River main stem above Bear Lake and from Smiths Fork were collected by district water commissioners and submitted weekly to the Assistant Secretary. He computed section diversions and allocations and informed these district commissioners and members of the Commission of the quantities diverted and of State-section allocations, where applicable, for the regulatory action needed to comply with the Compact.

### Upper Division

The Upper Division comprises that part 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

Interstate regulation in years such as 1967 when water supply is above average usually is not required during the critical part of the irrigation season in areas where meadow hay is predominant. Also after about July 10, Upper Wyoming Section allocation is increased under terms of the Compact by the unused allocation (9.6 percent) to Lower Wyoming Section.

For instance, in the Upper Division (see figure 6) a water emergency, as defined above, existed May 1-23 and after July 20 for the balance of the season. The first period was not significant in Upper Wyoming as the normal rate of diversion was small, and in the later period the allocation included the increase from Lower Wyoming. Therefore, a normal rate of diversion throughout the season did not exceed compact allocation. Sulphur Creek Reservoir storage was used only in late September with the release of about 1,500 acre-feet.

Diversion and allocation data for the lower sections of this division are shown in figures 7 and 8. Lower Utah Section reduced diversions after about July 10 to begin harvesting meadow hay, then on August 22 began release of 10,000 acre-feet of storage from Woodruff Narrows Reservoir to irrigate fall pasture. (See figures 7 and 9) Again this year, the contribution of return flow from applied storage water is evident as the release of 10,000 acre-feet resulted in diversion of about 13,000 acre-feet with little contribution from natural flow.

Users in Lower Wyoming Section (figure 8) followed their usual pattern of diversion and ceased irrigating about July 5, though a large supply was then available as is shown by the hydrograph of water leaving the Division (Bear River below Pixley Dam). This section could not divert all allocated water for the short period May 18-23 because of diversion in Utah in excess of compact allocation. The section did not utilize any reservoir water in 1967.

# UPPER DIVISION - UPPER WYOMING SECTION

CUBIC FEET PER SECOND

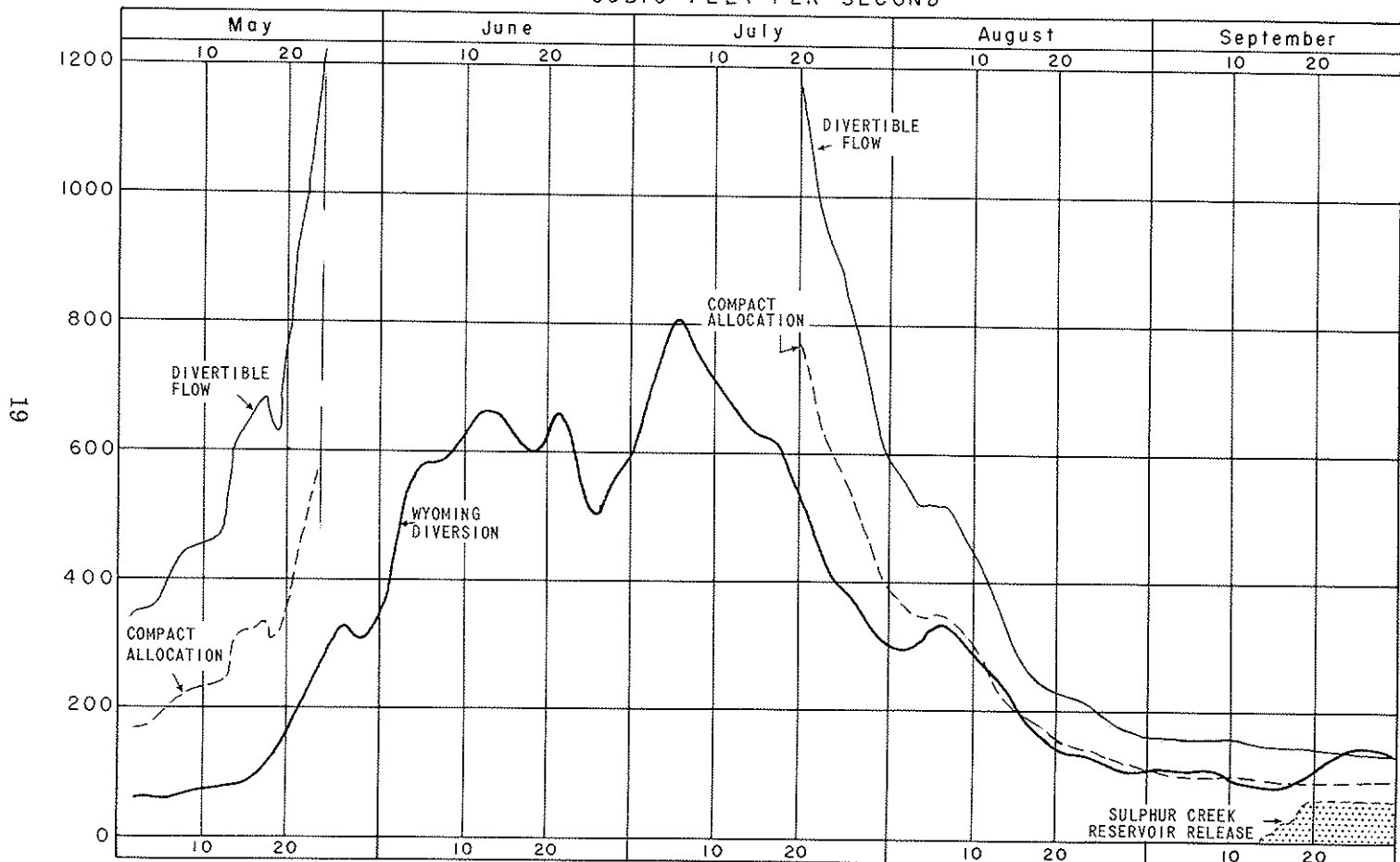


Figure 6

# UPPER DIVISION - LOWER UTAH SECTION

CUBIC FEET PER SECOND

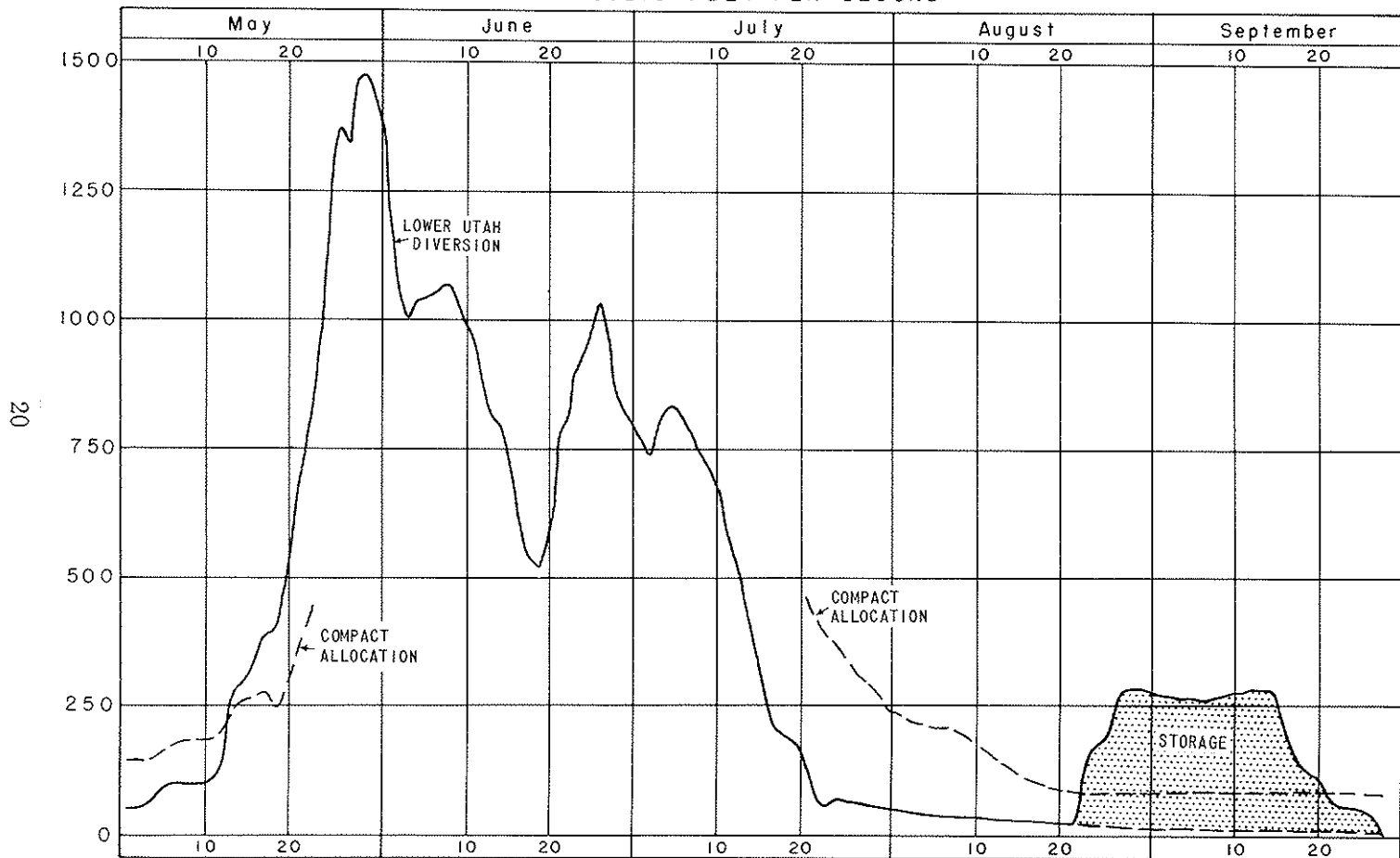


Figure 7



# UPPER DIVISION - LOWER WYOMING SECTION

CUBIC FEET PER SECOND

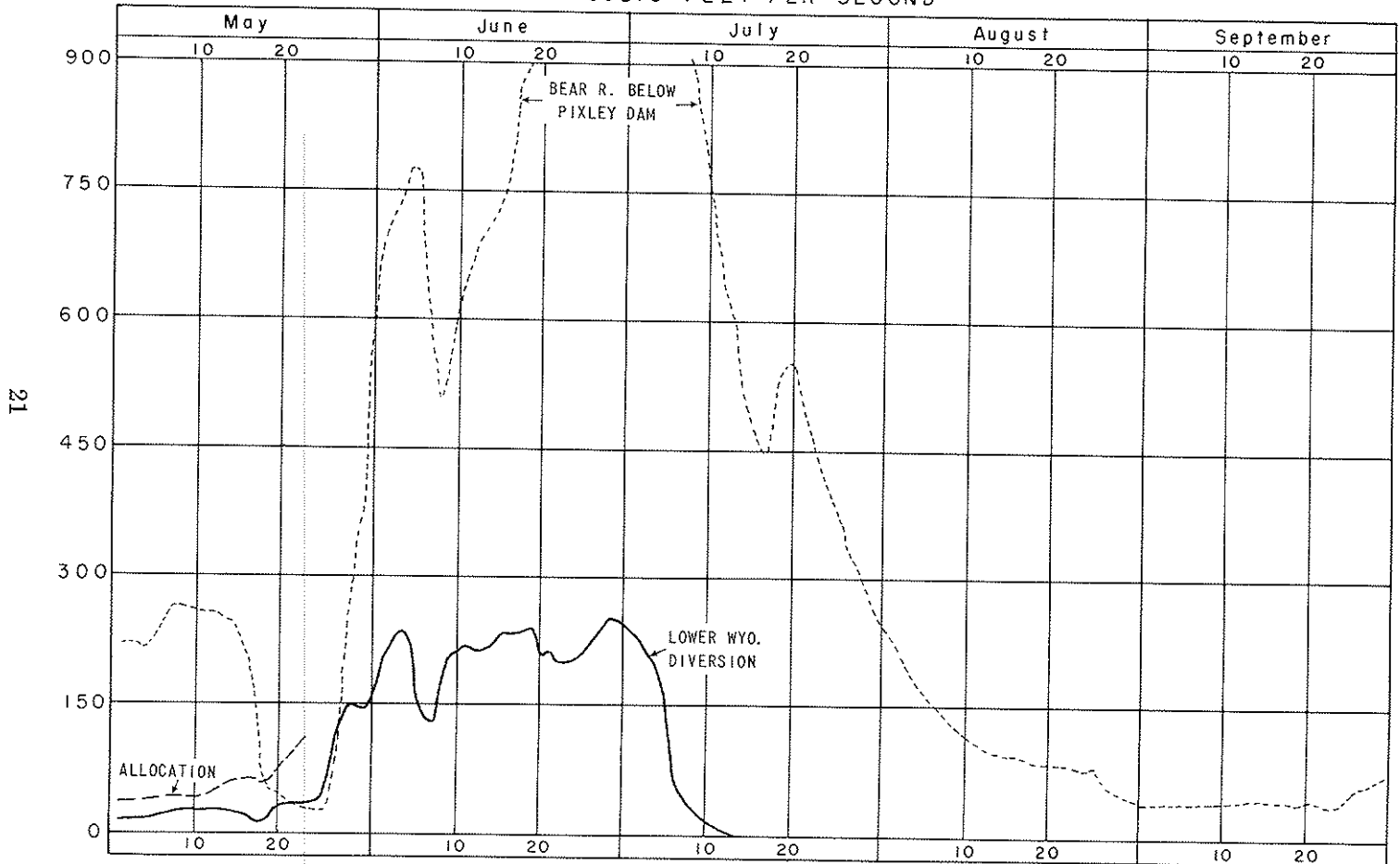


Figure 8

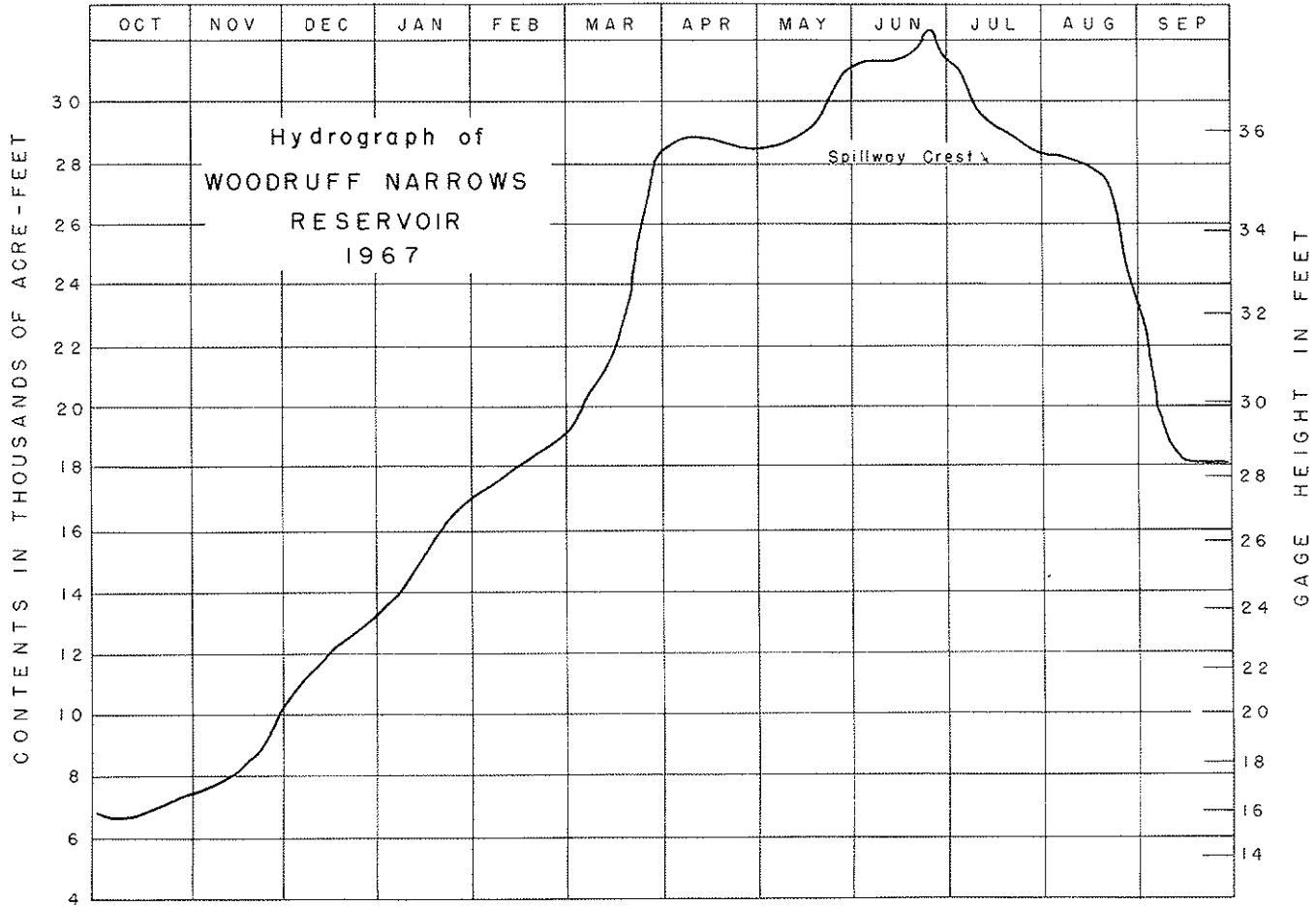


Figure 9

## 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 a water emergency.

Hydrographs pertaining to Wyoming Section in the Central Division are shown in figure 10 in which the divertible flow is seen to be less than 870 cfs in the forepart of May and again after August 1. Bear River flow entering Idaho decreased below 350 cfs on August 6 and remained below thereafter. Regulation of some diversions in Wyoming was required after about August 12 for compliance with interstate allocations, but there was no difficulty in keeping the total of diversions within the allocated amount.

Idaho Section in this division was adequately supplied and during most of the irrigation season bypassed large quantities to Bear Lake. (See figure 11.) Total diversion for irrigation in Idaho generally is less than the allocation because divertible flow includes that water leaving the division via Rainbow Inlet Canal to Bear Lake.

Effectiveness of interstate regulation in the dry years of 1961 and 1966 is indicated in the following table by the small spread in diversion rate per acre in the two sections. In good years such as 1967 with less restriction, the Wyoming rate is much higher and reflects the greater requirement of gravelly soils.

