

BEAR RIVER COMMISSION

106 West 500 South, Suite 101
Bountiful, UT 84010
(801) 524-6320
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MINUTES

BEAR RIVER COMMISSION ANNUAL MEETING

Utah Department of Natural Resources Building
Salt Lake City, Utah
April 16, 1990

COMMISSION MEMBERS

Federal Members

Kenneth T. Wright

Idaho Members

R. Keith Higginson
Rodney Wallentine
Floyd J. Jensen

Utah Members

D. Larry Anderson
Blair Francis
Calvin Funk

Wyoming Members

Gordon W. Fassett
J. W. Myers
S. Reed Dayton

ENGINEER-MANAGER

Jack A. Barnett
106 West 500 South
Suite 101
Bountiful, UT 84010

Wally Jibson
880 River Heights Blvd.
Logan, UT 84321

ATTORNEY

E. J. Skeen
VanCott, Bagley,
Cornwall & McCarthy
P.O. Box 3400
Salt Lake City, UT
84110-3400

The annual meeting of the Bear River Commission was called to order by Chairman Wright at 1:00 p.m. on April 16, 1990, in the First Floor Conference Room of the Utah Department of Natural Resources Building in Salt Lake City, Utah. Chairman Wright introduced Floyd Jensen, the Idaho representative. The agenda was approved without change (see Appendix A). A copy of the attendance roster is attached as Appendix B.

The Commission reviewed the minutes of the last Commission meeting held November 20, 1989, in Salt Lake City, Utah. After a few minor editorial changes, the minutes were approved.

Rod Wallentine was nominated and formally elected as the new Vice Chairman of the Commission.

Jack Barnett gave a report on the activities of the Technical Advisory Committee (TAC). He first addressed expected costs associated with determining depletions since 1976. The TAC recommended to the Commission that a budget be approved giving each state \$40,000 for work efforts to determine the depletions. As each state submitted a bill for work accomplished, the TAC would monitor the efforts of each state and recommend the bill to the Management Committee for payment.

Keith Higginson raised a concern as to the procedures used by each state in reporting their depletion data and whether the funds allotted to each state would accomplish any useful purpose. He felt that the states had committed to reporting depletions using high-tech satellite imagery, and other analyses, to rely on similar measurements for all three states.

Jeff Fassett pointed out that there were problems in the current high-tech data being reliable. Larry Anderson expressed his belief that the satellite imagery was not very accurate. He believed there were more accurate and less costly alternatives for data collection.

Hal Anderson indicated that as each of the three states took different approaches to data collection, all three collection methods would contain some inaccuracies. If the Commission were, however, to survey every field and invest the time and expense necessary to ensure accuracy in every case, the costs would be excessive.

Higginson expressed his belief that all three states should be gathering and reporting data in a consistent manner. Jack Barnett indicated that he understood that the interim approval of the Commission procedures allowed each state to gather and report data in their own way. Barnett felt that to require each state to report data in the same way would be to go back six months or a year in the negotiations on this issue. Bob Fotheringham indicated that common data does not exist in each state for them to be able to report data in a totally consistent manner.

After considerable discussion, the Commission determined that the Management Committee should meet to iron out the differences of opinion between the three states with respect to how to report data. In the interim, however, it was suggested that the Commission operate on the \$120,000 budget for the three states.

Lloyd Austin then reported on the status of printing multiple copies of the base maps. Austin explained that the AGR had used an electrostatic plotter to record the data from each state, but AGR had not been able to read the data from Idaho's computer. Ten copies of the base maps have been made for Utah and Wyoming. He gave three copies to each of the Management Committee members and one copy to the Engineer-Manager. He indicated AGR had solved the problem with the Idaho data and was currently printing the Idaho maps. Once they were finalized, he would mail them out to the three states.

Barnett then reported that the TAC recommended to the Commission that the stream gage at Border between Idaho and Wyoming be automated. He indicated that he felt it important for him as Engineer-Manager to know what the flows were at that gage in order to distribute Bear River water in accordance with the Compact. He further indicated that at its next meeting, the TAC intends to look in some detail at the gaging occurring around the Woodruff Narrows Reservoir. It may be that the Commission could obtain more time valuable information at a lower cost at that location.

Carly Burton reported on the progress of Utah Power and Light (UP&L) with respect to automation of stream gages. He indicated that UP&L had still not received all of the data logging systems equipment

which was on order. He said UP&L was expecting three radio receivers to arrive any day. USGS will be installing the equipment once it has all arrived. UP&L hopes to have three stations up and running within the next few weeks. Burton indicated that the equipment would first be installed below Oneida; then on the Bear River at Soda Springs; and then at the Rainbow Inlet Canal. UP&L also intends to install, through the cooperation of the USGS, three more stations either late this year or early next year.

Bert Page then reported on the budgets for FY 90. He distributed a "Statement of Income and Expenditures for the Period of July 1, 1989, to March 31, 1990" (see Appendix C). Page indicated that at the start of that time period, cash on hand was \$127,242.17. Collectively, the states had paid \$75,000 and the Commission had earned \$8,915.88 in interest, yielding total revenues of \$211,388.05. The Commission had expended \$38,400 for USGS stream gaging plus \$30,695.60 for operational expenses, yielding total expenditures of \$69,095.60. Revenues less expenses brought the cash balance as of March 31, 1990, to \$142,292.45.

Next, Reed Dayton reported on the activities of the Operations Committee. He indicated the Operations Committee had held its first committee meeting on January 31, 1990, in Fish Haven, Idaho. Topics of discussion included (1) how the Engineer-Manager works with the various state river commissioners when a water emergency exists to distribute the waters of the Bear River among the states, (2) how the Operations Committee might determine Bear Lake spills, (3) the need for stream gages, and (4) potential problems of distribution of Bear River water with Utah and Idaho in the Cache Valley area.

Dayton indicated that the Operations Committee was responsible for advising the Commission and the Engineer-Manager of all matters concerning allocation and distribution of waters under the Compact. He asked each Operations Committee member to give a report on the water outlook in their respective states. Dayton indicated that in the Cokeville area of Wyoming the flows were at about 50 percent of normal. Further, he indicated that in the Smiths Fork area, flows were down from previous months to around 60 percent of normal.

Calvin Funk indicated that the reservoirs in the Cache County (Porcupine, Hyrum, and Newton) of Utah had not filled, so irrigation reservoirs would be depleted early in the season. He further indicated that irrigators in the Bear were counting on UP&L's ability to deliver the contract water, including the 900 second feet at Cutler. This water would be a salvation to those irrigators because the stored water was in the lake.

Rodney Wallentine indicated that the Idaho portion of the Bear River was also very dry. Idaho was diverting, however, and had the west fork full as of April 15.

Barnett reported on deliveries across the Utah-Idaho line in Cache Valley. He indicated that the Compact provided for individual water users to petition the Commission to become involved if they feel they are not getting their direct flow waters delivered to them. The Operations Committee instructed Barnett to contact Bob Morgan and Keith Higginson to see if he could obtain a list of direct flow rights in the Lower Division of the river. Barnett asked whether the list which Bob Fotheringham had sent to Higginson was a list which the Commission could accept as a document to be used by the Commission and water users. Higginson indicated the list was to be used for informational purposes only, but was not comprehensive nor to be used as an official document. Barnett stated he would distribute that list to Commission members.

Barnett also indicated he had talked with Higginson about getting weekly reports of water distribution from Idaho's river commissioner, Pete Peterson, should individual water users request that information. Higginson had indicated that this information would be available upon request.

Burton then reported on the progress UP&L had made with securing contracts with water users to obtain water pumped from Bear Lake through the summer. He distributed a summary of Bear River contracts for delivery of Bear Lake storage (see Appendix D). He gave a historical summary of all contracts in existence on the river in order of priority. He also explained the purposes of the contracts and provisions contained therein, including the process whereby water deliveries will be made and the associated costs to irrigators. The river commissioners from each state will coordinate the requests and deliveries of storage water and report said deliveries to UP&L. UP&L will bill the irrigators at the end of each irrigation season.

Burton then turned the Commission's attention to a sheet indicating stream discharges for October 1988 to September 1989 on Bear Lake at the Outlet Canal. He indicated that releases were made during the 1989 irrigation season from June 6 to September 14. About 165,000 acre-feet was released during the period. In Idaho, total diversion of storage water was about 40,000 acre-feet; the rest went to Utah. The total diversion from individual pumpers in Utah amounted to about 12,500 acre-feet. The rest of it was diverted at the two canals at Cutler Dam. That amounted to about 249,000 acre-feet. UP&L doesn't exactly know how much of that total diversion was storage water. They estimated, however, that about 110,000 of the 249,000 acre-feet for the Bear River Canal company was storage water. About 6,000 acre-feet of the 12,000 acre-feet individual pumping diversion was storage water. Maximum diversion rate of the combined individual pumpers was a little over 100 cfs.

Burton handed out a graph relating to Bear River runoff in the spring and summer of 1989 and several tables relating to historical

runoff, available inflow, and elevation of the Bear Lake through 1989 (see Appendix E). He indicated that on April 15, 1989, Bear Lake elevation was a little under 5,916. The lake peaked on June 15, 1989, at 5,916.5. At the time the outlet was shut off last fall, the lake was down to 5,913.56. The low point occurred in November at 5,913.41. Since November, the lake has only recovered half a foot.

The runoff graph indicated cfs in the river on a monthly basis at Stewart Dam. The graph shows how runoff during 1989 was considerably below normal. The inflow to Cutler reservoir is only 750, instead of the normal 3,000. Burton said he didn't expect to see any additional runoff this year. The water outlook is deteriorating day by day. Further, they would probably have to start releasing from Bear Lake in the middle of May, about 2-3 weeks earlier than last year. By the end of the season, Burton anticipated the lake level might be at about 5,910.

Blair Francis then gave the Records Committee report. He indicated that the Records Committee met on February 15 in Evanston, Wyoming. One of their first actions was to change the name of the committee from the "Records and History Committee" to the "Records Committee." They also elected Blair as chairman of the committee.

Blair reported on the Records Committee's proposed changes to the Commission Bylaws. He indicated that most of the changes were to clean up previous language and make the Bylaws more accurate. Some specific changes made in the Bylaws included: (1) the Budget Committee was eliminated as a standing committee, (2) the word "state" replaced the word "government" in several places, and (3) the procedure for identifying state alternates to the Commission was outlined. The proposed Bylaws were approved by the Commission without further change. The approved new Bylaws are included in these minutes as Appendix F.

Jack Barnett suggested that as there were only about 30 copies of the Bear River Compact as Amended and Bylaws of Bear River Commission in the Commission's offices, the Commission might want him to authorize him to spend about \$200 and have that document reprinted with the new Bylaws in it. Calvin Funk suggested that the names and location of the office should also be changed. The Commission approved this printing with those changes.

Blair Francis further indicated that the Records Committee had discussed a draft agreement with Wally Jibson to write a history of the Bear River Commission. He indicated that Barnett had done most of the work in preparing the agreement. Barnett indicated that Jibson had looked at the proposed agreement, and that he and Jibson had, on several occasions, discussed it on the phone. Jibson requested that, for income tax purposes, the dollar amounts in the agreement be reversed so that the first payment would be \$2,560 and the second would be \$2,000. He also suggested that his full name, Wallace N. Jibson,

be used in the agreement. Barnett also indicated that in addition to the payments to be made to Jibson in connection with the agreement, he estimated there would be \$400-\$500 in typing fees under a separate contract.

Barnett said that Jibson has indicated he could have the first draft of the history ready by November 1 for the Records Committee to review in advance of the next Commission meeting. The Commission would have until December 5 to submit any comments to Jibson. He would then finalize the document by February 1, 1991. The agreement with Jibson was approved without further change.

Francis went on to indicate that the Records Committee had discussed the format for Commission minutes. The Commission had been keeping a verbatim record of all meetings. After some discussion, it was decided that in the future, the meetings would be summarized in more condensed minutes, but that a tape recording would be kept in case someone wanted to refer to exact dialogue.

Francis indicated that the Records Committee had been discussing the size and format for the Commission's biennial reports. To date, they had not made any decisions but were open to Commission comment or direction. Further, Francis indicated they had felt it would be the Records Committee's responsibility to review the stream gage records and diversion records which need to be published.

Barnett stated he had a copy of a list of water right activities in the State of Idaho which Keith Higginson had sent to Chairman Wright. The Records Committee felt that although the information was interesting, it doesn't reflect any information that's important to the Commission's activities. The Records Committee suggested that Commission no longer require the State Engineers to prepare that information. Higginson pointed out that Article XI of the Compact says, "The official of each State in charge of water administration shall, at intervals and in the format established by the Commission, report on the status of use of the respective allocations." The State Engineers are required by Compact to report something, but it's up to the Commission to decide what should be reported. It was determined that the Records Committee should decide in what format and how often that report should be made.

The Commission next skipped to agenda item X.C. so that Larry Anderson could address the Commission before he had to leave. Anderson distributed a modified budget for FY 91 (see Appendix G). He anticipated that expenditures for FY 90 would amount to \$104,709.49, leaving an unexpended cash balance of \$108,762.68. Anderson further discussed the needed FY 91 budget modifications to agree with the Commission's desired actions. He indicated the budget for USGS stream gaging would increase from \$41,760 to \$49,210 if the Commission installed the automated gage at Border. That includes a one-time cost

for installing the gage, plus an additional cost for automation which would be carried over from year to year. That increase also reflects an additional station which USGS had not previously included in the billing, but which will be included in future years.

