

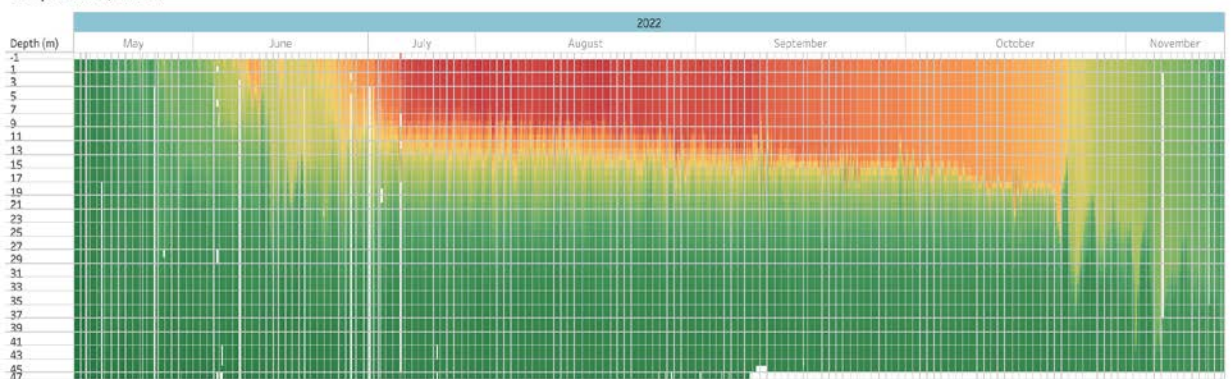
BEAR RIVER COMMISSION



TWENTY-SECOND BIENNIAL REPORT



Temperature, water



2021-2022

Cover photos courtesy of Jake C. Seawolf

The United States Geological Survey (USGS), in partnership with the Bear River Commission, Utah and Idaho Departments of Environmental Quality, Bear Lake Watch, and PacifiCorp, conducted a long-term water quality monitoring program on Bear Lake. Two water quality data platforms were deployed on the lake beginning in 2018 and continuing through 2022. This monitoring program included operating two floating water quality and weather monitoring platforms to (1) establish a robust baseline dataset of the current water quality and meteorological conditions of the lake; (2) refine the lakes water budget by calculating evaporation rates; and (3) investigate temporal and spatial variability of the lakes processes. The photos are of the platforms and the graphic is a sample of the type of water quality data generated.

TWENTY-SECOND BIENNIAL REPORT

**BEAR RIVER
COMMISSION**

2021-2022

For the Biennium October 1, 2020

to

September 30, 2022

FARMINGTON, UTAH

April 2024



BEAR RIVER COMMISSION

226 South 200 West
Farmington, Utah 84025
801-292-4662
bearrivercommission.org

CHAIR

Jody Williams

IDAHO

COMMISSIONERS

Mat Weaver
Kerry Romrell
Curtis Stoddard

UTAH

COMMISSIONERS

Teresa Wilhelmsen
Charles W. Holmgren
Norm Weston

WYOMING

COMMISSIONERS

Brandon Gebhart
Adrian Hunolt
Tim Teichert

ENGINEER-MANAGER

Don A. Barnett

April 9, 2025

Donald Trump
President of the United States
Executive Office of the President
The White House
1600 Pennsylvania Avenue NW
Washington, D.C. 20500

Dear President Trump:

Submitted herewith is the Twenty-Second Biennial Report of the Bear River Commission, as required by Article III.D.2 of the Amended Bear River Compact.

A copy of the report is being transmitted to the governor of each signatory state to the Bear River Compact.

Sincerely,

Don A. Barnett
Engineer-Manager

Enclosure

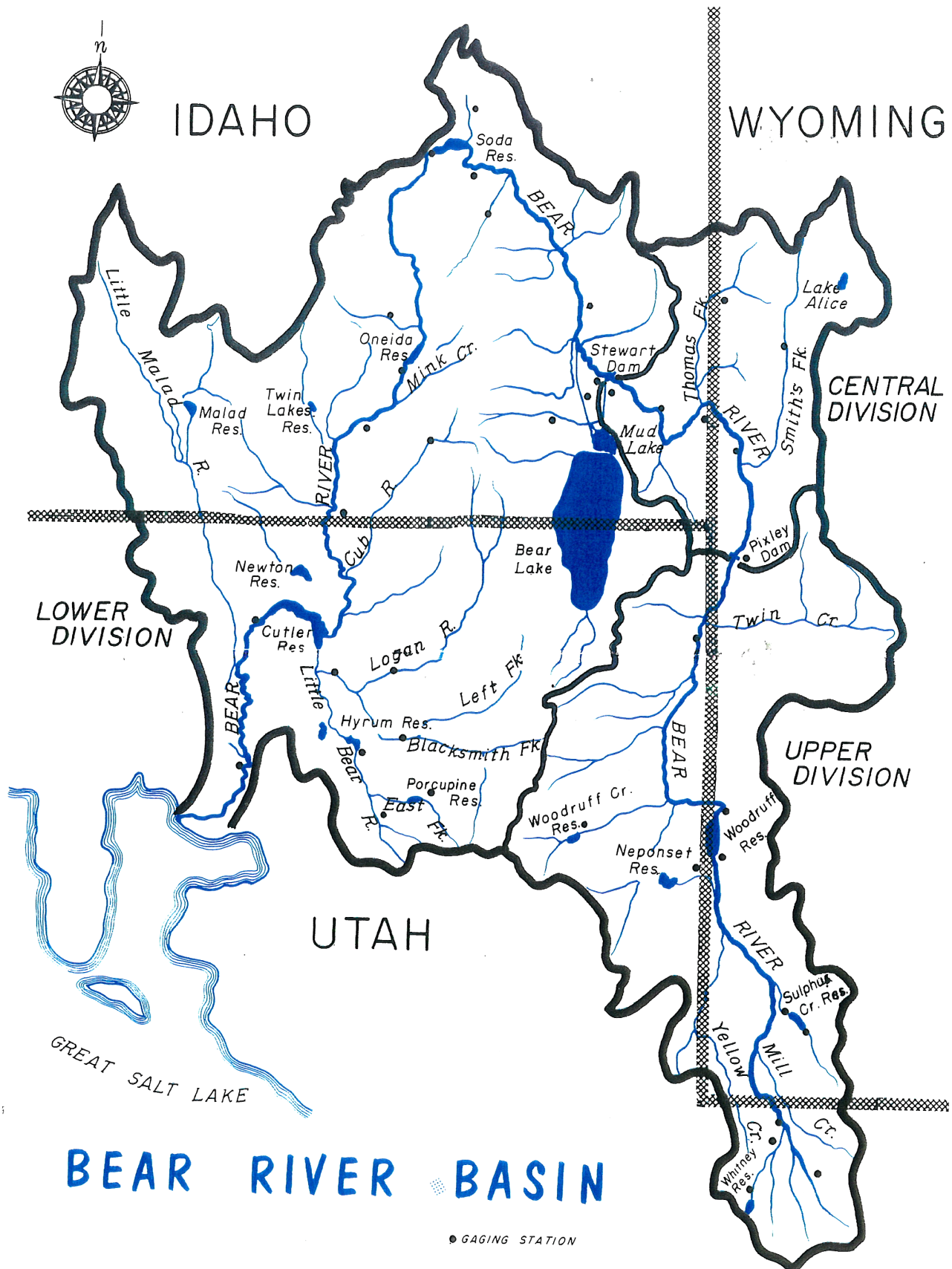


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TWENTY-SECOND BIENNIAL REPORT BEAR RIVER COMMISSION

Overview

SYNOPSIS

The two years reported on in this biennial period both had very limited water supply. The water supply in 2021 was near record low in some reaches of the river and in 2022 it was improved, but still well below normal. Interstate water deliveries pursuant to a water emergency declaration occurred in the Central Division in both years. No water emergencies were declared in 2021 or 2022 in the Upper and Lower Divisions. Distribution in all three divisions was done with great cooperation between administrators and users of waters within the Bear River system.

This biennial report is divided into three chapters. This first chapter, the Overview Chapter, provides a background of the Compact and the Commission and its general activities. The second and third chapters provide specific water supply and streamflow distribution information for the 2021 and 2022 water years, respectively.

BACKGROUND

The Bear River Compact determines the rights and obligations of the signatory states of Idaho, Utah and Wyoming with respect to the waters of the Bear River. Federal consent to the Compact was given by Congress and signed by President Eisenhower on March 17, 1958. The Bear River Commission was created by the Compact and has been organized as an interstate agency to administer the Compact.

The Bear River Compact was amended in accordance with Article XIII of the Original Compact (Article XIV, Amended Compact) following several years of study and review of Compact provisions. Principal amendments and other changes are discussed elsewhere in this report. Amendments to the Compact were agreed to by representatives of the compacting states on December 22, 1978, and State Amending Legislation was approved in each state in the spring of 1979. Congressional consent was given by the 96th Congress by Public Law 96-189 and signed into law by President Carter on February 8, 1980.

Article III.D.2 of the Compact was amended to provide that the Bear River Commission compile a biennial report rather than an annual report as required in the original Compact. Annual reports were compiled in each of the 21 years (1958-78) and were transmitted to the President of the United States and to the Governors of the signatory states. This is the Twenty-Second Biennial Report covering the 2021 and 2022 water years (October 1, 2020, to September 30, 2022).

River operation under the Bear River Compact and activities of the Bear River Commission during the 2021 and 2022 water years are summarized in this report, by year, in the two chapters which follow. This biennial report is organized so that the specific information for each water year is reported in separate chapters. Selected streamflow records are given in the chapters discussing each water year.

COMMISSION ORGANIZATION & MEMBERS

Ten commissioners, three representing each state and one representing the United States, constitute the Bear River Commission. The Federal representative serves as chairperson without a vote, while each of the other nine Commissioners has one vote. Figure O.1 lists the Bear River Commission membership as of October 1, 2020 (the beginning of the biennial period).

The Commission amended its bylaws on April 16, 1990. The amendments allowed for the creation of three standing committees of the Commission: the Management Committee, the Operations Committee, and the Records Committee. On November 18, 1997, the Commission again amended its bylaws and changed the name of the Records Committee to the Records & Public Involvement Committee. A Water Quality Committee was also created on November 18, 1997. On November 20, 2018, the Commission amended its bylaws recognizing that Commission communications could occur via electronic mail. Further, it formalized its Technical Advisory Committee (TAC) and made it a standing committee. The above, standing committees have duties as assigned to them by the Commission. Each state is allowed to designate its representatives to the committees, and in all committees, votes are taken by state, with each state having one vote. These five committees met from time to time on an as-needed basis throughout this biennium. For the most part, they are advisory to the Commission.

Bear River Commission Members

(as of October 1, 2020)

Officers

Chair Jody L. Williams, Salt Lake City, UT
Vice Chair Curtis Stoddard, Grace, ID
Secretary Todd Adams, Salt Lake City, UT
Treasurer Randy Staker, Salt Lake City, UT
Engineer-Manager Don A. Barnett, Farmington, UT

Members

Idaho

Gary Spackman Boise, ID
Kerry Romrell Montpelier, ID
Curtis Stoddard Grace, ID

Utah

Todd Adams¹ Salt Lake City, UT
Blair Francis² Woodruff, UT
Charles W. Holmgren Bear River City, UT

Wyoming

Greg Lanning³ Cheyenne, WY
Adrian Hunolt Evanston, WY
Tim Teichert Cokeville, WY

United States

Jody L. Williams Salt Lake City, UT

Management Committee

Gary Spackman Boise, ID
Todd Adams Salt Lake City, UT
Greg Lanning Cheyenne, WY

Operations Committee

Adrian Hunolt Evanston, WY
Blair Francis Woodruff, UT
Kerry Romrell Montpelier, ID

Records Committee

Charles Holmgren Bear River City, UT
Curtis Stoddard Grace, ID
Tim Teichert Cokeville, WY

¹On December 8, 2021 Todd Adams was replaced by Candice Hasenyager

²On April 21, 2022 Blair Francis was replaced by Norman Weston

³On March 22, 2022 Greg Lanning was replaced by Brandon Gebhart

Figure O.1

MEETINGS

Four Regular or Annual Commission meetings were held during the biennium. The dates of the meetings are as follows:

November 17, 2020	Regular Meeting	Virtual Meeting
April 20, 2021	Annual Meeting	Salt Lake City, Utah
November 23, 2021	Regular Meeting	Salt Lake City, Utah
April 19, 2022	Annual Meeting	Salt Lake City, Utah

Three of the four meetings during this biennium were held at the Utah Department of Natural Resources building in Salt Lake City, Utah. The first was held virtually due to the COVID 19 pandemic. At the annual meetings held in April, elections were held, and fiscal matters were addressed. A fiscal report for the biennial period, prepared by the Treasurer, has been made as part of this chapter. Formal minutes for all four of the Commission meetings have been approved and are available on the Commission's website (bearrivercommission.org).

COMMISSION ACTION AND ACTIVITIES

This section is to provide a brief accounting of significant actions or activities of the Commission during the biennial period separate and apart from specific streamflow measurement and distribution which are discussed elsewhere in this report. Greater details relative to specific actions or activities of the Commission are contained within the Commission's approved meeting minutes.

The first meeting of the biennial period was the Commission's regular fall meeting held on November 17, 2020. Due to the COVID pandemic the meeting was held via Zoom. As a first item of business the Commission amended its Bylaws to allow meetings to be held "in person or through other means." The Commission then heard a financial report including a closeout of its FY2020 budget. The Commission then received a report from Representative Hawkes of Utah on water supply concerns for the Great Salt Lake and the passage of HCR-10. The Commission then heard committee reports. A more detailed report on this meeting can be found in the Commission's meeting minutes.

The second meeting of the Commission during this biennial period was the Commission's annual meeting which was held on April 20, 2021. This meeting was also held electronically. At the meeting the Commission adopted its 2022 budget. It then heard a water supply outlook report from NRCS. The Bear River Basin had a snow water equivalent of about 70% of normal. The Commission also heard a report from Utah on the Bear River modeling efforts followed by reports from the Commission's standing committees. A more detailed report of this meeting can be found in the Commission's meeting minutes.

The third meeting of the biennial period was the Commission's regular fall meeting held on November 23, 2021. The meeting was a hybrid meeting with some meeting in person in Salt Lake City, UT and some joining electronically. A report was provided by the Commission's Treasurer on the closeout of the FY2021 income and expenses. This was followed by a very preliminary report on the Basin's water supply outlook, which was for fairly dry conditions. This was followed by a report by PacifiCorp on its proposed Dry Canyon Pump Storage Project above Mud Lake. There were then reports from the Commission's standing committees, including an update by the TAC on the depletions estimates efforts. More detail on specific discussions of the Commission and reports can be found in the Commission's meeting minutes.

The fourth and final meeting of the Commission during the biennial period was held on April 19, 2022. This meeting was held in person in Salt Lake City, UT and virtually. At the start of the meeting the Commission welcomed Brandon Gebhart and Candice Hasenyager as new commissioners from Wyoming and Utah, respectively. Adrian Hunolt was then elected Vice Chair of the Commission; Candice Hasenyager was elected Secretary and Randy Stake was elected Treasurer. Candice Hasenyager also read a resolution of appreciation for Blair Francis's 43 years of service to the Commission. The Commission then approved its FY2023 budget. It then heard a report on the 2022 water supply outlook and discussions relative to potential interstate regulation on Mill Creek. The Commission then heard reports from its standing committees including a report on discussions to acquire flood easements in the Gentile Valley. Greater detail relating to the Commission meeting and activities can be found in the Commission's meeting minutes.

In recognition of the Commission's commitment to broaden its public outreach, the Commission has often sponsored tours of the Bear River System. Due to COVID 19, no Commission tours were sponsored during the biennial period.

FINANCIAL REPORT

The fiscal year of the Commission begins on July 1 of a given year and ends on June 30 of the following year. The expenditures for the period are shown in Figure O.2 and were presented to the Commission by the Treasurer.

The Commission records were audited by an auditor. The audit of accounts and records, including a statement of budget revenue and disbursements for the biennium ending June 30, 2022, is a part of the formally accepted Commission minutes.

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 they represent.

Financial Report June 30, 2022				
	ACTUAL FY 21	ACTUAL FY 22	PROPOSED FY 23	PROPOSED FY 24
<u>ACTUAL/ANTICIPATED INCOME</u>				
Idaho Assessment	45,000.00	45,000.00	45,000.00	45,000.00
Utah Assessment	45,000.00	45,000.00	45,000.00	45,000.00
Wyoming Assessment	45,000.00	45,000.00	45,000.00	45,000.00
State Water Quality Agencies	3,060.67	9,580.41	9,584.01	9,775.69
Interest on Savings	699.96	911.54	800	800.00
TOTAL	\$142,883.66	\$146,566.21	\$287,084.23	\$278,069.92
<u>ACTUAL/ANTICIPATED EXPENSES</u>				
Stream Gaging	\$45,910.00	\$47,902.00	47,920.00	48,860.00
Personal Services, Engineer-Manager	71,032.00	73,163.04	76,821.00	80,662.00
Travel Expenses	1,200.00	1,035.27	1,200.00	1,200.00
Office Expenses	1,600.00	977.78	1,600.00	1,600.00
Biennial Report	1,000.00	1,211.60	1,000.00	1,000.00
Treasurer Bond & Audit	1,400.00	100.00	1,400.00	1,400.00
Printing	1,600.00	1,559.90	1,600.00	1,600.00
Real-time Web Hosting	8,400.00	7,220.99	8,400.00	8,400.00
Clerical	9,209.00	4,077.98	10,149.00	10,859.00
Tour	2,500.00	0.00	2,500.00	2,500.00
Contingency	2,000.00	0.00	2,000.00	2,000.00
TOTAL	\$145,851.00	\$137,057.80	154,590.00	160,081.00

Figure O.2

THE BEAR RIVER

The Bear River drains an area of 6,900 square miles in southwestern Wyoming, northern Utah and southeastern Idaho. Its headwaters are only 90 miles from its mouth, yet it meanders 500 miles in a circuitous course in reaching the Great Salt Lake. In its travels, it

makes five state line crossings in the three states. The map found on page ii shows the major features of the Bear River system.

The Bear River is not only the largest tributary to the Great Salt Lake but is the largest stream in the North American Continent that does not flow to an ocean. Prior to settlement and irrigation development, the annual discharge of the river into the Great Salt Lake averaged an estimated 1,750,000 acre-feet. Settlement of lands adjacent to the Bear River began in about 1860, and power development began in 1907. In 1911, Bear Lake was converted into a storage reservoir by constructing inlet and outlet canals connecting the lake and the river.

Approximately 500 irrigation organizations own and operate separate irrigation systems in the Basin, supplying irrigation water for half a million acres of land. Six hydroelectric plants are in operation on the main stem of the Bear River.

In addition, a municipality, numerous communities, individual families, a variety of industrial and miscellaneous users, and waterfowl refuges withdraw water from the Bear River, its tributaries and its tributary ground water. Today, on average, nearly a million acre-feet of water still flows annually into the Great Salt Lake from the Bear River.

BEAR RIVER COMPACT

The Bear River Compact is a document voluntarily adopted by the states which establishes the rights and obligations of Idaho, Utah and Wyoming with respect to the waters of the Bear River. The Compact became effective on March 17, 1958.

The main purposes of the Compact are outlined in paragraph A of Article I of the Compact, which states:

The major purposes of this Compact are to remove the causes of present and future controversy over the distribution and use of the waters of the Bear River, to provide for efficient use of water for multiple purposes, to permit additional development of the water resources of Bear River, and to promote interstate comity.

The Original (1958) Compact provided the following:

- Divided the Bear River into three main divisions: the Upper Division, the Central Division, and the Lower Division, with subdivisions or sections created in the Upper and Central Divisions. The Compact specifically identified which river flows and canal diversions are to be assigned to each of the divisions.
- Apportioned the direct flows of the Bear River and its tributaries between Utah and Wyoming in the Upper Division (upstream of Pixley Dam) and between Idaho and Wyoming in the Central Division (Pixley Dam to Stewart Dam).
- Did not specifically allocate the water in the Lower Division between the states of Idaho and Utah. The Compact did, however, provide a mechanism

wherein a Utah water user may allege that because of diversions within Idaho, he is being deprived of water to which he is justly entitled and request distribution across the state line. If the Commission finds this to be the case, the Commission may declare a water emergency and establish a water delivery schedule in the Lower Division based upon priority of rights without regard to the state line.

- Defined the pre-compact storage rights for each of the three states in reservoirs above Bear Lake and established additional rights to store above Stewart Dam 36,500 acre-feet of Bear River water in any water year. This 36,500 acre-feet of storage is referred to as "Original Compact Storage" and was allocated to each of the states as follows:

Utah	17,750 acre-feet
Wyoming	17,750 acre-feet
Idaho	1,000 acre-feet

- Reserved a portion of the storage capacity in Bear Lake for primary use by, and protection of, irrigation uses and rights downstream from Bear Lake. This compact-provided-for "irrigation reserve" establishes minimum Bear Lake levels which correspond to upstream storage development, below which Bear Lake cannot be drawn down only for power purposes.

AMENDED BEAR RIVER COMPACT

Proposed amendments to the Bear River Compact were approved by the Commission in December 1978 and the Amended Compact became law on February 8, 1980. The Amended Compact replaces the original Compact. Amendments provide for the following principal changes to the 1958 Compact:

Amendment Highlights

- The allocation and distribution of direct flow rights between the various sections in the Upper and Central Divisions are unchanged from the 1958 Compact.
- Additional storage is granted above Bear Lake for 74,500 acre-feet, of which 4,500 acre-feet is granted to Idaho and 35,000 acre-feet is granted each to Utah and Wyoming. This storage, plus water appropriated (including ground water) and applied to beneficial use after January 1, 1976, is limited to an annual depletion of 28,000 acre-feet, of which Idaho is allocated 2,000 acre-feet and Utah and Wyoming are allocated 13,000 acre-feet each. This additional storage in the Upper and Central Division will not be allowed when the elevation of Bear Lake is below 5911 feet (Utah Power and Light datum).
- Additional rights are granted to store water in the Upper and Central Divisions which would otherwise be spilled or bypassed from Bear Lake when all other direct flow

and storage rights are satisfied. These storage rights are allocated with equal priority as follows: 6 percent to Idaho, 47 percent to Utah and 47 percent to Wyoming.

- The method for the declaration of a water emergency in the Lower Division and the distribution of direct flow diversions by priority without regard to state line is unchanged from the 1958 Compact.
- The water not applied to beneficial use prior to January 1, 1976, including ground water tributary to the Bear River, is allocated on a depletion basis.
- In the Lower Division, Idaho is granted the first right to develop and deplete 125,000 acre-feet. Utah is granted the second right to develop and deplete 275,000 acre-feet. The next 150,000 acre-feet of water depletion will be divided equally between Utah and Idaho. All water in excess of the above allocations will be divided between Utah and Idaho, with Idaho receiving 30 percent and Utah 70 percent.

Compact Required Depletion Estimates

The Amended Bear River Compact, as referenced above, states that the new provisions allowing for additional storage and use of waters subsequent to January 1, 1976, are to be administered based on allowed new depletions. The Compact provides that Commission-approved procedures shall be adopted to make such depletion estimates. Working under the direction of the Commission, the Technical Advisory Committee (TAC) first prepared a depletion estimate in 1990. An update to the depletion estimates has now been prepared through 2009. Such estimates are memorialized in a Technical Memorandum titled *2009 Depletions Update*. At the April 2014 Commission meeting the Commission formally adopted these updated depletion estimates. The Commission's approved procedures which provide for depletion estimate calculations were also revised. The Commission-approved procedures direct that the latest depletion estimates should be included in the Biennial Report. Figure O.3 represents the most recent depletion estimates.

Bear River Commission
Estimated Annual Depletions¹
Changes from January 1, 1976, to December 31, 2009

ABOVE STEWART DAM

State	Allocation	Agricultural Depletions	M&I Depletions	Reservoir Evaporation	Total Depletions	Remaining Allocation
Utah	13,000	5,935	-5	841	6,771	6,229
Wyoming	13,000	2,407	401	197	3,005	9,995
Idaho	2,000	1,310	3	0	1,313	687

LOWER DIVISION

State	Allocation	Agricultural Depletions	M&I Depletions	Reservoir Evaporation	Total Depletions	Remaining Allocation
Idaho	125,000 ²	8,667	300	11	8,978	116,022
Utah	275,000 ³	-5,771	5,978	0	207	274,793

¹Any reductions in pre-1976 depletions are reflected in the above numbers.

²First right under Compact. Compact grants additional rights.

³Second right under Compact. Compact grants additional rights.

Figure O.3

ADMINISTRATION OF BEAR RIVER COMPACT

General

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

Seasonal daily records are collected on about 130 diversions above Bear Lake by state river commissioners under the direction of their respective State Engineers and under the general supervision of the Commission's Engineer-Manager. These records include all the diversions from Bear River main stem and Smith's Fork, as they are required to administer the Bear River Compact. Daily discharge records for canals in the Upper and Central Divisions are published in this biennial report and have been published in previous biennial reports.

The Engineer-Manager determines when, under the provisions of the Compact, a water emergency exists in the Upper or Central Divisions. Once a determination has been made of a water emergency, the Engineer-Manager is in weekly contact with state river

commissioners as to flows and diversions and, at least once a week, allocates the water within the Upper and Central Divisions as provided for under the Compact. The Engineer-Manager also inspects diversions in the field as needed to ensure the equitable apportionment of the water of the Bear River as provided for under the Compact.

Storage

New Storage

The original 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 listed in Figure O.4 have been constructed under the additional storage provisions of the original Compact.

Constructed Additional Storage Provided for Under the Original Compact

<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 (Wyoming)	3,250 ac-ft
Woodruff Narrows Reservoir (Utah)	15,240 ac-ft
Whitney Reservoir (Wyoming).....	4,200 ac-ft
Wyman Reservoir (Wyoming).....	22 ac-ft
Massae Reservoir (Wyoming).....	107 ac-ft
Massae Reservoir Enlargement (Wyoming)	51 ac-ft
Woodruff Creek Reservoir (Utah)	2,000 ac-ft
Coy Reservoir (Wyoming).....	100 ac-ft
Bear River Regional Joint Powers Board (Wyoming).....	168 ac-ft
TOTAL ALLOCATION	31,402 ac-ft

Figure O.4

Additional storage allowance is also granted under the Amended Compact. Woodruff Narrows was enlarged in 1980 under this provision from a capacity of 28,100 acre-feet to 57,300 acre-feet. Allocated to this enlargement is: Utah, 18,000 acre-feet, including 6,686 acre-feet depletion; and Wyoming, 2,960 acre-feet, including 871 acre-feet depletion.

Sulphur Creek Reservoir was enlarged in 1988 to a total capacity of 19,775 acre-feet. Allocated to this enlargement is 10,315 acre-feet (9,370 for municipal use), including 701 acre-feet for depletion.

Bear Lake

Article VI 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, allocated by the original Compact, is developed above Bear Lake. No additional storage was built pursuant to this provision in the Compact during the biennial period, and so the irrigation reserve elevation remained at 5,914.61 feet, with an active storage content in Bear Lake of 794,000 acre-feet. This irrigation reserve elevation corresponds to 30,000 acre-feet of developed additional original Compact storage allocation.

Water Supply

The Commission uses three stream gages, one in each of the three river divisions, as general indicators of the water supply during a given year in the respective divisions. Each of these three gages has a period of record beginning in 1943 and continues to the present. There are not significant streamflow diversions above these three gages and, hence, they are used to approximate natural flow conditions.

In the Upper Division, most of the Bear River streamflow originates on the north slopes of the Uinta Mountains and flows northward across the state line into Wyoming. The USGS Utah-Wyoming State Line Gage has been used as a good indicator gage of the water supply generally available above Bear Lake and, in particular, to the Upper Division.

Inflow from the Smith's Fork to the Bear River in the Central Division often represents half, or more, of the combined flow of the Bear River at this location. Therefore, the USGS gage on Smith's Fork has been used by the Commission as an indicator of the available water supply in the Central Division.

A large amount of the available water supply in the Lower Division originates and is diverted in the Cache Valley. The major streams which are tributary to the Bear River in the Cache Valley originate in the mountains on the east side of the valley. One of these tributaries, the Logan River, has been used by the Commission as a good indicator gage of the water supply available for diversion in the Cache Valley and, in general, in the Lower Division. A canal diverts from the Logan River above the USGS gaging station. Hence, in order to gain a good record of approximate natural flow conditions, the canal diversion data are added to the USGS stream gage data to generate a combined Logan River flow value. It is this combined Logan River data which is used as an indicator of the general water supply in the Lower Division.

Streamflow Distribution

The administration of the distribution of the waters of the Bear River between the three Compact states and the various subdivisions of the river, as defined by the Compact (the river crosses state lines five times), is defined by the original Compact. When the flow of the river in the Upper and Central Divisions decreases to certain levels, the Engineer-

Manager is to declare a "water emergency" and supervise the allocation of water between the sections within the divisions of the river as directed by the Compact.

The Compact provides that in the Upper Division, which comprises all of the Basin from its headwaters down to and including Pixley Dam, there shall be two sections administered in Wyoming and two sections administered in Utah. The Compact provides that when the total natural flow diversion 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 the sections as follows:

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

The Amended Compact further provides in Article IV.A.1.e. that:

If for any reason the aggregate of all diversions in a river section of the Upper Division does not equal the allocation of water thereto, the unused portion of such allocation shall be available for use in the other river sections in the Upper Division in the following order: (1) In the other river section of the same State in which the unused allocation occurs; and (2) in the river sections of the other State. No permanent right of use shall be established by the distribution of water pursuant to this paragraph e.

The Compact defines the Central Division as comprising that part of the Basin from Pixley Dam down to and including Stewart Dam (the point of diversion to Bear Lake). It includes one section in Wyoming and one in Idaho.

Divertible flow in the Central Division is the sum of diversions from Smith’s Fork and designated tributaries, diversions from Bear River in the division, diversion to Bear Lake via the Rainbow Inlet Canal, and flow passing Stewart Dam. A water emergency shall exist when this divertible flow is less than 870 cfs, or when the flow of the Bear River entering Idaho (gaging station at Border) is less than 350 cfs. Wyoming diversions are limited to 43 percent of divertible flow during a water emergency.

Procedures for the Lower Division Water Delivery were adopted several years ago. No formal requests for the declaration of a water emergency in the Lower Division have ever been received by the Commission, though water is distributed by the States of Idaho and Utah with similar water right accounting models which essentially distribute water between users similar to what would occur if a water emergency were declared in the Lower Division.

Stream Gaging Program

The Commission has concluded a record of the stream flows in the Bear River drainage is most important as this record is needed: 1) for the measurement and subsequent distribution of waters during the irrigation season in compliance with the Compact; 2) to verify the

compliance of diversions with the Compact; 3) for the review of the Compact, as is required from time to time; and 4) for the three states to plan for water resource use and development. As an indication of the Commission's commitment to the stream-gaging program, the Commission allocated in the biennium about half of its budget to the stream-gaging program. PacifiCorp, the individual states, and water user organizations maintain additional records of stream flows and canal diversions. A composite of all of the records is needed to accurately reflect the waters available for use in the Bear River drainage.

All of the stream gages supported by the Commission are operated and maintained by the U.S. Geological Survey (USGS). The USGS is well recognized as a leader in stream-gaging technologies, and their records are used as a standard for planning, water distribution and legal purposes. The cooperative agreement between the Bear River Commission and the USGS provides that both contribute to the funding of the program. The adequacy of the stream-gaging program is constantly reviewed by the Commission's TAC, by Commission members and by the USGS.

Lists of the individual gages supported during the biennium and the records of key gages during the biennium are made a part of this report, and respective detail is provided in the 20219 and 2022 chapters of this report. The locations of the gages that were in operation during the biennial period are shown in Figure O.5.

BIENNIUM STATE ADMINISTRATION

Article XI of the Amended Compact provides that applications for appropriation or change in water use within each state shall be in accordance with individual state law, except no such application shall be approved if the effect will deprive water users within another state or increase the depletion beyond that which is provided for under the Compact. This article further requires that state officials report, in a format and at intervals established by the Commission, the status of their respective allocations and uses. The Commission has determined the best format for reporting such changes in use is the Biennial Report. Details of state water-related activities are shown in the respective years' write-ups.

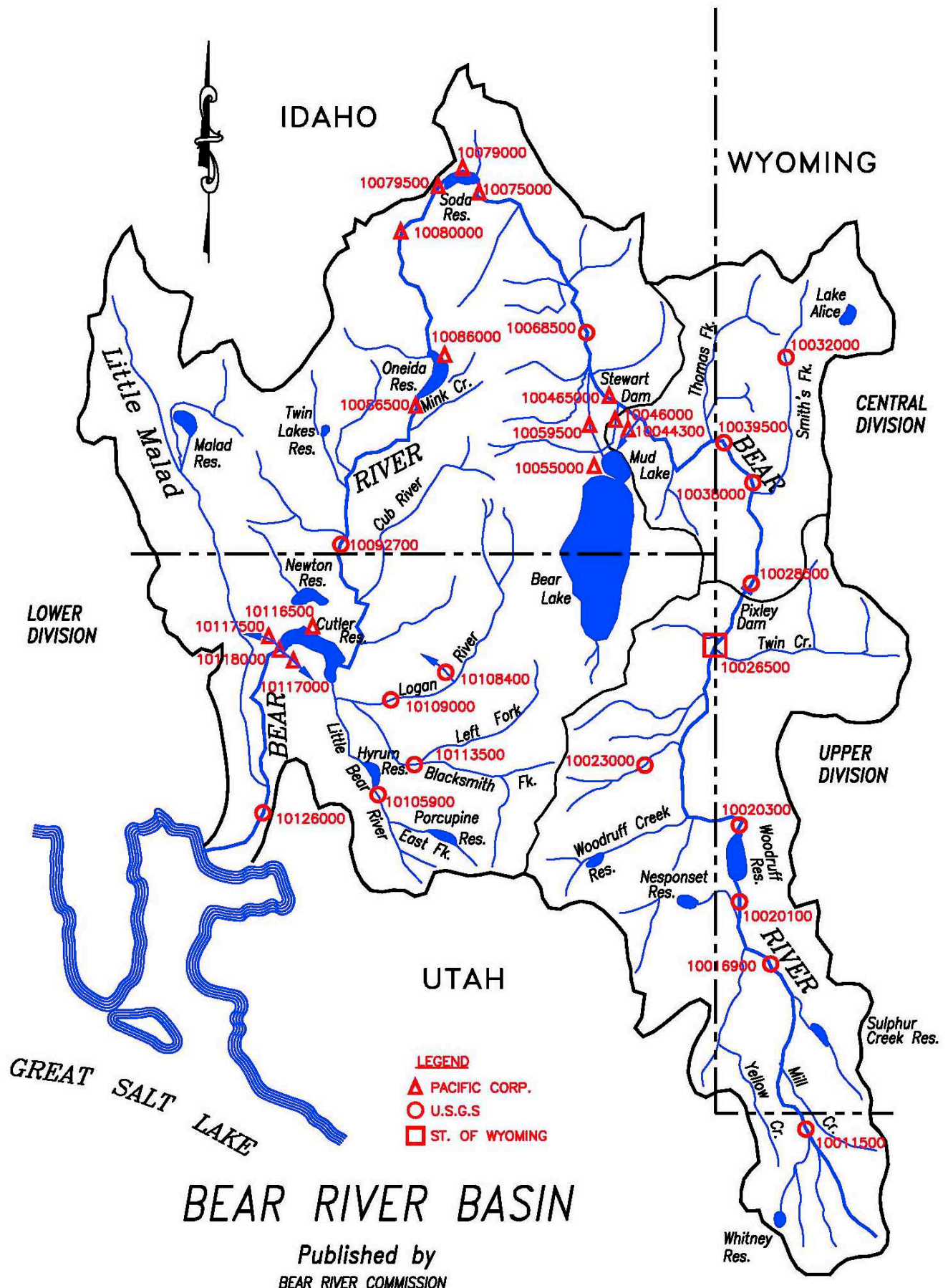


Figure O.5

WATER QUALITY EFFORTS

The water quality agencies within each of the three Bear River States supported the Commission creating the Water Quality Committee. It was determined that the three state lead water quality administrators would serve as committee members. The committee generally reports twice each year at the Commission meetings regarding its activities. At the time of the creation of the Water Quality Committee, the Bear River Water Quality Task Force was already in existence. Technical representatives from the three states' water quality agencies co-chair this task force which meets three times a year in the basin and which serves as a support to the committee in identifying, reviewing, coordinating and reporting water quality activities within the Bear River Basin. Though water quality administration is not a specific charge in the Compact, water quality issues certainly become entwined in water administration within the Basin. Not only has the committee worked effectively on some cross-discipline issues, but the cooperation fostered within the water quality administration arena has been most notable and worthwhile.

In order for water quality streamflow data to be meaningful, there is a need for streamflow information. The Commission financially supports the stream gaging program in cooperation with the USGS which collects basic hydrologic information in the Bear River drainage. The water quality agencies, through the Water Quality Committee, have agreed to financially support a portion of the overall stream gaging costs as well.

In conjunction with the Commission's 20-year Compact review effort, the Water Quality Committee took a look back at its accomplishments, since it was created twenty years earlier, and began a strategic planning process to look at where it wants to direct efforts in the future. It also provided input and guidance to the Commission on comments which were submitted in the 20-year Compact review effort. The Water Quality Committees efforts on its strategic planning process continued through the biennial period.

As reported in previous biennial reports, with the assistance of an EPA grant, a Bear River Water Information System (WIS) was created as a massive repository of hydrologic and water quality information. This valuable tool is housed at Utah State University (USU) (bearriverinfo.org). During the biennial period, the three states, through the Water Quality Committee, continued to financially and functionally support the maintenance of the WIS at USU.

During the biennial period, the Water Quality Committee continued to coordinate and report on TMDL efforts within the states. Many of the discussions of the committee focused on sediment load in the Bear River, including a TMDL in the Upper Bear River Basin in Wyoming. They also looked at sediment issues associated with the Mud Lake complex, along with potential studies. At their meetings they discussed issues with Harmful Algal Blooms within their states and began to plan an intensive synoptic survey of water quality above Bear Lake. Also, during this period, the Water Quality Committee continued a joint effort by USGS, Bear Lake Watch, PacifiCorp and the three state water quality agencies in the maintenance of two water quality platforms on Bear Lake. This five-year effort will seek to better understand changes to water quality within the lake.

At each of the meetings the three states discussed their efforts with respect to water quality administration in the river. This is most valuable as the Bear River winds its way from the headwaters to its terminus in the Great Salt Lake by crossing state lines five times, creating six separate sections of the river in the three states. Continued discussions concerning each state's water quality standards and their TMDL efforts have been most productive, and discussions at the Water Quality Committee meetings and Bear River Water Quality Task Force meetings have helped inform administrators and coordinate efforts.

2021 WATER SUPPLY AND DISTRIBUTION REPORT

2021 Water Supply and Distribution Report

OVERVIEW

The water supply in 2021 was near record low with irrigation season stream flow varying from 36% to 54% of normal. The only bright spot in the water was fairly significant and widespread precipitation during August. Thankfully, due to the good water year in 2017, Bear Lake began the 2021 water year in fairly good shape. The other reservoirs had limited carryover. Except for August, summer precipitation was well below normal. A water emergency was declared at the start of May in the Central Division and continued for the entire irrigation season. Despite the poor water year, water was fairly distributed between the States pursuant to the Compact.

WATER SUPPLY

Three stream gages, one in each division of the river, have been used by the Commission as indicator gages of the relative supply available for each of the divisions of the river (see Stream Gaging Program section in the Overview chapter). The Utah-Wyoming State Line and Smith's Fork gages measure a major portion of the stream flow in the Upper and Central Divisions, respectively. The Logan River is a major tributary to the Bear River in Cache Valley, which is in the Lower Division. Specific discharges, as measured by the USGS for the three gages during 2021, compared with the long-term averages, are summarized in Figure 2021.1, and are graphically illustrated in Figures 2021.2 through 2021.4 on the subsequent pages.

Figure 2021.1 shows a summary of the volumetric discharge for each of these gages for the water year. As the water supply available during the irrigation season is most critical for filling the natural flow rights, the discharge as measured at these gages during the irrigation season is also shown in Figure 2021.1.

Figures 2021.2 through 2021.4 show hydrographs for each of these three gaging stations. On each hydrograph, the mean daily flow during the irrigation season is plotted against the average of the mean daily flows for the period 1943 through 2021. The area between the 2021 hydrographs and the mean hydrographs represents the difference in volume of water discharged during 2021 versus the long-term average. This volumetric difference is illustrated by the bar charts shown on each of the figures.

As can be seen in Figure 2021.1, the annual discharge for the Upper Division (Utah-Wyoming State Line gage) was 56 percent of the long-term average, and streamflow on Smith's Fork and the Logan Rivers were 54 percent and 48 percent, respectively, the latter being the second lowest during the period of record which began in 1943. More important to the irrigation diversions than the streamflow during the water year is the streamflow during the irrigation

season of May through September. During this period, the water supply was 54 percent (Upper Division) (third lowest ever), 48 percent (Central Division), and 39 percent (Lower Division) (third lowest ever).

2021 Water Supply Summary by Division

2021 WATER YEAR

(Discharge in Acre-feet)

GAGE	AVERAGE (1943-21)	2021	PERCENT
Upper Division (UT-WY State Line)	138,700	77,300	56%
Central Division (Smith's Fork)	136,300	74,100	54%
Lower Division (Logan River)	179,800	86,700	48%

2021 IRRIGATION SEASON

MAY - SEPTEMBER

(Discharge in Acre-feet)

GAGE	AVERAGE (1943-21)	2021	PERCENT
Upper Division (UT-WY State Line)	114,200	61,600	54%
Central Division (Smith's Fork)	101,100	49,000	48%
Lower Division (Logan River)	119,900	46,200	39%

Figure 2021.1

One item of interest to note is that the April 1 streamflow forecasts for the April – September period were reasonably close to the realized amounts with the forecasts 7% to 14% above actual stream flows realized during the irrigation season. The forecasted amounts on April 1 were 63%, 68% and 57%, respectively.

A closer look at the three hydrographs (Figures 2021.2, 2021.3 and 2021.4) is also insightful when one is trying to understand the natural flow water supply in the spring and summer of 2021. In the Upper Division the streamflow was quite variable with three different peaks until early June when the flow dropped off to well below normal until a significant rain event in mid-August. In the Central and Lower Divisions, the streamflow was quite lackluster with muted peaks and well below normal flows during the entire irrigation season.