*Diversion in acre-feet per acre  
May-September*

	1961	1962	1963	1964	1965	1966	1967
Wyoming Section .....	2.16	5.82	5.06	4.48	4.96	3.32	4.78
Idaho Section .....	1.72	3.26	3.28	2.91	2.87	2.95	3.05

## 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 may be made also 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.

No petitions were filed with the Commission or water emergencies declared in the Lower Division in 1967.

## Interstate Tributaries

An aggrieved user on an interstate tributary may petition for declaration of water emergency and distribution of flow under direction

of the Commission. Interstate arbitration on tributaries was not requested in 1967.

## 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 1967. 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.

<i>Reservoir</i>	<i>Allocation</i>
Sulphur Creek Reservoir (Wyoming).....	4,614 ac-ft
Sulphur Creek Reservoir Enlargement (Wyoming).....	1,100 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
Whitney Reservoir (Wyoming) .....	4,200 ac-ft
Wyman Reservoir (Wyoming).....	22 ac-ft
Total Allocation .....	28,776 ac-ft

### Bear Lake

Article V of the Compact provides an irrigation reserve level in Bear Lake below which water shall not be released solely for generation of power, except in emergency, but after release for irrigation it may be used in generating power as it is conveyed to irrigation diversion works. The reserve is to be increased by designated amounts as additional storage, under terms of the Compact, is developed above Bear Lake. The irrigation reserve was increased by Commission resolution April 30, 1962 to include the water in the lake below elevation 5,914.15 feet (764,000 ac-ft) corresponding to 20,000 acre-feet of additional storage.

Whitney Reservoir, completed in October 1966, increased the total constructed allocation to 28,776 acre-feet of new storage. Accordingly, the Commission adopted a resolution December 5, 1966 to increase the irrigation reserve elevation to 5,914.41 feet (781,500 ac-ft) corresponding to 25,000 acre-feet of additional storage allocation. The hydrograph of Bear Lake in figure 5 shows the lake surface was above the reserve level throughout the 1967 water year.

## 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."

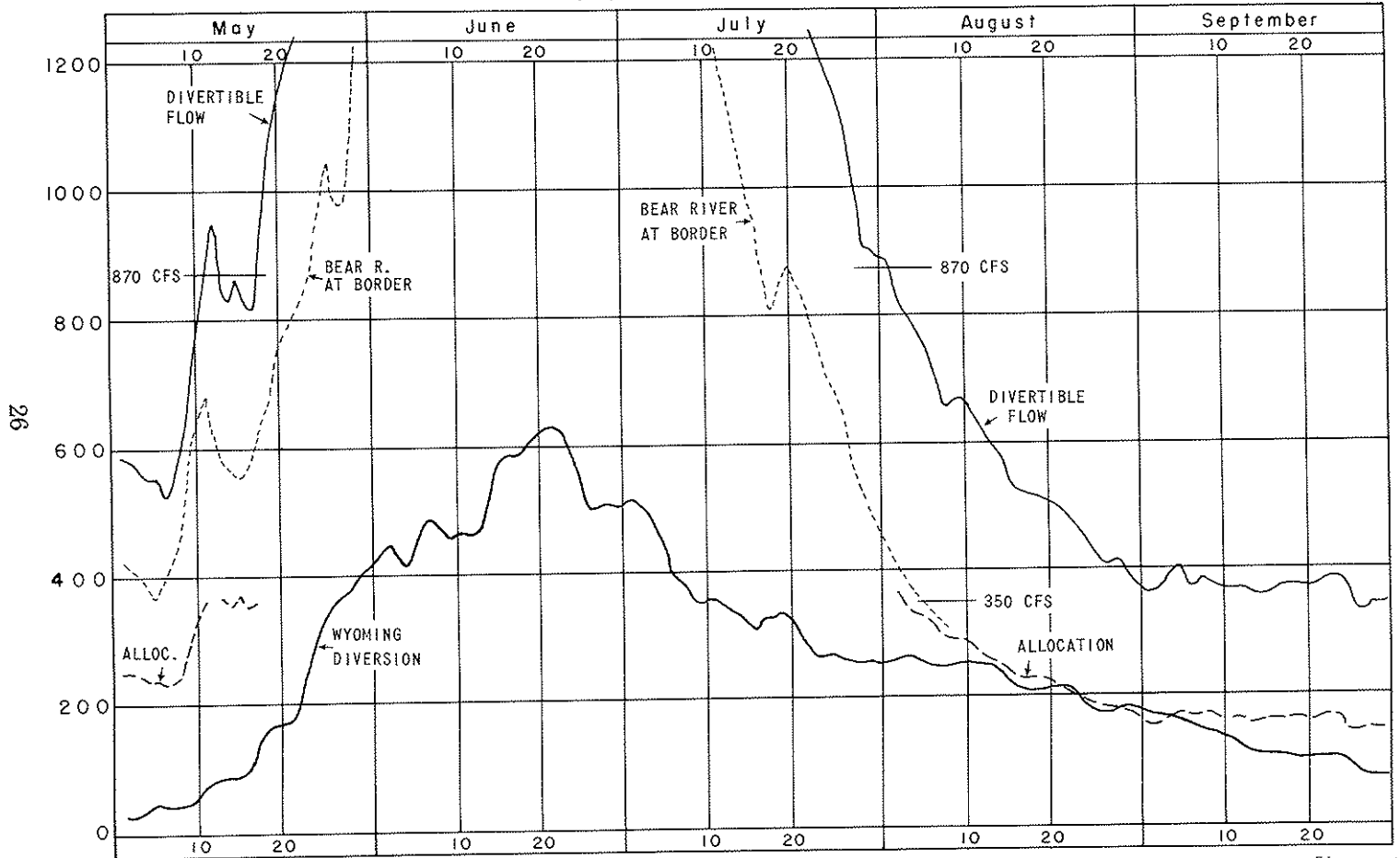
Copies of applications presented to the Commission in 1967 included one for storage of 158 acre-feet on Mill Creek in Wyoming. The total capacity includes 108 acre-feet of allocated Compact water and 50 acre-feet of holdover capacity. This was the only application for irrigation storage of allocated water under the new storage provision of the Compact.

Many applications for ground-water development are submitted to the Commission each year. Most of these applications are in Utah in the Lower Division so could not affect an existing user in a lower State. Yet pumping also is becoming more extensive above Bear Lake, and the Commission is concerned with respect to Article X of the Compact which prohibits approval of an application if it will affect rights in another State.

Hydrologic studies of ground water in the Wyoming portion of Bear River basin indicate quantities of water sufficient for irrigation are available in the unconsolidated sediments underlying the basin. Only a small amount of this supply is now being used, but the effect on streamflow and established rights in other States eventually will need to be determined as underground withdrawal increases.

# CENTRAL DIVISION - WYOMING SECTION

CUBIC FEET PER SECOND



26

Figure 10

# CENTRAL DIVISION - IDAHO SECTION

CUBIC FEET PER SECOND

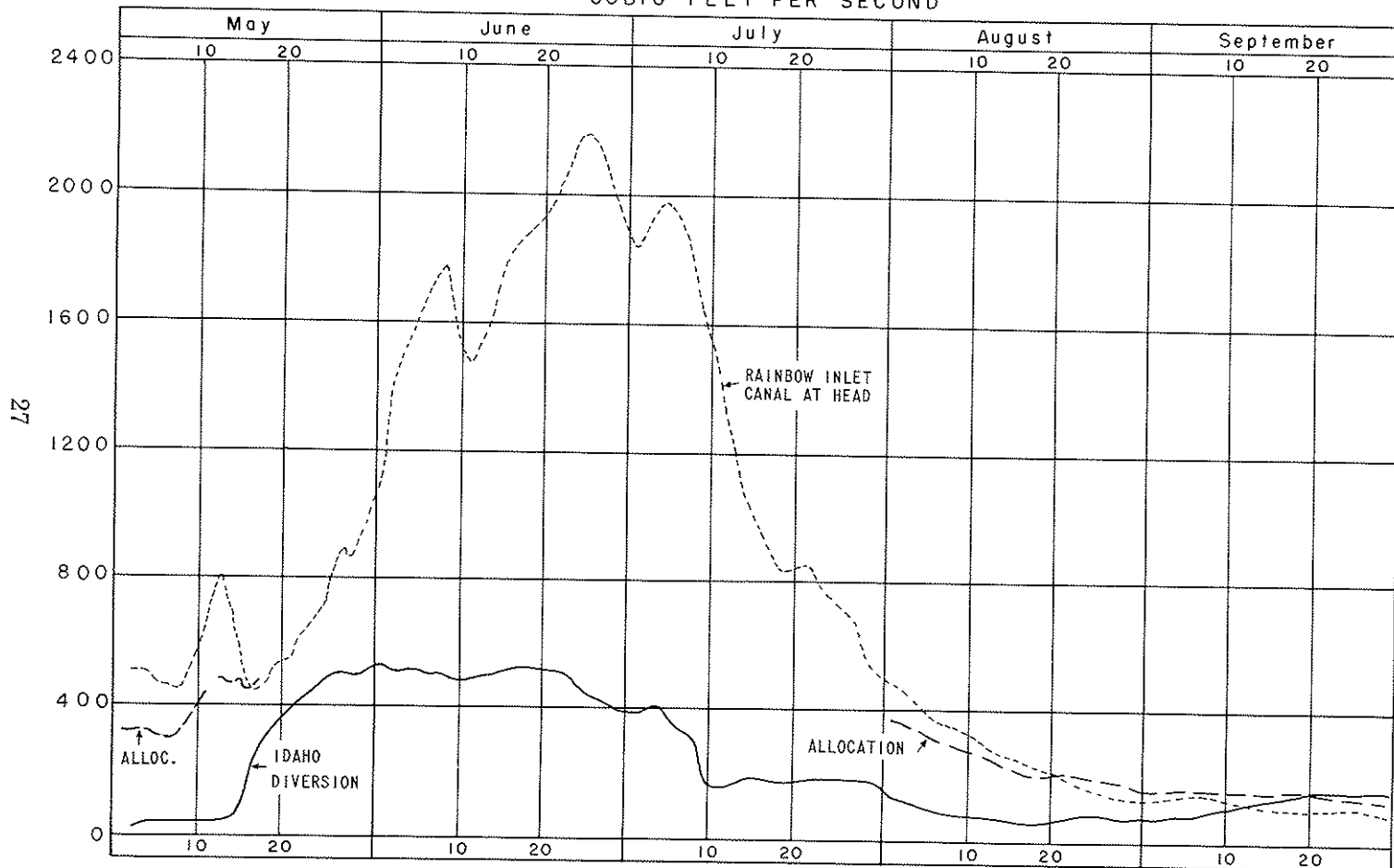


Figure 11

DAILY DISCHARGE IN CFS OF SMITHS FORK AND BEAR RIVER CANALS  
 WITH COMPACT ALLOCATION IN CENTRAL DIVISION

MAY 1967	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
<b>SMITHS FORK DIVISIONS</b>	...																														
<b>BEAR RIVER DIVISIONS</b>	...																														
<b>SMITHS FORK CANALS</b>	...																														
<b>BEAR RIVER CANALS</b>	...																														
<b>SUBTOTAL</b>	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	
<b>SMITHS FORK FLOW</b>	595	572	670	562	567	584	570	543	577	567	569	575	569	590	608	574	617	710	671	655	628	630	628	625	624	622	620	618	616	614	
<b>BEAR RIVER FLOW</b>	589	572	670	562	567	584	570	543	577	567	569	575	569	590	608	574	617	710	671	655	628	630	628	625	624	622	620	618	616	614	
<b>Compact Allocation (CFS)</b>	...																														
<b>Water Allocation (CFS)</b>	...																														

Table 1

28



DAILY DISCHARGE IN CFS OF SMITHS FORK AND BEAR RIVER CANALS WITH COMPACT ALLOCATION IN CENTRAL DIVISION

Table with columns for months (JUNE 1967) and days (1-31) and rows for various canal types (DIVERSIONS, PRIMARY CANALS, SMITHS FORK CANALS, LOCAL WYD. DIVERSIONS, IRRIG. DIVERSIONS, CUMULATIVE) and specific canal names like Goodwill Co., DeWitt, etc.

Table 2



**DAILY DISCHARGE IN CFS OF SMITHS FORK AND BEAR RIVER CANALS  
WITH COMPACT ALLOCATION IN CENTRAL DIVISION**

AUGUST 1967	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	
<b>SMITHS FORK CANALS</b>																																
Upper River 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	
Lower River 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	
Upper Middle 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	
Lower Middle 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	
Upper Lower 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	
Lower Lower 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	
<b>BEAR RIVER CANALS</b>																																
Upper River 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	
Lower River 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	
Upper Middle 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	
Lower Middle 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	
Upper Lower 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	
Lower Lower 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	
<b>TOTAL</b>	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	

Table 4



## APPENDIX A

L. WILLIAM ANDERSON  
CERTIFIED PUBLIC ACCOUNTANT  
2870 EAST 3300 SOUTH • TELEPHONE 487-7176  
SALT LAKE CITY 9, UTAH

November 28, 1967

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

Gentlemen:

In accordance with your instructions, I have examined the records and accounts of the Bear River Commission for the fiscal year ended June 30, 1967 and now submit my report thereon.

My audit included a review of the financial transactions, and examination of the statement of revenue and expenditures for the year and budget estimates and related expenditures, as published with minutes of the meetings held December 5, 1966 and April 17, 1967 and letter of June 23, 1967, regarding budget revisions.

I confirmed the funds available at June 30, 1967 by direct correspondence with the depository. My 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 I considered necessary in the circumstances. All 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 my report. Locally administrative expenses amounting to \$1,137.00 were disbursed by the local office.

The results of my 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, 1967.

Exhibit "A" -Statement of available revenue and appropriations thereof for the fiscal year, showing balances unexpended at June 30, 1967.

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

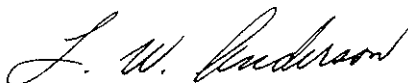
### GENERAL COMMENTS

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 the Bear River. The Bear River Commission was organized April 5, 1958, and by-laws were 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 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, 1967, are presented in Schedule "A-1".

In my 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, 1967, and the results of the financial transactions for the period then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Yours very truly,



BEAR RIVER COMMISSION

Statement of Revenue & Expenditures  
For the Fiscal Year Ended June 30, 1967

<u>REVENUE:</u>			
State of Wyoming		\$10,750.00	
State of Idaho		11,083.33	
State of Utah		<u>11,083.34</u>	\$32,916.67
 <u>EXPENDITURES:</u>			
Commission's portion of direct expenses of the stream-gauging program, Schedule "A-1"			
Personal Services	\$22,637.00		
Travel and subsistence	2,983.50		
General office	1,365.00		
Fiscal and administration	1,211.50		
Washington office charges	<u>2,799.00</u>		
Total -- Schedule "A-1"		\$30,996.00	
Administrative expenses:			
Auditing fee	\$ 200.00		
Legal consultant	300.00		
Transcript of minutes	70.00		
Printing annual report	492.00		
Insurance	50.00		
Supplies	<u>25.00</u>		
		<u>1,137.00</u>	<u>32,133.00</u>
 <u>EXCESS OF REVENUE OVER EXPENDITURES FOR</u> <u>THE FISCAL YEAR ENDED JUNE 30, 1967</u>			\$ 783.67
 <u>FUNDS AVAILABLE AT JULY 1, 1966</u>			<u>5,999.62</u>
 <u>FUNDS AVAILABLE AT JUNE 30, 1967</u>			<u>\$ 6,783.29</u>
Expenditures as above			\$32,133.00
Portion of expenditures incurred through stream-gauging program allocated to and paid direct by United States Geological Survey			<u>24,881.00</u>
 Total expenditures as per Exhibit "B"			<u><u>\$57,014.00</u></u>

## BEAR RIVER COMMISSION

Statement of Available Revenue and Appropriation Thereof  
For the Fiscal Year, Showing Balances at June 30, 1967

	Expected Revenue & Expenditures as Budgeted	Actual Revenue & Expenditures	Balance or Deficit (-) Compared to Budget
<u>Cash Revenues:</u>			
Balance--funds on hand at July 1, 1966	\$ 5,999.62	\$ 5,999.62	\$ -0-
Revenue Receipts			
State of Wyoming	10,750.00	10,750.00	
State of Idaho	10,750.00	*11,083.33	333.33
State of Utah	10,750.00	*11,083.34	333.34
	<u>\$38,249.62</u>	<u>\$38,916.29</u>	<u>\$ 666.67</u>
<u>FUNDS FURNISHED DIRECT BY</u>			
<u>UNITED STATES GEOLOGICAL SURVEY</u>	24,455.00	24,881.00	426.00
<u>ALLOCATED FROM GENERAL FUND</u>	196.00		(196.00)
	<u>\$62,900.62</u>	<u>\$63,797.29</u>	<u>\$ 896.67</u>
<u>Appropriation Accounts:</u>			
Stream-gauging -- Schedule "A-1"	\$48,910.00	\$49,336.00	\$ (426.00)
Personal services	4,900.00	4,900.00	-0-
Travel and subsistence	539.00	539.00	-0-
Fiscal and administration	253.00	253.00	-0-
Washington office charge	569.00	569.00	-0-
General office expense	380.00	280.00	100.00
Printing Annual report	500.00	492.00	8.00
Treasurer's bond and audit	300.00	250.00	50.00
Transcript of minutes	150.00	70.00	80.00
Legal consultant	300.00	300.00	-0-
Miscellaneous	100.00	25.00	75.00
	<u>\$56,901.00</u>	<u>\$57,014.00</u>	<u>\$ (113.00)</u>
Unappropriated at July 1, 1966	<u>5,999.62</u>	<u>-0-</u>	<u>5,999.62</u>
	<u>\$62,900.62</u>	<u>\$57,014.00</u>	<u>\$5,886.62</u>
<u>BALANCE</u>	<u>\$ -0-</u>	<u>\$ 6,783.29</u>	<u>\$6,783.29</u>
<u>FUNDS AVAILABLE AT JUNE 30, 1967</u>		<u>\$ 6,783.29</u>	<u>\$6,783.29</u>

\*It was intended the total assessment would be increased by \$1,000 to meet added anticipated costs. However, since all states were not able to contribute the increased amount, the excess paid in by Utah and Idaho will be credited against next year's assessments.