Anderson indicated that it was proposed that Jack Barnett's contract as Engineer-Manager be increased from \$25,000 to \$26,380. This would raise the annual contract with the Engineer-Manager by 6 percent. Anderson also stated that the "travel" and "office expenses" line items were increased to match anticipated expenditures. In addition, \$5,000 was included to cover the approximate \$4,500 contract with Wally Jibson plus the \$500 contract for typing.

Under the "special studies" line item, \$95,000 was added in FY 91 to the \$25,000 budgeted in FY 90, giving a total of \$120,000 for the three states to complete their consumptive use studies. This means in FY 91, total expenditures are projected to be \$184,390, leaving an unexpended cash balance at the end of FY 91 of \$4,372.68.

Higginson expressed concern about cash flow problems with the projected \$4,372.68 unexpended cash balance. With state assessments sometimes coming in rather late in the fiscal year, this could create a problem with paying the bills. Barnett indicated that it was anticipated that the states would not use the full \$120,000 available to them in FY 90-91 for "special studies," but only use something like \$70,000 in FY 91. Anderson distributed a second version of the modified FY 91 budget showing only \$70,000 in FY 91 for "special studies" (Appendix H), leaving an unexpended cash balance of \$29,372.68. He indicated that the bottom line is that in FY 92 there will have to be a major increase in dues from each of the three states.

Jeff Fassett indicated that in March he submitted budgets for FY 91 and FY 92 at the \$25,000 level, based on the Commission's projected expenses from about a year ago. Therefore, Wyoming cannot adjust its budget to accommodate an increase in dues in FY 92. The Commission approved the FY modified budget with the \$70,000 amount for "special studies."

There was some discussion with respect to how the USGS had arrived at their \$49,210 number for FY 91 stream gaging. Lee Case indicated the USGS had that information and he would make it available to the Commission. Later in the Commission meeting, he distributed a sheet with a breakdown of stream gage expense by station number (see Appendix I).

Higginson and Fassett expressed further concern over whether the Commission would be able to operate in FY 92 without an increase in state dues. Fassett pointed out that \$75,000 in state revenues in FY 92 would only cover basic expenditures like the engineer-manager contract, office expenses, travel, etc. Larry Anderson indicated that he anticipated that in FY 92 expenditures would be at least \$80,000,

leaving no money in reserves if dues are not raised. It was determined, however, that considering Wyoming's constraints, the budget would not be increased for FY 92. The Commission will have to make do with the funds available, anticipating that potentially Wyoming and/or other states will not use their 1/3 of the \$70,000 for "special studies," and thus expenditures will be reduced. It was determined that the Commission should adopt the budget which provides for the \$29,372.68 carryover (Appendix H) and that the Management Committee should further address this issue at a forthcoming meeting.

Chairman Wright then turned the Commission's attention back to agenda item IX, "Bear River snow survey and stream forecast." Ray Wilson distributed several handouts on snow survey data, streamflow, snowpack, and reservoir storage (see Appendix J). He indicated that there are 34 snow survey data sites in the Bear River Basin and gave a breakdown of their location and dates of installation. Wilson pointed out that the Bear River suffered a net loss in water content in March, which is quite uncommon. Across Utah, snowpack ranges from 50 to 88 percent of normal. March precipitation was below normal in all areas of Utah; it ranged from 55 percent on the Weber River watershed to 81 percent over the Uintas. Water year totals since October 1 ranged from 62 percent in southeastern Utah to 84 percent on the Uinta basin.

Wilson went on to indicate that the reservoir information reflected 26 reservoirs in Utah. Those reservoirs averaged 90 percent of normal storage. That equates to 63 percent of their combined capacities. Streamflow predictions in Utah averaged 55 percent of normal. Next he covered similar data in the Bear River Basin. He indicated that the overall water content actually went down during March. Normally the snowpack gains 2.6 inches overall; this year we lost 0.7 inch during March. The snowmelt began about two weeks earlier than usual. As of April 1, precipitation was 74 percent of average, bringing the water year total to 71 percent of normal. The reservoirs sampled had 53 percent of their combined capacity in storage. Normally by the first of April they would have 70 percent of capacity filled. The forecasts for spring and summer streamflow on the Bear were averaging 49 percent of normal.

Wilson indicated that individual forecasts ranged from a low of 33 percent on the Little Bear River near Paradise to a high of only 69 percent on the Bear near the Utah-Wyoming state line. All the reservoirs were storing less than last year except Hyrum Reservoir. Next he distributed an April 16, 1990, "Snow - Precipitation Update" based on Mountain Data from SCS SNOTEL Sites (see Appendix K). He indicated that since the first of April, the numbers had continued to drop. There had been between 2-5 inches of melt per week in the basin, even as high as 10,000 feet. He guessed that within 4-6 weeks, the snowmelt would be over. Wilson pointed out that the water content for the Little Bear was at 0, compared to a normal 12.8 inches. Trial

Lake, the most important indicator in the Upper Bear, had 16.7 inches of water content; that normally has about 25.3. Basinwide, (as of April 16) the snow pack was at 45 percent of normal and the precipitation was at 72 percent of normal.

Jack Barnett indicated that the Soil Conservation Service had been very cooperative with the Commission's office. At any point in time, he could use a computer modem to search their records and access their SNOTEL data. He also indicated that Larry Anderson had requested that he bring up two items as part of the Management Committee report. First, he indicated the Bylaws called for the election of a Secretary and a Treasurer (or a Secretary-Treasurer in the same office). The Commission voted to renew Larry Anderson's term as Secretary-Treasurer.

Secondly, Larry Anderson had wanted it clarified that with the approval of the Commission's budget, the Commission also approved the reissuance of a contract with Jack Barnett in the amounts set forth in the budget. Higginson indicated that the Management Committee had discussed the Engineer-Manager's compensation at some length. He recommended the Commission approve Barnett's compensation consistent with the budget that was adopted. The Commission approved this recommendation.

Jack Barnett indicated that Lee Case wanted to advise the Commission of an ongoing study on the Bear River. Case first indicated that the Annual Records Report of the USGS was sent to the printer on March 30. It should be finished within a couple of weeks.

Case went on to indicate that the Office of Management and Budget had approved the USGS's proposed National Water Quality Assessment (NWQA) program. The program is designed to analyze how successful the federally funded water quality programs have been at cleaning up the nation's water. The USGS had proposed that one of the study sites in the assessment be the Great Salt Lake Basin, including the Bear River Basin. Out of the 60 sites proposed, the Great Salt Lake Basin was one of the first sites selected for study. The study will begin next year. It will provide an influx of federal dollars to understand the hydrology, the processes, and the water quality of the entire river system. The USGS will be working with agencies that have existing studies to try to maximize the amount of information available per dollar spent.

The NWQA study will last 9-12 years. There will be 3-4 years of intensive data collection and analysis, followed by another 3-4 years of intensive data collection, plus another 3-4 years reanalyzing the data. There will be money for monitoring throughout the entire process. He further indicated that a new ground-water study had started in the Cache Valley in July of 1989. It is a three-year study to be conducted in cooperation with the Utah Division of Water Resources and the Utah Division of Water Rights. The cost for the

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APRIL 16, 1990

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study is estimated at \$480,000. The USGS is not, however, involved in any weather modification activities at this time.

It was determined that the next Commission meeting would be held on Tuesday, November 27, in Salt Lake City. The meeting adjourned at 3:45 p.m.

hsm

AGENDA

Bear River Commission Meeting
April 16, 1990

First Floor Conference Room
Utah Department of Natural Resources Building
Salt Lake City, Utah

PRE-COMMISSION MEETINGS

8:30 a.m. Technical Advisory Committee meeting

10:30 a.m. Informal meeting--agenda overview
 in advance of state caucuses Barnett

11:00 a.m. State caucuses

COMMISSION MEETING

Convene Meeting: 1:00 p.m., Chairman Kenneth T. Wright conducting

I.	Call to order	Wright
	A. Welcome and overview of meeting	
	B. Approval of agenda	
	C. Introductions	
II.	Approval of minutes of last Commission meeting (November 20, 1989)	Wright
III.	Report of Chairman	Wright
	A. Election of officers	
IV.	Report from Technical Advisory Committee	Barnett
	A. Depletion study	
	B. Stream gaging	
V.	Report of Secretary/Treasurer (including budget items)	Anderson
VI.	Report of Operations Committee (including water deliveries in Lower Division)	Dayton
VII.	Storage waters from Bear Lake	Burton
VIII.	Report of Records Committee (including amendments to Bylaws)	Francis
IX.	Bear River snow survey and stream forecast	Wilson
X.	Report of the Management Committee	
	A. Higginson	
	B. Fassett	
	C. Anderson	
XI.	Other items from Commission members	
XII.	Next Commission meeting	Wright
	A. Date--November 26, 1990 (regular meeting - fourth Monday in November)	
	B. Location	

Anticipated adjournment: 3:30 p.m.

ATTENDANCE ROSTER

BEAR RIVER COMMISSION
ANNUAL MEETING
Salt Lake City, Utah
April 16, 1990

IDAHO COMMISSIONERS

R. Keith Higginson
Rodney Wallentine
Floyd Jensen

UTAH COMMISSIONERS

D. Larry Anderson
Blair R. Francis
Calvin Funk
J. Glen Nelson (Alternate)
Dean Stuart (Alternate)

CHAIRMAN

Kenneth T. Wright

WYOMING COMMISSIONERS

Gordon W. Fassett
S. Reed Dayton
John Teichert (Alternate)

ENGINEER-MANAGER

Jack A. Barnett

SECRETARY

Heidi S. Marciniak

ATTORNEY

E. J. Skeen

OTHERS IN ATTENDANCE

IDAHO

Hal Anderson, Department of Water Resources
Pete Peterson, Watermaster - Dist. #11

UTAH

Robert M. Fotheringham, Division of Water Rights
Lloyd H. Austin, Division of Water Resources
Carly Burton, Utah Power & Light
Norman Stauffer, Division of Water Resources
Lee Case, U.S. Geological Survey
Darrell Carlson, U.S. Geological Survey
Robert L. Morgan, State Engineer, Division of Water Rights
Bert Page, Division of Water Resources
Barry Saunders, Division of Water Resources
Ray Wilson, Soil Conservation Service, Snow Survey

WYOMING

Mike Ebsen, Board of Control
Sue Lowry, State Engineer's Office

BEAR RIVER COMMISSION

STATEMENT OF INCOME AND EXPENDITURES

FOR THE PERIOD OF JULY 1, 1989 TO MARCH 31, 1990

INCOME	CASH ON HAND	INTEREST INCOME	FROM STATES	TOTAL REVENUE
Cash Balance 07-1-89	\$127,472.17			\$127,472.17
State of Idaho			\$25,000.00	\$25,000.00
State of Utah			\$25,000.00	\$25,000.00
State of Wyoming			\$25,000.00	\$25,000.00
Interest on Savings and other income		\$8,915.88		\$8,915.88
TOTAL INCOME TO March 31, 1990	\$127,472.17	\$8,915.88	\$75,000.00	\$211,388.05

DEDUCT OPERATION EXPENSE

EXPENDED THROUGH U.S.G.S.