2021 - Upper Division Water Supply

Flow at Utah-Wyoming State Line Gage

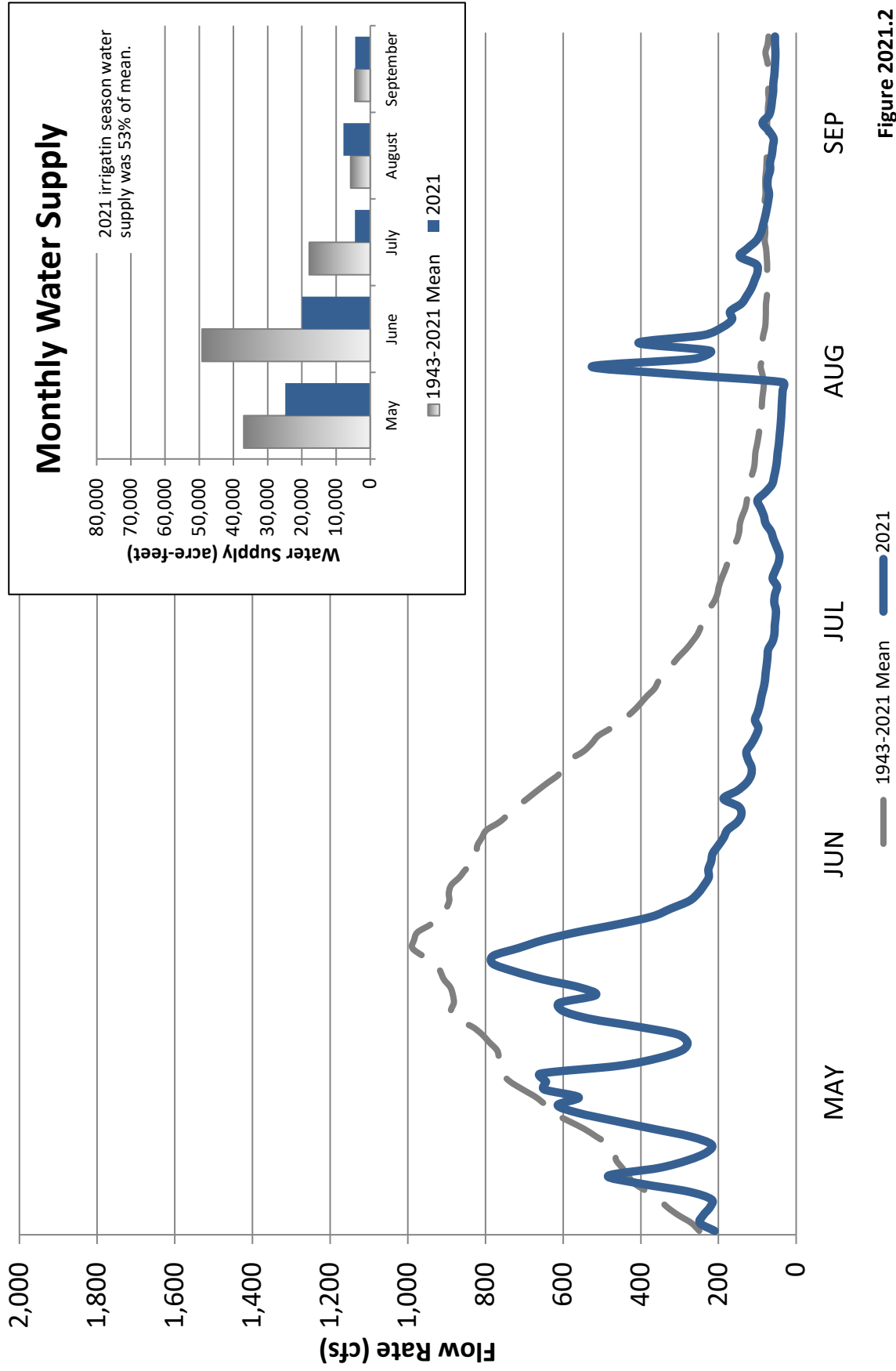


Figure 2021.2

2021 - Central Division Water Supply

Flow at Smiths Fork near Border, Wyoming Gage

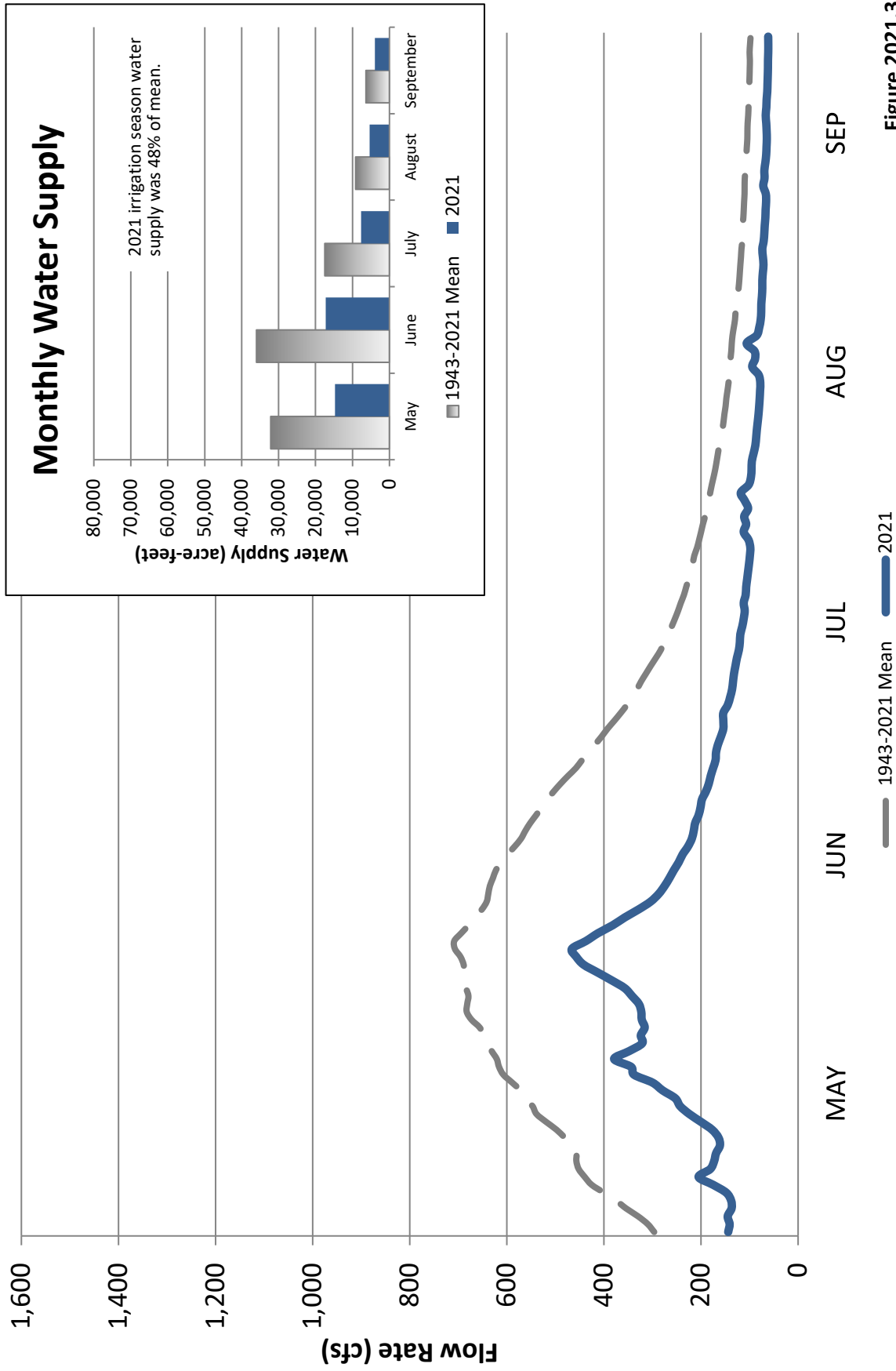


Figure 2021.3

2021 - Lower Division Water Supply Flow at Logan River Combined Gage

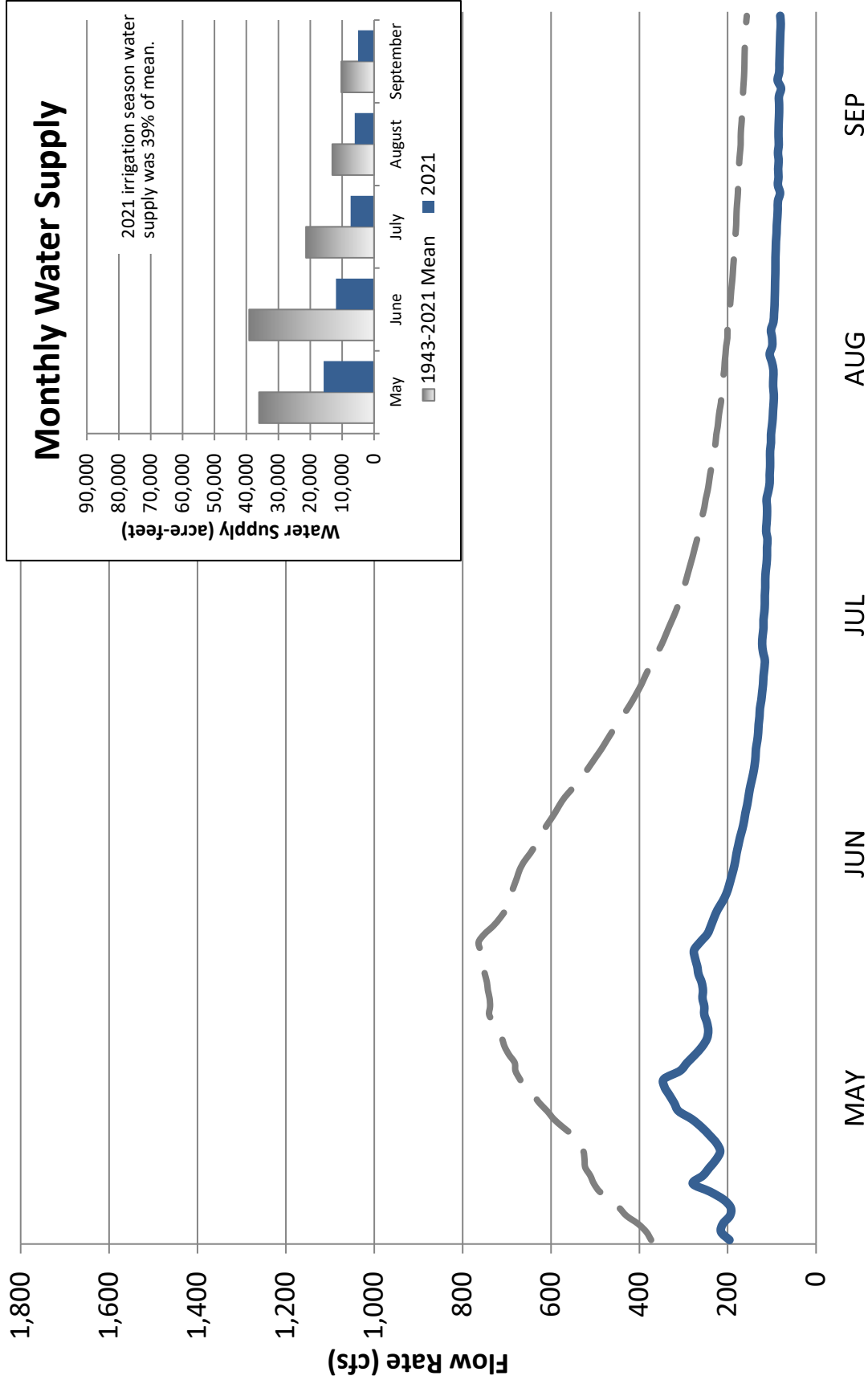
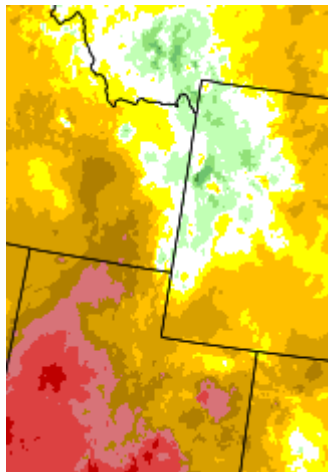
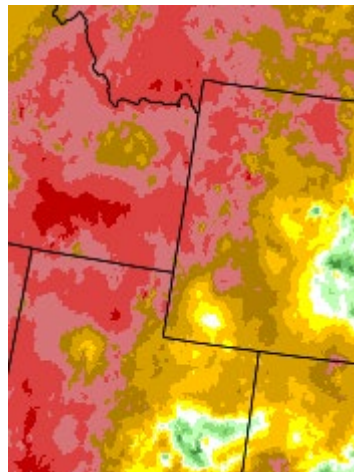


Figure 2021.4

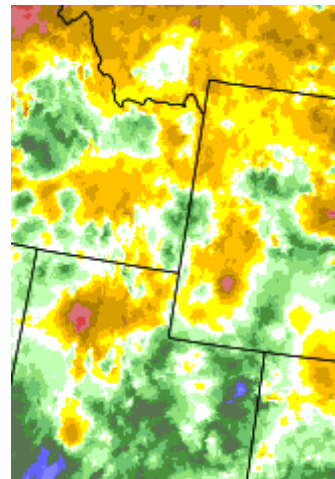
Historically the Commission has focused on the snowpack with its attendant streamflow forecasts as the main indicator of water supply. However, in recent years, the impact of summer precipitation has become more apparent as an important portion of the irrigation water supply. After well below normal precipitation in May and June 2021, the precipitation was mixed in July with some areas above normal and others below. However, August had very significant and widespread precipitation throughout the Bear River Basin. This was followed by a drier than normal September.



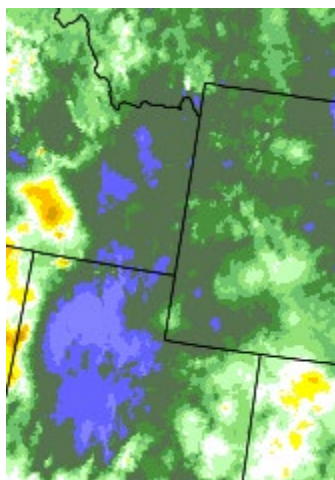
May 2021



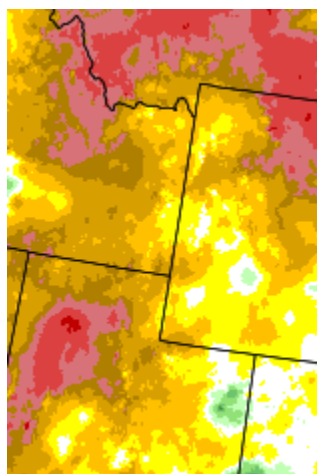
June 2021



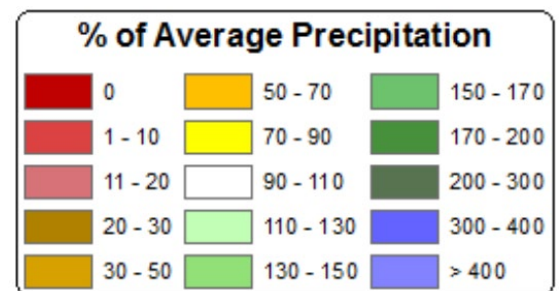
July 2021



August 2021



September 2021



STORAGE

Storage supplies along the Bear River have a notable impact on the water resources available for irrigation each year. Because of the limited water supply in 2020, the 2021 storage season began with limited carryover storage, and, with very poor water supply in most reservoirs only had limited fill in the spring before being further drafted during the irrigation season. Woodruff Narrows Reservoir is the largest reservoir in the Upper Division. However, Whitney, Sulphur Creek, and Woodruff Creek Reservoirs also provide for notable amounts of winter storage.

Paragraph B of Article VI of the Amended Compact, which allows for additional storage rights above Stewart Dam, also has a provision which restricts storage to occur if the water surface elevation at Bear Lake is below an elevation of 5911.0 (UP&L Datum). About two-thirds of the storage which is assigned to Woodruff Narrows Reservoir, from both the States of Utah and Wyoming, falls under this provision of the Amended Compact. Bear Lake began the storage season above 5916, and therefore, well above the 5911-foot elevation storage restriction and so this limit did not apply during the 2021 storage season.

Prior to 1997, a gage was maintained, with Commission funding, by the USGS on Woodruff Narrows Reservoir. The gage included a recorder which allowed for preservation of daily values. Since this time, periodic measurements have been kept by the Woodruff Narrows Reservoir Company in coordination with the Wyoming State Engineer's Office. In 2013 a real-time water level gage was installed at Woodruff Narrows Reservoir. Figure 2021.5 shows the maximum and minimum contents for the Woodruff Narrows Reservoir since its enlargement in 1980.

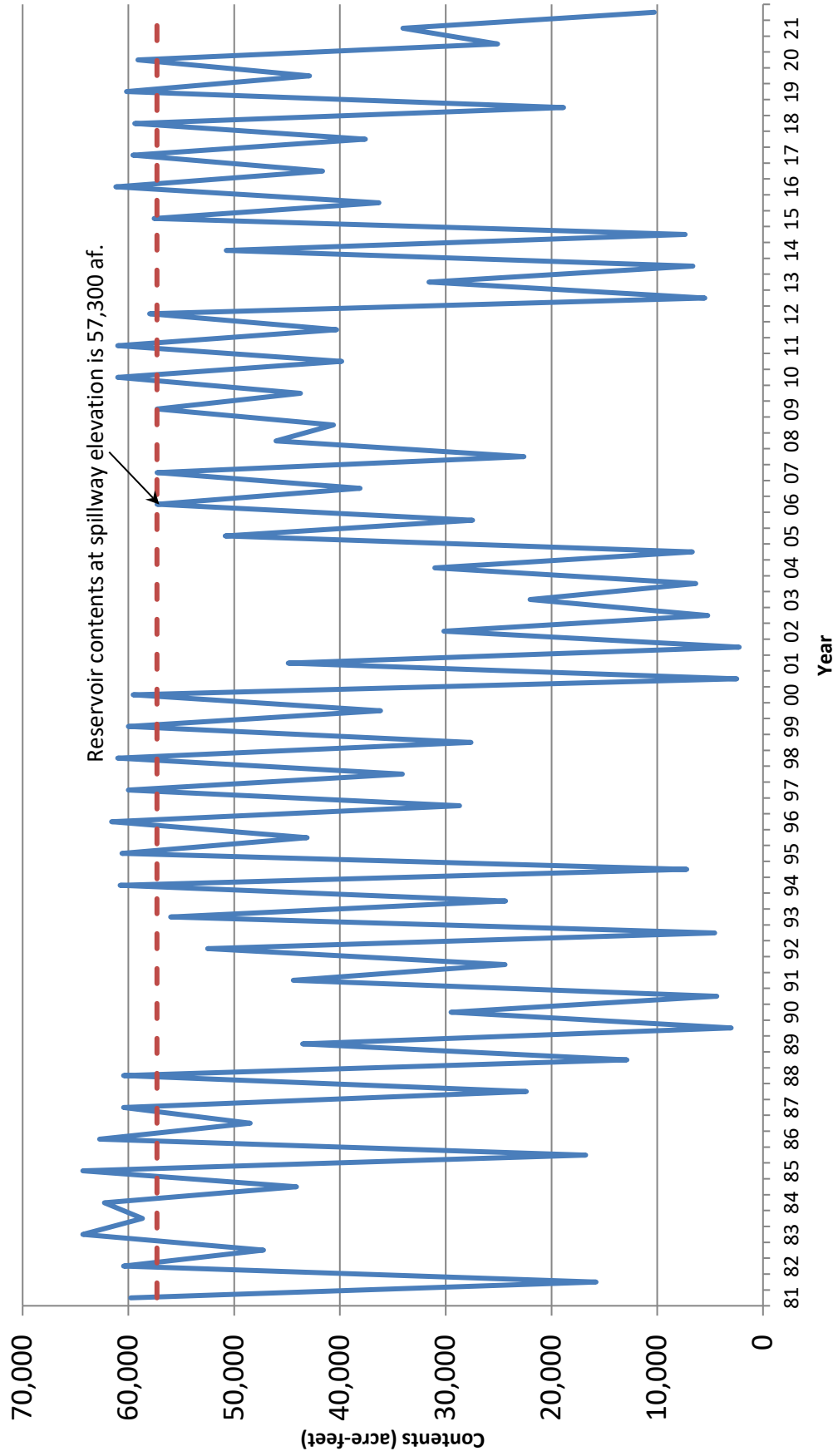
The spillway crest of Woodruff Narrows Dam is at an elevation of 6454.5 feet and when the water level is at this elevation, the content is 57,300 acre-feet. Hence, when the reservoir is spilling, the contents above this amount represent uncontrolled storage as this storage is only temporary and cannot be controlled by the reservoir company. Generally, during spill periods, the reservoir company is often releasing significant flows through its outlet works as well. Though the total contents are uncontrolled, the proportion of water discharging from the reservoir through the outlet works versus over the spillway is somewhat under the control of the reservoir company. Both discharge to the Bear River below the dam but above the stream gage, and it makes no difference to the total discharge measured into the Bear River. Because of the limited carry-over in storage from 2020 (25,100 acre-feet) coupled with the poor streamflow in 2021, Woodruff Narrows was only able to fill to a maximum content of just over 34,000 acre-feet and then, with a little more than 24,000 acre-feet of releases during the irrigation season, it carried into the 2022 storage season only about 10,000 acre-feet.

There is no significant storage in the Central Division.

The largest and most significant storage reservoir in the Lower Division, and in the entire watershed, is Bear Lake, which is at the very top of the Lower Division. Bear Lake is operated as a storage reservoir by PacifiCorp. The Compact regulates various aspects of how PacifiCorp can manage the storage of water within Bear Lake. Figure 2021.6 summarizes the 2021 Bear Lake hydrologic information and significant operational events.

Woodruff Narrows Reservoir

Annual Maximum and Minimum Contents



Note: Through the 1996 water year a gage with a recorder was maintained by the USGS on Woodruff Narrows Reservoir. From then until 2013 measurements are based on spot observations and estimates by the Woodruff Narrows Reservoir Company and the Wyoming State Engineer's Office. Since 2013, a gage and recorder has been maintained by the Wyoming State Engineer's Office. Contents above 57,300 af represent uncontrolled storage.

Figure 2021.5

**Summary of Significant
2021 Bear Lake
Hydrologic Information and Operational Events**

<u>Date</u>	<u>Hydrologic Information/Event</u>	Contents (% of Full)
		<u>Discharge (% of Normal)</u>
10-01-20	Bear Lake Beginning Elevation — 5,916.34 ft	911,791 af (64%)
11-13-20	Bear Lake Low Elevation ¹ — 5,916.07 ft ¹	893,396 af (63%)
	Rainbow Inlet Canal Discharge	60,200 af (23%)
	Bear River Discharge Below Stewart Dam	2,880 af
	Bear Lake Net Runoff (Computed Total Inflow less lake Evaporation)	-19,600 af (-6%)
05-03-21	Bear Lake High Elevation — 5,916.94 ft	952,836 af (67%)
	Outlet Canal Releases: 5/2 – 8/21; 8/26 – 10/1 (149 days irrigation releases)	249,000 af
06-16-21	Outlet Canal Maximum Release – 1,680 cfs	
	Bear Lake Storage Release ² (irrigation release 221,000 acre-feet)	236,000 af
09-30-21	Bear Lake Ending Elevation — 5,912.26 ft	638,844 af (45%)
	Bear Lake Settlement Agreement “System Loss” Volume	15,000 af

¹ Low contents prior to start of storage.

² Net irrigation storage release from Bear Lake, subtracting Rainbow inflow and the decreed adjustment for the natural yield of Bear Lake and Mud Lake area. Includes system loss volume.

³ Due to uncontrolled flow from (welcome) rain events. Whenever water flows below Cutler during the irrigation season, any storage water in the system at Cutler is the first water out. Natural flow goes to irrigators.

Figure 2021.6

Bear Lake began the 2021 water year with a little above normal carry over storage. With a dramatically reduced Rainbow Inlet flow (23% of normal) Bear Lake rose less than one foot and reached a high elevation of 5916.94 feet on May 3rd. Total storage release was significant at 249,000 acre-feet and Bear Lake ended the water year at 5912.26 feet, or 45% full.

Figure 2021.7 is a graph which shows the annual maximum and minimum elevations of Bear Lake since 1915. As described above, the beginning storage elevation (or minimum) occurred, on November 13, 2020, and thereafter PacifiCorp endeavored to store as much water in Bear Lake as was available. Figure 2021.8 is an area plot showing the daily contents in Bear Lake over the past ten years. This hydrograph and Figure 2021.7 show the impact of two very significant water years (2011 and 2017) amid average to well below average water years over the last ten-year period.

BEAR LAKE ELEVATION

Annual Maximum & Minimum Elevations

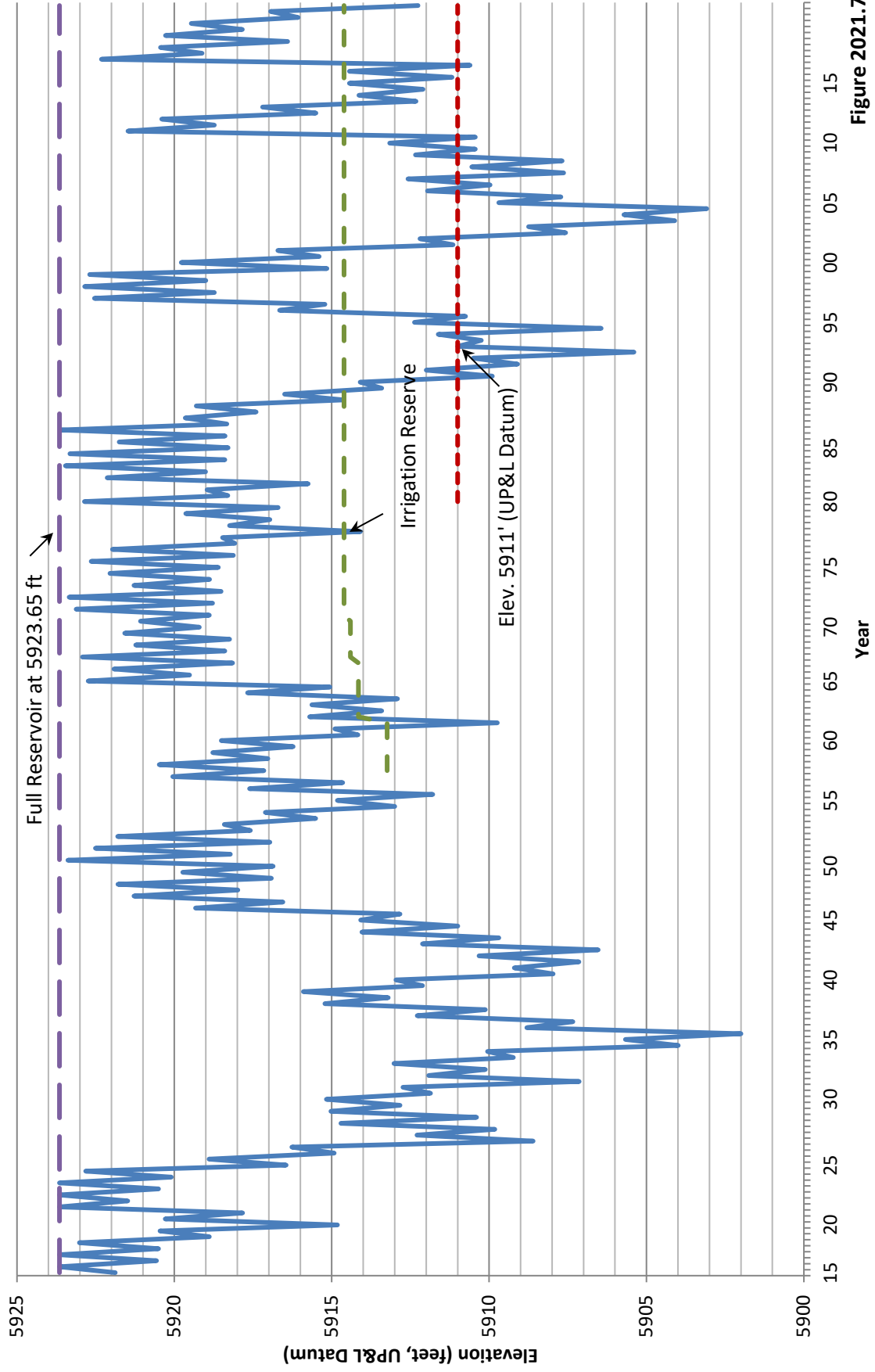


Figure 2021.7

BEAR LAKE CONTENTS

Water Years 2012 - 2021

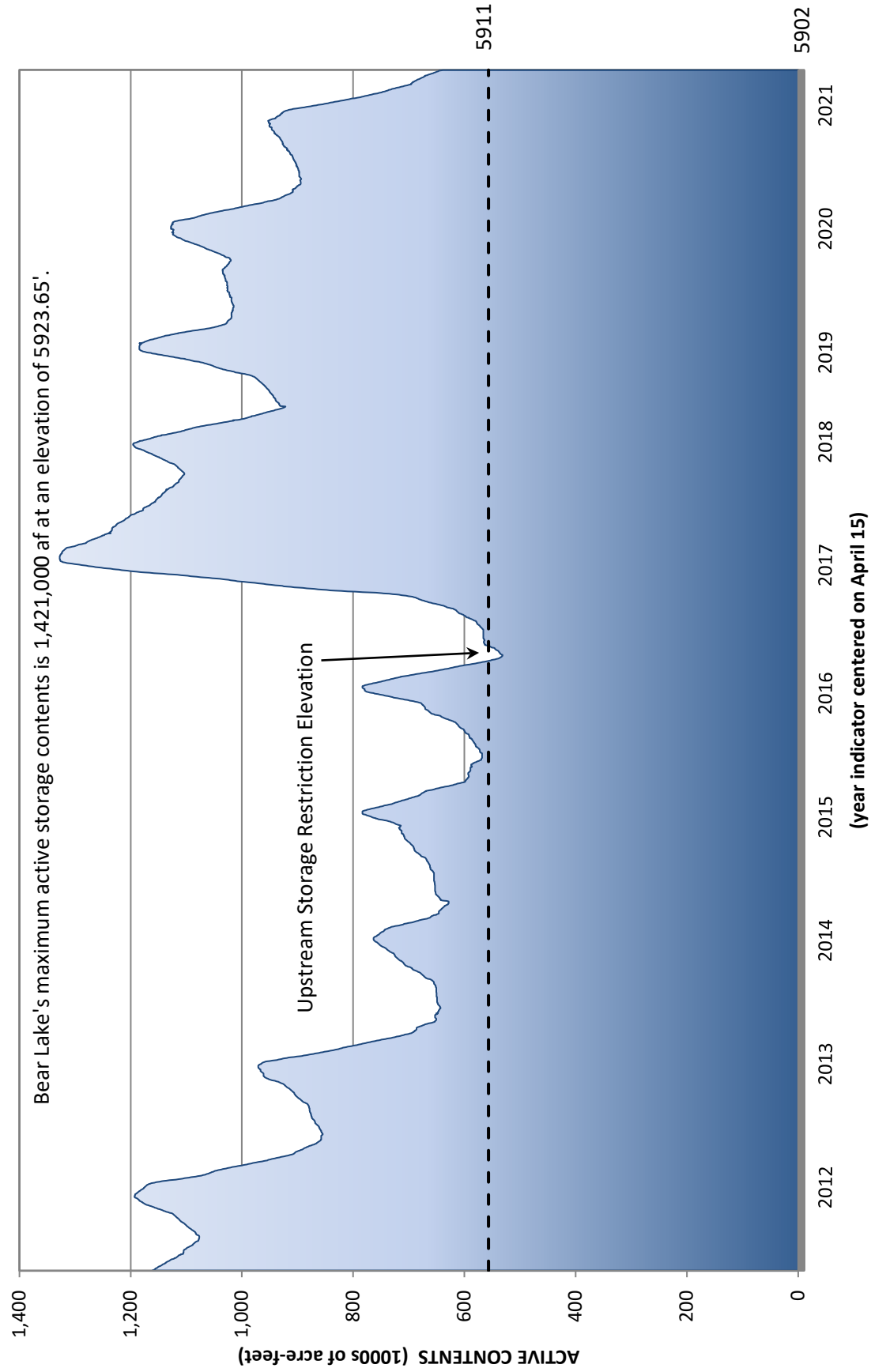


Figure 2021.8

STREAMFLOW DISTRIBUTION

General

The water administration in 2021 in the three divisions remained similar to prior years. Randy Nate became Wyoming's hydrographer in the Cokeville area. Don Barnett continued to serve as Engineer-Manager of the Bear River Commission. Each River Commissioner/Watermaster works under the direction of their State Engineer's office, but coordinates with the Commission's Engineer-Manager with regard to total diversions in each of the various sections as defined by the Compact.

During the 2021 irrigation season, the following River Commissioners/Watermasters measured and distributed water in their sections of the river:

<u>DIVISION</u>	<u>SECTION</u>	<u>RIVER COMMISSIONER/ WATERMASTER</u>
Upper	Upper Utah	Travis McInnis
	Upper Wyoming	Travis McInnis
	Lower Utah	Ron Hoffman
	Lower Wyoming	Randy Nate
Central	Wyoming	Randy Nate
	Idaho	Josh Hanks
Lower	Idaho	Josh Hanks
	Utah	Jim Watterson

Upper Division

The Upper Division divertible flow, as defined by the Compact, consists of a summation of the diversions of all of the canals in the four sections, plus waters passing Pixley Dam, less that portion of water diverted by the canals which is attributable to storage releases from Whitney, Sulphur Creek, Woodruff Narrows, and Grassy Lake Reservoirs. The Compact provides that when the total divertible flow is less than 1250 cfs, a water emergency exists. The total divertible flow was below this amount the entire irrigation season except for three days (June 4-6). Nevertheless, there was no request for interstate regulation. In recent years, users in the Upper Division have, at times, opted for the flexibility available through unofficial general cooperation and sharing of water rather than direct Compact administration.

On May 21, Woodruff Narrows Reservoir was storing 289 cfs. The next day it was releasing 522 cfs and 1043 cfs by the following day. Though the storage water was released, it was several days to a week before the full released amount was diverted and measured in canals in the Lower Utah and Lower Wyoming Sections. While this water was in transit it was not measured as part of the total divertible flow. This caused the calculated total divertible flow to drop to 19 cfs on May 23 and then slowly increase as the storage water that was in transit

began to be diverted, and then ultimately rediverted as return flows, downstream. This rapid drop in the calculated total divertible flow caused it to appear that the Upper Wyoming Section was significantly diverting above what would have been its allocation had a water emergency been in place even though it would not have been had the storage water in transit been considered. Further, in May, during the period preceding the release of storage water, the data show that the Lower Utah Section was diverting significantly less than would have been its allocation under water emergency distribution, yet, in reality its allocation was being captured in the reservoir.

During years when a water emergency has been declared, the regulation of the river is based on the weekly diversions as called in by the respective River Commissioners. At the end of each year, these River Commissioners submit to their respective State Engineers a complete written report of water deliveries. It is this information which is presented in the graphs and tables on the following pages and not the weekly totals called in during times of regulation. The weekly call-in totals, which are received during the irrigation season, differ slightly from the year-end data because of timing of call-ins and call-outs, shifts on canal ratings and other factors.

Figures 2021.9 and 2021.10 show the divertible flow and natural flow diversions in the Upper Wyoming and Lower Utah Sections, respectively. Also shown on the graphs (magenta line) is what would have been the Compact allocation had a water emergency been imposed. As can be seen in Figure 2021.10, after the peak runoff, during some of the irrigation season, diversion in the Lower Utah Section was below what would have been its allocation had a water emergency been imposed. At times, especially during the rapid falling limb of the hydrograph, this was due to over diversion in the Upper Wyoming Section and thereafter it is principally due to the fact that the water was getting past the Lower Utah Section to the Lower Wyoming Section and not due to over diversion in the Upper Wyoming Section as can be discerned by reviewing Figure 2021.9 in comparison to Figure 2021.10. Figure 2020.11 is a tabulation by month of canal diversions and shows the calculation of divertible flow (less storage release) and allocations to the respective sections, pursuant to the Compact, had a water emergency been declared. The values shown for each canal and pump in this figure represent total diversion (including both natural flow and storage), and then the storage water is subtracted out of the section totals before computing the total divertible flow.

2021 - Upper Division

Upper Wyoming Section Diversions vs Allocation

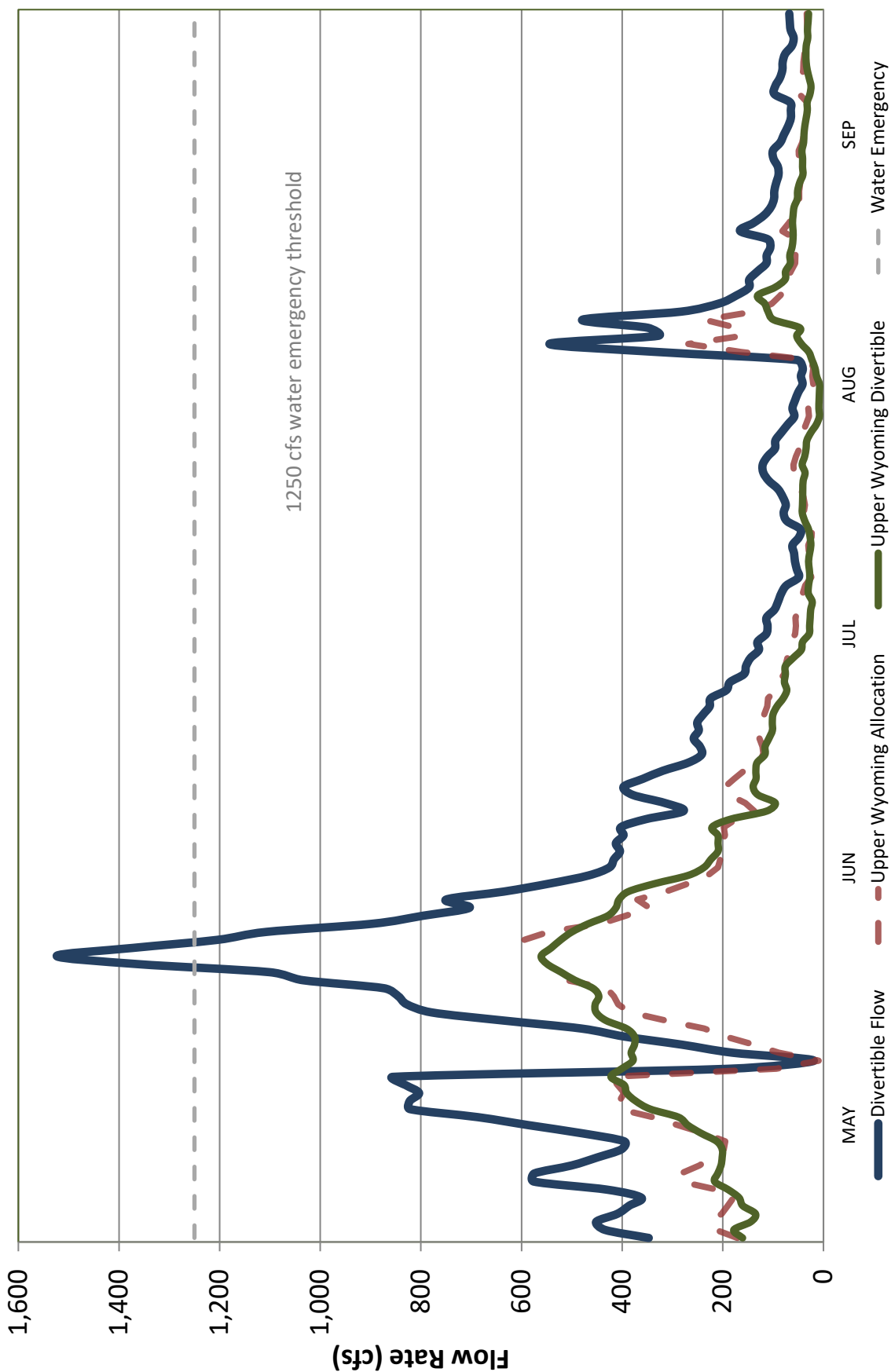


Figure 2021.9

2021- Upper Division Lower Utah Section Diversions vs Allocation

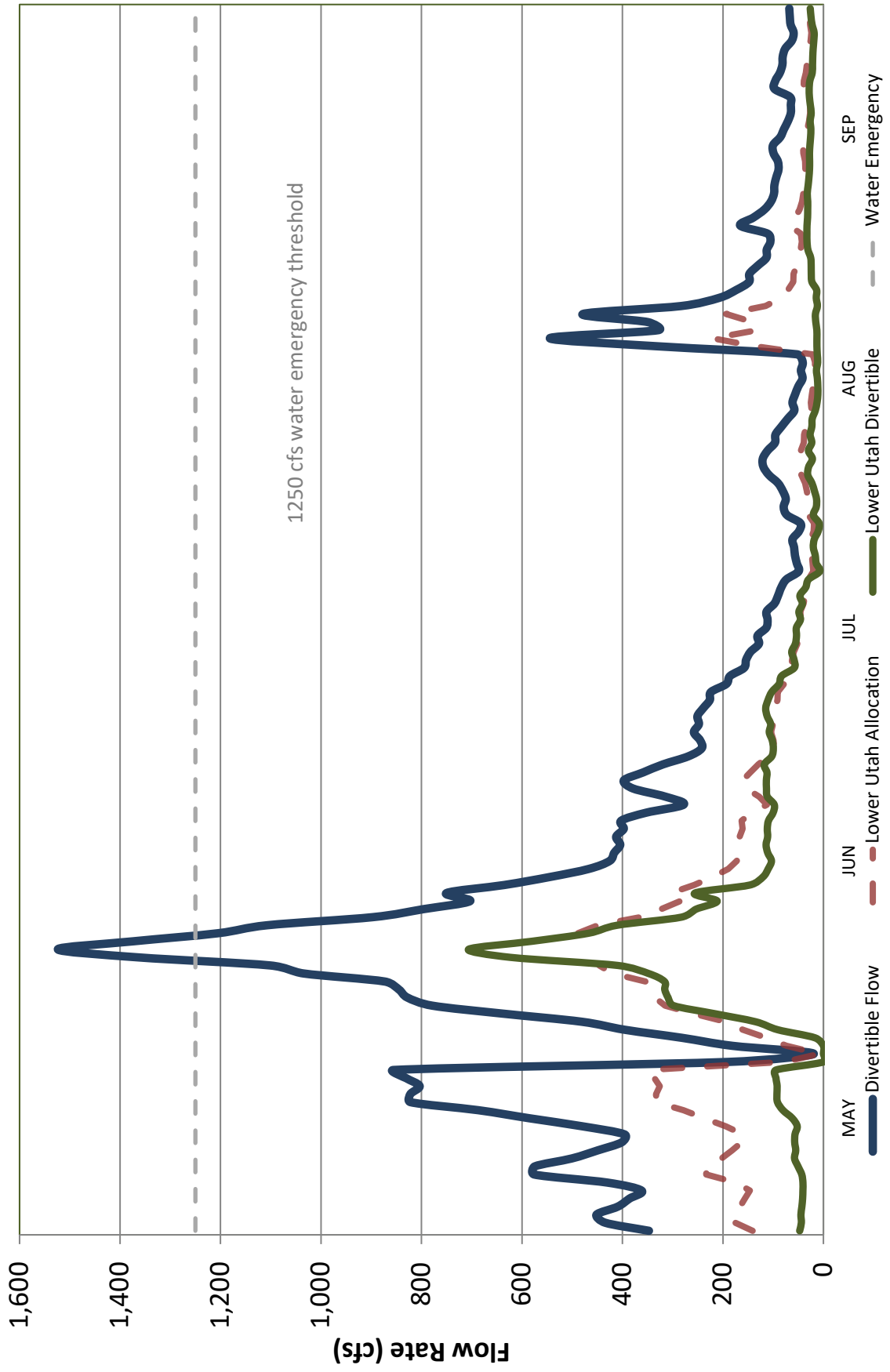


Figure 2021.10

DAILY DISCHARGE IN CFS OF BEAR RIVER CANALS WITH COMPACT ALLOCATIONS IN THE UPPER DIVISION

[illegible]

"Chapman (Stateline)" is a second measurement of flows in the Chapman Canal. As such, the values are not re-added into the Upper Wyoming total. Whitney and Sulphur Creek Reservoirs supply storage to irrigators in the Upper Wyoming Section. Woodruff Narrows storage is credited 83% to the Lower Utah Section, Bear River and Francis Lee Canal irrigators, and 17% to Wyoming irrigators.