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, 1967

	<u>Allocable Expenditures</u>			Charged Direct to Bear River Commission	Total Expenses to Bear River Commission
	<u>Total</u>	<u>U. S. G. A. 50%</u>	<u>Bear River Commission 50%</u>		
Personal services	\$35,900.00	\$18,163.00	* \$17,737.00	\$ 4,900.00	\$22,637.00
Travel and subsistence	4,889.00	2,444.50	2,444.50	539.00	2,983.50
General office	2,170.00	1,085.00	1,085.00	280.00	1,365.00
Fiscal and administration	1,917.00	958.50	958.50	253.00	1,211.50
Washington office	<u>4,460.00</u>	<u>2,230.00</u>	<u>2,230.00</u>	<u>569.00</u>	<u>2,799.00</u>
	<u>\$49,336.00</u>	<u>\$24,881.00</u>	<u>\$24,455.00</u>	<u>\$ 6,541.00</u>	<u>\$30,996.00</u>

\*Unequal distribution of personal services expenditures due to supplemental Federal appropriation for salary increases during the third quarter.

## 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 1967 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 information published in annual water-supply papers of the Geological Survey.

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. Quantities for the month are 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

## 10-112. West Fork Bear River at Whitney Dam site, near Oakley, Ut.

Location.--lat 40°50'30", long 110°58'20", in NE¼ sec.9, T.1 N., R.5 E., on left bank, 1,380 ft below Whitney Dam, 7 miles upstream from Deer Creek, 21.5 miles northeast of Oakley.

Drainage area.--7.5 sq mi, approximately.

Records available.--October 1963 to September 1967. Prior to October 1965 published as, "at Whitney Dam site".

Gage.--Water-stage recorder. Altitude of gage is 9,120 ft (from topographic map).

Expenses.--Maximum discharge during year, 122 cfs Sept. 8 (gage height, 3.01 ft); no flow Nov. 16-29, 1963-67; Maximum discharge, 145 cfs June 13, 1965 (gage height, 1.95 ft); no flow July 24 to Sept. 30, Nov. 16-29, 1966.

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 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.03	0.01	0.07	0.89	0.99	0.44	0.47	0.11	1.0	50	8.7	12
2	.03	.01	.34	.92	.99	.47	.47	.11	1.1	60	4.0	12
3	.03	.01	.70	.92	.95	.47	.47	.11	1.1	55	3.9	11
4	.03	.01	.76	.92	.96	.47	.47	.11	1.2	48	3.9	11
5	.03	.01	.82	.89	.96	.47	.49	.11	1.3	46	2.3	11
6	.03	.01	.96	.90	.98	.47	.49	.12	1.4	40	1.4	11
7	.03	.01	.89	.96	.98	.47	.49	.15	1.4	32	1.4	11
8	.03	.01	1.1	.96	.96	.47	.49	.15	1.4	26	1.4	22
9	.03	.01	1.2	.96	.96	.47	.49	.16	1.4	23	1.7	16
10	.03	.01	1.3	.92	.98	.47	.49	.15	1.4	17	2.1	16
11	.03	.01	1.3	.92	.96	.47	.49	.12	1.4	4.9	2.5	16
12	.03	.01	1.3	.92	.96	.47	.49	.12	1.3	4.9	2.0	16
13	.03	.01	1.1	.92	.99	.42	.49	.12	1.5	4.8	2.7	16
14	.03	.01	.76	.96	.99	.42	.49	.12	1.5	7.5	2.6	16
15	.03	.01	.73	.96	.99	.42	.49	.12	1.5	10	9.7	16
16	.02	0	.73	.96	.99	.44	.49	.15	1.2	12	11	16
17	.02	0	.73	.96	.99	.44	.49	.16	.89	13	11	20
18	.02	0	.76	.96	.96	.44	.37	.20	.89	12	11	20
19	.02	0	.76	.99	1.0	.44	.12	.17	.65	11	11	20
20	.02	0	.76	1.0	.99	.44	.11	.20	.89	10	12	20
21	.02	0	.79	1.0	.99	.44	.11	.23	.85	9.5	12	20
22	.02	0	.82	.99	1.0	.44	.11	.27	.89	8.8	12	20
23	.02	0	.85	.99	1.0	.44	.11	.29	.89	9.0	12	20
24	.02	0	.85	.99	1.0	.44	.11	.34	8.0	10	12	20
25	.02	0	.89	.99	.80	.44	.11	.32	82	9.2	12	20
26	.02	0	.89	.99	.49	.44	.11	.32	74	8.9	12	19
27	.02	0	.89	.99	.47	.44	.11	.26	55	8.5	11	19
28	.02	0	.89	.99	.44	.44	.11	.70	40	8.3	11	19
29	.02	0	.89	.99	---	.47	.11	.92	25	8.0	11	19
30	.02	.01	.89	.99	---	.47	.11	.92	25	9.2	11	19
31	.02	---	.89	.99	---	.47	---	.26	---	9.2	11	---
Total	0.77	0.16	26.71	29.69	25.73	14.00	9.95	8.35	314.45	566.7	235.1	506
Mean	0.025	0.005	0.862	0.956	0.919	0.482	0.332	0.271	10.5	18.9	7.58	16.9
Max	0.03	0.01	1.3	1.0	1.0	0.47	0.49	0.96	74	60	12	22
Min	0.02	0	0.07	0.89	0.44	0.42	0.11	0.11	0.85	4.6	1.4	11
Ac-ft	1.5	0.3	53	59	51	28	20	17	624	1,160	466	1,000
Cal yr:1966: Total	2,162.94		Mean	5.98	Max	52	Min	0	Ac-ft	4,350		
Wtr yr:1967: Total	1,787.65		Mean	4.62	Max	74	Min	0	Ac-ft	3,480		

Note.--No gage height record Oct. 1 to Nov. 29.

# BEAR RIVER BASIN

## 10-115. Bear River near Utah-Wyoming State Line.

Location.--Lat 40°58', long 110°51', in SE<sup>1</sup>/<sub>4</sub> 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 1967.

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

Average discharge.--25 years, 187 cfs (13E,400 acre-ft per year).

Extremes.--Maximum discharge during year, 2,260 cfs June 23 (gage height, 3.32 ft); minimum, 23 cfs Nov. 29. 1942-67: Maximum discharge, 2,850 cfs June 12, 1968; maximum gage height, 4.27 ft June 8, 1967; minimum determined, 16 cfs Apr. 11, 1951, Nov. 5, 1954, Nov. 1, 1958, Oct. 30, 1958.

Remarks.--Records good except those for winter months, which are fair. Two diversions above station for irrigation of about 200 acres above and 2,600 acres below station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	32	50	48	41	41	49	65	742	1,800	158	79
2	40	50	48	45	41	41	49	61	759	1,470	212	72
3	62	52	46	45	41	42	46	59	885	1,400	182	65
4	55	50	50	45	41	42	51	59	993	1,350	182	64
5	58	48	50	45	41	42	55	68	1,220	1,300	200	62
6	58	53	50	45	41	44	51	68	1,390	1,180	103	62
7	56	56	50	45	41	46	52	79	1,080	866	236	59
8	58	58	50	45	41	46	55	111	957	840	193	70
9	55	47	50	45	41	42	53	159	948	788	168	87
10	51	64	52	45	40	40	51	212	1,010	768	182	87
11	51	62	54	41	42	40	55	152	658	694	148	83
12	55	59	54	41	40	40	53	156	940	614	146	81
13	70	53	52	41	42	40	55	122	948	590	130	76
14	68	55	52	40	41	39	56	108	858	654	122	76
15	64	53	52	41	40	46	62	104	813	648	125	74
16	61	55	52	41	40	45	62	128	777	646	117	76
17	59	52	52	40	40	47	56	212	622	638	111	62
18	62	52	52	40	40	46	72	352	1,020	527	109	61
19	65	48	52	40	40	44	81	444	1,340	464	102	61
20	72	50	52	40	40	45	70	527	1,540	414	100	75
21	70	56	50	40	40	45	61	668	1,630	374	96	76
22	52	48	50	40	40	44	59	939	1,640	357	89	79
23	68	39	50	42	40	50	64	1,190	1,920	368	83	86
24	61	47	50	42	40	46	56	1,250	1,400	420	81	74
25	61	38	50	42	40	44	44	1,590	1,470	379	61	76
26	65	45	50	43	40	46	58	1,220	1,550	508	84	75
27	65	47	50	44	40	47	65	1,210	1,600	260	83	72
28	61	49	50	44	40	46	79	1,350	1,610	244	83	70
29	59	51	50	42	- - - -	45	78	1,250	1,400	220	69	65
30	56	51	50	44	- - - -	42	69	930	1,470	208	91	70
31	58	- - - -	50	41	- - - -	50	- - - -	777	- - - -	196	83	- - - -
Total	1,856	1,639	1,572	1,519	1,134	1,369	1,778	15,375	35,609	20,777	4,072	2,249
Mean	59.3	51.3	50.7	42.5	40.5	44.2	59.3	502	1,187	670	131	75.0
Max	72	64	54	45	42	50	81	1,590	1,620	1,500	258	87
Min	34	38	48	40	40	39	46	59	742	198	61	59
Ac-ft	3,850	3,050	3,120	2,820	2,250	2,720	3,830	30,890	70,630	41,210	8,080	4,460

Cal yr 1966: Total 55,810 Mean 153 Max 1,340 Min 23 Ac-ft 110,700  
 Wtr yr 1967: Total 88,831 Mean 243 Max 1,920 Min 24 Ac-ft 176,200

Peak discharge (base, 1,100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
8-25	1630	3.12	1,800	8-23	0800	3.32	2,260
8-5	2300	3.07	1,850				

## BEAR RIVER BASIN

### 10-157. Sulphur Creek above reservoir, near Evanston, Wyoming.

Location.--Lat 41°08', long 110°48', in SW<sup>1</sup>/<sub>4</sub> sec.35, T.14 N., R.118 W., on right bank 1.2 miles downstream from Willow Creek, 2 miles upstream from Sulphur Creek Dam, and 11.5 miles southeast of Evanston.

Drainage area.--84 sq mi, approximately.

Records available.--October 1957 to September 1967. Monthly discharge only for October and November 1957, published in RSP 1734.

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

Average discharge.--10 years, 11.3 cfs (8,340 acre-ft per year).

Extremes.--Maximum discharge during year 234 cfs May 26 (gage height, 4.17 ft); minimum, 0.06 Oct. 2.

1967-67: Maximum discharge, 1,220 cfs Apr. 21, 1968 (gage height, 6.02 ft); no flow at times most of years.

Remarks.--Records good except those for winter months, which are fair. Several diversions for irrigation above section.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.06	0.33	3.5	4.0	4.5	7.0	70	22	74	14	2.5	3.2
2	.10	3.7	4.5	4.0	4.5	7.0	60	44	77	12	3.6	3.4
3	.30	10	4.5	4.0	4.5	7.0	70	45	69	9.9	3.4	3.2
4	.30	11	3.5	4.0	4.5	7.0	90	36	65	9.9	3.2	3.0
5	.24	10	2.2	4.0	4.5	7.0	110	32	48	10	3.4	3.0
6	.22	2.5	2.5	4.0	4.5	7.0	100	37	49	9.8	3.0	3.2
7	.22	1.9	3.8	4.0	4.5	7.0	94	34	35	15	3.8	2.5
8	.24	3.4	3.8	4.0	4.5	7.0	88	43	40	16	4.0	.84
9	.24	3.5	3.5	4.0	4.5	7.0	84	51	34	13	3.8	1.4
10	.24	5.1	1.0	4.0	4.5	7.0	70	50	39	12	3.2	1.3
11	.26	5.9	3.5	4.5	5.0	10	54	72	42	10	2.8	.84
12	.33	5.9	4.0	4.5	5.0	10	43	56	33	8.6	2.0	.68
13	.32	5.9	4.0	4.5	5.0	10	44	56	55	6.9	1.6	.66
14	1.1	6.4	4.0	4.5	5.0	10	47	49	56	11	1.6	.84
15	.62	6.1	4.0	4.5	5.0	10	47	40	64	34	2.0	.78
16	.48	5.6	4.0	4.5	5.0	10	31	35	57	17	2.2	.84
17	.42	4.9	4.0	4.5	5.0	11	45	42	65	24	.92	.84
18	.42	4.5	4.0	4.5	5.0	16	42	62	53	17	.60	.68
19	.45	4.3	4.0	4.5	5.0	16	36	66	48	14	.68	.60
20	.54	4.3	4.0	4.5	5.0	16	26	69	51	11	.60	.57
21	.22	4.7	4.0	4.5	5.0	16	24	116	59	7.4	.60	.84
22	.45	3.6	4.0	4.5	5.0	22	20	148	57	6.1	.57	.84
23	.45	4.7	4.0	4.5	6.0	31	22	161	58	4.7	.54	.78
24	.42	2.2	4.0	4.5	6.0	50	22	154	64	4.9	.54	.84
25	.39	1.4	4.0	4.5	6.0	39	16	167	39	5.6	.54	.92
26	.39	1.6	4.0	4.5	6.0	47	16	146	31	4.9	1.0	.84
27	.36	1.3	4.0	4.5	6.0	60	20	120	20	3.6	1.9	.76
28	.36	1.6	4.0	4.5	6.0	64	20	108	21	3.2	2.2	.68
29	.36	2.9	4.0	4.5	- - -	48	71	109	21	2.9	2.2	.76
30	.33	3.8	4.0	4.5	- - -	35	19	111	17	2.5	2.2	1.1
31	.33	- - -	4.0	4.5	- - -	50	- - -	67	- - -	2.7	2.7	- - -
Total	12.76	134.43	116.3	134.5	141.0	648.0	1,455	2,502	1,462	323.3	63.89	40.11
Mean	0.412	4.48	3.72	4.34	5.04	20.9	48.5	60.7	48.7	10.4	2.06	1.34
Max	1.1	11	6.8	4.5	6.0	64	110	168	84	34	4.0	3.4
Min	0.06	0.33	1.0	4.0	4.5	7.0	18	26	17	2.5	0.54	0.54
Ac-ft	25	267	223	267	286	1,290	2,890	4,960	2,900	641	127	80
Cal yr:1966: Total	3,080.99		Mean	9.26	Max	16	Min	0	Ac-ft	6,710		
Wtr yr:1967: Total	7,032.23		Mean	19.3	Max	168	Min	0.06	Ac-ft	13,960		

## BEAR RIVER BASIN

### 10-159. Sulphur Creek below reservoir, near Evanston, Wyoming.

Location.--Lat 41°09', long 110°49', in SE1/4 sec.26, T.14 N., R.119 W., on left bank 400 ft downstream from Sulphur Creek Dam, 6.3 miles upstream from mouth, and 10.5 miles southeast of Evanston.

Drainage area.--66 sq mi, approximately.

Records available.--March 1966 to September 1967.

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

Extremes.--Maximum discharge during year, 167 cfs May 26 (gage height, 4.10 ft); no flow Oct. 18 to Apr. 18, 1966-67; Maximum discharge, 343 cfs June 11, 1966 (gage height, 4.36 ft); no flow at times in each year.

Remarks.--Records good. Flow regulated by Sulphur Creek Reservoir (capacity, 7,100 acre-ft) enlargement completed November 1966. Records prior to 1966 do not include flow over spillway of the dam.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13						0	22	128	19	8.2	0.18
2	13						0	23	122	16	8.1	.19
3	13						0	22	92	14	6.6	.18
4	5.8						0	60	48	14	6.4	.24
5	.04						0	80	28	13	6.1	.29
6	.03						0	60	14	13	7.6	.29
7	.03						0	47	14	14	9.3	.29
8	.02						0	7.4	12	16	9.3	.23
9	.02						0	7.8	16	20	6.0	.29
10	.02						0	7.6	16	21	6.7	.18
11	.02						0	7.6	23	19	6.1	.34
12	.04						0	23	36	16	7.4	.12
13	.07						0	35	54	15	6.6	.06
14	.04						0	36	61	15	4.8	3.4
15	.03						0	40	27	27	3.7	16
16	.02						0	56	85	34	3.0	16
17	.02						0	5.0	58	40	2.4	30
18	0						10	56	73	42	1.9	37
19	0						10	52	68	38	1.7	37
20	0						10	35	63	32	1.3	59
21	0						10	35	66	26	1.1	70
22	0						10	35	67	18	.94	68
23	0						10	43	72	18	.80	66
24	0						10	100	89	15	.55	67
25	0						10	134	75	14	.50	66
26	0						10	157	58	12	.61	64
27	0						10	148	44	11	.29	64
28	0						16	137	35	11	.29	63
29	0						25	137	29	11	.61	62
30	0						25	137	24	11	.40	61
31	0							126		6.2	.34	
Total	48.20	0	0	0	0	0	171.0	2,083.2	1,700	582.2	121.43	854.35
Mean	1.55	0	0	0	0	0	5.70	67.2	56.7	19.1	3.92	28.5
Max	13	0	0	0	0	0	25	157	165	42	9.3	70
Min	0	0	0	0	0	0	0	7.4	16	8.2	0.29	0.05
Ac-ft	96	0	0	0	0	0	339	4,130	3,376	1,170	241	1,680
Cal yr 1966: Total	5,919.1		Mean 16.2	Max 66	Min 0	Ac-ft 11,730						
Wtr yr 1967: Total	5,570.38		Mean 15.3	Max 157	Min 0	Ac-ft 11,040						

# BEAR RIVER BASIN

## 10-195. Chapman Canal at State Line, near Evanston, Wyoming.

Location.--Lat 41°24', long 111°02', in SW¼ sec.35, T.17 N., R.121 W., on left bank at highway bridge, 6.5 miles downstream from headgates and 10 miles northeast of Evanston.

Records available.--April 1942 to September 1967 (prior to October 1944 irrigation seasons only). Monthly discharge ONLY for some periods, published in MSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,970 ft (from river-profile map). Prior to Oct. 11, 1945, staff gage and Oct. 11, 1946 to Aug. 2, 1961, water-stage recorder at site 20 ft downstream at same datum.

Average discharge.--23 years (1944-67), 18.8 cfs (13,680 acre-ft per year).

Extremes.--1942-67: Maximum daily discharge, 133 cfs June 19, 1964; no flow at times each year.

