

TWELFTH ANNUAL REPORT

BEAR RIVER
COMMISSION

1969



For the Report Year October 1, 1968 to

September 30, 1969

LOGAN, UTAH

April 1, 1970

BEAR RIVER COMMISSION

P. O. BOX 413
LOGAN, UTAH

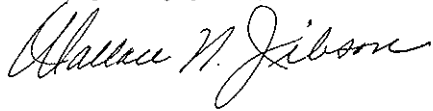
April 1, 1970

Mr. President:

Submitted herewith is the Twelfth 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".

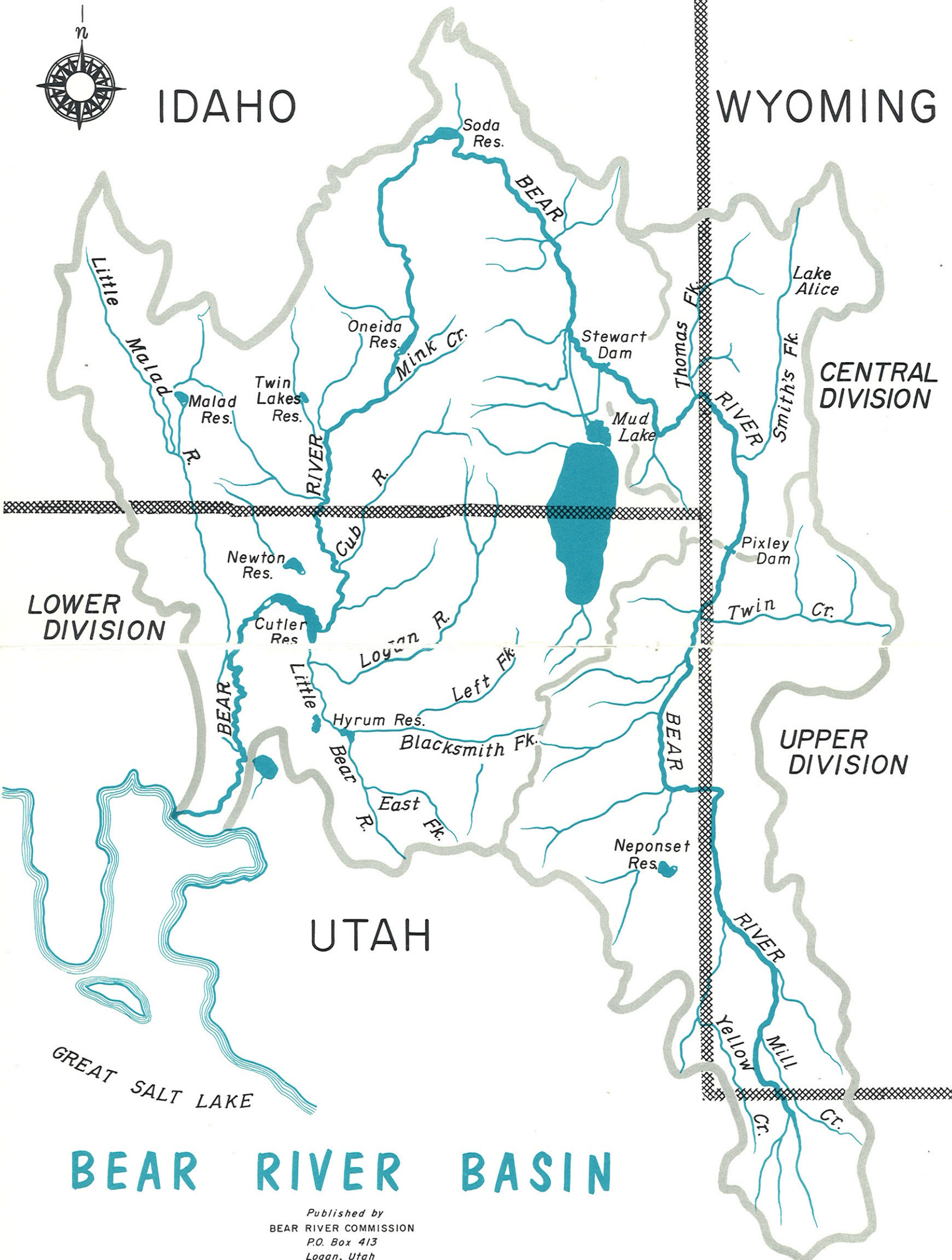
Wallace N. Jibson
Assistant Secretary

The President
The White House
Washington, D. C.



IDAHO

WYOMING



LOWER DIVISION

CENTRAL DIVISION

UPPER DIVISION

UTAH

GREAT SALT LAKE

BEAR RIVER BASIN

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

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TWELFTH ANNUAL REPORT

of the

BEAR RIVER COMMISSION

April 1, 1970

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, 1969 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.

No changes were made in membership of the Commission or committees during the 1969 water year. Grover R. Harper, Corinne, was elected Vice-Chairman of the Commission at the annual meeting, April 21, 1969. Other officers were re-elected by acclamation.

OFFICERS

ChairmanE. O. Larson, Salt Lake City, Utah
Vice-Chairman.....Grover R. Harper, Corinne, Utah
Secretary-TreasurerDaniel F. Lawrence, Bountiful, Utah
Assistant SecretaryWallace N. Jibson, Logan, Utah

MEMBERS

Idaho

Cecil FosterWhitney, Idaho
Ferris M. KunzMontpelier, Idaho
Stephen L. SmithMalad, Idaho
R. Keith Higginson (Ex officio)Boise, Idaho

Utah

Daniel F. Lawrence.....Bountiful, Utah
Gordon H. PeartRandolph, Utah
Grover R. HarperCorinne, Utah

Wyoming

Floyd A. BishopCheyenne, Wyoming
S. Reed DaytonCokeville, Wyoming
J. W. MyersEvanston, Wyoming

United States

E. O. LarsonSalt Lake City, Utah

Budget Committee

Grover R. HarperCorinne, Utah
J. W. MyersEvanston, Wyoming
Ferris M. KunzMontpelier, Idaho

Operations Committee

Cecil FosterWhitney, Idaho
Gordon H. PeartRandolph, Utah
S. Reed DaytonCokeville, Wyoming

MEETINGS

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

Regular Meeting—December 16, 1968.....Salt Lake City, Utah
 Annual Meeting—April 21, 1969.....Salt Lake City, Utah

BUDGET AND FISCAL DISBURSEMENTS

Adopted Budget

	<i>Fiscal Year Ending 6-30-1969</i>	<i>Fiscal Year Ending 6-30-1970</i>	<i>Total Biennium Ending 6-30-1970</i>
Compact Administration			
Personal Services	\$ 5,250	\$ 5,710	\$ 10,960
Travel and Subsistence	400	400	800
General Office Expense	370	350	720
Fiscal and Administrative	270	290	560
Washington Office Tech.Charge....	610	650	1,260
Printing and Reproduction	500	500	1,000
Treasurer (Bond and Audit)	300	300	600
Transcribing Minutes	100	100	200
Legal Retainer Fee	300	300	600
Miscellaneous	0	0	0
Sub-Total	\$ 8,100	\$ 8,600	\$ 16,700
Stream-Gaging Program			
U.S. Geological Survey	\$60,954	\$66,503	\$127,457
Total	\$69,054	\$75,103	\$144,157

Allocation of Budget

U.S. Geological Survey	\$30,954	\$34,303	\$ 65,257
State of Idaho	12,700	13,600	26,300
State of Utah	12,700	13,600	26,300
State of Wyoming	12,700	13,600	26,300
Total	\$69,054	\$75,103	\$144,157

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, 1969 and statement of budget revenue and appropriation accounts for the fiscal year ended June 30, 1969, 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 was reinstalled in June 1969 on Bear River near Pescadero, Idaho (below Montpelier) at a site where records were collected from 1921 through 1954. This station was reactivated at the request of Utah commissioners to determine any change in depletion from this point up to Bear Lake since the earlier period of record.

Gaging stations to determine supply for potential reservoir development on Mill and Muddy Creeks, Smiths Fork drainage, were discontinued September 30, 1969 after four years of operation. The period of record includes years of above-average and below-average runoff. Also, a Bureau of Reclamation development station on Blacksmith Fork below Mill Creek was discontinued September 30, 1969 after four years of record.

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 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 file.

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

The seasonal water picture has been one of contrast, from a potential flood condition in May to a serious deficiency in early June that was alleviated by record-breaking storms of nearly two weeks duration. The above-normal snowpack on May 1 disappeared so quickly that by June 12 streamflow from the Uinta watershed was down near that of the same date in the drought year 1961. Smiths Fork runoff was slightly better, but the main river flow entering Idaho was dropping at an alarming rate before the storms moved in. Increased river flow from the storms and a decreased rate of depletion to the system resulted in near-normal irrigation supplies for the balance of the season.

Monthly and yearly runoff in 1969 at three representative gaging stations is compared with a longtime average in the bargraphs 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 and is shown on daily hyrographs in figures 2 and 3.

Runoff in Acre-feet May-September

	<i>Average 1943-69</i>	<i>1968</i>	<i>1969</i>
Upper Bear River	114,700	146,700	111,600
Smiths Fork	106,400	87,200	99,400
Logan River	117,500	113,400	112,900

Water Year

	<i>Average 1943-69</i>	<i>1968</i>	<i>1969</i>
Upper Bear River	137,100	169,600	142,100
Smiths Fork	138,700	120,400	140,700
Logan River	177,100	172,000	180,300

Bear Lake operation is illustrated in figure 4 in which is shown by bargraphs a comparison of 1969 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. Inflow and outflow were about equal in 1969, and each exceeded a longtime average by about 35 per cent with the Lake showing a small net loss for the year. The pattern of last year was followed in which stored water was released in the fall and winter months to develop adequate storage space for spring runoff. April and May inflow was above average but little storage accrued in the normally high month of June, and the Lake started and ended the water year near the 1968 levels.

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>
1967	5,918.29	5,922.92	5,920.36
1968	5,920.36	5,921.23	5,920.02
1969	5,920.02	5,921.58	5,919.80

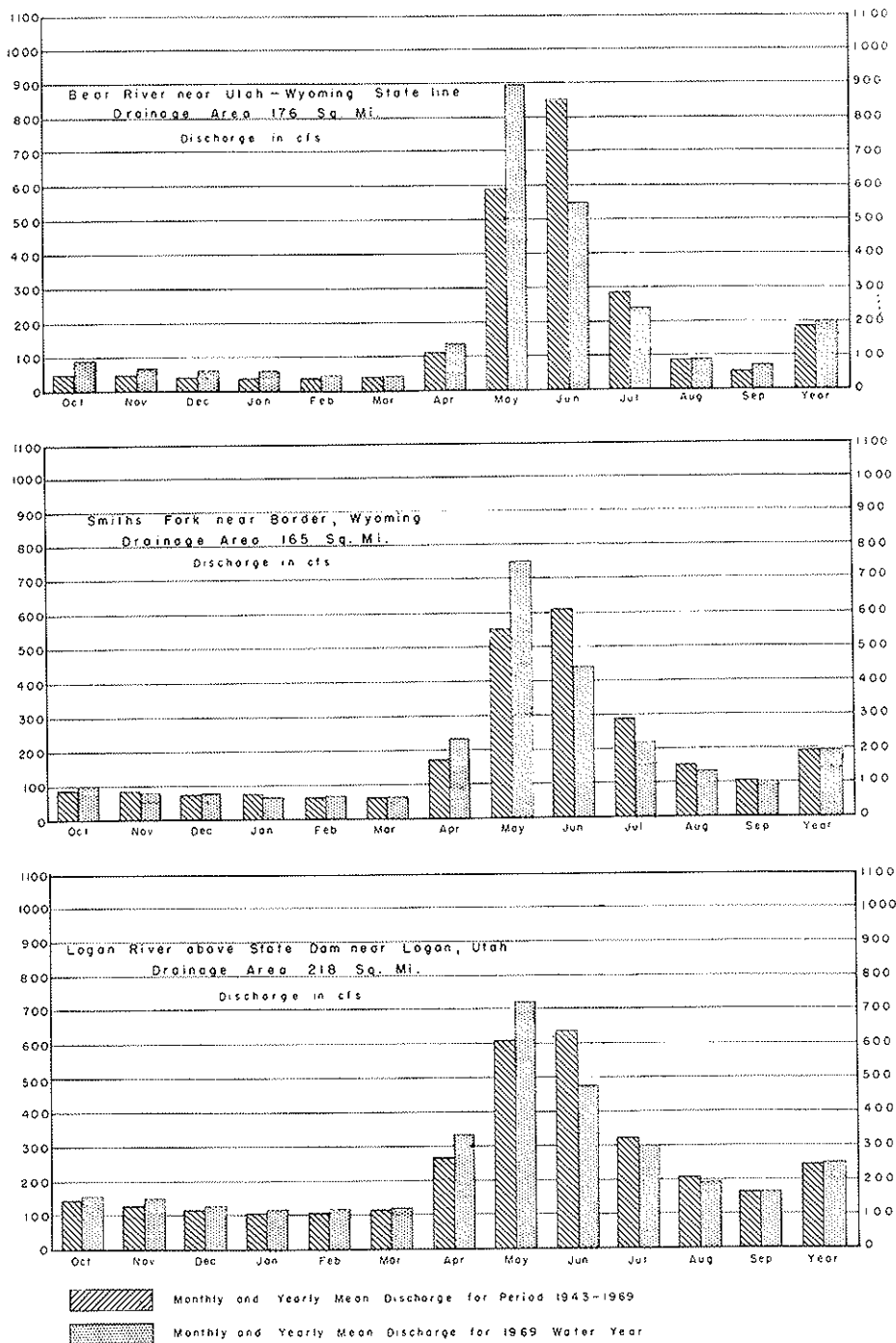
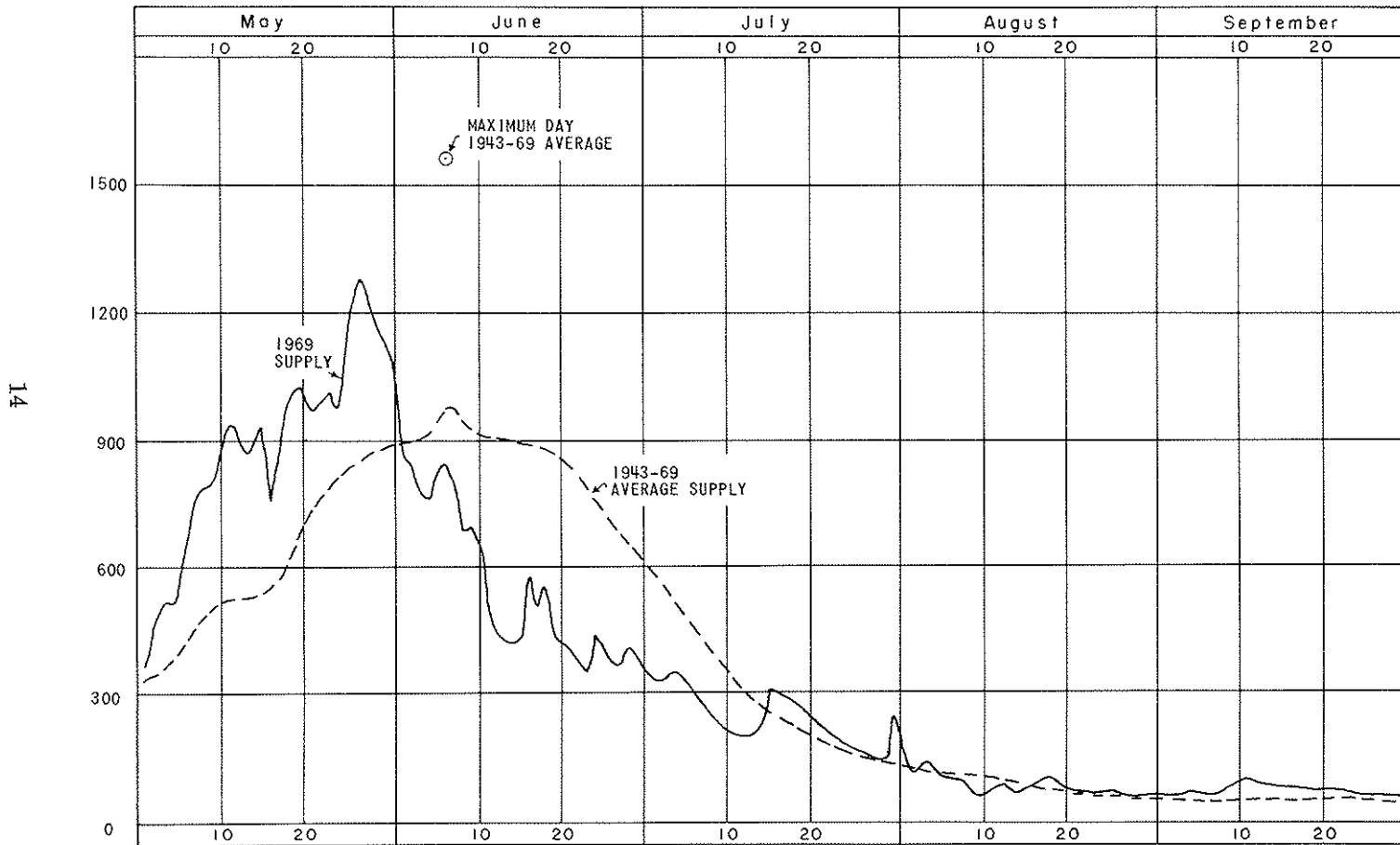


Figure 1. Comparison of discharge at three representative gaging stations in 1969 with average discharge for period 1943-69