Figure 2021.11

DAILY DISCHARGE IN CFS OF BEAR RIVER CANALS WITH COMPACT ALLOCATIONS IN THE UPPER DIVISION

	June																														
	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	
UPPER UTAH SECTION																															
Hovarka (E Fk)	8	8	9	8	8	8	8	8	7	6	6	6	6	4	4	4	2	1	1	1	5	6	6	6	6	6	6	3	2	2	
Hatch (W Fk)	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
UPPER WYOMING SECTION																															
Hilliard East Fork (E Fk)	27	28	28	28	28	24	24	27	27	26	26	26	25	25	25	24	21	17	16	17	11	0	0	0	0	0	0	0	0	0	0
Lannon & Lone Mtn	19	21	22	22	22	22	24	21	18	18	18	18	15	13	10	11	12	12	12	12	12	12	12	12	12	12	9	8	8	8	
Hilliard West Side	32	33	33	32	31	30	33	33	33	32	32	32	31	31	31	24	20	20	20	20	7	0	0	0	0	0	0	0	0	0	0
Bear (Bear R)	73	85	86	93	94	91	89	88	75	67	67	66	65	65	58	55	52	50	50	50	20	10	10	10	10	10	10	10	10	10	10
Tropic	3	2	2	2	2	2	2	2	2	2	4	5	5	5	3	2	2	2	6	10	2	0	0	0	0	0	0	0	0	0	0
Kreider Domestic Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Danielson	6	5	3	4	6	7	6	4	7	5	3	4	4	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crown & Pine Grove	26	25	24	26	25	24	22	19	22	21	19	24	25	24	24	24	10	2	2	2	7	10	10	10	6	4	4	4	8	9	
McGraw	16	16	16	16	15	15	15	15	15	15	15	14	14	10	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Lewis (D4)	3	3	3	5	5	5	5	2	2	2	2	2	5	6	5	6	5	2	2	2	1	1	0	0	0	0	0	0	0	0	0
Homer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lewis and Blanchard	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0
Myers No. 2	4	4	5	5	5	4	4	4	3	2	2	2	2	1	1	1	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0
Hare	1	4	4	4	4	4	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0
Coffman	2	2	2	2	2	2	2	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Knoder	1	1	3	4	4	5	5	5	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Myers No. 1	4	4	6	8	6	6	5	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Myers Irr	5	5	4	1	1	1	2	2	3	4	4	4	4	4	3	3	4	4	4	4	4	4	3	3	4	4	3	3	3	3	3
Evanston Pipeline	0	0	11	11	11	11	11	11	11	10	10	10	10	10	12	14	15	14	10	10	10	10	10	10	9	8	8	8	9	9	
Booth	13	14	14	15	15	14	14	13	12	11	11	11	11	11	11	11	11	8	7	7	7	7	6	5	5	5	5	5	5	5	5
Anel Irr	3	6	7	8	9	11	11	10	10	7	6	6	6	6	6	6	6	5	7	7	6	6	6	6	6	6	6	6	6	6	6
Cornellson	1	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Ev Water Supply (and Anderson)	5	5	5	5	5	5	5	5	5	5	5	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Knight No. 2 (and No. 1)	7	7	7	7	6	6	6	6	5	5	5	4	4	4	3	4	4	5	5	5	5	4	3	3	3	3	3	3	3	3	3
"State Hospital Ditch"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Evanston Water	19	21	21	22	22	21	20	20	18	17	15	13	12	15	17	17	16	16	17	17	16	16	17	15	15	16	15	15	14	13	
Wilson Irr	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Faulkner	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rocky Mtn & Blyth (and Crompton)	8	8	9	9	8	7	6	5	8	8	6	6	5	5	5	4	4	4	4	4	4	4	4	4	5	5	5	5	4	4	4
B.E.A.R. Project PL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fife Irr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Johnston & Narramore	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Sim's Creek Slough Diversion	9	10	11	11	11	11	9	9	7	7	6	6	5	5	7	6	6	6	6	6	6	6	6	6	6	3	1	1	1	1	1
John Sims	9	10	10	13	16	16	16	15	13	7	6	5	5	5	8	7	6	6	6	6	6	6	6	6	4	3	3	3	5	7	7
Michael Sims	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S. P.	9	9	10	10	13	13	13	12	11	9	8	7	6	5	5	5	5	5	5	5	4	3	3	4	2	2	2	2	5	4	3
Almy	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sims, Blight & Turner	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bowns	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nixon West Side	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turner	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chapman (Headgate)	93	99	105	112	115	107	101	93	85	79	75	71	62	62	64	89	89	92	92	90	88	86	26	12	41	57	55	52	49	43	
Chapman (Stataline, incl'd above)	57	53	53	57	67	74	69	58	49	42	38	33	29	18	19	32	41	43	44	44	43	40	20	9	12	19	14	15	15	15	15
Morris Bros Irr (Lower)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	1	0	0	0	0	0
Bowns & Bruce	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Olson No. 1 Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0</														

July

NOTE: "Chapman (Stateline)" is a second measurement of flows in the Chapman Canal. As such, the values are not re-added into the Upper Wyoming total. Whitney and Sulphur Creek Reservoirs supply storage to irrigators in the Upper Wyoming Section. Woodruff Narrows storage is credited 83% to the Lower Utah Section, Bear River and Francis Lee Canal irrigators, and 17% to Wyoming irrigators.

21-18

DAILY DISCHARGE IN CFS OF BEAR RIVER CANALS WITH COMPACT ALLOCATIONS IN THE UPPER DIVISION

[illegible]

"Chapman (Stateline)" is a second measurement of flows in the Chapman Canal. As such, the values are not re-added into the Upper Wyoming total. Whitney and Sulphur Creek Reservoirs supply storage to irrigators in the Upper Wyoming Section. Woodruff Narrows storage is credited 83% to the Lower Utah Section, Bear River and Francis Lee Canal irrigators, and 17% to Wyoming irrigators.

Figure 2021.11 (cont.)

[illegible]

NOTE: "Chapman (Stateline)" is a second measurement of flows in the Chapman Canal. As such, the values are not re-added into the Upper Wyoming total. Whitney and Sulphur Creek Reservoirs supply storage to irrigators in the Upper Wyoming Section. Woodruff Narrows storage is credited 83% to the Lower Utah Section, Bear River and Francis Lee Canal irrigators, and 17% to Wyoming irrigators.

21-20

Central Division

The Compact provides that a water emergency shall be deemed to exist when the divertible flow in the Central Division drops below 870 cfs. A water emergency shall also be deemed to exist in the Central Division if the flow rate at the Border Gage drops below 350 cfs. The Compact provides that once a water emergency is deemed to exist, diversions in the State of Wyoming are to be limited to 43 percent of the total divertible flow. The remaining 57 percent is available for use within Idaho.

During the irrigation, the Engineer-Manager, in coordination with the state river commissioners/watermasters, watches the flows in the Central Division to determine when a water emergency is being approached. Given the very dry water year, based on the call-in of diversion data during the first week of May, it was confirmed that the total divertible flow as defined by the Compact was below the water emergency trigger of 870 cfs (the flow at the Border Gage was also well below the 350 cfs water emergency threshold). Figure 2021.12 shows the weekly call-in/call-out information for the Central Division. Shown with the black triangles is the total divertible flow as defined by the Compact. The green circles show Wyoming diversion data with the solid circles showing actual diversions and the hollow circles showing Wyoming's allocation (43%). Similarly, the brown squares show the Idaho data with the hollow squares showing Idaho's allocation (57%) and the solid squares showing total water available to Idaho. These values include not only diversions to Idaho canals and pumps but also water bypassing Stewart Dam as well as water flowing into the Rainbow Inlet Canal. The grey diamonds show the calculated gains/losses in the Idaho Section of the River which is determined by subtracting the flows at the Border Gage from the sum of the Idaho diversions plus discharge into the Rainbow Inlet Canal and flows bypassing Stewart Dam. The red triangles represent the forecasted divertible flow each week. The solid dark blue line is the flow at the Border Gage. It is important to note that, though efforts are made to ensure the quality of data, these values represent the preliminary, real-time flow and diversion data that are available each week as the irrigation season progresses. In order to adjust for lag-time in flows from Wyoming to Idaho, the typical weekly process is for Wyoming to measure/regulate its diversions on Monday and Tuesday, Idaho to do its diversions on Thursday and then for the call-out/regulation for the next week to occur on Friday. In 2021 the weekly call-in/call-out practice commenced on May 1 and on May 3 a water emergency was declared, and interstate regulation commenced. This continued until September 30 when the water emergency ceased pursuant to the Compact.

After the close of the irrigation season final diversion and flow data are tabulated. Figures 2021.13 and 2021.14 graphically illustrate the Central Division's divertible flow and the respective allocations and diversions by the Wyoming and Idaho Sections under a water emergency. The flow passing the Border Gage is not illustrated on these figures as it confuses the diversion and allocation data. In viewing Figure 2021.13 and 2021.14, one will note that regulation was very tight with the watermasters/river commissioners and water users working aggressively to properly distribute the limited water supply. It is important to note that on Figure 2021.14 the line labeled as "Available to Idaho" represents the summation of diversions within the State of Idaho, as well as flow passing Stewart Dam and diversion to the Rainbow Inlet Canal. As the Compact provides that 57 percent of the Central Division's divertible flow

shall be available for use within Idaho, this line is used to show whether such provision of the Compact was met. However, the Compact also provides that if Idaho elects to not divert into its canals its full entitlement, a portion of its allocation can pass into the Lower Division via the Rainbow Inlet Canal or Stewart Dam. Data for these hydrographs are based on the river commissioners'/watermasters' annual reports to their respective state water agencies.

Figure 2021.15 shows a compilation of daily canal diversions as provided by the respective river commissioners/watermasters. The Wyoming and Idaho Sections' diversions and allocations are tabulated and summarized at the bottom of each page. The pages are divided such that there is one month's data per page. As the flow of the Bear River at the Border Gage could also be critical to the declaration of a water emergency, as defined by the Compact, this gage's data are also shown in these tables. Despite the dryness of the year, there was very good cooperation between the Wyoming and Idaho river commissioners/watermasters in administering water distribution throughout this irrigation season.

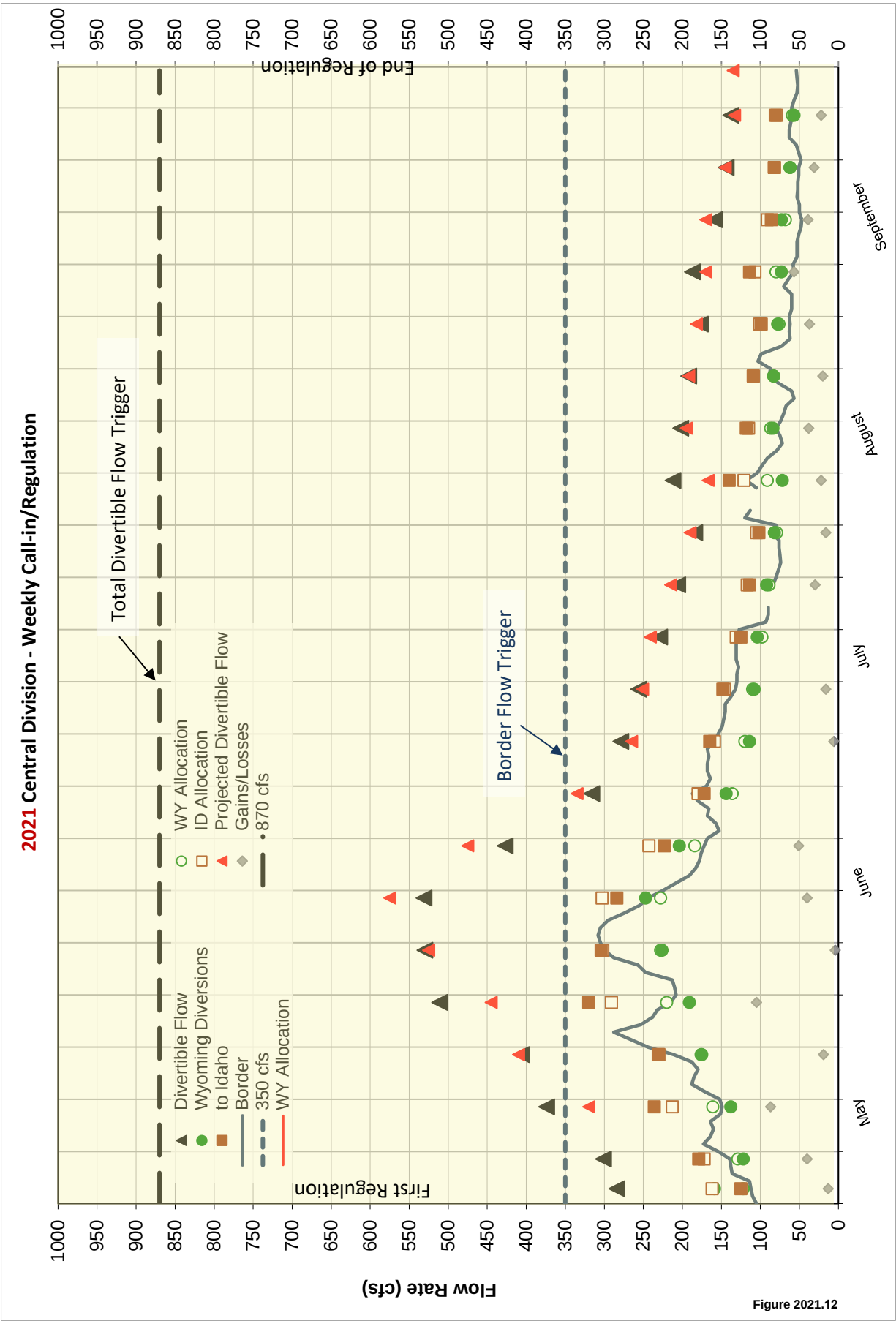


Figure 2021.12

2021 - Central Division Distribution

Wyoming Section Diversions vs Allocation

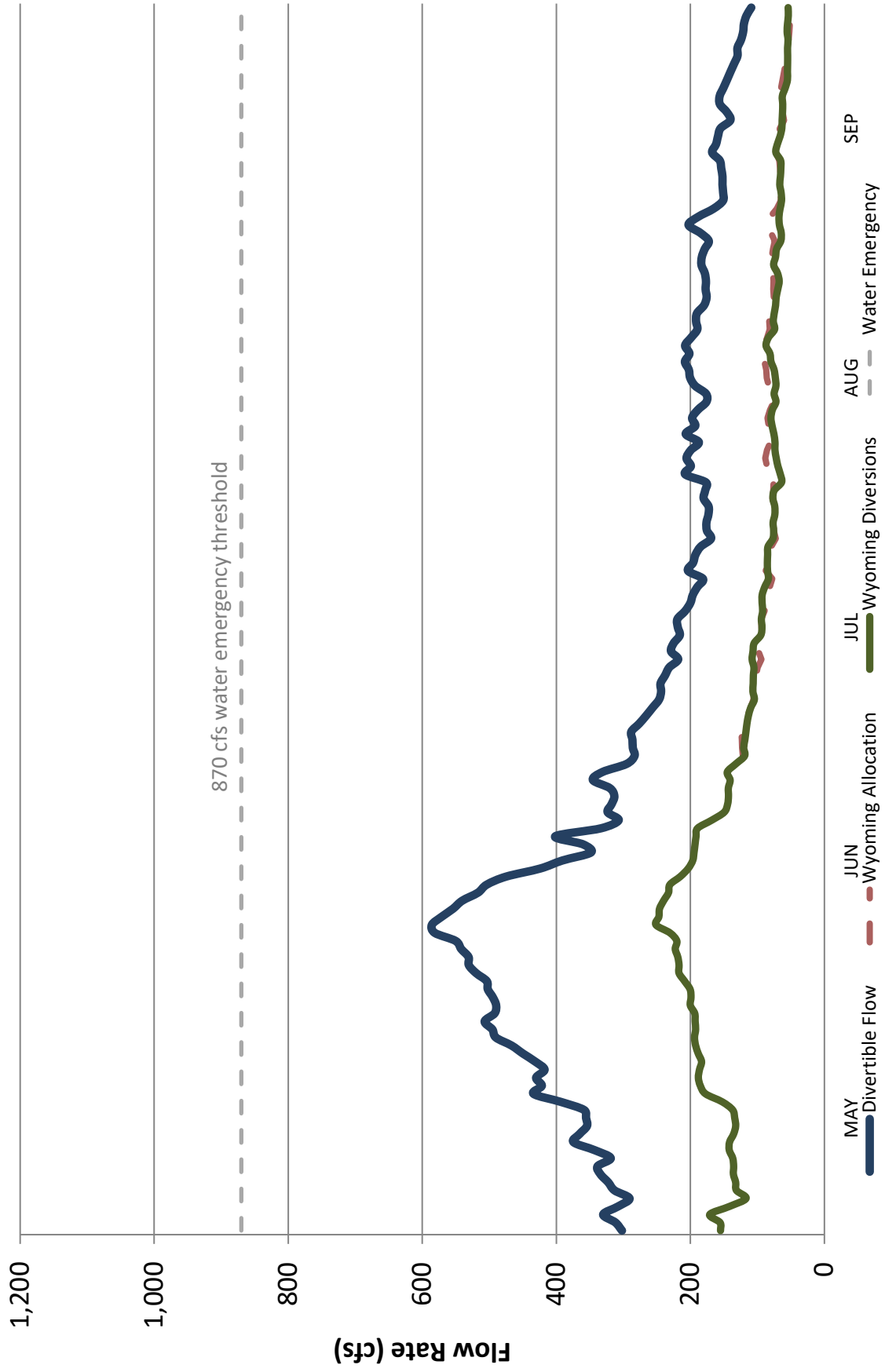


Figure 2021.13

2021 - Central Division Distribution

Idaho Section Diversions vs Allocation

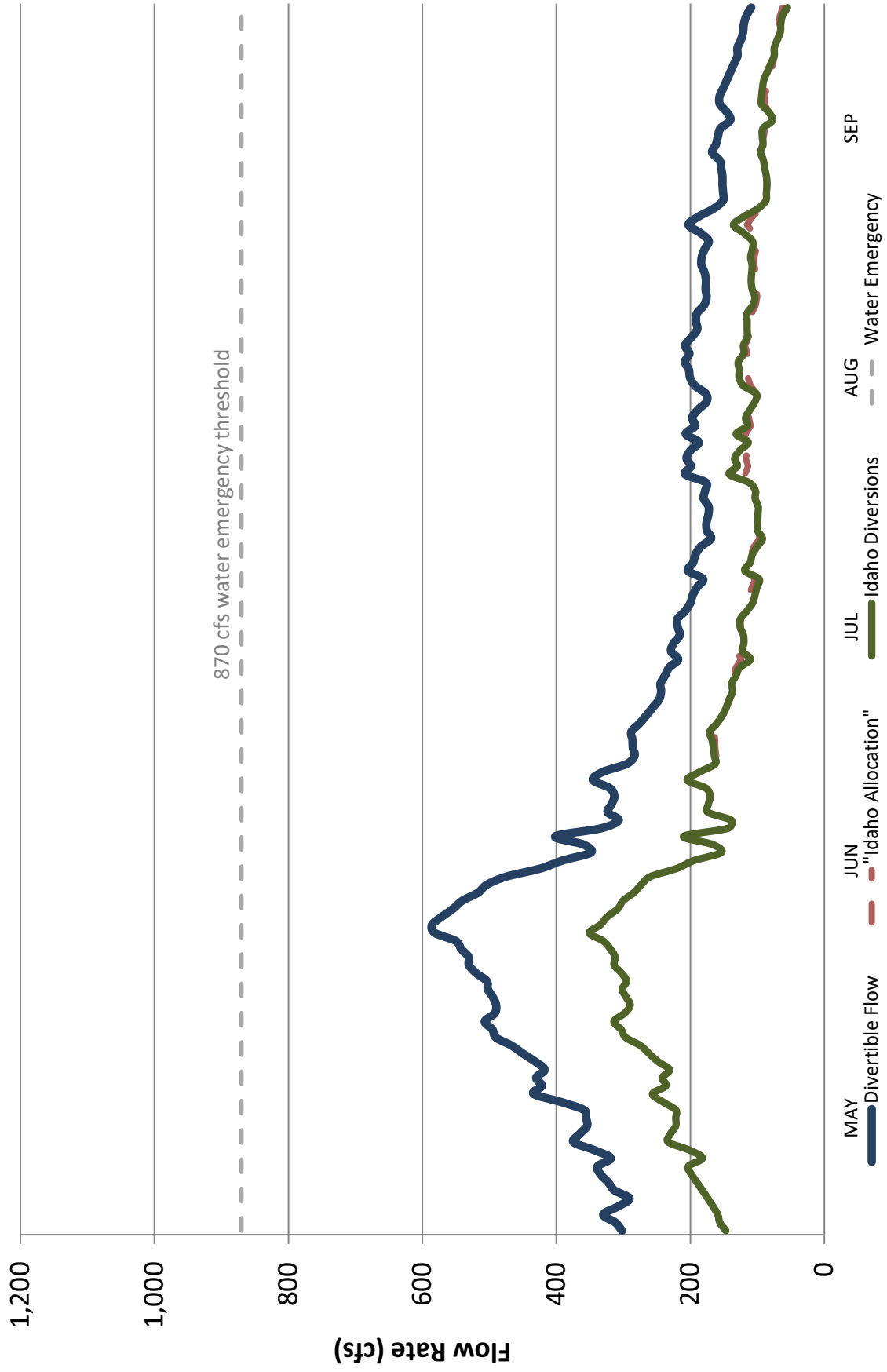


Figure 2021.14

DAILY DISCHARGE IN CFS OF BEAR RIVER CANALS WITH COMPACT ALLOCATIONS IN THE CENTRAL DIVISION

	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
MAY																															
WYOMING DIVERSIONS																															
BEAR RIVER CANALS																															
Thornock Pump and Pivot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	0	0	0	0	0	0	3	2	3	2
Bridge Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alonso F. Signs (Main Stem)	8	8	7	9	10	7	7	7	6	7	6	2	3	3	1	1	7	6	7	7	8	8	7	7	7	6	6	6	6	6	6
Wyman No. 1 (East)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wyman No. 2 (West)	1	1	1	1	1	1	1	1	2	2	2	3	4	5	5	5	5	5	7	7	7	7	7	7	6	6	6	6	6	6	6
Rickard Snyder	19	19	15	5	5	5	5	5	5	5	5	4	4	5	4	4	4	4	4	4	4	4	4	4	4	5	6	6	6	6	6
Rocky Point (02)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cook Bros	10	11	11	25	42	42	41	39	38	39	38	39	38	39	38	39	41	40	40	41	42	42	42	42	39	40	40	41	41	41	42
John R. Richards Terr	5	5	6	6	6	5	5	4	4	4	5	11	9	8	8	8	8	7	7	7	7	9	11	11	9	8	8	7	6	6	5
TRIBUTARY DIVERSIONS																															
Abraham Stoner (Sublette Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2
Teichert Bros Sprayer Dk (Sublette Cr)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0
Grade (Grade Canyon Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	0	0	0	0	0	0
D.C.P. (Bruner Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtis Pump (Bruner Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chapman (Chapman Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	9	9	9	9	9	9	9
V.H. (Pine Cr)	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	4	4	4	4	4	4	4
Dimond No. 2 (Spring Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kenyon (Spring Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SMITH'S FORK DIVERSIONS																															
Quinn Bourne	17	17	17	10	1	0	0	0	0	0	0	0	0	0	0	0	0	3	6	7	8	7	6	7	6	6	6	6	6	6	6
Bar-O-Bar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TUC Pump (Brown Pump)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Francis-Larson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C.B.D. NO 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C.B.D. No 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reed Ditch (N Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reed Ditch (M Branch)	0	0	0	2	2	2	2	2	2	3	3	3	3	3	3	3	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3
Larson Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emille	11	11	11	9	6	5	5	5	5	5	5	4	3	3	3	3	6	10	10	10	10	11	12	11	9	9	9	9	10	10	10
Seven C Ranch North Pivot Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
Seven C Ranch South Pump & Pipeline	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3
Crover	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheelock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crover (Headgate)	37	37	37	29	13	14	14	15	16	14	10	9	9	10	10	10	14	25	29	30	29	28	36	44	43	42	41	41	41	41	42
Crover (Bunker Cr)	6	6	6	6	6	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Crover (Spring Cr)	5	5	5	5	5	5	5	5	5	5	5	6	6	6	6	6	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Smith Branch (N Branch)	5	5	5	3	4	5	5	5	5	5	12	15	13	13	14	14	14	12	11	10	10	10	8	8	7	7	7	7	7	7	7
Reed Ditch (N Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stoner & Nichols (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minnie Roberts (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gastanaga North (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gastanaga South (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nichols Branch (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanner (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Star (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Star Two Pump (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coleville Water (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0																	

Figure 2021.15 (cont.)

NOTE: Wyoming is limited to 43% of the total divertible flow. The remainder of the divertible flow is available for use within Idaho.

DAILY DISCHARGE IN CFS OF BEAR RIVER CANALS WITH COMPACT ALLOCATIONS IN THE CENTRAL DIVISION

[illegible]

NOTE: Wyoming is limited to 43% of the total divertible flow. The remainder of the divertible flow is available for use within Idaho.

Figure 2021.15 (cont.)

Figure 2021.15 (cont.)

NOTE: Wyoming is limited to 43% of the total divertible flow. The remainder of the divertible flow is available for use within Idaho.

Lower Division

The Compact provides that a Utah Lower Division water user can petition the Commission for interstate regulation if he believes that he is being deprived of water to which he is justly entitled due to diversions in Idaho. If, upon review, the Commission finds such to be the case, then the Compact provides for the declaration of a water emergency and that it shall put into effect water delivery schedules based on priority of rights without regard to the state line. The Commission has never received such a petition. However, with growing concern for such a possibility, the Commission, over a several-year period, determined how it would receive and review such a petition and implement water delivery should a water emergency be declared. At its November meeting in 1997, the Commission adopted *Interim Procedures for Lower Division Water Delivery*. Appendix B to the procedures, which was revised with the procedures in April 2004, provides for the accounting and distribution method to be used in a water emergency.

Also appended to the procedures is *Water Delivery Schedule No. 1* which was revised by the Commission in 2015 and which includes the mainstem Lower Division water rights in both Idaho and Utah. After adoption of the water delivery schedule, both states began using this common schedule of water rights in their water right accounting programs. Hence, though not regulated by the Commission, the distribution in the Lower Division is cooperatively managed by the states of Idaho and Utah through their respective watermasters and river commissioners. Such distribution was facilitated in 2021 with bi-weekly conference calls with the state agencies, large water users and PacifiCorp. Figure 2021.16 shows the delivery of water in the Lower Division as reported by the two state agencies.

2021 Lower Division Irrigation Water Deliveries

Canal/Group	Natural Flow (af)	Storage Use (af)	Total Diversion (af)
Idaho			
Gentile Valley	5,249	4,036	9,285
West Cache	18,977	23,920	42,897
Cub River Pumps	660	16,650	17,310
Last Chance and Bench B	21,564	35,401	56,965
Idaho Small Irrigators	9,813	5,763	15,576
Utah			
Bear River Canal Company	132,738	116,057	248,795
Utah Small Irrigators	992	9387	10,379

Figure 2021.16

Allocation and deliveries of Bear Lake storage water are significant in most years to the total water diverted in the Lower Division. In 1995, PacifiCorp, the irrigators and Bear Lake

interests entered into a settlement agreement as to the allocation of storage water from Bear Lake. In 2004 the parties entered into an *Amended and Restated Bear Lake Settlement Agreement*. PacifiCorp tracks deliveries pursuant to the settlement agreement. Figure 2021.17 shows such deliveries in 2021.

2021 Bear Lake Storage Deliveries

Irrigation Storage Allocation	245,000 af
Bear Lake Storage Release	236,000 af
Lake Recovery Volume	9,000 af
Decreed Transit Losses ¹	7,680 af
System Losses ²	15,000 af
Delivered Bear Lake Storage	213,320 af

¹Approximate, 3.6% of total storage release per Dietrich Decree, based on average rate for all irrigators

²Water that passes below Cutler Dam that is accounted for as storage water release

Figure 2021.17

STATE WATER ACTIVITIES

Article XI of the Amended Compact provides that applications for appropriation or change in water use within each state shall be in accordance with individual state law, except no such application shall be approved if the effect will deprive water users within another state or increase the depletion beyond that which is provided for under the Compact. This article further requires that state officials report, in a format and at intervals established by the Commission, the status of their respective allocations and uses. The Commission has determined the best format for reporting such changes in use is the Biennial Report. Figure O.3 in the Overview section of this report provides the most recent depletion information. This portion of the Biennial Report provides a summary of major water and water right related activities in each of the states during the 2021 water year.

Idaho

Water Activities

On June 15, 2021, Judge Eric Wildman issued a Commencement Order for the Bear River Basin Adjudication (BRBA). The BRBA will include all surface and ground water rights in Administrative Basin 11 (Bear River drainage from Idaho-Wyoming state line to Alexander Res. Dam), Basin 13 (Bear River drainage from Alexander Reservoir Dam to Idaho-Utah state line), Basin 15 (Malad River drainage) and Basin 17 (Deep Creek drainage and Juniper-Black Pine area). Claims for certain small uses may be deferred to a later date. IDWR will employ a staggered approach for providing public notice and initiating claims taking in the BRBA. IDWR plans to have a field office open in Preston and begin taking claims by the end of 2022.

Throughout the year, IDWR worked with many water users in the BRBA basins to update ownership records for water rights and to update water right places of use to reflect the current irrigation practices.

Water Rights

Water right permits were issued in Basins 11, 13 and 15 as shown in the table below. Permits 11-7863 and 13-8068 include conditions requiring the permit holders to mitigate for depletions.

<u>Right No.</u>	<u>Priority Date</u>	<u>Rate (cfs)</u>	<u>Volume (af)</u>	<u>Source</u>	<u>Water Use</u>
11-7863	4/17/2020	0.85	20	GROUND WATER	MUNICIPAL
11-7881	6/28/2021	0.02		SPRING	STOCKWATER
13-8048	2/28/2020			UNNAMED STREAM	IRRIGATION STORAGE
13-8068	2/8/2021	0.12		GROUND WATER	DOMESTIC
13-8075	7/29/2021	0.04		SPRING	DOMESTIC
13-8076	6/7/2021	0.02		UNNAMED STREAM	DOMESTIC
13-8077	7/14/2021	0.04		SPRING	DOMESTIC

Utah

Water Activities

The Board of Water Resources continued to work with Bear River Canal Company to line and repair a canal and pipe a ditch. Work continued with Cove Water Works Company to improve their culinary water system. Funds were provided to West Cache Irrigation Company to pipe ditches and install a pump. One contract with West Cache provided \$2,260,000 for a \$4,259,000 project, and another was for \$485,000 of a \$1,046,000 project.

The cloud seeding program continued to target select storms over mountain ranges in Eastern Box Elder County and Cache County. Bear River Water Conservancy District and Cache County cost shared (50/50) with the Utah Board of Water Resources. The estimated average annual increase in snow-water equivalent in the target area due to seeding activity was 6%.

The Utah Division of Forestry, Fire & State Lands (FFSL) completed the Bear Lake Comprehensive Management Plan which replaced the 2009 CMP and updated management goals and objectives for Bear Lake sovereign lands in Rich County, Utah. The purpose of the CMP is to ensure that navigation, fish and wildlife habitat, aquatic beauty, public recreation, and water quality (known as Public Trust resources) are given due consideration and balanced against the economic necessity, justification for, or benefit to be derived from any proposed use, pursuant to Utah Administrative Code R652-2-200. FFSL's primary goal for the Bear Lake CMP is to provide clear and consistent guidance for coordination and management, straightforward permitting requirements, and helpful best management practices for implementing projects that affect Bear Lake sovereign lands.

The Conservation Economics Institute started to study the regional economic contributions of Bear Lake. The contract is with the Bear River Association of Governments and Bear Lake Watch. They developed and deployed a survey from which they are analyzing the results. They have estimated overall visitation to Bear Lake via the state park visitation numbers. They have begun estimating total summer visits after which they will complete an impact analysis. They plan to have a final draft in 2022.

Utah Division of Water Resources continued corridor preservation for a large-diameter pipeline through Box Elder County along I-15 near the Willard Bay area for the Bear River Development Project. The Division is also making plans to identify potential alternative pipeline corridors in Box Elder County between West Haven and the Willard Bay area and from West Haven to I-84 north of Howell. The Division recently contracted with an engineering/surveying team for potential parcel acquisition. The Division will soon be releasing an RFP for a Real Estate Acquisition Team. The Division continues to work with local Water Districts regarding the timing and the need for the Bear River Development Project.

In 2021 the several irrigation companies/districts initially interested in exploring a water bank confirmed that demand did not justify organizing a multi-entity water bank. Two of the interested parties, Hyrum Irrigation Company and Wellsville-Mendon Conservation District,

determined demand for late season irrigation water and potential supply in Hyrum Reservoir merited creating a late-season rental pool. These two entities are both members of the South Cache Water Users Association, which holds a contract with the BOR for storage water in Hyrum Reservoir, and the lease water will come from HIC's portion of the storage contract, when available. As no change in the point of diversion or other elements of the underlying water rights were to be changed the parties chose not to form a water bank under the Water Banking Statute. The parties have negotiated a leasing contract and are presently finalizing the contract with signatures. If available, late season water may be leased in the summer of 2022.

Water Rights

New Applications Approved in 2021:

- Upper Division - 17 Applications to Appropriate:
 - Total Irrigation (Acres): 220.45
 - Total Domestic (EDUs): 15
 - Total Stockwater (ELUs): 0
 - Total Volume (acre-feet): 636.7
- Lower Division - 76 Applications to Appropriate:
 - Total Irrigation (Acres): 108.62
 - Total Domestic (EDUs): 76
 - Total Stockwater (ELUs): 661.38
 - Total Volume (acre-feet): 481.50

2021 - Upper Division Notable Applications to Appropriate			
Water Right #	Uses	Priority	Diversion (Acre-feet)
23-3997	Irrigation - 100 acres	07/08/2020	300.0
23-3998	Irrigation - 110 acres	07/08/2020	330.0
2021 - Lower Division Notable Applications to Appropriate			
Water Right #	Uses	Priority	Diversion (Acre-feet)
29-4717	Irrigation - 9.5 acres Stock Water - 9 ELUs Domestic - 1 EDU	06/11/2020	38.702
29-4708	Irrigation - 65 acres	04/03/2020	260.0

Wyoming

Water Activities

Again, Wyoming saw personnel changes with both Sam Swartz, Interstate streams (TAC Member), Randy Nate, Water Commissioner (Central Division) leaving the agency.

The Upper Division received an in-state call for regulation from a canal below Woodruff Narrows Reservoir. This call came prior to any of the reservoirs filling and the regulation was in effect for the remainder of the 2021 irrigation season. As a result of the call for regulation, Wyoming imposed a cease to all storage allocations for the canals that requested regulation. With Woodruff Narrows only filling to half capacity it was a devastating summer for the Utah and Wyoming users resulting roughly in an 80% crop loss. No official Compact regulation was requested in the Upper Division. Although regulation in the Upper Division happens in most years it is typically administered between the water commissioners to compact allocation and standards.

The Central Division was placed into interstate regulation on May 3, with regulation lasting the remainder of the summer. Soil moisture was very low and most of the snowmelt soaked into the ground causing extremely below average water flow in the Smiths Fork.

Water Rights

New water right permits subject to Compact depletions issued from Wyoming's allocation are as follows:

<u>Permit No.</u>	<u>Appropriator</u>	<u>Priority Date</u>
P#7999.E	Circle B Land Company Hufford LLC	10/27/2020
P#214915.W	Jason Thornock	5/2/2021
P#214994.W	Teichert Brothers LLC	5/18/2021
P#36601.D	M Lyle Johnson Trust/Lela A Johnson Trust	7/9/2021

STREAM GAGING

As was indicated in the Overview chapter of this report, under the subsection concerning the Stream Gaging Program, the Bear River Commission participates in a cooperative contract with the USGS for the maintenance of stream gages on the Bear River and significant tributaries. Also, the states, PacifiCorp and, at times, others participate in stream gaging on the Bear River and its tributaries. The Commission believes the collection of data concerning stream flows in the Bear River system is very important and allocates a significant portion of its annual budget in support of the cooperative stream gaging program with the U.S. Geological Survey. However, costs continue to increase and so the Commission is constantly reviewing the stream gaging program to determine if all of the stations supported are necessary for the Commission to fulfill the responsibilities assigned to it by the Compact.

During 2021, a total of 33 gages were maintained on the Bear River system. Of these 33 gages, 6 were part of a cooperative effort between the Bear River Commission and the USGS, and the USGS funded 7 gages under its Federal Priority Streamgage Program (FPS). PacifiCorp maintained 14 gages on the Bear River system during 2021. Three additional gages were maintained under the USGS Cooperative Program with the State of Utah (2 gages) and the State of Idaho (1 gage). Additionally, the State of Wyoming maintained 1 gage on the Bear River and the USFWS funded 1 USGS gage. The Bear Lake water quality platforms were funded as described in the footnote with the table below. Figure 2021.18 shows a tabulation of these gages and the entities which participated in the operation and funding of each gage. The approximate locations of the stream gages are shown in Figure O.5 in the Overview section of this report.

Publication of the streamflow records for 13 of the gages in this report were considered to be of significant value to the Commission and are included on pages 21-39 through 21-51 (the Bear River near Randolph, UT gage, which is maintained by the State of Wyoming, was added to this report as it is published nowhere else).

BEAR RIVER SYSTEM STREAM GAGING STATIONS

STREAM GAGES MAINTAINED DURING THE 2021 WATER YEAR

STATION #	STATION NAME	OPERATED BY	FUNDED BY
<u>10011500</u> ❖	Bear River near UT-WY state line	USGS	USGS
10016900❖	Bear River at Evanston WY	USGS-WY	USGS
<u>10020100</u> ❖	Bear River above reservoir near Woodruff UT	USGS	USGS
<u>10020300</u>	Bear River below reservoir near Woodruff UT	USGS	BRC/USGS
10023000	Big Creek near Randolph UT	USGS	UTDNR/USGS
<u>10026500</u>	Bear River near Randolph UT	WSE	State of WY
<u>10028500</u> ¹	Bear River below Pixley Dam near Cokeville WY	USGS	BRC/USGS
<u>10032000</u>	Smiths Fork near Border WY	USGS	BRC/USGS
10038000❖	Bear River below Smiths Fork near Cokeville WY	USGS	USGS
<u>10039500</u>	Bear River at Border WY	USGS	BRC/USGS
10044300 ²	Dingle Inlet Canal near Dingle ID	PacifiCorp	PacifiCorp
<u>10046000</u>	Rainbow Inlet Canal near Dingle ID	PacifiCorp	PacifiCorp
10046500 ^{2,3}	Bear River below Stewart Dam near Montpelier ID	PacifiCorp	PacifiCorp
	Bear Lake Water Quality Platforms	USGS	(see below) ⁴
<u>10055000</u>	Bear Lake at State Park Marina near Garden City UT	USGS	BRC/USGS
<u>10059500</u>	Bear Lake Outlet Canal near Paris ID	PacifiCorp	PacifiCorp
10068500	Bear River at Pescadero ID	USGS	IDDNR/USGS
10075000	Bear River at Soda Springs ID	PacifiCorp	PacifiCorp
10079000	Soda Point Reservoir at Alexander ID	PacifiCorp	PacifiCorp
10079500	Bear River at Alexander ID	PacifiCorp	PacifiCorp
10080000	Bear River below Grace Dam near Grace ID	PacifiCorp	PacifiCorp
10086000	Oneida Narrows Reservoir at Oneida ID	PacifiCorp	PacifiCorp
10086500	Bear River below PacifiCorp Tailrace at Oneida ID	PacifiCorp	PacifiCorp
<u>10092700</u>	Bear River at ID-UT state line	USGS	BRC/USGS
10105900	Little Bear River at Paradise UT	USGS	UTDNR/USGS
10108400❖	Logan, Hyde Park, Smithfield Canal near Logan UT	USGS	USGS
<u>10109001</u> ❖ ⁵	Logan River above State Dam near Logan UT	USGS	USGS
10113500❖	Blacksmith Fork abv Upper & Lower Dam Near Hyrum UT	USGS	USGS
10116500	Cutler Reservoir near Collinston UT	PacifiCorp	PacifiCorp
10117000	Hammond (East Side) Canal near Collinston UT	PacifiCorp	PacifiCorp
10117500	West Side Canal near Collinston UT	PacifiCorp	PacifiCorp
10118000	Bear River near Collinston UT	PacifiCorp	PacifiCorp
<u>10126000</u>	Bear River near Corinne UT	USGS	USFWS

Notes:

❖ FPS site – Federal Priority Streamgaging Program

Underlined station numbers indicate those gages for which stream flow data are published in this report.

¹ This gage is operated seasonally from April 1 until September 30 each year.

² Data for these gages are generated by PacifiCorp but not formally published

³ Discharge measurements below Stewart Dam are required for interstate regulation pursuant to the Compact. However, flow is general only a few cfs. PacifiCorp maintains this gage and reports discharge to the Idaho watermaster. The data are included with the Central Division's canal diversion data herein.

⁴ These two water quality platforms are jointly funded by Bear Lake Watch, Idaho Department of Environmental Quality, Utah Division of Water Quality, PacifiCorp and USGS.

⁵ Gage 10109001 represents a summation of the Logan River discharge (10109000) and canal diversions (10108400) upstream of the gage.

This is not a physical river gage. Gages 10109000 and 10108400 are part of the GSWIP.

Figure 2021.18

10011500 BEAR RIVER NEAR UTAH-WYOMING STATE LINE

LOCATION.--Lat 40°57'55", long 110°51'10" referenced to North American Datum of 1927, in SE ¼ NW ¼ SE ¼ sec.30, T.3 N., R.10 E., Summit

County,UT, Hydrologic Unit 16010101, on left bank 400 ft downstream from West Fork and 2.8 mi upstream from Utah-Wyoming State line.

DRAINAGE AREA.--172 mi².

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

REVISED RECORDS.--WDR UT-74-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 7,965 ft above NGVD of 1929, from river-profile map. Prior to October 1, 1986 at datum 3.0 ft higher.

REMARKS - Records good except for estimated discharges which are poor and other periods as noted. Records fair May 20, 2014 through Jun. 17, 2014 due to variable control conditions from snow-melt runoff. Flow regulated slightly by Whitney Reservoir, total capacity, 4,700 acre-ft since 1966. Three diversions above station for irrigation of about 265 acres above and 2,600 acres below station.

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 3,390 ft³/s, Jun 30, 2011, gage height, 7.82 ft; minimum, 6.8 ft³/s, Apr 12, 1984, result of upstream ice jam.

DISCHARGE, CUBIC FEET PER SECOND

YEAR 2020-10-01 to 2021-09-30

DAILY MEAN VALUES

[e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	38.3	e35.9	e32.3	e30.7	e22.9	e29.7	34.3	210	559	128	91.5	103
2	36.4	e35.7	e32.1	e31.5	e28.4	e31.0	39.6	248	652	115	99.6	145
3	36.9	e34.6	e32.3	e34.1	e29.8	e31.3	50.0	239	725	104	79.1	126
4	36.2	34.9	e32.6	e34.8	e28.4	e31.7	64.6	222	781	97.3	62.1	103
5	35.3	33.1	e32.8	e34.5	e28.4	e31.1	74.4	218	780	106	56.8	91.0
6	35.3	34.0	e32.8	e34.9	e29.2	e30.6	69.6	278	714	98.9	52.5	85.3
7	35.7	e33.7	e32.9	e34.3	e31.5	e32.1	61.6	400	651	93.2	49.5	80.1
8	34.9	e32.5	e33.2	e30.9	e32.5	e32.6	65.4	484	565	89.4	47.7	75.9
9	34.4	e31.3	e33.2	e27.1	e34.2	e32.8	64.2	354	461	84.2	44.8	72.3
10	34.2	e31.3	e33.0	e25.0	e33.8	e31.9	67.9	278	371	80.4	43.0	69.8
11	44.3	e31.1	e32.9	e24.7	e32.2	e30.3	73.3	230	323	78.6	41.0	73.7
12	41.7	e29.5	e32.2	e26.3	e32.1	e29.5	71.5	218	275	75.9	39.3	72.7
13	42.1	e30.3	e31.9	e28.1	e32.6	e31.1	70.2	272	252	73.8	38.1	67.0
14	39.0	e31.4	e31.3	e27.9	e30.8	e33.6	64.9	370	237	71.8	37.1	67.2
15	38.4	36.2	e31.1	e28.6	e33.2	30.3	58.8	468	225	60.8	36.0	62.4
16	37.0	39.2	e31.8	e30.7	e35.7	31.4	56.6	561	226	55.9	34.7	60.1
17	39.4	39.7	e32.4	e31.8	e35.6	30.3	53.4	614	219	55.2	35.1	58.0
18	36.8	41.4	e32.0	e29.5	e34.5	31.4	57.0	560	215	52.9	30.3	70.2
19	35.7	e40.3	e31.8	e27.7	e36.0	33.4	63.4	649	201	52.1	52.6	86.5
20	35.4	e33.4	e32.5	e27.8	e37.5	36.5	59.0	644	187	56.4	26.1	69.7
21	35.3	e32.8	e33.6	e28.0	e38.4	31.5	61.6	659	177	54.4	22.1	64.3
22	e34.4	e31.9	e33.1	e28.6	e38.7	32.2	58.6	458	152	49.1	40.6	61.9
23	e34.3	e32.4	e32.5	e28.9	e36.6	33.0	65.1	354	141	60.5	23.8	59.1
24	e35.2	e32.6	e32.3	e28.9	e32.9	31.7	65.6	293	148	53.8	19.0	58.9
25	e33.3	e32.5	e32.4	e27.5	e29.8	31.0	71.8	280	187	45.5	16.5	56.3
26	e32.2	e32.1	e32.2	e25.9	e30.2	29.9	84.2	305	152	43.0	17.0	54.9
27	e33.6	e32.0	e31.4	e26.4	e28.5	30.6	71.2	410	128	49.9	14.1	53.9
28	e34.0	e32.2	e31.5	e28.4	e28.4	32.2	73.0	532	116	58.2	12.7	53.3
29	e35.0	e32.1	e30.6	e29.0		33.1	102	601	115	64.8	11.5	54.4
30	e35.8	e32.4	e30.1	e27.3		31.4	154	610	124	78.4	10.7	54.4
31	e35.7		e30.3	e23.4		33.2		516		83.3	9.9	
Total	1,126	1,013	997	903	903	982	2,027	12,530	10,060	2,271	3,958	2,210
Mean	36.3	33.8	32.2	29.1	32.2	31.7	67.6	404	335	73.2	128	73.7
Max	44.3	41.4	33.6	34.9	38.7	36.5	154	659	781	128	526	145
Min	32.2	29.5	30.1	23.4	22.9	29.5	34.3	210	115	43.0	34.7	53.3
Ac-ft	2,234	2,008	1,978	1,791	1,791	1,949	4,020	24,86	19,950	4,504	7,850	4,384

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943-2021, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	66.0	54.7	45.3	41.4	39.6	44.5	115	602	826	290	93.3	75.5
Max	208	106	94.9	72.4	64.3	99.5	316	1,044	1,990	1,371	244	229
(WY)	(1983)	(1984)	(1984)	(1984)	(1984)	(2017)	(1946)	(1984)	(1986)	(2011)	(1965)	(1983)
Min	30.8	32.5	27.7	28.9	21.1	26.0	37.2	162	204	67.4	31.0	23.9
(WY)	(1959)	(1955)	(1960)	(2007)	(2003)	(1964)	(1944)	(1977)	(1992)	(1961)	(2002)	(1956)

Figure 2021.18 (cont.)