	APPROVED BUDGET	UNEXPENDED BALANCE	EXPENDITURES TO DATE
Stream Gaging	\$38,400.00	\$0.00	\$38,400.00
SUBTOTAL	\$38,400.00	\$0.00	\$38,400.00

EXPENDED THROUGH COMMISSION

Personal Services	Jack	\$24,887.00	\$6,221.72	\$18,665.28
	Technician	\$3,000.00	\$637.50	\$2,362.50
	Wally	\$0.00	-\$3,925.49	\$3,925.49
Travel (Eng-Mgr)		\$800.00	-\$559.03	\$1,359.03
Office Expenses & Supplies		\$250.00	-\$736.30	\$986.30
Printing Biennial Report		\$2,300.00	\$323.00	\$1,977.00
Treasurer Bond & Audit		\$700.00	-\$220.00	\$920.00
Printing		\$100.00	\$100.00	\$0.00
1976 Base Maps		\$3,000.00	\$3,000.00	\$0.00
Legal Consultant		\$500.00	\$0.00	\$500.00
Special Studies		\$25,000.00	\$25,000.00	\$0.00
SUBTOTAL		\$60,537.00	\$29,841.40	\$30,695.60

TOTAL	\$98,937.00	\$29,841.40	\$69,095.60
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CASH BALANCE AS OF 3-31-90	\$142,292.45
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BEAR RIVER COMMISSION
DETAILS OF EXPENDITURES

FOR PERIOD ENDING MARCH 31, 1990

208	JACK BARNETT	\$495.47
209	JACK BARNETT	\$2,073.92
210	JACK BARNETT	\$3,250.50
211	ED SKEEN	\$500.00
212	WALLY JIBSON	\$1,890.16
213	U.S.G.S	\$38,400.00
214	JACK BARNETT	\$2,477.13
215	WALLY JIBSON	\$2,035.33
216	JACK BARNETT	\$2,240.93
**	BANK CHARGE	\$1.08
217	JACK BARNETT	\$2,578.33
**	BANK CHARGE	\$11.92
218	GILCHRIST & CO	\$920.00
219	JACK BARNETT	\$2,709.45
220	ROSE PRINTING	\$1,977.00
221	JACK BARNETT	\$2,175.39
**	BANK CHARGE	\$0.93
222	JACK BARNETT	\$2,747.21
223	JACK BARNETT	\$2,610.85
		\$0.00
	TOTAL EXPENSES	<u>\$69,095.60</u>

BANK RECONCILIATION

MARCH 31, 1990

Cash in Bank per Statement 4-01-90	\$921.27
Less: Outstanding Checks	<u>\$0.00</u>
Total Cash in Bank	<u>\$921.27</u>
Plus: Savings Account-Utah State Treasurer	<u>\$141,371.18</u>
TOTAL CASH IN SAVINGS AND IN CHECKING ACCOUNT	\$142,292.45

BEAR RIVER CONTRACTS FOR DELIVERY OF BEAR LAKE STORAGE

I. SUMMARY OF HISTORICAL CONTRACTS

<u>Company</u>	<u>Date</u>	<u>Location</u>	<u>Amount</u>
Bear River Canal Company	12/30/1912	Utah	900 CFS Summer 150 CFS Winter
Cub River Irrigation Co.	04/03/1916	Idaho	20,000 Acre Feet
West Cache Canal Company	06/19/1919	Idaho	12,000 Acre Feet
Last Chance Canal Company	08/02/1919 Amended 01/17/84	Idaho	63,600 AF/10-Year Period Max. 20,000 AF/Year Charge for additional water
Twin Lakes Canal Company	02/09/1961	Idaho	5,000 Acre Feet
Individual Pumpers	1989	Idaho (16)	-
Individual Pumpers	1989	Idaho (56) Utah	-

II. PURPOSE OF CONTRACTS

- A. To document natural flow and storage use by all users on Bear River.
- B. To protect storage rights and deliveries to irrigators from Bear Lake.
- C. To promote conservation and optimum use of available water supply by all users.

III. PROVISIONS OF NEW (1989) CONTRACTS

A. Conditions

1. Irrigator must have existing rights approved by the State in which the right exists.
2. Storage water will be delivered on a supplemental basis only, not intended to be the primary use of water.
3. The available storage water will vary from year to year, and deliveries will be made on a priority based on the contract date.
4. UP&L will determine available supply by April 1 of each year.
5. Irrigator will, by May 1 of each year, make written request for the amount of storage water needed for that year.
6. If total requests exceed available supply, the amounts granted to individuals will be on a pro rata basis.

B. Cost of Delivery of Stored Water

1. The cost to irrigators will be determined by UP&L based on the value to replace lost generation for diversions above the respective hydroelectric plants.

2. The cost for 1990 will be as follows:

Above Cutler	\$1.40/Acre Foot
Above Oneida	\$2.89/Acre Foot
Above Cove	\$3.83/Acre Foot
Above Grace	\$9.48/Acre Foot
Above Soda	\$10.36/Acre Foot

C. Coordination

1. All requests and deliveries of storage water will be coordinated through the River Commissioners of each state.
2. Commissioners will submit reports to UP&L on diversions of storage water by each user.
3. UP&L will bill irrigators accordingly at the end of each irrigation season, and irrigators will submit payment for storage water use prior to the next irrigation season.

CBB3/53/1:cms

UTAH POWER & LIGHT COMPANY

STREAM DISCHARGE RECORDS

DAILY DISCHARGE (CFS)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DAY
1	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	1
2	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	2
3	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	3
4	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	4
5	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	5
6	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	6
7	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	7
8	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	8
9	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	9
10	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	10
11	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	11
12	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	12
13	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	13
14	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	14
15	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	15
16	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	16
17	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	17
18	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	18
19	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	19
20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	20
21	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	21
22	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	22
23	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	23
24	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	24
25	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	25
26	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	26
27	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	27
28	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	28
29	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	29
30	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	30
31	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	1040.00	893.00	505.00	31

MONTHLY

OT	130.20	126.00	130.20	130.20	117.60	130.20	126.00	130.20	14145.00	35711.00	25786.00	7462.00
EA	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	472.00	1152.00	832.00	249.00
MAX	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	957.00	1410.00	1100.00	643.00
MIN	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	4.20	854.00	493.00	12.00
CR	258.00	250.00	258.00	258.00	233.00	258.00	250.00	258.00	28060.00	70830.00	51150.00	14800.00
FT												

CT88-SEPT89 TOTAL 84124.60 MEAN 230.00 MAX 1410.00 MIN 4.20 TOT ACR FT 166900.00

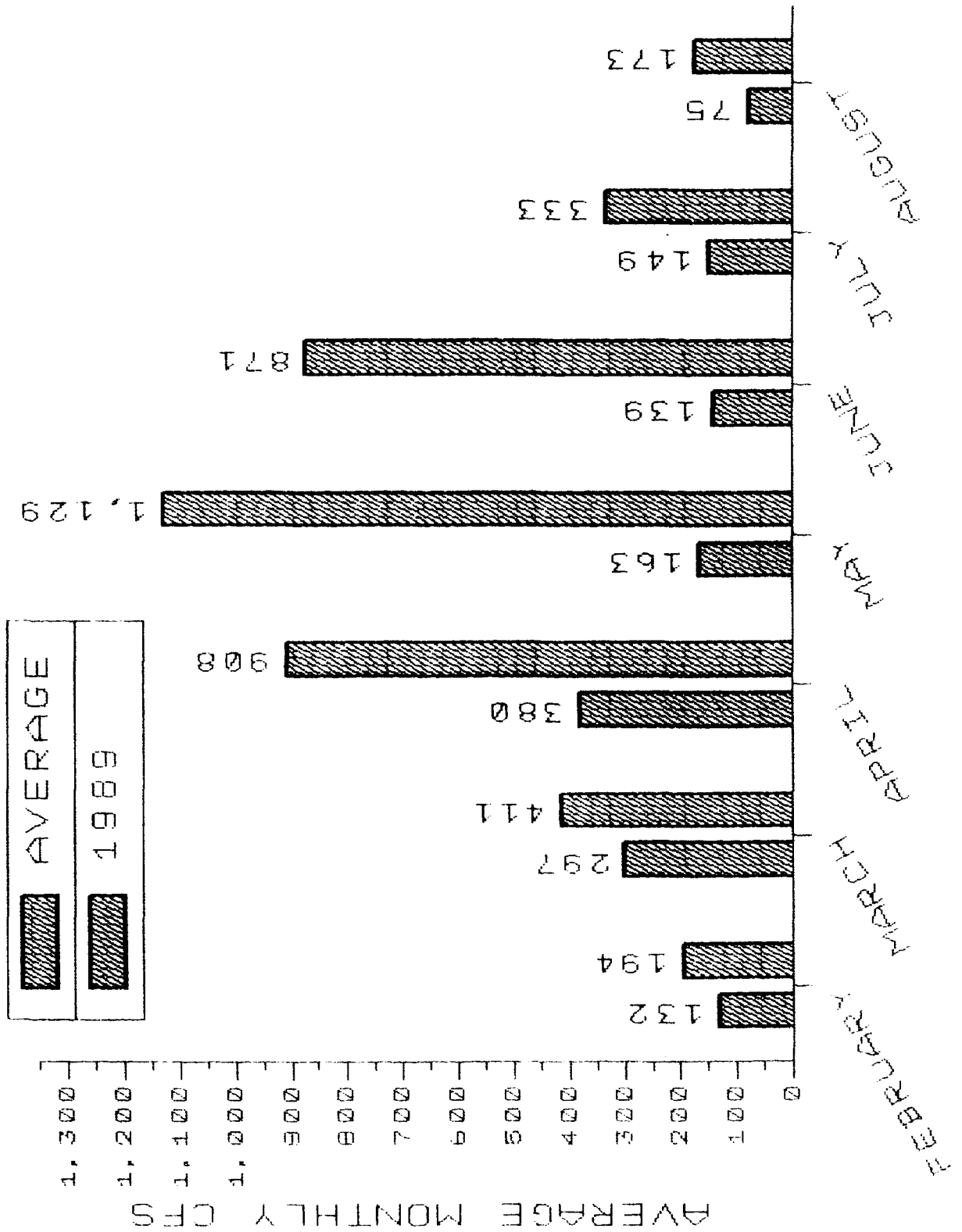
TOTAL MEAN MAX MIN TOT ACR FT

MAX UNIT DISCHARGE 1410.00 CFS (18.46 FT) DATE JUL 13 MIN UNIT DISCHARGE 4.20 CFS DATE MAY 28

REMARKS:

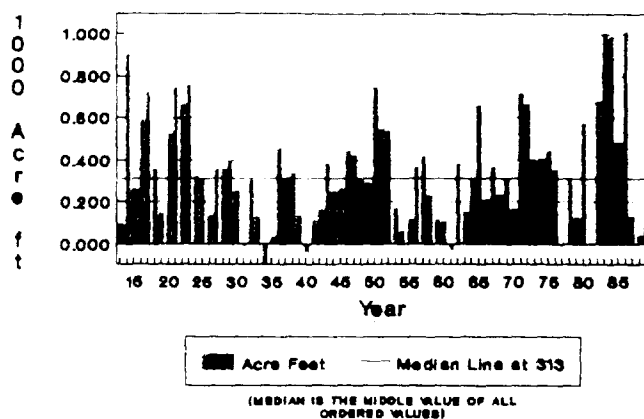
The Outlet Canal was shut off on 9/23/88. On 9/30/88 a discharge measurement of 4.18 CFS was taken, this measurement will be used until water is turned back into the Outlet canal. The Outlet Canal was opened on 6/6/89. The Outlet Canal was closed on 7/14/89