UPPER DIVISION - BEAR RIVER SUPPLY *

CUBIC FEET PER SECOND

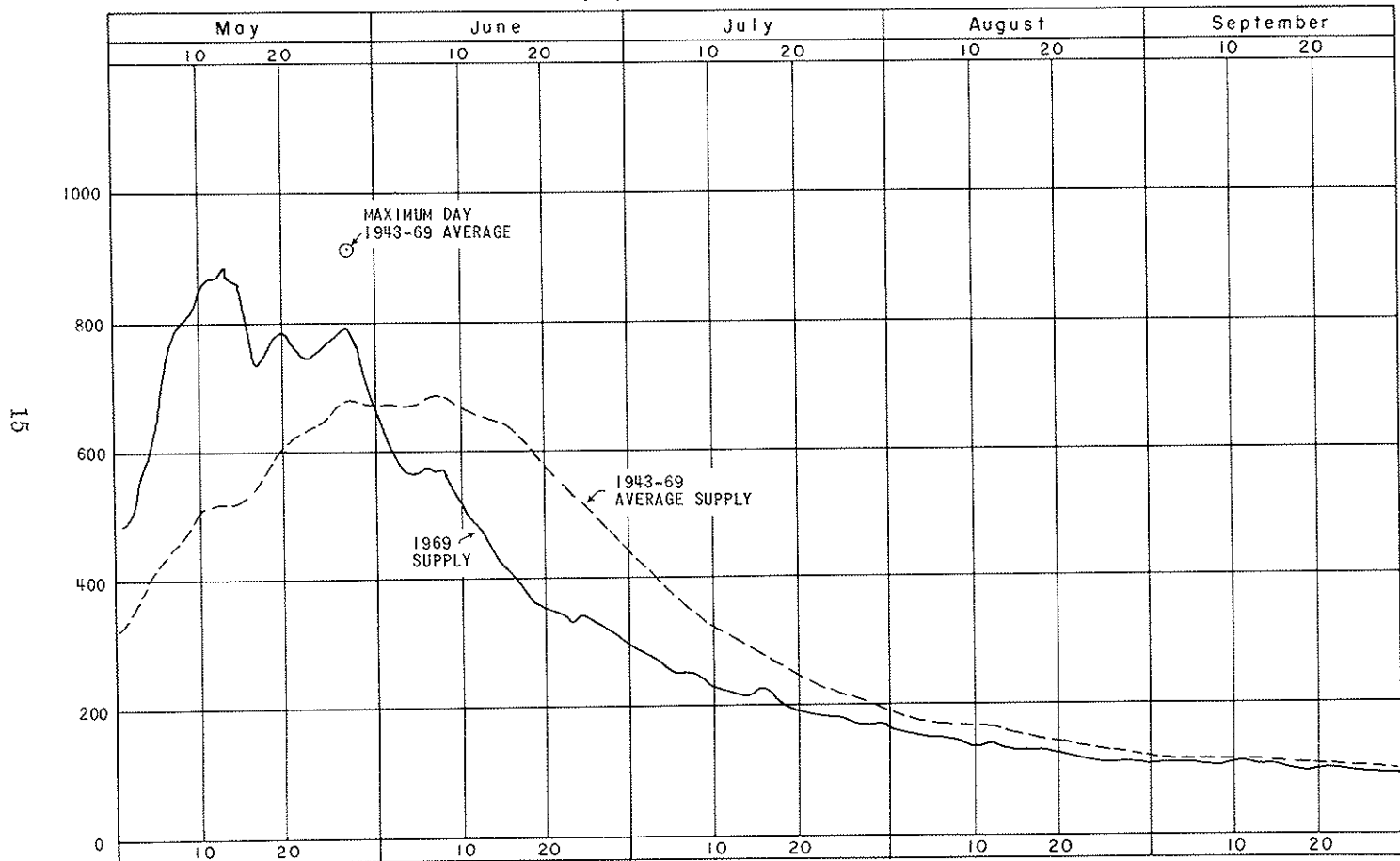


*Bear River near Utah-Wyoming State line

Figure 2

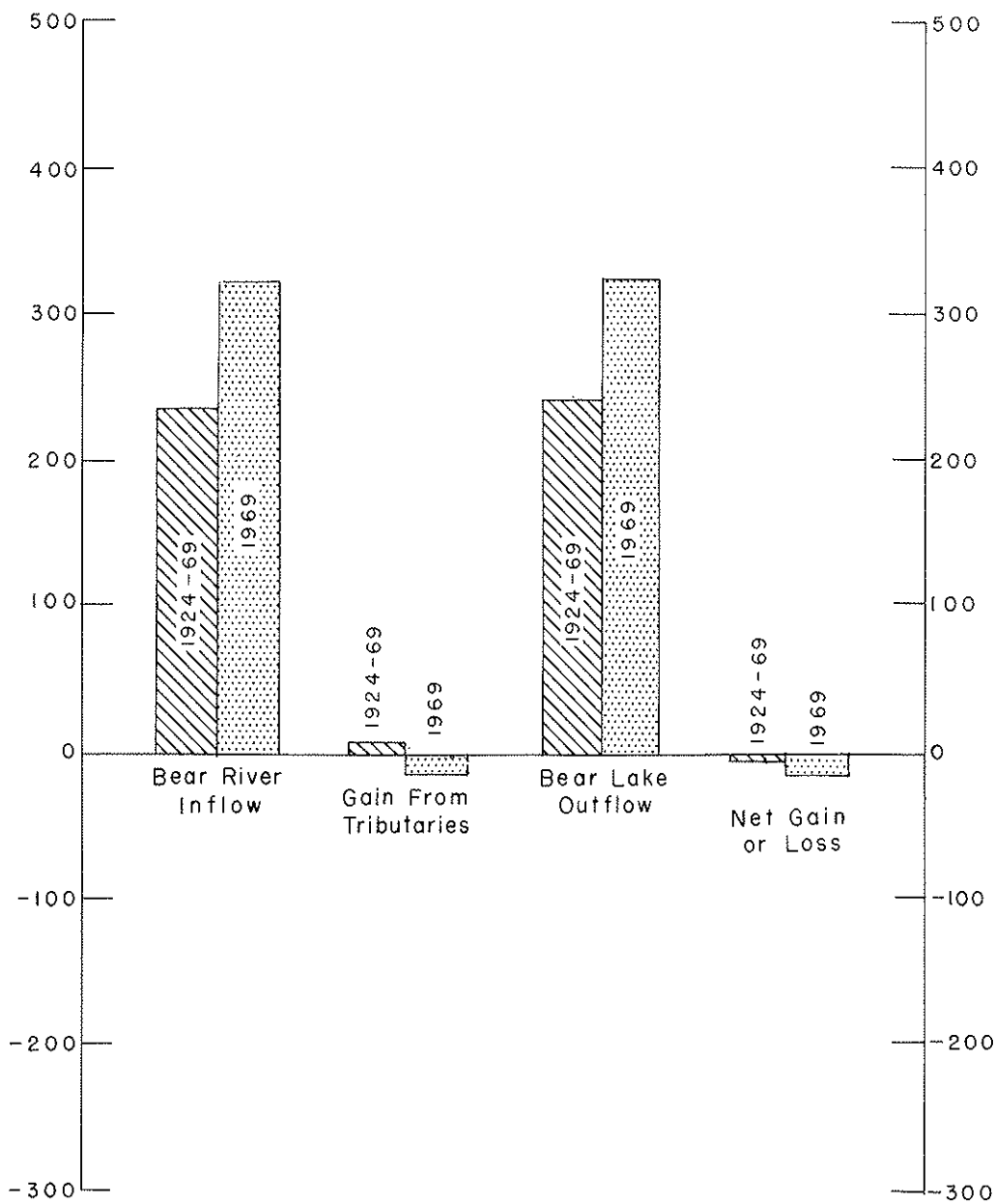
CENTRAL DIVISION - SMITHS FORK SUPPLY *

CUBIC FEET PER SECOND



*Smiths Fork near Border, Wyoming

Figure 3

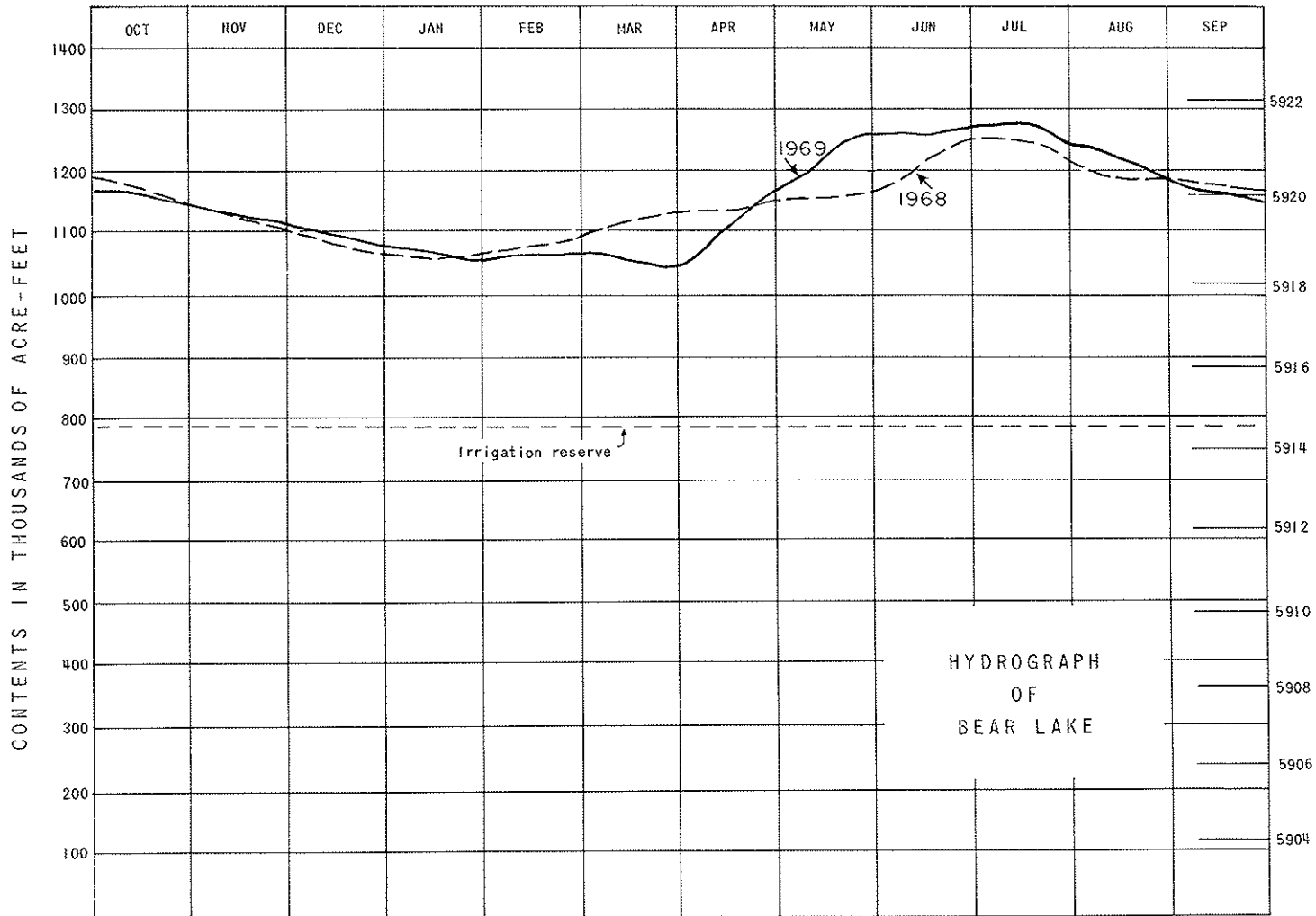


BEAR LAKE

Annual Quantities in Thousands of Acre-Feet

Figure 4

LI



HYDROGRAPH
OF
BEAR LAKE

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 this division in years 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.

Hydrographs of water allocated and diverted are shown in figures 6, 7, and 8 for the three main sections in the Upper Division. Upper Wyoming (figure 6) is the section in which interstate regulation has been required on occasion, but a normal rate of diversion generally is within compact allocation except for a short period or two each year. Two periods of water emergency when the total divertible flow in the division was below 1,250 cfs occurred this season, May 1-11 and July 5 - September 30. The first period, as usual, was not significant as sections were diverting only small amounts of water. Allocation for the latter period is shown by the dashed line in figure 6 and though allocation is less than the total water diverted it is in general more than the amount diverted from direct flow (after adjustment for the amount diverted from released storage.) Thus, excepting a short period or two, Upper Wyoming Section diverted within the compact allocation.

Similar information for Lower Utah Section (Rich County) is shown in figure 7. The extent of application of Woodruff Narrows Reservoir water (dotted areas) should be noted in this section where stored water played an important role in June and July. Lower Wyoming Section, land served from diversion at BQ and Pixley Dams, is shown in figure 8. This section normally ceases diverting prior to the allocation period under terms of the Compact (except in early May) and this year followed generally the same pattern. Though not segregated on the graph, storage water contributed part of the supply diverted in June and July. Release from Woodruff Narrows Reservoir (see figure 9) amounted to about 16,500 acre-feet below the spillway crest. Irrigation holdover storage was not used in 1969.

UPPER DIVISION - UPPER WYOMING SECTION

CUBIC FEET PER SECOND

19

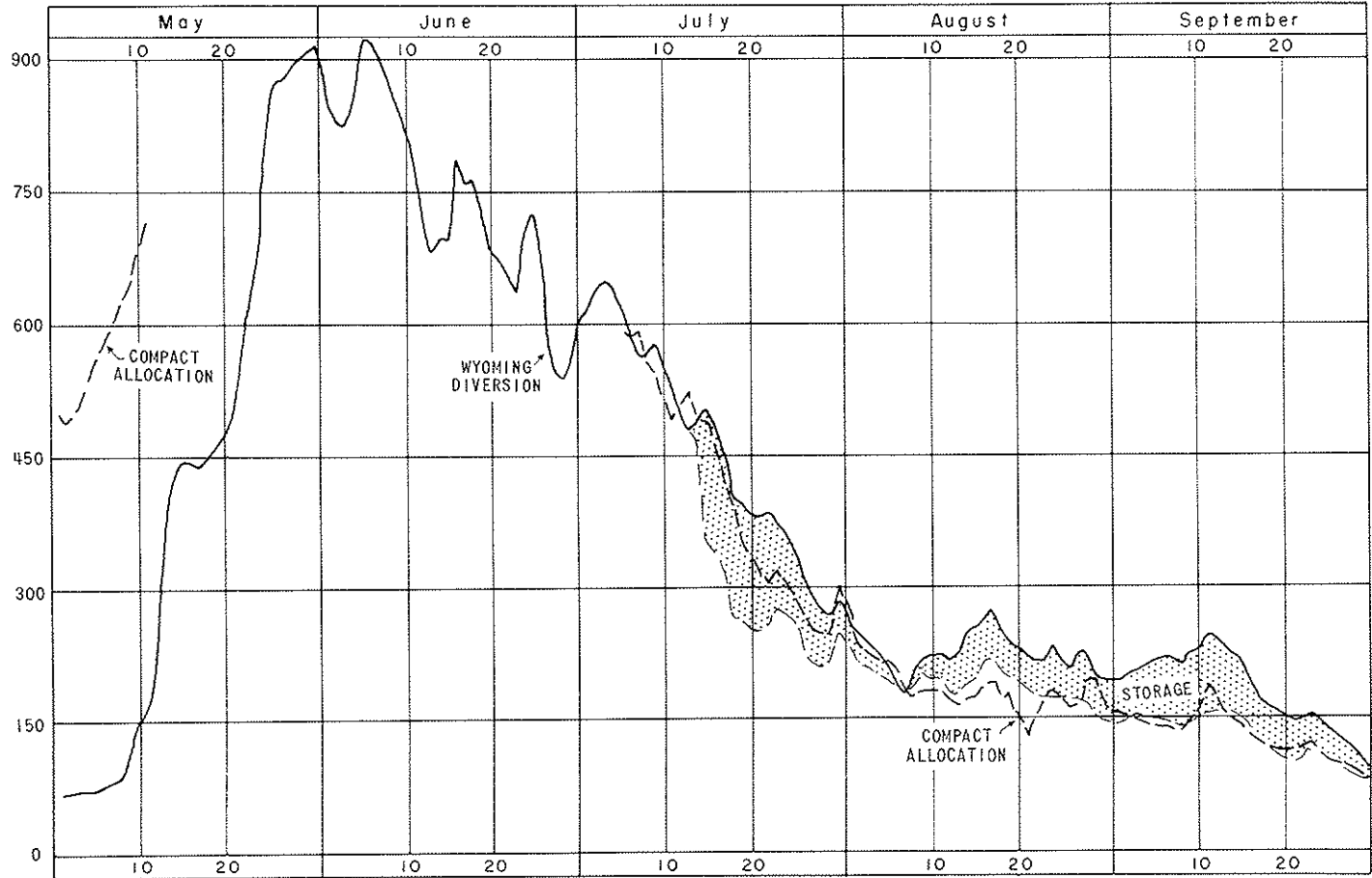


Figure 6

UPPER DIVISION - LOWER UTAH SECTION

CUBIC FEET PER SECOND

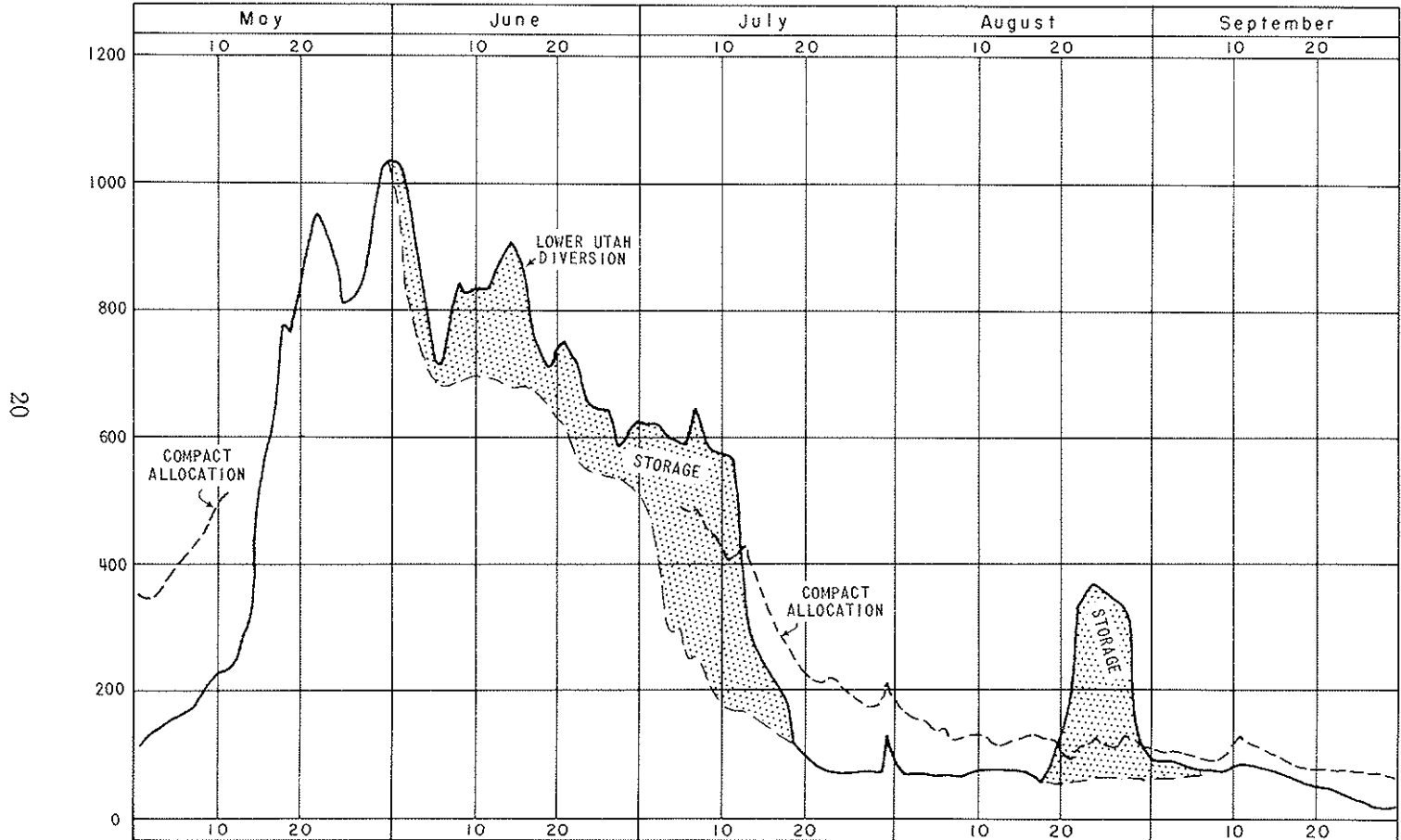


Figure 7

UPPER DIVISION - LOWER WYOMING SECTION

CUBIC FEET PER SECOND

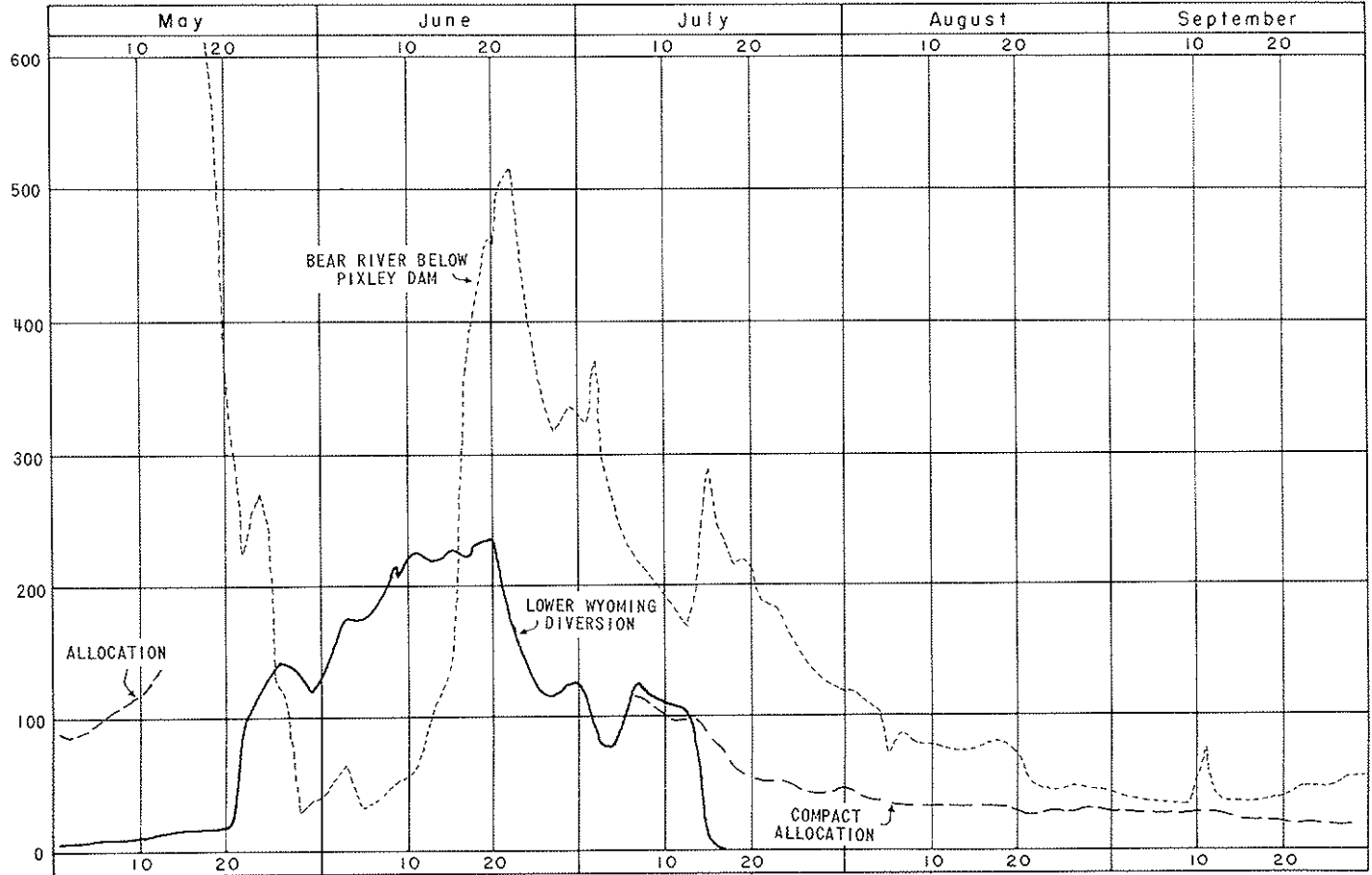


Figure 8



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. A water emergency existed after July 11 when the total divertible flow dropped below 870 cfs and remained in effect for the balance of the season. Flow passing the Border gaging station is shown by the short dashed line which shows the rapid rate at which the supply was falling in late May and early June. Obviously, the flow past Border (350 cfs) would have initiated interstate regulation by June 10 at a critical time in the irrigation season except for the general storm period that lasted for about 10 days. As shown by the hydrograph, Wyoming rate of diversion stayed below compact allocation throughout the period of water emergency. Similar hydrographs for Idaho Section of the Central Division are shown in figure 11. The difference between Idaho diversions and allocation is primarily water being diverted in the Rainbow Inlet Canal which is included in the total divertible flow in this division.

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 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	1968	1969
Wyo.	2.16	5.82	5.06	4.48	4.96	3.32	4.78	4.02	4.24
Idaho	1.72	3.26	3.28	2.91	2.87	2.95	3.05	3.39	3.48

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 1969.