Remarks.--Records fair. Canal diverts water from Bear River in NW¼ sec.35, 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 Salernatus basin, Utah.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	55	0.04			0	0	42	54	35	15	3.0
2	0	47	0.04			0	0	46	75	37	15	3.0
3	2.2	25	0.04			0	0	47	89	37	16	2.0
4	12	28	0			0	0	48	87	48	13	2.0
5	12	22	0			0	.20	45	76	49	15	2.0
6	8.4	19	0			0	1.3	48	56	57	16	1.0
7	15	41	0.24			0	.67	46	94	61	17	1.0
8	22	59	0			0	1.2	44	59	63	27	1.0
9	29	58	0			0	1.4	47	59	32	24	1.0
10	32	44	0			0	.85	53	73	23	23	1.0
11	30	57	.36			.10		56	73	19	23	0
12	24	64	0			.30	.40	54	69	17	21	1.0
13	36	69	0			.50	.29	51	78	15	21	1.3
14	69	62	.40			.70	.04	49	74	13	20	1.8
15	73	42	0			.90	0	46	74	13	21	1.4
16	66	1.9	0			1.1	0	43	73	13	23	1.3
17	66	1.5	0			1.3	0	46	89	13	19	1.0
18	70	1.1	0			1.5	8.2	61	73	15	18	1.4
19	74	.94	0			1.7	44	69	82	15	16	3.8
20	83	.76	0			1.9	48	70	99	15	14	4.3
21	89	.58	0			4.4	44	78	108	15	14	6.8
22	88	.40	0			6.8	42	73	127	15	13	9.1
23	74	.32	0			4.0	41	68	111	15	13	9.7
24	93	.32	0			2.2	41	65	33	15	12	10
25	66	.12	0			1.2	39	127	27	40	12	9.7
26	82	.20	0			0	37	87	25	48	11	11
27	85	.04	0			0	38	85	27	39	10	13
28	82	.03	0			0	39	88	26	32	9.0	13
29	70	.28	0			.58	42	98	25	29	8.0	13
30	68	.20	0			.24	43	102	33	24	8.0	15
31	62		0			0		64		23	7.0	
Total	1,802.6	703.54	1.12	0	0	29.42	508.94	1,977	2,058	895	496.0	144.6
Mean	51.7	23.5	0.038	0	0	0.949	17.0	63.8	68.6	28.9	16.0	4.82
Max	93	69	0.40	0	0	6.8	46	127	127	67	27	15
Min	0	0.04	0	0	0	0	0	41	25	13	7.0	0
Ac-ft	3,180	1,400	2.2	0	0	58	1,010	3,920	4,080	1,780	984	257
Cal yr 1968: Total	5,788.98			Mean	15.8	Max	83	Min	0	Ac-ft	11,450	
Wtr yr 1967: Total	8,416.22			Mean	23.1	Max	127	Min	0	Ac-ft	16,700	

# BEAR RIVER BASIN

## 10-201. Bear River above reservoir, near Woodruff, Utah.

Location.--Lat 41°26'06", long 111°01'00", in NW1/4 sec.29, T.17 N., R.12E W., in Wyoming on right bank 2.3 miles upstream from Woodruff Harrows Dam and 10 miles southeast of Woodruff.

Drainage area.--780 sq mi, approximately.

Records available.--October 1961 to September 1967.

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

Average discharge.--6 years, 234 cfs (169,400 acre-ft per year).

Extremes.--Maximum discharge during year, 2,140 cfs June 24 (gage height, 5.51 ft); minimum, 2.7 cfs Sept. 5, 6, 1961-67. Maximum discharge, 3,340 cfs June 13, 14, 1965 (gage height, 5.85 ft); minimum, 0.1 cfs Aug. 24, 1964.

Remarks.--Records good except those for winter months, which are fair. Diversions for irrigation of about 73,500 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.8	28	86	80	70	80	186	156	1,270	1,320	65	7.3
2	4.5	23	97	60	70	80	176	208	1,100	1,250	61	6.0
3	5.6	18	87	60	70	80	164	234	1,050	1,180	61	5.6
4	5.6	18	92	60	70	80	186	224	1,030	1,010	52	4.8
5	6.0	18	70	50	70	60	282	199	1,180	876	48	3.6
6	6.0	13	97	60	70	80	277	220	1,230	844	46	3.0
7	5.3	16	97	60	70	80	273	220	1,400	754	46	3.8
8	5.3	27	97	60	70	80	299	192	1,160	661	60	4.2
9	6.0	27	82	60	70	80	277	202	1,050	376	60	5.3
10	7.3	22	92	60	70	125	258	277	1,020	834	50	4.9
11	8.0	24	92	60	70	180	250	364	1,020	481	46	4.5
12	6.0	30	90	60	70	245	242	352	568	406	41	4.2
13	12	32	90	60	70	220	234	369	1,110	343	36	3.4
14	19	32	90	60	70	170	231	347	1,100	331	34	3.8
15	21	35	60	60	70	170	246	302	1,100	471	33	5.6
16	22	104	90	60	70	170	284	277	1,040	486	34	6.0
17	23	108	90	60	70	170	227	255	1,354	452	36	7.3
18	27	97	90	60	70	170	216	360	1,060	438	26	5.2
19	33	97	90	60	70	170	206	608	1,220	374	24	16
20	38	98	90	60	70	170	209	576	1,800	314	21	17
21	52	86	90	70	70	200	183	700	1,610	250	18	18
22	52	104	90	70	70	280	158	946	1,770	208	17	24
23	35	88	90	70	60	300	150	1,220	1,330	176	15	23
24	40	70	60	70	80	230	147	1,450	2,010	173	15	27
25	41	45	90	70	60	250	186	1,660	1,900	196	12	27
26	36	75	90	70	60	266	123	1,970	1,730	173	12	35
27	35	66	90	70	60	218	123	1,950	1,730	141	9.9	41
28	34	75	90	70	60	231	126	1,610	1,720	120	8.2	40
29	29	66	90	70	- - - -	306	167	1,670	1,670	104	8.0	34
30	27	104	90	70	- - - -	250	180	1,650	1,350	66	8.0	38
31	25	- - - -	90	70	- - - -	183	- - - -	1,610	- - - -	77	6.6	- - - -
Total	672.7	1,646	2,803	2,370	2,020	5,376	6,189	22,660	40,042	14,884	1,007.7	429.8
Mean	21.7	54.9	90.6	76.5	72.1	173	206	737	1,335	490	32.4	14.3
Max	52	108	97	90	80	308	299	1,850	2,010	1,320	65	41
Min	3.8	13	70	70	70	60	80	123	156	568	77	6.8
Ac-ft	1,330	3,260	5,570	4,700	4,020	10,660	12,230	48,340	79,480	29,520	1,990	652

Cal yr 1966: Total 56,734.4 Mean 155 Max 1,360 Min 1.2 Ac-ft 112,500  
 Wtr yr 1967: Total 100,303.2 Mean 275 Max 2,020 Min 3.0 Ac-ft 198,800



# BEAR RIVER BASIN

## 10-202. Woodruff Narrows Reservoir near Woodruff, Utah.

Location.--Lat 41°30'10", long 111°00'55", in sec.32, T.16 N., R.120 W., in Wyoming, in gate house on dam, 5.6 miles upstream from Wyoming-Utah State line and 7.7 miles east of Woodruff.

Drainage area.--810 sq mi. approximately.

Records available.--October 1965 to September 1967.

Gage.--Water-stage recorder and mercury manometer. Altitude of the gage is 8,405 ft (from levels by Bureau of Reclamation).

Extremes.--Maximum contents during year 34,130 acre-ft June 23-25 (gage height, 36.0 ft); minimum 6,560 acre-ft Oct. 7-12.  
1966-67: Maximum contents, those of June 23-25, 1967; minimum, 6,480 acre-ft Sept. 11-13, 1966.

Remarks.--Reservoir formed by earth-fill, rock faced dam. Storage began Jan. 5, 1962. Usable capacity 26,000 acre-ft which includes 4,200 acre-ft of irrigation holdover, 4,000 acre-ft for winter release for fish propagation, and 1,500 acre-ft of inactive storage. Gage height of spillway is 35.3 ft. Figures given herein represent total contents.

Contents, in acre-feet, at 24.00, water year October 1965 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,850	7,350	10,000	13,050	16,810	18,880	23,410	23,410	30,850	31,370	23,260	23,410
2	8,850	7,350	10,180	-	16,820	19,000	23,410	23,410	31,030	31,370	23,260	23,040
3	8,850	7,350	10,360	-	17,050	19,120	23,410	23,580	31,030	31,370	23,260	22,740
4	8,850	7,350	10,450	-	17,120	19,240	23,410	23,580	31,200	31,200	23,260	23,310
5	8,850	7,350	10,530	-	17,150	19,360	23,580	23,580	31,370	31,030	23,260	21,680
6	6,850	7,630	10,680	-	17,320	19,480	23,710	23,580	31,530	30,850	23,260	21,480
7	6,560	7,630	10,780	-	17,330	19,600	23,710	23,710	31,530	30,850	23,260	21,030
8	6,560	7,710	10,920	-	17,330	19,720	23,860	23,860	31,530	30,410	23,260	20,510
9	6,560	7,790	10,920	-	17,440	19,840	23,860	-	31,370	30,060	23,260	20,180
10	6,560	7,780	11,090	-	17,550	19,960	23,860	-	31,200	29,740	23,260	19,720
11	6,560	7,790	11,270	-	17,550	20,180	23,710	-	31,200	29,580	23,260	19,480
12	6,560	7,570	11,360	-	17,770	20,280	23,710	-	31,030	29,370	27,690	19,000
13	6,630	7,870	11,520	-	-	20,700	23,710	-	31,200	29,180	27,830	18,640
14	6,630	7,950	11,600	-	-	21,180	23,710	-	31,200	28,180	27,690	18,130
15	6,700	7,950	11,780	-	-	21,460	23,710	-	31,200	28,180	27,690	18,000
16	6,700	8,110	11,870	-	-	21,880	23,710	-	31,200	28,180	27,690	18,000
17	6,700	8,320	11,960	15,220	-	22,170	23,710	29,000	31,200	29,180	27,620	18,000
18	6,780	8,530	12,050	15,340	-	22,450	23,710	29,000	31,200	29,180	27,690	18,000
19	6,880	8,610	12,150	15,340	-	22,880	23,580	29,550	31,200	29,000	27,690	18,000
20	6,930	8,780	12,340	15,450	-	23,180	23,580	29,550	31,530	29,000	27,690	18,000
21	6,930	8,960	12,410	15,570	-	23,410	23,580	29,740	31,850	28,710	27,590	18,000
22	7,090	9,120	12,490	15,670	-	23,890	23,580	30,060	32,350	28,710	27,550	18,000
23	7,090	9,210	12,450	15,670	-	24,460	23,410	30,410	34,150	28,710	27,370	18,000
24	7,180	9,280	12,570	15,780	15,510	25,340	23,410	30,620	34,150	28,710	26,840	18,000
25	7,240	9,350	12,680	15,800	15,540	25,800	23,410	30,680	34,150	28,710	26,320	18,000
26	7,320	9,470	12,800	16,000	15,640	26,320	23,410	31,030	31,880	28,280	26,800	18,000
27	7,320	9,580	12,740	16,240	15,760	26,840	23,410	31,370	31,660	28,280	26,340	18,000
28	7,390	9,650	12,820	16,370	15,860	27,370	23,280	31,200	31,850	28,280	26,010	18,000
29	7,390	9,740	12,900	16,490	-	27,830	23,410	31,200	31,850	28,280	24,560	18,000
30	7,470	9,800	13,000	16,800	-	28,120	23,410	31,200	31,370	28,280	24,140	18,130
31	7,470	-	13,000	16,710	-	28,260	-	31,200	-	28,280	23,760	-
(†)	18.8	19.8	23.8	27.0	28.8	35.8	35.8	37.2	37.3	35.5	32.6	28.3
(‡)	+840	+2,430	+3,100	+3,710	+4,170	+5,380	+180	+2,790	+170	-3,110	-4,800	-5,630

Calendar year 1966 ..... † -6,720  
 Water year 1966-67 ..... ‡ +11,560

† Gage height, in feet, at 2400 of first day of month.  
 ‡ Change in contents, in acre-feet.

## BEAR RIVER BASIN

### 10-203. Bear River below reservoir, near Woodruff, Utah.

Location.--Lat 41°30'20", long 111°00'50", in NW¼NW¼ sec.32, T.16 N., R.12C W., in Wyoming, on right bank, 1,100 ft below Woodruff Narrows Dam, 1.8 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 1967.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 6,400 ft (from river-profile map). Prior to Sept. 28, 1962, at site 175 ft upstream at same datum.

Average discharge.--6 years, 228 cfs (163,600 acre-ft per year).

Extremes.--Maximum discharge during year, 2,530 cfs June 25 (gage height, 7.38 ft); minimum daily, 6.7 cfs Oct. 19-22.

1961-67: Maximum discharge, 3,060 cfs June 14, 1965 (gage height, 7.38 ft); no flow July 4, 8, 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.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.7	7.7	8.3	9.3	20	22	148	144	1,520	1,290	82	194
2	7.7	7.7	8.3	14	20	22	156	152	1,140	1,190	71	194
3	7.7	7.7	8.3	17	20	23	159	179	984	1,200	63	194
4	7.7	8.0	8.3	17	20	23	170	196	1,070	1,120	67	194
5	7.7	8.0	8.3	17	20	23	230	202	1,110	1,040	53	194
6	7.4	7.7	8.3	17	21	23	236	202	1,180	978	49	194
7	7.4	8.0	8.3	17	21	23	250	207	1,320	893	42	194
8	7.4	8.0	8.3	17	21	23	286	202	1,290	809	39	192
9	7.4	8.0	8.3	17	21	23	272	196	1,190	713	39	192
10	7.4	8.0	8.6	18	21	23	262	205	1,100	624	36	189
11	7.4	8.0	8.6	18	21	23	256	268	1,090	555	36	186
12	7.4	8.0	8.6	18	21	23	256	318	1,060	494	35	186
13	7.7	8.0	8.6	18	21	23	247	340	1,100	427	33	184
14	7.4	8.0	8.6	18	22	23	239	354	1,140	374	32	184
15	7.4	8.0	8.6	18	22	23	244	356	1,130	366	29	182
16	7.0	7.7	8.6	18	22	23	247	307	1,130	436	28	24
17	7.0	7.7	8.6	18	22	23	242	297	1,060	456	26	23
18	7.0	8.0	8.6	18	22	23	233	307	1,060	444	25	23
19	6.7	8.0	8.6	18	22	23	216	378	1,090	419	22	20
20	6.7	8.0	8.9	18	22	23	210	596	1,250	374	22	16
21	6.7	8.0	8.9	18	22	23	196	677	1,440	314	20	16
22	6.7	8.0	8.9	18	22	23	176	767	1,530	262	53	16
23	7.0	8.0	8.9	18	22	23	165	1,050	1,860	267	202	15
24	7.0	8.0	8.9	18	22	23	152	1,260	2,030	194	199	15
25	7.0	8.0	8.9	18	22	23	142	1,560	2,240	182	196	15
26	7.0	8.0	8.9	19	22	23	135	1,780	1,980	176	196	15
27	7.4	8.0	8.9	19	22	24	139	1,980	1,680	159	196	15
28	7.4	8.0	8.9	19	22	24	124	1,970	1,620	139	196	15
29	7.7	8.3	8.9	19	-----	41	133	1,900	1,660	123	196	15
30	7.7	8.3	8.9	20	-----	37	146	1,910	1,540	106	196	15
31	7.7	-----	9.3	20	-----	123	-----	1,760	-----	96	194	-----
Total	226.5	238.0	268.2	546.3	598	905	6,031	22,000	40,674	16,162	2,672	3,081
Mean	7.32	7.56	8.65	17.6	21.4	29.2	201	710	1,356	521	81.2	105
Max	7.7	8.3	9.3	20	22	23	272	1,960	2,240	1,290	202	194
Min	6.7	7.7	8.3	9.3	20	22	124	144	384	96	20	15
Ac-ft	449	474	532	1,090	1,190	1,800	11,960	43,640	80,680	32,060	5,300	6,110
Cal yr 1966: Total	56,507.7			Mean 107		Max 1,490	Min 5.4	Ac-ft 116,100				
Wtr yr 1967: Total	93,407.8			Mean 256		Max 2,240	Min 6.7	Ac-ft 185,300				

# BEAR RIVER BASIN

## 10-265. Bear River near Randolph, Utah

Location.--Lat 41°48', long 111°06', in SE¼NE¼ sec.7, T.12 N., R.5 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.--1,650 sq mi, approximately.

Records available.--October 1943 to September 1967. Monthly discharge only for some periods, published in WSP 1374.

Gage.--Water-stage recorder. Altitude of gage is 5,205 ft (from river-profile map).

Average discharge.--24 years, 186 cfs (134,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,950 cfs June 27 (gage height, 8.35 ft); minimum daily, 16 cfs May 24. 1943-67: Maximum discharge 2,650 cfs May 6, 1952; maximum gage height, 8.95 ft June 17, 1955; minimum discharge, 1.6 cfs Nov. 12, 1961.

Remarks.--Records good except those for winter months, which are fair. Diversions for irrigation of about 34,500 acres above station. Flow regulated by Woodruff Narrows Reservoir beginning January 1962 (capacity 88,000 acre-ft).