10020100 BEAR RIVER ABOVE RESERVOIR, NEAR WOODRUFF, UT

LOCATION.--Lat 41°26'04", long 111°01'01" referenced to North American Datum of 1927, in NE ¼ NW ¼ NW ¼ sec.29, T.17 N., R.120 W., Uinta County, WY, Hydrologic Unit 16010101, on right bank 4.8 mi upstream from Woodruff Narrows Dam and 9.6 mi southeast of Woodruff.

DRAINAGE AREA.--755 mi².

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

REVISED RECORDS.--WDR UT-74-1: Drainage area.

GAGE - Water-stage recorder. Datum of gage is 6,464.63 ft. above NAVD of 1988 from a Level II GNSS survey conducted on June 30, 2022.

REMARKS - Diversion for irrigation of about 43,500 acres above station. Records are good except for discharges below 15 cfs which are fair and estimated discharges which are poor.

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 4,150 ft³/s, Jun 2, 1983, gage height, 6.17 ft; minimum, no flow several days during Aug, Sep 1988, and Sep 2002

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2020-10-01 to 2021-09-30 DAILY MEAN VALUES [e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	18.3		e2.64	e11.3	e15.4	e13.7	13.6	102	206	53.5	29.9	61.8
2	12.0	3.32	e2.51	e12.1	e17.3	e15.4	17.2	179	238	68.0	37.7	69.6
3	4.40	2.68	e2.55	e13.4	e18.7	e17.7	44.8	229	281	68.5	48.9	119
4	3.17	2.46	e2.67	e14.2	e17.7	e18.9	74.6	202	337	64.9	45.0	96.8
5	2.80	2.85	e2.93	e18.7	e19.4	e21.2	89.3	156	382	51.7	28.8	77.4
6	2.85	2.88	e3.17	e18.0	e20.5	e23.6	80.0	128	358	51.7	17.5	64.4
7	2.94	2.25	e3.39	e17.0	e20.4	e26.0	57.3	186	312	60.0	10.7	56.7
8	2.70	2.51	e3.32	e15.3	e22.5	e27.5	47.4	310	250	53.1	7.34	52.5
9	2.55	2.97	e3.15	e13.9	e20.9	e30.4	48.1	311	176	42.7	6.65	47.0
10	2.39	1.97	e2.95	e12.7	e20.9	e30.7	36.0	237	120	34.6	5.51	43.9
11	2.74	1.69	e2.83	e13.9	e19.7	e27.1	33.0	191	93.0	28.0	11.2	48.6
12	2.61	1.61	e2.79	e16.0	e17.4	e22.2	30.1	142	72.0	25.8	16.3	54.6
13	2.73	1.67	e3.28	e17.2	e15.8	e20.4	22.2	127	48.5	20.7	18.3	54.9
14	3.23	1.60	e4.06	e16.9	e15.7	e19.4	25.2	185	29.2	17.9	16.4	46.8
15	3.17	1.87	e4.28	e17.2	e15.7	e16.5	20.0	255	24.1	17.6	13.5	40.1
16	3.26	1.92	e4.32	e17.1	e14.3	e16.1	19.1	320	20.3	24.2	13.1	40.6
17	3.34	1.71	e4.39	e16.9	e14.1	e20.0	23.8	388	34.6	22.8	13.2	37.7
18	3.30	1.71	e4.41	e16.0	e14.1	e28.2	20.1	359	49.5	20.3	17.4	38.1
19	3.32	e1.76	e4.41	e14.7	e15.1	e38.7	18.2	324	68.5	19.7	288	39.5
20	3.51	e2.01	e4.45	e14.3	e16.0	e70.0	39.4	340	56.8	26.2	488	61.9
21	3.38	e1.99	e4.93	e14.3	e15.6	e53.3	29.9	338	51.7	18.5	262	51.3
22	3.26	e1.74	e5.92	e13.7	e15.0	e38.9	34.5	321	42.7	15.4	287	42.3
23	3.03	e1.71	e5.88	e13.4	e13.7	e30.0	33.4	207	38.5	15.1	364	33.3
24	2.87	e1.84	e7.39	e12.3	e11.3	e22.8	31.4	149	97.6	14.8	162	29.4
25	2.90	e1.86	e10.8	e11.4	e9.41	e18.0	34.6	109	133	13.7	106	25.2
26	3.37	e1.61	e11.5	e11.8	e10.4	e15.2	37.6	89.9	146	12.1	72.6	23.1
27	3.42	e1.42	e10.2	e12.0	e10.7	e12.3	55.6	94.6	118	9.79	71.8	21.9
28	3.21	e1.44	e8.82	e13.0	e12.6	19.2	47.2	159	81.4	11.0	90.1	22.3
29	3.34	e1.82	e8.63	e13.2		e18.3	35.5	223	54.4	25.7	72.8	21.9
30	2.47	e2.30	e10.4	e14.7		e19.6	49.4	272	43.3	24.7	64.6	22.2
31	3.34		e13.0	e14.2		e19.9		260		26.8	60.9	
Total	120	61.7	166	451	450	771	1,149	6,894	3,963	959	2,747	1,445
Mean	3.87	2.06	5.35	14.5	16.1	24.9	38.3	222	132	31.0	88.6	48.2
Max	18.3	3.32	13.0	18.7	22.5	70.0	89.3	388	382	68.5	488	119
Min	2.39	1.42	2.51	11.3	9.41	12.3	13.6	89.9	20.3	9.79	5.51	21.9
Ac-ft	238	122	329	894	893	1,530	2,278	13,669	7,861	1,903	5,449	2,866

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 -2021, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	63.0	62.3	61.8	60.6	71.6	152	306	753	779	176	45.8	45.1
Max	437	198	181	147	312	627	671	1,957	2,564	1,355	340	288
(WY)	(1983)	(1974)	(1984)	(1984)	(1986)	(1986)	(1969)	(1984)	(1986)	(2011)	(1983)	(1983)
Min	3.03	2.06	5.35	6.76	10.4	24.9	38.3	104	47.3	4.41	.68	.49
(WY)	(1965)	(2021)	(2021)	(1989)	(2003)	(2021)	(2021)	(1977)	(2012)	(2000)	(2000)	(1988)

Figure 2021.18 (cont.)

10020300 BEAR RIVER BELOW RESERVOIR, NEAR WOODRUFF, UT

LOCATION.--Lat 41°30'20", long 111°00'50" referenced to North American Datum of 1927, in NE ¼ NE ¼ NW ¼ sec.32, T.18 N., R.120 W., Uinta County, WY, Hydrologic Unit 16010101, on right bank 1,100 ft downstream from Woodruff Narrows Dam, 1.6 mi upstream from Salt Creek, 5.4 mi upstream from Wyoming-Utah State line, and 7.7 mi east of Woodruff.

DRAINAGE AREA.--784 mi².

PERIOD OF RECORD - October 1961 to current year.

GAGE - Water-stage recorder and concrete control. Datum of gage is 6,398.96 ft above NGVD of 1929. Prior to September 26, 1962, at site 175 ft upstream at same datum.

REMARKS - Flow regulated by Woodruff Narrows Reservoir (station 10020200) beginning January 1962. Diversions for irrigation of about 43,500 acres above station. Records are good, except estimated daily discharges which are poor, and other exceptions as noted. Aug 4 to Sep 30, 2014, records are fair (due to variable control conditions from rainstorm event). Aug 6 to Aug 23, 2022, records are poor (due to variable control conditions from rainstorm/debris event).

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 3,820 ft³/s, Jun 2, 1983, gage height, 8.26 ft; no flow Jul 4, 5, 1962, Aug 30, 31, Sep 1, 2, 6, 7, 1979, Oct 30, 1980.

DISCHARGE, CUBIC FEET PER SECOND

WATER YEAR 2020-10-01 to 2021-09-30

DAILY MEAN VALUES

[e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	18.2	22.7	21.7	22.0	20.1	20.6	10.0	30.7	980	54.5	47.3	58.4
2	18.3	22.8	21.9	21.9	19.9	21.4	18.5	30.6	946	54.4	46.7	58.4
3	18.2	22.9	21.9	21.9	20.1	21.5	18.8	30.5	914	54.9	46.3	58.9
4	18.4	22.7	21.9	21.9	20.3	21.6	18.9	31.2	655	54.7	46.7	59.3
5	18.6	22.5	21.9	21.7	20.3	21.6	19.0	31.6	364	54.4	38.6	59.5
6	18.5	22.7	21.9	21.7	20.2	21.7	19.2	33.0	341	54.9	18.0	60.0
7	18.8	22.4	21.9	21.7	19.7	21.7	19.1	39.3	334	45.5	15.8	54.2
8	18.7	22.4	21.9	21.6	19.6	21.4	19.3	44.1	273	40.8	10.3	51.2
9	18.9	22.8	21.9	21.5	19.7	20.7	19.5	46.4	233	41.2	6.09	44.7
10	19.0	22.7	21.8	21.5	19.6	20.7	19.8	46.8	234	41.7	4.95	40.5
11	19.0	22.2	21.8	21.4	19.8	21.1	20.0	47.4	230	42.1	4.49	40.5
12	19.0	21.9	21.8	21.4	20.2	21.2	20.4	47.4	133	25.2	2.49	40.3
13	18.8	22.1	21.9	21.3	20.3	21.3	20.5	47.4	61.6	14.4	7.31	40.4
14	19.3	21.9	21.9	21.2	20.6	14.4	20.2	47.4	58.0	14.2	8.17	40.6
15	19.3	21.9	21.8	21.1	20.9	9.14	20.9	47.4	56.1	14.0	9.30	40.5
16	19.4	21.8	21.8	21.1	21.0	8.64	21.3	47.4	56.8	13.8	12.4	40.8
17	19.2	21.9	21.6	21.3	21.0	7.95	21.2	47.4	56.8	13.7	13.8	40.8
18	19.2	21.6	21.6	21.0	21.1	7.52	21.3	47.5	56.2	17.9	13.9	40.8
19	19.4	21.6	21.8	21.2	21.1	6.94	20.5	48.0	54.8	21.6	14.7	40.7
20	19.3	21.8	21.8	21.0	20.8	6.52	29.4	48.2	54.1	45.9	14.7	27.2
21	19.1	21.8	21.8	20.7	20.8	6.11	39.8	48.7	53.3	53.9	15.1	16.2
22	19.1	21.8	21.8	20.7	20.6	5.92	38.2	843	52.0	54.1	15.1	15.3
23	19.0	21.3	21.8	20.6	20.7	5.68	36.8	1,250	51.4	51.6	15.5	14.8
24	18.7	21.6	21.8	20.5	20.7	5.12	34.9	1,220	51.0	49.4	16.0	14.1
25	19.8	21.8	21.9	20.5	20.7	4.65	33.0	1,200	51.0	49.1	43.2	14.0
26	22.9	21.8	22.3	20.4	20.8	4.57	33.2	1,170	51.2	48.7	58.2	23.6
27	22.9	21.9	22.4	20.4	20.8	4.20	31.4	1,130	51.2	48.7	58.3	27.7
28	22.9	21.8	22.4	20.1	20.8	4.27	30.7	1,110	51.0	47.7	58.6	27.8
29	22.9	21.8	22.4	20.2		4.04	30.9	1,070	53.7	47.1	58.5	28.0
30	22.9	21.7	22.1	20.1		3.91	30.4	1,040	54.3	47.2	58.0	27.7
31	22.9		21.9	20.1		3.89		1,010		47.3	57.7	
Total	611	663	679	654	572	390	737	11,930	6,612	1,265	836	1,147
Mean	19.7	22.1	21.9	21.1	20.4	12.6	24.6	385	220	40.8	27.0	38.2
Max	22.9	22.9	22.4	22.0	21.1	21.7	39.8	1250	980	54.9	58.6	60.0
Min	18.2	21.3	21.6	20.1	19.6	3.89	10.0	30.5	51.0	13.7	2.49	14.0
Ac-ft	1,211	1,314	1,346	1,297	1,135	773	1,462	23,670	13,110	2,508	1,659	2,275

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2021, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	49.1	44.8	39.5	37.2	38.9	87.7	239	736	934	250	68.0	54.1
Max	425	421	184	153	171	648	891	1,828	2,437	1,339	331	278
(WY)	(1983)	(1983)	(1983)	(1985)	(1971)	(2017)	(1985)	(1984)	(1983)	(2011)	(1983)	(1983)
Min	3.89	.12	4.28	4.37	4.71	4.70	.34	27.8	220	10.4	3.91	3.65
(WY)	(1990)	(1981)	(1978)	(1978)	(1978)	(1978)	(1977)	(1977)	(2021)	(2002)	(1979)	(1979)



Bear River near Randolph, UT - Division 4 District 2

Source Data: Discharge@10026500, Bear River near Randolph, UT

Units: ft³/s

Oct 2020 - Sep 2021

WY: Total: 4425.68 Mean: 23.74 Max: 167.12 Min: 6.02 Ac-Ft: 8776.12

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1								9.44	167.12	17.09	36.77	12.28
2								10.07	148.01	16.12	27.22	12.17
3								10.43	137.73	17.17	25.16	12.00
4								10.36	111.37	16.66	25.08	12.72
5								10.66	105.55	16.38	23.28	12.04
6								9.36	74.86	14.19	22.89	11.60
7								7.44	44.28	14.42	24.59	11.80
8								7.85	32.69	14.26	23.62	11.44
9								8.89	28.91	13.40	20.36	10.52
10								7.97	22.93	12.53	15.42	10.15
11								8.58	22.01	12.34	14.82	10.78
12								9.79	20.77	10.98	13.26	10.98
13								8.18	19.38	10.52	13.28	11.89
14								7.51	18.66	10.05	12.88	10.94
15								7.33	18.24	9.27	12.26	10.65
16								8.92	17.39	8.90	11.90	10.70
17								9.04	16.73	8.49	11.28	11.00
18								8.39	17.02	7.79	11.59	11.52
19								7.41	16.13	8.26	13.24	11.02
20								6.91	15.89	8.58	13.56	10.68
21								6.61	15.82	8.58	13.12	11.11
22								6.02	15.75	8.01	14.04	9.94
23								6.21	15.13	9.16	13.62	10.60
24								11.00	18.53	10.90	12.81	11.11
25								100.99	19.37	12.54	12.41	11.66
26								107.48	19.35	12.11	14.33	11.62
27								134.05	18.85	13.38	13.54	11.60
28								131.83	18.92	16.32	12.71	11.26
29								147.58	18.82	21.13	12.25	11.15
30								139.54	18.18	18.26	12.38	11.38
31								163.50		22.96	12.04	
Total								1129.35	1234.40	400.74	515.74	338.29
Mean								36.43	41.15	12.93	16.64	11.28
Max								163.50	167.12	22.96	36.77	12.72
Min								6.02	15.13	7.79	11.28	9.94
Ac-Ft								2239.51	2447.81	794.67	1022.70	670.82

Comments:

10028500 BEAR RIVER BELOW PIXLEY DAM, NEAR COKEVILLE, WY

LOCATION.--Lat 41°56'20", long 110°59'05" referenced to North American Datum of 1927, in SW ¼ SE ¼ SE ¼ sec.25, T.23 N., R.120 W., Lincoln County, WY, Hydrologic Unit 16010102, 800 ft downstream from Pixley Dam, 11 mi south of Cokeville, and 17.5 mi downstream from Twin Creek.

DRAINAGE AREA.--2,032 mi².

PERIOD OF RECORD.--October 1941 to November 1943 (published as Bear River near Cokeville), October 1952 to September 1956, May 1958 to current year (seasonal only). Monthly discharge only for some periods, published in WSP 1314.

REVISED RECORDS.--WDR UT-74-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 6,185 ft above NGVD of 1929, from river-profile map. October 31, 1941 to November 30, 1943, at site 200 ft downstream at different datum. September 24, 1952 to August 31, 1994 at site 50 ft downstream at same datum. May 7, 2015 to August 14, 2015 at site 850 ft upstream at same datum.

REMARKS.-- Natural flow of stream affected by diversions for irrigation, return flow from irrigated areas, and regulation by upstream reservoirs.

Records are fair except for estimated daily discharges which are poor and other periods as noted. 6/20/14 - 7/12/14; records are poor due to variable control conditions from backwater. 5/6/15 - 9/30/16, 3/18/16 - 5/16/16, 6/8/16 - 10/4/16, 3/21/17 - 10/2/17, 3/14/18 - 4/24/18; records are good.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,300 ft³/s, Mar 25, 1956; minimum daily discharge, 0.09 ft³/s, Sep 8, 2002.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2020-10-01 to 2021-09-30 DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	24.8	---	---	---	---	---	e18.0	7.89	14.4	3.17	12.9	2.87
2	21.1	---	---	---	---	---	e17.4	7.98	60.5	3.26	17.3	3.02
3	22.8	---	---	---	---	---	16.6	7.99	34.4	3.18	23.9	2.94
4	25.1	---	---	---	---	---	16.6	7.64	10.1	2.95	41.7	2.91
5	24.3	---	---	---	---	---	15.5	7.83	6.81	2.78	44.4	2.72
6	14.2	---	---	---	---	---	14.3	7.81	5.78	2.77	31.7	2.87
7	23.0	---	---	---	---	---	14.6	5.70	6.05	2.64	27.2	3.33
8	30.8	---	---	---	---	---	14.5	4.10	6.20	2.57	24.3	3.66
9	35.0	---	---	---	---	---	15.0	3.92	6.33	2.54	22.4	3.40
10	35.9	---	---	---	---	---	14.4	4.18	5.03	2.55	21.7	3.11
11	37.2	---	---	---	---	---	14.8	4.31	5.78	2.61	19.7	2.26
12	38.5	---	---	---	---	---	15.2	4.11	5.48	2.54	17.6	2.31
13	38.0	---	---	---	---	---	20.2	4.09	5.34	2.27	15.7	2.59
14	---	---	---	---	---	---	19.1	3.92	4.27	2.16	10.7	2.50
15	---	---	---	---	---	---	14.9	4.01	3.44	2.31	8.23	2.14
16	---	---	---	---	---	---	15.8	3.93	3.44	2.22	8.05	2.14
17	---	---	---	---	---	---	15.3	3.64	3.31	2.28	8.27	2.53
18	---	---	---	---	---	---	14.7	3.49	3.45	2.25	8.97	2.43
19	---	---	---	---	---	---	14.5	3.62	3.08	2.17	10.5	1.70
20	---	---	---	---	---	---	15.3	3.45	2.71	2.18	10.6	2.24
21	---	---	---	---	---	---	15.7	3.36	2.84	2.19	11.5	2.80
22	---	---	---	---	---	---	14.6	3.20	3.03	2.31	12.9	2.76
23	---	---	---	---	---	---	13.8	3.15	3.30	2.20	12.1	3.03
24	---	---	---	---	---	---	13.8	2.96	3.39	2.03	12.5	3.34
25	---	---	---	---	---	---	13.6	3.08	3.27	2.01	12.5	2.54
26	---	---	---	---	---	---	13.7	3.16	3.19	10.5	12.6	2.20
27	---	---	---	---	---	---	13.8	3.51	3.01	6.07	13.0	2.73
28	---	---	---	---	---	---	11.7	5.71	2.92	3.61	13.5	2.79
29	---	---	---	---	---	---	7.98	9.04	3.10	4.30	14.2	3.18
30	---	---	---	---	---	---	7.93	9.73	3.10	5.64	12.4	3.09
31	---	---	---	---	---	---		10.5		7.23	7.85	
Total							443	161	227	99.5	521	82.1
Mean							14.8	5.19	7.57	3.21	16.8	2.74
Max							20.2	10.5	60.5	10.5	44.4	3.66
Min							7.93	2.96	2.71	2.01	7.85	1.70
Ac-ft							879	319	450	197	1,033	163

Figure 2021.18 (cont.)

10032000 SMITHS FORK NEAR BORDER, WY

LOCATION.--Lat 42°17'36", long 110°52'18" referenced to North American Datum of 1927, in NE ¼ SW ¼ sec.28, T.27 N., R.118 W., Lincoln County, WY, Hydrologic Unit 16010102, on left bank 4.9 mi upstream from Howland Creek, 5.6 mi downstream from Hobbie Creek, and 12.4 mi northeast of Border.

DRAINAGE AREA.--165 mi².

PERIOD OF RECORD - May 1942 to current year.

GAGE - Water-stage recorder and crest-stage gage. Datum of gage is 6,705.69 ft. above NAVD of 1988 from a Level II GNSS survey conducted on June 9, 2021. Prior to October 16, 1945, at site 1.2 mi downstream at different datum. October 16, 1945 to November 1986 at site 0.4 mi downstream at different datum.

REMARKS - Records good except for estimated daily discharges which are poor. One diversion for irrigation of about 200 acres above station.

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 2,100 ft³/s, Jun 4, 1986, gage height, 5.66 ft; minimum, 19 ft³/s, Feb 28, 2007.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2020-10-01 to 2021-09-30 DAILY MEAN VALUES

[e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	68.7	67.4	e60.0	e44.0	e45.1	68.0	51.1	144	357	169	103	71.3
2	68.8	67.3	e53.2	e46.7	e49.2	62.3	55.3	141	384	165	110	72.5
3	68.7	67.4	e48.8	e45.9	52.9	56.4	62.4	145	413	159	118	73.7
4	73.8	67.2	e48.0	e49.6	58.1	50.4	71.4	137	442	154	102	70.9
5	77.1	66.9	e51.3	e55.7	52.1	48.9	83.5	138	457	154	97.1	69.6
6	76.1	67.0	e49.7	e50.7	44.3	49.1	88.7	148	466	154	95.9	68.7
7	75.4	69.3	e48.1	e52.8	47.6	46.6	78.4	175	437	145	95.3	67.4
8	74.9	75.8	e49.8	e53.1	55.5	46.6	79.7	205	412	140	91.7	66.9
9	74.2	68.0	e49.2	e48.8	65.9	47.9	78.8	181	382	136	88.1	65.9
10	73.6	64.8	e50.6	e40.1	51.1	45.9	79.5	173	357	134	86.4	66.5
11	83.3	68.2	e48.5	e39.8	47.9	43.5	85.1	169	329	132	85.0	71.7
12	76.9	70.8	e47.1	e44.7	48.0	e42.4	84.0	161	304	129	83.2	69.2
13	74.5	73.6	e44.9	e52.8	47.1	47.1	82.8	164	287	126	81.5	69.5
14	73.9	65.6	e46.8	e51.6	51.3	46.1	82.3	177	275	122	80.2	67.4
15	73.0	63.8	e48.0	e50.0	58.0	47.5	78.1	200	265	120	79.1	65.7
16	72.4	65.7	e52.2	e52.2	49.8	46.5	76.2	224	256	119	78.3	65.0
17	72.2	65.1	e54.1	e47.7	47.5	47.7	71.9	243	246	115	77.9	64.4
18	71.7	66.6	e53.5	e47.0	46.6	47.8	75.3	253	238	112	81.3	64.8
19	71.0	67.4	e50.8	e47.4	57.5	50.2	82.3	279	227	110	94.4	65.6
20	70.7	e55.7	e52.3	e52.3	47.1	53.9	77.2	300	219	112	88.7	66.7
21	70.7	e49.8	e54.2	e54.9	47.8	50.4	77.8	338	215	108	89.7	65.4
22	69.6	e50.8	e50.4	e55.2	46.4	47.9	82.6	344	212	107	106	64.8
23	69.2	e55.5	e42.4	52.3	45.9	51.4	86.4	379	205	105	85.4	63.5
24	70.9	e52.6	e37.2	54.0	49.2	47.7	88.4	348	201	103	80.1	63.0
25	70.8	e52.3	e42.6	71.6	e49.3	49.0	87.8	321	198	101	77.1	62.5
26	e67.2	e59.0	e49.0	e75.1	62.3	47.5	99.9	324	190	99.3	76.0	62.1
27	70.4	e56.1	e48.2	e75.7	53.4	46.8	94.4	316	184	98.4	75.8	62.0
28	69.7	e57.1	e46.1	59.5	57.2	48.1	98.7	322	180	102	74.5	61.5
29	69.6	e56.2	e43.6	52.4		50.9	108	323	175	112	73.7	61.4
30	68.9	e55.1	e42.6	e50.7		47.4	125	328	170	107	73.7	61.6
31	68.4		e47.3	e44.6		49.1		342		111	72.6	
Total	2,236	1,888	1,510	1,618	1,434	1,531	2,473	7,442	8,683	3,861	2,702	1,991
Mean	72.1	62.9	48.7	52.2	51.2	49.4	82.4	240	289	125	87.2	66.4
Max	83.3	75.8	60.0	75.7	65.9	68.0	125	379	466	169	118	73.7
Min	67.2	49.8	37.2	39.8	44.3	42.4	51.1	137	170	98.4	72.6	61.4
Ac-ft	4,436	3,745	2,996	3,211	2,844	3,037	4,905	14,760	17,220	7,658	5,359	3,948

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2021, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	90.4	78.2	68.1	63.2	60.4	63.6	161	523	605	285	149	107
Max	156	114	88.4	88.7	87.5	159	446	1,072	1,377	779	280	169
(WY)	(1987)	(1986)	(1983)	(2019)	(2017)	(2017)	(2017)	(1997)	(1986)	(2011)	(2011)	(2011)
Min	51.0	50.7	41.5	39.7	34.7	39.5	58.6	99.1	96.2	61.4	55.1	52.1
(WY)	(1978)	(1978)	(2002)	(2008)	(2003)	(1988)	(1975)	(1977)	(1977)	(1977)	(1977)	(1977)

Figure 2021.18 (cont.)

10039500 BEAR RIVER AT BORDER, WY

LOCATION.--Lat 42°12'40", long 111°03'11" referenced to North American Datum of 1927, in NE ¼ NE ¼ NE ¼ sec.15, T.14 S., R.46 E., Bear Lake County, ID, Hydrologic Unit 16010102, on left bank 0.2 mi west of Wyoming-Idaho State line, 0.5 mi west of Border, and 2.1 mi upstream from Thomas Fork.

DRAINAGE AREA.--2,480 mi².

PERIOD OF RECORD - October 1937 to September 1996, October 1996 to September 2000 (seasonal), October 2000 to current year.

GAGE - Water-stage recorder. Datum of gage is 6,056.85 ft. above NAVD of 1988 from a Level II GNSS survey conducted on June 8, 2021.

REMARKS - Natural flow of stream affected by regulation of upstream reservoirs, diversions for irrigation, and return flow from irrigated areas.

Records are good except estimated discharges which are poor and the following exceptions: March 13 to August 15, 2017 which is rated fair. EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 4,880 ft³/s, Jun 7, 1983, gage height, 9.69 ft; minimum discharge, 24 ft³/s, Apr 29, 30, 1977.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2020-10-01 to 2021-09-30 DAILY MEAN VALUES [e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	94.6	126	e105	e109	e110	e146	154	105	250	148	121	67.2
2	90.4	128	e104	e106	e113	e135	176	110	258	136	113	62.6
3	87.4	127	e103	e107	e143	e128	196	112	289	129	121	57.1
4	85.2	127	e104	e112	e122	e133	189	114	300	121	120	57.6
5	90.5	128	e103	e121	e131	e141	199	137	305	119	105	53.3
6	95.1	133	e104	e116	e128	e135	209	133	317	116	119	53.5
7	87.2	139	e106	e109	e131	e142	200	143	316	116	104	52.5
8	87.1	140	e104	e106	e122	e144	190	159	e286	106	97.9	51.8
9	91.4	146	e105	e101	e123	e148	170	176	271	99.5	92.0	49.3
10	94.4	139	e104	e98.3	e130	e154	159	167	249	97.4	80.3	49.0
11	99.6	e141	e101	e87.5	e128	e153	153	177	238	97.4	74.8	51.2
12	98.7	e135	e99.9	e87.5	e138	e150	154	177	217	94.9	77.1	51.3
13	99.3	e138	e99.3	e113	e142	e142	134	164	197	98.2	81.2	52.8
14	104	e150	e110	e114	e142	e155	128	164	178	98.7	76.5	52.1
15	102	e161	e120	e110	e148	e165	127	168	169	97.7	72.6	52.1
16	102	e170	e130	e118	e134	e167	117	190	162	96.0	70.3	51.9
17	105	e151	e136	e117	e140	e175	113	209	159	93.5	62.5	51.6
18	102	e173	e136	e127	e134	e176	106	209	154	92.1	64.3	49.8
19	97.0	179	e141	e121	e141	e171	105	204	148	89.2	78.1	52.1
20	103	e180	e141	e106	e137	e174	108	214	128	88.7	89.5	53.9
21	100	e145	e138	e104	e121	e179	104	241	133	88.0	88.0	60.9
22	99.0	e118	e142	e121	e136	e165	103	279	149	87.5	104	60.5
23	97.9	e109	e133	e127	e140	e158	104	305	146	85.5	99.9	58.8
24	102	e114	e128	e133	e144	e159	96.3	330	165	81.6	75.9	57.4
25	116	e114	e113	e126	e141	e153	96.6	292	173	78.8	66.6	56.4
26	107	e114	e126	e110	e149	e153	93.2	276	150	76.5	67.3	53.7
27	108	e111	e139	e106	e152	e158	103	270	144	77.6	66.1	52.6
28	117	e109	e133	e123	e149	e160	98.2	251	149	78.3	64.6	52.1
29	119	e109	e122	e127		e170	96.1	243	149	78.5	64.8	52.7
30	120	e105	e106	e130		e167	107	246	146	86.8	64.3	54.4
31	124		e108	e126		e161		249		81.4	66.8	
Total	3,126	4,059	3,644	3,519	3,769	4,817	4,088	6,213	6,095	3,035	2,648	1,632
Mean	101	135	118	114	135	155	136	200	203	97.9	85.4	54.4
Max	124	180	142	133	152	179	209	330	317	148	121	67.2
Min	85.2	105	99.3	87.5	110	128	93.2	105	128	76.5	62.5	49.0
Ac-ft	6,200	8,051	7,228	6,979	7,476	9,554	8,108	12,320	12,090	6,019	5,253	3,237

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2021, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	195	213	186	171	193	364	690	955	1,113	520	214	166
Max	752	693	563	381	479	1,640	2,220	3,158	3,829	2,837	752	671
(WY)	(1983)	(1983)	(1983)	(1985)	(1986)	(2017)	(2017)	(1952)	(1983)	(2011)	(1983)	(1983)
Min	43.5	74.7	97.2	77.6	75.2	105	71.2	74.4	62.2	54.2	42.3	38.5
(WY)	(2002)	(2002)	(2002)	(1993)	(1993)	(1988)	(1977)	(1977)	(1977)	(1977)	(1940)	(1940)

Figure 2021.18 (cont.)

RAINBOW INLET CANAL NEAR DINGLE, ID (10046000)

Water Year 2021 (October 2020 to September 2021)

Daily Mean Values

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	79	125	145	145	140	140	170	5	7	5	10	20
2	79	125	145	145	145	140	170	5	7	5	10	20
3	79	125	145	145	145	135	180	5	7	5	11	20
4	79	125	145	145	145	145	190	3	7	5	13	20
5	82	125	140	145	145	145	190	3	7	5	13	12
6	84	130	140	145	145	145	190	3	7	5	15	10
7	84	130	140	145	145	145	190	3	7	5	15	10
8	89	140	140	145	145	162	190	3	7	5	15	10
9	84	145	140	145	145	155	190	3	7	5	15	10
10	84	140	145	145	145	155	190	3	7	5	15	10
11	89	140	145	145	145	155	190	15	7	5	15	10
12	89	148	145	145	135	155	190	8	7	5	15	10
13	89	148	145	145	135	160	170	8	7	5	15	9
14	89	148	145	145	135	160	160	8	7	5	15	9
15	95	148	145	145	135	160	110	8	7	5	15	9
16	110	150	145	145	135	160	110	8	7	5	15	9
17	120	155	145	145	135	165	110	5	6	5	15	10
18	120	160	145	140	135	165	100	5	6	5	15	10
19	135	165	145	140	135	170	80	7	6	5	15	10
20	135	165	145	140	135	170	65	7	6	5	15	10
21	135	165	145	140	140	170	60	7	6	5	15	10
22	135	160	150	140	140	170	40	7	6	5	15	10
23	135	155	145	140	140	170	25	8	6	5	15	10
24	135	155	145	140	140	170	25	8	5	5	15	10
25	135	145	145	140	140	170	25	15	5	5	15	13
26	135	150	145	140	140	170	25	15	5	10	17	13
27	135	150	145	140	140	170	25	18	5	10	17	13
28	135	150	145	140	140	170	25	18	5	10	17	13
29	135	145	145	140		170	17	10	5	10	17	15
30	130	145	145	140		170	17	7	5	10	20	21
31	125		145	140		170		7		10	20	
Monthly Statistics												Yearly Stats
Total	3,364	4,357	4,475	4,425	3,925	4,957	3,419	235	189	185	465	366
Mean	109	145	144	143	140	160	114	8	6	6	15	12
Min	79	125	140	140	135	135	17	3	5	5	10	9
Max	135	165	150	145	145	170	190	18	7	10	20	21
Ac-ft	6,670	8,640	8,880	8,780	7,790	9,830	6,780	466	375	367	922	726
												30,400
												84
												3
												190
												60,200

10055000 BEAR LAKE AT STATE PARK MARINA NR GARDEN CITY, UT

LOCATION - Lat 41°57'57.30", long 111°23'53.44" referenced to North American Datum of 1983, Rich County, UT, Hydrologic Unit 16010201,

PERIOD OF RECORD - UP&L Datum - October 1903 to June 1906, August 1909 to current year; North American Vertical Datum 1988 (NAVD88) -

October 2019 to current year. Records from October 1903 to October 2019 collected by UP&L Co/PacifiCorp Power Company.

GAGE - Staff gage at Bear Lake at Fish Haven, ID from October 1903 to 1906, UP&L datum. Water-stage recorder at Lifton Pumping Station, ID from August 1909 to April 2004, UP&L datum. Staff gage at Bear Lake State Park Marina, Garden City, UT, from April 2004 to October 2019, UP&L datum. Water-stage recorder at Bear Lake State Park Marina, Garden City, UT, from October 2019 to present, NAVD88 and UP&L datum.

COOPERATION - Station operated by the U.S. Geological Survey, in cooperation with the Bear River Commission and Bear Lake Watch.

REMARKS - The Bear Lake elevations measured at State Park Marina reported by the U.S. Geological Survey are referenced to the NAVD 88 datum.

The relation of the gage to this datum was established by U.S. Geological Survey personnel who performed two separate GNSS static observations on a local reference mark near the gage location on October 2 and 3, 2019. Utilizing additional GNSS static observations near the Lifton Bench Mark, U.S. Geological Survey personnel determined a difference between the datum of this gage (NAVD88) and the UP&L Co. datum (which has been historically used to quantify the elevation of Bear Lake) to be -6.88 feet. Bear Lake elevations are reported here relative to the NAVD88 datum. Additionally, Bear Lake elevations are reported here relative to the UP&L Co. datum by subtracting 6.88 feet from gage readings.

GAGE HEIGHT, FEET, [Elevation, ft (UP&L Co. Datum)]

YEAR 2020-10-01 to 2021-09-30

DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	2020	2020	2020	2021	2021	2021	2021	2021	2021	2021	2021	2021
1	5,916.34	5,916.08	5,916.13	5,916.23	5,916.39	5,916.56	5,916.78	5,916.93	5,916.49	5,915.03	5,913.75	5,912.96
2	5,916.32	5,916.08	5,916.12	5,916.23	5,916.39	5,916.57	5,916.79	5,916.94	5,916.46	5,914.98	5,913.73	5,912.95
3	5,916.31	5,916.08	5,916.12	5,916.24	5,916.42	5,916.57	5,916.80	5,916.94	5,916.43	5,914.93	5,913.69	5,912.92
4	5,916.29	5,916.09	5,916.12	5,916.24	5,916.43	5,916.58	5,916.81	5,916.92	5,916.40	5,914.88	5,913.66	e5,912.89
5	5,916.29	5,916.09	5,916.13	5,916.25	5,916.44	5,916.59	5,916.82	5,916.90	5,916.37	5,914.84	5,913.64	e5,912.88
6	5,916.29	5,916.09	5,916.13	5,916.26	5,916.45	5,916.59	5,916.84	5,916.88	5,916.32	5,914.80	5,913.60	e5,912.86
7	5,916.29	5,916.09	5,916.14	5,916.26	5,916.42	5,916.60	5,916.84	5,916.86	5,916.28	5,914.75	5,913.56	e5,912.84
8	5,916.29	5,916.10	5,916.14	5,916.26	5,916.44	5,916.60	5,916.85	5,916.83	5,916.22	5,914.72	5,913.53	e5,912.82
9	5,916.29	5,916.09	5,916.14	5,916.27	5,916.44	5,916.61	5,916.85	5,916.79	5,916.17	5,914.64	5,913.50	5,912.80
10	5,916.28	5,916.08	5,916.15	5,916.27	5,916.44	5,916.62	5,916.85	5,916.75	5,916.09	5,914.58	5,913.45	5,912.78
11	5,916.30	5,916.07	5,916.15	5,916.28	5,916.45	5,916.62	5,916.85	5,916.75	5,916.04	5,914.54	5,913.41	5,912.77
12	5,916.29	5,916.07	5,916.15	5,916.28	5,916.46	5,916.62	5,916.85	5,916.74	5,915.98	5,914.49	5,913.38	5,912.75
13	5,916.28	5,916.07	5,916.15	5,916.28	5,916.48	5,916.63	5,916.84	5,916.73	5,915.93	5,914.45	5,913.34	5,912.75
14	5,916.25	5,916.08	5,916.16	5,916.29	5,916.49	5,916.64	5,916.87	5,916.72	5,915.88	5,914.41	5,913.31	5,912.72
15	5,916.22	5,916.09	5,916.16	5,916.29	5,916.50	5,916.64	5,916.90	5,916.71	5,915.82	5,914.37	5,913.27	5,912.69
16	5,916.22	5,916.09	5,916.16	5,916.29	5,916.52	5,916.65	5,916.90	5,916.69	5,915.77	5,914.33	5,913.23	5,912.66
17	5,916.21	5,916.10	5,916.17	5,916.30	5,916.52	5,916.66	5,916.91	5,916.68	5,915.73	5,914.29	5,913.19	5,912.64
18	5,916.20	5,916.11	5,916.18	5,916.30	5,916.52	5,916.67	5,916.91	5,916.65	5,915.67	5,914.25	5,913.16	5,912.61
19	5,916.19	5,916.12	5,916.19	5,916.30	5,916.53	5,916.68	5,916.91	5,916.63	5,915.62	5,914.21	5,913.12	5,912.58
20	5,916.18	5,916.12	5,916.18	5,916.31	5,916.54	5,916.70	5,916.91	5,916.63	5,915.56	5,914.18	5,913.13	5,912.55
21	5,916.18	5,916.12	5,916.19	5,916.31	5,916.55	5,916.71	5,916.90	5,916.62	5,915.50	5,914.14	5,913.12	5,912.52
22	5,916.17	5,916.12	5,916.20	5,916.32	5,916.55	5,916.71	5,916.90	5,916.62	5,915.45	5,914.11	5,913.11	5,912.50
23	5,916.15	5,916.12	5,916.19	5,916.35	5,916.56	5,916.73	5,916.89	5,916.60	5,915.41	5,914.04	5,913.10	5,912.47
24	5,916.14	5,916.12	5,916.19	5,916.35	5,916.55	5,916.74	5,916.90	5,916.58	5,915.36	5,914.00	5,913.09	5,912.45
25	5,916.13	5,916.12	5,916.20	5,916.36	5,916.55	5,916.75	5,916.89	5,916.58	5,915.32	5,913.97	5,913.07	5,912.43
26	5,916.10	5,916.12	5,916.20	5,916.36	5,916.56	5,916.77	5,916.92	5,916.58	5,915.29	5,913.92	5,913.07	5,912.40
27	5,916.09	5,916.12	5,916.21	5,916.36	5,916.56	5,916.77	5,916.93	5,916.56	5,915.23	5,913.90	5,913.04	5,912.38
28	5,916.08	5,916.12	5,916.21	5,916.36	5,916.56	5,916.78	5,916.92	5,916.55	5,915.18	5,913.87	5,913.03	5,912.36
29	5,916.08	5,916.12	5,916.21	5,916.37		5,916.77	5,916.92	5,916.54	5,915.13	5,913.83	5,913.01	5,912.31
30	5,916.08	5,916.12	5,916.22	5,916.38		5,916.78	5,916.93	5,916.53	5,915.08	5,913.80	5,912.99	5,912.26
31	5,916.08		5,916.22	5,916.38		5,916.78		5,916.51		5,913.77	5,912.98	
Mean	5,916.21	5,916.1	5,916.17	5,916.3	5,916.49	5,916.67	5,916.87	5,916.71	5,915.81	5,914.36	5,913.3	5,912.65
Max	5916.34	5916.12	5916.22	5916.38	5916.56	5916.78	5916.93	5916.94	5916.49	5915.03	5913.75	5912.96
Min	5916.08	5916.07	5916.12	5916.23	5916.39	5916.56	5916.78	5916.51	5915.08	5913.77	5912.98	5912.26



Bear Lake Outlet Canal near Paris, ID (10059500)

Daily Mean by Year

Units: ft^3/s

October 2020 - September 2021

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	358	0.00	0.00	0.00	0.00	0.00	0.00	0.00	667	1350	865	381
2	357	0.00	0.00	0.00	0.00	0.00	0.00	290	765	1380	871	380
3	358	0.00	0.00	0.00	0.00	0.00	0.00	603	856	1400	880	379
4	169	0.00	0.00	0.00	0.00	0.00	0.00	617	858	1330	763	378
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	619	979	1260	634	378
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	621	1180	1260	635	380
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	627	1290	1250	635	382
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1030	1370	1240	633	421
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1290	1590	1240	754	450
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1170	1620	1240	840	445
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	824	1630	1230	841	347
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	511	1640	1170	840	286
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	514	1640	1070	833	316
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	521	1660	1060	824	317
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	912	1680	1050	824	315
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1270	1680	1040	814	316
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1280	1630	1040	805	315
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	953	1570	1040	799	311
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	590	1570	1030	709	316
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	613	1570	1030	556	316
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	602	1580	1030	325	315
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	596	1480	1010	0.00	315
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	598	1370	968	0.00	346
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	594	1460	968	0.00	373
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	596	1520	968	0.00	375
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	516	1400	967	176	379
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	405	1320	966	385	382
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	391	1350	969	388	394
29	0.00	0.00	0.00	0.00		0.00	0.00	389	1330	971	386	388
30	0.00	0.00	0.00	0.00		0.00	0.00	489	1330	915	384	387
31	0.00		0.00	0.00		0.00		629		865	381	

Max	358	0.00	0.00	0.00	0.00	0.00	0.00	1290	1680	1400	880	450
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	667	865	0.00	286
Mean	40.1	0.00	0.00	0.00	0.00	0.00	0.00	667	1390	1110	574	359

Annual Max: 1680 Annual Mean: 346

10092700 BEAR RIVER AT IDAHO-UTAH STATE LINE

LOCATION.--Lat 42°00'47", long 111°55'14" referenced to North American Datum of 1927, in NE ¼ NW ¼ NE ¼ sec.29, T.16 S., R.39 E., Franklin County, ID, Hydrologic Unit 16010202, on left bank 1,050 ft downstream from inlet canal to Cub River pumps, 1.1 mi downstream from Weston Creek, 1.8 mi upstream from Idaho-Utah State line, and 3.5 mi southeast of Weston.