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 1969.

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 1969. 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 most recent increase in the reserve level was made by resolution adopted December 5, 1966 whereby the irrigation reserve elevation was set at 5,914.41 feet (781,500 acre-feet) corresponding to 25,000 acre-feet of additional storage allocation. Bear Lake hydrograph, figure 5, shows the lake surface was above the reserve level during the 1969 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 filings presented to the Commission in 1969 included a pending application in Idaho by the Bureau of Reclamation for storage of 45,000 acre-feet at the Mapleton site on Cub River. Other rights filed during the year for the most part involved relatively small amounts of underground water for supplemental irrigation use in the basin below Bear Lake.

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 continues to be 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.

REVIEW OF COMPACT PROVISIONS

Article XIII, Bear River Compact, requires that the Commission review provisions of the Compact at intervals not exceeding twenty years and may propose amendments to any such provision for consideration of the legislatures of the signatory States. Wyoming commissioners have urged such a review with particular emphasis on their recommendation for an increase in storage allocation to the basin above Bear Lake. The Assistant Secretary, at the request of the Commission, prepared a report on storage above Bear Lake that was presented in the regular meeting, December 16, 1968. This report analyzed effects on Bear Lake of storage developed under terms of the Compact and of assumed additional allocation of storage. The analysis indicated that under present storage development and assumed increases in allocation there would be on the average an excess of storable water originating above Bear Lake over irrigation requirements on the Lake.

A further study by the Assistant Secretary dealt with changes in depletion in the various river sections during the period of streamflow record. This study, presented in the April 1969 meeting, indicated a relatively large increase in depletion in recent years particularly in the basin below Bear Lake. A study on Wyoming's water supplies and needs in Bear River basin, prepared by a private engineering firm, was presented by H. T. Person to the Commission in the April meeting. This study confirms the Wyoming claim for an increase in upstream storage allocation.

CENTRAL DIVISION - WYOMING SECTION

CUBIC FEET PER SECOND

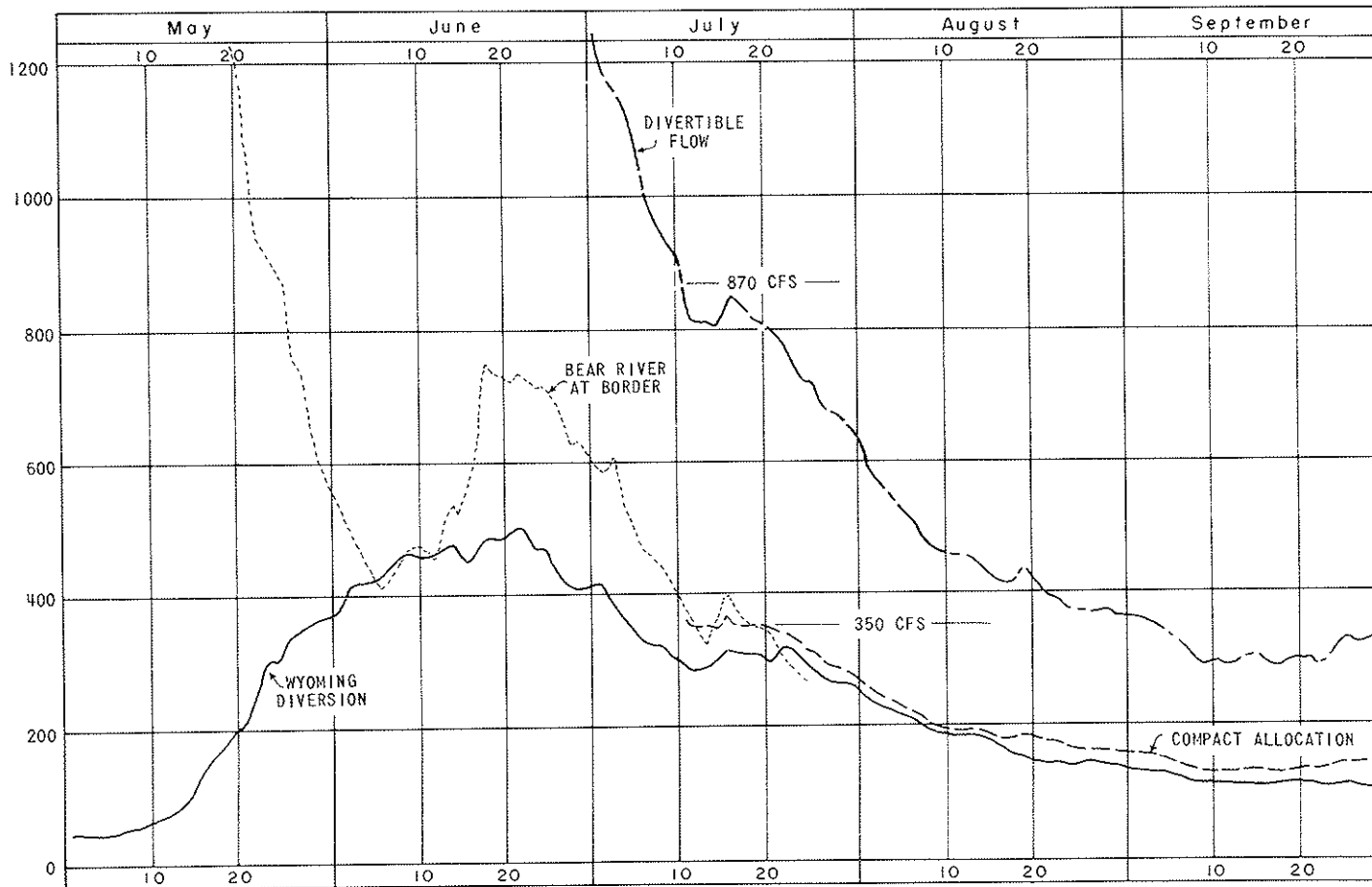


Figure 10

CENTRAL DIVISION - IDAHO SECTION

CUBIC FEET PER SECOND

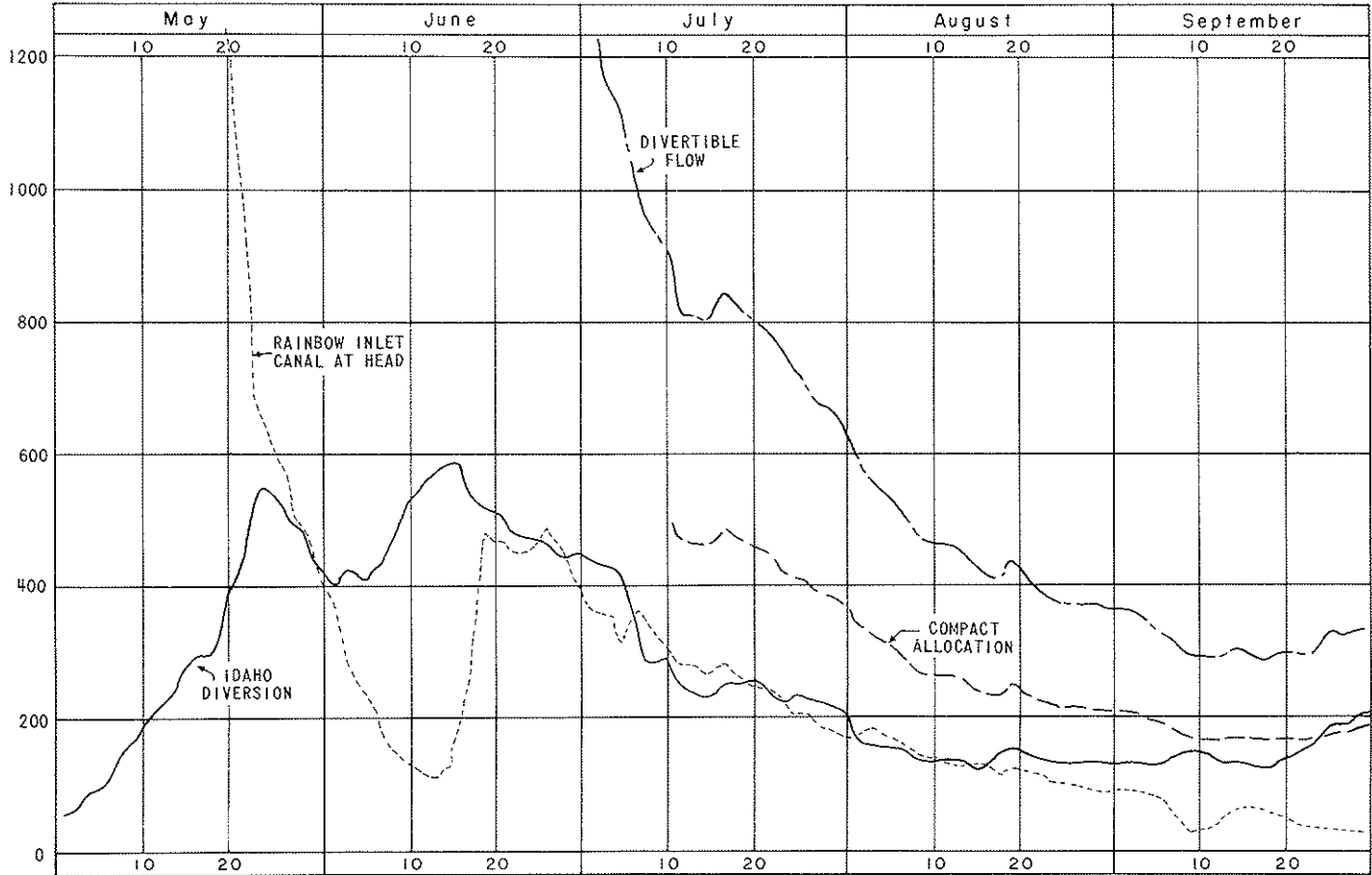


Figure 11

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

AUGUST	1969	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	
BYONNE DIVISIONS																																	
BEAR RIVER CANALS																																	
Karnham																																	
Milton																																	
Kornan Dam																																	
Kornan West																																	
Kornan																																	
Kornan Point																																	
Cook																																	
J. H. Richards																																	
WINDHAM CANALS																																	
Gondell Cr - Pine Cr																																	
V. R. Canal - Pine Cr																																	
Collett Canal - Pine Cr																																	
Gracie Creek Canal																																	
Wagoner Rd - Windham																																	
Huggins Windham Cr																																	
Shelton E of Thompson																																	
SMITHS FORK CANALS																																	
Galen-Kanawha																																	
Butler Flat																																	
Perry Parkridge																																	
Hansbrom																																	
Cayle																																	
Conroy																																	
Weberloch																																	
Cover Canal at Head																																	
Cover Canal - Smalls Cr																																	
Cover Canal - Smalls Cr																																	
Panner - Hunt A - Smalls Cr																																	
Whites Water																																	
Waffle (Collett Cr)																																	
Kornan (Hansbrom Cr)																																	
Kornan (Collett Cr)																																	
Stoner-Michels (So Br)																																	
Morgan (South Branch)																																	
Cokeville Water - So Br																																	
Panner & South Br																																	
Smalls E. Canal - So Br																																	
South Br. - Smalls Work																																	
South Br. - Smalls Work																																	
TOTAL, BYC. DIVISIONS																																	
IDAHO DIVISIONS																																	
Miller Blitch																																	
Nutter Canal																																	
Karnham Blitch																																	
Karnham Dam																																	
Loud Blitch																																	
Single Intake Canal																																	
Kane Creek Canal																																	
Kane Creek Dam																																	
Pannan Montpelier Cr																																	
Lawrence Kent Canal																																	
West Fork Canal																																	
Rugerer Blitch																																	
SURFICIAL																																	
Baldock Intake - Va - Bear																																	
Bear & Below - Bear																																	
Idaho River Intake																																	
Sawtooth Mountains Flow																																	
Idaho River Intake Dam																																	
Sawtooth Allocation (1970)																																	
Idaho Allocation (1970)																																	

31

APPENDIX A

WM. DEAN KIMBER CERTIFIED PUBLIC ACCOUNTANT

4315 South 3720 West
SALT LAKE CITY, UTAH 84120

MEMBER
AMERICAN INSTITUTE OF
CERTIFIED PUBLIC ACCOUNTANTS

November 17, 1969

Bear River Commission
Utah State Capitol
Salt Lake City, Utah

Gentlemen:

In accordance with your instructions I have examined the fiscal and accounting records of the Bear River Commission for the fiscal year ended June 30, 1969 and I now submit the report of my examination.

My examination included a review of the financial transactions and an examination of the statement of revenue and expenditures for the year and budget estimates and related expenses as included in the minutes of the Commission meeting held April 15, 1968 and subsequently adjusted to reflect a supplemental appropriation of \$954 to partially offset the October 1968 pay raise of Federal employees.

I confirmed the funds available at June 30, 1969 by direct correspondence with the depository. My examination was conducted 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. Expenditures for operations were made directly by the United States Geological Survey and are included in detail in this report. Administrative expenses in the amount of \$1,279.40 were disbursed by the Salt Lake City Office.

The results of my examination are presented herewith and include comments and explanations as appropriate in the following described statements.

Exhibit "A" -Statement of Revenue and Expenditures for the fiscal year ended June 30, 1969.

Exhibit "B" -Statement of Available Revenue and Appropriations thereof for the fiscal year, showing balances at June 30, 1969.

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 Wyoming, Idaho, and Utah for the utilization and development of the waters of the Bear River. The Commission was organized April 5, 1958 and the by-laws were adopted April 26, 1958. The Commission is the administrative agency which carries out the provisions of the Bear River Compact. Three Commissioners from each of the three represented states, plus one non-voting Commissioner representing the United States, constitutes the ten member Commission. The United States representative acts as Chairman. All expenses of the Commission are shared by the three states on an equal basis.

The Commission enters into an annual agreement with the United States Geological Survey, Department of the Interior, for the operation and maintenance of gauging stations. Expenses for the gauging station program are shared equally by the Commission and the Geological Survey. Other expenses attributable to the Commission are paid by the Commission whether the expense is incurred by the Geological Survey or the Salt Lake Office. Detail of the expenses incurred under the agreement are shown 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 position of the Bear River Commission at June 30, 1969 and the results of the financial transactions for the period then ended in conformity with generally accepted accounting principles applied on a consistent basis except expenses incurred by the United States Geological Survey during the last six months of the fiscal year in the amount of \$17,201 were not reimbursed until July 1969. These expenses were deferred pending the maturity of savings certificates. These certificates in the amount of \$16,000 were purchased in January 1969 and certificates in the amount of \$12,000 were redeemed in July 1969. The redemption proceeds were used to pay the United States Geological Survey.

Yours very truly,

W. H. Kimber

BEAR RIVER COMMISSIONStatement of Revenue & ExpensesFor the Fiscal Year Ended June 30, 1969

(Including Expenses in the Amount of \$17,201 Paid in July 1969-See Schedule "A-1")

REVENUE:

State of Wyoming	\$11,700.00	
State of Idaho	11,700.00	
State of Utah	<u>11,700.00</u>	\$35,100.00

EXPENSES:

Commission's Portion of Direct Expenses of the Stream-gauging Program, Schedule "A-1"		
Personal Services	\$28,221.00	
Travel and Subsistence	2,300.00	
General Office	1,435.00	
Fiscal and Administration	1,490.00	
Washington Office Charges	<u>3,354.00</u>	
Total--Schedule "A-1"		\$36,800.00
Administrative Expenses		
Auditing Fee	\$ 175.00	
Legal Consultant	300.00	
Transcript of Minutes	70.00	
Printing Annual Report	474.00	
Insurance Bond	66.00	
Compact Printing	<u>194.40</u>	
Total		\$ 1,279.40

EXCESS OF EXPENDITURES OVER REVENUE FORTHE FISCAL YEAR ENDED JUNE 30, 1969FUNDS AVAILABLE AT JULY 1, 1958

Subtotal		(2,979.40)
Investment in Saving Certificates		<u>6,462.96</u>
Net Excess of Investments in Saving Certificates and Expense Incurred Over Available Funds		3,483.56
Expenditures as Above		<u>4,000.00</u>
Expenditures Incurred Through Stream-gauging Program Allocated to and Paid Direct by United States Geological Survey		\$ 516.44
Total Expenditures		\$38,079.40
Investments (Net of Redemptions in July 1969)		<u>30,954.00</u>
Total Expenses and Net Investment		69,033.40
Expenses Paid to June 30, 1969	\$51,832.40	
Investment in Saving Certificates	<u>16,000.00</u>	
Total Expenses Paid Plus Investment to June 30, 1969 per Exhibit "B"		\$67,832.40
1969 Expenses Paid in July 1970	\$17,201.00	
Less Savings Certificates Redeemed	<u>12,000.00</u>	
Net 1970 Expenditures for 1969 Expenses per Exhibit "B"		5,201.00
Total Expenses and Net Investment per Above		<u>\$73,033.40</u>

BEAR RIVER COMMISSION

Statement of Available Revenue and Appropriation Thereof
For the Fiscal Year Ended June 30, 1969

	Expected Revenue & Expenditures as Budgeted*	Actual Revenue & Expenditures	Balance or (Deficit)	1970 Expenditures Applicable to 1969 Expenses***	Balance or (Deficit) to 1969 Budget
<u>CASH REVENUES:</u>					
Balance of Funds June 30, 1968	\$ 6,462.96	\$ 6,462.96	\$ -0-	\$ -0-	\$ -0-
Revenue Receipts					
State of Wyoming	11,700.00	11,700.00	-0-	-0-	-0-
State of Idaho	11,700.00	11,700.00	-0-	-0-	-0-
State of Utah	11,700.00	11,700.00	-0-	-0-	-0-
Subtotal	\$41,562.96	\$41,562.96	\$ -0-	\$ -0-	\$ -0-
<u>FUNDS FURNISHED BY UNITED STATES</u>					
GEOLOGICAL SURVEY DIRECT	30,954.00	30,954.00	-0-	-0-	-0-
Total Funds Available	\$72,516.96	\$72,516.96	\$ -0-	\$ -0-	\$ -0-
<u>APPROPRIATIONS:</u>					
Stream-gauging-Schedule "A-1"	\$60,954.00	\$45,136.00	\$15,818.00	\$15,818.00	\$ -0-
Personal Services	5,150.00	4,699.00	451.00	551.00	(100.00)
Travel and Subsistence	450.00	138.00	312.00	262.00	50.00
Fiscal and Administrative	280.00	136.00	144.00	134.00	10.00
Washington Office Service	620.00	305.00	315.00	305.00	10.00
Office and Supplies	400.00	139.00	261.00	131.00	130.00
Annual Report	500.00	474.00	26.00	-0-	26.00
Compact Printing	-0-	194.40	(194.40)	-0-	(194.40)
Treasurer's Bond and Audit	300.00	241.00	59.00	-0-	59.00
Transcript of Minutes	100.00	70.00	30.00	-0-	30.00
Legal Retainer Fee	300.00	300.00	-0-	-0-	-0-
Miscellaneous	-0-	-0-	-0-	-0-	-0-
Savings Certificates-Purchased	-0-	16,000.00	(16,000.00)	-0-	(16,000.00)
Savings Certificates-Redeemed**	-0-	-0-	-0-	(12,000.00)	12,000.00
Total Appropriations	\$69,054.00	\$67,832.40	\$ 1,221.60	\$ 5,201.00	\$ (3,979.40)
Unappropriated Balance or Excess of Expenses	\$ 3,462.96	\$ 4,684.56	\$ 1,221.60	\$ (5,201.00)	\$ 3,979.40
Unappropriated Balance 6-30-69					3,462.96
Excess of Expenses and Net Investment over Available Funds					\$ (516.44)

*As revised April 15, 1968

**Redeemed July 1969

***Paid July 1969

****This is represented by Savings Certificates of \$4,000

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, 1969
(Including Expenses in the Amount of \$17,201 Paid in July 1969)**

	<u>Allocable Expenditures</u>			<u>Charged Direct to Bear River Commission**</u>	<u>Total Expenses to Bear River Commission**</u>
	<u>Total</u>	<u>U.S.G.S.</u>	<u>Bear River Commission*</u>		
Personal Services	\$46,896.00	\$23,925.00	\$22,971.00	\$ 5,250.00	\$28,221.00
Travel and Subsistance	3,800.00	1,900.00	1,900.00	400.00	2,300.00
General Office	2,330.00	1,165.00	1,165.00	270.00	1,435.00
Fiscal and Administra- tion	2,440.00	1,220.00	1,220.00	270.00	1,490.00
Washington Office	<u>5,488.00</u>	<u>2,744.00</u>	<u>2,744.00</u>	<u>610.00</u>	<u>3,354.00</u>
Totals	<u>\$60,954.00</u>	<u>\$30,954.00</u>	<u>\$30,000.00</u>	<u>\$ 6,800.00</u>	<u>\$36,800.00</u>

*Unequal distribution of personal services arose because of a supplemental Federal appropriation for salary increases during the fourth quarter.

**Includes the following expenses incurred in fiscal year 1969 paid in July 1969:

	<u>Bear River Commission</u>	<u>Charged Direct to Bear River Commission</u>	<u>Total</u>
Personal Services	\$12,272.00	\$ 551.00	\$12,823.00
Travel and Subsistance	1,020.00	262.00	1,282.00
General Office	544.00	131.00	675.00
Fiscal and Administrative	610.00	134.00	744.00
Washington Office	<u>1,372.00</u>	<u>305.00</u>	<u>1,677.00</u>
Totals	<u>\$15,818.00</u>	<u>\$ 1,383.00</u>	<u>\$17,201.00</u>

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 1969 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 near Oakley, Utah

LOCATION.--Lat 40°59'30", long 110°55'28", in NE1/4 Sec.3, T.1 N., R.9 E., Summit County, on left bank, 1,380 ft below Whitney Dam, 7 miles upstream from Bear Creek, 21.5 miles northeast of Oakley.