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	38	50	28	47	50	250	213	1,400	1,520	201	20
2	32	36	50	28	47	50	257	210	1,300	1,380	168	23
3	32	37	50	28	47	50	264	205	1,450	1,310	172	23
4	32	37	50	28	47	50	277	208	1,120	1,100	153	21
5	31	37	50	28	47	50	316	225	740	962	135	20
6	32	38	45	28	47	54	322	244	708	851	124	20
7	32	39	45	40	47	54	322	242	764	785	116	25
8	32	41	45	40	47	54	340	239	845	734	105	24
9	32	39	45	40	49	54	336	235	944	692	87	24
10	32	42	45	40	49	56	332	228	1,010	605	85	25
11	32	38	45	40	49	60	340	225	993	541	60	26
12	32	39	45	40	49	60	340	239	948	515	85	26
13	32	38	45	40	49	180	356	228	1,030	466	79	27
14	33	38	45	40	49	150	354	217	1,100	405	76	26
15	32	38	45	40	50	140	368	184	1,260	382	76	26
16	30	38	40	40	50	130	364	144	1,360	370	71	26
17	29	38	40	40	50	120	350	60	1,460	382	68	26
18	29	36	40	40	50	120	340	40	1,490	459	65	24
19	29	37	40	40	50	120	334	32	1,400	513	64	23
20	29	37	40	40	50	130	320	28	1,300	496	61	30
21	29	37	35	40	50	150	308	21	1,250	459	61	24
22	29	47	35	40	50	180	298	18	1,270	425	58	21
23	28	44	35	40	50	200	284	17	1,340	396	54	20
24	29	50	35	40	50	210	268	16	1,460	370	53	23
25	30	50	35	40	50	208	257	76	1,580	360	64	35
26	32	50	28	45	50	218	246	218	1,730	322	47	40
27	32	50	28	45	50	215	237	378	1,910	295	35	43
28	32	50	28	45	50	222	225	534	1,910	277	28	45
29	32	50	28	45	50	304	223	737	1,830	257	23	47
30	34	50	28	45	50	255	220	962	1,700	237	20	48
31	35	---	26	45	---	257	---	1,170	---	218	20	---
Total	967	1,226	1,243	1,196	1,370	4,142	9,047	7,784	36,772	18,084	2,575	833
Mean	31.2	40.9	40.1	38.8	48.9	134	307	251	1,222	583	83.2	27.8
Max	35	50	50	45	50	304	365	1,170	1,910	1,520	201	48
Min	29	36	28	28	47	50	220	16	708	218	20	29
Ac-ft	1,920	2,440	2,470	2,380	2,720	8,220	17,940	15,440	76,900	35,870	5,110	1,650

Cal yr 1966: Total 80,710 Mean 166 Max 1,670 Min 11 Ac-ft 120,400  
 Wtr yr 1967: Total 87,246 Mean 239 Max 1,910 Min 16 Ac-ft 173,100

# BEAR RIVER BASIN

## 10-285. Bear River below Pixley Dam, near Cokeville, Wyo.

Location.--Lat 41°56'20" N, long 110°59'05" W, in SE¼SE¼ sec.25, T.23 N., R.12G W., 500 ft downstream from Pixley Dam, 11 miles south of Cokeville, and 17.8 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 1958, May 1958 to September 1967 (irrigation seasons only). Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,155 ft (from river-profile map). Oct. 31, 1941, to Nov. 30, 1943, at site 200 ft downstream at different datum.

Extremes.--Maximum discharge during season, 1,430 cfs June 30 (gage height, 6.73 ft); minimum daily, 28 cfs May 28.  
1941-43, 1952-56, 1958-67: Maximum daily discharge, 2,300 cfs Mar. 25, 1956; minimum daily recorded, 0.3 cfs Aug. 21, 1961.

Remarks.--Records good. 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 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	36							221	660	1,400	235	38	
2	40							220	711	1,350	220	36	
3	43							210	737	1,300	209	37	
4	42							212	780	1,240	192	37	
5	41							225	772	1,180	171	38	
6	40							249	653	1,080	155	34	
7	46							264	665	890	147	35	
8	39							264	804	907	136	38	
9	39							264	537	640	126	37	
10	40							262	603	780	117	38	
11	39							256	637	701	111	38	
12	21							258	660	644	104	40	
13	16							249	694	606	100	41	
14	29							248	711	546	96	40	
15	25							240	729	493	96	40	
16	13							213	722	465	94	41	
17	16							189	686	441	90	41	
18	18							76	688	475	37	42	
19	19							43	699	537	83	40	
20	-							48	1,080	549	82	38	
21	-							32	1,220	518	61	44	
22	-							32	1,230	479	61	38	
23	-							30	1,200	447	78	35	
24	-							27	1,180	425	78	38	
25	-							26	1,190	402	73	44	
26	-							246	42	1,200	370	67	58
27	-							246	116	1,240	326	62	58
28	-							235	221	1,310	313	53	62
29	-							228	316	1,400	288	45	67
30	-							228	363	1,430	271	44	70
31	-							680	-	-	251	38	-
Total								6,070	27,033	20,612	3,368	1,274	
Mean								196	803	686	106	42.5	
Max								650	1,430	1,400	235	70	
Min								26	504	251	36	34	
Ac-ft								12,040	53,780	40,880	6,660	2,530	
Cal. yr	Total		Mean	Max	Min		Ac-ft						
The season:	Total	-	Mean	Max	Min	-	Ac-ft	115,800					

# BEAR RIVER BASIN

## 10-320. 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 4.5 miles upstream from Howland Creek, 8 miles downstream from Hobble Creek, and 18 miles northeast of Border.

Drainage area.--168 sq mi.

Records available.--May 1942 to September 1967.

Gage.--Water-stage recorder. Altitude of gage is 6,650 ft (from topographic map). Prior to Oct. 16, 1948, at site 0.5 mile downstream at different datum.

Average discharge.--28 years, 192 cfs (139,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,040 cfs June 20 (gage height, 4.24 ft); minimum, 44 cfs Mar. 15, 1942-47; Maximum discharge, 1,500 cfs June 7, 1857 (gage height, 4.55 ft); minimum recorded, 38 cfs Mar. 21, 1855, result of freezeup.

Remarks.--Records good except those for winter months, which are fair. One diversion for irrigation of about 500 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	68	64	62	57	57	80	102	752	728	284	150
2	80	69	64	62	57	57	58	101	835	701	248	145
3	82	66	65	62	56	57	58	101	872	672	242	143
4	80	65	63	62	56	57	54	101	896	680	239	138
5	79	65	64	62	55	56	71	105	820	610	235	137
6	76	65	64	62	58	58	65	117	986	598	227	134
7	76	62	65	62	58	54	71	164	974	557	227	134
8	75	69	66	62	56	64	72	248	896	523	221	132
9	75	68	64	62	58	56	79	337	870	502	215	132
10	78	68	64	62	56	58	80	402	860	469	209	128
11	78	68	64	62	56	58	85	326	870	442	208	128
12	75	68	64	62	58	55	88	272	890	424	203	128
13	78	68	64	62	56	58	88	246	900	408	200	126
14	75	66	64	60	57	55	90	239	940	389	203	124
15	74	66	65	59	56	55	97	239	960	384	196	122
16	73	66	64	59	56	57	97	260	874	378	190	120
17	73	66	64	60	58	57	94	300	840	368	187	120
18	73	66	64	61	54	58	103	560	860	360	184	122
19	71	65	64	62	54	57	121	662	896	342	181	118
20	71	65	64	64	54	60	113	700	1,020	332	174	117
21	73	73	64	63	56	56	105	750	968	321	171	115
22	71	69	63	62	56	56	99	790	956	315	169	117
23	73	68	62	60	56	57	105	884	962	309	164	117
24	71	64	62	58	58	58	97	944	984	305	162	115
25	70	65	62	58	58	58	97	1,010	817	296	162	117
26	70	66	62	60	56	57	96	866	811	289	155	115
27	70	68	62	60	58	55	99	896	802	279	154	115
28	70	65	62	59	58	58	115	864	841	273	152	111
29	70	65	62	59	58	63	117	914	782	268	152	109
30	69	65	64	58	58	58	111	914	768	268	154	117
31	69	65	64	58	58	59	111	835	768	260	157	117
Total	2,291	1,988	1,972	1,697	1,563	1,752	2,704	15,349	26,973	13,043	5,991	3,747
Mean	73.9	62.5	63.8	60.3	56.5	56.5	86.3	498	689	421	193	125
Max	82	73	66	64	57	59	121	1,030	1,020	753	254	140
Min	69	64	62	58	54	54	58	101	766	280	152	109
Ae-ft	4,540	3,980	3,910	3,740	3,100	3,480	5,360	36,446	53,500	25,870	11,890	7,450

Cal yr 1966: Total 50,858 Mean 159 Max 128 Min 59 Ae-ft 100,900  
 Wtr yr 1967: Total 78,266 Mean 217 Max 1,020 Min 54 Ae-ft 157,800

## BEAR RIVER BASIN

### 10-327. Muddy Creek above Mill Creek, near Cokeville, Wyo.

Location.--Lat 42°11'30", long 110°53'55", in SE $\frac{1}{4}$  sec. 31, T.26 N., R.118 W., on right bank, 0.3 mile upstream from Mill Creek, 1.2 miles upstream from mouth, and 8 miles northeast of Cokeville.

Drainage area.--20.7 sq mi.

Records available.--October 1964 to September 1967.

Gage.--Water-stage recorder, and sharp-crested trapezoidal weir. Altitude of gage is 6,490 ft (from topographic map).

Extremes.--Maximum discharge during year, 57 cfs May 10 (gage height, 2.81 ft); minimum, 0.18 cfs Oct. 1, 1964-67; Maximum discharge, 135 cfs Apr. 30, 1965 (gage height, 3.77 ft); no flow Aug. 18, 26, 1966.

Remarks.--Records good. No diversion above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.28	0.69	0.92	0.81	0.81	1.0	1.8	8.0	21	6.3	2.4	0.42
2	.28	.73	.98	.85	.81	1.0	1.6	7.2	20	7.8	2.3	.42
3	.40	.81	1.4	.85	.81	1.0	2.2	7.0	18	7.8	1.9	.42
4	.95	.77	1.1	.85	.81	1.0	3.2	7.4	17	7.6	1.9	.33
5	.32	.77	.98	.92	.81	.98	4.0	9.8	18	7.4	1.6	.36
6	.32	.77	1.0	.92	.81	.98	4.0	14	18	7.3	1.4	.38
7	.32	.77	1.0	.92	.81	.98	5.2	23	17	7.4	1.4	.38
8	.32	.81	1.0	.92	.81	.98	6.8	30	19	6.8	1.3	.42
9	.38	.73	1.0	.92	.81	.92	7.4	31	16	6.2	1.0	.42
10	.38	.73	.98	.85	.81	.92	6.7	38	18	6.2	.98	.48
11	.38	.81	.92	.85	.81	.98	10	25	14	5.6	.98	.48
12	.95	.92	.85	.85	.81	.98	10	20	13	5.3	.98	.48
13	.40	.81	.77	.92	.81	.98	14	17	14	5.2	.98	.53
14	.42	.81	.85	.92	.81	.92	18	18	27	5.0	.98	.43
15	.48	.81	.81	.85	.81	.85	13	17	20	4.8	.98	.42
16	.53	.88	.85	.85	.81	.85	11	22	18	4.7	.92	.48
17	.49	.81	.80	.92	.92	1.0	8.9	26	18	4.7	.85	.57
18	.53	.85	.74	.92	.81	1.2	18	29	14	5.0	.85	.66
19	.56	.81	.78	.92	.76	1.2	18	31	13	4.6	.73	.61
20	.57	.81	.80	.85	.74	1.2	9.8	29	18	4.0	.77	.57
21	.57	1.2	.82	.85	.74	1.2	7.4	27	15	3.7	.73	.65
22	.49	1.1	.84	.85	.74	1.2	6.3	27	12	3.4	.65	.73
23	.53	.98	.84	.85	.76	1.3	7.4	27	12	3.2	.61	.73
24	.57	.81	.84	.82	.80	1.3	6.3	26	11	3.2	.65	.73
25	.49	.89	.83	.82	.84	1.3	6.8	28	9.8	3.2	.61	.77
26	.53	.69	.60	.85	.88	1.3	7.2	26	9.3	3.1	.57	.61
27	.53	.69	.78	.81	.92	1.4	3.8	24	5.3	2.7	.57	.92
28	.49	.69	.73	.81	1.0	1.8	18	24	10	2.6	.57	.65
29	.57	.77	.73	.81	- - - -	2.5	18	23	9.3	2.5	.45	.68
30	.65	.92	.77	.81	- - - -	2.3	10	28	6.8	2.4	.45	.65
31	.73	- - - -	.61	.81	- - - -	1.9	- - - -	23	- - - -	2.4	.42	- - - -
Total	14.15	24.44	27.30	28.78	22.87	37.42	262.1	690.4	441.2	184.4	31.48	16.75
Mean	0.456	0.815	0.961	0.863	0.817	1.21	8.74	22.3	14.7	4.93	1.02	5.58
Max	0.73	1.2	1.4	0.92	1.0	2.5	18	38	27	8.3	2.4	0.92
Min	0.28	0.69	0.73	0.81	0.74	0.85	1.8	7.0	5.8	2.4	0.42	0.35
Ac-ft	28	48	54	53	45	74	820	1,370	675	306	62	33

Cal yr 1966: Total 1,361.69 Mean 3.70 Max 28 Min 0 Ac-ft 2,690  
 Wtr yr 1967: Total 1,749.28 Mean 4.79 Max 38 Min 0.28 Ac-ft 3,470

# BEAR RIVER BASIN

## 10-328. Mill Creek near Cokeville, Wyoming

Location.--Lat 42°11'30", long 110°54'10", on right bank, 0.3 mile upstream from mouth and 8 miles northeast of Cokeville.

Drainage area.--8.07 sq mi.

Records available.--October 1966 to September 1967.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 6,480 ft (from topographic map).

Extremes.--Maximum discharge during year, 23 cfs May 23 (gage height, 9.17 ft); minimum daily, 0.25 cfs Dec. 19, 1966-67; Maximum discharge, that of May 23, 1967; minimum daily, that of Dec. 19, 1966.

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 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.46	0.33	0.46	0.37	0.41	0.50	1.1	4.8	12	4.8	2.0	0.86
2	.46	.33	.46	.37	.41	.50	1.0	4.8	11	4.8	1.8	.79
3	.46	.33	.46	.37	.41	.50	1.2	4.8	10	4.8	1.8	.79
4	.46	.33	.41	.37	.41	.46	1.8	4.8	9.6	4.8	2.0	.86
5	.46	.37	.46	.37	.41	.50	1.6	4.8	9.6	4.4	1.8	.67
6	.41	.41	.46	.37	.45	.50	1.5	5.3	9.6	4.4	1.6	.67
7	.41	.41	.46	.37	.45	.50	2.1	6.8	9.0	4.2	1.8	.67
8	.41	.46	.46	.37	.45	.50	2.3	8.3	8.0	4.0	1.8	.67
9	.46	.46	.41	.37	.45	.50	2.4	11	8.2	3.8	1.5	.67
10	.41	.51	.37	.33	.46	.50	2.8	13	8.2	3.6	1.4	.67
11	.46	.51	.41	.29	.51	.50	2.9	13	8.2	3.6	1.2	.67
12	.46	.51	.37	.28	.51	.50	3.1	11	7.9	3.3	1.2	.73
13	.56	.51	.34	.30	.46	.50	3.8	10	7.9	3.3	1.2	.67
14	.51	.51	.29	.33	.46	.50	3.6	9.6	5.0	3.3	1.2	.67
15	.46	.51	.25	.37	.51	.50	4.0	9.6	9.0	3.3	1.2	.67
16	.51	.46	.33	.37	.46	.50	3.6	10	8.6	3.1	1.1	.60
17	.51	.41	.29	.37	.25	.50	3.8	12	8.2	3.1	1.1	.60
18	.51	.41	.37	.37	.36	.50	4.4	14	7.9	2.9	1.1	.60
19	.46	.41	.37	.37	.47	.50	4.4	17	7.6	2.8	1.0	.60
20	.51	.41	.41	.37	.45	.50	4.2	18	7.3	2.6	1.0	.60
21	.46	.51	.37	.37	.45	.52	4.0	19	6.8	2.6	.86	.60
22	.46	.46	.38	.37	.45	.54	4.0	22	6.3	2.4	.86	.60
23	.46	.37	.35	.37	.45	.56	4.0	22	6.8	2.4	.79	.60
24	.41	.41	.35	.37	.45	.56	4.2	21	5.3	2.3	.79	.60
25	.41	.51	.34	.37	.45	.51	4.0	20	5.6	2.3	.73	.60
26	.37	.41	.35	.37	.46	.56	4.2	18	5.6	2.1	.73	.60
27	.37	.41	.33	.37	.50	.51	4.4	17	5.6	2.0	.73	.60
28	.37	.46	.33	.37	.50	.79	5.1	15	5.6	2.0	.73	.60
29	.33	.46	.29	.37	---	1.1	5.3	15	5.1	2.1	.73	.60
30	.33	.46	.28	.37	---	1.0	5.1	13	4.8	2.1	.73	.60
31	.33	---	.26	.41	---	1.3	---	12	---	2.0	---	---
Total	13.65	13.05	11.53	10.84	12.52	18.05	99.3	386.3	236.0	99.2	36.57	14.66
Mean	0.440	0.435	0.372	0.350	0.447	0.582	3.31	12.5	7.87	3.20	1.16	0.655
Max	0.56	0.51	0.56	0.41	0.51	1.3	5.3	22	12	4.8	2.0	0.86
Min	0.33	0.33	0.25	0.26	0.23	0.50	1.0	4.8	4.8	2.0	0.73	0.60
Ac-ft	87	26	22	22	25	36	197	767	468	197	73	39
Oct. yr 1966 Total	813.75		Mean 2.23	Max 16	Min 0.25	Ac-ft 1,610						
Wtr yr 1967 Total	987.17		Mean 2.62	Max 22	Min 0.25	Ac-ft 1,500						

Note.--No gage-height record Feb. 18 to Mar. 22.

# BEAR RIVER BASIN

## 10-395. Bear River at Border, Wyoming

Location.--Lat 42°11', long 111°03', in NE¼ sec.15, T.14 S., R.46 E., in Idaho, on left bank 0.2 mile west of Wyoming-Idaho State line, 0.3 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 1967.

Gage.--Water-stage recorder. Datum of gage is 6,081.63 ft above mean sea level, unadjusted.

Average discharge.--30 years, 336 cfs (288,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,530 cfs June 22 (gage height, 7.68 ft); minimum, 111 cfs Oct. 1, 14. 1937-67: Maximum discharge, 3,680 cfs May 11, 1952 (gage height, 8.99 ft); minimum daily, 30 cfs Aug. 18-22, 1940.