BEAR RIVER RUNOFF 1989 SPRING AND SUMMER



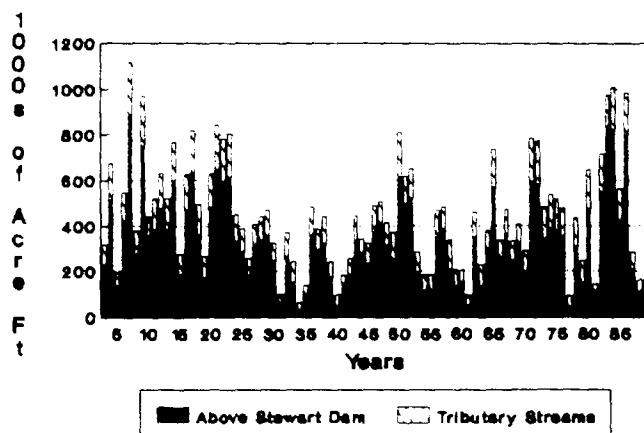
Bear Lake Runoff

From 1913 - 1989



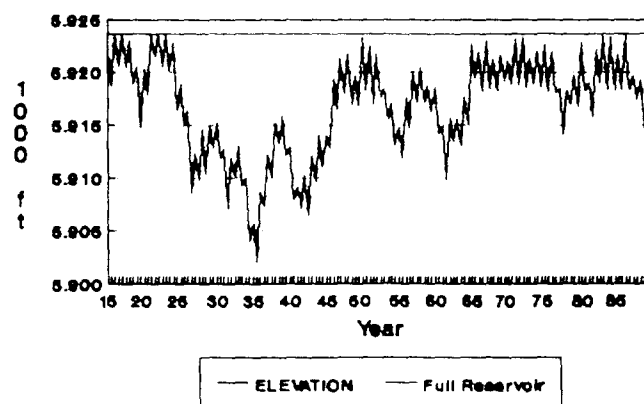
Bear Lake Available Inflow

From 1903 to 1989



Bear Lake Elevation

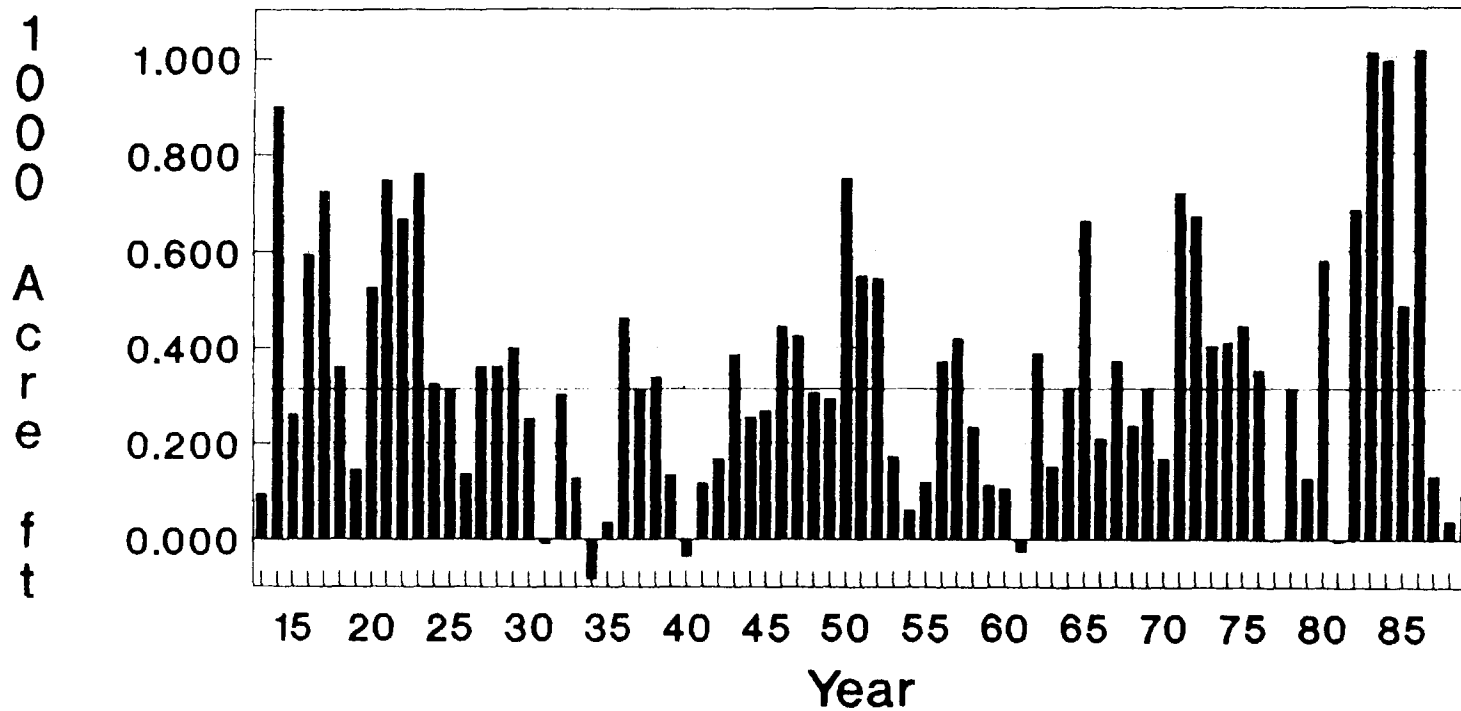
From 1916 to 1989



Full Reservoir at 5923.86 ft

Bear Lake Runoff

From 1913 - 1989



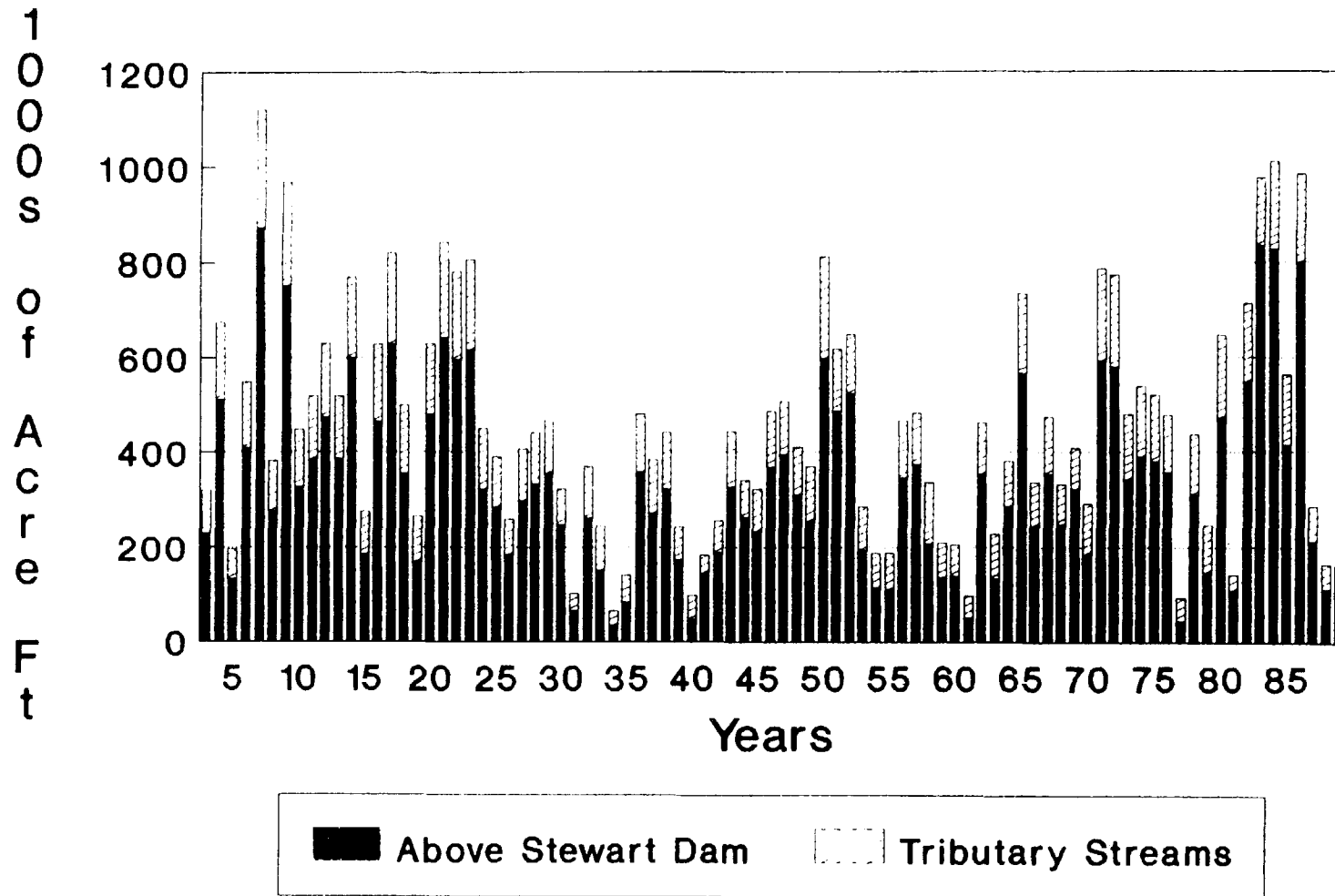
■ Acre Feet

--- Median Line at 313

(MEDIAN IS THE MIDDLE VALUE OF ALL ORDERED VALUES)

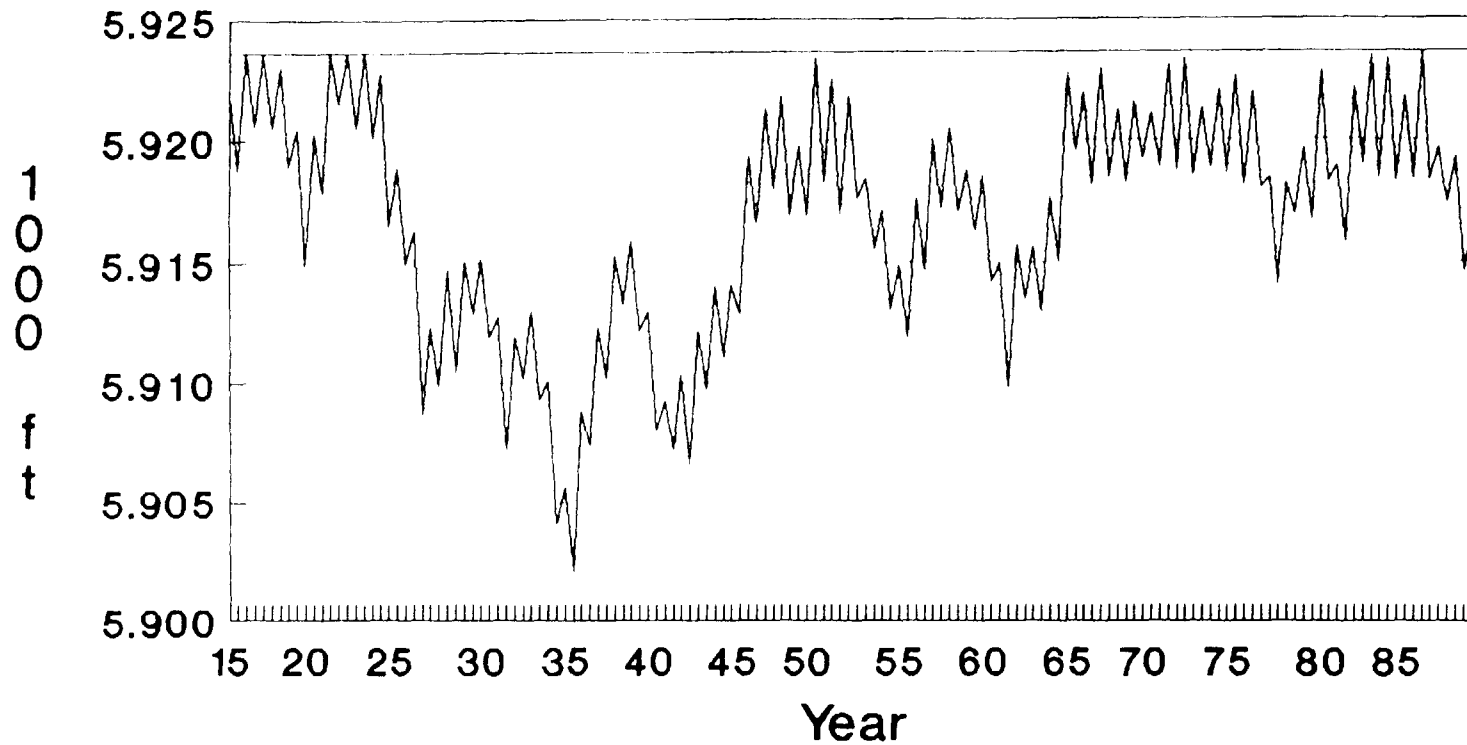
Bear Lake Available Inflow

From 1903 to 1989



Bear Lake Elevation

From 1916 to 1989



— ELEVATION

- - - Full Reservoir

Full Reservoir at 5923.65 ft

BYLAWS OF BEAR RIVER COMMISSION

ARTICLE I

THE COMMISSION

1. The Commission shall be composed of nine Commissioners, three Commissioners representing each of the States of Idaho, Utah, and Wyoming, selected in accordance with the laws of each such State and, if appointed by the President, one Commissioner representing the United States of America.

2. The credentials of each Commissioner shall be filed with the Secretary of the Commission.

3. Each Commissioner shall advise in writing the Secretary of the Commission as to his address to which all official notices and other communications of the Commission shall be sent to him and shall further promptly advise in writing the Secretary of the Commission as to any change in such address.

ARTICLE II

OFFICERS

1. The officers of the Commission shall be:

Chairman,
Vice-Chairman,
Secretary,
Treasurer

2. The Commissioner representing the United States of America shall be the Chairman of the Commission. The Chairman shall preside at meetings of the Commission. His duties shall be such as are usually imposed on such officers and such as may be assigned to him by these Bylaws or by the Commission from time to time.

3. The Vice-Chairman and Secretary shall each be one of the Commissioners representing a State. They shall be elected at each annual meeting of the Commission and shall hold office until the next annual meeting and until their successors are elected. In the case of a vacancy in either office, the Commission shall at its next meeting, whether regular or special, elect a successor to serve for the unexpired term. The Vice-Chairman shall perform all the duties of the Chairman when the Chairman is unable for any reason to act, or when for any reason there is a vacancy in the office of Chairman. In addition, the Vice-Chairman and Secretary shall perform such other duties as may be assigned to them under these Bylaws or by action of the Commission.

4. The Treasurer may or may not be a member of the Commission. He shall be elected at each annual meeting of the Commission and shall hold office until his successor is elected and shall have qualified. The Treasurer shall receive, hold, and disburse all funds of the Commission. The Treasurer shall furnish a bond for the faithful performance of his duties in such amount as the Commission may direct. The cost of such bond shall be paid by the Commission. In the case of a vacancy in the office of Treasurer the Chairman shall appoint a new Treasurer to serve for the unexpired term or until such time as the Commission shall elect a successor at a regular or special meeting and the person so elected shall have qualified. The offices of Secretary and Treasurer may be held by the same person.

5. The Commission may employ a secretarial assistant and such engineering, legal, clerical, and other personnel as, in its judgment, may be necessary. They shall receive such compensation and perform such duties as may be fixed by the Commission.

ARTICLE III

PRINCIPAL OFFICE

1. The principal office and place of business of the Commission shall be at a location designated by the Commission.

2. The principal office shall be open for business on such hours and days as the Commission may direct.

3. All books and records of the Commission shall be kept at the principal office of the Commission. Except as otherwise provided in the Compact, or herein, all records of the Commission shall be open to inspection by the public.

ARTICLE IV

MEETINGS

1. The annual meeting of the Commission shall be held on the third Monday of April of each year unless otherwise designated by the Commission.

2. The Commission shall hold a regular meeting on the fourth Monday of November of each year unless otherwise designated by the Commission.

3. Special meetings of the Commission may be called by the Chairman or, in case of vacancy in the office of the Chairman or inability of the Chairman to act, by the Vice-Chairman. Upon the request of two or more Commissioners, it shall be the duty of the Chairman to call a special meeting.

4. Notice of all meetings of the Commission shall be sent by the Secretary or the Engineer-Manager, to all members of the Commission, by ordinary mail at least ten days in advance of each

such meeting. Such notice shall designate the time, place, and proposed agenda of the meeting. The notice here required may be waived by unanimous consent of all members of the Commission.

5. The approved minutes of the Commission shall be preserved in a suitable manner. Until approved by the Commission, minutes shall not be official and shall be furnished only to members of the Commission, its employees, and committees.