DRAINAGE AREA.--7.5 sq mi, approximately.

PERIOD OF RECORD.--October 1963 to current year. Prior to October 1965 published as, "at Whitney Dam site".

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir since Aug. 3, 1966. Altitude of gage is 9,120 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 121 cfs July 18, 16 (gage height, 2.95 ft); minimum daily, 0.67 cfs Aug. 8, 9.
 Period of record: Maximum discharge, 145 cfs June 13, 1965 (gage height, 1.95 ft); maximum gage height, 2.95 ft July 18, 16, 1969; no flow July 29 to Sept. 30, Nov. 16-28, 1968.

REMARKS.--Records good. Flow regulated by Whitney Reservoir. Usable capacity between sill of outlet and spillway crest, 8,200 acre-ft. Dead storage 800 acre-ft. Construction of dam began Aug. 1, 1965 and completed October 1966. Storage began July 24, 1966, and reached sill of outlet Nov. 30, 1966. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR BEGINNING OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	1.4	1.4	1.3	1.4	1.4	1.4	1.4	67	21	.75	13
2	34	1.4	1.4	1.3	1.4	1.4	1.4	1.4	66	19	.73	15
3	34	1.4	1.4	1.3	1.4	1.4	1.4	1.4	29	17	.73	24
4	34	1.4	1.4	1.3	1.4	1.4	1.5	1.4	14	15	.72	24
5	34	1.4	1.4	1.3	1.4	1.4	1.5	1.4	11	13	.70	23
6	34	1.4	1.4	1.3	1.4	1.4	1.5	1.4	25	12	.70	23
7	33	1.4	1.4	1.3	1.4	1.4	1.5	1.4	30	11	.69	33
8	33	1.4	1.4	1.3	1.4	1.4	1.5	1.4	29	11	.67	66
9	37	1.4	1.4	1.3	1.4	1.4	1.7	1.4	26	11	.67	46
10	41	1.4	1.4	1.3	1.4	1.4	1.4	1.4	26	4.8	.68	62
11	41	1.4	1.4	1.3	1.4	1.4	1.4	1.7	23	8.9	6.2	60
12	40	1.4	1.4	1.3	1.4	1.4	1.4	1.4	21	8.4	13	39
13	40	1.4	1.4	1.3	1.4	1.4	1.4	1.4	20	7.9	13	38
14	40	1.4	1.4	1.3	1.4	1.4	1.4	1.4	20	65	13	36
15	40	1.4	1.4	1.3	1.4	1.4	1.4	2.1	20	113	13	33
16	37	1.4	1.4	1.3	1.4	1.4	1.4	2.1	24	117	13	30
17	32	1.4	1.4	1.3	1.4	1.4	1.4	2.2	23	112	13	28
18	17	1.4	1.4	1.3	1.4	1.4	1.4	2.3	22	106	13	25
19	1.4	1.4	1.4	1.3	1.4	1.4	1.4	2.4	18	99	13	24
20	1.4	1.4	1.4	1.3	1.4	1.4	1.4	2.4	16	94	13	22
21	1.3	1.4	1.4	1.3	1.4	1.4	1.4	2.5	15	89	13	21
22	1.4	1.4	1.4	1.3	1.4	1.4	1.4	2.5	14	81	13	19
23	1.4	1.4	1.4	1.3	1.4	1.4	1.4	2.4	14	84	13	17
24	1.4	1.4	1.4	1.3	1.4	1.4	1.4	2.4	18	56	13	15
25	1.4	1.4	1.4	1.3	1.4	1.4	1.4	2.4	20	54	13	14
26	1.4	1.4	1.4	1.3	1.4	1.4	1.4	2.1	21	43	13	12
27	1.4	1.4	1.4	1.3	1.4	1.4	1.4	2.2	14	33	13	10
28	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.1	22	18	13	8.5
29	1.4	1.4	1.4	1.4	-----	1.4	1.4	2.4	23	.84	13	7.2
30	1.4	1.4	1.3	1.4	-----	1.4	1.4	2.0	22	.82	13	5.3
31	1.4	-----	1.3	1.4	-----	1.4	-----	2.3	-----	.77	13	-----
TOTAL	653.1	62.0	63.2	60.7	39.2	43.4	51.3	590.4	702.88	1,284.43	273.24	732.0
MEAN	21.1	1.40	1.39	1.31	1.40	1.40	1.71	19.1	23.4	61.5	8.81	24.4
MAX	41	1.4	1.4	1.4	1.4	1.4	1.4	2.4	67	117	13	46
MIN	1.3	1.4	1.3	1.3	1.4	1.4	1.4	1.7	1.88	.77	.67	5.3
AC-FI	1,300	84	86	81	78	86	102	1,170	1,390	2,550	542	1,450
CAL YR 1968	TOTAL	3,160.4		MEAN	8.64	MAX	76	MIN	1.2	AC-FI	6,270	
WTR YR 1969	TOTAL	4,497.25		MEAN	12.3	MAX	117	MIN	.67	AC-FI	8,920	

BEAR RIVER BASIN

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

LOCATION.--Lat 40°57'58", long 110°31'04", in SE1/4 sec.36 T.3 N., R.10 E., Summit County, on left bank just downstream from West Park, 2.8 miles upstream from Utah-Wyoming State line.

DRAINAGE AREA.--176 sq mi.

PERIOD OF RECORD.--July 1942 to current year.

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

AVERAGE DISCHARGE.--27 years, 189 cfs (136,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,460 cfs May 27 (gage height, 2.76 ft); maximum gage height, 2.83 ft Dec. 22 (backwater from ice); minimum discharge, 2nd cfs Apr. 23.
 Period of record: Maximum discharge, 2,980 cfs June 6, 1968 (gage height, 3.79 ft); maximum gage height, 4.27 ft June 6, 1957; minimum discharge determined, 16 cfs Apr. 11, 1951, Nov. 5, 1954, Nov. 1, 1955, Oct. 10, 1956.

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 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	65	66	58	52	47	65	357	867	330	128	61
2	87	66	66	58	52	47	62	458	804	330	120	59
3	85	76	66	60	52	47	65	513	777	352	149	68
4	83	72	66	60	52	47	65	534	768	346	120	74
5	83	68	66	59	52	47	76	527	840	320	111	65
6	81	68	64	58	52	45	81	638	849	295	104	64
7	85	50	64	58	52	45	72	759	795	272	98	65
8	89	70	62	58	52	45	70	795	686	264	83	83
9	87	87	61	58	52	45	74	804	702	236	70	89
10	93	72	59	58	52	45	85	885	670	220	70	93
11	93	70	58	58	52	45	93	939	520	208	74	102
12	91	66	56	58	51	45	106	930	450	200	85	83
13	91	66	56	58	48	45	114	876	420	204	78	79
14	139	68	56	56	48	45	106	885	426	228	72	79
15	165	68	55	58	48	45	102	939	426	320	81	76
16	120	68	58	61	48	44	93	759	590	300	85	74
17	98	68	60	58	48	44	87	867	492	285	98	72
18	104	68	60	56	48	44	93	1,000	569	276	104	70
19	85	68	60	56	48	44	100	1,020	438	262	83	68
20	81	68	60	56	48	44	120	1,030	420	240	79	64
21	78	68	60	56	48	44	162	966	414	224	76	70
22	72	68	60	55	47	44	228	1,010	374	212	72	68
23	76	66	60	55	47	42	295	1,040	357	182	72	62
24	72	66	60	55	47	42	315	975	444	182	68	58
25	70	66	61	55	47	42	262	1,130	414	172	66	55
26	72	66	60	55	47	43	216	1,230	379	159	66	53
27	65	66	60	55	47	46	196	1,290	368	159	72	53
28	66	66	60	55	47	45	204	1,220	420	146	65	50
29	70	66	60	55	-----	47	294	1,160	384	136	66	48
30	70	66	60	55	-----	51	310	1,130	352	240	66	47
31	72	-----	60	55	-----	58	-----	1,070	-----	149	64	-----
TOTAL	2,712	2,036	1,880	1,766	1,384	1,409	4,171	27,716	16,415	7,429	2,645	2,052
MEAN	87.5	67.9	60.6	57.0	49.4	45.5	139	894	547	240	85.3	68.4
MAX	165	87	66	61	52	58	315	1,290	867	352	149	102
MIN	65	50	55	55	47	42	62	357	352	136	64	47
AC-FT	5,380	4,040	3,730	3,500	2,750	2,790	8,270	54,970	32,560	14,740	5,250	4,070

CAL YR 1968 TOTAL 86,595 MEAN 237 MAX 2,400 MIN 40 AC-FT 171,800
 WYR YR 1969 TOTAL 71,615 MEAN 196 MAX 1,290 MIN 42 AC-FT 142,000

PEAK DISCHARGE (BASE, 1,100 CFS).--May 27 (0200) 1,460 cfs (2.76 ft).

BEAR RIVER BASIN

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

LOCATION.--Lat 41°08'39", long 110°48'18", in SW1/4 sec.35, T.14 N., R.119 W., Uinta County, on right bank 1.2 miles downstream from Willow Creek, 2 miles upstream from Sulphur Creek Dam, and 11.0 miles south-east of Evanston.

DRAINAGE AREA.--64 sq mi, approximately.

PERIOD OF RECORD.--October 1957 to current year. Monthly discharge only for October and November 1957, published in MSP 1738.

GAGE.--Water-stage recorder. Altitude of gage is 7,180 ft (from topographic map).

AVERAGE DISCHARGE.--12 years, 12.8 cfs (9,274 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 532 cfs Apr. 11 (gage height, 4.49 ft); maximum gage height, 5.56 ft Apr. 4 (backwater from ice); minimum discharge, 0.60 Aug. 5, 8, 7.

Period of record: Maximum discharge, 1,220 cfs Apr. 21, 1965 (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 station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	6.1	6.5	6.0	6.5	7.5	21	58	3.4	7.2	2.7	1.0
2	1.2	5.9	6.5	6.0	6.5	7.5	35	75	3.4	6.4	2.0	.92
3	.84	6.4	6.5	6.0	6.5	7.5	58	77	2.8	7.4	2.0	.84
4	.76	6.4	6.5	6.0	6.5	7.5	90	63	3.4	9.2	2.7	1.2
5	.60	7.2	6.5	6.6	6.5	7.5	150	60	3.0	10	1.4	.92
6	.54	6.9	6.5	7.2	6.2	7.5	120	81	4.5	8.6	1.2	.68
7	.54	6.4	6.5	7.2	6.2	7.5	105	84	10	8.3	1.7	.60
8	.51	6.4	6.5	6.0	6.2	7.5	93	93	17	11	1.6	.76
9	.54	5.4	6.5	5.0	6.2	7.5	125	81	17	11	1.2	1.0
10	2.4	9.9	6.5	5.5	6.2	7.5	184	75	12	9.9	.68	1.1
11	2.4	10	6.0	6.0	6.2	7.5	188	69	13	6.9	.76	1.7
12	2.4	10	6.0	6.4	6.2	7.5	161	56	13	3.2	1.7	1.6
13	1.7	9.6	6.0	7.0	6.2	7.5	144	47	11	3.6	1.5	1.4
14	2.4	9.0	6.0	7.5	6.2	7.5	104	37	18	4.0	1.2	1.2
15	4.5	8.0	6.0	8.0	6.2	7.5	81	38	14	4.0	1.1	1.1
16	5.1	4.7	6.0	7.0	6.0	7.5	54	27	79	3.6	1.0	1.2
17	4.5	5.9	6.0	6.2	6.0	8.0	65	25	72	3.4	1.6	1.3
18	5.6	7.0	6.0	5.6	6.0	8.0	57	25	30	2.8	5.1	1.2
19	6.4	7.0	6.0	6.2	6.0	8.0	65	22	18	4.3	3.4	1.0
20	5.4	7.0	6.0	6.7	6.0	7.6	60	4.7	18	4.3	2.5	.76
21	4.5	7.0	6.0	7.2	6.0	9.0	65	3.6	12	3.8	2.0	1.0
22	4.5	7.0	6.0	7.6	7.0	9.0	68	3.2	21	3.2	1.7	1.3
23	5.5	7.0	6.0	7.0	7.5	9.0	68	2.8	12	3.4	1.6	1.2
24	5.4	7.0	6.0	7.0	7.5	9.0	78	2.7	78	4.9	1.2	.92
25	5.1	7.0	6.0	7.0	7.5	9.0	51	2.8	56	4.7	1.2	.76
26	5.1	7.0	6.0	7.0	7.5	10	40	2.4	41	3.2	1.3	.76
27	5.1	7.0	6.0	7.0	7.5	11	34	2.5	21	1.9	1.4	.68
28	5.4	6.6	6.0	7.0	7.5	12	36	2.8	15	1.4	1.2	1.0
29	4.7	6.5	6.0	6.5	-----	14	43	4.3	13	2.0	1.2	1.3
30	4.5	6.5	6.0	6.5	-----	16	57	3.6	9.9	9.6	1.2	1.4
31	5.4	-----	6.0	6.5	-----	18	-----	2.7	-----	4.5	1.1	-----
TOTAL	105.63	213.6	191.0	204.4	182.5	278.4	2,484	1,131.3	641.4	172.7	52.74	31.80
MEAN	3.41	7.13	6.16	6.59	6.52	8.98	82.8	36.5	21.4	5.57	1.70	1.06
MAX	6.4	10	6.5	8.0	7.5	18	188	93	79	11	5.1	1.7
MIN	.51	4.7	6.0	5.0	6.0	7.5	21	2.4	2.8	1.4	.68	.60
AC-FT	210	424	379	405	362	552	4,930	2,240	1,270	343	105	63

CAL YP 1968 TOTAL 7,677.65 MEAN 21.0 MAX 188 MIN .51 AC-FT 15,230
 KTR YP 1969 TOTAL 5,689.57 MEAN 15.6 MAX 188 MIN .51 AC-FT 11,290

BEAR RIVER BASIN

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

LOCATION.--lat 41°09'22", long 110°50'00", in SW1/4SE1/4 sec.26, T.14 N., R.115 W., Uinta County, on left bank 100 ft downstream from Sulphur Creek Dam, 6.3 miles upstream from mouth, and 10.5 miles southeast of Evanston.

DRAINAGE AREA.--68 sq mi, approximately.

PERIOD OF RECORD.--April 1958 to current year.

GAGE.--Water-stage recorder and concrete V-notch control. Altitude of gage is 7,120 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 299 cfs Mar. 15 (gage height, 8.46 ft); no flow Jan. 20 to Mar. 14, May 3 to June 15, Sept. 16.

Period of record: Maximum discharge, 343 cfs June 11, 1956 (gage height, 4.96 ft) no flow at times each year.

REMARKS.--Records good. Flow regulated by Sulphur Creek Reservoir 900 ft upstream (capacity, 7,100 acre-ft). Enlargement completed November 1964. Prior to enlargement (capacity, 4,600 acre-ft). Records prior to 1965 do not include flow over spillway of the dam.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	27	26	25	0	0	64	118	0	7.6	36	38
2	3.1	27	26	25	0	0	64	114	0	7.9	30	38
3	2.6	27	26	25	0	0	64	0	0	7.9	23	38
4	4.5	27	26	25	0	0	64	0	0	7.9	23	38
5	4.5	27	26	25	0	0	67	0	0	8.4	15	46
6	4.5	27	26	25	0	0	65	0	0	9.0	6.1	53
7	4.5	27	26	20	0	0	70	0	0	9.2	9.5	53
8	4.4	27	25	12	0	0	70	0	0	9.6	16	53
9	4.4	27	26	12	0	0	73	0	0	11	22	52
10	4.4	26	26	12	0	0	74	0	0	12	25	52
11	4.4	26	25	12	0	0	75	0	0	13	29	51
12	4.4	27	25	12	0	0	77	0	0	13	25	51
13	4.4	27	25	12	0	0	81	0	0	12	40	51
14	4.4	27	25	12	0	0	82	0	0	22	47	50
15	4.4	27	25	12	0	30	82	0	0	27	42	50
16	4.4	27	25	12	0	43	82	0	7.0	36	38	40
17	4.4	26	25	12	0	42	100	0	66	25	26	32
18	4.4	26	25	12	0	41	116	0	99	25	25	31
19	4.4	26	25	8.3	0	40	116	0	88	35	32	31
20	4.4	26	25	0	0	40	120	0	73	36	22	31
21	3.2	26	25	0	0	40	120	0	65	36	32	30
22	2.8	26	25	0	0	40	118	0	61	26	22	25
23	2.8	26	25	0	0	40	120	0	58	26	22	13
24	2.8	26	24	0	0	40	120	0	81	26	32	13
25	2.8	26	25	0	0	40	120	0	146	26	27	13
26	2.8	26	25	0	0	40	118	0	153	36	39	12
27	2.8	26	25	0	0	40	118	0	109	26	25	12
28	2.8	26	25	0	0	40	118	0	81	36	29	12
29	1.4	26	25	0	-----	48	118	0	69	36	38	6.0
30	2.7	26	24	0	-----	63	118	0	57	26	26	C
31	2.7	-----	24	0	-----	63	-----	0	-----	36	38	-----
TOTAL	903.8	794	781	310.3	0	730	2,798	232	1,213.0	760.6	568.0	1,015.0
MFAN	29.2	26.5	25.2	10.0	0	23.5	93.3	7.48	40.4	24.5	21.2	33.8
MAX	4.5	27	26	25	0	65	120	118	153	27	47	53
MIN	2.6	26	24	0	0	0	64	0	0	7.6	6.1	0
AC-FT	1,790	1,570	1,550	615	0	1,450	5,550	460	2,410	1,510	1,920	2,010
CAL YR 1968	TOTAL 10,445.04		MEAN 25.1		MAX 146		MIN 0		AC-FT 21,110			
WTR YR 1969	TOTAL 10,505.70		MEAN 28.8		MAX 153		MIN 0		AC-FT 20,840			

BEAR RIVER BASIN

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

LOCATION.--Lat 41°24'24", long 111°02'26", in SW1/4 sec.36, T.17 N., R.121 W., Uinta County, on left bank at Highway bridge, 6.5 miles downstream from headgates and 10 miles northwest of Evanston.

PERIOD OF RECORD.--April 1942 to current year (prior to October 1944 irrigation seasons only). Monthly discharge only for some periods, published in WSP 1314.

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

AVERAGE DISCHARGE.--25 years (1944-69), 18.9 cfs (13,699 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 139 cfs June 25, 1969; no flow at times each year.

REMARKS.--Records fair. Canal diverts water from Bear River in NW1/4 sec.36, T.16 N., R.121 W. Many diversions above station for irrigation in Wyoming. Flow at station is for storage in Neponset Reservoir, Utah, and irrigation in Saleratus basin, Utah.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	4.0	0	0	0	0	18	0	88	85	33	.16
2	8.1	4.0	0	0	0	0	26	0	74	66	28	.20
3	8.6	4.0	0	0	0	0	40	0	71	51	22	5.1
4	10	3.6	0	0	0	0	40	0	70	46	22	11
5	11	3.0	0	0	0	0	25	0	67	42	22	7.6
6	11	2.5	0	0	0	0	3.3	0	69	37	20	2.5
7	10	1.9	0	0	0	0	.16	0	75	31	10	4.7
8	10	1.2	0	0	0	0	0	.02	83	24	6.4	5.1
9	7.8	1.0	0	0	0	0	0	5.7	77	18	6.0	5.6
10	3.0	.80	0	0	0	0	0	63	67	12	2.2	13
11	3.5	.60	0	0	0	0	0	68	70	5.6	1.3	13
12	2.6	.40	0	0	0	0	0	70	64	4.0	.67	17
13	1.0	.20	0	0	0	0	0	64	60	2.2	.56	17
14	2.2	0	0	0	0	0	0	60	67	1.0	.20	18
15	3.0	0	0	0	0	0	0	59	62	.40	.65	18
16	3.5	0	0	0	0	0	0	58	79	.94	1.2	15
17	3.0	0	0	0	0	0	.32	59	104	15	.26	12
18	2.4	0	0	0	0	0	.08	70	100	22	0	8.8
19	2.2	0	0	0	0	0	0	76	101	23	0	11
20	2.0	0	0	0	0	0	0	74	98	22	0	8.1
21	1.6	0	0	0	0	0	0	72	102	24	.49	9.7
22	1.2	0	0	0	0	0	0	71	103	20	.85	21
23	.85	0	0	0	0	0	0	82	97	16	.32	28
24	1.6	0	0	0	0	0	0	84	104	11	.16	21
25	2.0	0	0	0	0	0	0	88	139	15	0	22
26	2.6	0	0	0	0	0	0	91	137	20	0	22
27	1.6	0	0	0	0	0	0	91	125	15	.04	21
28	3.5	0	0	0	0	0	0	92	111	13	1.2	19
29	6.0	0	0	0	-----	0	0	94	107	14	2.0	18
30	6.8	0	0	0	-----	0	0	90	99	26	.76	23
31	9.4	-----	0	0	-----	0	-----	90	-----	77	.20	-----
TOTAL	152.05	27.20	0	0	0	0	162.86	1,671.72	2,670	770.14	142.44	357.56
MEAN	4.90	.91	0	0	0	0	5.43	53.9	89.0	24.8	5.93	13.3
MAX	11	4.0	0	0	0	0	40	94	139	85	33	28
MIN	.85	0	0	0	0	0	0	0	60	.40	0	.16
AC-FT	302	54	0	0	0	0	323	3,320	5,300	1,530	365	789
CAL YR 1968	TOTAL	7,758.45	MEAN	21.3	MAX	110	MIN	0	AC-FT	15,470		
WTR YR 1969	TOTAL	6,035.41	MEAN	16.5	MAX	139	MIN	0	AC-FT	11,970		

BEAR RIVER BASIN

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

LOCATION.--Lat 41°26'00", long 111°01'00", in NW1/4NW1/4 Sec.29, T.17 N., R.120 W., Blaine County, Wyoming, on right bank 9.3 miles upstream from Woodruff Narrows Dam and 10 miles southeast of Woodruff.