Remarks.--Records good except those for winter months, which are fair. Diversions for irrigation of about 122,000 acres above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	117	156	178	188	198	168	387	424	1,680	2,210	444	183
2	124	158	179	188	198	146	379	411	1,760	2,240	411	149
3	126	157	180	188	198	148	385	400	1,880	2,220	397	154
4	127	159	182	188	198	148	424	392	1,920	2,180	379	155
5	134	159	184	188	198	150	498	367	2,000	2,140	357	146
6	132	141	160	188	198	155	548	384	2,020	2,030	338	151
7	129	146	160	188	198	188	538	424	1,960	1,900	322	153
8	129	151	165	188	198	175	558	476	1,810	1,730	301	155
9	132	148	165	188	198	190	577	558	1,660	1,580	294	162
10	132	153	165	188	198	190	574	632	1,700	1,430	274	160
11	129	157	165	188	198	169	577	676	1,760	1,300	261	160
12	125	157	168	188	198	208	587	629	1,740	1,180	258	167
13	122	153	168	188	198	220	590	587	1,860	1,110	244	171
14	114	142	168	188	198	250	606	564	1,970	1,060	242	169
15	122	142	168	188	198	240	639	588	2,130	976	234	169
16	134	142	160	148	138	250	662	588	2,170	840	226	166
17	119	149	160	148	138	250	635	599	2,160	636	220	166
18	117	149	160	148	138	250	608	662	2,200	613	216	167
19	119	148	160	148	138	250	603	669	2,240	644	210	171
20	127	146	160	148	138	250	603	751	2,320	676	203	173
21	153	159	158	148	140	281	567	779	2,420	640	203	176
22	134	180	158	148	140	281	530	816	2,500	602	201	184
23	130	161	158	148	140	289	517	846	2,470	751	199	180
24	136	136	158	148	140	292	308	916	2,410	715	196	167
25	134	161	158	148	140	308	475	980	2,340	686	190	166
26	134	171	158	138	140	369	455	1,040	2,250	689	168	175
27	137	169	158	138	140	331	444	976	2,160	603	158	183
28	134	182	158	138	140	340	441	876	2,170	542	169	180
29	132	174	158	138	140	380	441	1,110	2,170	511	144	182
30	132	176	158	138	140	438	441	1,390	2,160	476	139	183
31	132	---	138	138	---	438	---	1,540	---	467	141	---
Total	4,009	4,538	5,046	4,585	3,820	7,170	15,801	22,073	62,000	36,649	7,777	5,034
Mean	129	151	163	146	136	244	527	712	2,067	1,182	251	158
Max	133	182	166	158	140	438	666	1,540	2,500	2,240	444	183
Min	114	136	155	138	138	148	379	367	1,620	467	139	146
Ac-ft	7,850	9,000	10,010	8,080	7,580	15,010	31,340	43,780	123,000	72,680	15,430	8,980

Cal yr 1966: Total 135,231 Mean 370 Max 2,500 Min 69 Ac-ft 285,200  
 Wtr yr 1967: Total 178,902 Mean 480 Max 2,500 Min 114 Ac-ft 354,900



# BEAR RIVER BASIN

## 10-460. Rainbow inlet canal near Dingle, Idaho

Location.--Lat 42°13'00", long 111°17'50", in SE 1/4 sec. 3, T.14 S., R. 44 E., on left bank 1.8 miles west of Dingle and 1.8 miles downstream from headworks at Stewart Dam.

Records available.--January 1922 to September 1967. Monthly discharge only prior to October 1945, published in WSP 1324.

Gage.--Water-stage recorder. Altitude of gage is 5,950 ft (from topographic map). Prior to Oct. 1, 1923, at site 200 ft downstream at different datum; Oct. 1, 1923 to Oct. 27, 1944, at site 0.5 mile downstream at different datum.

Average discharge.--46 years. 311 cfs (225,300 acre-ft per year).

Extremes.--Maximum discharge during year, 2,300 cfs June 24 (gage height, 6.48 ft); minimum daily, 27 cfs Oct. 1.

1922-27: Maximum discharge, 4,160 cfs May 7, 1922 (gage height, 6.62 ft); minimum daily, 1 cfs on several days in 1923, 1924, 1940, 1948.

Remarks.--Records good except those for winter periods, which are fair. Discharge measurements generally made three to six times a week. Canal diverts from Bear River at Stewart Dam in NE 1/4 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 Gutter 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 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	162	181	108	135	157	516	516	1,330	1,220	500	119
2	40	163	171	106	133	160	488	306	1,420	1,390	472	121
3	81	167	171	112	138	155	452	494	1,440	1,390	429	126
4	112	169	171	115	133	170	478	469	1,470	1,380	420	136
5	110	236	178	124	134	180	500	485	1,470	1,370	420	143
6	114	206	159	125	140	171	567	435	1,760	1,350	366	138
7	134	167	145	124	145	176	639	450	1,720	1,660	367	138
8	108	197	141	128	140	171	636	487	1,780	1,770	331	138
9	106	186	112	115	145	163	627	565	1,660	1,640	331	126
10	106	190	101	119	146	136	625	667	1,480	1,330	331	124
11	114	168	141	115	140	163	704	756	1,470	1,400	304	115
12	121	164	137	112	145	133	711	514	1,810	1,280	361	110
13	112	180	161	115	140	182	748	715	1,850	1,160	588	108
14	128	178	153	120	160	182	756	664	1,650	1,080	273	108
15	130	167	141	130	168	182	783	580	1,740	1,040	273	108
16	134	165	138	135	160	238	510	420	1,810	884	245	110
17	143	167	125	135	160	233	915	453	1,840	940	233	110
18	136	189	124	135	143	280	779	484	1,860	825	233	106
19	135	189	126	135	135	267	753	829	1,850	822	228	99
20	149	187	123	135	125	265	741	549	1,920	849	228	101
21	143	171	124	138	125	270	730	606	1,990	976	219	103
22	159	160	130	135	122	285	662	653	2,020	633	203	106
23	155	151	125	135	120	266	649	622	2,130	753	186	112
24	149	136	120	135	125	239	625	704	2,120	745	176	110
25	157	110	99	134	125	340	604	768	2,150	731	163	108
26	161	108	80	124	145	355	563	633	2,160	700	167	52
27	159	108	109	126	180	378	543	904	2,080	650	157	89
28	163	117	105	132	155	359	546	666	1,990	583	153	87
29	185	151	105	134	154	411	516	808	1,840	523	143	101
30	185	157	108	135	155	422	523	1,000	1,850	563	134	112
31	163	---	103	132	---	513	---	1,160	---	500	126	---
Total	3,852	4,896	4,114	3,911	3,966	7,782	19,228	20,119	53,710	36,147	8,441	3,411
Mean	127	169	133	120	122	251	611	649	1,780	1,166	272	114
Max	185	236	173	139	163	513	814	1,162	2,190	1,290	500	143
Min	37	106	90	106	120	136	453	420	1,380	800	126	89
Ac-ft	7,840	9,910	8,180	7,760	7,870	15,440	38,140	39,210	106,600	71,700	16,740	6,770
Cal yr 1966: Total	116,843		Mean	320	Max	2,300	Min	20	Ac-ft	231,800		
Wtr yr 1967: Total	169,777		Mean	455	Max	2,190	Min	37	Ac-ft	336,700		

## BEAR RIVER BASIN

### 10-465. Bear River below Stewart Dam, near Montpelier, Idaho

Location.--Lat 42°18'30", long 111°17'30", in NE<sup>1</sup> sec.34, T.13 S., R.44 E., on right bank 300 ft downstream from Stewart Dam and 4.5 miles south of Montpelier.

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

Records available.--January 1922 to September 1937. 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.--45 years, 54.8 cfs (39,670 acre-ft per year).

Extremes.--Maximum discharge during year, 17 cfs June 1 (gage height, 1.18 ft); minimum, 2.0 cfs Mar. 21, 1922-37; Maximum daily discharge, 3,050 cfs June 3, 1923; no flow July 15, 1958.

Remarks.--Records good. Discharge measurements generally made once a week. Water diverted at Stewart Dam through Rainbow inlet canal (see station 10-0460) 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.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.5	4.8	4.0	3.2	5.0	4.8	6.5	5.8	16	7.7	4.8	3.8
2	6.5	4.8	4.2	3.4	5.0	5.0	6.5	5.9	14	8.0	5.3	4.0
3	7.1	4.8	4.2	3.4	4.8	5.0	6.8	5.9	14	8.4	5.3	4.2
4	8.4	4.4	4.2	3.4	5.3	5.9	6.2	5.6	14	8.4	5.3	4.6
5	8.0	5.8	4.4	3.6	5.8	5.3	6.5	5.3	14	8.4	5.3	4.6
6	7.7	4.8	4.4	3.6	5.6	5.9	7.1	5.3	14	8.4	5.8	3.6
7	8.4	5.0	4.2	3.2	5.9	6.5	7.4	5.3	8.8	8.0	5.0	4.8
8	8.4	5.3	4.2	3.2	5.9	5.9	7.4	5.3	3.8	7.7	4.6	4.6
9	8.8	5.8	3.4	3.2	5.9	5.6	7.1	5.6	3.8	8.8	4.6	4.8
10	8.8	5.0	3.6	3.2	6.2	7.4	6.5	5.9	4.0	6.5	4.8	5.0
11	8.4	5.0	3.6	3.4	5.9	6.8	6.2	6.2	4.6	5.9	4.4	4.6
12	8.4	5.6	3.8	3.4	5.9	8.8	6.2	5.3	4.4	5.0	4.2	4.6
13	8.0	5.8	3.8	3.2	5.9	9.2	6.2	5.0	4.6	4.2	3.8	4.6
14	8.0	5.3	4.0	3.4	5.9	9.2	5.6	4.6	5.6	3.8	3.8	4.4
15	7.7	5.3	4.0	3.4	6.2	6.8	5.9	5.0	6.2	3.4	4.0	4.6
16	7.4	5.0	4.0	3.4	5.9	6.8	6.2	7.4	5.9	3.4	7.7	4.8
17	6.5	5.0	4.0	3.4	5.6	8.8	6.2	9.2	6.5	3.2	13	4.6
18	5.8	4.8	4.0	3.4	5.3	8.4	5.6	10	6.8	2.9	11	4.6
19	3.8	4.8	4.0	3.6	5.6	7.7	5.6	12	7.4	2.9	11	4.8
20	2.3	4.8	4.2	3.6	5.6	5.9	5.6	12	7.4	3.0	10	4.6
21	2.4	4.8	4.4	3.6	5.6	5.9	5.9	14	7.7	3.2	9.6	5.0
22	2.9	4.8	4.2	3.6	4.6	5.9	5.9	12	8.0	3.2	9.6	5.0
23	3.2	4.6	3.8	3.6	4.2	7.4	5.6	12	6.8	2.9	9.2	5.3
24	4.0	4.6	3.8	3.6	4.4	7.4	5.8	12	8.4	2.9	8.8	5.0
25	4.0	4.2	3.0	3.8	4.6	6.2	5.3	13	6.8	2.9	6.5	4.8
26	4.2	4.2	3.4	3.8	4.8	5.6	5.3	14	8.8	2.9	4.2	4.8
27	4.2	4.0	3.4	3.8	5.0	7.1	4.6	14	8.2	4.2	4.4	5.0
28	4.2	4.0	3.4	4.0	5.3	7.1	5.0	12	8.8	5.9	4.6	5.3
29	4.2	4.0	3.4	4.2	---	6.8	5.6	14	6.8	5.6	4.4	5.6
30	4.2	4.0	3.2	4.4	---	6.8	5.3	14	7.7	5.3	4.2	5.6
31	4.2	---	3.2	5.6	---	6.8	---	16	---	5.0	3.8	---
<b>Total</b>	<b>186.0</b>	<b>144.3</b>	<b>119.2</b>	<b>112.2</b>	<b>151.3</b>	<b>203.7</b>	<b>181.3</b>	<b>275.4</b>	<b>248.8</b>	<b>160.0</b>	<b>192.8</b>	<b>142.4</b>
<b>Mean</b>	<b>5.00</b>	<b>4.81</b>	<b>3.85</b>	<b>3.62</b>	<b>5.40</b>	<b>6.73</b>	<b>6.04</b>	<b>9.01</b>	<b>8.29</b>	<b>5.18</b>	<b>6.22</b>	<b>4.75</b>
<b>Max</b>	<b>8.8</b>	<b>5.8</b>	<b>4.4</b>	<b>5.6</b>	<b>6.2</b>	<b>9.2</b>	<b>7.4</b>	<b>16</b>	<b>16</b>	<b>8.4</b>	<b>13</b>	<b>5.8</b>
<b>Min</b>	<b>2.3</b>	<b>4.0</b>	<b>3.0</b>	<b>3.2</b>	<b>4.2</b>	<b>4.8</b>	<b>4.8</b>	<b>4.6</b>	<b>3.6</b>	<b>2.9</b>	<b>3.8</b>	<b>3.8</b>
<b>Ac-ft</b>	<b>369</b>	<b>298</b>	<b>236</b>	<b>223</b>	<b>300</b>	<b>414</b>	<b>360</b>	<b>554</b>	<b>493</b>	<b>317</b>	<b>382</b>	<b>282</b>
<b>Cal yr 1966: Total</b>	<b>2,302.0</b>											
<b>Wtr yr 1967: Total</b>	<b>2,126.2</b>											
<b>Mean</b>	<b>6.31</b>											
<b>Max</b>	<b>18</b>											
<b>Min</b>	<b>2.3</b>											
<b>Ac-ft</b>	<b>4,360</b>											
<b>Mean</b>	<b>5.83</b>											
<b>Max</b>	<b>16</b>											
<b>Min</b>	<b>2.3</b>											
<b>Ac-ft</b>	<b>4,220</b>											

# BEAR RIVER BASIN

## 10-555. 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, 3.5 miles east of St. Charles.

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

Records available.--October 1903 to June 1906 (gauge heights only), January 1921 to September 1967. Monthly contents only January 1921 to September 1945 published in WSP 1314. Published as Bear Lake at Fish Haven 1903-06.

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, 1,370,000 acre-ft July 12-16 (gage height, 22.92 ft); minimum, 1,036,000 acre-ft Oct. 30 to Nov. 20 (gage height, 18.15 ft).  
1921-67: Maximum contents, 1,423,000 acre-ft June 10, 1923 (gage height, 23.68 ft); no usable contents Nov. 9-19, 1938 (gage height, 2.00 ft, lower limit of pumps).

Remarks.--Outflow regulated by gates and pumps at Bear Lake and by gates in dike at north end of Mud Lake. Inflow to lake suggested by water diverted from Bear River through Rainbow Inlet canal and Dingle Inlet canal, which empty into Mud Lake (see station 10-0460). Water from Mud Lake reaches Bear Lake by a siphon 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 23.68 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 and Light Company.

Contents, in thousands of acre-feet, at 0700, water year October 1966 to September 1967												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.	
1	1,046	1,036	1,038	1,049	1,060	1,077	1,039	1,147	1,210	1,342	1,357	1,259
2	1,045	1,036	1,038	1,049	1,060	1,077	1,100	1,146	1,214	1,346	1,356	1,255
3	1,044	1,036	1,038	1,049	1,061	1,078	1,100	1,149	1,218	1,349	1,356	1,252
4	1,044	1,036	1,038	1,060	1,062	1,078	1,100	1,150	1,222	1,352	1,355	1,249
5	1,044	1,036	1,040	1,060	1,062	1,078	1,101	1,152	1,225	1,356	1,353	1,245
6	1,044	1,038	1,040	1,060	1,062	1,078	1,101	1,153	1,228	1,359	1,350	1,241
7	1,044	1,036	1,042	1,060	1,078	1,101	1,102	1,154	1,232	1,363	1,346	1,238
8	1,044	1,036	1,042	1,061	1,084	1,079	1,102	1,155	1,236	1,366	1,346	1,236
9	1,043	1,036	1,042	1,061	1,085	1,079	1,104	1,158	1,240	1,367	1,340	1,235
10	1,043	1,035	1,043	1,061	1,065	1,050	1,106	1,157	1,247	1,368	1,337	1,233
11	1,042	1,036	1,042	1,061	1,065	1,050	1,108	1,159	1,251	1,369	1,333	1,231
12	1,042	1,036	1,044	1,061	1,066	1,061	1,110	1,160	1,257	1,370	1,330	1,228
13	1,042	1,036	1,044	1,061	1,068	1,082	1,113	1,161	1,263	1,370	1,325	1,224
14	1,041	1,036	1,044	1,061	1,067	1,086	1,117	1,163	1,271	1,370	1,321	1,220
15	1,041	1,036	1,045	1,062	1,067	1,086	1,122	1,164	1,277	1,370	1,317	1,216
16	1,040	1,036	1,045	1,062	1,068	1,086	1,124	1,168	1,282	1,370	1,313	1,213
17	1,040	1,036	1,046	1,063	1,069	1,090	1,127	1,167	1,287	1,369	1,310	1,210
18	1,040	1,036	1,046	1,063	1,070	1,092	1,130	1,168	1,291	1,368	1,307	1,207
19	1,040	1,036	1,047	1,064	1,071	1,094	1,132	1,170	1,294	1,368	1,304	1,205
20	1,039	1,036	1,047	1,064	1,072	1,096	1,134	1,172	1,300	1,368	1,301	1,203
21	1,038	1,037	1,047	1,064	1,072	1,096	1,136	1,174	1,304	1,366	1,298	1,202
22	1,038	1,037	1,047	1,064	1,073	1,096	1,137	1,176	1,310	1,366	1,295	1,201
23	1,038	1,036	1,047	1,065	1,073	1,096	1,138	1,178	1,314	1,365	1,292	1,199
24	1,038	1,036	1,047	1,065	1,074	1,096	1,140	1,180	1,318	1,362	1,286	1,198
25	1,038	1,036	1,048	1,066	1,074	1,097	1,141	1,182	1,321	1,365	1,284	1,197
26	1,038	1,036	1,048	1,066	1,075	1,097	1,142	1,184	1,325	1,363	1,280	1,196
27	1,038	1,036	1,048	1,066	1,076	1,097	1,143	1,187	1,329	1,361	1,277	1,194
28	1,037	1,036	1,049	1,067	1,076	1,097	1,144	1,190	1,332	1,361	1,273	1,192
29	1,037	1,036	1,049	1,068	- - -	1,098	1,145	1,196	1,336	1,361	1,270	1,191
30	1,036	1,036	1,049	1,068	- - -	1,099	1,146	1,201	1,339	1,358	1,266	1,190
31	1,036	- - -	1,049	1,069	- - -	1,099	- - -	1,206	- - -	1,358	1,262	- - -
(†)	18.15	18.18	18.33	18.48	18.73	19.08	19.75	20.58	22.49	27.76	21.39	20.36
(*)	-10.0	+2.0	+11.0	+10.0	+17.0	+23.0	+47.0	+60.0	+133	+19.0	-86.0	-72.0
Calendar year 1966 ..... * -158												
Water year 1966-67 ..... * +144												

† Gage height, in feet, at end of month.  
\* Change in contents, in thousands of acre-feet.