6. Six Commissioners, who shall include two Commissioners from each State, shall constitute a quorum. An absent member may be represented by his proxy who must be an accredited adviser from his State, and such proxy shall have the powers of a member at such meeting.

7. Each Commissioner, except the Federal Representative, shall have one vote.

8. When a quorum is present, an affirmative vote of at least two-thirds of the Commissioners in attendance shall be necessary for Commission action.

9. At each meeting of the Commission, the agenda items, unless agreed otherwise, shall include approval of the minutes of the last meeting, and reports from the Chairman, the Secretary, the Treasurer, the Engineer-Manager, and other agreed-upon agenda items.

10. All meetings of the Commission, except executive sessions, shall be open to the public. Executive sessions shall be open only to officers and members of the Commission, three advisers designated by each State, and the Federal Representative; provided, however, that the Commission may call witnesses in such sessions.

11. Each State may accredit three advisers to the Commission.

ARTICLE V

COMMITTEES

1. There shall be the following standing committees:

Management Committee
Operations Committee
Records Committee

2. The standing committees shall have duties as assigned by the Commission.

3. Members of committees shall be Commission members. The number of members on each committee shall be determined by the Commission. Each State shall designate the members and/or advisers on each committee representing such State. In all committee action the votes shall be taken by States, with each State having one vote.

4. The Chairman shall be an ex-officio member of all committees.

5. Each committee shall designate a chairman from among the members of the committee.

6. The Commission may create special committees and assign them tasks to be determined by the Commission.

7. Committees shall report all of their findings and recommendations.

ARTICLE VI

FISCAL

1. All expenses incurred by the Commission in the administration of the Bear River Compact, except those paid by the United States of America, shall be paid by the signatory States on an equal basis.

2. Commission funds shall be received by the Treasurer and deposited by him in a depository or depositories designated by the Commission.

3. The Treasurer shall disburse Commission funds by check upon vouchers approved and countersigned by the Chairman, the Vice-Chairman, or a member of the Management Committee.

4. On or before May 1 of each odd-numbered year, the Commission shall adopt and transmit to the appropriate water resource agencies of the three States, a budget covering an estimate of its expenses for the following biennium and the amount payable by each State under the provisions of the Bear River Compact.

5. The payment of expenses of the Commission and its employees shall not be subject to the audit and accounting procedures of any of the three States.

6. All receipts and disbursements of the Commission shall be biennially audited by a certified public accountant to be selected by the Commission. The audit report shall be included in the biennial report of the Commission.

7. The Secretary shall keep an up-to-date inventory of all Commission property.

8. The fiscal year of the Commission shall begin July 1 of each year and end June 30 of the following year.

ARTICLE VII

MISCELLANEOUS

1. The Commission shall on request make available to the Governor of each of the States signatory to the Bear River Compact any information within its possession at any time, and shall always provide the Governors of such States or their representatives or authorized representatives of the United States of America, free access to records. The cost of making information available shall be borne by the person or government requesting such information.

2. All contracts or other instruments in writing to be signed for and in behalf of the Commission, except matters relating to the receipt or disbursement of funds, shall be signed by the Chairman or Vice-Chairman and the Secretary or Treasurer.

3. Amendments to the Bylaws may be made at any meeting of the Commission, provided notice of the proposed amendment shall have been given in the notice of the meeting.

4. Except as otherwise provided by the Compact or herein, meetings of the Commission shall be in accordance with Robert's Rules of Order.

BRC

BEAR RIVER COMMISSION / EXPENDITURE FORECAST THRU FY 91

DESCRIPTION	FY 90 BUDGET	FY 90 AS OF 03-31	FY90 THRU JUNE 30	FY 91 BUDGET	FY91 MODIFIED
INCOME					
BEGINNING BALANCE	\$130,625.00	\$127,472.17	\$127,472.17	\$127,472.17	\$108,762.68
IDAHO	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00
UTAH	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00
WYOMING	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00
INTEREST ON SAVINGS	\$8,000.00	\$7,904.54	\$11,000.00	\$9,800.00	\$5,000.00
TOTAL INCOME	\$213,625.00	\$210,376.71	\$213,472.17	\$212,272.17	\$188,762.68
EXPENDITURES					
	BUDGET	Y-T-D PROJECT 6-30		BUDGET	BUDGET
STREAM GAGING-U.S.G.S.	\$38,400.00	\$38,400.00	\$38,400.00	\$41,760.00	\$49,210.00
PERSONAL SERVICES	\$24,887.00	\$18,665.28	\$24,887.00	\$25,000.00	\$26,380.00
JACK	\$3,000.00	\$2,362.50	\$3,000.00		\$3,200.00
TECHNICIAN	\$0.00	\$3,925.49	\$3,925.49		\$0.00
WALLY	\$800.00	\$11,359.03	\$1,800.00	\$800.00	\$1,800.00
TRAVEL	\$250.00	\$986.30	\$1,200.00	\$250.00	\$2,100.00
OFFICE EXPENSES	\$2,300.00	\$1,977.00	\$1,977.00		\$0.00
PRINTING BIENNIAL REPORT	\$700.00	\$920.00	\$920.00	\$800.00	\$1,000.00
TREASURE'S BOND & AUDIT	\$100.00	\$0.00	\$100.00	\$200.00	\$200.00
PRINTING	\$3,000.00	\$0.00	\$3,000.00		\$0.00
1976 BASE MAPS	\$500.00	\$500.00	\$500.00	\$500.00	\$500.00
LEGAL CONSULTANT	\$0.00	\$0.00	\$0.00		\$5,000.00
COMMISSION HISTORY (WALLY)	\$25,000.00	\$0.00	\$25,000.00	\$25,000.00	\$95,000.00
SPECIAL STUDIES	\$98,937.00	\$79,095.60	\$104,709.49	\$94,310.00	\$184,390.00
TOTAL EXPENDITURES	\$98,937.00	\$79,095.60	\$104,709.49	\$94,310.00	\$184,390.00
UNEXPENDED CASH BALANCE	\$114,688.00	\$131,281.11	\$108,762.68	\$117,962.17	\$4,372.68

BRC

BEAR RIVER COMMISSION / EXPENDITURE FORECAST THRU FY 91

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UTAH	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00
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WALLY	\$800.00	\$11,359.03	\$1,800.00	\$800.00	\$1,800.00
TRAVEL	\$250.00	\$986.30	\$1,200.00	\$250.00	\$2,100.00
OFFICE EXPENSES	\$2,300.00	\$1,977.00	\$1,977.00		\$0.00
PRINTING BIENNIAL REPORT	\$700.00	\$920.00	\$920.00	\$800.00	\$1,000.00
TREASURE'S BOND & AUDIT	\$100.00	\$0.00	\$100.00	\$200.00	\$200.00
PRINTING	\$3,000.00	\$0.00	\$3,000.00		\$0.00
1976 BASE MAPS	\$500.00	\$500.00	\$500.00	\$500.00	\$500.00
LEGAL CONSULTANT	\$0.00	\$0.00	\$0.00		\$5,000.00
COMMISSION HISTORY (WALLY)	\$25,000.00	\$0.00	\$25,000.00	\$25,000.00	\$70,000.00
SPECIAL STUDIES	\$98,937.00	\$79,095.60	\$104,709.49	\$94,310.00	\$159,390.00
TOTAL EXPENDITURES	\$98,937.00	\$79,095.60	\$104,709.49	\$94,310.00	\$159,390.00
UNEXPENDED CASH BALANCE	\$114,688.00	\$131,281.11	\$108,762.68	\$117,962.17	\$29,372.68

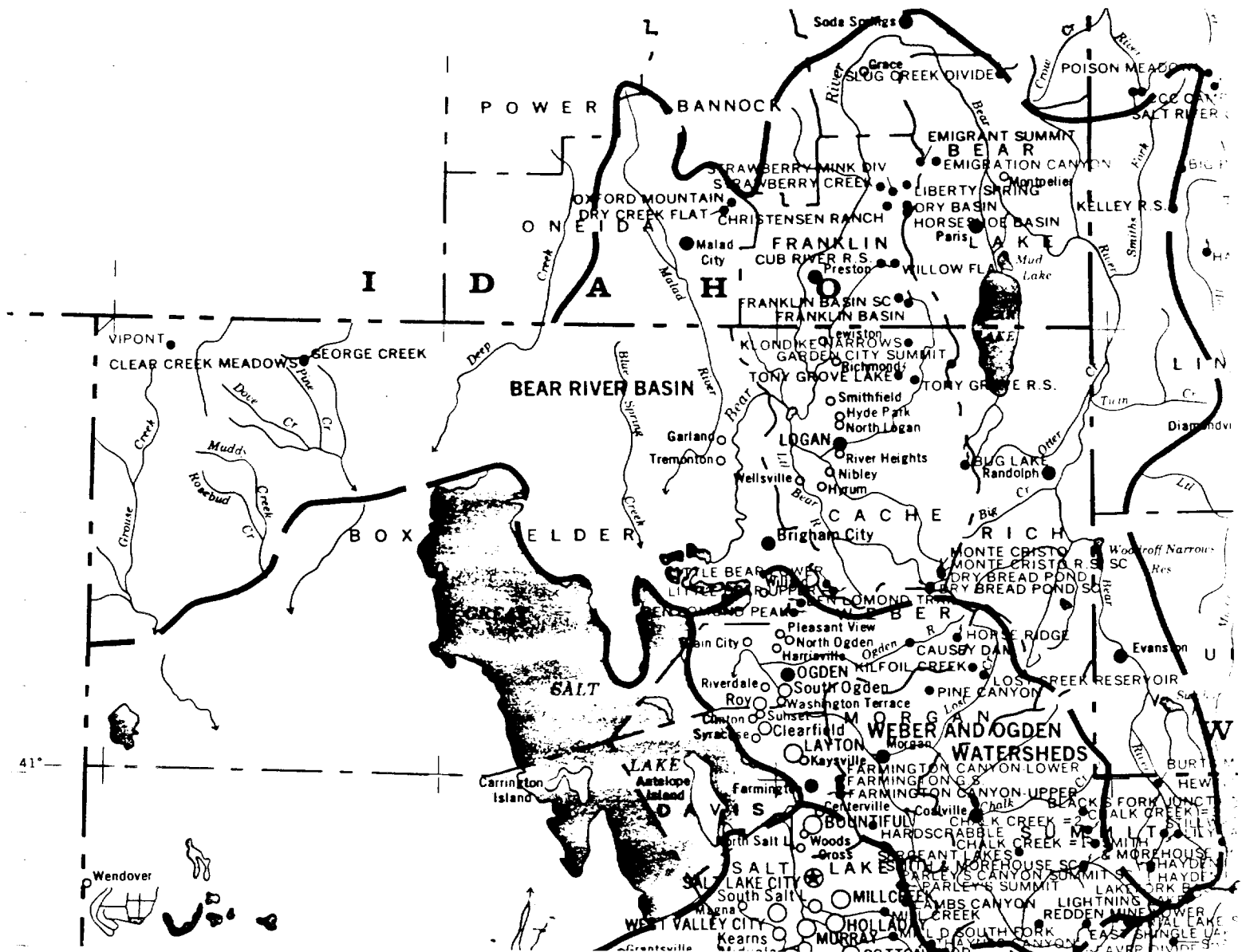
1990-91 BEAR RIVER COMMISSION PROGRAM

STATION NUMBER	STATION NAME	USGS	BEAR RIVER COMM	TOTAL FUNDING
10011500	BEAR R NR UT-WYO STATE LINE	2,650	2,650	5,300
10015700	SULPHUR CR AB RES NR EVANSTON WY	2,650	2,650	5,300
10015900	SULPHUR CR BEL RES NR EVANSTON WY	2,650	2,650	5,300
10020100	BEAR R AB RES NR WOODRUFF	2,650	2,650	5,300
10020200	WOODRUFF NARROWS RES NR WOODRUFF	2,650	2,650	5,300
10020300	BEAR R BEL RES NR WOODRUFF	2,650	2,650	5,300
10026500	BEAR R NR RANDOLPH	2,650	2,650	5,300
10028500	BEAR R BEL PIXLEY D NR COKEVILLE WY	1,330	1,330	2,660
10032000	SMITHS FORK NR BORDER WY	2,650	2,650	5,300
10038000	BEAR R BEL SMITHS FK NR COKEVILLE WY	2,650	2,650	5,300
10039500	BEAR R AT BORDER WY	2,650	2,650	5,300
10039500	DCP EQUIP & INSTALLATION	4,000	4,000	8,000
10041000	THOMAS FK NR WYO-ID STATE LINE	2,650	2,650	5,300
10068500	BEAR R AT PESCADERO ID	2,650	2,650	5,300
10092700	BEAR R AT ID-UT STATE LINE (DCP)	3,500	3,500	7,000
10108400	LOGAN H PK & SMITH CAN AT H NR LOGAN	2,650	2,650	5,300
10109000	LOGAN R AB STATE DAM NR LOGAN	2,650	2,650	5,300
10117000	HAMMOND(E SIDE) CAN NR COLLINSTON (PUB)	210	210	420
10117500	WEST SIDE CAN NR COLLINSTON (PUB)	210	210	420
10118000	BEAR R NR COLLINSTON (PUB)	210	210	420
10126000	BEAR R NR CORRINE	2,650	2,650	5,300
		<hr/> 49,210	<hr/> 49,210	<hr/> \$98,420

BEAR RIVER BASIN

APPENDIX J

PAGE 1



STATUS OF SNOW SURVEY DATA SITES IN THE BEAR RIVER BASIN

STATE	NUMBER OF DATA SITES	NUMBER OF SNOTEL SITES	NUMBER OF PRECIPITATION GAGES	
			TOTAL	MANUAL
Idaho	16	3	4	1
Utah	12	7	12	5
Wyoming	6	3	3	0
Total	34	13	19	6

Note: records go back as far as 1924 on 2 of the sites on the Logan River, 6 sites were established in the 30's, 2 in the 40's, 13 in the 50's, 4 in the 60's, 5 in the 70's and 2 in the 80's.