PERIOD OF RECORD - October 1970 to current year.

GAGE - Water-stage recorder and crest-stage gage. Datum of gage is 4,424.20 ft. above NAVD of 1988 from a Level II GNSS survey conducted on June 21, 2023. Prior to September 10, 1982 at datum 12.00 ft higher. September 10, 1982 to September 30, 1985 at datum 10.0 ft higher.

REMARKS - Records good except for estimates, which are poor. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 4,870 ft³/s, Jun 14, 1984, gage height, 19.20 ft, present datum; maximum gage height, 20.25 ft, Jun 12, 1971, present datum; minimum daily discharge, 24 ft³/s, May 16, 2004.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2020-10-01 to 2021-09-30 DAILY MEAN VALUES [e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	501	519	493	635	454	470	587	466	461	944	757	290
2	581	516	522	489	450	469	590	430	514	952	810	293
3	634	485	502	418	451	469	587	395	554	983	801	296
4	637	496	475	421	448	472	613	382	599	1,000	763	285
5	694	497	484	446	459	472	627	379	660	1,010	739	294
6	765	494	496	467	488	470	662	412	650	1,000	738	304
7	698	539	457	450	453	481	681	577	669	907	668	303
8	587	532	441	424	448	500	604	717	750	809	568	299
9	584	534	450	433	450	518	596	860	830	710	417	291
10	528	521	470	424	454	531	584	886	894	831	406	311
11	508	526	485	410	460	486	706	896	941	854	400	382
12	502	524	461	422	470	485	708	763	952	823	507	481
13	500	531	455	413	477	458	530	684	960	796	589	587
14	498	522	391	414	492	460	456	690	1,050	734	616	485
15	486	541	441	411	484	463	470	746	1,050	722	666	334
16	488	522	536	416	490	467	476	941	945	710	596	253
17	462	e501	504	422	491	476	467	928	903	725	606	240
18	463	e544	468	427	480	487	460	929	895	766	709	269
19	478	531	478	421	483	493	437	838	917	772	753	276
20	479	511	469	402	481	493	453	648	923	748	824	276
21	480	497	460	402	477	518	407	590	1,010	733	860	288
22	481	477	454	449	461	561	414	621	1,030	708	841	313
23	471	490	453	434	471	545	403	646	1,040	722	680	279
24	455	470	e485	427	469	579	388	633	1,040	761	396	276
25	454	490	e515	418	470	526	395	652	1,010	779	287	272
26	446	476	478	414	466	533	450	666	1,010	742	267	271
27	451	475	581	410	473	547	475	616	1,080	741	263	267
28	454	480	e439	431	476	587	394	536	1,070	658	297	244
29	493	522	e442	419		713	325	515	1,020	683	338	253
30	539	522	e468	461		660	361	485	982	708	293	256
31	510		589	457		592		482		743	287	
Total	16,310	15,290	14,840	13,490	13,130	15,980	15,310	20,010	26,410	24,770	17,740	9,268
Mean	526	510	479	435	469	516	510	645	880	799	572	309
Max	765	544	589	635	492	713	708	941	1080	1010	860	587
Min	446	470	391	402	448	458	325	379	461	658	263	240
Ac-ft	32,340	30,320	29,440	26,750	26,040	31,700	30,359	39,690	52,380	49,140	35,190	18,380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2021, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	785	837	846	829	865	1,066	1,264	1,287	1,171	938	876	795
Max	2,849	2,983	2,552	1,904	2,556	3,264	3,594	3,968	4,263	3,442	2,416	2,545
(WY)	(1984)	(1984)	(1985)	(1984)	(1986)	(1986)	(1986)	(1986)	(1986)	(1983)	(1984)	(1986)
Min	224	298	310	269	296	351	351	158	301	368	461	192
(WY)	(2004)	(1993)	(1982)	(2004)	(2002)	(1991)	(2003)	(2003)	(2004)	(2006)	(1993)	(1992)

Figure 2021.18 (cont.)

**10109001 COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF LOGAN RIVER ABOVE STATE DAM AND
CACHE HIGHLINE CANAL**

Water-Data Report 2021

**DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR 2020-10-01 to 2021-09-30
DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	127	107	93.0	87.5	80.5	77.2	84.3	196	256	136	112	91.2
2	126	107	90.9	87.9	81.7	77.6	88.8	215	259	133	108	90.7
3	125	105	86.6	87.6	84.6	78.8	97.2	211	266	131	105	89.4
4	124	107	89.3	87.7	81.5	79.6	111	195	269	130	105	89.0
5	124	104	90.9	89.1	83.1	79.7	126	e193	274	128	104	87.7
6	123	104	91.9	83.6	82.2	80.5	132	e209	276	127	104	86.7
7	123	107	90.5	87.7	81.1	81.2	121	240	262	124	104	86.3
8	122	112	90.6	86.6	80.6	82.7	119	279	246	122	102	81.5
9	121	107	90.7	85.8	80.7	84.4	118	256	238	120	102	86.4
10	120	106	92.4	80.7	80.6	81.4	118	241	231	119	100	85.0
11	130	107	91.6	81.1	80.5	80.4	122	226	223	117	98.3	85.8
12	123	105	91.9	86.0	83.5	79.8	122	217	212	116	97.3	84.6
13	120	105	86.5	88.0	84.4	80.0	121	225	203	120	96.1	86.2
14	121	110	93.3	83.5	79.5	79.8	126	241	197	122	95.6	84.4
15	115	106	91.6	81.9	82.2	81.7	121	259	192	121	97.2	85.1
16	113	107	91.7	87.4	83.6	83.1	120	281	187	119	96.8	84.9
17	112	106	92.3	83.8	81.4	83.2	116	311	183	119	96.5	84.3
18	112	107	91.9	84.6	75.6	82.9	115	321	180	117	101	83.6
19	113	108	91.1	83.6	80.8	85.2	113	332	176	116	105	83.6
20	109	103	90.6	80.0	81.9	90.4	112	343	172	116	99.4	84.0
21	110	101	92.0	82.8	78.9	88.9	111	344	167	115	99.5	79.3
22	109	99.5	92.9	85.6	78.7	85.6	111	308	163	115	102	87.1
23	110	98.1	90.0	84.7	79.1	84.3	115	292	160	114	96.5	83.5
24	111	99.0	79.8	82.9	78.8	82.1	120	274	156	112	95.1	83.2
25	112	98.7	86.1	82.7	74.0	81.6	125	258	153	111	94.0	82.6
26	110	98.7	93.1	82.4	80.1	81.7	134	247	150	111	93.5	82.1
27	113	96.5	91.0	81.9	79.8	80.6	130	244	146	110	93.1	81.5
28	108	95.2	85.9	82.2	75.5	80.7	126	247	142	113	92.7	80.8
29	105	93.8	83.0	82.4		84.0	129	253	139	112	92.2	79.9
30	108	92.0	82.3	83.8		82.3	150	253	137	111	92.1	81.2
31	107		90.1	79.3		81.8		257		111	92.0	
Total	3,605	3,101	2,786	2,615	2,255	2,543	3,554	7,967	6,015	3,688	3,071	2,542
Mean	116	103	89.9	84.3	80.5	82.0	118	257	201	119	99.1	84.7
Max	130	112	93.3	89.1	84.6	90.4	150	344	276	136	112	91.2
Min	105	92.0	79.8	79.3	74.0	77.2	84.3	193	137	110	92.0	79.3
Ac-ft	7,151	6,153	5,525	5,185	4,473	5,044	7,050	15,800	11,930	7,315	6,092	5,041

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2021, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	146	130	116	108	107	124	252	588	636	334	208	167
Max	262	221	187	165	230	405	629	1,186	1,465	1,118	477	312
(WY)	(2012)	(2012)	(1984)	(2012)	(2017)	(2017)	(1986)	(1936)	(1986)	(2011)	(2011)	(2011)
Min	74.2	71.9	69.0	63.1	61.6	80.3	111	163	141	103	86.4	79.9
(WY)	(1935)	(1993)	(1993)	(1993)	(1993)	(1942)	(1991)	(1977)	(1934)	(1934)	(1992)	(1934)

Figure 2021.18 (cont.)

10126000 BEAR RIVER NEAR CORINNE, UT

LOCATION.--Lat 41°34'35", long 112°06'00" referenced to North American Datum of 1927, in NE ¼ SE ¼ NE ¼ sec.30, T.10 N., R.2 W., Box Elder County, UT, Hydrologic Unit 16010204, on right bank 1.2 mi downstream from Salt Creek, 2.0 mi northeast of Corinne, and 2.8 mi downstream from Malad River.

DRAINAGE AREA.--7,029 mi².

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

GAGE - Water-stage recorder and crest-stage gage. Datum of gage is 4,206.78 ft. above NAVD of 1988 from a Level II GNSS survey conducted on May 14, 2021. Auxiliary nonrecording gage 7,800 ft downstream July 27, 1950 to November 21, 1955.

REMARKS - Records good except for estimates, which are poor. Natural flow of stream affected by Cutler Dam many miles upstream of gage, power development, diversions for irrigation, and return flow from irrigated areas and backwater from Bear River Bird Refuge about 5 miles downstream.

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 14,770 ft³/s, May 19, 1984, gage height, 17.50 ft; minimum daily discharge, 23 ft³/s, Jul 30, 2004.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2020-10-01 to 2021-09-30

DAILY MEAN VALUES [e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	344	858	966	1,230	1,020	882	1,320	229	165	43.5	47.9	308
2	486	894	943	1,090	993	912	1,270	132	156	45.5	55.4	230
3	513	740	921	1,080	976	927	1,140	93.2	154	48.5	79.8	191
4	680	831	951	1,250	959	921	1,100	93.9	167	41.6	107	180
5	763	837	1,060	1,300	958	864	1,090	96.9	184	41.7	129	176
6	626	788	946	e1,080	958	828	974	108	172	40.2	135	173
7	719	806	951	e914	955	819	1,220	111	151	44.9	137	173
8	769	733	1,080	e907	975	872	1,630	117	145	51.1	139	171
9	733	777	1,070	e910	939	912	1,290	118	125	46.9	134	173
10	560	734	899	e891	962	951	1,010	120	104	44.0	136	180
11	471	931	696	e870	925	1,020	959	122	86.2	48.2	134	185
12	528	877	1,010	e841	930	1,040	1,060	122	76.6	47.9	133	190
13	529	856	1,190	e781	944	1,010	1,350	124	64.9	46.3	131	193
14	539	818	1,210	e811	1,020	978	1,730	124	56.9	47.4	128	194
15	372	867	992	e837	1,190	1,020	1,620	124	60.1	49.8	125	194
16	492	913	914	e835	1,050	1,030	919	118	49.7	49.3	122	194
17	611	1,020	1,130	e899	965	890	413	124	43.6	35.1	130	193
18	382	919	1,350	e905	1,010	815	402	148	40.7	29.6	140	202
19	576	796	1,550	1,290	1,060	887	984	422	37.9	31.1	202	188
20	500	798	1,380	786	984	942	958	520	32.2	37.3	269	187
21	542	854	1,280	321	921	1,000	1,040	408	35.8	33.6	295	197
22	649	773	1,050	730	929	1,040	1,060	644	40.0	34.4	239	203
23	671	506	851	1,270	951	1,040	702	484	32.2	33.8	160	207
24	730	713	838	1,270	965	996	463	279	31.3	30.6	135	209
25	610	865	1,040	1,240	1,000	1,120	384	367	32.6	30.7	232	204
26	420	810	1,320	e1,260	982	1,140	520	419	34.3	35.7	273	202
27	623	550	1,210	1,250	918	1,060	745	335	28.0	40.1	282	202
28	787	710	691	1,190	887	1,050	730	285	24.5	38.0	281	202
29	645	838	613	1,100		1,220	599	311	27.8	35.2	479	205
30	615	902	1,100	1,150		1,050	393	270	34.9	40.4	559	206
31	645		1,330	1,070		1,330		199		43.2	386	
Total	18,130	24,310	32,529	31,360	27,330	30,570	29,080	7,168	2,393	1,266	5,935	5,911
Mean	585	810	1,049	1,012	976	986	969	231	79.8	40.8	191	197
Max	787	1020	1550	1300	1190	1330	1730	644	184	51.1	559	308
Min	344	506	613	321	887	815	384	93.2	24.5	29.6	47.9	171
Ac-ft	35,960	48,230	64,530	62,200	54,200	60,629	57,670	14,220	4,747	2,510	11,770	11,730

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2021, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,212	1,462	1,539	1,654	1,756	2,225	2,708	2,664	1,974	616	529	785
Max	4,240	4,471	4,414	3,639	5,966	6,041	7,258	9,598	9,201	4,186	3,045	3,423
(WY)	(1984)	(1985)	(1984)	(1984)	(1986)	(1986)	(1985)	(1984)	(1984)	(1983)	(1983)	(1984)
Min	95.6	621	535	620	723	897	638	71.8	77.6	40.4	46.8	62.2
(WY)	(1993)	(1995)	(1995)	(1993)	(1993)	(2015)	(1992)	(1992)	(1992)	(2003)	(2004)	(1992)

Figure 2021.18 (cont.)

2022 WATER SUPPLY AND DISTRIBUTION REPORT

2022 Water Supply and Distribution Report

OVERVIEW

The water supply in 2022 was improved over the really poor 2021 supply, but it was still fairly dry with irrigation season stream flow varying from 83% of normal in the Upper Division down to 56% of normal in the Lower Division. The actually realized flows were above the forecasted amounts in the Upper Division, about equal in the Central Division and below the forecasted amounts in the Lower Division. Additionally, precipitation was below normal to well below normal during May, June and July but well above normal in August and mixed in the Basin in September. Due to the two prior drier than normal years, the carryover storage coming into the 2022 water year was limited. A water emergency was declared in the Central Division the first week of May and except for a short period from mid-June to the first part of July remained in interstate regulation throughout the irrigation season. Despite the dry water year, water was fairly distributed between the States pursuant to the Compact.

WATER SUPPLY

Three stream gages, one in each division of the river, have been used by the Commission as indicator gages of the relative supply available for each of the divisions of the river (see Stream Gaging Program section in the Overview chapter). The Utah-Wyoming State Line and Smith's Fork gages measure a major portion of the stream flow in the Upper and Central Divisions, respectively. The Logan River is a major tributary to the Bear River in Cache Valley, which is in the Lower Division. Specific discharges, as measured by the USGS for the three gages during 2022, compared with the long-term averages, are summarized in Figure 2022.1 and are graphically illustrated in Figures 2022.2 through 2022.4 on the subsequent pages.

Figure 2022.1 shows a summary of the volumetric discharge for each of these gages for the water year. As the water supply available during the irrigation season is most critical for filling the natural flow rights, the discharge as measured at these gages during the irrigation season is also shown in Figure 2022.1.

Figures 2022.2 through 2022.4 show hydrographs for each of these three gaging stations. On each hydrograph, the mean daily flow during the irrigation season is plotted against the average of the mean daily flows for the period 1943 through 2022. The area between the 2022 hydrographs and the mean hydrographs represents the difference in volume of water discharged during 2022 versus the long-term average. This volumetric difference is illustrated by the bar charts shown on each of the figures.

As can be seen in Figure 2022.1, the annual discharge for the Upper Division (Utah-Wyoming State Line gage) was 87 percent of the long-term average, and streamflow on Smith's Fork

and the Logan River were 70 percent and 57 percent, respectively. More important to the irrigation diversions is the streamflow during the irrigation season of May through September. During this period, the water supply was 83 percent (Upper Division), 68 percent (Central Division), and 56 percent (Lower Division).

2022 Water Supply Summary by Division

2022 WATER YEAR

(Discharge in Acre-feet)

GAGE	AVERAGE (1943-22)	2022	PERCENT
Upper Division (UT-WY State Line)	138,400	119,900	87%
Central Division (Smith's Fork)	135,800	95,300	70%
Lower Division (Logan River)	181,600	102,400	57%

2022 IRRIGATION SEASON

MAY - SEPTEMBER

(Discharge in Acre-feet)

GAGE	AVERAGE (1943-22)	2022	PERCENT
Upper Division (UT-WY State Line)	114,000	94,200	83%
Central Division (Smith's Fork)	100,700	68,800	68%
Lower Division (Logan River)	119,200	66,600	56%

Figure 2022.1

One item of interest to note is that the April 1 streamflow forecasts for the April – September period was 12% below what was actually realized in the Upper Division, almost spot on in the Central Division, and 10% higher than what was realized in the Lower Division. The water supply clearly worsened moving down river.

A closer look at the three hydrographs (Figures 2022.2, 2022.3 and 2022.4) is also insightful when one is trying to understand the natural flow water supply in the spring and summer of 2022. In general, the three gages each show three different peaks during the runoff period, though below normal, with streamflow below normal to well below normal during the remainder of the irrigation season.

2022 - Upper Division Water Supply

Flow at Utah-Wyoming State Line Gage

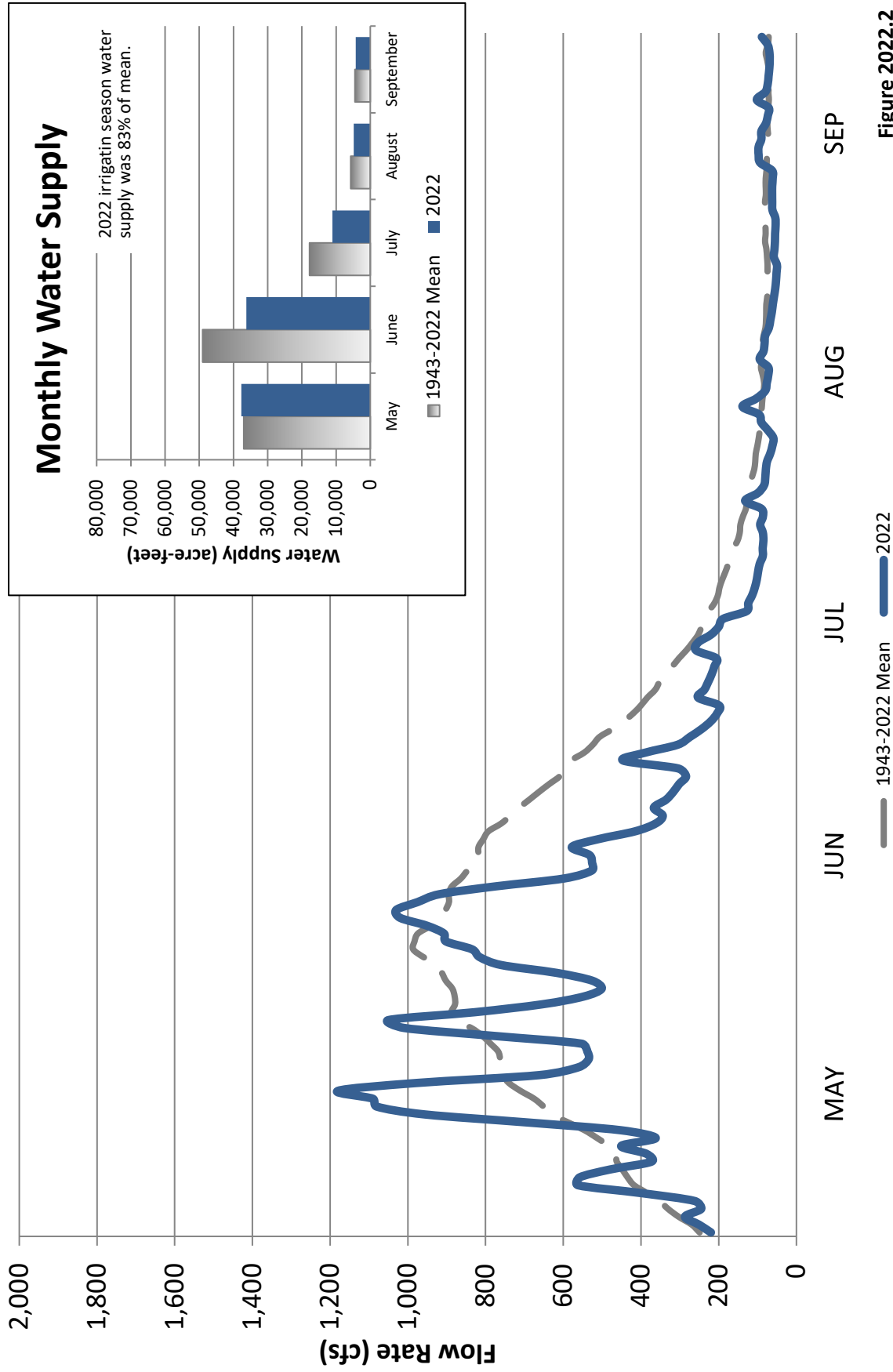


Figure 2022.2

2022 - Central Division Water Supply

Flow at Smiths Fork near Border, Wyoming Gage

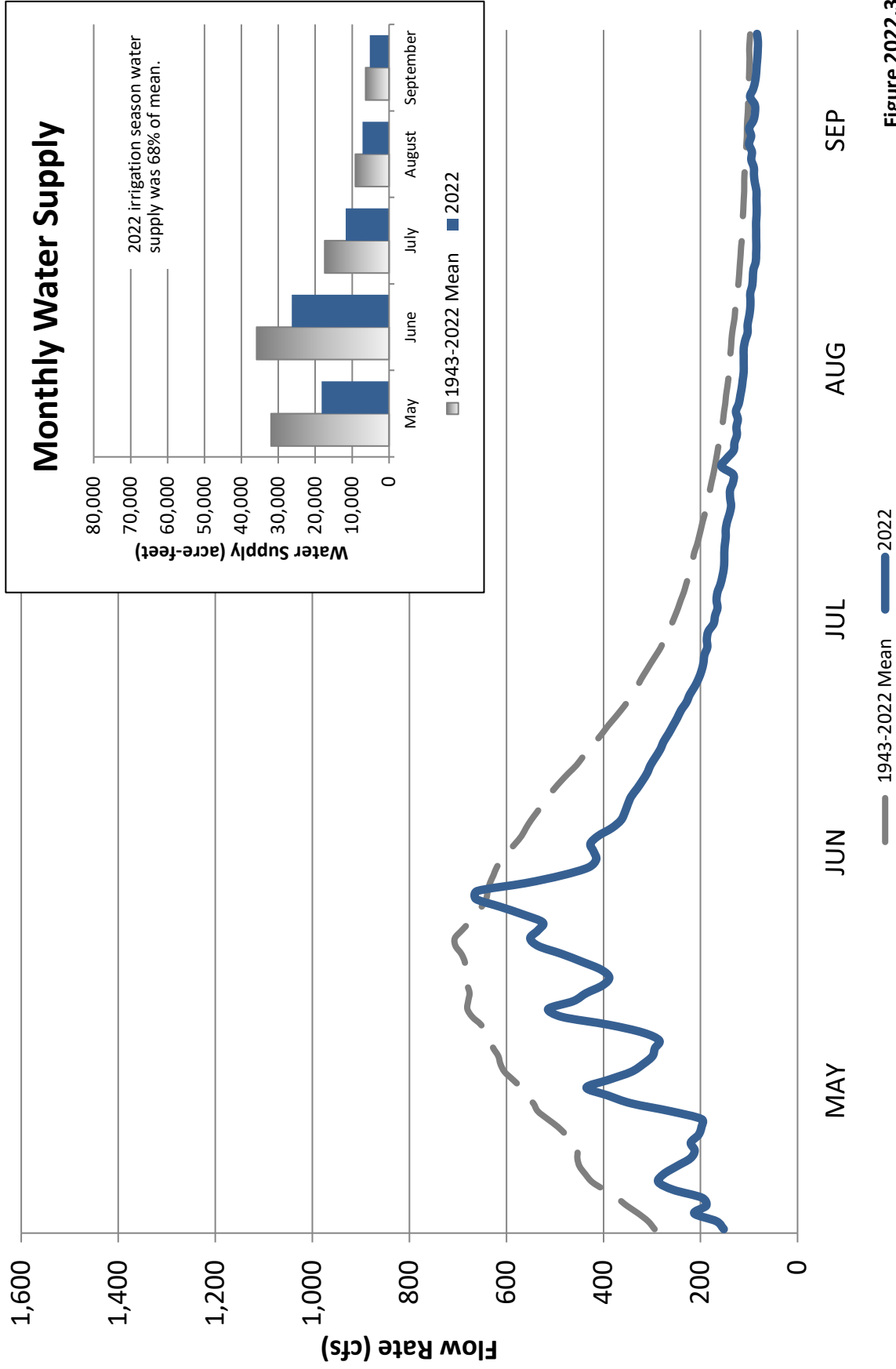


Figure 2022.3

2022 - Lower Division Water Supply Flow at Logan River Combined Gage

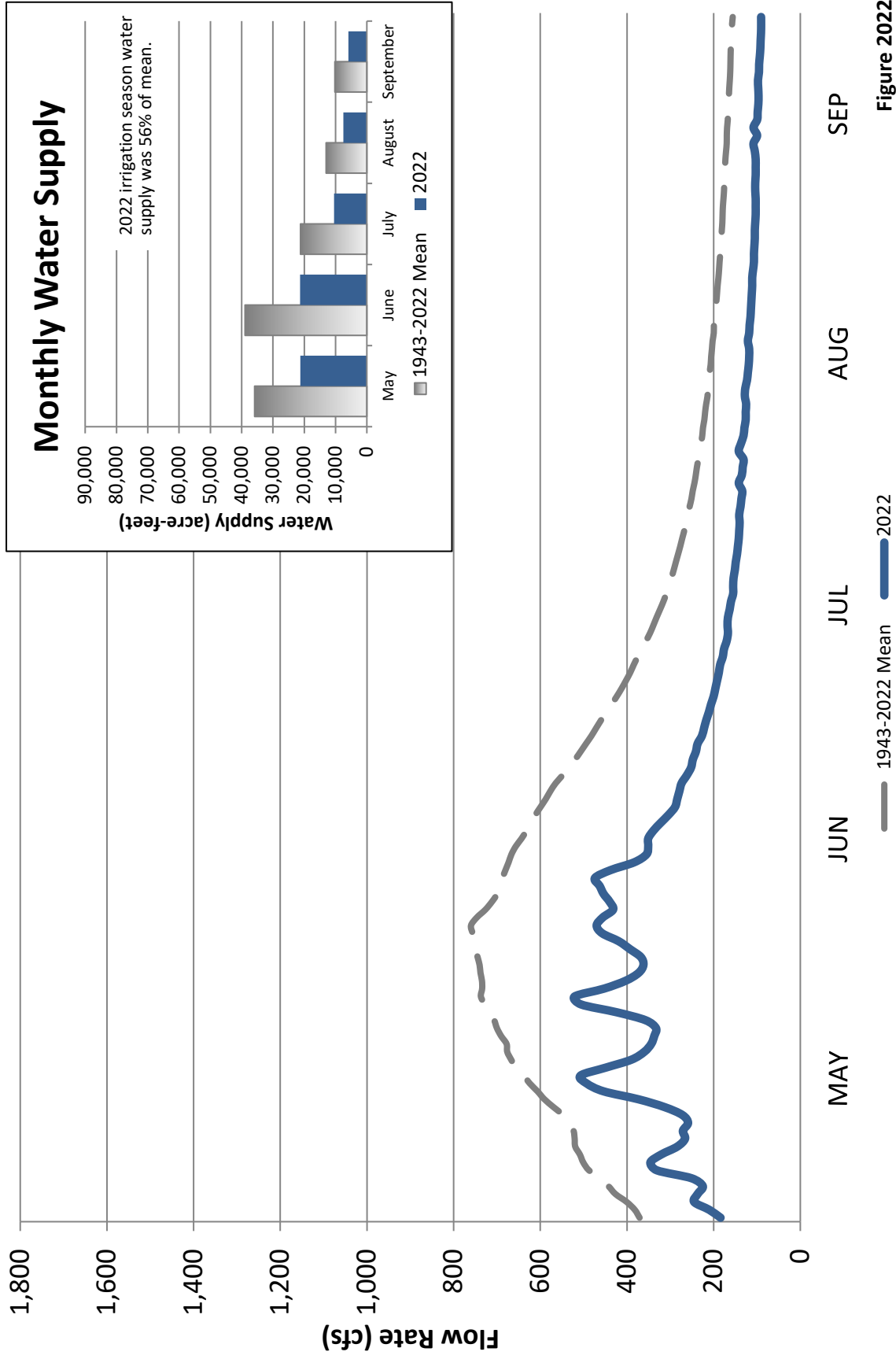
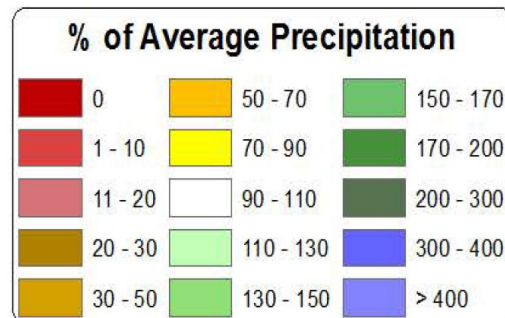
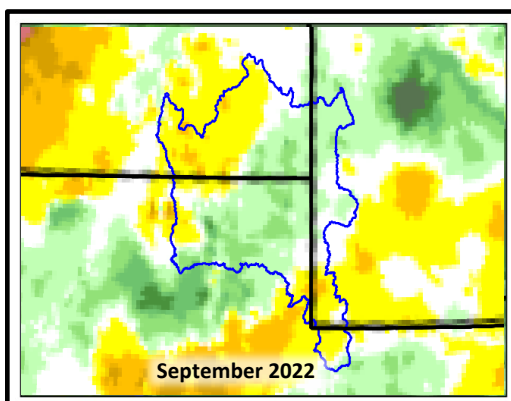
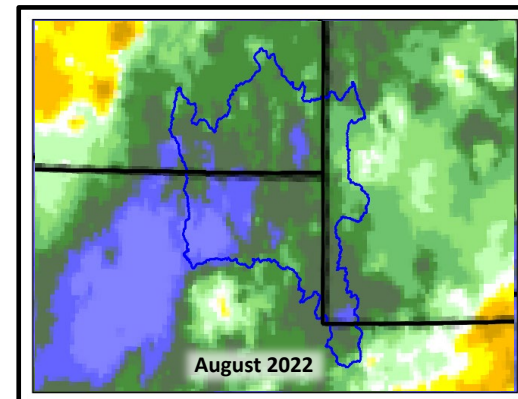
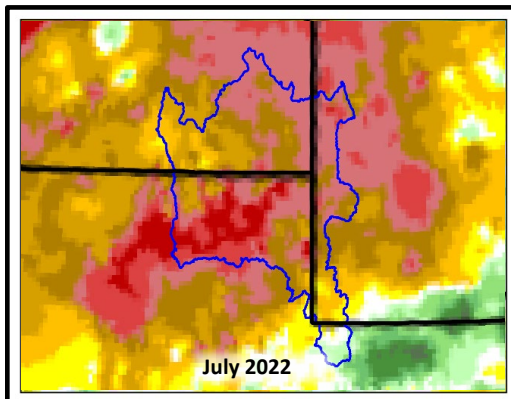
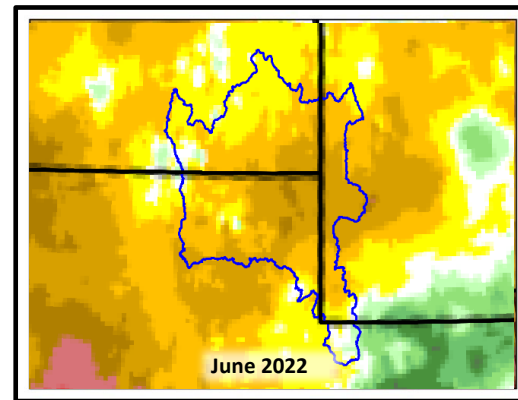
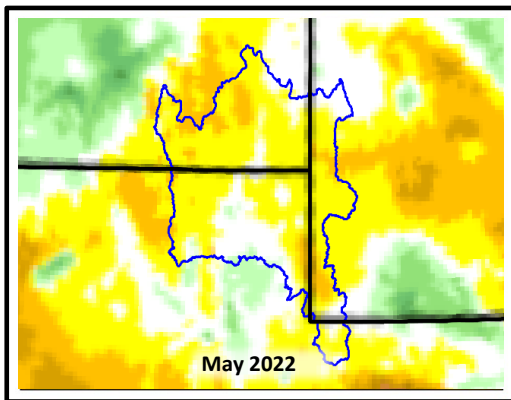


Figure 2022.4

Historically the Commission has focused on the snowpack with its attendant streamflow forecasts as the main indicator of water supply. However, in recent years, the impact of summer precipitation has become more apparent as an important portion of the irrigation water supply. After well below normal precipitation in May, June and July, the August 2022 precipitation brought welcome relief with well above normal precipitation. Precipitation was mixed in the Basin in September (see monthly precipitation maps below).

Comparison of 2022 Monthly Precipitation in the Bear River Basin



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STORAGE

Storage supplies along the Bear River have a notable impact on the water resources available for irrigation each year. Because of two prior dry years, the 2022 storage season began with limited carryover storage. Woodruff Narrows Reservoir is the largest reservoir in the Upper Division. However, Whitney, Sulphur Creek, and Woodruff Creek Reservoirs also provide for notable amounts of winter storage.

Paragraph B of Article VI of the Amended Compact, which allows for additional storage rights above Stewart Dam, also has a provision which restricts storage to occur if the water surface elevation at Bear Lake is below an elevation of 5911.0 (UP&L Datum). About two-thirds of the storage which is assigned to Woodruff Narrows Reservoir, from both the States of Utah and Wyoming, falls under this provision of the Amended Compact. Bear Lake began the storage season above 5912, and therefore, was a foot above the 5911-foot elevation storage restriction and so this limit did not apply during the 2022 storage season.

Prior to 1997 a gage was maintained, with Commission funding, by the USGS on Woodruff Narrows Reservoir. The gage included a recorder which allowed for preservation of daily values. Since this time, periodic measurements have been kept by the Woodruff Narrows Reservoir Company in coordination with the Wyoming State Engineer's Office. In 2013 a real-time water level gage was installed at Woodruff Narrows Reservoir. Figure 2022.5 shows the maximum and minimum contents for the Woodruff Narrows Reservoir since its enlargement in 1980.

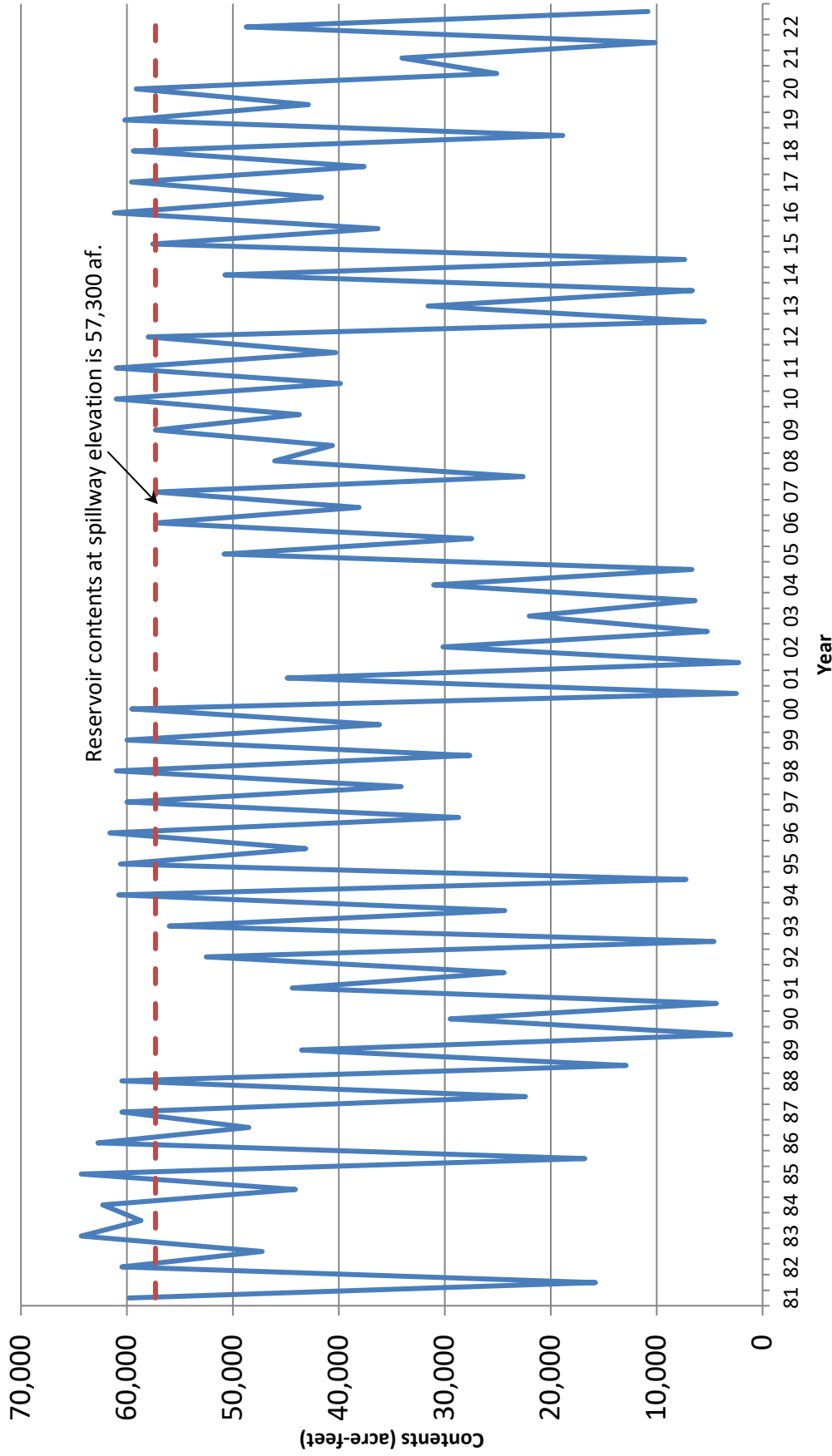
The spillway crest of Woodruff Narrows Dam is at an elevation of 6454.5 feet and when the water level is at this elevation, the content is 57,300 acre-feet. Hence, when the reservoir is spilling, the contents above this amount represent uncontrolled storage as this storage is only temporary and cannot be controlled by the reservoir company. Generally, during spill periods, the reservoir company often releases significant flows through its outlet works as well. Though the total contents are uncontrolled, the proportion of water discharging from the reservoir through the outlet works versus over the spillway is somewhat under the control of the reservoir company. Both discharge to the Bear River below the dam but above the stream gage, and it makes no difference to the total discharge measured into the Bear River. Because the carryover storage coming into the 2022 storage year was only about 10,000 acre-feet coupled with the poor streamflow, Woodruff Narrows only filled to a content of 48,750 acre-feet and then, with about 37,000 acre-feet of releases during the irrigation season, it carried into the 2023 storage season about 11,700 acre-feet.

There is no significant storage in the Central Division.

The largest and most significant storage reservoir in the Lower Division, and in the entire watershed, is Bear Lake, which is at the very top of the Lower Division. Bear Lake is operated as a storage reservoir by PacifiCorp. The Compact regulates various aspects of how PacifiCorp can manage the storage of water within Bear Lake. Figure 2022.6 summarizes the 2022 Bear Lake hydrologic information and significant operational events.

Woodruff Narrows Reservoir

Annual Maximum and Minimum Contents



Note: Through the 1996 water year a gage with a recorder was maintained by the USGS on Woodruff Narrows Reservoir. From then until 2013 measurements are based on spot observations and estimates by the Woodruff Narrows Reservoir Company and the Wyoming State Engineer's Office. Since 2013, a gage and recorder has been maintained by the Wyoming State Engineer's Office. Contents above 57,300 af represent uncontrolled storage.

Figure 2022.5

**Summary of Significant
2022 Bear Lake
Hydrologic Information and Operational Events**

<u>Date</u>	<u>Hydrologic Information/Event</u>	<u>Contents (% of Full)</u>
		<u>Discharge (% of Normal)</u>
10-01-21	Bear Lake Beginning Elevation — 5,912.25 ft	638,189 (45%)
10-07-21	Bear Lake Low Elevation ¹ — 5,912.21 ft ¹	635,569 af (45%)
	Rainbow Inlet Canal Discharge	81,476 (31%)
	Bear River Discharge Below Stewart Dam	3,316 af
	Bear Lake Net Runoff (Computed Total Inflow less lake Evaporation)	76,700 af (24%)
05-16-22	Bear Lake High Elevation — 5,913.69 ft	733,317 af (52%)
	Outlet Canal Releases: 5/21–5/31; 6/7-9/22; 9/30-10/12 (133 days irrigation releases)	216,000 af
07-01-22	Outlet Canal Maximum Release – 1,700 cfs	
	Bear Lake Storage Release ² (irrigation release 148,500 acre-feet)	189,000 af
09-30-22	Bear Lake Ending Elevation — 5,910.13 ft	500,668 af (35%)
	Bear Lake Settlement Agreement “System Loss” Volume	39,805 af

¹ Low contents prior to start of storage (occurred in previous water year)

² Net irrigation storage release from Bear Lake, subtracting Rainbow inflow and the decreed adjustment for the natural yield of Bear Lake and Mud Lake area. Includes system loss volume.

³ Due to uncontrolled flow from (welcome) rain events. Whenever water flows below Cutler during the irrigation season, any storage water in the system at Cutler is the first water out. Natural flow goes to irrigators.

Figure 2022.6

Bear Lake began the 2022 water year at 45 percent of capacity and was operated in storage mode during the entire winter season. With an extremely reduced runoff (24% of normal) Bear Lake reached a high elevation of 5913.69 feet on July 1st. Total storage release was 189,000 acre-feet and Bear Lake ended the water year at 5910.13 feet, or 35% full.

Figure 2022.7 is a graph which shows the annual maximum and minimum elevations of Bear Lake since 1915. As described above, the beginning storage elevation (or minimum) occurred, on October 7, 2021, and thereafter PacifiCorp endeavored to fill Bear Lake as much as possible during the winter. One can see from Figure 2022.7 that storage began the storage season just a little above an elevation of 5912 and increased in elevation less than two feet and then fell by September 30 about three and a half feet to 5910.13. Figure 2022.8 is an area plot showing the daily contents in Bear Lake over the past ten years. This hydrograph and Figure 2022.7 show the impact of a very significant water year (2017) amid average to well below average water years over the last ten-year period.