# BEAR RIVER BASIN

## 10-595. Bear Lake outlet canal near Paris, Idaho

Location.--Lat 42°17'00", long 111°20'30", in SW 1/4 sec. 8, T.14 S., R.44 E., on right bank 2,000 ft downstream from headgates (45 dikes) and 3 miles southeast of Paris.

Records available.--January 1922 to September 1967. Monthly discharge only January 1922 to September 1945, published in WSP 3314.

Gage.--Water-stage recorder. Altitude of gage is 8,880 ft (from topographic map).

Average discharge.--45 years, 338 cfs (242,300 acre-ft per year).

Extremes.--Maximum discharge during year, 1,630 cfs Aug. 3 (gage height, 19.26 ft); minimum daily, 1.1 cfs Oct. 5.

1922-67: Maximum daily discharge, 1,670 cfs Aug. 6, 1924; minimum daily, 1 cfs for many days in 1937, 1937, 1959, 1961, 1964.

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.

Geograph'cn.--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 1922 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.3	1.6	1.7	1.7	1.7	1.7	1.9	2.1	2.3	2.3	1,450	1,430
2	6.4	1.7	1.7	1.7	1.7	1.7	1.9	2.1	2.3	2.3	1,540	1,270
3	6.7	1.7	1.7	1.7	1.7	1.7	1.9	2.1	2.3	2.3	1,530	588
4	4.2	1.7	1.7	1.7	1.7	1.7	1.9	2.1	2.3	2.3	1,570	1,140
5	1.1	1.7	1.7	1.7	1.7	1.7	1.9	2.2	2.3	2.3	1,520	1,330
6	1.2	1.6	1.7	1.7	1.7	1.7	1.6	2.2	2.3	367	1,540	1,160
7	1.3	1.8	1.7	1.7	1.7	1.7	2.0	2.2	2.3	629	1,520	490
8	1.4	1.6	1.7	1.7	1.7	1.7	2.0	2.2	2.3	803	1,580	647
9	1.8	1.9	1.7	1.7	1.7	1.7	2.0	2.2	2.3	1,040	1,580	1,280
10	1.6	1.9	1.7	1.7	1.7	1.7	2.0	2.2	2.3	1,030	1,350	1,220
11	1.6	2.0	1.7	1.7	1.7	1.7	2.0	2.2	2.3	1,030	1,590	1,190
12	1.5	2.0	1.7	1.7	1.7	1.7	2.0	2.2	2.3	1,040	1,580	1,110
13	1.8	2.1	1.7	1.7	1.7	1.7	2.0	2.2	2.3	1,030	1,570	1,110
14	1.8	2.1	1.7	1.7	1.7	1.7	2.0	2.2	2.3	1,070	1,580	1,090
15	1.6	2.1	1.7	1.7	1.7	1.7	2.0	2.2	2.3	1,030	1,550	1,140
16	1.4	2.0	1.7	1.7	1.7	1.7	2.0	2.3	2.3	1,040	1,540	1,160
17	1.4	2.0	1.7	1.7	1.7	1.7	2.0	2.3	2.3	1,030	1,540	1,140
18	1.4	1.9	1.7	1.7	1.7	1.7	2.0	2.3	2.3	1,030	1,330	1,030
19	1.4	1.8	1.7	1.7	1.7	1.8	2.0	2.3	2.3	1,030	1,550	822
20	1.4	1.8	1.7	1.7	1.7	1.8	2.0	2.3	2.3	1,070	1,550	828
21	1.4	1.7	1.7	1.7	1.7	1.6	2.0	2.3	2.3	1,200	1,580	818
22	1.4	1.7	1.7	1.7	1.7	1.8	2.0	2.3	2.3	1,330	1,580	813
23	1.4	1.7	1.7	1.7	1.7	1.8	2.0	2.3	2.3	1,320	1,530	810
24	1.4	1.7	1.7	1.7	1.7	1.8	2.0	2.3	2.3	1,260	1,540	752
25	1.4	1.7	1.7	1.7	1.7	1.8	2.0	2.3	2.3	1,300	1,540	807
26	1.5	1.7	1.7	1.7	1.7	1.8	2.0	2.3	2.3	1,410	1,540	837
27	1.5	1.7	1.7	1.7	1.7	1.8	2.0	2.3	2.3	1,430	1,530	840
28	1.5	1.7	1.7	1.7	1.7	1.8	2.0	2.3	2.3	1,430	1,320	840
29	1.6	1.7	1.7	1.7	1.7	1.9	2.1	2.3	2.3	1,580	1,550	798
30	1.8	1.7	1.7	1.7	1.7	1.8	2.1	2.3	2.3	1,490	1,530	798
31	1.8	1.7	1.7	1.7	1.7	1.9	2.1	2.3	2.3	1,390	1,520	800
Total	69.4	84.4	82.7	82.7	47.6	54.3	59.4	69.4	69.0	29,620.3	47,890	29,604
Mean	2.21	1.81	1.70	1.70	1.70	1.73	1.99	2.24	2.30	368	1,645	987
Max	6.6	2.1	1.7	1.7	1.7	1.9	2.1	2.3	2.3	1,580	1,680	1,430
Min	1.1	1.8	1.7	1.7	1.7	1.7	1.8	2.1	2.3	2.3	1,490	490
Ac-ft	186	108	105	105	94	105	118	138	137	58,760	94,990	58,720

Cal yr 1922: Total 152,845.7 Mean 300 Max 1,400 Min 1.1 Ac-ft 362,300  
 Wtr yr 1967: Total 167,832.6 Mean 295 Max 1,590 Min 1.1 Ac-ft 213,500

Note.--No gage-height record Oct. 1 to July 5.

# BEAR RIVER BASIN

## 10-905. Bear River near Preston, Idaho

Location.--Lat 42°10', long 111°51', in NW 1/4 sec.36, T.14 S., R.38 E., on left bank 600 ft downstream from head-gates of West Cache Canal, 5 miles downstream from Mink Creek, 5 miles north of Preston, and 5.5 miles upstream from Battle Creek.

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

Records available.--October 1868 to December 1918, January to September 1917 (gage heights only), October 1943 to September 1967. Prior to 1903, published as "at Battlecreek." Monthly discharge only for some periods, published in WSP 1314.

Gage.--Digital water-stage recorder. Altitude of gage is 4,540 ft (from topographic map). October 1898 to September 1917 staff or wire-weight gages at several sites within 5 miles downstream at different datums. January 1944 to September 1965 graphic water-stage recorder at same site and datum.

Average discharge.--24 years (1943-67), 751 cfs (572,700 acre-ft per year).

Extremes.--Maximum discharge during year, 3,070 cfs May 19, 20 (gage height, 4.66 ft); minimum, 14 cfs Apr. 13 (gage height, 0.43 ft); minimum daily, 36 cfs Oct. 8.

1885-1917: Maximum discharge, about 3,500 cfs June 9, 10, 1897, estimated on basis of records for station near Collinston, Utah; maximum gage height observed, 8.05 ft Jan. 17, 18, 1917 (backwater from ice), site and datum then in use; minimum discharge not determined.

1943-67: 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 8, 1967.

Remarks.--Records good. Station is below all irrigation diversions from Bear River in Idaho except Cub River pumps in SW 1/4 sec.20, T.16 S., R.38 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 1868 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	376	224	274	380	361	347	835	614	950	123	1,010	1,270
2	65	324	516	80	429	294	754	680	1,050	315	1,020	1,310
3	635	334	425	500	532	561	749	648	445	1,060	1,020	1,020
4	143	282	342	471	669	437	837	905	493	90	1,300	1,260
5	40	374	475	607	458	272	872	959	864	643	1,340	260
6	347	56	454	510	401	237	1,230	939	996	418	1,360	1,260
7	516	528	611	559	249	527	1,070	635	558	633	1,370	1,140
8	36	251	500	263	177	420	1,210	1,060	836	722	1,210	890
9	277	344	318	280	557	527	1,040	669	665	714	1,150	783
10	335	180	466	245	496	408	1,090	1,240	574	777	1,150	485
11	221	163	90	541	666	578	1,220	1,520	1,030	1,230	1,080	875
12	171	263	450	455	104	240	1,140	1,250	982	1,420	1,140	1,050
13	735	179	480	308	377	510	894	1,310	985	1,220	1,170	1,260
14	400	290	460	528	366	408	1,410	954	1,070	1,230	1,300	1,260
15	212	390	520	181	245	619	548	967	1,430	983	1,450	1,050
16	164	340	520	330	415	709	1,260	1,120	1,600	1,170	1,170	1,220
17	354	352	540	319	342	464	1,130	1,230	1,320	1,030	1,200	1,240
18	387	400	540	429	419	649	937	1,300	967	1,060	1,270	1,040
19	245	463	530	503	263	569	1,120	1,350	1,400	824	1,410	1,320
20	166	404	350	485	329	800	969	1,180	1,180	1,200	868	1,400
21	299	284	560	933	471	895	770	1,070	1,300	611	1,240	1,120
22	401	252	840	360	311	767	823	1,310	1,036	570	1,110	1,060
23	185	549	720	301	481	682	996	1,250	1,350	1,270	1,230	1,260
24	161	400	250	356	368	622	689	1,450	1,330	1,280	1,270	1,180
25	353	295	300	401	483	684	680	1,290	932	1,110	1,260	941
26	210	224	90	323	262	621	757	1,230	823	820	1,130	1,080
27	437	418	350	423	320	785	653	916	1,060	1,090	1,400	1,030
28	44	356	90	481	510	410	943	1,350	778	987	1,160	1,020
29	394	397	480	276	---	733	408	1,250	1,070	1,160	1,570	881
30	369	438	470	570	---	615	607	1,120	582	1,110	1,090	911
31	378	---	350	534	---	976	---	726	---	1,240	1,320	---
Total	8,759	9,321	13,499	12,822	11,011	18,306	28,077	33,573	30,012	28,659	37,918	32,116
Mean	283	331	425	417	392	590	836	1,083	1,000	925	1,223	1,071
Max	735	549	720	938	665	976	1,410	1,520	1,600	1,420	1,570	1,310
Min	36	56	80	80	104	237	408	514	445	56	588	260
Ac-ft	17,370	19,880	28,770	25,630	21,640	36,310	55,690	66,530	59,530	56,860	75,210	63,700

Enl. yr 1966: Total 293,975 Mean 805 Max 1,830 Min 11 Ac-ft 585,100  
 Rr. yr 1967: Total 264,731 Mean 725 Max 1,600 Min 36 Ac-ft 523,200

# BEAR RIVER BASIN

## 10-930. Cub River near Preston, Idaho

Location.--Lat 42°06', long 111°41', in SW 1/4 sec. 8, T.18 S., R.41 E., on right bank 0.7 mile upstream from head-gates of Cub River--Horn 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 1962, October 1965 to September 1967.

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

Average discharge.--24 years, 82.5 cfs (59,730 acre-ft per year).

Extremes.--Maximum discharge during year, 585 cfs May 26 (gage height, 2.84 ft); minimum, 8.6 cfs Feb. 17, 1940-52, 1965-67; Maximum discharge, 718 cfs June 7, 1967 (gage height, 3.39 ft); maximum gage height, 3.63 ft June 2, 1943; no flow for part of Jan. 26, 1966, result of snowslide.

Remarks.--Records good. No diversion above station.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	20	18	18	17	18	29	40	358	299	65	43
2	24	20	19	17	17	18	26	25	354	260	68	42
3	24	20	21	17	17	18	28	40	470	260	68	42
4	24	21	19	17	17	19	31	40	465	236	65	41
5	24	21	21	18	17	18	42	40	490	221	63	40
6	23	21	20	17	17	18	38	43	518	208	63	40
7	23	21	19	17	17	18	40	51	527	193	63	40
8	23	21	19	17	17	18	44	69	508	178	60	40
9	23	20	19	17	17	18	41	90	470	163	58	40
10	23	20	19	17	17	20	41	128	460	153	58	40
11	23	21	19	17	17	22	44	118	440	141	57	40
12	23	21	19	17	17	23	42	101	450	132	56	39
13	22	20	19	17	18	23	42	88	480	126	55	39
14	22	20	19	17	18	22	48	77	475	121	54	38
15	22	20	19	17	18	21	51	71	445	116	53	37
16	22	20	19	17	18	21	51	78	430	111	51	37
17	22	20	18	17	18	24	49	103	448	106	51	37
18	22	19	18	17	17	30	50	143	470	103	51	36
19	22	19	18	17	17	28	54	203	480	100	50	35
20	22	19	18	17	18	28	49	223	460	96	49	34
21	22	20	18	17	18	25	48	260	470	94	48	34
22	22	20	19	17	18	27	42	328	460	90	48	34
23	21	19	18	17	18	32	40	420	460	88	47	33
24	21	19	16	17	17	37	39	485	435	85	46	33
25	21	19	16	17	17	34	39	540	397	82	47	32
26	21	19	16	17	17	32	38	485	384	81	46	32
27	21	19	18	17	17	29	38	475	366	78	46	32
28	21	19	17	17	17	32	40	490	358	78	45	32
29	21	19	18	17	17	38	41	440	342	74	44	32
30	20	19	17	17	17	33	41	430	314	71	43	31
31	20	19	17	18	17	29	39	379	288	71	43	31
Total	680	596	577	530	477	772	1,240	6,827	13,178	4,235	1,665	1,105
Mean	22.2	19.9	18.6	17.1	17.0	24.5	41.3	211	439	137	53.7	36.6
Max	24	21	21	18	18	39	54	640	527	298	69	43
Min	20	19	17	17	16	18	26	30	314	71	43	31
Ac-ft	1,360	1,180	1,140	1,050	946	1,480	2,480	12,950	26,130	8,400	3,300	2,180
Cal yr 1966: Total	20,823		Mean	57.0	Max	485	Min	17	Ac-ft	41,290		
Wtr yr 1967: Total	31,587		Mean	68.5	Max	540	Min	16	Ac-ft	62,610		

# BEAR RIVER BASIN

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

**Location.**--Lat 41°44'40", long 111°47'00", in H&A sec.36, T.12 N. R.1 E., on right bank at Logan plant of Utah Power & Light Co., 125 ft upstream from tailrace, 0.5 mile upstream from State dam, and 2.5 miles east of Logan.

**Drainage area.**--216 sq mi.

**Records available.**--June 1896 to September 1967. 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 MSP 1214.

**Gage.**--Water-stage recorder and concrete control. Altitude of gage is 4,260 ft (from topographic map). Prior to May 7, 1913, staff gage at various sites within 0.5 mile downstream, below confluence of tailrace, at different datums. May 7 to Sept. 30, 1913, water-stage recorder at present site at different datums and Oct. 1, 1913, to Sept. 3, 1936, at datum about 2.3 ft lower than present datum.

**Average discharge.**--54 years (1913-67), 102 cfs (73,640 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, 71 years (1896-1967), 275 cfs (197,660 acre-ft per year).

**Extremes.**--Maximum discharge during year, 969 cfs May 25 (gage height, 4.31 ft); minimum daily, 15 cfs Oct. 29. Maximum combined discharge during year (Logan River above State dam, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal) 1,160 cfs May 26; minimum daily, 36 cfs Feb. 20. 1913-67: 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. 1896-1967: 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, 30 cfs Jan. 21, 1935.

**Remarks.**--Records good. 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 Plant that siphons canyon 400 ft upstream from station. During 1965 site of gaging station for Logan, Hyde Park & Smithfield Canal was changed; records of combined flow since that time are equivalent to previous records.

**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 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	16	16	32	24	23	78	24				
2	18	16	15	32	24	23	24	24	508	484	39	30
3	23	16	20	30	23	23	81	24	528	457	36	30
4	22	16	20	28	23	22	61	24	823	426	32	48
5	19	16	19	29	23	21	78	28	880	397	30	50
6		16							710	372	28	50
7	16	16	19	28	23	21	61	40	761	361	26	48
8	16	16	18	26	23	22	30	72	756	332	24	50
9	17	16	19	26	23	21	39	143	710	311	21	48
10	17	16	19	28	23	21	35	182	636	308	20	52
11									648	260	23	50
12	17	17	20	26	23	22	45	211	632	224	20	48
13	17	17	20	28	23	22	30	188	650	204	19	48
14	19	17	20	26	24	39	39	120	660	176	20	48
15	17	17	19	28	24	34	34	168	710	179	20	37
16	17	17	18	32	24	23	36	100	660	152	20	36
17	17	17	18	32	24	23	40	143	623	161	20	34
18	17	17	19	28	24	23	30	220	641	156	20	30
19	17	17	20	28	24	28	36	325	670	134	20	33
20	16	18	20	24	24	24	45	404	623	117	20	32
21									499	710	20	28
22	17	19	19	24	24	50	32	484	695	96	20	30
23	17	19	20	25	23	52	28	623	685	86	20	32
24	16	18	20	25	24	61	26	745	708	81	20	34
25	16	18	21	24	24	30	25	832	660	70	21	30
26	16	18	22	24	23	24	24	678	623	61	21	30
27	16	18	28	24	23	29	24	816	600	56	23	34
28	16	18	32	24	23	36	24	772	578	50	23	40
29	16	18	30	24	23	37	26	800	580	47	24	36
30	15	19	29	24	---	56	26	756	710	532	43	22
31	16	18	29	24	---	32	25	678	504	43	48	24
	---	---	---	---	---	---	---	---	---	---	---	---
Total	534	516	681	828	657	880	1,078	10,994	19,414	5,993	782	1,282
Mean	17.2	17.2	21.3	26.7	23.5	31.6	35.9	355	647	193	25.2	35.4
Max	23	19	32	32	24	61	78	877	761	484	46	52
Min	15	16	18	24	23	21	24	24	504	36	19	22
Ac-ft	1,080	1,020	1,310	1,640	1,300	1,940	2,140	21,810	38,310	11,690	1,550	2,340
Cal yr 1966: Total	21,623		Mean	59.2	Max	536	Min	15	Ac-ft	42,660		
Wtr yr 1967: Total	43,619		Mean	120	Max	877	Min	15	Ac-ft	66,510		

## 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 at head, near Logan, Utah, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	124	118	108	106	100	97	116	166	505	721	296	219
2	123	118	118	108	98	97	110	162	787	711	292	218
3	123	116	118	105	96	100	109	166	860	686	287	213
4	123	118	116	104	96	99	122	169	923	661	286	214
5	123	118	112	107	98	96	146	164	973	643	283	212
6	123	116	114	105	90	96	130	209	1,080	610	281	209
7	122	116	118	100	95	97	138	242	1,020	662	278	211
8	120	121	110	99	90	96	151	321	958	560	272	209
9	120	114	105	106	94	96	145	376	879	546	270	213
10	120	116	104	102	95	97	153	477	859	523	264	211
11	120	116	107	105	95	98	172	397	876	499	255	209
12	121	114	102	106	96	97	150	342	895	478	255	208
13	124	113	105	108	98	103	167	302	921	462	254	207
14	121	111	107	105	100	99	179	288	956	447	252	196
15	122	112	102	103	99	92	197	284	972	439	249	194
16	120	112	97	107	95	95	169	327	944	425	246	192
17	121	112	100	103	97	99	171	406	868	419	243	188
18	121	112	98	101	98	108	188	513	899	413	243	191
19	121	112	98	100	89	113	204	598	921	395	240	189
20	121	112	98	102	86	109	192	642	936	383	236	185
21	120	116	100	102	88	107	184	875	920	370	235	184
22	121	114	100	103	87	108	170	760	910	362	236	185
23	119	112	88	104	94	118	171	887	920	353	235	187
24	118	112	94	99	94	118	163	878	863	342	230	183
25	119	109	96	101	91	120	162	1,080	850	336	228	182
26	118	112	94	98	95	120	159	1,060	822	331	230	185
27	120	108	104	99	91	119	169	1,020	808	322	225	183
28	120	107	99	99	89	120	178	1,010	786	319	221	188
29	116	114	102	99	- - - -	130	177	964	768	309	216	169
30	118	110	104	101	- - - -	125	170	923	739	308	219	171
31	116	- - - -	104	102	- - - -	119	- - - -	857	- - - -	301	218	- - - -
Total	3,739	3,400	3,213	3,186	2,833	3,286	4,826	16,779	26,529	14,291	7,775	5,915
Mean	121	113	104	103	94.0	106	161	541	884	461	251	197
Max	124	121	118	107	100	130	204	1,080	1,020	721	298	219
Min	118	107	88	98	86	92	109	162	739	301	218	169
As-ft	7,420	6,740	6,370	6,320	5,220	6,520	9,570	33,280	52,620	28,350	15,420	11,730
Cal yr1966: Total	72,708		Mean 199		Max 796	Min 88	Ac-ft 144,200					
Wtr yr1967: Total	95,571		Mean 262		Max 1,060	Min 86	Ac-ft 189,600					



## BEAR RIVER BASIN

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

Location.--Lat 41°18'51", long 112°03'24", in SE $\frac{1}{4}$  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 1967. Prior to 1918, published as Hammond ditch near Collinston. Monthly discharge only for some periods, published in WSP 1914.