APRIL 1, 1990

SUMMARY

Prospects for adequate streamflow this spring and summer in Utah are poor with the summary of forecasts across the state averaging only 55% of usual. Reservoir storage is still 10% below average. Only heavy and properly timed spring and summer rains can offset the shortages that are facing the Utah water user this year.

SNOWPACK

The 1990 snowpack accumulation season practically stalled in March ending any hopes for a near normal snow year. The watersheds of southwestern Utah and the Bear River watershed suffered a net loss in snow water content during the month while other areas received increases ranging from 21% of average on the Provo-Utah Lake-Jordan River-Tooele Valley watersheds to 100% of average on the Uintas. Across the State, snowpack ranges from 50% of the April first average in southwestern Utah to 88% on the Uintas. Snowmelt began early again this year in most areas. With the exception of the Uintas, the melt began one to two weeks earlier than usual.

PRECIPITATION

March precipitation at mountain stations was below normal in all areas of the State--a major disappointment since March is historically one of our wettest months. Precipitation ranged from 55% of normal on the Weber River watershed to 81% on the Uinta Mountains and the Sevier River watershed during March. Statewide precipitation for the month was 71% of normal. Water year totals (October first through March) range from 62% of normal in southeastern Utah to 84% on the Uinta Mountains with the total for the State at 72% of average.

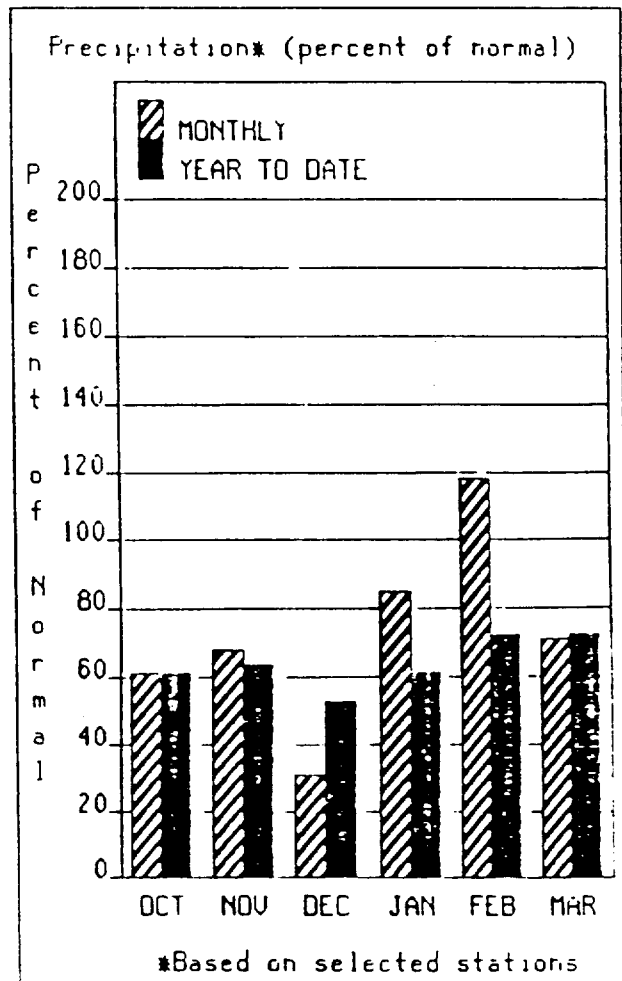
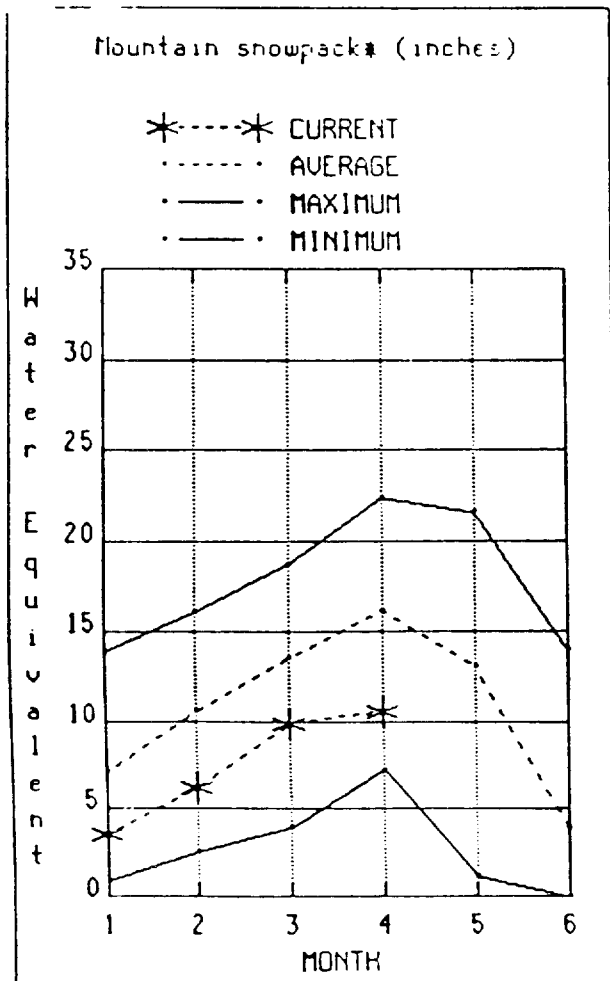
Lower elevation precipitation stations of the National Weather Service network report March values received at below to near average. The Six creeks area near Salt Lake received 95%. Southwestern Utah received below normal rainfall and eastern Utah figures were normal to above. Seasonal precipitation values remain below average with the lowest in eastern Utah (55%-75% of average).

RESERVOIRS

Reservoir managers are striving to accumulate stored water in the face of this season's poor outlook for streamflow. Statewide, the percentage of average stored on April 1st is up some from the March 1st volumes to 90% of average. This level of storage equates to 63% of capacity (9% less than last year at this time). Taken individually, storage in the 26 major reservoirs ranges from 21% of capacity in Scofield to 100% of capacity for Vernon Creek. Compared to average, storage ranges from 36% at Steinaker to 165% at Mill Site.

STREAMFLOW

Poor snowpack accumulation and warmer than usual temperatures have reduced streamflow predicitions across Utah to only 55% of the average flows. The Sevier River and Virgin River are the hardest hit with only 25% of average expected in one of the reaches of the Sevier River. Southern Utah snowpacks are melting much earlier than usual as well. Forecasts over the rest of the State are a poor 50% of average. The Uinta range with the best snowpack in Utah is expected to produce flows at about one-third below normal. Water users and managers all across Utah should be prepared for significant flow shortages and earlier than usual peaks. Only much above average spring and summer precipitation can offset the shortages that are ahead.

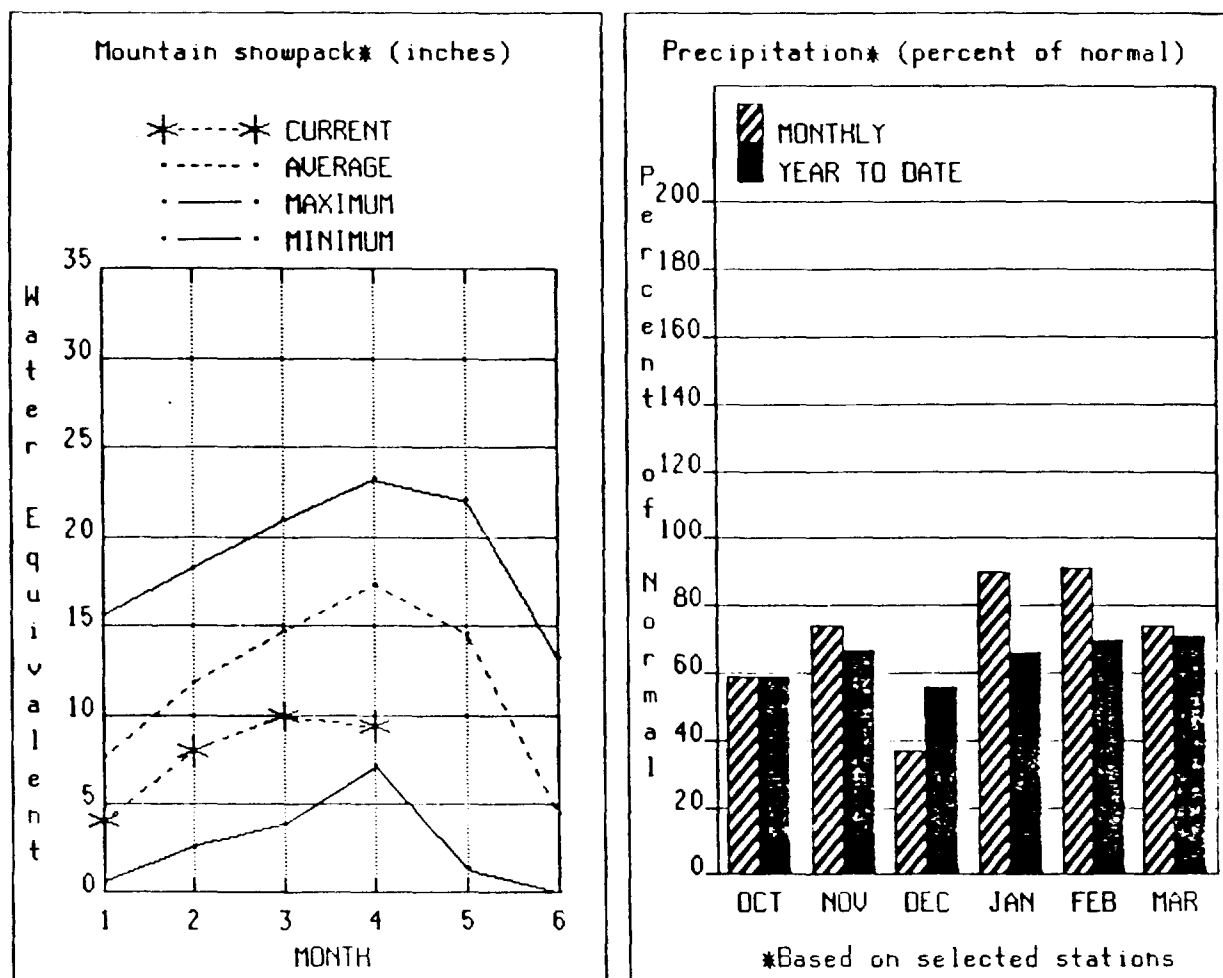


BEAR RIVER BASIN

APPENDIX J

PAGE 4

APRIL 1, 1990



Snowpack on the Bear River watershed suffered a very unusual occurrence during March--a net loss of snow water content. This has only happened three other years since 1961. This March the snowpack lost 0.7 inches. Normally the snowpack should gain 2.6 inches of water during March. Snowmelt commenced about two weeks earlier than usual this year on the Bear. Precipitation at mountain stations was 74% of average during March bringing water year accumulation to 71% of normal. Area reservoirs at the end of March were holding 53% of their combined capacity in storage (seventy-five percent of average). Normally 70% of capacity would be filled by this time of year. Last year 61% of capacity was filled. Forecasts of spring and summer streamflow are reduced somewhat from the March first outlook to a basin average of 49%. Shortages of runoff will be experienced this season as well as continued low water levels at Bear Lake.