DRAINAGE AREA.--780 sq mi, approximately.

PERIOD OF RECORD.--October 1961 to current year.

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

AVERAGE DISCHARGE.--8 years, 238 cfs (172,468 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,250 cfs May 12 (gage height, 4.25 ft); maximum gage height, 5.25 ft Apr. 3 (backwater from ice); minimum discharge, 2.4 cfs Sept. 1-3.

Period of record: Maximum discharge, 3,340 cfs June 13, 14, 1965 (gage height, 5.89 ft); minimum, 0.1 cfs Aug. 24, 1964.

REMARKS.--Records good except those for winter months, which are fair. Diversion for irrigation of about 43,500 acres above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	112	104	105	90	84	600	638	620	308	61	2.7
2	68	107	104	105	86	84	750	745	465	222	57	2.4
3	65	105	104	105	86	84	810	818	417	142	44	2.9
4	50	114	104	105	86	84	831	831	370	116	33	6.2
5	103	114	104	105	86	84	888	844	360	103	31	8.9
6	103	112	104	105	86	84	1,030	870	404	66	26	8.4
7	103	107	104	105	86	84	818	990	423	74	17	6.2
8	105	88	104	105	86	84	530	1,090	429	68	11	5.9
9	112	88	104	105	86	84	512	1,090	392	52	8.9	7.9
10	118	112	104	105	86	84	632	1,060	386	36	8.4	7.9
11	123	103	104	100	86	84	812	1,130	360	24	7.9	10
12	120	109	104	85	87	84	857	1,160	294	21	6.6	15
13	116	118	104	90	87	84	775	1,100	266	14	5.5	18
14	125	109	104	95	87	84	712	1,040	290	12	5.2	18
15	172	103	104	100	87	80	700	1,050	266	13	4.8	18
16	222	109	104	102	87	80	632	1,010	365	11	4.5	17
17	178	105	104	102	87	90	548	824	620	16	4.5	16
18	155	109	104	102	87	105	542	912	560	45	4.2	13
19	161	125	97	102	87	130	536	996	494	52	4.2	12
20	147	125	90	102	87	125	524	1,010	398	53	5.2	13
21	137	103	85	102	84	120	566	948	355	54	5.9	12
22	123	114	80	102	84	110	626	844	321	44	5.5	12
23	93	137	85	102	84	115	680	745	298	38	5.9	18
24	90	120	90	102	84	120	757	686	340	32	5.5	18
25	88	101	95	102	84	130	706	608	674	24	5.5	17
26	84	112	100	102	84	135	614	700	719	38	5.5	15
27	87	110	105	102	84	140	948	805	662	20	5.2	13
28	75	109	105	102	84	150	512	824	572	26	5.5	12
29	76	105	105	102	-----	180	500	812	560	20	4.2	9.8
30	84	104	105	102	-----	250	572	775	492	28	3.6	8.4
31	105	-----	105	95	-----	350	-----	751	-----	69	3.6	-----
TOTAL	3,459	3,289	3,119	3,145	2,405	3,586	20,120	27,706	13,132	1,511	426.1	344.6
MEAN	113	110	101	101	85.9	116	671	894	438	61.6	13.7	11.5
MAX	272	137	105	105	90	350	1,030	1,160	719	308	61	18
MIN	68	88	80	85	84	80	500	608	266	11	3.4	2.4
AC-FT	6,960	6,520	6,190	6,240	4,770	7,110	39,910	54,950	26,050	3,790	845	684
CAL YR 1968	TOTAL	102,630.7		MEAN	280	MAX	2,250	MIN	3.4	AC-FT	203,600	
WTR YR 1969	TOTAL	82,683.7		MEAN	227	MAX	1,160	MIN	2.4	AC-FT	164,000	

BEAR RIVER BASIN

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

LOCATION.--lat 41°30'10", long 111°00'55", in sec.32, T.18 N., R.120 W., Uinta County, Wyoming, in gate house on dam, 5.5 miles upstream from Wyoming-Utah State line and 7.7 miles east of Woodruff.

DRAINAGE AREA.--810 sq mi, approximately.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and mercury manometer. Altitude of the gage is 6,405 ft (from levels by Bureau of Reclamation).

EXTREMES.--Current year: Maximum contents, 31,370 acre-ft May 12-14 (gage height, 37.3 ft); minimum, 11,440 acre-ft Sept. 28-30.
 Period of record: Maximum contents, 34,130 acre-ft June 23-25, 1967 (gage height, 38.0 ft); minimum, 6,480 acre-ft Sept. 11-13, 1966.

REMARKS.--Reservoir formed by earth-fill, rock faced dam. Lower portion of spillway cut in natural rock. Storage began Jan. 5, 1962. Total capacity 28,000 acre-ft below spillway crest, which includes 15,240 acre-ft of Compact allocation for irrigation, 4,260 acre-ft of irrigation holdover, 8,000 acre-ft for winter release for fish propagation in Utah, and 1,500 acre-ft of storage for fish propagation in Wyoming. Gage height of spillway is 35.3 ft. Figures given herein represent total contents.

Capacity table (gage height, in feet, and total contents, in acre feet)

21	10,760	30	20,180
22	11,600	32	23,040
24	13,360	34	25,800
26	15,370	36	29,000
28	17,770	38	34,130

CONTENTS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24560	27970	27970	27830	27970	27970	29370	29930	29370	26320	18260	12340
2	24560	27970	27970	27830	27970	27970	29930	30080	29180	25970	18260	12250
3	24710	27970	27970	27830	27970	27970	30080	30410	28860	25560	18260	12250
4	24860	27970	27970	27830	27970	27970	30230	30410	28710	25170	18260	12150
5	25010	27970	27970	27830	27970	27970	30230	30630	28410	24710	18260	12050
6	25010	27970	27970	27830	27970	27970	30410	30630	28120	24010	18260	11960
7	25170	27970	27970	27970	27970	27970	30410	30850	27970	23250	18260	11870
8	25340	27970	27970	27970	27970	27970	30410	31030	27830	22450	18260	11370
9	25340	27970	27970	27970	27970	27970	30410	31200	27690	21600	18260	11780
10	25500	27970	27970	27970	27970	27970	30230	31200	27550	20510	18130	11690
11	25650	27970	27970	27970	27970	27970	30230	31200	27550	19840	18000	11600
12	25970	27970	27970	27970	27970	27970	30080	31370	27200	19120	17850	11600
13	26320	27970	27970	27970	27970	27970	30080	31370	26840	18880	17770	11600
14	26490	27970	27970	27970	27970	27970	30080	31370	26660	18760	17660	11600
15	26660	27970	27970	27970	27970	27970	30080	31200	26490	18640	17550	11600
16	27020	27970	27970	27970	27970	27970	30080	31200	26320	18510	17440	11600
17	27550	27970	27970	27970	27970	27970	30080	31030	26140	18390	17330	11520
18	27830	27970	27970	27970	27970	27970	30080	30850	25970	18260	17230	11520
19	27970	27970	27970	27970	27970	27970	29930	30630	26140	18130	17130	11520
20	28120	27970	27970	27970	27970	27970	29930	30630	26140	18130	16920	11440
21	28120	27970	27830	27970	27970	27970	29740	30630	25970	18130	16370	11440
22	28120	27970	27830	27970	27970	28120	29740	30410	25800	18130	15890	11440
23	28120	27970	27830	27970	27970	28120	29930	30230	25500	18130	15340	11440
24	28120	27970	27830	27970	27970	28120	29930	30080	25170	18000	14800	11440
25	28120	27970	27830	27970	27970	28120	29930	29930	25500	18000	14260	11440
26	28120	27970	27830	27970	27970	28120	29930	29930	25800	18000	13650	11440
27	28120	27970	27830	27970	27970	28120	29930	29740	26140	18000	13090	11440
28	28120	27970	27830	27970	27970	28120	29930	29550	26320	18000	12640	11440
29	27970	27970	27830	27970	27970	28660	29930	29370	26490	18000	12570	11440
30	27970	27970	27830	27970	27970	28660	29930	29370	26490	18000	12450	11440
31	27970		27830	27970		28660		29370		18130	12410	
(+)	35.3	35.3	35.2	35.3	35.3	35.9	36.5	36.2	34.4	28.3	22.9	21.8
(±)	+3,410	0	-140	+140	0	+890	+1070	-860	-2880	-8,360	-5,720	-970

CALENDAR YEAR 1968 (+) +4,670
 WATER YEAR 1968-69 (+) -13,120

(+) Gage height, in feet, at 2400 of last 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 NW1/4NW1/4 sec. 32, T.18 N., R.126 W., Uinta County, Wyoming, on right bank, 1,100 ft below Woodruff Narrows Dam, 1.6 miles upstream from Salt Creek, 5.4 miles upstream from Wyoming-Utah State line, and 7.7 miles east of Woodruff.

DRAINAGE AREA.--816 sq mi, approximately.

PERIOD OF RECORD.--October 1961 to current year.

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

AVERAGE DISCHARGE.--8 years, 232 cfs (168,100 acre-ft per year).

EXPENSES.--Current year: Maximum discharge, 1,130 cfs May 21 (gage height, 6.13 ft); minimum daily, 12 cfs Sept. 22-30.

Period of record: Maximum discharge, 3,000 cfs June 14, 1965 (gage height, 7.88 ft); no flow July 4, 5, 1962.

REMARKS.--Records excellent. Flow regulated by Woodruff Narrows Reservoir beginning January 1962 (see sta 10-0202). Diversions for irrigation of about 43,500 acres above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	84	97	97	88	81	444	550	731	454	31	23
2	39	90	97	97	86	81	591	613	624	449	31	23
3	40	96	96	98	84	81	725	695	535	446	21	23
4	40	96	96	98	84	81	809	755	472	449	21	23
5	40	100	96	100	84	82	828	785	462	444	31	23
6	41	102	97	102	85	82	886	797	535	444	31	23
7	41	102	97	105	90	85	912	848	521	440	27	23
8	41	100	94	105	88	84	749	926	526	426	51	23
9	42	97	94	102	86	82	608	1,000	516	432	51	23
10	42	92	96	97	86	82	575	1,020	503	427	50	23
11	42	87	100	90	85	82	653	1,040	503	427	50	23
12	42	98	102	86	84	80	745	1,080	498	356	49	23
13	41	100	97	86	84	80	773	1,110	494	50	45	22
14	41	100	94	90	84	78	743	1,060	494	90	49	22
15	41	102	94	97	84	78	737	1,020	494	71	45	22
16	42	102	97	98	92	77	707	1,030	490	50	49	22
17	42	102	98	98	88	77	630	919	472	49	49	21
18	42	103	97	96	85	82	570	860	454	49	45	21
19	50	106	94	96	84	98	550	906	454	49	49	21
20	72	113	90	96	84	110	535	945	454	49	121	21
21	85	113	86	97	82	116	530	1,030	454	42	213	18
22	97	110	82	103	81	121	555	971	449	32	294	12
23	87	113	81	103	80	128	602	854	449	32	301	12
24	92	113	84	98	82	131	635	785	449	32	297	12
25	80	110	91	96	88	133	677	695	449	32	254	12
26	85	103	98	97	90	131	641	665	454	32	290	12
27	82	100	100	102	85	133	591	695	454	32	287	12
28	81	102	102	98	82	139	540	743	454	32	228	12
29	81	96	100	100	-----	150	516	779	454	32	23	12
30	77	96	100	94	-----	189	516	773	454	32	23	12
31	78	-----	98	90	-----	284	-----	761	-----	31	22	-----
TOTAL	1,805	3,940	2,945	3,012	2,385	3,310	19,577	26,710	14,752	6,065	3,211	574
MEAN	56.2	101	95.0	97.2	85.2	107	653	862	492	196	104	19.1
MAX	97	113	102	105	92	284	912	1,110	731	454	301	23
MIN	39	84	81	86	80	77	444	550	449	31	23	12
AC-FT	3,580	6,030	5,840	5,970	4,730	6,580	38,830	52,980	29,260	12,030	6,370	1,140
CAL YR 1968	TOTAL	59,754.2	MEAN	273	MAX	2,700	MIN	1.5	AC-FT	197,900		
WTR YR 1969	TOTAL	87,394	MEAN	239	MAX	1,110	MIN	12	AC-FT	173,300		

BEAR RIVER BASIN

10-265. Bear River near Randolph, Utah

LOCATION.--Lat 41°48'52", long 111°04'20", in SW1/4SE1/4 sec.7, T.12 N., R.6 E., Rich County, on left bank 3.5 miles upstream from Twin Creek, 4.8 miles upstream from Utah-Wyoming State line, and 11 miles northeast of Randolph.

DRAINAGE AREA.--1,640 sq mi, approximately.

PERIOD OF RECORD.--October 1941 to current year. Monthly discharge only for some periods, published in WSF 1314.

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

AVERAGE DISCHARGE.--26 years, 150 cfs (137,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,030 cfs Apr. 5 (gage height, 8.66 ft); minimum daily, 19 cfs Sept. 10-17.

Period of record: Maximum discharge 2,660 cfs May 8, 1952; maximum gage height, 8.99 ft June 17, 1965; minimum discharge, 1.6 cfs Nov. 12, 1961.

REMARKS.--Records good except those for winter months, which are fair. Diversion for irrigation of about 94,560 acres above station. Flow regulated by Woodruff Narrows Reservoir beginning January 1962 (see sta 10-G202).

DISCHARGE, IN CUBIC FEET PER SECCND, WATER YEAR OCTOBER 1966 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	167	130	130	130	110	1,800	645	174	271	53	24
2	26	107	130	130	130	110	1,480	650	179	234	87	21
3	26	111	130	130	130	110	1,520	682	152	212	82	20
4	27	116	130	130	130	110	1,920	725	156	218	75	20
5	27	117	130	130	130	110	1,920	773	132	227	74	20
6	27	120	130	130	130	110	1,750	812	158	241	67	20
7	35	122	130	130	130	110	1,520	833	198	208	66	20
8	44	123	130	130	130	110	1,310	818	230	192	68	20
9	46	88	130	130	130	110	1,240	824	169	181	66	20
10	47	79	130	130	130	110	1,120	878	200	174	60	19
11	48	142	130	130	130	110	972	934	227	161	55	19
12	49	153	130	130	130	110	909	944	217	164	60	19
13	49	130	130	130	130	110	888	944	244	159	58	19
14	50	105	130	130	130	110	954	923	272	156	56	19
15	56	120	130	130	130	110	993	870	298	148	55	19
16	58	130	120	140	120	110	1,010	710	324	172	54	19
17	55	130	130	140	120	110	990	599	351	163	54	19
18	55	130	130	140	120	110	944	539	378	159	52	21
19	64	130	130	140	120	110	857	427	405	132	50	24
20	67	130	130	140	120	115	903	354	432	147	29	24
21	68	130	130	140	120	130	770	291	459	138	26	27
22	72	130	130	140	120	150	740	322	434	146	23	29
23	80	130	130	140	120	170	731	350	362	132	24	31
24	94	130	130	140	120	190	728	314	297	122	29	32
25	102	130	130	140	120	220	734	273	269	114	32	35
26	107	130	130	140	120	290	761	228	268	107	34	38
27	108	130	130	140	120	400	779	193	271	101	35	38
28	108	130	130	140	120	550	755	164	297	97	36	38
29	108	130	130	140	-----	740	713	129	308	91	35	38
30	108	130	130	140	-----	1,000	670	132	302	81	32	38
31	107	-----	130	140	-----	1,400	-----	155	-----	91	26	-----
TOTAL	1,943	3,690	4,030	4,190	3,510	7,445	32,381	17,435	8,163	4,950	1,606	750
MEAN	62.7	123	130	135	125	240	1,079	562	272	161	51.8	25.0
MAX	108	153	130	140	130	1,400	1,920	944	459	271	83	38
MIN	25	79	130	130	120	110	670	129	132	81	23	19
AC-FT	3,850	7,320	7,990	8,310	6,560	14,770	64,230	34,560	16,190	9,900	3,190	1,490
CAL YR 1568	TOTAL 86,743		MEAN 237		MAX 2,270	MIN 16	AC-FT 172,100					
WTR YR 1969	TOTAL 90,133		MEAN 247		MAX 1,920	MIN 19	AC-FT 178,800					

BEAR RIVER BASIN

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

LOCATION.--lat 41°56'29", long 110°59'05", in SW1/4SW1/4 sec.25, T.23 N., R.120 W., Lincoln County, 800 ft downstream from Pixley Dam, 13 miles south of Cokeville, and 17.5 miles downstream from Twin Creek.

DRAINAGE AREA.--2,040 sq mi, approximately.

PERIOD OF RECORD.--October 1941 to November 1943 (published as Bear River near Cokeville), October 1952 to September 1956, May 1956 to current year (irrigation seasons only). Monthly discharge only for some periods, published in GSP 1314.

GAGE.--Water-stage recorder. Altitude of gage is 6,185 ft (from river-profile map). Oct. 31, 1941, to Nov. 30, 1943, at site 200 ft downstream at different datum.

EXTREMES.--Current season: Maximum discharge, 875 cfs May 14 (gage height, 6.62 ft); minimum daily, 26 cfs May 29.
 Period of record: 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, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								670	45	324	12C	28
2								646	55	371	112	27
3								658	65	268	108	36
4								687	48	245	114	34
5								725	30	241	118	22
6								754	33	220	122	32
7								780	25	220	127	32
8								790	44	210	79	21
9								777	57	204	79	30
10								801	54	155	118	47
11								835	58	188	76	77
12								864	75	174	76	41
13								869	107	146	12	24
14								0	0	0	0	0
15								0	0	0	0	0
16								0	0	0	C	0
17								0	0	0	0	0
18								0	0	C	0	0
19								0	0	C	C	0
20								0	0	0	C	0
21								0	C	0	0	0
22								0	0	0	C	0
23								0	0	0	C	0
24								0	0	0	0	0
25								0	0	0	0	0
26								0	0	0	C	0
27								0	0	0	0	0
28								0	C	0	0	0
29					-----			0	0	0	C	0
30					-----			0	0	0	0	0
31		-----			-----		-----	0	-----	0	0	-----
TOTAL								9,856	705	3,060	1,14C	5C1
MEAN								318	23.5	99.4	26.8	16.7
MAX								869	107	371	12C	77
MIN								0	0	0	C	0

INCORRECT

BEAR RIVER BASIN

10-320. Smiths Fork near Border, Wyo.

LOCATION.--Lat 42°16'52", long 110°52'05", in NW1/4 sec.33, T.27 N., R.118 W., Lanesin County, on left bank 4.5 miles upstream from Howland Creek, 6 miles downstream from Hobbie Creek, and 12 miles northeast of Border.

DRAINAGE AREA.--165 sq mi.

PERIOD OF RECORD.--May 1942 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,550 ft (from topographic map). Prior to Oct. 16, 1945, at site 0.8 mile downstream at different datum.

AVERAGE DISCHARGE.--27 years, 191 cfs (138,306 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 908 cfs May 13 (gage height, 4.03 ft); maximum gage height, 4.09 ft May 15; minimum discharge, 48 cfs Mar. 20.
 Period of record: Maximum discharge, 1,500 cfs June 7, 1957 (gage height, 4.36 ft); minimum recorded, 35 cfs Mar. 21, 1955, result of freezeup.

REMARKS.--Records good except those for winter months, which are fair. One diversion for irrigation of about 200 acres above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	86	82	76	70	60	73	487	632	266	156	106
2	97	86	82	76	70	58	75	502	604	279	157	104
3	97	88	82	76	70	58	86	567	577	273	154	106
4	57	91	82	76	70	58	90	593	562	269	154	106
5	96	88	81	76	70	58	96	637	562	257	152	104
6	56	86	80	85	70	58	113	719	583	254	148	102
7	94	80	82	85	70	58	111	780	572	254	145	101
8	54	79	82	82	70	58	106	805	577	248	143	101
9	54	54	82	75	70	58	102	811	541	239	135	101
10	94	88	82	72	70	58	111	847	521	233	137	106
11	54	86	80	73	65	58	120	872	497	227	134	117
12	94	86	82	76	65	58	124	866	478	224	145	104
13	54	84	82	76	65	58	132	884	474	218	137	102
14	120	86	82	77	65	58	143	866	437	212	132	106
15	122	80	82	74	65	58	152	866	420	221	128	101
16	108	82	82	74	65	58	152	774	416	230	126	59
17	99	83	82	74	65	58	159	731	391	209	128	57
18	57	85	82	74	65	58	190	750	372	200	128	57
19	99	82	82	74	66	58	190	780	360	195	124	97
20	96	82	80	73	66	56	227	786	357	192	120	97
21	96	82	80	73	66	60	289	768	350	190	120	101
22	94	82	80	73	64	59	384	756	346	184	119	99
23	52	80	80	69	62	59	531	744	328	161	115	57
24	91	82	80	65	66	60	610	756	346	181	117	94
25	91	84	80	66	59	60	482	768	339	181	115	94
26	90	82	78	65	60	60	412	780	328	176	115	94
27	88	80	76	70	58	59	364	792	315	169	109	92
28	88	80	76	70	60	59	372	798	315	169	108	51
29	88	80	76	70	-----	61	437	744	302	171	108	91
30	88	82	76	70	-----	64	483	707	289	174	108	91
31	86	-----	76	70	-----	68	-----	672	-----	164	106	-----
TOTAL	2,973	2,516	2,491	2,289	1,841	1,829	6,921	23,208	13,191	6,659	4,036	2,998
MEAN	95.9	83.9	80.4	73.8	65.8	59.0	231	749	440	215	130	99.9
MAX	122	94	82	85	70	68	610	884	632	285	159	117
MIN	57	79	76	65	58	56	73	487	289	164	106	91
AC-FT	5,900	4,950	4,940	4,540	3,650	3,630	13,730	46,030	26,160	13,210	6,010	5,550
CAL YR 1968	TOTAL 60,666		MEAN 166		MAX 750		MIN 56		AC-FT 120,300			
WTR YR 1969	TOTAL 70,952		MEAN 194		MAX 884		MIN 56		AC-FT 140,700			

BEAR RIVER BASIN

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

LOCATION.--Lat 42°11'30", long 110°53'55", in SE1/4 sec.31, T.26 N., R.118 W., Lincoln County, 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.