BEAR LAKE ELEVATION

Annual Maximum & Minimum Elevations

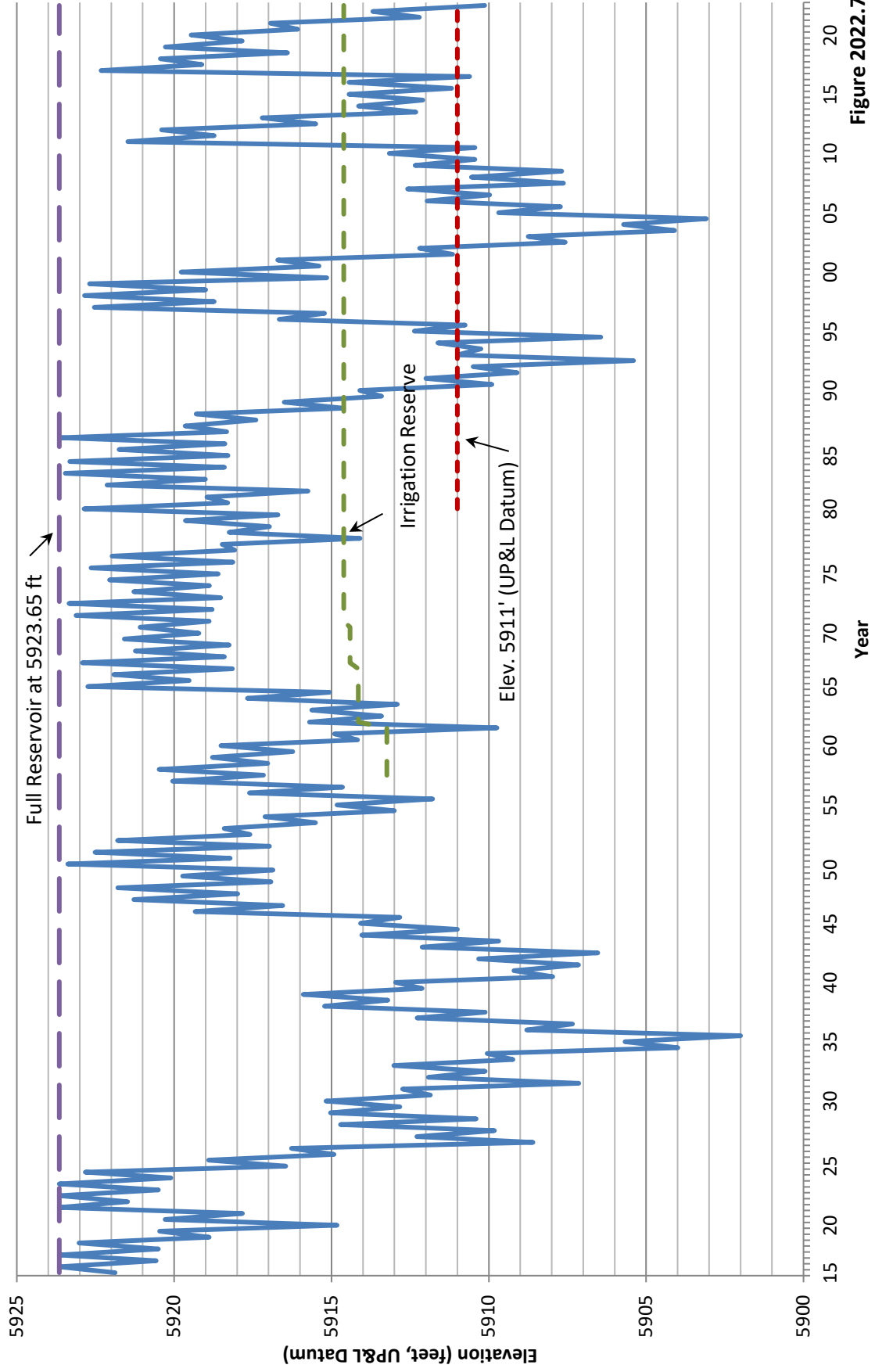


Figure 2022.7

BEAR LAKE CONTENTS **Water Years 2013 - 2022**

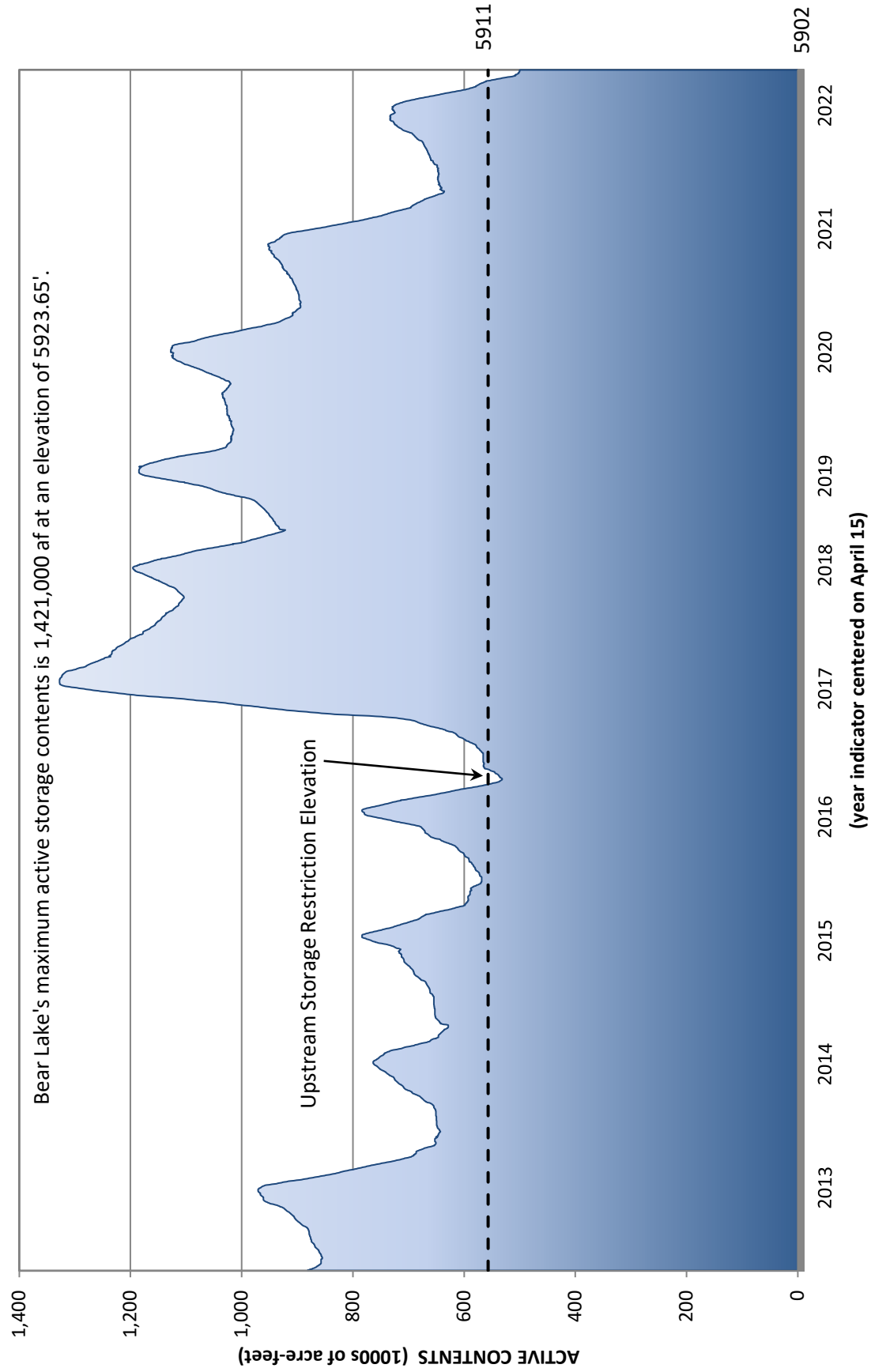


Figure 2022.8

STREAMFLOW DISTRIBUTION

General

The water administration in 2022 in the three divisions remained similar to prior years. Trevor Hurd replaced Travis McInnis as Wyoming's hydrographer in the Evanston area and Nick Dayton replaced Randy Nate as Wyoming's hydrographer in the Cokeville area. In the Utah Section of the Lower Division Clint Ballard replaced Jim Waterson as the River Commissioner. Don Barnett continued to serve as Engineer-Manager of the Bear River Commission. Each river commissioner/watermaster works under the direction of their State Engineer's office, but coordinates with the Commission's Engineer-Manager with regard to total diversions in each of the various sections as defined by the Compact.

During the 2022 irrigation season, the following River Commissioners/Watermasters measured and distributed water in their sections of the river:

<u>DIVISION</u>	<u>SECTION</u>	<u>RIVER COMMISSIONER/ WATERMASTER</u>
Upper	Upper Utah	Trevor Hurd
	Upper Wyoming	Trevor Hurd
	Lower Utah	Ron Hoffman
	Lower Wyoming	Nick Dayton
Central	Wyoming	Nick Dayton
	Idaho	Josh Hanks
Lower	Idaho	Josh Hanks
	Utah	Clint Ballard

Upper Division

The Upper Division divertible flow, as defined by the Compact, consists of a summation of the diversions of all of the canals in the four sections, plus waters bypassing Pixley Dam, less that portion of water diverted by the canals which is attributable to storage releases from Whitney, Sulphur Creek, Woodruff Narrows and Grassy Lake Reservoirs. The Compact provides that when the total divertible flow is less than 1250 cfs, a water emergency exists. The total divertible flow was below this amount early in the irrigation season and then bounce above this amount four different times between mid-May and early July. It was below the water emergency trigger all other times of the year. Nevertheless, there was no request for interstate regulation. Looking at the data, one can see that the Upper Wyoming Section generally took equal to or less than what would have been its allocation if a water emergency had been declared. The Lower Utah Section took a little under its allocation or right at its allocation during most of the year except during the early season when storage was occurring in Woodruff Narrows Reservoir. In recent years, users in the Upper Division have at times

opted for the flexibility available through unofficial general cooperation and sharing of water rather than direct Compact administration.

During years when a water emergency has been declared, the regulation of the river is based on the weekly diversions as called in by the respective River Commissioners. At the end of each year, these River Commissioners submit to their respective State Engineers a complete written report of water deliveries. It is this information which is presented in the graphs and tables on the following pages and not the weekly totals called in during times of regulation. The weekly call-in totals, which are received during the irrigation season, differ slightly from the year-end data because of timing of call-ins and call-outs, shifts on canal ratings and other factors.

Figures 2022.9 and 2022.10 show the divertible flow and natural flow diversions in the Upper Wyoming and Lower Utah Sections, respectively. Also shown on the graphs (magenta line) is what would have been the Compact allocation had a water emergency been imposed. As can be seen in Figure 2022.10, during some of the irrigation season, diversion in the Lower Utah Section was below the allocation. However, this is due to the fact that the water was getting past the Lower Utah Section to the Lower Wyoming Section and not due to over diversion in the Upper Wyoming Section as is confirmed by Figure 2022.9. Figure 2022.11 is a tabulation by month of canal diversions and shows the calculation of divertible flow (less storage release) and allocations to the respective sections, pursuant to the Compact, had a water emergency been declared. The values shown for each canal and pump in this figure represent total diversion (including both natural flow and storage), and then the storage water is subtracted out of the section totals before computing the total divertible flow.

2022 - Upper Division Upper Wyoming Section Diversions vs Allocation

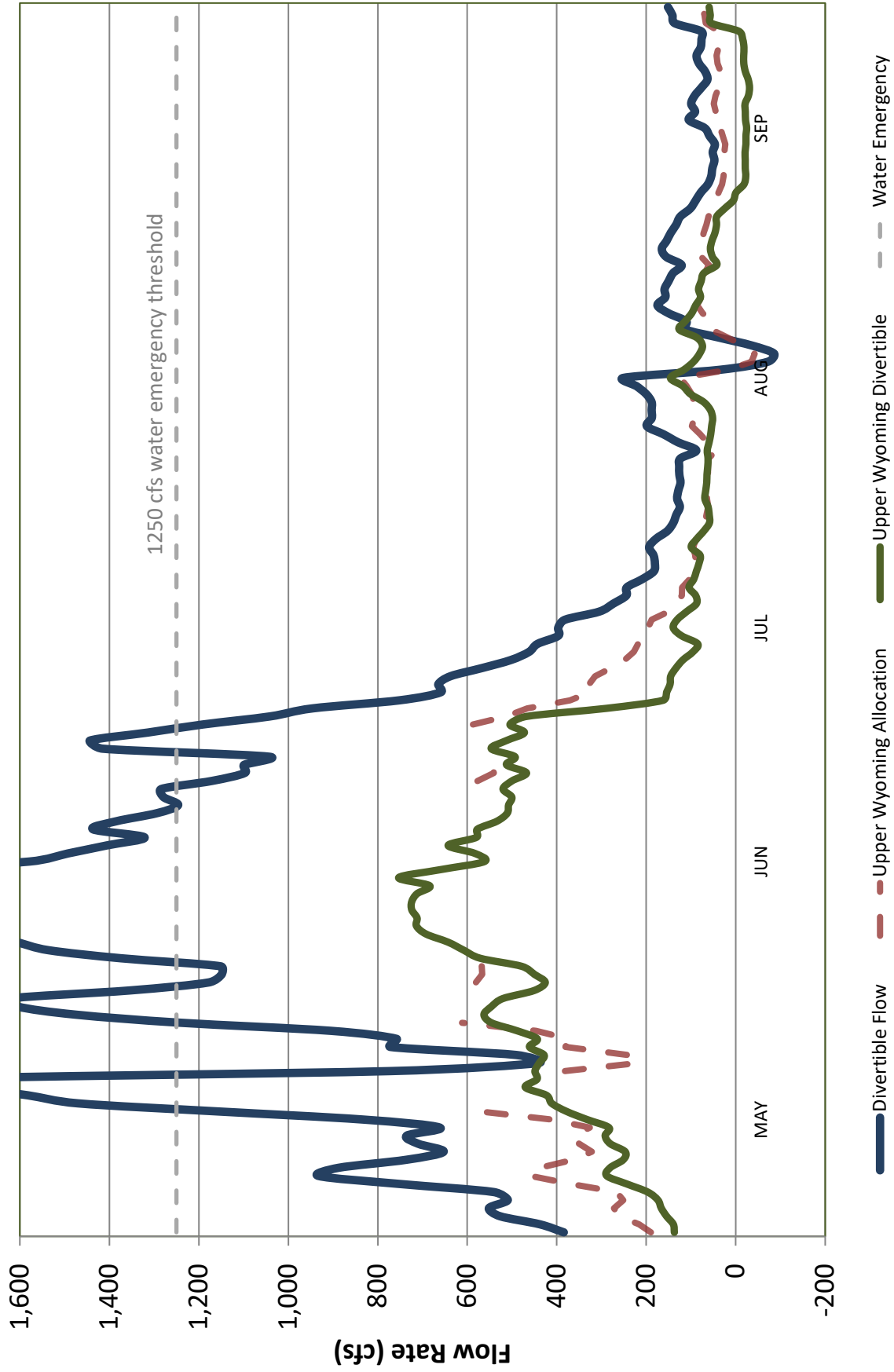


Figure 2022.9

2022- Upper Division Lower Utah Section Diversions vs Allocation

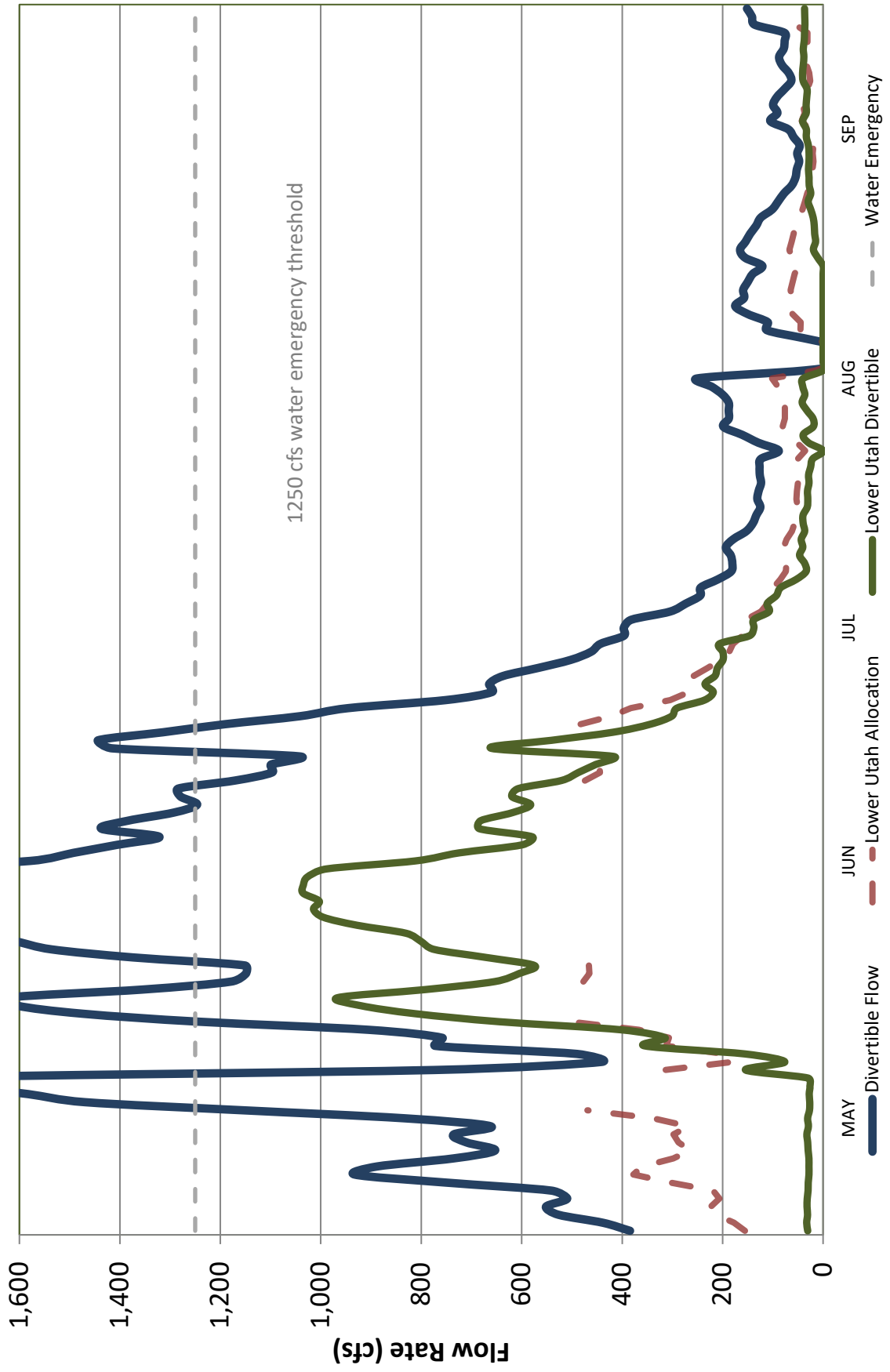


Figure 2022.10

DAILY DISCHARGE IN CFS OF BEAR RIVER CANALS WITH COMPACT ALLOCATIONS IN THE UPPER DIVISION

	May																															
	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	
UPPER UTAH SECTION																																
Hovarka (E Fk)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	12	12	7	1	4	4	10	
Hatch (W Fk)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	9	9	9	9	9	6	
UPPER WYOMING SECTION																																
Hilliard East Fork (E Fk)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	3	4	
Lannon & Lone Mtn	12	12	12	11	9	9	9	9	9	9	9	9	9	10	10	10	9	10	9	8	9	14	14	17	20	19	19	18	17	14	23	
Hilliard West Side	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	38	38	38	38	36	36	29		
Bear (Bear R)	20	20	20	20	20	16	16	16	16	16	16	16	15	14	14	14	13	20	32	44	46	48	51	53	52	52	52	51	51	51	31	
Tropic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kreider Domestic Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Danielson	0	0	0	0	6	6	6	6	6	6	6	6	7	7	7	7	7	7	11	11	11	11	11	8	8	8	8	8	8	7		
Crown & Pine Grove	1	1	0	0	0	0	2	3	3	3	3	3	3	2	1	1	1	2	5	4	4	5	8	15	16	16	15	14	14	13		
McGraw	4	4	4	4	6	7	7	7	7	8	10	12	13	14	17	17	12	11	11	11	11	11	11	12	13	18	21	22	18	12	7	
Lewis (D4)	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	4	11	18	19	20	19	
Horner	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lewis and Blanchard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	1	1	1	1	1	1	1	
Myers No. 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	
Hare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	
Coffman	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	
Knoder	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	
Myers No. 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	12	12	12	4	4	4	4	4	4	4	4	
Myers Irr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	
Evanston Pipeline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	
Booth	6	6	6	7	7	7	8	8	8	7	7	7	7	7	7	7	7	7	6	6	5	5	8	11	10	11	11	10	10	9	9	
Anel Irr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	9	9	9	9	9	9	9	9	9	
Cornelison	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Ev Water Supply (and Anderson)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Knight No. 2 (and No. 1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
"State Hospital Ditch"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Evanston Water	0	0	0	0	0	0	0	4	3	3	9	18	20	26	30	35	39	38	36	33	31	28	25	29	31	31	31	31	31	31	31	
Wilson Irr	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	5	5	5	5	5	5	5	4	4	4	4	4	4	4	
Faulkner	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	
Rocky Mtn & Blyth (and Crompton)	4	4	4	4	4	4	4	4	4	4	4	5	5	5	4	7	7	7	7	8	8	7	7	7	10	13	12	12	12	13		
B.E.A.R. Project PL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fife Irr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Johnston & Narramore	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Sim's Creek Slough Diversion	5	6	6	6	6	6	7	6	6	6	6	6	6	6	9	12	9	9	13	11	11	13	11	10	7	12	15	13	9	12	9	
John Sims	0	0	0	0	0	10	11	16	21	21	19	20	19	19	20	21	30	24	41	29	11	11	12	12	11	13	15	15	12	11	9	
Michael Sims	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	4	0	0	0	0	0	0	0	0	
S. P.	3	3	3	3	3	3	2	2	1	1	1	1	1	1	3	8	12	24	19	20	20	18	17	16	15	12	10	8	6	5	3	
Almy	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	5	5	5	5	5	5	5	5	3	3	3	3	3	3	3		
Sims, Blight & Turner	0	0	0	0	0	0	0	0	0	0	0	3	3	3	3	3	3	5	5	5	5	5	5	6	6	6	6	6	6	6		
Bowns	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	10	10	10	10	10	4	4	4	4	4	4	4		
Nixon West Side	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Turner	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10	10	10	10	10	5	5	5	5	5	5	5		
Chapman (Headgate)	64	66	79	92	96	104	140	157	148	122	116	125	127	121	149	170	182	184	180	158	146	138	127	135	122	142	175	182	175	174	157	
Chapman (Stateline, incl'd above)	20	22	28	42	46	67	100	118	119	113	103	112	108	93	108	130	136	144	140	113	111	104	97	92	83	88	112	121	122	132	121	
Morris Bros Irr (Lower)	2	2	2	2	2	2	2	3	5	6	7	9	10	9	8	8	7	5	4	3	4	6	7	9	8	8	7	7	6	6		
Bowns & Bruce	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0		
Olson No. 1 Pump	0	0	0	0	0	0	0	0	0																							

DAILY DISCHARGE IN CFS OF BEAR RIVER CANALS WITH COMPACT ALLOCATIONS IN THE UPPER DIVISION

	June																														
	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	
UPPER UTAH SECTION																															
Hovarka (E Fk)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6	6	6	5	5	5	5	5	5	5	4	4
Hatch (W Fk)	10	10	10	10	10	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	5	5	5	5	5	5	5	7	7	7	
UPPER WYOMING SECTION																															
Hilliard East Fork (E Fk)	5	6	9	19	20	22	22	22	22	23	23	22	22	22	21	24	23	25	27	26	26	25	24	24	23	23	23	25	26	26	
Lannon & Lone Mtn	30	31	35	34	32	33	35	32	29	29	28	27	25	24	23	22	22	23	23	24	23	23	23	23	23	23	23	23	23	23	
Hilliard West Side	24	24	24	25	25	34	43	43	44	44	44	43	43	42	41	40	40	41	41	40	38	33	31	33	31	28	26	28	38	38	
Bear (Bear R)	15	28	43	75	75	75	76	76	75	74	74	74	72	70	67	48	65	76	76	76	76	77	78	79	80	82	82	83	84		
Tropic	0	0	0	0	0	1	2	2	2	2	2	2	2	5	8	8	8	8	8	8	8	7	7	7	7	7	6	7	7		
Kreider Domestic Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Danielson	7	7	7	7	7	9	9	9	9	9	9	9	9	8	8	8	8	8	8	8	6	6	6	6	6	6	6	7	7		
Crown & Pine Grove	13	17	25	26	27	27	29	31	32	32	32	26	22	20	18	18	21	24	25	24	22	21	21	22	24	24	23	23	26		
McGraw	10	13	17	20	24	28	29	29	29	29	28	28	28	27	23	22	21	20	21	21	19	18	17	16	16	15	15	13	11		
Lewis (D4)	14	4	4	6	7	7	7	8	8	6	7	7	7	7	7	4	4	5	5	4	3	2	2	2	2	2	2	2	2		
Homer	0	0	0	0	0	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	0	0	0	0	0	0	0	2	2		
Lewis and Blanchard	3	3	3	3	3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0	0	1		
Myers No. 2	0	0	0	0	0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0	0	0	0	0	0	0	0	0	0		
Hare	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3	3	2	2		
Coffman	0	0	0	0	0	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1		
Knoder	1	0	0	0	0	0	1	1	1	1	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Myers No. 1	4	4	4	4	4	6	6	6	6	6	6	6	6	5	5	5	5	5	5	5	2	2	2	2	2	2	2	3	3		
Myers Irr	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1		
Evanston Pipeline	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12	12	12	12	12	12	12	12		
Booth	9	11	18	17	19	19	20	20	19	19	19	18	18	17	16	15	14	14	14	14	16	17	16	15	15	15	16	19	18		
Anel Irr	11	14	14	14	15	15	15	15	15	15	16	16	16	15	15	14	14	14	14	13	13	12	11	11	11	10	11	12	12		
Cornellson	1	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2		
Ev Water Supply (and Anderson)	5	5	5	5	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Knight No. 2 (and No. 1)	4	4	4	4	5	5	5	5	5	5	6	6	6	6	5	5	4	4	4	4	4	4	4	4	4	4	5	9	8		
"State Hospital Ditch"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Evanston Water	6	6	8	26	29	30	32	35	38	39	38	35	32	28	21	23	24	22	28	28	28	25	25	23	21	19	17	26	20		
Wilson Irr	4	4	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
Faulkner	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0		
Rocky Mtn & Blyth (and Crompton)	14	15	15	16	17	17	18	17	18	18	18	17	17	16	15	14	13	12	11	11	11	11	11	11	11	11	10	12	11		
B.E.A.R. Project PL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fife Irr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Johnston & Narramore	4	4	4	4	4	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	4	4	4	4	4	4	4	4	4		
Sim's Creek Slough Diversion	6	7	6	7	8	8	8	8	8	8	8	8	7	7	6	6	7	4	6	4	1	1	1	1	1	1	7	9	8		
John Sims	10	13	13	13	13	13	14	14	14	14	14	14	14	14	13	12	11	12	15	18	18	17	17	17	18	18	18	16	14		
Michael Sims	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
S.P.	1	2	5	9	13	18	22	23	23	23	23	23	23	22	22	21	20	19	19	18	17	16	15	14	13	12	11	9	12		
Almy	1	1	1	1	1	1	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	2	2	2	2		
Sims, Blight & Turner	6	6	6	6	6	6	9	9	9	9	9	9	9	9	9	9	9	9	9	10	10	10	10	10	10	10	6	6	6		
Bowns	9	9	9	9	9	9	15	15	15	15	15	15	13	13	13	13	13	13	14	14	14	14	14	14	14	6	6	6			
Nixon West Side	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Turner	5	5	5	5	5	5	8	8	8	8	8	8	8	8	8	8	8	8	8	7	7	7	7	7	7	7	7	7	7		
Chapman (Headgate)	155	161	146	167	185	170	174	177	177	184	187	183	173	213	186	118	126	181	107	110	84	77	82	75	95	82	72	96	68		
Chapman (Stataline, incl'd above)	116	100	91	96	104	107	114	117	118	122	124	116	111	128	123	101	82	64	58	63	62	55	47	42	38	30	25	20	14		
Morris Bros Irr (Lower)	5	5	4	4	6	8	7	6	5	4	3	2	2	1	1	1	1	0	0	0	0	0	1	1	2	3	2	2	2		
Bowns & Bruce	0	0	0	0	0	0	0	0	15	15	15	15	15	15	15	15	15	15	15	10	10	10	10	10	10	10	1	1	1		
Olson No. 1 Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Turner	7	3	3	4	4	15	24	25	28	28	28	27	25	20	17	14	12	12	14	12	12	10	12	10	12	10	6	11	26		
Francis-Lee	25	25	25	25	24	24	24	24	24	24	24	24	24	25	25	24	24	24	24	24	23	23	23	24	23	23	22	22	14		
Bear River Canal	48	47	47	47	46	46	46	46	47	48	48	47	46	47	47	47	48	48	48	48	48	48	48	48	48	48	48	49	49		
TOTAL UPPER WY DIV.	466	490	519	610	646	682	731	751	751	764	766	746	723	753	699	602	623	683	620	617	573	549	547	540	559	539	507	551	532		
Whitney Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sulphur Creek Storage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
LOWER UTAH																															
Neville	8	8	8	7	6	7	7	7	7	7	7	8	7	5	5	5	5	5	5	5	5	5	5	5	5	5	5	6	5		
Booth	14	14	14	13	13	14	18	18	17	17	17	16	16	16	16	16	16	16	16	15	16	15	15	15	15	14	14	14	9		
Rees & Livestock	23	23	23	23	22	22	20	18	18	17	17	17	17	17	17	17	15	15	18	25	23	21	21	20	20	19	17</				

DAILY DISCHARGE IN CFS OF BEAR RIVER CANALS WITH COMPACT ALLOCATIONS IN THE UPPER DIVISION

	July																																
	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		
UPPER UTAH SECTION																																	
Hovarka (E Fk)	4	4	3	3	3	3	5	6	7	8	9	9	9	9	9	9	9	9	6	3	4	3	3	3	3	2	2	1	2	2	2		
Hatch (W Fk)	7	7	7	7	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
UPPER WYOMING SECTION																																	
Hilliard East Fork (E Fk)	28	29	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Lannon & Lone Mtn	20	17	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Hilliard West Side	32	25	25	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Bear (Bear R)	79	73	73	73	55	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	7	7	7	7	7	7		
Tropic	7	7	7	7	5	2	2	2	2	2	2	2	2	2	4	4	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0		
Kreider Domestic Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Danielson	5	5	5	5	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Crown & Pine Grove	27	20	20	18	19	22	22	23	21	20	20	20	19	23	24	21	18	20	21	19	0	0	0	0	0	0	0	0	0	0	0	0	
McGraw	12	10	8	6	4	3	3	3	4	4	5	4	3	3	3	4	3	3	3	3	3	3	3	3	3	2	1	2	4	4	3		
Lewis (D4)	4	3	1	1	1	1	1	1	1	2	2	1	2	5	6	5	4	3	2	3	3	2	2	2	2	3	3	1	0	0	0		
Horner	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0		
Lewis and Blanchard	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0		
Myers No. 2	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	0	0	0	0	0	0		
Hare	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Coffman	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Knoder	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3		
Myers No. 1	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Myers Irr	1	1	1	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	2	2	1	1	1	1	1	1	1	1	1	1		
Evanston Pipeline	12	12	12	12	12	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6		
Booth	12	13	12	12	13	13	12	13	12	12	12	11	11	10	10	10	9	9	10	0	0	0	0	0	0	0	0	0	0	0	0	0	
Anel Irr	5	4	2	2	2	6	6	6	6	6	6	6	6	6	6	6	6	6	1	1	1	1	1	1	1	1	1	1	1	1	1		
Cornelison	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0		
Ev Water Supply (and Anderson)	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Knight No. 2 (and No. 1)	5	5	5	4	4	4	4	4	4	4	4	4	4	4	5	4	4	4	5	3	0	0	0	0	0	0	0	0	0	0	0		
"State Hospital Ditch"	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Evanston Water	16	21	20	19	18	19	13	12	12	15	15	12	10	10	12	12	12	7	2	2	2	2	2	2	2	2	2	2	2	2	2		
Wilson Irr	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
Faulkner	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Rocky Mtn & Blyth (and Crompton)	12	12	11	10	10	8	4	4	4	4	5	5	4	4	4	3	3	3	3	3	3	3	3	3	3	3	5	5	4	3	4		
B.E.A.R. Project PL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fife Irr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Johnston & Narramore	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sim's Creek Slough Diversion	9	7	8	8	5	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
John Sims	14	17	16	15	14	14	9	6	5	5	5	4	4	5	5	5	5	4	4	3	2	3	3	3	3	3	4	2	2	5	5		
Michael Sims	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
S. P.	18	16	12	9	6	3	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Almy	2	2	2	2	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Sims, Blight & Turner	6	6	6	6	6	6	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Bowns	6	6	6	6	6	6	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1		
Nixon West Side	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Turner	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Chapman (Headgate)	91	88	134	107	91	88	123	113	116	107	111	106	107	113	131	123	109	96	84	72	84	78	73	70	87	66	51	49	48	49	56		
Chapman (Stateline, incl'd above)	19	21	18	14	9	13	51	44	48	43	49	47	52	62	82	84	73	63	54	44	58	56	52	49	48	49	51	53	55	57	59		
Morris Bros Irr (Lower)	3	2	2	2	2	2	2	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Bowns & Bruce	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Olson No. 1 Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0														

	August																															
	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	
UPPER UTAH SECTION																																
Hovarka (E Fk)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Hatch (W Fk)	2	3	3	3	3	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
UPPER WYOMING SECTION																																
Hilliard East Fork (E Fk)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lannon & Lone Mtn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Hilliard West Side	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bear (Bear R)	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	8	
Tropic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kreider Domestic Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Danielson	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Crown & Pine Grove	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
McGraw	3	4	4	3	3	3	3	3	3	2	3	3	3	4	4	3	2	2	2	3	3	3	3	2	2	2	2	2	2	2	3	3
Lewis (D4)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Homer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Lewis and Blanchard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Myers No. 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Hare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Coffman	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Knoder	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Myers No. 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Myers Irr	1	2	2	1																												

"Chapman (Stateline)" is a second measurement of flows in the Chapman Canal. As such, the values are not re-added into the Upper Wyoming total. Whitney and Sulphur Creek Reservoirs supply storage to irrigators in the Upper Wyoming Section. Woodruff Narrows storage is credited 83% to the Lower Utah Section, Bear River and Francis Lee Canal irrigators, and 17% to Wyoming irrigators.

22-19

September

NOTE: "Chapman (Stateline)" is a second measurement of flows in the Chapman Canal. As such, the values are not re-added into the Upper Wyoming total. Whitney and Sulphur Creek Reservoirs supply storage to irrigators in the Upper Wyoming Section. Woodruff Narrows storage is credited 83% to the Lower Utah Section, Bear River and Francis Lee Canal irrigators, and 17% to Wyoming irrigators.

22-20

Central Division

The Compact provides that a water emergency shall be deemed to exist when the divertible flow in the Central Division drops below 870 cfs. A water emergency shall also be deemed to exist in the Central Division if the flow rate at the Border Gage drops below 350 cfs. The Compact provides that once a water emergency is deemed to exist, diversions in the State of Wyoming are to be limited to 43 percent of the total divertible flow. The remaining 57 percent is available for use within Idaho.

During the irrigation, the Engineer-Manager, in coordination with the state river commissioners/watermasters, watches the flows in the Central Division to determine when a water emergency is approaching. A weekly call-in/call-out schedule of flow and diversion data commenced the first week on May, and on May 6, based on a tabulation of data, it was determined that the total divertible flow as defined by the Compact was only about half the amount needed to exceed a water emergency trigger of 870 cfs and the Central Division was placed in interstate regulation pursuant to the Compact (the flow at the Border Gage was also well below the 350 cfs water emergency threshold). Figure 2022.12 shows the weekly call-in/call-out information for the Central Division. Shown with the black triangles is the total divertible flow as defined by the Compact. The green circles show Wyoming diversion data with the solid circles showing actual diversions and the hollow circles showing Wyoming's allocation (43%). Similarly, the brown squares show the Idaho data with the hollow squares showing Idaho's allocation (57%) and the solid squares showing total water available to Idaho. These values include not only diversions to Idaho canals and pumps but also water bypassing Stewart Dam as well as water flowing into the Rainbow Inlet Canal. The grey diamonds show the calculated gains/losses in the Idaho Section of the River which is determined by subtracting the flows at the Border Gage from the sum of the Idaho diversions plus discharge into the Rainbow Inlet Canal and flows bypassing Stewart Dam. The red triangles represent the forecasted divertible flow each week. The solid dark blue line is the flow at the Border Gage. It is important to note that, though efforts are made to ensure the quality of data, these values represent the preliminary, real-time flow and diversion data that are available each week as the irrigation season progresses. In order to adjust for lag-time in flows from Wyoming to Idaho, the typical weekly process is for Wyoming to measure/regulate its diversions on Monday and Tuesday, Idaho to do its diversions on Thursday and then for the call-out/regulation for the next week to occur on Friday. In 2022 the weekly call-in/call-out practice commenced on the first week of May. On the June 10th regulation it was determined that the total divertible flow was above the water emergency trigger (the flow at Border had already exceeded its trigger) and the Central Division went out of interstate regulation for three weeks, but weekly call-ins continued. On July 1st the Central Division went back into interstate regulation only to go out of it one week later. A week after that the total divertible flow was again below the water emergency trigger and remained there the rest of the season. This continued until September 25 when the water emergency was lifted.

After the close of the irrigation season final diversion and flow data are tabulated. Figures 2022.13 and 2022.14 graphically illustrate the Central Division's divertible flow and the respective allocations and diversions by the Wyoming and Idaho Sections under a water emergency. The flow passing the Border Gage is not illustrated on these figures as it confuses

the diversion and allocation data. In viewing Figure 2022.13, one will note that the total divertible flow bounces around and at times it was difficult to make tight administration with weekly, preliminary data. Also, on July 5th the boards were pulled at Pixley Dam and the flows from the Upper Division to the Central Division increased by nearly 250 cfs. This water pushed out into Wyoming's and Idaho's diversions causing the July 8th call-in to appear to be 68 cfs greater than the final data show and the lifting of a water emergency for a week as was noted above. Nonetheless, an examination of the final data show that water distribution was within 0.5% during the period of interstate regulation. It is important to note that on Figure 2022.14 the line labeled as "Available to Idaho" represents the summation of diversions within the State of Idaho, as well as flow passing Stewart Dam and diversion to the Rainbow Inlet Canal. As the Compact provides that 57 percent of the Central Division's divertible flow shall be available for use within Idaho, this line is used to show whether such provision of the Compact was met. However, the Compact also provides that if Idaho elects to not divert into its canals its full entitlement, a portion of its allocation can pass into the Lower Division via the Rainbow Inlet Canal or Stewart Dam. Data for these hydrographs are based on the river commissioners'/watermasters' annual reports to their respective state water agencies.

Figure 2022.15 shows a compilation of final, daily canal diversions as provided by the respective River Commissioners/Watermasters. The Wyoming and Idaho Sections' diversions and allocations are tabulated and summarized at the bottom of each page. The pages are divided such that there is one month's data per page. As the flow of the Bear River at the Border Gage could also be critical to the declaration of a water emergency, as defined by the Compact, this gage's data are also shown in these tables. Despite the dryness of the year, there was very good cooperation between the Wyoming and Idaho river commissioners/watermasters in administering water distribution throughout this irrigation season.