BEAR RIVER BASIN

STREAMFLOW FORECASTS

FORECAST POINT	FORECAST PERIOD	<----- DRIER ----- FUTURE CONDITIONS ----- WETTER ----->						25 YR. (1000AF)
		CHANCE OF EXCEEDING *						
		90% (1000AF)	70% (1000AF)	50% (MOST PROBABLE) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
BEAR RIVER near UT-WY Stateline	APR-JUL	42	65	80	69	95	118	116
BEAR near Woodruff	APR-JUL	15.0	48	88	59	129	188	150
WOODRUFF CREEK near Woodruff	APR-JUL	3.3	6.4	8.5	49	10.6	13.7	17.3
BIG CREEK near Randolph	APR-JUL	0.5	1.1	2.6	49	4.1	6.2	5.3
BEAR near Randolph	APR-JUL	10.0	19.0	45	36	80	131	126
SMITHS FORK near Border	APR-SEP	12.0	36	70	57	104	154	123
THOMAS FORK near Stateline	APR-SEP	4.0	9.0	19.0	51	29	44	37
BEAR RIVER near Harer	APR-SEP	31	83	150	48	215	315	310
BEAR RIVER blw Stewart Dam	APR-SEP	10.0	69	108	36	148	205	298
CUB RIVER near Preston	APR-JUL	11.0	19.0	24	51	30	38	47
LITTLE BEAR RIVER near Paradise	APR-JUL	4.0	6.0	15.0	33	24	37	46
LOGAN RIVER near Logan	APR-JUL	30	48	60	49	72	90	122
BLACKSMITH FORK near Hyrum	APR-JUL	6.0	15.0	25	44	35	49	57

RESERVOIR STORAGE					(1000AF)	WATERSHED SNOWPACK ANALYSIS			
RESERVOIR	USEABLE	** USEABLE STORAGE **			WATERSHED	NO.	THIS YEAR AS % OF		
	CAPACITY	THIS	LAST	AVG.		COURSES	-----		
		YEAR	YEAR				LAST YR.	AVERAGE	
BEAR LAKE	1421.0	746.6	869.0	1002.1	BEAR RIVER, UPPER IN UTAH	6	83	72	
HYRUM	15.3	14.4	10.9	12.2	BEAR RIVER, LOWER IN UTAH	9	52	46	
PORCUPINE	11.3	6.6	---	5.0	BEAR RIVER DRAINAGE IN UT	15	63	55	
WOODRUFF NARROWS	55.8	17.5	18.4	---	BEAR RIVER, UPPER (above	12	82	72	
WOODRUFF CREEK		NO REPORT			BEAR RIVER, LOWER (below	22	47	42	
					LOGAN RIVER	5	58	53	
					BEAR RIVER DRAINAGE	34	60	53	
					RAFT RIVER	4	66	64	
					BEAR RIVER BASIN	38	61	54	

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1985 base period.

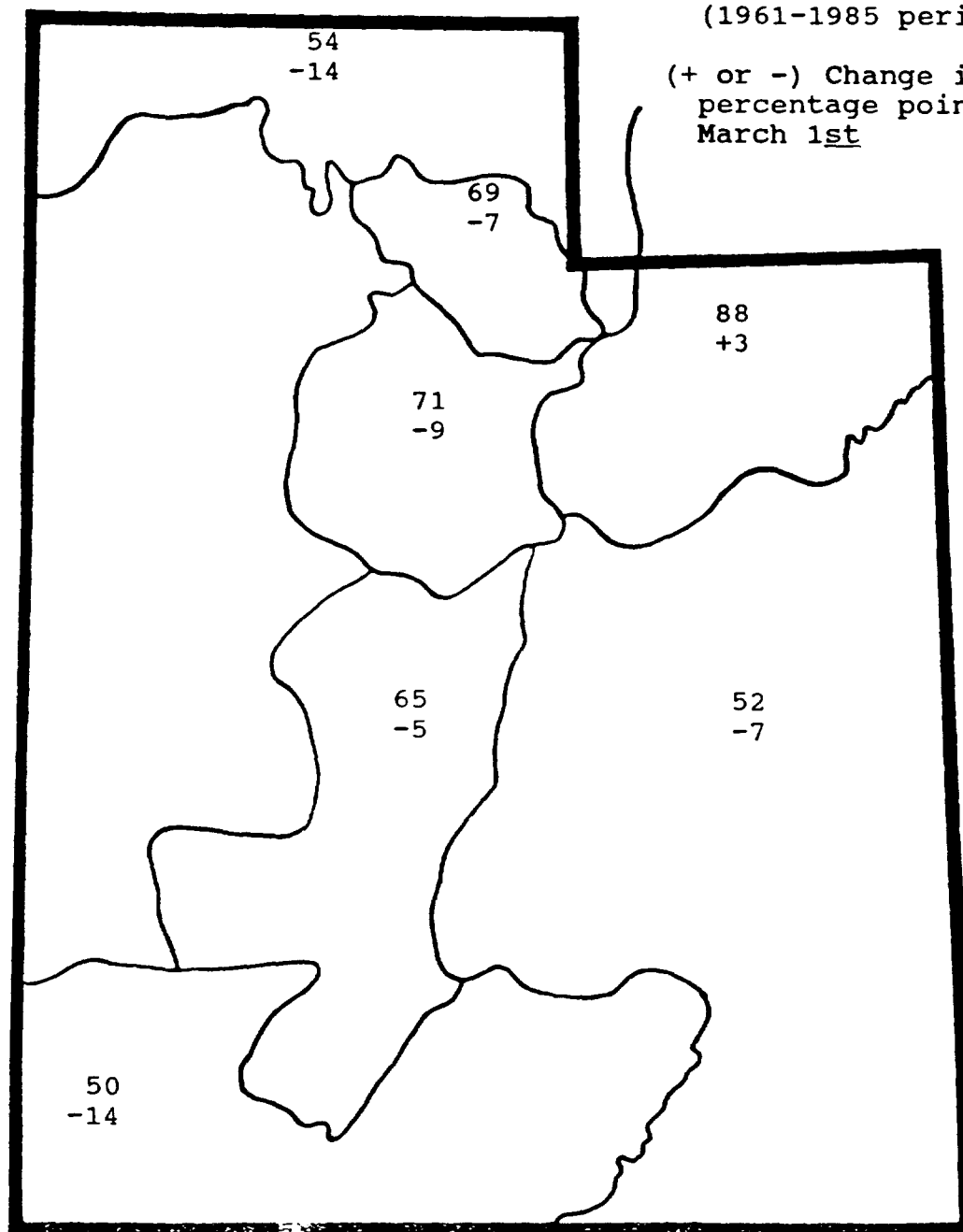
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

S N O W P A C K

As of APRIL 1, 1990

% Ave. on 1st of month
(1961-1985 period).

(+ or -) Change in
percentage points since
March 1st



STATEWIDE

65
-8

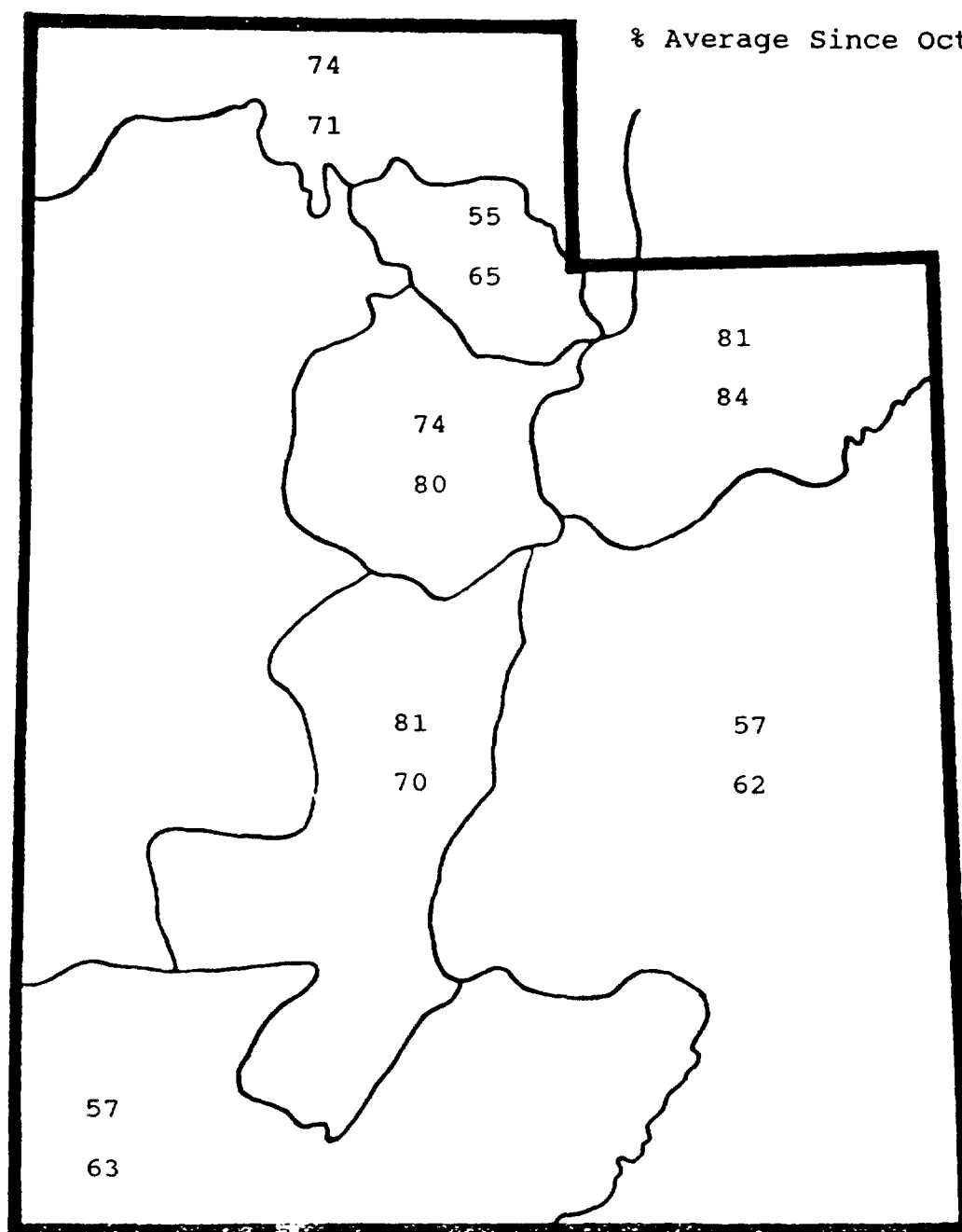
USDA-SCS-SNOW SURVEY
UTAH (801) 524-5213

MOUNTAIN PRECIPITATION

As of APRIL 1, 1990

% Average Catch for Mar.

% Average Since Oct. 1, 1989.



STATEWIDE

71
72

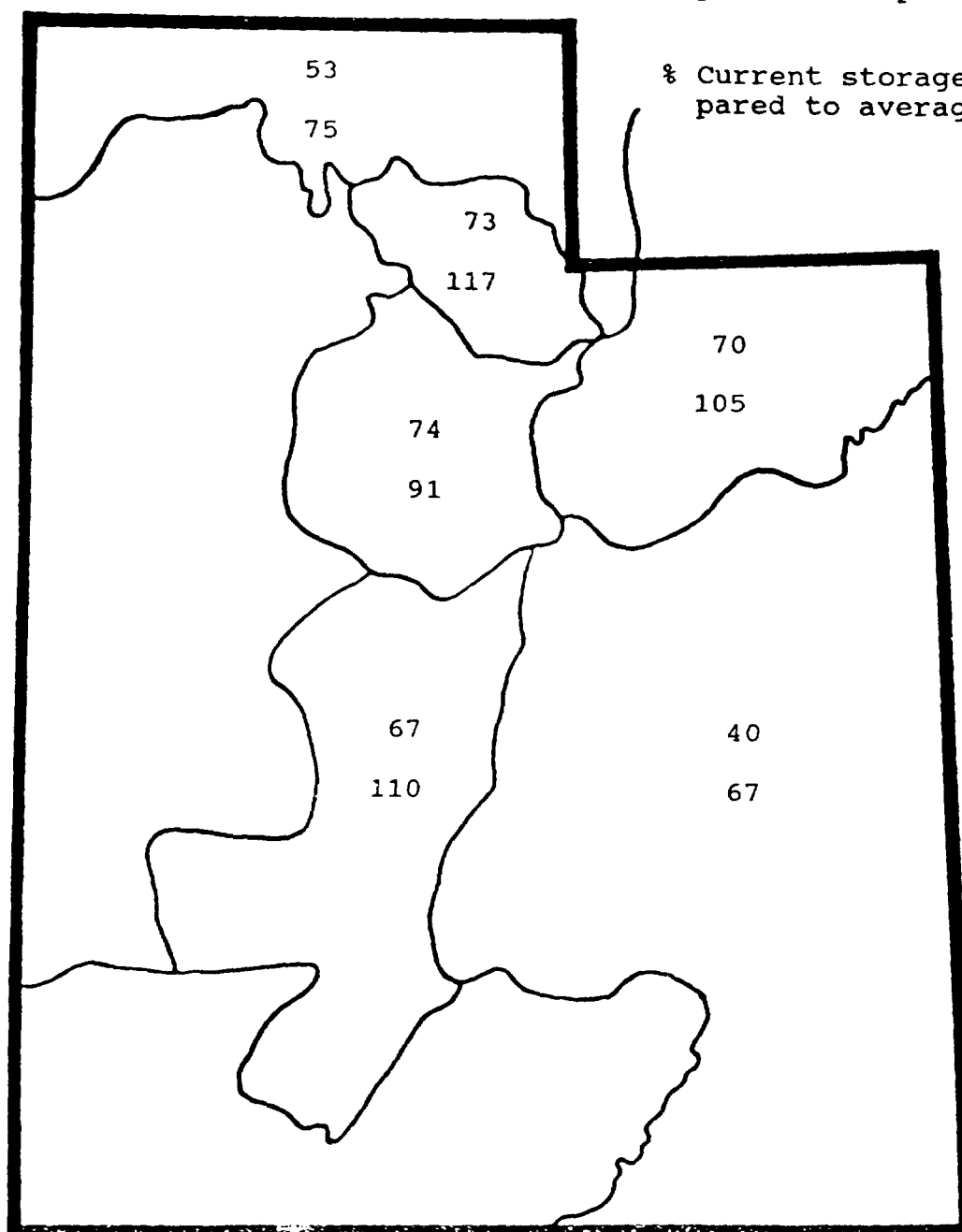
USDA-SCS-SNOW SURVEY
UTAH (801) 524-5213

RESERVOIR STORAGE

As of APRIL 1, 1990

% Current storage compared to capacity.