PERIOD OF RECORD.--October 1964 to September 1969 (discontinued).

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

EXTREMES.--Current year: Maximum discharge, not determined, occurred during period of no gage-height record and leakage around control; minimum daily, 0.38 cfs Oct. 3, 4.
Period of record: Maximum discharge, 136 cfs Apr. 30, 1965 (gage height, 3.77 ft); no flow Aug. 18, 25, 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 1968 TO SEPTEMBER 1969												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.42	.65	.85	.73	.57	.70	13	37	15	5.6	1.3	.40
2	.40	.65	.85	.73	.57	.70	12	37	15	5.0	1.3	.45
3	.38	.69	.92	.77	.61	.70	9.6	39	14	5.0	1.3	.40
4	.38	.69	.92	.77	.61	.70	8.9	39	14	4.4	1.2	.40
5	.40	.73	.92	.81	.61	.70	12	39	13	4.6	.98	.40
6	.45	.73	.90	.92	.61	.70	15	38	13	4.1	.77	.42
7	.49	.73	.92	1.0	.61	.70	14	38	13	4.1	.85	.42
8	.49	.69	.92	1.0	.61	.70	10	36	13	3.8	.65	.45
9	.43	.73	.81	.92	.61	.70	9.3	34	14	3.4	.57	.45
10	.53	.85	.77	.57	.61	.70	12	32	11	3.2	.57	.45
11	.49	.85	.77	.53	.65	.70	15	30	10	2.8	.61	.45
12	.53	.85	.81	.57	.65	.70	19	29	10	2.2	.85	.45
13	.57	.85	.81	.57	.68	.70	25	28	10	1.7	1.0	.45
14	1.0	.85	.81	.57	.70	.70	30	27	10	1.9	1.1	.45
15	1.2	.81	.81	.61	.70	.70	30	26	9.1	2.4	1.0	.45
16	1.0	.81	.81	.61	.70	.70	30	27	9.6	2.6	.61	.45
17	.85	.85	.85	.57	.70	.70	30	25	9.6	2.6	.73	.45
18	.81	.85	.81	.49	.70	.70	32	24	8.5	2.5	.73	.45
19	.77	.92	.81	.49	.70	.70	35	22	8.0	2.3	.61	.42
20	.73	.92	.81	.57	.70	.70	37	21	7.6	2.0	.69	.42
21	.72	.52	.77	.73	.70	.70	41	20	7.4	1.9	.73	.42
22	.73	.92	.73	1.6	.70	.70	44	20	7.4	1.5	.77	.45
23	.65	.98	.73	1.2	.70	.70	46	19	6.7	1.4	.57	.45
24	.69	.92	.77	.81	.70	.70	46	18	7.0	1.4	.45	.42
25	.65	.92	.77	.77	.70	.70	37	17	7.6	1.3	.45	.40
26	.61	.92	.77	.77	.70	.70	32	16	7.8	1.1	.45	.45
27	.61	.92	.81	.77	.70	.69	29	15	7.6	.77	.42	.45
28	.61	.85	.81	.77	.70	1.2	31	14	7.4	.65	.42	.45
29	.61	.85	.81	.73	-----	2.7	38	15	7.4	1.0	.42	.45
30	.61	.85	.73	.69	-----	4.6	42	15	6.2	1.3	.45	.45
31	.61	-----	.73	.57	-----	7.4	-----	15	-----	1.4	.45	-----
TOTAL	19.57	24.75	25.39	23.21	18.50	34.79	784.8	812	295.9	80.12	23.35	13.09
MEAN	.63	.83	.82	.75	.66	1.12	26.2	26.2	10.0	2.58	.75	.44
MAX	1.2	.98	.98	1.6	.70	7.4	46	39	15	5.6	1.3	.45
MIN	.38	.65	.73	.49	.57	.69	8.9	14	6.2	.77	.40	.40
AC-FT	35	46	50	46	37	69	1,560	1,610	595	159	46	26
CAL YR 1968 TOTAL	749.12			MEAN 2.05	MAX 11	MIN .12	AC-FT 1,490					
WTR YR 1969 TOTAL	2,159.47			MEAN 5.92	MAX 46	MIN .38	AC-FT 4,280					

NOTE.--No gage-height record Feb. 13 to Mar. 26, Apr. 10-24.

BEAR RIVER BASIN

10-328. Mill Creek near Cokeville, Wyoming

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

DRAINAGE AREA.--8.07 sq mi.

PERIOD OF RECORD.--October 1965 to September 1969 (discontinued).

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 6,490 ft (from topographic map).

EXTREMES.--Current year: Maximum discharge, 25 cfs Apr. 24 (gage height, 8.88 ft); minimum daily, 0.16 cfs Jan. 2.

Period of record: Maximum discharge, 25 cfs Apr. 24, 1969 (gage height, 8.88 ft); maximum gage height, 5.17 ft May 23, 1967; minimum daily discharge, 0.16 cfs Jan. 2, 1969.

REMARKS.--Records good except those for winter months, which are fair. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.46	.41	.40	.20	.29	.33	1.4	17	5.1	2.4	1.0	.61
2	.66	.41	.40	.16	.29	.33	1.6	16	4.8	2.3	.93	.61
3	.46	.46	.40	.22	.29	.33	2.9	17	4.8	2.1	.93	.61
4	.46	.48	.40	.22	.29	.33	4.6	17	4.6	2.0	.93	.61
5	.46	.51	.40	.26	.29	.33	5.6	17	4.4	2.0	.93	.56
6	.46	.51	.40	.35	.29	.33	7.0	17	4.2	2.0	.66	.56
7	.51	.56	.40	.40	.29	.33	5.9	17	4.4	2.0	.79	.56
8	.56	.58	.40	.44	.29	.33	5.6	18	4.6	2.0	.79	.51
9	.61	.52	.40	.40	.29	.33	5.6	16	4.2	1.8	.76	.51
10	.46	.55	.41	.25	.29	.33	6.5	15	4.2	1.8	.79	.67
11	.46	.47	.41	.23	.32	.33	7.6	14	4.4	1.6	.75	.67
12	.46	.46	.41	.26	.33	.33	11	14	4.2	1.5	.93	.51
13	.46	.47	.41	.29	.32	.33	13	13	4.2	1.6	.66	.46
14	.79	.44	.41	.29	.33	.33	14	13	6.0	1.5	.79	.46
15	.79	.41	.40	.26	.33	.33	14	13	3.6	1.5	.73	.46
16	.67	.43	.37	.26	.33	.33	13	12	3.8	1.5	.72	.41
17	.73	.46	.37	.26	.33	.33	14	11	3.6	1.4	.73	.41
18	.56	.46	.37	.26	.33	.33	15	11	3.6	1.3	.73	.41
19	.56	.46	.37	.26	.33	.33	15	10	3.3	1.3	.72	.41
20	.56	.46	.33	.29	.33	.32	16	9.6	3.3	1.3	.67	.41
21	.51	.45	.29	.29	.33	.37	18	9.3	3.3	1.3	.61	.46
22	.51	.45	.26	.33	.33	.37	21	8.6	3.3	1.2	.61	.46
23	.51	.45	.26	.40	.33	1.2	23	7.9	3.1	1.2	.61	.46
24	.51	.45	.26	.29	.33	.56	24	7.3	3.3	1.1	.61	.46
25	.51	.45	.26	.29	.33	.56	23	7.0	3.3	1.2	.61	.41
26	.46	.44	.24	.25	.33	.51	20	7.0	3.3	1.3	.61	.46
27	.41	.42	.23	.29	.33	.61	17	6.8	2.8	1.2	.61	.41
28	.46	.40	.21	.29	.33	.56	18	6.5	2.9	1.2	.61	.41
29	.46	.40	.20	.29	-----	.79	17	5.9	2.6	1.2	.61	.41
30	.46	.40	.20	.29	-----	.73	17	5.6	2.6	1.2	.61	.41
31	.41	-----	.20	.29	-----	.93	-----	5.3	-----	1.0	.61	-----
TOTAL	16.15	13.80	10.47	8.90	8.82	13.79	377.3	364.8	113.8	47.9	23.14	14.77
MEAN	.52	.46	.34	.29	.32	.44	12.6	11.8	3.79	1.55	.75	.49
MAX	.79	.58	.41	.44	.33	1.2	24	18	5.1	2.4	1.0	.67
MIN	.41	.40	.20	.16	.29	.33	1.4	5.3	2.6	1.0	.61	.41
AC-FT	.32	.27	.21	.18	.17	.27	748	724	226	95	.46	.29
CAL YR 1968	TOTAL	504.12	MEAN	1.38	MAX	6.7	MIN	.20	AC-FT	1,000		
WTR YR 1969	TOTAL	1,013.64	MEAN	2.78	MAX	24	MIN	.16	AC-FT	2,010		

BEAR RIVER BASIN

10-395. Bear River at Border, Wyoming

LOCATION.--Lat 42°12'40", long 111°03'11", in NE1/4NE1/4 sec.18, T.14 S., R.46 E., Bear Lake County, Idaho, on left bank 0.2 mile west of Wyoming-Idaho State line, 0.5 mile west of Border, and 2.1 miles upstream from Thomas Fork.

DRAINAGE AREA.--2,490 sq mi, approximately.

PERIOD OF RECORD.--October 1937 to current year.

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

AVERAGE DISCHARGE.--32 years, 401 cfs (290,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, not determined, occurred during ice breakup and float cable off recorder wheel; minimum, 102 cfs Sept. 9, 18.

Period of record: Maximum discharge, 3,680 cfs May 11, 1952 (gage height, 8.89 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 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162	238	280	250	220	205	1,000	1,300	548	553	220	119
2	158	236	280	240	220	205	1,600	1,280	514	500	226	117
3	160	234	290	235	220	205	2,800	1,300	487	609	220	116
4	160	240	290	230	220	205	3,600	1,370	458	526	214	114
5	164	244	290	235	220	205	3,300	1,430	427	511	207	112
6	166	244	290	250	220	205	3,100	1,510	405	470	184	110
7	169	244	290	250	220	205	3,000	1,600	424	455	184	106
8	171	244	290	250	220	205	2,850	1,680	444	444	184	105
9	164	243	290	250	220	205	2,640	1,720	472	424	175	105
10	162	277	290	250	220	205	2,360	1,740	470	405	175	104
11	162	244	280	240	220	200	2,140	1,790	470	379	111	124
12	166	238	280	220	220	185	1,960	1,840	449	355	178	141
13	164	281	280	220	220	185	1,760	1,850	496	321	164	119
14	182	281	280	230	220	185	1,560	1,860	536	319	145	114
15	230	270	280	240	220	185	1,470	1,870	520	372	144	113
16	224	250	265	250	210	185	1,450	1,860	564	400	144	110
17	251	240	265	240	205	185	1,410	1,720	622	372	149	110
18	224	270	265	230	205	190	1,400	1,530	751	357	157	110
19	210	320	265	220	205	210	1,370	1,460	733	350	152	111
20	208	310	265	230	205	220	1,310	1,380	729	352	155	113
21	268	275	260	250	205	225	1,270	1,170	718	336	145	117
22	210	263	250	260	205	230	1,300	1,020	733	361	137	119
23	210	279	250	250	205	240	1,330	932	722	288	132	121
24	212	268	255	240	205	250	1,400	912	711	261	125	117
25	216	279	255	240	205	270	1,470	888	718	285	124	116
26	232	260	255	230	205	290	1,380	868	686	270	127	110
27	234	280	255	230	205	320	1,300	751	652	261	129	117
28	240	310	255	230	205	350	1,270	740	622	215	127	122
29	242	290	255	230	-----	400	1,280	669	629	242	124	122
30	240	290	255	230	-----	500	1,320	606	616	240	117	125
31	240	-----	255	230	-----	700	-----	571	-----	228	121	-----
TOTAL	6,147	7,968	8,405	7,380	5,670	7,755	55,400	41,217	17,320	11,661	4,967	3,460
MEAN	198	266	271	238	213	250	1,847	1,330	578	374	160	115
MAX	251	320	250	260	220	700	3,600	1,870	751	609	226	141
MIN	158	234	250	220	205	185	1,000	571	405	228	117	104
AC-FT	12,190	15,800	16,670	14,640	11,840	15,360	109,900	81,750	34,370	23,010	5,850	6,860
CAL YR 1968	TOTAL 151,581		MEAN 415		MAX 2,740	MIN 139	AC-FT 301,400					
WTR YR 1969	TOTAL 177,596		MEAN 487		MAX 3,600	MIN 104	AC-FT 352,300					

NOTE.--No gage-height record Apr. 4-7.

BEAR RIVER BASIN

10-460. Rainbow inlet canal near Dingle, Idaho

LOCATION.--lat 42°13'00", long 111°17'30", in SW1/4 sec. 3 T.14 S., R.44 E., Bear Lake County, on left bank 1.5 miles west of Dingle and 1.8 miles downstream from headworks at Stewart Dam.

PERIOD OF RECORD.--January 1922 to current year. Monthly discharge only prior to October 1946, published in MSP 1314.

GAGE.--Water-stage recorder. Altitude of gage is 5,950 ft (from topographic map). Prior to Oct. 1, 1921, at site 300 ft downstream at different datum; Oct. 1, 1923 to Oct. 27, 1944, at site 0.5 mile downstream at different datum.

AVERAGE DISCHARGE.--47 years, 314 cfs (277,500 acre-ft per year).

EXTREMES.--Maximum daily discharge during current year, 3,040 cfs April 7 (gage height, 7.64 ft); minimum daily, 22 cfs Sept. 9.

Period of record: Maximum discharge, 4,180 cfs May 7, 1922 (gage height, 8.62 ft); minimum daily, 1 cfs on several days in 1931, 1934, 1946, 1948.

REMARKS.--Records good. Discharge measurements generally made three to six times a week. Canal diverts from Bear River at Stewart Dam in NE1/4 sec. 34, T.12 S., R.44 E., for storage in Bear Lake. At times flow in canal is augmented by surplus water from Black Outer 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 CFS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128	224	186	195	195	205	577	1,600	584	376	178	87
2	161	226	210	175	195	210	572	1,550	356	364	178	87
3	163	228	226	175	195	210	1,280	1,380	270	356	162	83
4	161	224	208	186	190	210	1,560	1,376	256	347	175	82
5	155	233	212	190	190	215	2,420	1,620	233	312	163	79
6	153	228	206	203	190	215	2,350	1,690	208	347	155	70
7	153	226	206	215	190	215	3,040	1,700	169	370	147	51
8	151	226	203	220	190	215	2,960	1,740	155	342	138	34
9	151	231	208	205	190	210	2,950	1,790	156	344	138	22
10	151	247	206	190	186	210	2,830	1,840	132	296	136	29
11	160	265	206	190	186	210	2,710	1,880	117	299	128	30
12	157	247	199	203	190	205	2,560	1,960	114	276	108	32
13	147	238	198	210	195	205	2,390	1,910	105	280	128	47
14	153	252	191	219	200	200	2,160	1,930	122	278	128	56
15	165	235	186	215	200	200	1,860	1,890	145	260	124	62
16	186	278	190	224	200	200	1,810	1,890	193	286	124	61
17	188	212	192	225	200	200	1,740	1,850	245	296	123	58
18	197	190	199	225	200	200	1,780	1,780	309	270	112	51
19	188	291	203	230	200	200	1,720	1,480	478	247	124	51
20	160	301	193	230	195	208	3,680	1,330	462	243	121	38
21	186	296	182	230	195	208	1,620	1,160	462	243	114	37
22	188	273	170	230	195	203	1,560	940	450	224	112	35
23	219	262	160	230	190	203	1,600	700	453	231	108	34
24	215	260	175	225	190	203	1,610	653	450	210	96	32
25	215	250	169	228	195	233	1,700	625	453	199	99	29
26	247	199	182	225	200	200	1,710	597	487	206	96	29
27	252	206	184	230	200	200	1,670	559	469	190	94	29
28	243	178	184	225	200	205	1,600	500	456	180	96	27
29	234	203	182	220	- - - -	312	1,380	478	424	182	92	24
30	228	180	180	210	- - - -	364	1,580	444	390	160	89	24
31	228	- - - -	177	205	- - - -	459	- - - -	411	- - - -	165	90	- - - -
TOTAL	5,719	7,118	5,970	6,552	5,444	7,153	58,075	41,567	9,082	8,395	3,896	1,418
MEAN	184	237	193	211	194	231	1,936	1,341	303	271	126	47.3
MAX	252	301	226	230	200	459	3,040	1,950	487	376	182	89
MIN	128	178	160	169	186	200	577	411	105	89	22	22
AC-FT	11,340	14,320	11,840	13,090	10,800	14,190	115,200	82,450	18,010	16,650	7,730	2,810
CAL YR	1968	TOTAL	120,900.5	MEAN	330	MAX	2,000	MIN	6.3	AC-FT	239,800	
MTN YR	1969	TOTAL	160,394	MEAN	439	MAX	3,040	MIN	22	AC-FT	316,100	

BEAR RIVER BASIN

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

LOCATION.--Lat 43°15'30", long 111°17'30", in NE1/4 sec.34, T.13 S., R.43 E., Bear Lake County, on right bank 300 ft downstream from Stewart Dam and 4.5 miles south of Montpelier.

DRAINAGE AREA.--2,820 sq mi, approximately.

PERIOD OF RECORD.--January 1922 to current year. Monthly discharge only January 1922 to September 1965, published in WSP 1313.

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

AVERAGE DISCHARGE.--47 years, 52.7 cfs (38,260 acre-ft per year).

EXTREMES.--Maximum daily discharge during current year, 16 cfs April 6, 7 (gage height, 1.80 ft); minimum 0.4 cfs Sept. 8.
Period of Record: Maximum daily discharge, 3,050 cfs June 3, 1923; no flow July 15, 1956.

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 CFS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	7.4	6.5	4.8	5.5	7.1	12	6.2	4.0	8.0	7.1	4.2
2	5.6	7.7	6.5	5.0	6.2	7.1	11	5.9	4.2	8.0	6.5	3.4
3	5.6	8.0	6.5	5.0	5.9	7.1	12	5.9	6.2	8.0	6.5	2.8
4	5.3	8.0	5.5	5.3	5.3	7.4	14	5.4	6.2	8.0	5.5	2.4
5	5.3	8.0	6.8	5.3	5.0	7.7	14	5.9	6.2	7.7	5.6	2.0
6	5.6	8.0	6.8	5.6	5.0	7.4	16	5.9	6.8	7.7	5.6	1.6
7	5.9	8.0	6.8	6.8	5.3	7.1	16	6.8	6.2	7.7	5.9	.9
8	5.9	7.7	6.8	7.1	5.3	7.1	14	8.0	6.5	7.7	5.0	4
9	5.9	7.4	6.8	7.1	5.3	7.1	14	8.8	5.4	8.0	4.8	4.0
10	5.9	7.7	6.8	7.1	5.3	7.1	14	8.8	5.6	8.0	5.0	4.2
11	6.2	8.0	6.5	7.4	5.3	6.8	12	5.6	5.9	7.7	4.4	4.4
12	6.2	7.7	6.2	7.4	5.3	6.5	12	5.2	5.9	7.7	4.0	4.4
13	6.2	8.0	6.2	7.7	5.6	6.8	10	10	6.2	7.4	4.0	4.2
14	6.2	8.0	5.9	7.7	5.6	7.1	8.6	11	5.9	7.7	4.4	4.8
15	6.5	8.4	5.6	8.0	5.9	7.1	6.8	11	6.8	7.7	3.8	4.6
16	6.8	8.4	5.3	8.0	6.2	7.1	7.1	10	6.8	7.7	3.2	4.8
17	7.1	7.7	5.6	8.0	6.2	7.7	6.5	10	6.5	7.7	3.0	5.3
18	7.1	7.4	5.3	8.0	6.2	7.7	6.5	10	7.1	7.7	2.8	5.3
19	7.7	8.0	5.3	8.4	5.9	8.4	6.5	10	7.7	8.0	5.9	6.2
20	8.0	8.4	5.6	8.4	5.9	8.8	6.8	11	7.7	7.7	5.4	5.6
21	8.0	8.4	5.3	8.4	6.2	9.2	6.8	11	7.7	7.7	4.8	5.9
22	8.0	8.0	5.3	8.8	6.5	8.8	6.5	5.8	8.0	7.4	5.0	5.6
23	8.0	7.7	5.0	8.8	6.8	9.2	6.5	3.2	8.0	7.7	4.4	5.6
24	7.7	8.0	5.6	8.4	6.8	9.2	6.5	4.6	8.0	7.7	4.4	5.3
25	7.7	7.4	5.6	8.0	6.8	10	6.5	4.8	8.0	7.4	4.2	5.3
26	7.7	7.1	5.6	7.7	6.8	10	6.8	2.6	8.4	6.8	4.0	5.3
27	8.0	7.1	6.2	7.7	8.8	10	6.5	5.6	8.4	6.8	3.8	5.6
28	7.7	6.8	5.9	7.7	7.4	11	6.2	5.0	8.4	7.1	4.0	5.6
29	7.7	6.8	5.6	7.4	7.4	10	6.2	5.0	8.8	6.8	4.4	5.9
30	8.0	6.5	5.3	7.1	---	9.6	5.9	5.0	7.7	7.1	4.6	6.2
31	7.7	---	5.0	6.5	---	10	---	4.4	---	8.2	---	4.6
TOTAL	216.2	221.7	184.7	224.6	167.3	253.2	283.4	209.9	205.3	234.5	186.1	121.6
MEAN	6.78	7.12	5.96	7.25	5.95	8.17	9.45	7.42	6.84	7.56	6.11	4.39
MAX	8.0	8.4	6.8	8.8	7.4	11	16	11	8.4	8.0	7.1	6.2
MIN	5.0	6.8	3.0	4.8	5.0	6.5	5.9	3.2	4.0	6.2	2.8	0.4
AC-FT	417	460	367	447	332	502	563	456	407	465	290	261
CAL YR	1968	TOTAL	2,201.4	MEAN	6.61	MAX	16	MIN	2.2	AC-FT	4,370	
WTR YR	1969	TOTAL	2,502.7	MEAN	6.86	MAX	16	MIN	0.4	AC-FT	4,960	

BEAR RIVER BASIN

10-555. Bear Lake at Lifton, near St. Charles, Idaho

LOCATION.--Lat 42°07'20", long 111°19'20", in NE1/4 sec.16, T.15 S., R.44 E., Bear Lake County, in Lifton pumping plant of Utah Power & Light Company, 5.5 miles east of St. Charles.