2022 Central Division - Weekly Call-in/Regulation

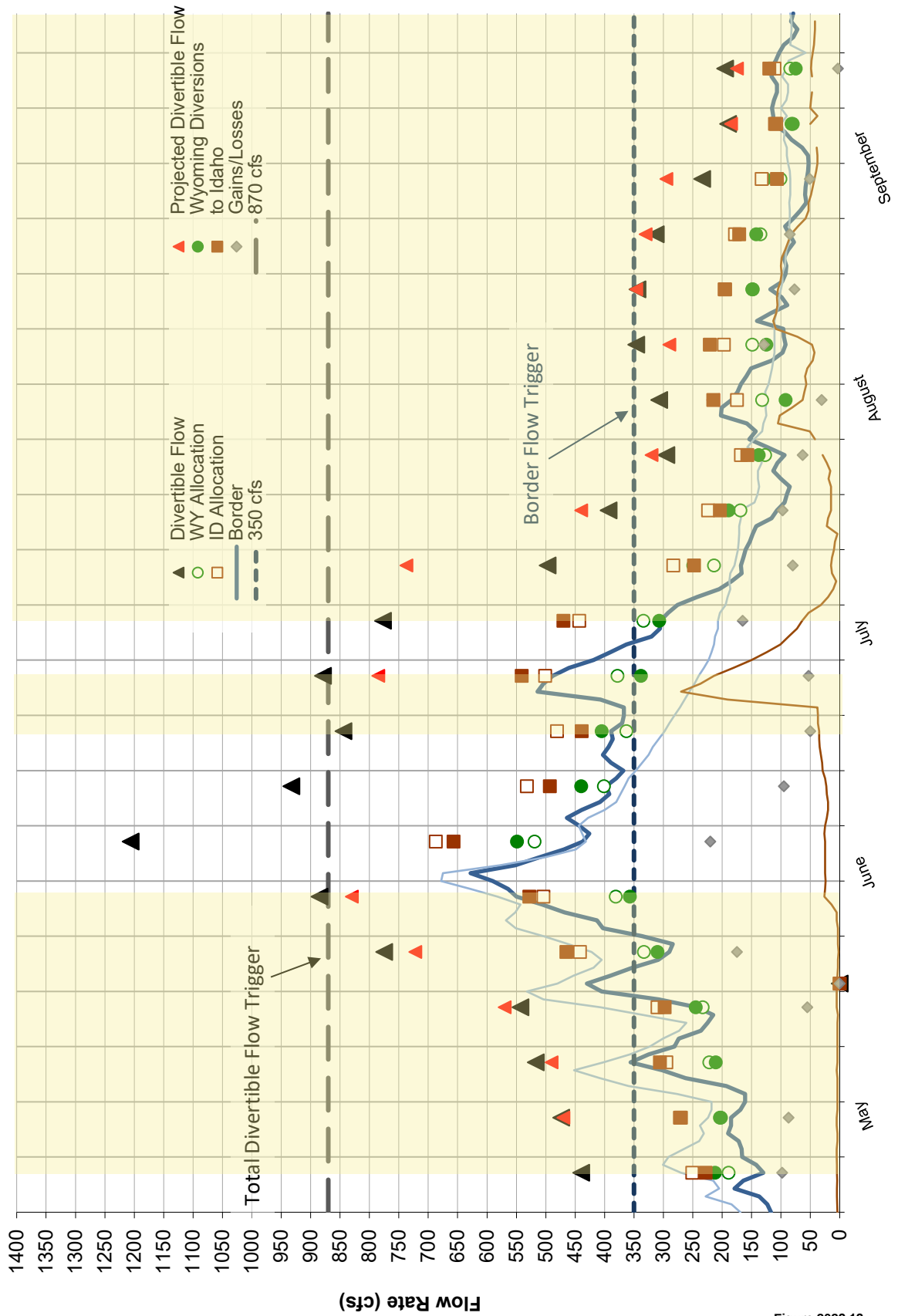


Figure 2022.12

2022 - Central Division Distribution

Wyoming Section Diversions vs Allocation

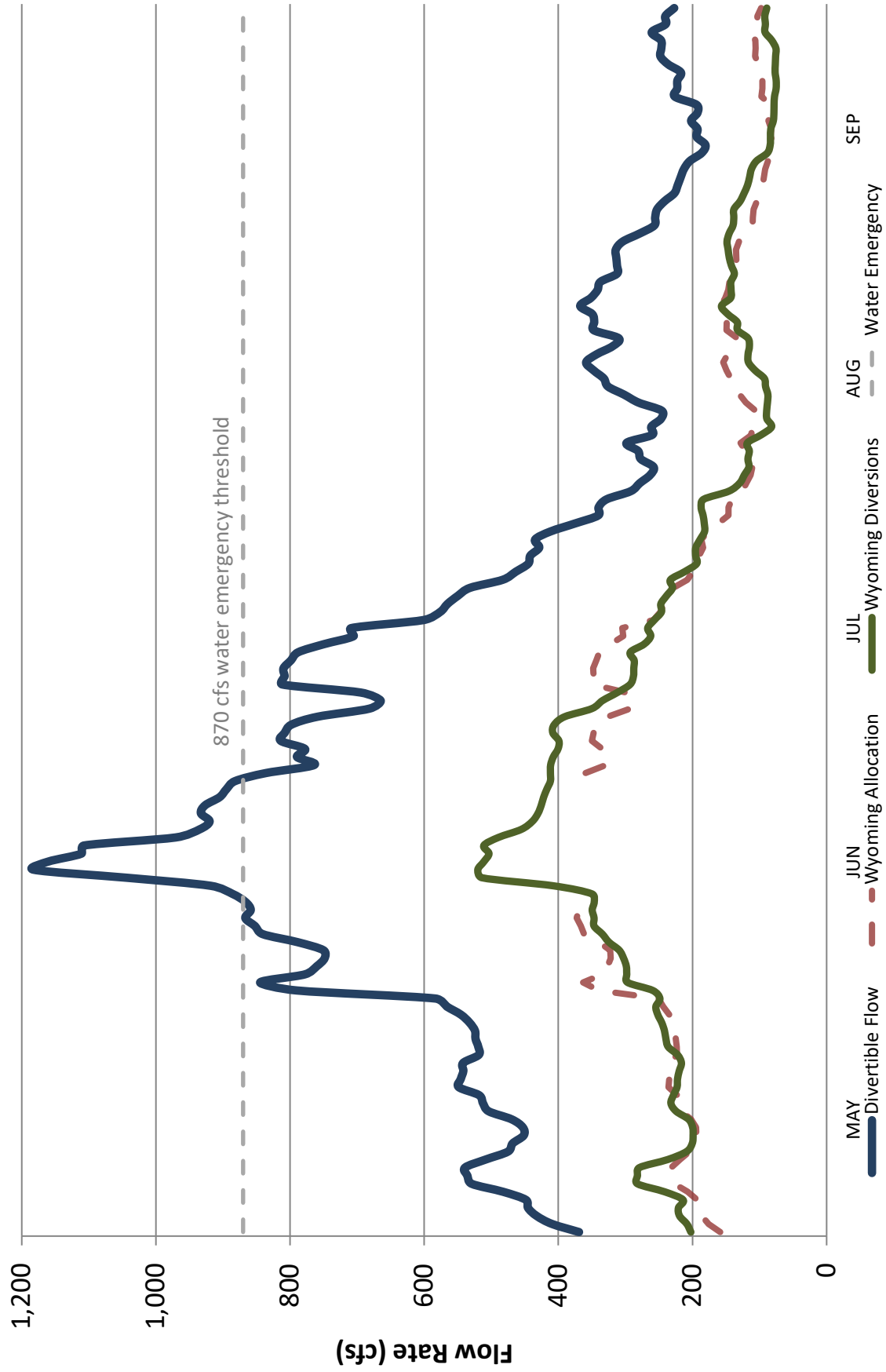


Figure 2022.13

2022 - Central Division Distribution

Idaho Section Diversions vs Allocation

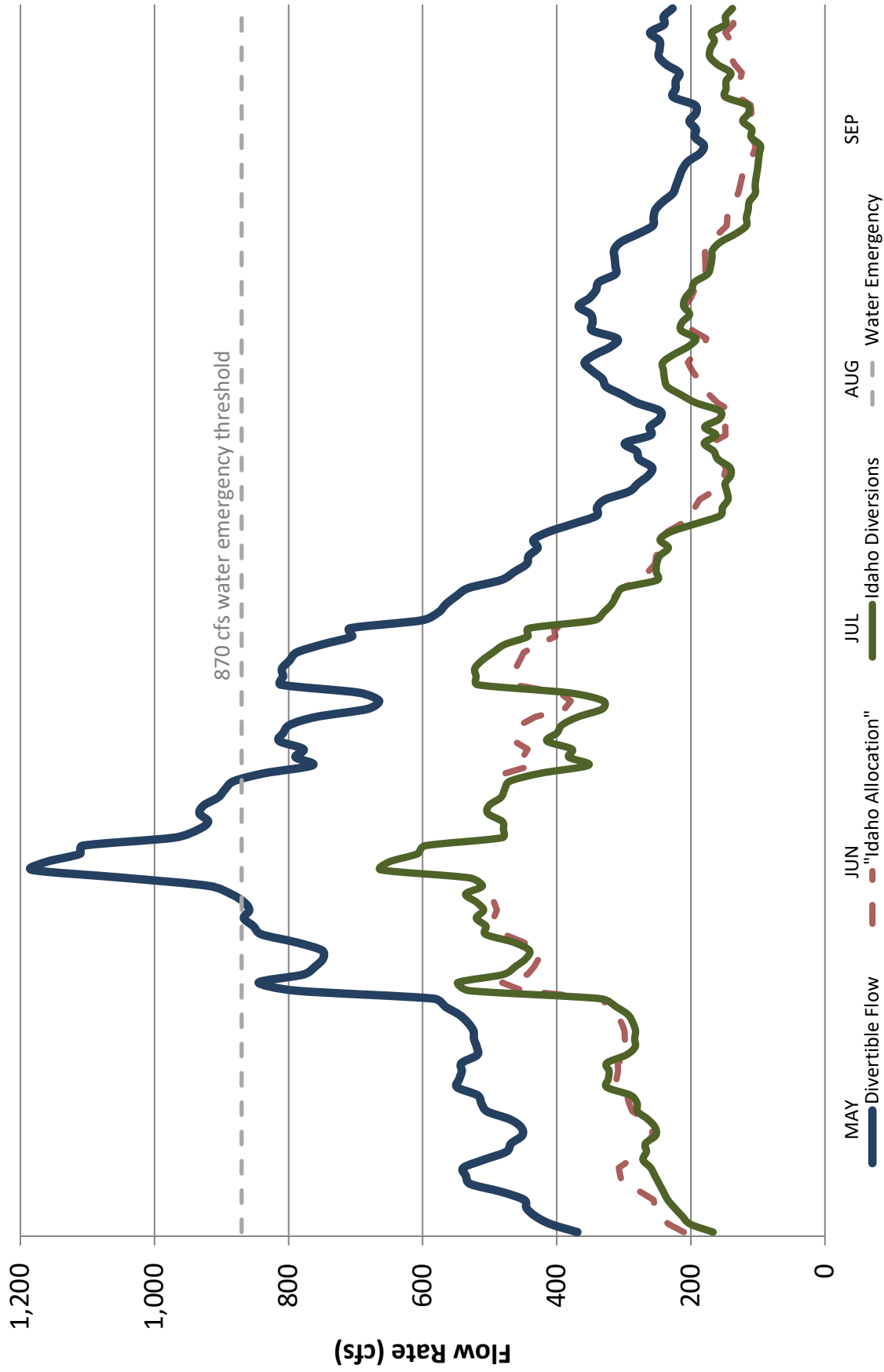


Figure 2022.14

	May																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
WYOMING DIVERSIONS																																
BEAR RIVER CANALS																																
Thomson Pump and Pivot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	3	1	0	0	0	
Bridge Pump	16	17	18	20	19	19	20	20	13	8	8	8	8	8	8	8	7	6	6	7	8	8	8	9	9	9	9	10	10	10	10	
Alorzo F-Signs (Main Stem)	18	18	18	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	
Alorzo F-Signs (Sublette Cr)	21	23	23	24	24	25	26	24	9	4	6	6	6	6	6	5	4	5	5	5	5	5	6	11	11	11	13	14	15	15	14	
Wyman No. 2 (West)	11	11	11	11	11	11	11	10	5	5	5	5	5	5	5	5	5	5	5	5	5	6	11	11	11	13	14	15	15	14	3	
Oscar E. Snyder	21	22	23	22	23	23	23	22	14	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
Rocky Point (D2)	0	0	0	0	0	20	37	38	39	42	38	38	38	38	37	38	42	42	43	42	40	40	41	41	41	41	42	43	43	43	46	
Cook Bros	10	10	10	12	10	6	6	7	6	5	5	5	5	4	4	4	4	6	6	6	6	6	6	5	4	4	4	6	7	7	7	
John R. Richards Terr																																
TRIBUTARY DIVERSIONS																																
Abraham Stoner (Sublette Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tachert Bro's Ditch (Sublette Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Tachert Bro's Spreader Dk (Sublette Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grade Gate Canyon Cr)	0	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	
J.C. (Burner Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Chas. (Burner Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Curtis Pump (Burner Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Goodell (Pine Cr)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	
V.H. (Pine Cr)	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	
Dimond No. 2 (Spring Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Kenyon (Spring Cr)																																
SMITH'S FORK DIVERSIONS																																
Quinn-Bourne	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	10	7	5	4	6	7	7	8	8	8	8	8	7	9	9	
Bar-O-Bar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TJC Pump (Brown Pump)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Francis Larson	5	5	5	4	4	5	5	4	3	2	1	1	1	1	1	1	1	0	0	0	0	0	1	2	2	3	2	2	2	2	3	
C.B.D. NO 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
W.C. (Burner Cr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Barton Flat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Progress	3	5	5	5	5	5	5	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	5	
Larson Pump	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Emelle	18	18	21	20	19	21	20	19	18	14	11	12	12	12	12	14	16	17	17	16	16	15	15	16	16	15	14	16	16	16	16	
Seven C Branch North Pivot Pump	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Seven C Branch South Pump & Pipeline	5	5	7	7	7	9	10	9	9	7	4	5	4	4	3	5	9	11	10	9	7	7	7	8	7	8	7	8	0	13	12	10
Copier	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wheelock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Covey (Headgate)	44	47	45	46	51	65	63	66	65	65	62	60	60	63	65	64	60	59	57	56	55	58	60	60	61	62	63	63	67	67	67	
Covey (Burner Cr)	4	5	5	5	4	4	5	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Covey (Spring Cr)	5	5	5	5	5	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
South Branch (M Branch)	4	6	8	8	8	8	12	11	10	6	2	2	2	2	2	1	12	13	10	9	8	9	8	9	8	9	8	9	8	9	8	9
Reed Ditch (N Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stoner & Nichols (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Minnie Roberts (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Gastanaga North (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Gastanaga South (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Trainer (M Branch)	0	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Tanner (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Star (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Star Two Pump (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Coleville Water (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ipp No. 3 (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Ipp No. 2 (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Smith's Fork Ditch (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Smith's Fork Ditch (M Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Petersen Pump (S Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Petersen Yard P.L.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bourne (S Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thompson (S Branch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL WYOMING DIVERSIONS	202	208	219	221	214	242	282	282	279	237	209	200	199	200	206	224	232	228	223	222	220	216	222	236	240	242</						

June

NOTE: Wyoming is limited to 43% of the total divertible flow. The remainder of the divertible flow is available for use within Idaho.

Figure 2022.15 (cont.)

[illegible]

NOTE: Wyoming is limited to 43% of the total divertible flow. The remainder of the divertible flow is available for use within Idaho.

Figure 2022.15 (cont.)

[illegible]

NOTE: Wyoming is limited to 43% of the total divertible flow. The remainder of the divertible flow is available for use within Idaho.

Figure 2022.15 (cont.)

Lower Division

The Compact provides that a Utah Lower Division water user can petition the Commission for interstate regulation if he believes that he is being deprived of water to which he is justly entitled due to diversions in Idaho. If, upon review, the Commission finds such to be the case, then the Compact provides for the declaration of a water emergency and that it shall put into effect water delivery schedules based on priority of rights without regard to the state line. The Commission has never received such a petition. However, with growing concern for such a possibility, the Commission, over a several-year period, determined how it would receive and review such a petition and implement water delivery should a water emergency be declared. At its November meeting in 1997, the Commission adopted *Interim Procedures for Lower Division Water Delivery*. Appendix B to the procedures, which was revised with the procedures in April 2004, provides for the accounting and distribution method to be used in a water emergency.

Also appended to the procedures is *Water Delivery Schedule No. 1* which was revised by the Commission in 2015 and which includes the mainstem Lower Division water rights in both Idaho and Utah. After adoption of the water delivery schedule, both states began using this common schedule of water rights in their water right accounting programs. Hence, though not regulated by the Commission, the distribution in the Lower Division is cooperatively managed by the states of Idaho and Utah through their respective watermasters and river commissioners. Such distribution was facilitated in 2022 with bi-weekly conference calls with the state agencies, large water users and PacifiCorp. Figure 2022.16 shows the delivery of water in the Lower Division as reported by the two state agencies.

2022 Lower Division Irrigation Water Deliveries

Canal/Group	Natural Flow (af)	Storage Use (af)	Total Diversion (af)
Idaho			
Gentile Valley	8,442	1,216	9,658
West Cache	28,321	15,753	44,074
Cub River Pumps	1,884	11,360	13,244
Last Chance and Bench B	48,192	22,303	70,495
Idaho Small Irrigators	13,447	2,400	15,847
Utah			
Bear River Canal Company	172,216	86,008	258,224
Utah Small Irrigators	2,909	7,648	10,557

Figure 2022.16

Allocation and deliveries of Bear Lake storage water are significant in most years to the total water diverted in the Lower Division. In 1995, PacifiCorp, the irrigators and Bear Lake

interests entered into a settlement agreement as to the allocation of storage water from Bear Lake. In 2004 the parties entered into an *Amended and Restated Bear Lake Settlement Agreement*. PacifiCorp tracks deliveries pursuant to the settlement agreement. Figure 2022.17 shows such deliveries in 2022. PacifiCorp operated in storage mode during the entire winter period.

2022 Bear Lake Storage Deliveries

Irrigation Storage Allocation	245,000 af
Bear Lake Storage Release	189,000 af
Lake Recovery Volume	56,000 af
Decreed Transit Losses ¹	5,371 af
System Losses ²	39,805 af
Delivered Bear Lake Storage	143,824 af

¹Approximate, 3.6% of total storage release per Dietrich Decree, based on average rate for all irrigators

²Water that passes below Cutler Dam that is accounted for as storage water release

Figure 2022.17

STATE WATER ACTIVITIES

Article XI of the Amended Compact provides that applications for appropriation or change in water use within each state shall be in accordance with individual state law, except no such application shall be approved if the effect will deprive water users within another state or increase the depletion beyond that which is provided for under the Compact. This article further requires that state officials report, in a format and at intervals established by the Commission, the status of their respective allocations and uses. The Commission has determined the best format for reporting such changes in use is the Biennial Report. Figure O.3 in the Overview section of this report provides the most recent depletion information. This portion of the Biennial Report provides a summary of major water and water right related activities in each of the states during the 2022 water year.

Idaho

Water Activities

The Bear River Basin Adjudication was delayed due to an appeal filed by the United States. IDWR opened a field office in Preston in June 2022 and hired a water right supervisor, Christopher Holmes, to lead the office. Staff in the Preston field office have assisted water users in preparing claims and understanding the adjudication process.

On November 3, 2022, IDWR issued an order extending the temporary moratorium in the Malad Valley Ground Water Management Area. The moratorium on processing or approving ground water rights for consumptive uses was extended to November 2027. IDWR has been working with water users in Basin 15 (Malad Valley) to create a water measurement district to collect data on existing ground water diversions in the basin.

Water Rights

Water right permits were issued in Basins 11, 13 and 15 as shown in the table below. Permit 13-8087 includes conditions requiring the permit holder to mitigate for depletions.

<u>Right No.</u>	<u>Priority Date</u>	<u>Rate (cfs)</u>	<u>Volume (af)</u>	<u>Source</u>	<u>Water Use</u>
11-7918	1/24/2022	0.02	1,200	GROUND WATER	STOCKWATER
11-7928	5/26/2022	0.02		GROUND WATER	STOCKWATER
13-8081	7/28/2021			OXFORD SLOUGH	WILDLIFE STORAGE
13-8082	7/23/2021	0.04		SPRING	DOMESTIC
13-8087	9/14/2021	0.13		GROUND WATER	DOMESTIC
13-8088	10/6/2021	0.02		SPRING	STOCKWATER
13-8092	1/10/2022	0.01		SPRING	AESTHETIC STORAGE
13-8093	1/20/2022	0.02		SPRING	STOCKWATER
15-7493	8/11/2022	0.06		GROUND WATER	DOMESTIC/COMMERCIAL
15-7495	10/6/2022	0.04		GROUND WATER	DOMESTIC

Utah

Water Activities

On April 1, 2022, the State Engineers of Utah and Wyoming entered into an agreement for the interstate administration of Mill Creek. Among the objectives of the agreement was the establishment of a temporary distribution protocol and a directive for the Utah State Engineer to investigate the facts and circumstances associated with the Utah water rights on the Mill Creek system as they relate to the use of import water and the potential for a futile call. Monitoring efforts are ongoing.

The Utah State Engineer's Office finalized the Water Commissioner Accounting Tool (WCAT) accounting/distribution model for the Lower Bear River Distribution system and made it publicly available to enable enhanced planning and management of the river by water users on the system.

Utah's Board of Water Resources facilitated the funding of several projects within the Bear River watershed. In the fall of 2020, the West Cache Irrigation Company initiated a project poised to extend through 2022 with a budget of \$4.2 million, of which \$2,267,000 was allocated for its initial phases. The project aims to overhaul 5.3 miles of open ditch with a pressurized pipeline and the installation of two pump stations. These system upgrades were complemented by the installation of four new flow meters and other essential appurtenances, designed to improve the efficiency and reliability of water delivery to the areas served by the company.

The Joint Bear River Planning Model has continued to be updated with current data through 2022 by the modeling team consisting of staff from Idaho Department of Water Resources, PacifiCorp, Utah Division of Water Resources and Wyoming Office of the State Engineer. The model was also extended to include the mainstem upstream of Bear Lake to the river's headwaters.

Yearly updates to the Water Related Land Use and seasonal field checks have continued under the Water Related Land Use program. Yearly reports, methodology, published data, and field check data can be found on our [Open Data website](#). The combined methodology defined as part of the [2019 Depletion Report](#) has set clear methods to which States can expect and therefore manage their data to prepare for future studies. The study recommended for each state to consider future studies and what they can do to streamline this process. Utah's Water Related Land Use program accomplishes this goal.

Utah's cloud seeding program continued to target select storms over mountain ranges in Eastern Box Elder County and Cache County. Bear River Water Conservancy District and Cache County cost shared (50/50) with the Utah Board of Water Resources. Estimated, average annual increase in snow-water equivalent in the target area due to seeding activity was approximately 6%. Meanwhile, a Seeding Feasibility and Design Report for the Bear River Basin was conducted by the National Center for Atmospheric Research. This study was

prepared for and funded by the Idaho Water Resource Board but shows that there is common ground between Utah and Idaho when it comes to cloud seeding efforts.

Water Rights

New Applications Approved in 2022:

- Upper Division - 25 Applications to Appropriate:
 - Total Irrigation (Acres): 3.1
 - Total Domestic (EDUs): 21
 - Total Stockwater (ELUs): 288
 - Total Volume (acre-feet): 26.26
- Lower Division - 126 Applications to Appropriate:
 - Total Irrigation (Acres): 249.6
 - Total Domestic (EDUs): 163
 - Total Stockwater (ELUs): 1,123.56
 - Total Volume (acre-feet): 1,206.82

2022 - Lower Division Notable Applications to Appropriate			
Water Right #	Uses	Priority	Diversion (Acre-feet)
29-4740	Irrigation - 20 acres	11/2/2020	80.0
29-4748	Irrigation - 110 acres	12/16/2020	440.0
29-4749	Irrigation - 70 acres Other (Pond) - 83.03 acre-feet	12/16/2020	363.0

Wyoming

Water Activities

Upper Division

Mill Creek, which originates in Utah and crosses into Wyoming, has been an area of focus for the last couple years. Wyoming users made a call for interstate regulation late in 2021. A temporary agreement was reached between Utah and Wyoming to implement a priority schedule for water delivery regardless of the state line. This agreement will be renewed only for one year at a time until both states have studied and installed the necessary equipment for timely regulation and accounting. Flows in both states were monitored during the 2022 water season.

Also, in the upper division CCN2 trust had an application to enlarge the Lannon Ditch for supplemental supply from the Bear River to service lands currently permitted for original supply from Mill Creek. This is a Utah diversion for ground in Wyoming.

Central Division

Cook Canal's petitioned the Wyoming Board of Control to reconfigure its water rights to match the current irrigation practices. This petition was granted and also resulted in an application for enlargement to add some additional acres located in Idaho. This canal diverts water in Wyoming and services mostly lands in Idaho.

Shortages/Regulation/Interstate Calls

The Upper Division went into in-state regulation the second week of July due to a call from a Wyoming user below Woodruff Narrows. This regulation continued until the end of September. There was no official call for interstate regulation although it was regulated to Compact allocations.

The Central Division went into interstate regulation the first week of May and lasted the remainder of the summer except for three weeks from mid-June until the first of July when flow raised enough to exceed the Compact trigger points. Wyoming delivered Woodruff Narrows storage water to Wyoming shareholders below Pixley Dam in late August.

Water Rights

New water right permits subject to Compact depletions issued from Wyoming's allocation are as follows:

<u>Permit No.</u>	<u>Appropriator</u>	<u>Priority Date</u>
P#216243.0W	Janet Widmer	11/15/2021
P#36794.0D	Devan Pope	5/17/2022
P#36795.0D	Jed. S. & Jennilyne S. Wayment	6/14/2022

STREAM GAGING

As was indicated in the Overview chapter of this report, under the subsection concerning the Stream Gaging Program, the Bear River Commission participates in a cooperative contract with the USGS for the maintenance of stream gages on the Bear River and significant tributaries. Also, the states, PacifiCorp and, at times, others participate in stream gaging on the Bear River and its tributaries. The Commission believes the collection of data concerning stream flows in the Bear River system is very important and allocates a significant portion of its annual budget in support of the cooperative stream gaging program with the U.S. Geological Survey. However, costs continue to increase and so the Commission is constantly reviewing the stream gaging program to determine if all of the stations supported are necessary for the Commission to fulfill the responsibilities assigned to it by the Compact.

During 2022, a total of 33 gages were maintained on the Bear River system. Of these 33 gages, 6 were part of a cooperative effort between the Bear River Commission and the USGS, and the USGS funded 6 gages under its Federal Priority Streamgaging Program (FPS) (in 2022 the Bear River at Evanston gage was dropped due to funding from the FPS and then picked up under the COOP Program by the City of Evanston). PacifiCorp maintained 14 gages on the Bear River system during 2021. Three additional gages were maintained under the USGS Cooperative Program with the State of Utah (2 gages) and the State of Idaho (1 gage). Additionally, the State of Wyoming maintained 1 gage on the Bear River and the USFWS funded 1 USGS gage. The Bear Lake water quality platforms were funded as described in the footnote with the table below. Figure 2022.18 shows a tabulation of these gages and the entities which participated in the operation and funding of each gage. The approximate locations of the stream gages are shown in Figure O.5 in the Overview section of this report.

Publication of the streamflow records for 13 of the gages in this report were considered to be of significant value to the Commission and are included on pages 22-39 through 22-52 (the Bear River near Randolph, UT gage, which is maintained by the State of Wyoming, was added to this report as it is published nowhere else).

BEAR RIVER SYSTEM STREAM GAGING STATIONS

STREAM GAGES MAINTAINED DURING THE 2022 WATER YEAR

STATION #	STATION NAME	OPERATED BY	FUNDED BY
<u>10011500</u> ❖	Bear River near UT-WY state line	USGS	USGS
10016900	Bear River at Evanston WY	USGS-WY	Evanston City
<u>10020100</u> ❖	Bear River above reservoir near Woodruff UT	USGS	USGS
<u>10020300</u>	Bear River below reservoir near Woodruff UT	USGS	BRC/USGS
10023000	Big Creek near Randolph UT	USGS	UTDNR/USGS
<u>10026500</u>	Bear River near Randolph UT	WSE	State of WY
<u>10028500</u> ¹	Bear River below Pixley Dam near Cokeville WY	USGS	BRC/USGS
<u>10032000</u>	Smiths Fork near Border WY	USGS	BRC/USGS
10038000❖	Bear River below Smiths Fork near Cokeville WY	USGS	USGS
<u>10039500</u>	Bear River at Border WY	USGS	BRC/USGS
10044300 ²	Dingle Inlet Canal near Dingle ID	PacifiCorp	PacifiCorp
<u>10046000</u>	Rainbow Inlet Canal near Dingle ID	PacifiCorp	PacifiCorp
10046500 ^{2,3}	Bear River below Stewart Dam near Montpelier ID	PacifiCorp	PacifiCorp
	Bear Lake Water Quality Platforms	USGS	(see below) ⁴
<u>10055500</u>	Bear Lake at State Park Marina near Garden City UT	USGS	BRC/USGS
<u>10059500</u>	Bear Lake Outlet Canal near Paris ID	PacifiCorp	PacifiCorp
10068500	Bear River at Pescadero ID	USGS	IDDNR/USGS
10075000	Bear River at Soda Springs ID	PacifiCorp	PacifiCorp
10079000	Soda Point Reservoir at Alexander ID	PacifiCorp	PacifiCorp
10079500	Bear River at Alexander ID	PacifiCorp	PacifiCorp
10080000	Bear River below Grace Dam near Grace ID	PacifiCorp	PacifiCorp
10086000	Oneida Narrows Reservoir at Oneida ID	PacifiCorp	PacifiCorp
10086500	Bear River below PacifiCorp Tailrace at Oneida ID	PacifiCorp	PacifiCorp
<u>10092700</u>	Bear River at ID-UT state line	USGS	BRC/USGS
10105900	Little Bear River at Paradise UT	USGS	UTDNR/USGS
10108400❖	Logan, Hyde Park, Smithfield Canal near Logan UT	USGS	USGS
<u>10109000</u> ❖ ⁵	Logan River above State Dam near Logan UT	USGS	USGS
10113500❖	Blacksmith Fork abv Upper & Lower Dam Near Hyrum UT	USGS	USGS
10116500	Cutler Reservoir near Collinston UT	PacifiCorp	PacifiCorp
10117000	Hammond (East Side) Canal near Collinston UT	PacifiCorp	PacifiCorp
10117500	West Side Canal near Collinston UT	PacifiCorp	PacifiCorp
10118000	Bear River near Collinston UT	PacifiCorp	PacifiCorp
<u>10126000</u>	Bear River near Corinne UT	USGS	USFWS

Notes:

❖ FPS site – Federal Priority Streamgaging Program

Underlined station numbers indicate those gages for which stream flow data are published in this report.

¹ This gage is operated seasonally from April 1 until September 30 each year.

² Data for these gages are generated by PacifiCorp but not formally published

³ Discharge measurements below Stewart Dam are required for interstate regulation pursuant to the Compact. However, flow is general only a few cfs. PacifiCorp maintains this gage and reports discharge to the Idaho watermaster. The data are included with the Central Division's canal diversion data herein.

⁴ These two water quality platforms are jointly funded by Bear Lake Watch, Idaho Department of Environmental Quality, Utah Division of Water Quality, PacifiCorp and USGS.

⁵ Gage 10109001 represents a summation of the Logan River discharge (10109000) and canal diversions (10108400) upstream of the gage. This is not a physical river gage. Gages 10109000 and 10108400 are part of the GSWIP.

Figure 2022.18

10011500 BEAR RIVER NEAR UTAH-WYOMING STATE LINE

LOCATION.--Lat 40°57'55", long 110°51'10" referenced to North American Datum of 1927, in SE ¼ NW ¼ SE ¼ sec.30, T.3 N., R.10 E., Summit

County,UT, Hydrologic Unit 16010101, on left bank 400 ft downstream from West Fork and 2.8 mi upstream from Utah-Wyoming State line.

DRAINAGE AREA.--172 mi².

PERIOD OF RECORD - July 1942 to current year.

GAGE - Water-stage recorder. Elevation of gage is 7,965 ft above NGVD of 1929, from river-profile map. Prior to October 1, 1986 at datum 3.0 ft higher.

REMARKS - Records good except for estimated discharges which are poor and other periods as noted. Records fair May 20, 2014 through Jun. 17, 2014 due to variable control conditions from snow-melt runoff. Flow regulated slightly by Whitney Reservoir, total capacity, 4,700 acre-ft since 1966. Three diversions above station for irrigation of about 265 acres above and 2,600 acres below station.

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 3,390 ft³/s, Jun 30, 2011, gage height, 7.82 ft; minimum, 6.8 ft³/s, Apr 12, 1984, result of upstream ice jam.

DISCHARGE, CUBIC FEET PER SECOND

YEAR 2021-10-01 to 2022-09-30

DAILY MEAN VALUES

[e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	51.7	103	53.5	e26.9	e37.6	e33.0	e56.3	220	501	389	89.9	50.2
2	48.3	113	52.6	e27.8	e37.0	e33.1	63.8	251	525	306	132	58.1
3	48.0	108	49.3	e31.3	e36.5	e33.2	71.3	287	617	274	99.5	56.5
4	44.9	98.4	47.1	e36.4	e36.9	e33.6	72.9	245	760	244	83.2	55.2
5	43.5	97.0	45.8	e39.0	e37.3	e33.9	73.4	262	815	220	80.1	54.8
6	66.8	91.1	32.8	e39.3	e37.6	e32.6	62.6	399	835	204	78.7	53.6
7	93.8	88.2	53.8	e39.0	e38.1	e33.5	63.9	562	902	199	75.7	54.3
8	92.2	86.7	40.7	e37.8	e38.6	e34.4	74.9	558	907	253	67.6	61.8
9	113	83.4	46.9	e37.6	e38.7	e32.2	100	480	951	237	61.9	62.3
10	92.5	88.7	42.2	e37.5	e39.7	e29.8	96.4	373	1,020	227	59.3	62.5
11	82.8	83.0	44.0	e38.4	e42.2	e30.8	88.3	386	1,030	218	73.6	62.4
12	85.4	83.5	56.7	e40.6	e41.3	e33.6	78.3	451	975	211	90.4	61.1
13	84.2	83.1	46.4	e41.9	e40.2	e34.2	74.8	362	919	206	96.4	62.6
14	79.1	78.2	39.4	e41.4	e37.8	e34.1	77.5	453	774	258	139	93.2
15	70.7	77.6	37.9	e41.2	e35.6	e36.0	77.4	697	598	253	104	97.3
16	74.5	78.1	e39.0	e41.8	e33.1	e36.6	74.8	956	527	220	80.5	97.4
17	80.8	51.9	e41.3	e43.6	e31.8	e34.1	76.0	1,080	526	200	76.3	90.2
18	79.7	54.0	e41.4	e43.5	e31.5	e33.0	84.2	1,090	533	189	72.4	90.2
19	87.4	77.3	e39.9	e42.5	e32.1	e33.1	125	1,180	578	128	72.5	78.6
20	80.9	72.2	e37.8	e41.4	e31.8	e33.1	142	978	510	124	94.4	73.5
21	83.3	52.4	e37.2	e41.6	e31.8	e33.0	167	662	415	114	84.9	71.6
22	83.7	59.5	e38.8	e42.9	e32.9	e32.1	185	561	362	107	82.0	102
23	82.4	62.5	e39.9	e43.5	e32.7	e33.1	150	535	344	102	80.5	79.9
24	81.9	60.2	e39.3	e43.3	e31.5	e37.3	132	538	367	98.7	70.9	73.9
25	86.2	47.3	e37.1	e42.2	e30.9	e40.2	125	553	336	94.5	67.1	71.7
26	164	60.8	e36.0	e40.6	e30.8	e46.1	142	782	317	86.5	63.3	69.7
27	122	62.6	e35.3	e40.2	e31.7	e52.0	174	1,010	302	86.8	60.7	68.7
28	115	58.6	e34.1	e41.7	e32.6	e63.5	216	1,050	284	84.9	57.6	69.4
29	114	56.6	e33.7	e42.8		e69.3	221	828	305	86.5	54.5	74.0
30	109	50.9	e32.9	e41.1		e67.6	197	655	446	93.3	52.5	89.1
31	105		e30.0	e38.6		e61.5		547		86.3	51.2	
Total	2,647	2,268	1,283	1,227	990	1,204	3,343	18,990	18,280	5,601	2,453	2,146
Mean	85.4	75.6	41.4	39.6	35.4	38.8	111	613	609	181	79.1	71.5
Max	164	113	56.7	43.6	42.2	69.3	221	1180	1030	389	139	102
Min	43.5	47.3	30.0	26.9	30.8	29.8	56.3	220	284	84.9	51.2	50.2
Ac-ft	5,250	4,498	2,544	2,435	1,964	2,387	6,630	37,670	36,260	11,110	4,865	4,256

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943-2022, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	66.2	55.0	45.3	41.3	39.6	44.4	115	602	824	289	93.1	75.5
Max	208	106	94.9	72.4	64.3	99.5	316	1,044	1,990	1,371	244	229
(WY)	(1983)	(1984)	(1984)	(1984)	(1984)	(2017)	(1946)	(1984)	(1986)	(2011)	(1965)	(1983)
Min	30.8	32.5	27.7	28.9	21.1	26.0	37.2	162	204	67.4	31.0	23.9
(WY)	(1959)	(1955)	(1960)	(2007)	(2003)	(1964)	(1944)	(1977)	(1992)	(1961)	(2002)	(1956)

10020100 BEAR RIVER ABOVE RESERVOIR, NEAR WOODRUFF, UT

LOCATION.--Lat 41°26'04", long 111°01'01" referenced to North American Datum of 1927, in NE ¼ NW ¼ NW ¼ sec.29, T.17 N., R.120 W., Uinta County, WY, Hydrologic Unit 16010101, on right bank 4.8 mi upstream from Woodruff Narrows Dam and 9.6 mi southeast of Woodruff.

DRAINAGE AREA.--755 mi².

PERIOD OF RECORD - October 1961 to current year.

GAGE - Water-stage recorder. Datum of gage is 6,464.63 ft. above NAVD of 1988 from a Level II GNSS survey conducted on June 30, 2022.

REMARKS - Diversion for irrigation of about 43,500 acres above station. Records are good except for discharges below 15 cfs which are fair and estimated discharges which are poor.

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 4,150 ft³/s, Jun 2, 1983, gage height, 6.17 ft; minimum, no flow several days during Aug, Sep 1988, and Sep 2002.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2021-10-01 to 2022-09-30 DAILY MEAN VALUES [e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	25.8	25.1	e10.3	e24.1	e32.5	e41.5	203	197	642	206	e1.58	18.4
2	24.6	16.5	11.8	e23.3	e32.5	e45.6	204	225	534	241	3.18	22.9
3	22.1	15.3	13.4	e25.0	e32.7	e49.2	222	286	489	168	3.06	24.3
4	18.7	19.9	12.4	e29.4	e33.0	e49.3	201	301	558	107	3.40	17.0
5	17.8	15.6	9.22	e33.4	e33.3	e46.7	167	256	649	69.6	4.45	14.6
6	19.3	12.6	e8.38	e35.8	e33.3	e43.3	149	269	693	48.5	5.63	14.2
7	24.4	10.6	e6.82	e36.2	e33.6	e41.8	104	441	735	34.3	5.62	15.2
8	63.0	9.83	e11.9	e35.6	e33.8	e40.5	105	587	775	79.6	4.73	19.0
9	67.1	8.99	e16.6	e35.0	e33.4	e39.2	122	550	792	102	4.06	20.1
10	81.4	8.32	e14.9	e34.8	e32.8	e38.4	145	438	847	78.1	3.61	22.2
11	71.5	7.91	e14.4	e36.2	e33.7	e38.2	124	366	878	69.6	9.97	21.9
12	60.2	8.63	e19.3	e38.4	e33.9	e38.1	114	389	844	63.8	11.4	23.4
13	55.7	7.81	e21.6	e39.1	e34.3	e38.3	84.9	400	794	58.9	8.21	25.6
14	55.9	7.84	e20.7	e38.6	e34.8	e40.7	82.8	337	905	30.7	12.8	31.5
15	17.1	7.80	e17.5	e37.0	e33.9	e48.9	96.1	459	747	33.2	14.2	42.3
16	7.04	7.43	e20.4	e36.8	e32.7	e55.4	132	741	546	45.6	11.6	65.5
17	5.82	6.94	e26.3	e37.6	e31.6	e61.2	186	1,020	444	30.7	7.79	57.0
18	5.43	6.40	e26.3	e37.5	e30.9	e65.8	205	1,120	334	20.3	6.27	63.9
19	6.78	5.92	e27.2	e35.7	e31.1	e64.9	116	1,210	292	16.4	5.62	57.1
20	6.93	e5.62	e31.1	e35.2	e31.7	e68.4	141	1,340	383	12.4	5.87	46.0
21	6.32	e6.64	e32.4	e35.4	e33.2	e70.6	174	978	361	8.07	6.22	24.8
22	5.99	e7.04	e34.6	e34.9	e33.5	e69.1	240	649	278	7.15	7.83	21.7
23	6.22	e6.37	e35.2	e34.2	e33.3	e70.0	278	509	218	6.07	6.55	31.2
24	6.13	e5.58	e35.0	e33.8	e32.5	e82.5	236	465	197	5.55	4.65	38.1
25	6.05	e7.12	e33.5	e33.8	e32.5	e112	193	406	190	5.01	4.44	31.5
26	7.49	e7.16	e32.8	e32.8	e33.0	e203	167	460	145	e4.36	4.13	30.8
27	44.3	e8.08	e31.8	e32.1	e34.2	271	183	675	118	e3.26	3.59	24.3
28	37.4	e9.56	e31.3	e32.2	e37.8	350	229	900	81.2	e2.95	2.87	23.6
29	30.8	e10.2	e31.4	e32.8		297	272	1,050	54.3	e2.10	2.65	26.1
30	29.4	e10.8	e30.4	e33.1		252	240	1,080	41.5	e1.66	15.0	29.4
31	26.7		e27.0	e32.8		274		837		e1.28	21.4	
Total	863	294	696	1,053	930	3,007	5,116	18,940	14,570	1,563	212	904
Mean	27.9	9.79	22.4	34.0	33.2	97.0	171	611	486	50.4	6.85	30.1
Max	81.4	25.1	35.2	39.1	37.8	350	278	1340	905	241	21.4	65.5
Min	5.43	5.58	6.82	23.3	30.9	38.1	82.8	197	41.5	1.28	1.58	14.2
Ac-ft	1,713	582	1,380	2,088	1,844	5,964	10,150	37,570	28,890	3,100	421	1,792

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 -2022, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	62.4	61.5	61.1	60.1	71.0	151	303	751	774	174	45.2	44.9
Max	437	198	181	147	312	627	671	1,957	2,564	1,355	340	288
(WY)	(1983)	(1974)	(1984)	(1984)	(1986)	(1986)	(1969)	(1984)	(1986)	(2011)	(1983)	(1983)
Min	3.03	2.06	5.35	6.76	10.4	24.9	38.3	104	47.3	4.41	.68	.49
(WY)	(1965)	(2021)	(2021)	(1989)	(2003)	(2021)	(2021)	(1977)	(2012)	(2000)	(2000)	(1988)

Figure 2022.18 (cont.)

10020300 BEAR RIVER BELOW RESERVOIR, NEAR WOODRUFF, UT

LOCATION.--Lat 41°30'20", long 111°00'50" referenced to North American Datum of 1927, in NE ¼ NE ¼ NW ¼ sec.32, T.18 N., R.120 W., Uinta County, WY, Hydrologic Unit 16010101, on right bank 1,100 ft downstream from Woodruff Narrows Dam, 1.6 mi upstream from Salt Creek, 5.4 mi upstream from Wyoming-Utah State line, and 7.7 mi east of Woodruff.

DRAINAGE AREA.--784 mi².

PERIOD OF RECORD - October 1961 to current year.

GAGE - Water-stage recorder and concrete control. Datum of gage is 6,398.96 ft above NGVD of 1929. Prior to September 26, 1962, at site 175 ft upstream at same datum.

REMARKS - Flow regulated by Woodruff Narrows Reservoir (station 10020200) beginning January 1962. Diversions for irrigation of about 43,500 acres above station. Records are good, except estimated daily discharges which are poor, and other exceptions as noted. Aug 4 to Sep 30, 2014, records are fair (due to variable control conditions from rainstorm event). Aug 6 to Aug 23, 2022, records are poor (due to variable control conditions from rainstorm/debris event).

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 3,820 ft³/s, Jun 2, 1983, gage height, 8.26 ft; no flow Jul 4, 5, 1962, Aug 30, 31, Sep 1, 2, 6, 7, 1979, Oct 30, 1980.

DISCHARGE, CUBIC FEET PER SECOND

WATER YEAR 2021-10-01 to 2022-09-30

DAILY MEAN VALUES

[e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	27.4	19.7	19.5	19.2	19.5	20.1	14.7	16.2	1,160	67.4	54.9	47.6
2	27.3	19.7	19.5	19.1	19.5	20.5	14.7	16.4	1,150	66.7	54.7	47.4
3	27.1	19.5	19.5	19.4	19.5	20.6	14.7	16.4	1,140	67.2	54.1	47.3
4	27.2	19.5	19.5	19.4	19.5	20.4	14.7	16.6	1,090	67.4	53.9	47.4
5	27.2	19.7	19.4	19.5	19.5	20.4	14.7	15.9	1,060	67.4	54.7	39.7
6	27.2	20.1	19.4	19.4	19.5	20.7	14.9	15.0	1,050	67.1	85.0	31.4
7	27.1	19.9	19.4	19.5	19.5	20.7	15.0	15.2	1,050	66.9	47.0	28.9
8	27.0	20.0	19.3	19.2	19.5	20.7	15.1	15.5	1,000	66.6	22.2	28.8
9	27.0	19.8	19.4	19.3	19.5	21.1	15.0	15.6	969	66.3	21.5	28.7
10	26.6	19.6	19.4	19.5	19.6	21.2	15.2	15.6	968	65.6	20.7	28.6
11	26.7	19.6	19.4	19.5	19.9	21.3	15.3	15.5	972	65.3	25.5	28.6
12	26.8	19.5	19.4	19.5	20.1	21.3	15.4	15.8	884	54.5	23.8	28.7
13	27.5	19.5	19.3	19.5	20.1	21.0	15.5	16.0	858	48.3	23.6	28.8
14	27.9	19.4	19.4	19.5	20.1	20.7	15.3	16.1	857	48.3	23.6	28.8
15	27.9	19.4	19.3	19.1	20.1	20.8	15.6	16.0	858	48.3	23.6	28.9
16	27.8	19.4	19.3	19.5	20.1	20.7	15.6	16.2	858	47.7	201	29.0
17	27.7	19.5	19.5	19.0	20.1	20.9	15.5	16.4	857	47.7	268	29.1
18	27.7	19.5	19.8	19.3	20.1	21.2	15.4	17.0	852	48.1	267	29.2
19	27.7	19.5	19.8	19.4	20.1	21.2	15.6	17.3	848	48.2	217	20.5
20	27.4	19.5	19.5	19.5	20.4	21.2	15.9	17.6	840	48.0	175	20.1
21	27.1	19.5	19.8	19.5	20.7	21.3	15.9	833	832	47.9	175	21.6
22	27.5	19.5	19.8	19.5	20.7	21.3	15.9	1,240	824	47.8	174	21.8
23	27.4	19.5	19.8	19.5	21.3	21.5	16.0	1,230	815	47.8	e107	21.7
24	20.7	19.5	19.7	19.5	20.9	21.6	15.7	1,230	804	47.8	74.3	21.7
25	19.1	19.5	19.2	19.5	21.2	20.4	16.1	1,240	796	47.8	74.3	22.0
26	19.6	19.5	19.2	19.5	21.2	17.5	16.1	1,220	784	47.7	73.6	22.3
27	19.5	19.5	19.2	19.5	21.1	17.2	16.2	1,210	774	47.8	72.8	22.3
28	19.5	19.5	19.1	19.5	20.9	15.8	16.2	1,200	763	48.1	73.3	22.4
29	19.5	19.5	19.1	19.5		14.9	16.3	1,200	749	48.4	73.1	22.4
30	19.5	19.5	19.2	19.5		14.7	16.3	1,190	289	55.3	54.6	22.3
31	19.7		19.1	19.5		14.7		1,170		54.9	47.9	
Total	785	587	602	602	564	618	464	13,280	26,750	1,714	2,717	868
Mean	25.3	19.6	19.4	19.4	20.2	19.9	15.5	429	892	55.3	87.6	28.9
Max	27.9	20.1	19.8	19.5	21.3	21.6	16.3	1240	1160	67.4	268	47.6
Min	19.1	19.4	19.1	19.0	19.5	14.7	14.7	15.0	289	47.7	20.7	20.1
Ac-ft	1,558	1,165	1,194	1,194	1,119	1,225	921	26,350	53,059	3,400	5,387	1,722

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2022, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	48.8	44.4	39.2	37.0	38.6	86.6	235	731	934	247	68.3	53.7
Max	425	421	184	153	171	648	891	1,828	2,437	1,339	331	278
(WY)	(1983)	(1983)	(1983)	(1985)	(1971)	(2017)	(1985)	(1984)	(1983)	(2011)	(1983)	(1983)
Min	3.89	.12	4.28	4.37	4.71	4.70	.34	27.8	220	10.4	3.91	3.65
(WY)	(1990)	(1981)	(1978)	(1978)	(1978)	(1978)	(1977)	(1977)	(2021)	(2002)	(1979)	(1979)



Bear River near Randolph, UT

Source Data : Discharge.Discharge@10026500, Bear River near Randolph, UT

Units: ft³/s
Data Coverage Threshold: 0%

Oct 2021 - Sep 2022

WY: Total: 14598.44 Mean: 96.11 Max: 335.19 Min: 10.70 Ac-Ft: 28948.70

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1								18.20	236.33	219.45	21.18	69.14
2								19.02	237.15	204.10	28.13	56.05
3								19.20	243.99	175.18	40.48	46.62
4								16.38	273.08	166.07	30.52	42.36
5								14.92	295.26	170.80	29.06	41.77
6								14.87	296.61	158.34	35.49	39.94
7								13.74	277.74	149.81	38.30	37.69
8								13.37	275.32	127.23	77.93	35.90
9								13.08	309.53	98.02	104.52	32.80
10								13.17	335.19	85.66	70.99	29.98
11								12.89	316.32	75.57	48.87	31.12
12								12.92	297.96	61.57	31.27	30.67
13								13.60	281.54	49.09	29.64	29.42
14								10.99	259.25	38.15	36.54	32.47
15								10.70	248.74	33.58	32.39	32.70
16								12.17	279.65	29.09	30.02	34.41
17								12.20	236.63	20.33	29.24	35.52
18								12.32	214.70	17.71	29.05	36.27
19								12.13	219.04	20.27	59.29	35.05
20								12.62	223.83	23.11	103.56	33.78
21								13.53	239.77	29.92	109.16	33.62
22								12.37	247.19	23.16	96.48	36.91
23								56.09	251.29	20.20	93.22	35.60
24								76.08	255.43	19.42	93.45	32.06
25								79.37	259.61	19.40	91.47	31.53
26								110.84	263.83	18.37	86.19	31.01
27								149.35	267.78	15.00	83.94	30.45
28								200.90	263.30	16.21	86.86	29.93
29								197.81	247.27	17.50	84.75	29.56
30								204.07	239.08	18.88	72.31	30.33
31								225.05		20.35	71.64	
Total								1603.91	7892.39	2141.55	1875.94	1084.65
Mean								51.74	263.08	69.08	60.51	36.16
Max								225.05	335.19	219.45	109.16	69.14
Min								10.70	214.70	15.00	21.18	29.42
Ac-Ft								3180.56	15650.60	4246.70	3719.98	2150.86

10028500 BEAR RIVER BELOW PIXLEY DAM, NEAR COKEVILLE, WY

LOCATION.--Lat 41°56'20", long 110°59'05" referenced to North American Datum of 1927, in SW ¼ SE ¼ SE ¼ sec.25, T.23 N., R.120 W., Lincoln County, WY, Hydrologic Unit 16010102, 800 ft downstream from Pixley Dam, 11 mi south of Cokeville, and 17.5 mi downstream from Twin Creek.