% Current storage compared to average.



STATEWIDE

63

90

USDA-SCS-SNOW SURVEY
UTAH (801) 524-5213

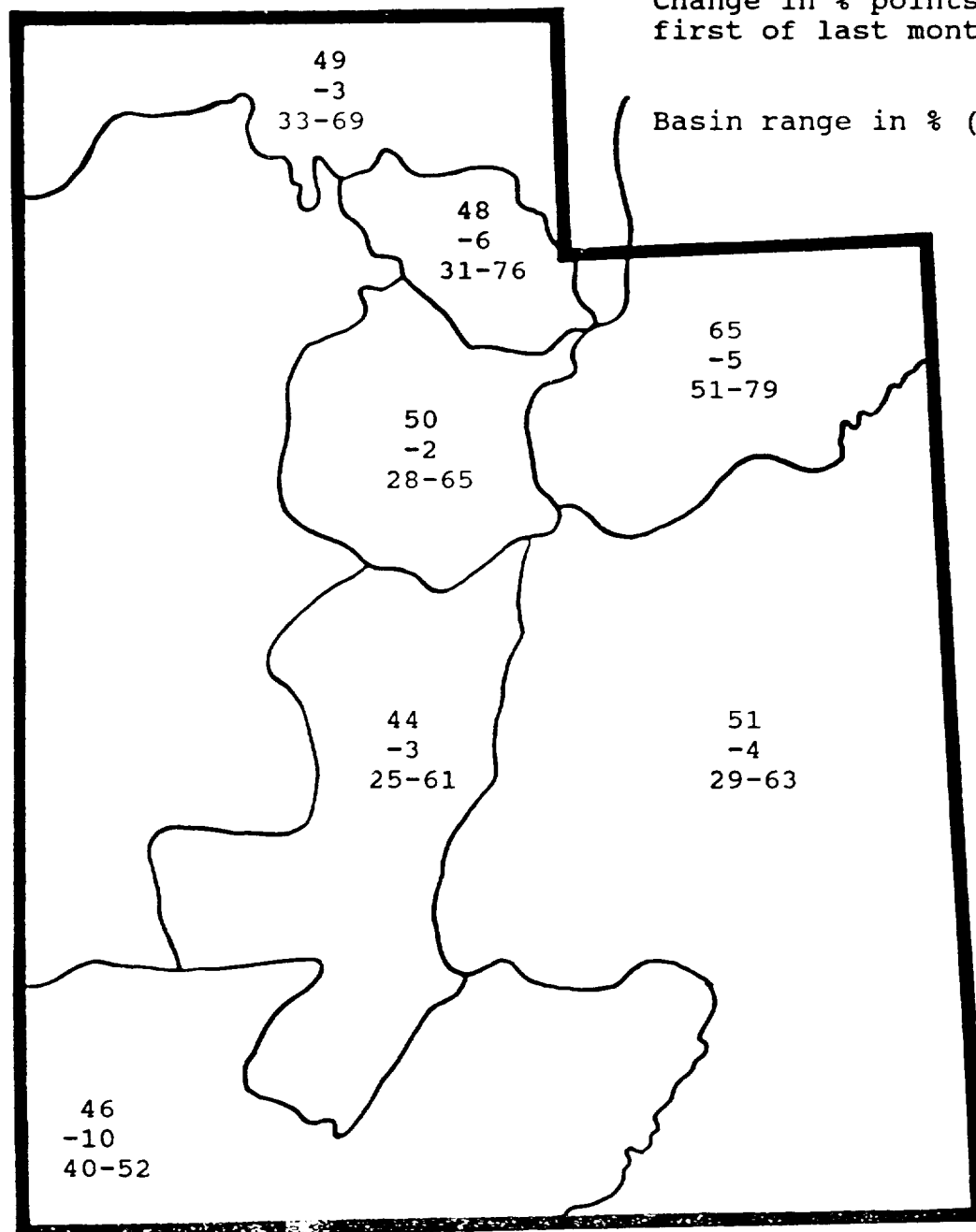
STREAMFLOW FORECASTS

As of APRIL 1, 1990

% Of average for the basin.

Change in % points since
first of last month.

Basin range in % (##-##).



STATEWIDE

50
-6
25-79

USDA-SCS-SNOW SURVEY
UTAH (801) 524-5213

United States
Department of
Agriculture

Soil
Conservation
Service

Jon G. Werner 524-5213
Data Collection Office Staff
Salt Lake City, UT 84147

S N O W - P R E C I P I T A T I O N U P D A T E

Based on Mountain Data from SCS SNOTEL Sites

As of : Monday, April 16, 1990

BASIN Data Site Name	ELEV. (Ft)	SNOW WATER EQUIVALENT		PRECIPITATION	
		Current	Average	% of Year to date	% of average

TAH

BEAR RIVER

TRIAL LAKE	9960	16.7	25.3	66	20.5	73
HAYDEN FORK	9400	10.2	18.3	56	19.5	102
LILY LAKE	9050	8.1	13.0	62	14.7	92
MONTE CRISTO	8960	15.9	31.6	50	17.3	58
TONY GROVE LAKE	8400	16.2	39.6	41	23.7	62
FRANKLIN BASIN	8040	10.9	31.0	35	21.1	67
BUG LAKE	7950	9.6	24.3	39	13.7	73
LITTLE BEAR	6550	0.0	12.8	0	17.1	75
				----		----
Basin wide percent of average				45		72

WEBER-OGDEN RIVERS

TRIAL LAKE	9960	16.7	25.3	66	20.5	73
THAYNES CANYON	9330	15.1	23.9	63	18.9	63
CHALK CREEK #1	9100	15.7	24.9	63	21.4	85
MONTE CRISTO	8960	15.9	31.6	50	17.3	58
DRY BREAD POND	8350	5.1	19.8	26	13.9	68
BEAVER DIVIDE	8280	0.2	10.0	2	16.0	86
HORSE RIDGE	8260	6.3	23.4	27	18.6	63
CHALK CREEK #2	8200	8.1	15.3	53	13.5	78
BEN LOMOND PEAK	8000	18.9	45.3	42	26.2	52
FARMINGTON	8000	17.8	33.8	53	22.6	58
SMITH & MOREHOUSE	7600	6.7	14.1	48	16.7	79
PARLEY'S SUMMIT	7500	0.0	16.0	0	17.0	64
BEN LOMOND TRAIL	6000	0.0	15.5	0	21.0	63
				----		----
Basin wide percent of average				42		66

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PROVO R.-UTAH LAKE-JORDAN R.

TRIAL LAKE	9960	16.7	25.3	66	20.5	73
SNOWBIRD	9640	32.1	37.8	85	32.0	87
CLEAR CREEK #1	9200	15.7	19.0	83	16.6	80
MILL-D NORTH	8960	12.7	32.6	39	21.3	68
BRIGHTON	8725	20.2	32.0	63	23.4	75
BEAVER DIVIDE	8280	0.2	10.0	2	16.0	86
LOOKOUT PEAK	8200	9.3	28.0	33	21.7	71
TIMPANOGOS DIVIDE	8140	13.7	24.3	56	23.5	74
PAYSON R.S.	8050	8.7	21.6	40	15.9	72
DANIELS-STRAWBERRY	8000	3.0	15.1	20	16.6	79
CLEAR CREEK #2	8000	8.1	14.5	56	14.6	81
PARLEY'S SUMMIT	7500	0.0	16.0	0	17.0	64
				----		----
Basin wide percent of average				51		75

TOOELE VALLEY-VERNON CREEK

DESERET PEAK	9250	10.2	29.4	35	19.8	67
ROCKY BASIN-SETTLEME	8900	14.2	24.8	57	24.8	90
MINING FORK	8000	3.5	27.1	13	16.8	58
VERNON CREEK	7500	0.0	10.7	0	11.9	62
				----		----
Basin wide percent of average				30		70

GREEN RIVER

STEEL CREEK PARK	10100	13.1	18.0	73	13.7	83
HEWINTA	9500	7.6	10.7	71	12.3	80
TROUT CREEK	9400	7.8	11.5	68	12.6	83
HOLE-IN-ROCK	9150	4.8	6.3	76	8.1	64
HICKERSON PARK	9150	4.9	7.3	67	9.5	84
KING'S CABIN	8730	6.5	11.9	55	12.8	89
				----		----
Basin wide percent of average				68		81

DUCHESNE RIVER

LAKEFORK BASIN	11100	18.5	16.7	111	18.5	102
FIVE POINTS LAKE	11000	17.4	16.1	108	20.4	125
BROWN DUCK	10600	16.5	19.5	85	18.5	88
CHEPETA	10300	14.0	13.5	103	15.5	63
LAKEFORK #1	10200	12.2	11.8	103	12.3	75
TRIAL LAKE	9960	16.7	25.3	66	20.5	73
MOSBY MTN.	9500	11.3	13.1	86	14.9	96
INDIAN CANYON	9100	6.4	13.0	49	13.5	81
STRAWBERRY DIVIDE	8400	7.0	19.6	36	16.7	85
DANIELS-STRAWBERRY	8000	3.0	15.1	20	16.6	79
CURRANT CREEK	8000	0.3	8.4	4	10.6	71
ROCK CREEK	7900	0.0	3.9	0	10.1	72
				----		----
Basin wide percent of average				70		83

PRICE-SAN RAFAEL

SEELEY CREEK	10000	8.6	17.0	51	11.3	67
BUCK FLAT	9800	8.6	19.1	45	14.6	72
RED PINE RIDGE	9200	9.0	18.9	48	15.6	65
MAMMOTH-COTTONWOOD	8800	12.9	22.0	59	13.7	65
WHITE RIVER #1	8550	6.3	13.5	47	13.0	74
				----		----
Basin wide percent of average				50		68

DIRTY DEVIL RIVER

DONKEY RESERVOIR	9800	3.5	7.3	48	8.1	45
BLACK FLAT-U.M. CK	9400	2.8	11.3	25	9.3	65
DILL'S CAMP	9200	3.0	16.2	19	12.5	61
				----		----
Basin wide percent of average				27		57

SOUTH EASTERN UTAH

LASAL MOUNTAIN	9400	1.8	16.3	11	13.0	63
CAMP JACKSON	8600	0.0	11.1	0	8.7	43
EAST WILLOW CREEK	8100	0.0	9.4	0	8.5	60
				----		----
Basin wide percent of average				5		55

DEVIER RIVER

MIDWAY VALLEY	9800	15.1	24.1	63	16.5	62
FARNSWORTH LAKE	9600	17.2	21.5	80	16.7	65
PICKLE KEG	9600	8.0	19.1	42	16.9	81
CASTLE VALLEY	9580	3.2	14.9	22	11.7	65
WIDSTOE #3	9500	5.3	13.0	41	12.0	72
KIMBERLY MINE	9300	11.0	19.1	58	18.9	76
BOX CREEK	9300	4.5	14.8	30	11.0	66
PINE CREEK	8800	18.8	19.9	94	17.1	59
MAMMOTH-COTTONWOOD	8800	12.9	22.0	59	13.7	65
GOOSEBERRY R.S.	8000	0.0	11.8	0	15.0	88
BEAVER DAMS	8000	1.3	11.1	12	15.1	71
HARRIS FLAT	7700	0.0	5.2	0	8.2	66
LONG VALLEY JCT	7500	0.0	1.7	0	8.2	69
				----		----
Basin wide percent of average				49		69

BEAVER RIVER

BIG FLAT	10290	12.3	20.7	59	15.3	68
MERCHANT VALLEY	8750	6.9	10.1	68	13.1	69
Basin wide percent of average				62		68

ESCALANTE RIVER

DONKEY RESERVOIR	9800	3.5	7.3	48	8.1	45
WIDSTOE #3	9500	5.3	13.0	41	12.0	72
Basin wide percent of average				43		58

VIRGIN RIVER

MIDWAY VALLEY	9800	15.1	24.1	63	16.5	62
KOLOB	9250	9.1	24.7	37	16.0	68
WEBSTER FLAT	9200	1.6	11.6	14	13.8	52
LONG FLAT	8000	0.0	5.8	0	9.7	60
HARRIS FLAT	7700	0.0	5.2	0	8.2	66
LONG VALLEY JCT	7500	0.0	1.7	0	8.2	69
LITTLE GRASSY	6100	0.0	1.1	0	12.5	104
Basin wide percent of average				35		66

STATE WIDE percent of average

48

71

Provisional data, subject to revision.

* = Average not available. ~ = Percent not computed. M = Missing reading

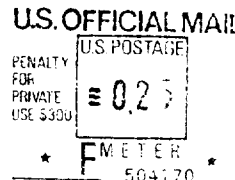
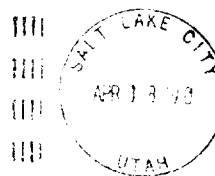
Water Content and Precipitation readings are reported in inches.

Average period covers 1961-1985

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