DRAINAGE AREA.--435 sq mi, approximately (does not include Mud Lake drainage).

PERIOD OF RECORD.--October 1903 to June 1906 (gage heights only), January 1921 to current year. Monthly contents only January 1921 to September 1945 published in WSP 1314. Published as Bear Lake at Fish Haven 1932-06.

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 current year, 1,276,000 acre-ft July 9-16 (gage height, 21.58 ft); minimum, 1,853,000 acre-ft Mar 27-29 (gage height, 18.25 ft).
Period of record: Maximum contents, 1,423,000 acre-ft June 10, 1923 (gage height, 23.68 ft); no usable contents Nov. 9-19, 1935 (gage height, 2.60 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 augmented by water diverted from Bear River through Rainbow Inlet canal and Bingle Inlet canal, which empty into Mud Lake (see station 10-0460). Water from Mud Lake reaches Bear Lake by a sluice at pumping plant or by gates in causeway at south end of Mud Lake. Capacity, 1,421,500 acre-ft between gage heights 2.60 (lower limit of pumps) and 23.65 ft (present feasible upper limit of storage with existing facilities). Storage water used for irrigation and power development. Figures given herein represent usable contents.

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

Contents, in thousands of acre-feet at 2330, water year October 1968 to September 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,166	1,144	1,110	1,076	1,063	1,066	1,045	1,166	1,259	1,271	1,244	1,181
2	1,166	1,143	1,108	1,074	1,063	1,065	1,047	1,170	1,259	1,272	1,243	1,180
3	1,166	1,141	1,107	1,074	1,063	1,065	1,051	1,173	1,259	1,273	1,242	1,178
4	1,166	1,140	1,105	1,072	1,063	1,065	1,055	1,177	1,259	1,273	1,241	1,177
5	1,165	1,138	1,103	1,072	1,063	1,065	1,066	1,180	1,259	1,273	1,240	1,175
6	1,165	1,138	1,103	1,071	1,065	1,065	1,066	1,184	1,256	1,274	1,236	1,173
7	1,164	1,136	1,100	1,070	1,065	1,064	1,071	1,188	1,258	1,275	1,237	1,170
8	1,164	1,135	1,099	1,069	1,065	1,063	1,079	1,192	1,256	1,275	1,235	1,169
9	1,163	1,134	1,098	1,067	1,065	1,062	1,086	1,195	1,258	1,276	1,233	1,167
10	1,163	1,133	1,097	1,067	1,065	1,061	1,092	1,198	1,258	1,276	1,230	1,166
11	1,162	1,131	1,097	1,065	1,063	1,060	1,097	1,202	1,258	1,276	1,227	1,164
12	1,162	1,131	1,095	1,065	1,065	1,058	1,101	1,206	1,258	1,276	1,224	1,164
13	1,161	1,129	1,094	1,064	1,065	1,057	1,104	1,210	1,258	1,276	1,221	1,163
14	1,161	1,128	1,094	1,063	1,065	1,056	1,106	1,215	1,258	1,276	1,218	1,162
15	1,161	1,127	1,092	1,062	1,065	1,054	1,110	1,220	1,258	1,276	1,215	1,161
16	1,161	1,124	1,091	1,062	1,066	1,053	1,113	1,224	1,259	1,276	1,212	1,160
17	1,161	1,124	1,090	1,061	1,066	1,051	1,118	1,229	1,259	1,275	1,210	1,160
18	1,161	1,123	1,089	1,060	1,066	1,050	1,121	1,234	1,260	1,275	1,208	1,159
19	1,160	1,122	1,088	1,060	1,065	1,049	1,125	1,238	1,261	1,273	1,207	1,159
20	1,159	1,122	1,087	1,059	1,065	1,048	1,130	1,242	1,262	1,271	1,206	1,158
21	1,157	1,121	1,085	1,059	1,065	1,047	1,134	1,245	1,262	1,268	1,203	1,157
22	1,156	1,120	1,084	1,059	1,065	1,046	1,138	1,248	1,263	1,266	1,202	1,156
23	1,154	1,119	1,083	1,059	1,065	1,045	1,143	1,251	1,264	1,262	1,200	1,156
24	1,154	1,118	1,083	1,059	1,065	1,044	1,146	1,253	1,264	1,259	1,198	1,155
25	1,153	1,118	1,082	1,059	1,065	1,044	1,150	1,255	1,266	1,255	1,196	1,154
26	1,152	1,116	1,081	1,060	1,066	1,044	1,152	1,257	1,267	1,252	1,194	1,154
27	1,150	1,115	1,081	1,061	1,066	1,043	1,156	1,258	1,268	1,249	1,192	1,153
28	1,149	1,113	1,080	1,062	1,066	1,043	1,158	1,258	1,268	1,248	1,189	1,152
29	1,148	1,111	1,078	1,063	1,065	1,043	1,161	1,259	1,269	1,246	1,187	1,152
30	1,146	1,110	1,078	1,063	1,065	1,043	1,164	1,259	1,271	1,245	1,185	1,151
31	1,145	1,109	1,076	1,063	1,065	1,043	1,167	1,259	1,271	1,245	1,183	1,150
(+)	19.71	19.22	18.73	18.54	18.58	18.26	18.98	21.39	21.31	21.14	20.26	19.80
(+)	-31.0	-35.0	-38.0	-13.0	+ 30	-22.0	+120.0	+51.0	+32.0	-36.0	-62.0	-32.0

Calendar year 1968..... † 410.0
Water year 1968-69..... † 415.0

† 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°13'00", long 111°20'30", in SW1/4 sec.8 T.14 S., R.44 E., Bear Lake County, on right bank 3,000 ft downstream from headgates (at dike) and 3 miles southeast of Paris.

PERIOD OF RECORD.--January 1922 to current year. Monthly discharge only January 1922 to September 1945, published in WSP 131A.

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

AVERAGE DISCHARGE.--47 years, 339 cfs (245,606 acre-ft per year).

EXTREMES.--Maximum daily discharge during current year, 1,920 cfs July 25; minimum daily, 5 cfs Apr. 1 to May 30. Period of Record: Maximum daily discharge, 1,920 cfs July 25, 1969; minimum daily, 1 cfs for many days in 1957, 1954, 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.

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

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	698	704	725	255	740	5	5	269	10	428	692
2	16	696	698	730	255	759	5	5	212	10	504	546
3	16	695	712	730	255	762	5	5	217	10	510	206
4	16	789	712	730	245	715	5	5	271	10	575	154
5	15	706	701	735	285	738	5	5	332	10	624	350
6	15	689	686	735	326	774	5	5	328	10	632	452
7	15	672	589	735	322	671	5	5	314	10	621	463
8	15	715	695	735	352	849	5	5	308	10	716	467
9	15	692	692	735	406	828	5	5	301	10	856	382
10	15	709	695	740	413	852	5	5	295	10	856	248
11	15	724	704	740	434	849	5	5	314	255	852	109
12	15	724	698	738	465	786	5	5	287	770	807	27
13	15	692	657	730	507	755	5	5	275	1,130	831	26
14	15	701	678	712	545	837	5	5	281	1,090	831	26
15	15	701	678	720	545	852	5	5	273	1,190	822	25
16	159	698	657	710	585	877	5	5	291	1,360	825	24
17	18	704	678	706	604	934	5	5	291	1,280	825	24
18	308	709	715	710	641	915	5	5	291	1,370	816	23
19	759	721	738	747	653	874	5	5	234	1,460	819	22
20	712	731	712	733	666	768	5	5	137	1,460	813	22
21	704	715	700	544	685	692	5	5	68	1,430	856	21
22	695	701	685	257	683	701	5	5	10	1,470	837	20
23	629	685	695	269	575	701	5	5	10	1,490	825	20
24	240	701	730	263	695	712	5	5	10	1,560	804	19
25	427	709	733	242	768	677	5	5	10	1,920	786	19
26	709	695	704	283	741	599	5	8	10	1,130	777	18
27	718	692	712	283	712	521	5	8	10	1,040	762	18
28	712	709	714	283	715	431	5	8	10	818	756	17
29	701	715	717	275	---	350	5	5	10	514	750	17
30	695	706	718	260	---	379	5	5	10	446	730	17
31	698	---	721	250	---	118	---	116	---	350	712	---
TOTAL	5,173	21,110	21,728	17,779	14,247	22,159	150	266	5,675	23,033	23,158	4,514
MEAN	296	704	701	574	512	715	5.0	8.58	189	762	747	150
MAX	759	724	738	740	768	934	5	116	333	1,920	856	692
MIN	15	672	657	242	245	118	5	5	10	10	428	17
AC-FT	18,190	41,870	43,160	35,260	28,460	43,950	298	928	11,260	46,880	45,930	8,950
CAL. YR	1968	TOTAL	111,001.2	MEAN	303	MAX	1,140	MIN	3.0	AC-FT	220,208	
WTR. YR	1969	TOTAL	163,692	MEAN	448	MAX	1,920	MIN	5	AC-FT	322,700	

BEAR RIVER BASIN

10-905. Bear River near Preston, Idaho

LOCATION.--Lat 42°10'05", long 111°55'59", in NW1/4 sec.26, T.14 S., R.39 E., Franklin County, on left bank 560 ft downstream from headgates 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.

PERIOD OF RECORD.--October 1889 to December 1916, January to September 1917 (gage heights only, October 1943 to current year. Prior to 1903, published as "at Battlereek." Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Altitude of gage is 4,580 ft (from topographic map). October 1889 to September 1917 staff or wire-weight gages at several sites within 5 miles downstream at different datums.

AVERAGE DISCHARGE.--26 years (1943-69), 791 cfs (573,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,080 cfs Apr. 6 (gage height, 4.76 ft); minimum, 1.6 cfs Aug. 6 (gage height, 9.29 ft); minimum daily 6.0 cfs Sept. 8.
 1889-1917: Maximum discharge, about 8,500 cfs June 9, 10, 1907, estimated on basis of records for station near Collinston, Utah; maximum gage height observed, 9.84 ft Jan. 17, 18, 1917 (backwater from ice), site and datum then in use; minimum discharge not determined.
 1943-69: Maximum discharge, 4,420 cfs Apr. 17, 1950 (gage height, 5.61 ft); minimum, 0.6 cfs June 14, 1949; minimum daily, 2.9 cfs May 11, 1968.

REMARKS.--Records good. Station is below all irrigation diversions from Bear River in Idaho except Cub River pumps in SE1/4 sec.20, T.16 S., R.39 E. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	424	1,200	1,090	669	1,020	1,480	1,580	837	158	637	510	420
2	246	783	1,200	1,010	836	1,560	1,740	1,320	158	716	332	550
3	245	781	1,080	1,310	694	1,080	1,560	1,070	143	464	469	453
4	367	1,160	971	1,180	810	1,370	1,860	1,370	171	260	271	578
5	274	788	776	1,160	696	1,180	2,140	937	151	658	128	446
6	372	1,140	1,220	1,310	1,220	1,900	2,180	1,220	126	319	260	809
7	247	1,210	1,210	1,280	1,030	1,290	2,330	1,120	148	251	223	349
8	402	1,166	1,180	1,270	1,010	1,360	1,840	1,240	122	226	458	193
9	343	1,060	1,160	1,190	972	1,410	1,950	1,270	104	233	485	66
10	334	1,120	1,190	1,030	792	1,470	1,670	1,250	95	365	432	143
11	363	1,230	1,000	1,550	854	1,260	1,810	1,030	118	472	505	168
12	385	1,170	1,250	792	1,350	1,370	1,700	1,010	112	789	1,040	196
13	418	1,050	1,320	1,250	1,090	1,460	1,830	979	128	738	840	163
14	387	971	915	1,340	791	1,190	1,580	1,080	77	880	562	188
15	384	1,270	1,050	1,490	457	1,420	1,480	818	133	822	911	168
16	441	1,120	1,180	1,350	1,080	1,420	1,310	894	226	1,120	638	251
17	300	1,030	1,120	1,190	953	1,510	1,640	764	179	1,250	190	237
18	704	1,090	1,280	1,240	1,080	1,370	1,500	593	174	1,170	674	225
19	712	993	1,020	1,220	1,090	1,540	1,210	535	207	703	847	229
20	915	1,240	1,030	1,730	1,280	1,410	1,030	654	161	716	682	249
21	953	1,020	1,090	2,050	1,110	1,480	855	173	325	727	743	263
22	1,010	1,440	967	2,290	1,260	1,310	1,320	747	459	1,030	575	263
23	938	1,020	744	1,960	1,190	1,600	1,510	421	502	912	777	261
24	991	1,420	1,030	1,280	1,120	1,110	1,310	427	546	1,110	428	203
25	907	1,080	1,070	1,220	1,240	1,600	1,090	410	631	864	890	234
26	685	928	1,310	1,190	1,610	935	1,350	383	650	426	825	268
27	643	1,200	1,190	735	940	1,570	1,300	224	649	797	623	280
28	922	1,110	1,120	1,110	1,690	1,380	1,180	304	722	792	553	207
29	979	1,150	1,400	816	-----	1,580	1,260	174	724	337	720	370
30	1,020	1,140	1,100	459	-----	1,560	1,590	183	336	497	766	136
31	1,300	-----	708	734	-----	1,860	-----	267	-----	211	443	-----
INITIAL	18,566	32,996	33,971	38,405	29,765	44,035	46,505	23,694	8,440	20,492	17,800	8,566
MEAN	599	1,100	1,096	1,239	1,063	1,420	1,550	744	281	851	574	286
MAX	1,300	1,440	1,400	2,290	1,690	1,900	2,330	1,370	724	1,250	1,040	809
MIN	229	781	708	459	-----	935	855	173	77	211	128	66
AC-FT	36,820	65,440	67,380	76,180	59,640	87,340	92,240	47,000	16,740	40,650	35,310	16,990
CAL YR 1968	TOTAL	238,208.0		MEAN 651		MAX 1,430	MIN 2.0	AC-FT 472,500				
WTR YR 1969	TOTAL	323,733		MEAN 886		MAX 2,330	MIN 66	AC-FT 641,100				

BEAR RIVER BASIN

10-930. Cub River near Preston, Idaho

LOCATION.--Lat 42°08'28", long 111°41'39", in SW 1/4 sec. 5, T.15 S., R.41 E., Franklin County, on right bank 0.2 mile upstream from headgates of Cub River-Worm Creek Canal, 6.7 mile upstream from forest boundary, and 10 miles east of Preston.

DRAINAGE AREA.--19.4 sq mi.

PERIOD OF RECORD.--March 1940 to September 1952, October 1955 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 5,326 ft (from topographic map).

AVERAGE DISCHARGE.--26 years, 81.7 cfs (59,136 acre-ft per year).

EXPENSES.--Current year: Maximum discharge, 485 cfs May 15 (gage height, 2.69 ft); minimum, 19 cfs Feb. 25. Period of record: Maximum discharge, 715 cfs June 7, 1957 (gage height, 3.39 ft); maximum gage height, 3.83 ft June 2, 1953; no flow for part of Jan. 29, 1965, result of snowslide.

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

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1969												
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	24	22	21	23	22	72	141	260	125	53	34
2	28	24	22	21	22	21	75	149	235	120	52	34
3	28	24	22	21	22	21	77	172	221	115	51	34
4	28	24	22	21	22	21	72	190	213	110	50	34
5	28	23	22	21	22	21	78	203	213	106	49	32
6	28	23	22	21	22	22	94	241	210	104	45	32
7	28	23	21	21	22	22	86	326	200	103	47	32
8	27	23	22	21	22	21	74	366	195	56	46	32
9	27	24	22	21	21	21	68	388	186	52	45	32
10	27	23	22	20	21	21	68	420	176	89	45	22
11	27	23	22	20	21	21	70	440	161	85	44	21
12	26	22	22	20	21	21	71	445	149	83	44	31
13	27	22	21	20	21	21	72	445	141	81	43	31
14	29	22	21	22	21	21	74	475	139	79	42	21
15	28	22	21	22	21	21	78	485	132	78	41	20
16	26	22	22	22	21	21	77	420	135	77	41	25
17	26	22	21	22	21	21	78	406	130	72	40	29
18	25	22	21	21	21	22	82	430	123	71	40	29
19	25	22	21	22	21	23	81	435	120	69	40	29
20	25	22	21	22	21	23	81	430	123	68	40	29
21	25	22	21	46	21	23	89	402	116	66	35	29
22	25	22	21	45	21	24	108	366	111	65	39	28
23	25	22	21	32	21	26	151	354	108	64	36	28
24	25	22	21	28	22	25	190	350	115	63	38	28
25	25	22	21	26	22	25	168	362	123	62	38	28
26	25	22	21	26	22	26	145	370	125	60	37	28
27	25	22	21	25	21	29	125	370	123	59	36	28
28	25	22	21	24	21	34	113	358	128	57	36	28
29	24	22	21	24	-----	40	115	322	135	57	35	28
30	24	22	21	24	-----	50	133	299	130	55	35	28
31	24	-----	21	23	-----	60	-----	280	-----	54	34	-----
TOTAL	314	677	663	752	600	790	2,865	10,840	4,676	2,485	1,307	908
MEAN	26.3	22.6	21.4	24.3	21.4	25.5	95.5	350	156	60.2	42.2	30.3
MAX	29	24	22	46	23	60	190	485	260	125	53	34
MIN	24	22	21	20	21	21	68	141	108	54	34	28
AC-FT	1,610	1,340	1,320	1,690	1,190	1,570	5,680	21,500	9,270	4,920	2,560	1,600
CAL YR 1969	TOTAL 25,774			MEAN 70.4	MAX 510	MIN 18		AC-FT 51,120				
WTR YR 1969	TOTAL 27,377			MEAN 75.0	MAX 485	MIN 20		AC-FT 54,300				

BEAR RIVER BASIN

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

LOCATION.--Lat 41°58'40", long 111°47'00", in NW1/4 sec.36 T.12 N., R.1 E., Cache County, on right bank at Logan plant of Utah Power & Light Co., 120 ft upstream from tailrace, 0.5 mile upstream from State dam, and 2.5 miles east of Logan.

DRAINAGE AREA.--216 sq mi.

PERIOD OF RECORD.--June 1896 to current year. Published as Logan River near Logan prior to 1913. Records since May 1913 equivalent to earlier records if records for Utah Power & Light Co.'s tailrace near Logan are added. Monthly discharge only for some periods, published in WSP 131a.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 4,680 ft (from topographic map). Prior to May 7, 1913, staff gage at various sites within 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.--66 years (1913-69), 193 cfs (74,620 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, 73 years (1896-1969), 272 cfs (196,983 acre-ft per year).

EXTREMES (River only).--Current year: Maximum discharge, 766 cfs May 15 (gage height, 4.09 ft); minimum daily, 17 cfs Oct. 4, 7.

Period of record: 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.

(Combined flow, Logan River above State dam, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal).--Current year: Maximum discharge, 888 cfs May 15; minimum daily, 302 cfs Mar. 11.