DRAINAGE AREA.--2,032 mi².

PERIOD OF RECORD - October 1941 to November 1943 (published as Bear River near Cokeville), October 1952 to September 1956, May 1958 to current year (seasonal only). Monthly discharge only for some periods, published in WSP 1314.

GAGE - Water-stage recorder. Datum of gage is 6,180.30 ft. above NAVD of 1988 from a Level II GNSS survey conducted on June 27, 2022. October 31, 1941 to November 30, 1943 at site 200 ft downstream at different datum. September 24, 1952 to August 31, 1994 at site 50 ft downstream at same datum. May 7, 2015 to August 14, 2015 at site 850 ft upstream at same datum.

REMARKS - Natural flow of stream affected by diversions for irrigation, return flow from irrigated areas, and regulation by upstream reservoirs.

Records are fair except for estimated daily discharges which are poor and other periods as noted. 6/20/14 - 7/12/14; 4/1/21 - 10/1/21; records are poor due to variable control conditions from backwater. 5/6/15 - 9/30/16, 3/18/16 - 5/16/16, 6/8/16 - 10/4/16, 3/21/17 - 10/2/17, 3/14/18 - 4/24/18; records are good.

EXTREMES FOR PERIOD OF RECORD - Maximum daily discharge, 2,300 ft³/s, Mar 25, 1956; minimum daily discharge, 0.09 ft³/s, Sep 8, 2002.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2021-10-01 to 2022-09-30 DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	---	---	---	---	---	---	---	4.78	e4.00	e32.7	14.8	86.0
2	---	---	---	---	---	---	58.2	4.17	e4.01	e33.1	18.7	80.6
3	---	---	---	---	---	---	51.6	4.01	e4.01	e33.7	16.2	68.5
4	---	---	---	---	---	---	44.4	4.20	e4.02	e35.5	21.9	55.8
5	---	---	---	---	---	---	34.2	4.11	e4.19	e212	26.3	51.1
6	---	---	---	---	---	---	33.7	3.89	e4.37	272	e29.4	50.9
7	---	---	---	---	---	---	29.7	3.56	e4.62	244	38.3	47.1
8	---	---	---	---	---	---	27.0	3.31	e5.15	223	49.6	43.6
9	---	---	---	---	---	---	26.7	3.47	e6.45	193	106	40.4
10	---	---	---	---	---	---	24.8	4.11	e8.96	164	102	37.7
11	---	---	---	---	---	---	25.6	4.15	e12.0	138	80.6	36.1
12	---	---	---	---	---	---	24.2	3.56	e15.6	116	62.5	35.9
13	---	---	---	---	---	---	24.4	3.61	e19.1	102	59.3	36.5
14	---	---	---	---	---	---	23.7	3.88	e21.7	90.4	56.9	e43.0
15	---	---	---	---	---	---	17.4	4.42	e23.3	81.9	58.3	e44.8
16	---	---	---	---	---	---	10.4	4.32	e24.6	71.5	54.5	47.2
17	---	---	---	---	---	---	9.56	4.11	e25.8	49.7	45.4	48.5
18	---	---	---	---	---	---	8.91	3.85	e26.1	36.7	42.2	49.6
19	---	---	---	---	---	---	8.23	3.44	e26.4	26.2	46.4	48.6
20	---	---	---	---	---	---	8.08	3.30	e26.6	21.6	70.7	47.1
21	---	---	---	---	---	---	7.61	3.58	e27.1	32.1	108	45.8
22	---	---	---	---	---	---	7.32	3.43	e27.9	36.2	112	46.7
23	---	---	---	---	---	---	6.36	3.48	e28.4	35.6	107	48.7
24	---	---	---	---	---	---	6.60	3.59	e28.8	32.4	105	48.4
25	---	---	---	---	---	---	7.14	3.73	e29.1	29.9	105	45.5
26	---	---	---	---	---	---	5.98	4.25	e29.4	25.3	103	43.9
27	---	---	---	---	---	---	e5.21	e4.07	e30.0	21.9	99.6	42.9
28	---	---	---	---	---	---	4.43	e3.77	e30.6	19.7	96.7	42.3
29	---	---	---	---	---	---	3.91	e3.83	e31.3	15.1	98.1	42.3
30	---	---	---	---	---	---	4.48	e3.83	e32.1	14.4	97.3	46.0
31	---	---	---	---	---	---		e3.94		14.6	91.3	
Total								120	566	2,454	2,123	1,452
Mean								3.86	18.9	79.2	68.5	48.4
Max								4.78	32.1	272	112	86.0
Min								3.30	4.00	14.4	14.8	35.9
Ac-ft								238	1,122	4,868	4,211	2,879

Figure 2022.18 (cont.)

10032000 SMITHS FORK NEAR BORDER, WY

LOCATION.--Lat 42°17'36", long 110°52'18" referenced to North American Datum of 1927, in NE ¼ SW ¼ sec.28, T.27 N., R.118 W., Lincoln County, WY, Hydrologic Unit 16010102, on left bank 4.9 mi upstream from Howland Creek, 5.6 mi downstream from Hobbie Creek, and 12.4 mi northeast of Border.

DRAINAGE AREA.--165 mi².

PERIOD OF RECORD - May 1942 to current year.

GAGE - Water-stage recorder and crest-stage gage. Datum of gage is 6,705.69 ft. above NAVD of 1988 from a Level II GNSS survey conducted on June 9, 2021. Prior to October 16, 1945, at site 1.2 mi downstream at different datum. October 16, 1945 to November 1986 at site 0.4 mi downstream at different datum.

REMARKS - Records good except for estimated daily discharges which are poor. One diversion for irrigation of about 200 acres above station.

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 2,100 ft³/s, Jun 4, 1986, gage height, 5.66 ft; minimum, 19 ft³/s, Feb 28, 2007.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2021-10-01 to 2022-09-30

DAILY MEAN VALUES

[e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	61.1	67.8	54.9	e48.9	e60.9	e48.9	83.5	152	402	283	137	86.2
2	60.3	75.3	52.9	e48.1	e56.9	e44.3	84.4	167	388	276	139	85.4
3	60.3	71.3	51.7	e47.3	e55.9	48.2	88.8	213	405	266	139	84.9
4	60.3	65.7	52.6	e50.4	e55.3	50.3	91.3	188	444	257	133	85.3
5	59.8	63.0	52.2	e51.9	e55.9	52.4	88.2	197	486	248	133	85.3
6	60.0	61.4	52.9	e51.9	e56.2	52.2	82.2	256	534	240	157	85.5
7	64.3	60.2	54.7	e50.6	e54.2	53.8	80.5	287	551	229	146	84.4
8	85.3	60.2	51.5	e48.4	e51.1	51.0	84.9	276	535	222	132	84.3
9	95.0	60.2	51.9	e45.6	e51.6	49.8	96.0	249	525	212	130	84.8
10	76.5	61.4	55.7	e35.2	e52.7	e38.5	93.9	221	565	204	125	84.6
11	70.1	59.6	e61.5	e36.6	e53.3	e51.5	90.8	212	613	198	126	87.8
12	68.0	59.9	e51.1	e93.2	e52.5	54.2	88.5	220	663	194	123	89.8
13	67.1	59.7	e49.7	e73.6	e53.0	49.6	83.8	204	660	192	127	90.1
14	65.2	60.2	e50.8	e59.1	e54.0	48.7	81.7	198	561	186	121	95.4
15	63.5	59.1	e51.6	e64.9	e52.1	47.1	82.8	198	485	187	118	94.0
16	62.0	59.5	e53.1	e64.2	e50.3	48.0	79.2	262	431	184	115	100
17	61.5	56.2	e54.5	e55.9	e52.4	46.9	83.3	343	415	173	113	95.6
18	61.1	58.1	e51.8	e54.2	e53.3	45.7	80.3	391	420	170	111	99.6
19	67.7	59.9	e52.1	e53.5	e52.1	46.1	97.8	435	427	165	111	90.9
20	65.0	58.5	e51.6	e60.3	e51.4	49.0	93.6	389	411	167	111	87.7
21	61.9	52.8	e51.2	e53.6	e48.8	46.9	96.9	343	383	165	111	88.2
22	60.5	57.2	e51.4	e57.0	e51.5	45.3	118	318	364	159	108	97.9
23	61.4	61.5	e51.2	e56.1	e50.9	47.8	110	299	356	155	103	91.4
24	63.5	56.1	e50.2	e64.7	e47.8	52.3	99.5	294	350	152	103	87.3
25	67.2	63.2	e46.6	74.3	e47.5	57.5	104	285	343	151	100	85.3
26	65.8	71.2	e45.7	e78.9	e40.1	64.0	114	319	331	151	97.7	84.2
27	63.7	61.7	e49.4	e80.3	e41.8	73.2	121	390	320	150	97.0	82.8
28	61.9	54.1	e48.9	e68.9	e47.4	82.8	140	486	310	148	97.5	82.0
29	60.7	53.2	e48.2	e66.1		91.1	154	514	303	148	93.4	81.6
30	59.8	52.9	e49.7	e65.0		93.4	139	462	293	145	92.1	83.5
31	60.6		e50.8	e63.2		89.5		436		140	91.0	
Total	2,021	1,821	1,602	1,822	1,451	1,719	2,932	9,204	13,270	5,917	3,641	2,646
Mean	65.2	60.7	51.7	58.8	51.8	55.5	97.7	297	442	191	117	88.2
Max	95.0	75.3	61.5	93.2	60.9	93.4	154	514	663	283	157	100
Min	59.8	52.8	45.7	35.2	40.1	38.5	79.2	152	293	140	91.0	81.6
Ac-ft	4,009	3,612	3,178	3,614	2,878	3,412	5,815	18,260	26,329	11,740	7,221	5,248

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2022, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	90.1	78.0	67.9	63.2	60.3	63.5	160	520	603	284	149	107
Max	156	114	88.4	88.7	87.5	159	446	1,072	1,377	779	280	169
(WY)	(1987)	(1986)	(1983)	(2019)	(2017)	(2017)	(2017)	(1997)	(1986)	(2011)	(2011)	(2011)
Min	51.0	50.7	41.5	39.7	34.7	39.5	58.6	99.1	96.2	61.4	55.1	52.1
(WY)	(1978)	(1978)	(2002)	(2008)	(2003)	(1988)	(1975)	(1977)	(1977)	(1977)	(1977)	(1977)

Figure 2022.18 (cont.)

10039500 BEAR RIVER AT BORDER, WY

LOCATION.--Lat 42°12'40", long 111°03'11" referenced to North American Datum of 1927, in NE ¼ NE ¼ sec.15, T.14 S., R.46 E., Bear Lake County, ID, Hydrologic Unit 16010102, on left bank 0.2 mi west of Wyoming-Idaho State line, 0.5 mi west of Border, and 2.1 mi upstream from Thomas Fork.

DRAINAGE AREA.--2,480 mi².

PERIOD OF RECORD - October 1937 to September 1996, October 1996 to September 2000 (seasonal), October 2000 to current year.

GAGE - Water-stage recorder. Datum of gage is 6,056.85 ft. above NAVD of 1988 from a Level II GNSS survey conducted on June 8, 2021.

REMARKS - Natural flow of stream affected by regulation of upstream reservoirs, diversions for irrigation, and return flow from irrigated areas.

Records are good except estimated discharges which are poor and the following exceptions: March 13 to August 15, 2017 which is rated fair. EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 4,880 ft³/s, Jun 7, 1983, gage height, 9.69 ft; minimum discharge, 24 ft³/s, Apr 29, 30, 1977.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2021-10-01 to 2022-09-30 DAILY MEAN VALUES [e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	54.2	156	e112	e109	e90.0	e89.3	309	133	355	391	77.0	74.7
2	47.9	159	e113	e108	e91.1	e93.4	289	139	310	371	90.3	82.0
3	45.4	163	e113	e108	e91.1	e96.2	281	154	292	367	102	88.9
4	38.9	155	e114	e110	e90.5	e95.1	268	194	286	366	95.5	75.8
5	33.6	147	e114	e113	e88.4	e94.9	262	180	338	406	89.8	64.0
6	31.3	144	e115	e114	e87.8	e96.7	239	146	405	513	117	53.8
7	38.3	142	e114	e112	e86.0	e110	227	159	416	502	148	56.0
8	46.9	140	e114	e109	e82.7	e108	223	182	471	485	136	55.5
9	59.7	138	e112	e104	e79.9	e107	217	183	509	458	152	53.1
10	94.5	126	e110	e98.1	e77.9	e107	218	188	553	416	201	51.4
11	74.3	119	e111	e101	e79.2	e110	211	207	567	387	199	50.5
12	73.4	135	e111	e105	e82.7	e111	215	201	593	359	181	51.9
13	68.1	133	e111	e109	e85.6	e115	215	201	632	316	169	61.0
14	65.8	131	e106	e113	e87.7	e116	202	186	555	302	162	78.5
15	62.9	129	e103	e113	e89.7	e121	204	179	514	300	153	90.8
16	61.1	131	e101	e110	e91.4	e117	202	179	472	286	145	109
17	58.3	131	e99.6	e104	e92.7	e117	183	210	441	270	110	114
18	58.5	e128	e98.8	e99.2	e93.8	e125	162	281	430	237	92.1	115
19	69.7	e128	e99.0	e98.3	e95.6	e130	153	322	447	199	87.0	112
20	102	e127	e102	e99.9	e95.0	e139	155	359	468	178	90.2	104
21	102	e126	e109	e105	e93.6	131	139	325	444	160	91.4	103
22	122	e124	e118	e109	e91.5	127	122	281	412	160	135	118
23	116	e123	e124	e109	e90.0	130	140	274	396	157	111	125
24	118	e123	e129	e108	e87.0	151	135	236	403	152	84.2	116
25	121	e121	e131	e111	e88.0	168	123	225	385	144	94.4	110
26	128	e119	e131	e111	e87.5	194	126	215	372	138	113	101
27	165	e117	e128	e105	e89.4	206	125	244	394	132	93.8	83.8
28	184	e115	e122	e92.9	e87.4	243	126	309	407	107	87.8	76.7
29	161	e113	e115	e89.6		285	146	406	395	98.1	87.0	87.4
30	147	e113	e111	e89.4		333	144	432	387	85.7	90.5	83.3
31	144		e110	e89.4		340		392		81.5	84.0	
Total	2,693	3,956	3,501	3,257	2,473	4,507	5,760	7,322	13,050	8,524	3,669	2,546
Mean	86.9	132	113	105	88.3	145	192	236	435	275	118	84.9
Max	184	163	131	114	95.6	340	309	432	632	513	201	125
Min	31.3	113	98.8	89.4	77.9	89.3	122	133	286	81.5	77.0	50.5
Ac-ft	5,341	7,846	6,945	6,460	4,906	8,939	11,430	14,520	25,879	16,910	7,277	5,050

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2022, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	194	212	185	170	192	361	684	947	1,105	517	212	165
Max	752	693	563	381	479	1,640	2,220	3,158	3,829	2,837	752	671
(WY)	(1983)	(1983)	(1983)	(1985)	(1986)	(2017)	(2017)	(1952)	(1983)	(2011)	(1983)	(1983)
Min	43.5	74.7	97.2	77.6	75.2	105	71.2	74.4	62.2	54.2	42.3	38.5
(WY)	(2002)	(2002)	(2002)	(1993)	(1993)	(1988)	(1977)	(1977)	(1977)	(1977)	(1940)	(1940)

Figure 2022.18 (cont.)

RAINBOW INLET CANAL NEAR DINGLE, ID (10046000)

Water Year 2022 (October 2021 to September 2022)

Daily Mean Values

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	28	170	115	115	105	110	452	11	200	228	10	53
2	30	170	120	115	105	110	425	11	123	230	10	35
3	30	170	120	115	105	110	398	11	120	220	5	11
4	43	170	120	115	105	110	380	10	115	200	6	11
5	43	165	120	115	105	110	367	10	110	180	6	11
6	43	165	120	115	105	110	365	10	115	180	6	11
7	40	165	120	115	105	110	342	10	123	180	6	11
8	45	116	120	115	105	110	270	10	125	323	8	5
9	55	116	120	115	105	110	275	10	130	320	15	5
10	55	116	120	115	105	110	265	10	135	315	17	5
11	70	116	115	115	105	120	260	10	140	310	30	5
12	75	116	105	115	105	120	255	10	150	300	75	5
13	72	110	120	115	100	120	220	5	150	290	100	5
14	72	110	120	115	100	120	225	5	175	270	121	5
15	72	110	120	115	100	120	200	5	312	265	125	5
16	72	110	120	115	100	130	200	5	300	159	125	10
17	72	110	120	115	100	130	200	5	260	150	125	12
18	68	110	120	115	100	135	180	5	240	150	116	15
19	70	110	120	115	100	168	170	5	130	150	100	46
20	70	110	120	115	110	168	160	5	130	145	90	47
21	70	110	115	115	110	168	150	10	130	99	80	48
22	70	110	115	115	110	168	140	10	152	90	80	70
23	70	115	115	110	110	168	130	8	152	90	70	90
24	72	115	115	110	110	168	120	10	145	85	80	105
25	72	115	115	110	110	175	110	10	140	80	90	105
26	85	115	115	110	110	185	100	10	140	75	80	100
27	100	115	115	110	110	200	50	10	145	75	75	100
28	110	115	115	105	110	210	60	10	155	50	53	80
29	190	115	115	105		250	80	10	175	25	53	80
30	185	115	115	105		280	70	15	175	25	53	70
31	180		115	105		300		200	175	20	53	
Monthly Statistics												Yearly Stats
Total	2,329	3,775	3,640	3,500	2,950	4,703	6,619	466	4,792	5,279	1,863	1,161
Mean	75	126	117	113	105	152	221	15	160	170	60	39
Min	28	110	105	105	100	110	50	5	110	20	5	5
Max	190	170	120	115	110	300	452	200	312	323	125	105
Ac-ft	4,620	7,490	7,220	6,940	5,850	9,330	13,130	924	9,500	10,470	3,700	2,300
												41,100
												113
												5
												452
												81,500

10055000 BEAR LAKE AT STATE PARK MARINA NR GARDEN CITY, UT

LOCATION - Lat 41°57'57.30", long 111°23'53.44" referenced to North American Datum of 1983, Rich County, UT, Hydrologic Unit 16010201,
PERIOD OF RECORD - UP&L Datum - October 1903 to June 1906, August 1909 to current year; North American Vertical Datum 1988 (NAVD88) -
October 2019 to current year. Records from October 1903 to October 2019 collected by UP&L Co/PacifiCorp Power Company.

GAGE - Staff gage at Bear Lake at Fish Haven, ID from October 1903 to 1906, UP&L datum. Water-stage recorder at Lifton Pumping Station, ID from
August 1909 to April 2004, UP&L datum. Staff gage at Bear Lake State Park Marina, Garden City, UT, from April 2004 to October 2019, UP&L
datum. Water-stage recorder at Bear Lake State Park Marina, Garden City, UT, from October 2019 to present, NAVD88 and UP&L datum.

COOPERATION - Station operated by the U.S. Geological Survey, in cooperation with the Bear River Commission and Bear Lake Watch.

REMARKS - The Bear Lake elevations measured at State Park Marina reported by the U.S. Geological Survey are referenced to the NAVD 88 datum.
The relation of the gage to this datum was established by U.S. Geological Survey personnel who performed two separate GNSS static
observations on a local reference mark near the gage location on October 2 and 3, 2019. Utilizing additional GNSS static observations near the
Lifton Bench Mark, U.S. Geological Survey personnel determined a difference between the datum of this gage (NAVD88) and the UP&L Co.
datum (which has been historically used to quantify the elevation of Bear Lake) to be -6.88 feet. Bear Lake elevations are reported here relative
to the NAVD88 datum. Additionally, Bear Lake elevations are reported here relative to the UP&L Co. datum by subtracting 6.88 feet from gage
readings.

GAGE HEIGHT, FEET, [Elevation, ft (UP&L Co. Datum)]

YEAR 2021-10-01 to 2022-09-30

DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	2021	2021	2021	2022	2022	2022	2022	2022	2022	2022	2022	2022
1	5,912.25	5,912.35	5,912.37	5,912.52	5,912.67	5,912.81	5,913.23	5,913.61	5,913.58	5,913.19	5,911.72	5,910.85
2	5,912.23	5,912.37	5,912.37	5,912.52	5,912.67	5,912.81	5,913.26	5,913.65	5,913.59	5,913.16	5,911.69	5,910.81
3	5,912.23	5,912.37	5,912.38	5,912.52	5,912.68	5,912.82	5,913.29	5,913.66	5,913.61	5,913.11	5,911.63	5,910.76
4	5,912.22	5,912.37	5,912.38	5,912.52	5,912.68	5,912.83	5,913.31	5,913.68	5,913.60	5,913.07	5,911.59	5,910.71
5	5,912.21	5,912.37	5,912.39	5,912.54	5,912.69	5,912.85	5,913.34	5,913.68	5,913.62	5,913.02	5,911.55	5,910.66
6	5,912.21	5,912.38	5,912.38	5,912.58	5,912.69	5,912.90	5,913.35	5,913.69	5,913.63	5,912.99	5,911.52	5,910.61
7	5,912.21	5,912.38	5,912.37	5,912.57	5,912.70	5,912.91	5,913.36	5,913.67	5,913.63	5,912.94	5,911.50	5,910.57
8	5,912.26	5,912.38	5,912.38	5,912.58	5,912.70	5,912.92	5,913.37	5,913.68	5,913.63	5,912.89	5,911.46	5,910.52
9	5,912.29	5,912.38	5,912.39	5,912.58	5,912.70	5,912.93	5,913.38	5,913.68	5,913.62	5,912.84	5,911.43	5,910.45
10	5,912.29	5,912.39	5,912.39	5,912.58	5,912.72	5,912.95	5,913.39	5,913.68	5,913.61	5,912.79	5,911.40	5,910.37
11	5,912.29	5,912.39	5,912.38	5,912.59	5,912.72	5,912.95	5,913.41	5,913.69	5,913.61	5,912.74	5,911.37	5,910.32
12	5,912.33	5,912.39	5,912.38	5,912.59	5,912.72	5,912.96	5,913.44	5,913.68	5,913.61	5,912.69	5,911.34	5,910.28
13	5,912.30	5,912.38	5,912.37	5,912.59	5,912.73	5,912.97	5,913.45	5,913.67	5,913.63	5,912.64	5,911.34	5,910.24
14	5,912.29	5,912.38	5,912.38	5,912.60	5,912.73	5,912.98	5,913.46	5,913.67	5,913.60	5,912.60	5,911.32	5,910.26
15	5,912.29	5,912.39	5,912.40	5,912.60	5,912.74	5,912.99	5,913.48	5,913.68	5,913.59	5,912.54	5,911.31	5,910.23
16	5,912.28	5,912.39	5,912.41	5,912.61	5,912.75	5,913.00	5,913.49	5,913.69	5,913.59	5,912.50	5,911.29	5,910.24
17	5,912.28	5,912.38	5,912.41	5,912.61	5,912.75	5,913.01	5,913.50	5,913.68	5,913.58	5,912.44	5,911.27	5,910.21
18	5,912.29	5,912.37	5,912.41	5,912.61	5,912.75	5,913.02	5,913.51	5,913.68	5,913.55	5,912.40	5,911.26	5,910.19
19	5,912.32	5,912.38	5,912.41	5,912.61	5,912.76	5,913.02	5,913.51	5,913.68	5,913.55	5,912.35	5,911.24	5,910.18
20	5,912.32	5,912.38	5,912.40	5,912.62	5,912.76	5,913.03	5,913.54	5,913.67	5,913.53	5,912.31	5,911.23	5,910.15
21	5,912.33	5,912.37	5,912.41	5,912.62	5,912.77	5,913.04	5,913.54	5,913.65	5,913.50	5,912.27	5,911.21	5,910.15
22	5,912.32	5,912.37	5,912.41	5,912.63	5,912.77	5,913.05	5,913.56	5,913.63	5,913.47	5,912.23	5,911.18	5,910.16
23	5,912.33	5,912.37	5,912.41	5,912.63	5,912.77	5,913.06	5,913.57	5,913.61	5,913.45	5,912.18	5,911.15	5,910.14
24	5,912.34	5,912.37	5,912.44	5,912.63	5,912.78	5,913.07	5,913.56	5,913.59	5,913.42	5,912.13	5,911.13	5,910.13
25	5,912.35	5,912.36	5,912.48	5,912.65	5,912.79	5,913.08	5,913.57	5,913.58	5,913.40	5,912.08	5,911.11	5,910.12
26	5,912.37	5,912.36	5,912.48	5,912.65	5,912.79	5,913.08	5,913.58	5,913.57	5,913.36	5,912.02	5,911.09	5,910.12
27	5,912.35	5,912.37	5,912.49	5,912.65	5,912.79	5,913.10	5,913.59	5,913.55	5,913.34	5,911.98	5,911.06	5,910.12
28	5,912.34	5,912.36	5,912.49	5,912.65	5,912.81	5,913.12	5,913.59	5,913.57	5,913.31	5,911.92	5,911.06	5,910.13
29	5,912.35	5,912.37	5,912.50	5,912.66		5,913.15	5,913.59	5,913.57	5,913.28	5,911.87	5,911.02	5,910.12
30	5,912.35	5,912.37	5,912.51	5,912.66		5,913.18	5,913.60	5,913.57	5,913.24	5,911.83	5,910.94	5,910.11
31	5,912.35		5,912.52	5,912.67		5,913.21		5,913.58		5,911.77	5,910.90	
Mean	5,912.3	5,912.37	5,912.42	5,912.6	5,912.74	5,912.99	5,913.46	5,913.64	5,913.52	5,912.5	5,911.3	5,910.33
Max	5912.37	5912.39	5912.52	5912.67	5912.81	5913.21	5913.60	5913.69	5913.63	5913.19	5911.72	5910.85
Min	5912.21	5912.35	5912.37	5912.52	5912.67	5912.81	5913.23	5913.55	5913.24	5911.77	5910.90	5910.11



Bear Lake Outlet Canal near Paris, ID (10059500)

Daily Mean

Units: ft^3/s

October 2021 - September 2022

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	184	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1700	1400	1020
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1580	1360	1020
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1450	1220	1110
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1430	1130	1200
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1420	1140	1200
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	165	1420	990	1200
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	322	1540	822	1190
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	324	1700	818	1190
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	324	1710	817	1190
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	324	1700	815	1190
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	323	1690	768	1180
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	331	1690	725	904
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	337	1680	564	603
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	232	1670	404	599
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	124	1530	400	598
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	413	1450	398	605
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	652	1370	563	474
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	648	1200	697	323
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	650	1200	648	321
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	725	1200	715	277
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	147	827	1260	783	205
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	309	830	1320	778	93.7
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	323	831	1360	773	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	333	962	1420	680	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	339	1090	1450	596	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	477	1090	1440	597	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	622	1090	1440	709	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	647	1150	1430	823	0.00
29	0.00	0.00	0.00	0.00		0.00	0.00	458	1290	1420	818	0.00
30	0.00	0.00	0.00	0.00		0.00	0.00	199	1480	1410	816	146
31	0.00		0.00	0.00		0.00		96.5		1400	906	

Max	184	0.00	0.00	0.00	0.00	0.00	0.00	647	1480	1710	1400	1200
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1200	398	0.00
Mean	5.95	0.00	0.00	0.00	0.00	0.00	0.00	127	550	1470	796	595

Max: 1710 Min: 0.00 Mean: 298

10092700 BEAR RIVER AT IDAHO-UTAH STATE LINE

LOCATION.--Lat 42°00'47", long 111°55'14" referenced to North American Datum of 1927, in NE ¼ NW ¼ NE ¼ sec.29, T.16 S., R.39 E., Franklin County, ID, Hydrologic Unit 16010202, on left bank 1,050 ft downstream from inlet canal to Cub River pumps, 1.1 mi downstream from Weston Creek, 1.8 mi upstream from Idaho-Utah State line, and 3.5 mi southeast of Weston.

PERIOD OF RECORD - October 1970 to current year.

GAGE - Water-stage recorder and crest-stage gage. Datum of gage is 4,424.20 ft. above NAVD of 1988 from a Level II GNSS survey conducted on June 21, 2023. Prior to September 10, 1982 at datum 12.00 ft higher. September 10, 1982 to September 30, 1985 at datum 10.0 ft higher.

REMARKS - Records good except for estimates, which are poor. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas.

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 4,870 ft³/s, Jun 14, 1984, gage height, 19.20 ft, present datum; maximum gage height, 20.25 ft, Jun 12, 1971, present datum; minimum daily discharge, 24 ft³/s, May 16, 2004.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2021-10-01 to 2022-09-30 DAILY MEAN VALUES [e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	289	398	399	e382	e351	397	632	601	452	909	999	715
2	366	374	403	e340	e370	442	745	541	409	963	981	704
3	347	391	390	e401	e334	420	911	461	402	1,100	1,040	730
4	357	407	377	e438	e341	460	931	428	401	1,130	1,030	810
5	359	388	388	491	e345	467	887	369	417	972	946	858
6	340	380	388	451	e377	465	786	359	356	949	985	871
7	343	389	387	423	e369	457	664	344	345	1,010	1,010	874
8	387	452	386	422	e369	418	668	422	400	1,110	1,150	874
9	501	435	390	e379	e382	422	568	382	394	1,110	1,110	864
10	452	450	386	e299	e387	416	739	297	457	1,110	781	865
11	366	465	386	e320	388	382	715	318	438	1,090	790	963
12	402	450	389	e401	386	405	604	301	340	1,080	779	972
13	406	444	395	382	384	423	493	249	326	1,020	755	1,000
14	387	430	399	392	387	461	489	205	311	1,010	697	1,090
15	380	443	398	386	389	481	511	192	263	1,030	619	795
16	381	401	381	e369	384	474	517	182	238	1,080	457	695
17	380	417	383	e322	379	469	498	162	190	1,050	350	684
18	377	401	384	e336	382	460	512	180	287	1,030	380	689
19	390	440	404	e369	386	447	551	209	463	984	396	651
20	370	424	380	382	385	459	606	234	582	916	447	492
21	365	383	380	386	385	443	639	220	630	846	587	439
22	362	407	e376	375	386	434	638	198	629	862	641	435
23	370	409	385	e357	383	435	579	180	535	886	681	438
24	402	407	432	e296	383	433	557	182	522	924	712	395
25	405	388	430	e358	394	453	527	269	538	926	709	395
26	474	385	430	e328	374	528	486	276	624	938	647	393
27	462	388	411	e356	384	657	473	361	662	945	541	386
28	375	388	e388	e360	381	712	458	488	741	973	526	278
29	364	395	e399	e342		817	444	582	777	1,020	539	270
30	362	391	386	e333		584	577	725	902	1,010	614	239
31	383		e386	e349		602		651		971	666	
Total	11,900	12,320	12,200	11,530	10,550	14,920	18,400	10,570	14,030	30,950	22,560	19,860
Mean	384	411	393	372	377	481	614	341	468	999	728	662
Max	501	465	432	491	394	817	931	725	902	1130	1150	1090
Min	289	374	376	296	334	382	444	162	190	846	350	239
Ac-ft	23,610	24,440	24,190	22,860	20,920	29,600	36,510	20,960	27,830	61,400	44,760	39,400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2022, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	777	829	838	821	855	1,055	1,251	1,269	1,158	939	873	792
Max	2,849	2,983	2,552	1,904	2,556	3,264	3,594	3,968	4,263	3,442	2,416	2,545
(WY)	(1984)	(1984)	(1985)	(1984)	(1986)	(1986)	(1986)	(1986)	(1986)	(1983)	(1984)	(1986)
Min	224	298	310	269	296	351	351	158	301	368	461	192
(WY)	(2004)	(1993)	(1982)	(2004)	(2002)	(1991)	(2003)	(2003)	(2004)	(2006)	(1993)	(1992)

Figure 2022.18 (cont.)

**10109001 COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF LOGAN RIVER ABOVE STATE DAM AND
CACHE HIGHLINE CANAL**

Water-Data Report 2022

**DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR 2021-10-01 to 2022-09-30
DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	80.7	79.6	74.0	68.1	68.7	70.3	127	184	373	227	134	106
2	79.4	80.6	73.0	e67.2	69.7	70.3	121	210	362	222	142	105
3	79.2	82.8	72.8	e68.4	66.8	71.6	124	245	368	217	135	105
4	82.1	89.5	73.1	84.6	68.4	73.4	125	237	393	211	133	104
5	79.4	88.7	72.6	87.1	73.9	74.5	125	225	419	206	131	103
6	79.9	78.3	72.2	86.5	73.2	74.7	116	251	457	200	142	103
7	80.4	77.4	72.9	87.8	71.0	72.0	112	331	470	196	137	103
8	86.9	78.3	72.7	82.7	71.0	72.1	113	346	456	192	131	104
9	90.8	79.7	74.7	76.0	69.6	74.3	125	321	432	188	129	104
10	82.7	81.7	72.7	75.5	69.7	68.3	126	284	440	185	126	103
11	82.6	78.3	71.6	75.6	70.5	68.4	127	266	454	179	126	103
12	90.8	80.2	71.8	77.7	70.0	73.5	127	271	463	176	125	103
13	83.1	76.3	72.7	77.2	70.5	73.7	119	259	474	170	128	105
14	81.5	75.9	74.9	77.4	71.1	72.2	116	272	438	167	127	108
15	80.5	79.3	76.6	75.0	71.6	73.7	119	313	383	168	123	99.7
16	80.2	77.7	69.4	74.7	71.4	75.2	115	e374	355	167	121	108
17	80.0	76.6	73.8	76.1	68.9	74.5	126	e454	351	163	119	99.5
18	79.0	78.9	65.6	76.5	71.0	75.6	124	493	351	160	118	98.4
19	86.6	77.0	69.9	75.2	69.9	76.6	133	507	339	157	118	96.8
20	81.7	76.3	72.7	73.6	71.1	77.5	137	e449	322	155	e121	96.4
21	79.9	74.8	69.5	75.3	70.7	76.2	138	e390	304	154	118	97.1
22	79.0	74.3	70.4	71.9	69.8	76.4	152	e360	289	151	e117	97.7
23	80.3	74.4	76.1	71.3	65.8	77.5	153	e344	284	149	115	95.4
24	80.8	77.1	81.0	71.8	66.9	80.9	144	e337	279	146	114	95.1
25	85.9	72.8	78.0	75.4	71.5	90.9	142	e333	274	144	113	93.5
26	92.4	74.1	77.2	69.5	64.8	103	143	e357	262	142	112	92.2
27	85.0	73.8	75.3	67.7	68.7	120	150	423	252	141	111	91.6
28	81.5	73.2	74.6	64.9	70.1	134	164	506	248	140	111	90.7
29	80.7	72.9	74.3	67.5		139	184	521	241	141	109	90.4
30	80.4	70.7	77.5	70.9		137	182	453	237	138	107	90.5
31	80.2		77.2	73.6		136		403		136	107	
Total	2,554	2,331	2,281	2,323	1,956	2,633	4,009	10,720	10,770	5,288	3,800	2,992
Mean	82.4	77.7	73.6	74.9	69.9	84.9	134	346	359	171	123	99.7
Max	92.4	89.5	81.0	87.8	73.9	139	184	521	474	227	142	108
Min	79.0	70.7	65.6	64.9	64.8	68.3	112	184	237	136	107	90.4
Ac-ft	5,064	4,624	4,524	4,607	3,880	5,223	7,952	21,260	21,360	10,490	7,537	5,935

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2022, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	146	129	115	108	107	124	251	585	633	332	207	166
Max	262	221	187	165	230	405	629	1,186	1,465	1,118	477	312
(WY)	(2012)	(2012)	(1984)	(2012)	(2017)	(2017)	(1986)	(1936)	(1986)	(2011)	(2011)	(2011)
Min	74.2	71.9	69.0	63.1	61.6	80.3	111	163	141	103	86.4	79.9
(WY)	(1935)	(1993)	(1993)	(1993)	(1993)	(1942)	(1991)	(1977)	(1934)	(1934)	(1992)	(1934)

Figure 2022.18 (cont.)

10126000 BEAR RIVER NEAR CORINNE, UT

LOCATION.--Lat 41°34'35", long 112°06'00" referenced to North American Datum of 1927, in NE ¼ SE ¼ NE ¼ sec.30, T.10 N., R.2 W., Box Elder County, UT, Hydrologic Unit 16010204, on right bank 1.2 mi downstream from Salt Creek, 2.0 mi northeast of Corinne, and 2.8 mi downstream from Malad River.

DRAINAGE AREA.--7,029 mi².

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

GAGE - Water-stage recorder and crest-stage gage. Datum of gage is 4,206.78 ft. above NAVD of 1988 from a Level II GNSS survey conducted on May 14, 2021. Auxiliary nonrecording gage 7,800 ft downstream July 27, 1950 to November 21, 1955.

REMARKS - Records good except for estimates, which are poor. Natural flow of stream affected by Cutler Dam many miles upstream of gage, power development, diversions for irrigation, and return flow from irrigated areas and backwater from Bear River Bird Refuge about 5 miles downstream.

EXTREMES FOR PERIOD OF RECORD - Maximum discharge, 14,770 ft³/s, May 19, 1984, gage height, 17.50 ft; minimum daily discharge, 23 ft³/s, Jul 30, 2004.

DISCHARGE, CUBIC FEET PER SECOND WATER YEAR 2021-10-01 to 2022-09-30 DAILY MEAN VALUES [e, Value has been estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	192	733	864	e824	e684	e752	1,660	698	1,400	161	128	240
2	180	829	888	e675	e675	778	1,480	834	1,220	149	184	243
3	358	664	815	e575	e679	768	1,160	938	843	148	243	242
4	484	547	866	e587	e680	863	1,350	818	748	131	262	240
5	460	600	690	e824	e673	822	1,710	781	649	146	279	244
6	390	661	603	e986	e653	1,000	1,570	544	420	159	480	243
7	402	736	818	e1,050	e719	1,040	1,690	415	507	154	874	243
8	416	731	948	e1,070	e600	1,120	1,710	239	631	143	1,020	244
9	511	626	858	e1,060	e687	1,050	1,480	107	530	140	1,040	241
10	719	603	829	e1,050	e677	1,110	1,240	284	501	135	1,030	240
11	857	805	580	e946	e689	1,060	1,200	542	471	130	964	244
12	704	980	621	e772	e834	788	1,230	480	329	127	687	248
13	545	982	725	e791	836	738	1,170	246	229	130	654	257
14	538	870	797	e923	689	852	1,140	134	319	111	576	278
15	558	670	788	e910	688	912	1,090	112	397	102	536	284
16	659	602	878	e863	858	1,220	1,070	87.7	233	103	543	309
17	696	587	1,020	e789	813	1,140	1,090	55.7	193	109	445	312
18	709	769	894	682	761	1,120	1,160	77.1	205	113	254	316
19	738	e732	791	847	689	1,090	1,090	95.6	220	110	199	312
20	725	e631	795	891	855	1,130	1,070	121	228	111	173	391
21	703	e623	933	865	807	920	1,180	141	231	113	158	444
22	669	647	836	e932	880	1,010	1,190	152	222	117	151	430
23	593	780	778	957	e751	960	1,240	157	205	117	160	604
24	504	822	826	967	e722	932	1,310	167	185	117	177	1,720
25	476	753	1,260	761	e736	977	1,400	183	162	115	190	733
26	514	962	1,610	564	e729	1,020	1,350	183	146	120	201	138
27	628	1,040	1,350	809	e725	1,040	1,200	181	134	118	215	99.7
28	1,110	963	1,070	e734	e729	1,070	955	192	154	118	223	142
29	1,390	878	1,060	e522		1,420	847	234	165	119	228	150
30	897	666	1,080	e658		e1,590	1,010	292	169	122	219	146
31	389		e935	e643		e2,040		655		124	227	
Total	18,710	22,490	27,810	25,530	20,520	32,329	38,040	10,150	12,050	3,912	12,720	9,978
Mean	604	750	897	823	733	1,043	1,268	327	402	126	410	333
Max	1390	1040	1610	1070	880	2040	1710	938	1400	161	1040	1720
Min	180	547	580	522	600	738	847	55.7	134	102	128	99.7
Ac-ft	37,120	44,610	55,150	50,630	40,700	64,130	75,460	20,120	23,890	7,759	25,230	19,790

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2022, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,203	1,451	1,530	1,642	1,741	2,207	2,687	2,630	1,950	608	527	778
Max	4,240	4,471	4,414	3,639	5,966	6,041	7,258	9,598	9,201	4,186	3,045	3,423
(WY)	(1984)	(1985)	(1984)	(1984)	(1986)	(1986)	(1985)	(1984)	(1984)	(1983)	(1983)	(1984)
Min	95.6	621	535	620	723	897	638	71.8	77.6	40.4	46.8	62.2
(WY)	(1993)	(1995)	(1995)	(1993)	(1993)	(2015)	(1992)	(1992)	(1992)	(2003)	(2004)	(1992)