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

Average discharge.--55 cfs, 50.3 cfs (36,750 acre-ft per year).

Extremes.--1912-67: Maximum daily discharge, 164 cfs June 29, 1963; no flow at times in each year.

Remarks.--Records good. Canal diverts from east side of Bear River in NW $\frac{1}{4}$ SE $\frac{1}{4}$  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 53,000 acres below station in eastern Box Elder County.

Cooperation.--Gage-height record and 7 discharge measurements furnished by Utah Power & Light Co.

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83	13						0	55	132	157	150
2	85	13						0	56	133	157	147
3	82	13						0	94	148	156	147
4	78	13						0	96	158	152	147
5	74	13						0	100	161	152	148
6	71	13						0	98	163	152	148
7	70	13						0	95	162	152	138
8	68	13						0	65	166	153	131
9	68	13						0	54	137	153	126
10	65	13						56	50	187	151	128
11	65	13						52	46	168	150	122
12	65	13						39	37	167	151	121
13	58	13						31	28	167	151	115
14	42	13						31	26	166	149	110
15	42	13						31	26	166	150	104
16	42	11						31	26	168	150	99
17	39	11						30	26	165	150	100
18	35	11						39	26	156	148	93
19	30	11						49	26	158	149	93
20	22	11						52	27	158	148	90
21	22	6.1						64	27	157	148	90
22	22	0						74	26	156	148	87
23	22	0						78	24	156	148	83
24	18	0						64	24	158	149	83
25	15	0						93	24	156	148	84
26	14	0						101	34	156	150	83
27	14	0						105	44	158	150	84
28	14	0						105	52	143	150	84
29	14	0						108	81	154	151	84
30	14	0						101	122	157	153	84
31	12	0						95	157	157	153	84
Total	1,562	208.1	0	0	0	0	0	1,450	1,598	4,200	4,276	3,304
Mean	43.3	6.36	0	0	0	0	0	46.8	53.3	158	151	110
Max	89	14	0	0	0	0	0	109	122	168	157	150
Min	12	0	0	0	0	0	0	0	24	132	146	85
Ac-ft	2,700	512	0	0	0	0	0	2,660	3,170	9,720	9,270	6,550
Cal yr 1966: Total	23,205.1		Mean 53.6	Max 175	Min 0	Ac-ft 46,030						
Wtr yr 1967: Total	17,548.1		Mean 48.1	Max 165	Min 0	Ac-ft 34,800						

# BEAR RIVER BASIN

## 10-1175. West Side Canal near Collinston, Utah

Location.--Lat 41°46'55", long 112°03'35", in SW<sup>1</sup>/<sub>4</sub> 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 1967. 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.--55 years, 237 cfs (171,600 acre-ft per year).

Extremes.--1912-67: Maximum daily discharge, 763 cfs July 11, 1967; no flow for periods in every year except 1912.

Remarks.--Records good. Canal diverts from west side of Bear River in NW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> 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 55,000 acres below station in Eastern Box Elder County.

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

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	444	100	83	57	20	3.1		0	578	638	651	661
2	444	104	84	58	10	8.8		0	594	635	641	661
3	427	103	83	56	10	8.8		0	592	689	618	663
4	416	100	83	55	10	8.5		0	594	721	613	663
5	396	100	82	55	10	8.2		4.5	567	745	594	661
6	362	100	80	55	10	8.0		12	556	749	596	655
7	373	100	80	55	9.9	8.0		12	522	791	611	647
8	360	100	79	55	9.9	8.0		12	403	751	622	636
9	355	99	79	55	9.9	8.2		12	350	749	632	620
10	341	94	79	55	9.9	6.2		204	323	787	641	616
11	320	87	78	55	9.6	2.6		121	310	763	661	599
12	283	87	77	55	9.6	2.0		121	221	755	669	577
13	249	87	77	55	9.9	1.5		117	118	745	675	564
14	217	86	77	55	9.6	.90		117	108	743	675	542
15	202	85	78	53	9.6	.30		117	38	749	681	539
16	190	85	76	53	9.6	0		117	5.6	747	659	539
17	169	85	58	53	9.6	0		116	58	725	675	539
18	143	85	64	52	9.6	0		178	167	693	675	527
19	140	85	63	51	9.6	2.8		222	169	703	675	500
20	134	84	63	48	9.6	3.0		229	169	713	675	482
21	133	85	63	40	9.6	3.0		234	166	723	671	475
22	133	85	63	40	9.6	1.0		298	166	727	671	459
23	134	85	60	35	9.6	0		398	166	701	667	457
24	125	85	60	32	9.6	0		456	166	691	665	454
25	120	84	60	29	9.6	0		488	165	677	663	447
26	120	84	60	28	9.3	0		535	222	671	661	442
27	119	84	60	28	9.3	0		575	239	671	661	439
28	115	84	60	27	5.3	0		615	299	673	663	445
29	111	84	59	27	- - -	0		630	342	673	665	437
30	110	84	59	26	- - -	0		586	516	673	671	468
31	110	- - - -	59	26	- - - -	0	- - - -	569	- - - -	659	667	- - - -
Total	7,332	2,706	2,186	1,421	281.8	96.90	0	7,093.5	8,502.6	22,663	20,234	16,435
Mean	237	90.2	70.5	45.8	10.1	3.19	0	229	297	712	653	548
Max	449	108	84	58	20	9.1	0	630	354	763	676	663
Min	110	84	58	26	9.3	0	0	0	5.6	636	594	439
Ac-ft	14,840	5,370	4,340	2,820	559	196	0	14,070	17,660	43,810	40,130	32,600

Cal yr 1966: Total 109,856.3 Mean 301 Max 741 Min 0 Ac-ft 217,900

Wtr yr 1967: Total 63,776.80 Mean 243 Max 763 Min 0 Ac-ft 176,100

# BEAR RIVER BASIN

## 10-1180. Bear River near Collinston, Utah

Location.--Lat 41°50'03", Long 112°03'13", in NW1/4 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 5.5 miles north of Collinston.

Drainage area.--8,000 sq mi, approximately.

Records available.--July 1889 to September 1967. Published as "at Collinston" prior to 1900. Monthly discharge only for some periods, published in WSP 1574.

Gage.--Digital water-stage recorder. Datum of gage is 4,275.13 ft above mean sea level (levels by Bureau of Reclamation). Prior to Nov. 8, 1913, staff gage, and Nov. 8, 1913 to Sept. 10, 1938, graphic water-stage recorder, at site 0.8 mile downstream at different datums. Sept. 10, 1938 to July 6, 1966, graphic water-stage recorder at same site and datum.

Extremes.--Maximum discharge during year, 4,970 cfs May 24 (gage height, 5.53 ft); minimum daily, 22 cfs Oct. 1, 1889-1967; Maximum discharge observed, 11,600 cfs June 7-10 (gage height, 7.70 ft, site and datum then in use); minimum daily, 10 cfs Aug. 4-12, 18-23, 1905; practically no flow at 2400 Aug. 5, 1920.

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

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

Discharge, in cubic feet per second, water year October 1966 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	673	1,310	706	1,010	1,040	1,650	1,860	3,670	1,980	651	771
2	23	1,030	889	510	1,200	1,210	1,750	2,090	3,090	1,100	388	704
3	23	705	1,110	958	1,580	987	1,700	2,890		30	634	640
4	23	1,150	610	788	1,330	958	1,600	1,960	1,710	23	720	473
5	642	501	736	854	830	850	1,800	2,680	2,370	50	663	600
6	23	365	980	960	1,070	808	1,370	1,830	2,260	50	755	725
7	23	268	1,050	785	1,320	1,060	1,850	1,170	2,400	288	568	607
8	23	729	805	861	886	1,110	1,980	2,020	2,310	487	1,030	630
9	23	1,210	897	999	1,030	1,220	1,880	2,480	2,830	87	1,000	608
10	273	924	1,120	1,160	1,080	1,250	2,210	2,850	2,820	246	788	703
11	389	753	875	1,060	761	1,110	2,390	2,630	2,910	985	833	626
12	212	555	960	741	344	543	1,720	3,390	3,060	459	551	750
13	455	862	640	637	1,000	2,250	1,720	3,410	3,260	687	566	711
14	838	808	634	878	1,350	1,090	2,260	3,220	3,890	308	738	867
15	703	754	1,270	680	1,150	1,620	2,190	2,900	3,320	570	650	1,120
16	671	600	1,030	842	970	1,380	2,480	2,750	3,910	431	876	1,120
17	314	757	1,020	1,250	767	1,110	2,720	2,780	3,910	456	805	1,160
18	117	1,200	506	875	821	1,730	2,890	3,310	3,310	578	810	925
19	272	576	780	948	578	1,890	2,740	2,010	3,310	538	327	837
20	816	594	600	1,330	919	1,960	2,210	1,850	3,310	462	303	977
21	582	458	1,030	1,620	333	2,450	2,100	2,520	3,910	628	605	1,440
22	428	438	928	514	1,170	2,090	2,210	3,060	3,900	685	289	1,090
23	369	622	932	983	1,780	2,120	2,350	3,290	3,900	325	1,280	1,080
24	405	911	927	1,130	1,120	1,880	2,410	4,190	3,900	173	947	946
25	366	690	558	1,160	1,020	1,940	2,280	4,360	3,910	381	461	1,260
26	462	776	665	1,170	827	1,760	3,140	4,000	3,770	546	704	1,280
27	388	784	758	1,540	1,200	1,950	1,970	4,070	2,240	687	777	985
28	824	825	572	1,280	1,260	1,360	3,350	3,300	2,580	804	438	1,300
29	618	876	1,160	1,270	- - -	1,520	1,840	3,620	2,310	826	548	1,130
30	408	1,160	1,030	1,230	- - - - -	1,860	1,500	3,580	1,980	667	608	1,110
31	613	- - - - -	516	905	- - - - -	1,450	- - - - -	3,680	- - - - -	786	500	- - - - -
Total	12,490	22,064	27,418	30,822	28,408	44,677	61,850	88,670	95,130	15,921	21,162	27,217
Mean	403	725	864	955	1,014	1,422	2,061	2,850	3,171	514	635	907
Max	989	1,210	1,310	1,620	1,580	2,450	2,890	4,380	3,970	1,980	1,280	1,300
Min	22	256	506	310	344	543	1,370	1,170	1,710	23	289	473
Ac-ft	24,770	43,760	54,350	60,540	56,340	87,430	122,600	175,900	188,700	31,530	41,970	53,960
Cal yr 1966: Total	366,523		Mean	1,060	Max	3,320	Min	16	Ac-ft	787,200		
Wtr yr 1967: Total	474,895		Mean	1,301	Max	4,360	Min	22	Ac-ft	942,000		

# BEAR RIVER BASIN

## 10-1260. Bear River near Corinne, Utah

Location.--Loc 41°24'35", long 112°06'00", in SE1/4 sec. 20, T.10 N., R.2 E., on right bank 1.2 miles downstream from Salt Creek, 2.0 miles northwest of Corinne, and 2.8 miles downstream from Mailed River.

Drainage area.--8,500 sq mi, approximately.

Records available.--October 1949 to September 1967, October 1967, October 1963 to September 1967.

Gage.--Water-stage recorder. Datum of gage is 4,204.6 ft, unadjusted. Auxiliary staff gage 7,600 ft downstream July 27, 1950 to Nov. 21, 1955.

Average discharge.--12 years, 1,622 cfs (1,174,000 acre-ft per year).

Extremes.--Maximum discharge during year, 4,420 cfs May 25 (gage height, 11.35 ft); minimum daily, 122 cfs Oct. 4.

1949-57, 1964-67: Maximum discharge, 7,200 cfs May 3, 1952 (gage height, 14.69 ft); maximum gage height, 14.68 ft Feb. 11, 1961; minimum daily discharge, 72 cfs Aug. 20, 21, 28, Sept. 5, 1961.

Remarks.--Records good except those for period of no gage-height record, which are fair. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas. Records are equivalent to flow at Bear River Hind Refuge diversion works.

Discharge, in cubic feet per second, water year October 1963 to September 1967

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	458	660	1,300	740	1,120	1,430	1,700	1,780	4,000	2,430	861	686
2	392	783	1,340	590	1,200	1,370	1,830	2,270	3,770	2,540	963	880
3	171	1,103	1,000	800	1,250	1,270	1,900	2,180	3,350	2,110	630	892
4	126	860	1,150	740	1,560	1,120	1,800	1,930	2,900	1,340	728	838
5	122	1,300	820	820	1,320	1,130	1,780	2,510	2,250	374	840	898
6	428	578	880	880	987	1,000	1,780	2,550	2,430	164	738	730
7	571	421	960	960	1,190	1,040	1,520	1,980	2,560	156	822	867
8	174	462	1,100	940	1,270	1,230	1,960	1,610	2,690	374	768	908
9	141	853	920	820	1,120	1,383	2,130	2,340	2,750	270	1,120	867
10	135	1,240	960	1,020	1,120	1,380	2,120	2,930	2,940	318	1,140	798
11	209	1,030	1,050	1,150	1,200	1,270	2,340	2,930	3,090	348	1,040	974
12	412	940	960	1,100	910	1,340	2,340	2,430	3,200	216	1,000	918
13	443	784	920	880	814	822	2,130	3,480	3,370	716	832	978
14	682	894	800	780	998	1,340	2,080	3,400	3,650	802	718	927
15	263	752	800	780	1,400	1,340	2,340	3,320	4,050	814	878	1,090
16	828	534	1,280	780	1,250	1,600	2,430	3,090	4,120	638	1,030	1,350
17	753	811	1,200	870	1,080	1,540	2,660	2,920	4,110	848	1,070	1,430
18	432	902	1,100	1,250	970	1,580	2,660	2,640	4,080	743	1,000	1,470
19	273	1,170	710	1,100	861	1,870	2,990	2,330	4,100	738	1,030	1,200
20	212	788	800	1,200	714	2,080	2,690	2,290	4,100	802	628	1,120
21	732	802	900	1,480	1,010	2,400	2,510	2,160	4,080	806	488	1,240
22	888	889	1,080	1,550	1,030	2,480	2,260	2,550	4,080	841	870	1,630
23	850	811	1,000	1,100	1,300	2,160	2,410	3,270	4,070	848	828	1,440
24	440	788	1,000	1,150	1,280	2,160	2,580	3,410	4,060	870	1,340	1,340
25	817	912	1,000	1,200	1,290	1,340	2,620	4,170	4,050	360	1,220	1,210
26	486	788	780	1,240	1,120	2,000	2,490	4,340	3,990	407	743	1,500
27	594	764	780	1,280	828	1,930	2,320	4,150	3,790	674	814	1,530
28	348	798	800	1,550	1,230	2,000	2,200	4,100	2,850	894	968	1,240
29	1,020	780	750	1,480	- - - -	1,360	2,500	4,000	2,720	826	858	1,480
30	818	880	1,200	1,220	- - - -	1,800	2,080	3,750	2,740	922	686	1,480
31	407	- - - -	1,180	1,280	- - - -	1,690	- - - -	3,850	- - - -	914	698	- - - -
Total	18,178	21,272	30,480	28,880	31,290	49,192	67,200	81,580	103,780	24,699	27,047	33,706
Mean	490	810	883	1,061	1,118	1,568	2,240	2,554	3,459	797	872	1,124
Max	1,020	1,240	1,340	1,680	1,580	2,600	2,990	4,340	4,120	2,480	1,340	1,630
Min	122	421	710	560	514	822	1,520	1,610	2,250	156	458	686
Ac-ft	30,110	48,540	60,450	65,220	62,060	87,470	133,300	181,600	208,800	48,990	53,650	66,850

Cal yr 1966: Total 441,842 Mean 1,211 Max 4,170 Min 74 Ac-ft 878,600  
 Wtr yr 1967: Total 431,478 Mean 1,458 Max 4,340 Min 122 Ac-ft 1,054,000

Note.--No gage-height record Nov. 29 to Feb. 2.