Period of record: Maximum observed discharge, 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 flume that siphons canyon 400 ft upstream from station. During 1963 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 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	25	33	34	33	29	186	419	496	300	122	79
2	18	25	33	33	32	29	211	441	468	297	120	76
3	17	25	32	33	32	29	201	484	457	267	125	76
4	11	30	32	33	33	28	192	488	426	277	125	78
5	18	28	32	33	33	28	240	496	419	266	120	79
6	18	26	32	33	33	29	263	564	415	233	108	76
7	17	26	30	33	33	29	230	655	419	233	111	72
8	19	26	30	32	32	29	198	675	415	217	108	74
9	19	26	30	30	32	29	192	675	400	195	103	74
10	18	28	30	29	33	30	226	695	400	179	103	76
11	19	26	32	32	33	33	256	720	397	170	102	76
12	19	29	30	32	32	36	270	705	372	164	108	72
13	18	28	28	33	32	37	277	710	361	164	100	72
14	25	29	29	33	32	33	280	725	350	161	98	70
15	33	30	32	32	32	33	304	730	332	161	100	61
16	20	30	32	30	32	33	287	670	372	158	96	57
17	19	30	30	29	32	33	280	646	375	155	93	63
18	19	30	29	29	32	33	283	660	318	152	96	68
19	18	30	29	32	30	33	273	690	304	149	93	65
20	19	30	29	36	29	32	290	695	308	149	92	65
21	29	32	29	39	25	30	328	670	300	143	90	74
22	26	32	30	47	29	32	353	641	297	140	88	74
23	28	32	32	36	29	32	464	618	287	124	86	76
24	25	32	33	33	29	32	516	610	308	146	86	79
25	25	32	33	37	32	32	449	618	346	137	86	79
26	24	32	32	39	30	32	397	623	328	140	83	79
27	24	30	32	37	29	32	361	614	308	131	83	76
28	24	32	32	34	28	34	339	600	304	128	83	76
29	24	32	32	33	-----	33	361	564	300	131	83	74
30	25	32	29	32	-----	37	415	536	300	134	81	74
31	25	-----	29	33	-----	126	-----	520	-----	128	79	-----
TOTAL	666	875	957	1,041	877	1,077	8,956	19,157	10,862	5,555	2,053	2,191
MEAN	21.5	29.2	30.9	33.6	31.3	34.7	299	618	362	179	58.5	73.0
MAX	32	32	33	47	33	126	516	730	496	300	125	79
MIN	17	25	28	28	28	28	186	419	287	128	75	57
CAL YR 1968	TOTAL 75,223		MEAN 207		MAX 894		MIN 17					
WTR YR 1969	TOTAL 55,271		MEAN 151		MAX 730		MIN 17					

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 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164	150	139	126	120	116	219	459	615	400	225	172
2	164	148	137	124	117	112	244	481	588	397	222	168
3	160	148	134	122	115	110	257	533	570	387	226	168
4	159	156	134	119	112	111	244	546	557	378	226	171
5	160	150	138	123	120	113	274	562	557	370	221	172
6	160	145	138	127	120	114	297	630	563	361	209	169
7	158	144	130	123	118	114	264	734	553	366	214	165
8	159	144	134	120	115	108	232	772	542	352	211	167
9	161	149	132	116	113	105	226	786	527	340	205	167
10	155	148	134	115	116	106	254	810	523	325	205	168
11	159	142	136	124	118	102	290	836	506	314	204	168
12	158	145	132	120	117	105	304	820	480	306	208	164
13	158	146	124	125	119	104	311	826	470	304	199	164
14	176	141	127	125	117	104	314	843	458	297	197	162
15	190	146	136	124	113	107	338	846	440	255	201	156
16	162	150	134	120	119	111	321	776	475	290	197	153
17	160	148	128	120	115	111	313	750	461	284	192	157
18	158	144	127	116	113	111	316	760	430	279	153	162
19	159	148	129	125	115	116	306	781	416	274	190	158
20	155	146	127	133	114	111	323	801	420	271	150	162
21	156	144	121	139	114	111	361	795	411	263	186	167
22	153	143	124	152	112	117	424	772	408	258	184	155
23	155	143	126	132	112	119	495	752	398	249	163	157
24	152	140	129	122	116	117	567	744	416	259	182	160
25	152	145	129	132	121	117	478	748	447	250	182	160
26	151	136	128	132	117	118	426	749	429	252	179	160
27	148	134	126	130	112	120	389	739	409	242	177	156
28	148	140	126	120	113	123	379	725	405	237	176	155
29	148	134	126	122	-----	136	402	688	401	236	176	153
30	151	136	113	112	-----	148	456	659	401	237	174	153
31	150	-----	115	126	-----	175	-----	640	-----	231	172	-----
TOTAL	4,995	4,234	4,013	3,865	3,243	3,592	10,004	22,363	14,276	9,304	6,106	4,869
MEAN	156	144	129	125	116	116	333	721	476	300	157	162
MAX	190	156	139	152	121	175	547	846	615	400	226	172
MIN	148	134	113	112	112	102	219	459	398	221	172	153
CAL YR 1968	TOTAL 86,471		MEAN 236		MAX 894		MIN 102					
WTR YR 1969	TOTAL 90,868		MEAN 249		MAX 846		MIN 102					

BEAR RIVER BASIN

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

LOCATION.--Lat 41°49'51", long 112°03'24", in SW1/4 sec.27, T.13 N., R.2 W., Box Elder County, on right bank 3,600 ft downstream from Cutler Dam and 8 miles north of Collinston.

PERIOD OF RECORD.--June 1912 to current year. Prior to 1915, published as Hammond ditch near Collinston. Monthly discharge only for some periods, published in WEF 1914.

GAGE.--Water-stage recorder. Prior to May 27, 1914, staff gage at same site and datum.

AVERAGE DISCHARGE.--57 years, 50.5 cfs (36,860 acre-ft per year).

EXTREMES.--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 NW1/4SW1/4 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 56,000 acres below station in eastern Box Elder County.

COOPERATION.--Gage-height record and 5 discharge measurements furnished by Utah Power & Light Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	6.1	0	0	0	0	0	0	153	53	162	139
2	70	6.1	0	0	0	0	0	0	151	81	161	128
3	66	6.1	0	0	0	0	0	0	152	101	159	130
4	64	6.1	0	0	0	0	0	0	152	109	152	125
5	64	6.3	0	0	0	0	0	79	152	122	147	124
6	64	6.3	0	0	0	0	0	92	152	127	145	125
7	65	6.1	0	0	0	0	0	92	151	146	147	126
8	65	6.1	0	0	0	0	0	101	149	161	149	125
9	58	6.4	0	0	0	0	0	120	154	164	144	119
10	56	6.4	0	0	0	0	0	135	154	162	151	109
11	56	6.4	0	0	0	0	0	141	148	167	150	105
12	54	6.3	0	0	0	0	0	153	148	169	150	106
13	51	4.0	0	0	0	0	0	156	139	169	151	105
14	47	4.89	0	0	0	0	0	154	109	165	153	105
15	33	0	0	0	0	0	0	153	124	163	153	101
16	16	0	0	0	0	0	0	153	114	165	153	97
17	7.9	0	0	0	0	0	0	154	104	165	153	99
18	7.9	0	0	0	0	0	0	162	106	165	153	101
19	7.9	0	0	0	0	0	0	161	115	165	153	93
20	7.7	0	0	0	0	0	0	161	108	165	153	81
21	7.7	0	0	0	0	0	0	160	106	164	153	81
22	7.5	0	0	0	0	0	0	163	107	164	150	81
23	6.8	0	0	0	0	0	0	165	107	165	149	80
24	6.6	0	0	0	0	0	0	165	99	163	150	81
25	6.4	0	0	0	0	0	0	164	84	163	150	81
26	6.4	0	0	0	0	0	0	164	72	164	150	81
27	6.6	0	0	0	0	0	0	164	52	165	145	81
28	6.6	0	0	0	0	0	0	163	47	160	144	80
29	6.6	0	0	0	-----	0	0	163	48	159	144	78
30	6.8	0	0	0	-----	0	0	163	50	148	144	76
31	6.3	-----	0	0	-----	0	-----	157	-----	160	142	-----
TOTAL	1,007.7	79.59	0	0	0	0	0	3,958	3,507	4,669	4,665	3,053
MEAN	32.5	2.65	0	0	0	0	0	128	117	151	150	102
MAX	75	6.4	0	0	0	0	0	165	154	169	162	129
MIN	6.3	0	0	0	0	0	0	0	47	53	142	76
AC-FT	2,000	158	0	0	0	0	0	7,850	6,960	5,240	5,210	6,160
CAL YR 1968	TOTAL	18,226.29	MEAN	49.8	MAX	167	MIN	0	AC-FT	36,150		
WTR YR 1969	TOTAL	20,939.29	MEAN	57.4	MAX	169	MIN	0	AC-FT	41,530		

BEAR RIVER BASIN

10-1175. West Side Canal near Collinston, Utah

LOCATION.--Lat 41°49'00", long 112°03'36", in SW1/4 sec.27, T.13 N., R.2 W., Box Elder County, on left bank 4,200 ft downstream from Cutler Dam and 4 miles north of Collinston.

PERIOD OF RECORD.--June 1912 to current year. 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.--57 years, 239 cfs (123,200 acre-ft per year).

EXTREMES.--Period of record: Maximum daily discharge, 763 cfs July 11, 1967; no flow for periods in every year except 1914.

REMARKS.--Records good. Canal diverts from west side of Bear River in SW1/4SW1/4 sec.27 (revised), T.13 N., R.2 W., at dam at which Hammond (East Side) Canal and intake of Cutler powerplant also divert. Water from this canal and Hammond (East Side) Canal used for irrigation of about 58,000 acres below station in eastern Box Elder County.

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

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	444	107	92	69	58	32	0	0	737	320	677	675
2	425	107	92	69	58	32	0	4.7	731	361	672	665
3	437	107	88	65	58	32	0	16	723	449	657	659
4	427	107	96	69	58	32	0	16	709	515	655	645
5	423	108	86	69	58	32	0	320	709	594	652	630
6	427	104	78	68	58	32	0	390	709	627	651	630
7	420	99	64	69	58	32	0	427	709	655	667	620
8	395	99	64	68	58	32	0	454	717	701	651	611
9	370	98	64	68	58	32	0	524	733	729	665	598
10	372	99	68	68	58	32	0	580	723	721	665	584
11	357	99	72	68	58	32	0	590	705	721	662	569
12	738	99	72	69	58	30	0	618	711	721	662	561
13	328	98	72	68	58	30	0	641	705	721	679	571
14	283	98	72	68	58	30	0	661	630	729	673	571
15	264	98	72	68	58	30	0	687	637	723	671	554
16	141	99	72	69	59	29	0	685	596	725	672	544
17	120	97	71	70	52	28	0	693	565	727	653	548
18	119	96	71	70	42	28	0	697	560	727	651	540
19	118	96	71	71	41	28	0	699	566	721	652	517
20	117	97	70	70	42	27	0	715	571	709	669	522
21	117	99	72	69	41	26	0	719	565	703	662	518
22	117	96	71	68	40	26	0	721	522	699	667	511
23	117	89	71	66	40	26	0	727	511	669	667	502
24	116	86	70	65	40	26	0	727	456	679	665	459
25	115	90	71	65	40	27	0	727	352	679	691	495
26	116	90	70	65	38	27	0	729	218	666	661	468
27	117	91	70	62	32	27	0	727	136	709	661	486
28	112	91	70	58	32	27	0	741	98	713	651	488
29	116	91	70	58	-----	25	0	747	112	659	651	479
30	116	91	70	58	-----	24	0	755	202	675	651	461
31	112	-----	70	58	-----	12	-----	747	-----	677	667	-----
TOTAL	7,560	2,927	2,270	2,069	1,409	885	0	17,514.7	16,608	20,637	21,113	16,757
MEAN	243	97.6	73.2	66.7	50.3	28.5	0	565	554	666	661	559
MAX	444	108	92	71	59	32	0	755	727	727	662	675
MIN	112	89	64	58	32	12	0	0	98	320	651	461
AC-FT	14,560	5,810	4,500	4,100	2,790	1,760	0	34,740	32,940	44,520	41,660	33,240
CAL YP 1968	TOTAL	77,453.00	MEAN	266	MAX	727	MIN	0	AC-FT	193,300		
WY 1969	TOTAL	109,729.70	MEAN	301	MAX	755	MIN	0	AC-FT	217,600		

BEAR RIVER BASIN

10-1180. Bear River near Collinston, Utah

LOCATION.--lat 41°54'03", long 112°03'16", in NW1/4SE1/4 sec.27, T.13 N., R.2 W., Box Elder County, on right bank 560 ft downstream from Cutler plant of Utah Power & Light Co., 2,600 ft downstream from Cutler Dam, and 5.8 miles north of Collinston.

DRAINAGE AREA.--6,000 sq mi, approximately.

PERIOD OF RECORD.--July 1889 to current year. Published as "at Collinston" prior to 1900. Monthly discharge only for some periods, published in ASR 1374.

GAGE.--Water-stage recorder. Datum of gage is 4,276.13 ft above mean sea level (levels by Bureau of Reclamation). Prior to Nov. 8, 1913, staff gage, and Nov. 8, 1913 to Sept. 10, 1938, water-stage recorder, at site 0.8 mile downstream at different datum.

EXTREMES.--Current year: Maximum discharge, 5,990 cfs May 6 (gage height, 6.06 ft); minimum daily, 16 cfs several days.

Period of record: Maximum discharge observed, 11,630 cfs June 7-10, 1909 (gage height, 7.70 ft, site and datum then in use); minimum daily, 16 cfs Aug. 4-12, 18-23, 1905; practically no flow at 2600 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.--Right discharge measurements furnished by Utah Power & Light Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	1,700	1,650	1,020	1,530	2,200	4,410	2,740	20	1,520	21	22
2	937	1,740	1,930	1,340	1,750	2,390	4,970	2,970	351	1,420	21	22
3	815	1,770	1,370	1,400	1,480	2,640	4,840	3,080	270	1,150	21	22
4	500	1,470	1,820	1,390	1,630	2,220	4,910	3,140	19	1,160	21	22
5	590	1,620	1,860	1,570	1,560	2,370	4,680	2,830	19	374	21	23
6	157	1,740	1,600	2,160	1,740	2,210	4,360	2,180	18	18	36	22
7	63	1,640	1,790	2,100	1,630	2,160	4,000	2,700	18	18	21	22
8	274	1,420	1,730	2,430	1,880	2,260	3,920	2,910	18	19	21	22
9	642	1,290	1,650	2,090	1,840	2,270	4,350	2,600	19	19	21	23
10	592	1,630	1,670	1,500	2,000	2,210	4,590	2,970	19	19	21	22
11	508	1,790	1,670	1,560	2,040	2,090	4,350	2,430	19	19	21	22
12	470	1,710	1,290	1,390	1,860	2,180	4,110	2,310	126	19	21	23
13	755	1,740	1,820	2,460	1,270	2,110	3,770	2,010	401	19	21	23
14	374	1,770	1,720	2,620	1,920	2,090	3,810	1,880	456	19	21	23
15	1,250	1,980	1,810	2,130	2,050	2,110	3,560	2,070	281	19	21	23
16	1,280	1,730	1,890	1,690	1,730	2,160	3,840	2,040	734	19	21	23
17	1,440	2,560	1,820	2,000	1,820	2,130	3,750	1,610	584	19	21	23
18	1,500	2,320	1,840	2,380	1,780	2,110	3,590	1,590	682	18	21	23
19	1,130	1,470	1,840	1,980	1,970	2,220	3,440	1,500	229	18	22	23
20	1,850	1,240	1,590	2,430	1,700	2,340	3,370	1,330	294	18	22	23
21	649	787	1,350	3,480	1,960	2,320	3,360	1,030	313	18	22	26
22	1,630	1,630	1,630	3,790	2,070	2,430	3,250	1,150	371	43	22	372
23	1,940	1,740	1,280	3,790	1,730	2,420	3,260	1,140	705	54	22	563
24	1,980	1,720	1,650	3,690	1,800	2,600	2,590	693	1,130	21	22	305
25	1,770	1,530	1,360	3,360	2,060	2,800	3,510	649	1,100	21	45	416
26	941	1,690	1,920	3,020	2,450	2,770	3,840	105	1,440	21	22	726
27	1,070	1,670	1,500	2,920	2,790	2,940	3,890	18	1,680	21	22	22
28	1,000	1,600	1,480	2,380	2,370	3,280	3,810	18	1,750	23	22	22
29	1,750	1,930	1,780	2,080	-----	3,610	3,790	170	1,740	88	22	116
30	1,350	1,660	1,730	1,340	-----	3,840	3,110	205	1,680	1,050	22	73
31	1,470	-----	1,440	1,950	-----	3,850	-----	400	-----	21	22	-----
TOTAL	31,354	69,487	50,980	69,440	51,690	77,130	117,480	52,528	16,432	7,235	702	3,042
MEAN	1,011	1,650	1,645	2,240	1,666	2,488	3,916	1,694	548	233	22.4	101
MAX	1,940	2,560	1,930	3,790	2,650	3,850	4,970	3,140	1,740	1,520	45	726
MIN	52	467	1,280	1,020	1,240	2,050	2,990	18	18	18	21	22
AC-FT	62,190	48,160	101,100	137,700	102,500	154,000	233,000	104,200	32,590	14,350	1,390	6,050
CAL YR 1968	TOTAL	424,048		MEAN	1,161	MAX	3,930	MIN	20	AC-FT	842,900	
W18 YR 1969	TOTAL	527,610		MEAN	1,665	MAX	4,970	MIN	18	AC-FT	1,066,000	

BEAR RIVER BASIN

10-1260. Bear River near Corinne, Utah

LOCATION.--Lat 41°38'35", long 112°06'00", in SE1/4NE1/4 sec.30, T.10 N., R.2 E., Box Elder County, on right bank 1.2 miles downstream from Salt Creek, 2.6 miles northeast of Corinne, and 2.8 miles downstream from Malad River.

DRAINAGE AREA.--6,800 sq mi, approximately.

PERIOD OF RECORD.--October 1949 to September 1957, October 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,204.6 ft, unadjusted. Auxiliary staff gage 7,800 ft downstream July 27, 1956 to Nov. 21, 1956.

AVERAGE DISCHARGE.--14 years, 1,616 cfs (1,170,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,440 cfs Apr. 3 (gage height, 12.70 ft); minimum daily, 90 cfs Aug. 14.

Period of record: Maximum discharge, 7,200 cfs May 3, 1952 (gage height, 14.69 ft); maximum gage height, 14.83 ft Feb. 11, 1951; minimum daily discharge, 72 cfs Aug. 20, 21, 26, Sept. 8, 1964.

REMARKS.--Records good except those for winter months, 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 Bird Refuge diversion works.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	584	1,670	1,650	1,700	2,050	2,640	4,610	3,410	480	1,860	377	157
2	288	1,770	1,900	1,250	1,800	2,590	5,020	3,050	283	1,800	162	166
3	813	1,500	1,880	1,600	1,850	2,710	5,420	3,160	300	1,730	136	172
4	975	1,890	1,800	1,450	2,150	2,720	5,370	3,260	454	1,580	141	177
5	774	1,730	2,160	1,600	1,900	2,560	5,310	3,290	239	1,420	121	161
6	776	1,650	2,020	1,800	1,800	2,640	5,070	2,960	138	749	111	157
7	477	1,830	1,850	2,300	1,700	2,550	4,760	2,840	129	231	104	157
8	221	1,800	1,950	2,300	1,900	2,530	4,400	2,930	129	124	103	160
9	231	1,720	1,970	2,700	2,050	2,550	4,280	2,960	131	117	101	163
10	644	1,480	1,860	2,400	2,050	2,560	4,650	3,020	159	110	100	145
11	759	1,770	1,920	1,800	2,250	2,470	4,860	2,930	199	107	105	129
12	743	1,990	1,840	1,700	2,300	2,420	4,660	2,680	179	109	95	126
13	709	1,970	1,650	1,650	2,150	2,460	4,420	2,480	190	106	96	124
14	954	2,000	1,960	2,650	1,730	2,400	4,090	2,280	636	110	90	114
15	891	2,050	1,920	2,900	2,180	2,380	4,040	2,240	770	102	93	121
16	1,350	2,120	2,050	2,600	2,380	2,400	3,910	2,450	460	106	106	120
17	1,480	2,330	2,090	2,200	2,000	2,420	4,040	2,430	1,110	115	111	113
18	1,580	2,750	1,820	2,300	2,070	2,400	4,010	1,840	960	140	122	115
19	1,650	2,480	1,670	2,650	2,120	2,390	3,860	1,840	806	159	129	118
20	1,550	1,830	1,890	3,100	2,190	2,520	3,740	1,770	678	177	134	120
21	1,530	1,520	1,780	3,390	2,030	2,630	3,650	1,580	540	181	110	122
22	982	995	1,600	4,030	2,200	2,640	3,600	1,310	586	184	104	135
23	1,790	1,720	1,650	4,230	2,170	2,730	3,530	1,440	538	181	111	368
24	2,060	1,910	1,800	4,110	2,220	2,930	3,470	1,460	954	210	104	674
25	2,050	1,980	1,600	4,020	2,190	3,010	3,340	970	1,500	222	108	510
26	1,780	1,800	1,650	3,890	2,410	3,240	3,680	884	1,480	173	126	562
27	1,200	1,860	2,100	3,640	2,690	3,340	3,960	458	1,700	160	122	867
28	1,200	1,880	2,000	3,470	2,570	3,570	4,050	176	1,870	151	133	473
29	1,830	2,040	1,850	2,700	-----	3,880	4,010	469	1,950	115	128	209
30	1,920	2,130	1,850	2,400	-----	4,200	3,960	277	1,950	197	146	218
31	1,600	-----	1,800	2,200	-----	4,580	-----	447	-----	920	159	-----
TOTAL	35,391	56,145	57,230	80,730	59,200	87,060	127,770	63,291	21,508	13,616	3,888	6,953
MEAN	1,142	1,872	1,846	2,604	2,114	2,808	4,259	2,042	717	439	125	232
MAX	2,060	2,750	2,160	4,230	2,690	4,580	5,420	3,410	1,960	1,860	377	867
MIN	221	995	1,500	1,250	1,700	2,380	3,340	176	129	102	90	113
AC-FT	70,200	111,400	113,500	160,100	117,400	172,700	253,400	125,500	42,660	27,010	7,710	13,790
CAL YR 1968	TOTAL	509,917		MEAN 1,393		MAX 3,950	MIN 91	AC-FT 1,011,000				
WTR YR 1969	TOTAL	612,782		MEAN 1,679		MAX 5,420	MIN 90	AC-FT 1,215,000				