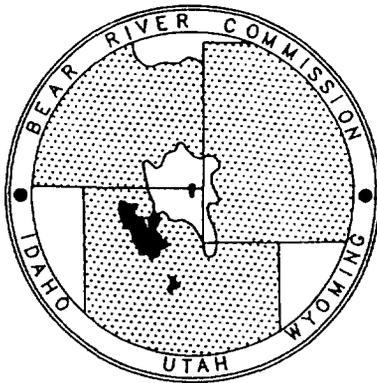


# BEAR RIVER COMMISSION

106 West 500 South, Suite 101  
Bountiful, UT 84010-6232  
(801) 524-6320



## MINUTES

### BEAR RIVER COMMISSION ANNUAL MEETING

Utah Department of Natural Resources Building  
Salt Lake City, Utah  
April 14, 1993

#### COMMISSION MEMBERS

##### Chairman

Charles J. Heringer, Jr.

##### 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  
Suite 101  
106 West 500 South  
Bountiful, UT 84010

#### ATTORNEY

E. J. Skeen  
Attorney At Law  
536 East 400 South  
Salt Lake City, UT 84102

The annual meeting of the Bear River Commission was called to order by Vice Chairman Wes Myers at 1:30 p.m. on April 14, 1993, in the First Floor Conference Room of the Utah Department of Natural Resources Building in Salt Lake City, Utah. Chairman Charles Heringer was absent due to a sudden illness.

Vice Chairman Myers welcomed everyone to the Commission meeting and asked if there were any changes to the proposed agenda. The agenda was approved without change and is attached as Appendix A. Myers asked those in the audience to introduce themselves. A copy of the attendance roster is attached as Appendix B.

The Commission then considered the proposed minutes from the Commission meeting held on November 24, 1992. The minutes were approved without change.

The Commission turned its attention to the election of Commission officers. Wes Myers was elected to serve a second year as Vice Chairman of the Commission. In addition, Larry Anderson was elected as Secretary-Treasurer for another year.

Vice Chairman Myers asked Larry Anderson to present the Secretary-Treasurer's report. Anderson asked Bert Page to report on the income and expenditures of the Bear River Commission. Bert distributed a Statement of Income and Expenditures to date for the July 1, 1992, to June 30, 1993, fiscal year (see Appendix C). Page indicated each state had paid its \$30,000 assessment. Interest income through April 1, 1993, was \$2,685.89. Carryover from the previous fiscal year was \$66,359.00, bringing the total

cash assets to \$159,044.89. Stream gaging expenses were \$53,225, and other expenses through April 1, 1993, were \$43,524.37, bringing expenditures to date to \$95,754.37. The cash balance as of April 1, 1993, was \$63,290.52.

Secretary-Treasurer Anderson then reviewed with the Commission the expenditure forecast through June 30, 1993, and the proposed budgets for the next three fiscal years (Appendix D). Anderson indicated that income through June 30, 1993, was projected to be \$159,459. Anticipated expenditures through the end of the fiscal year were \$106,985. Therefore, carryover in FY 93 was estimated to be \$52,474.

Anderson indicated that some adjustments had been made to the FY 93 budget. First, he indicated that the Commission had previously approved the expenditure of \$2,500 for printing the Seventh Biennial Report in FY 94. As some of the preparatory work on drafting the Biennial Report was occurring in FY 93, Anderson recommended that \$500 be moved into the FY 93 budget, leaving \$2,000 for expenditure in FY 94. Secondly, Anderson pointed out that in the FY 93 budget, \$4,432 was set aside for reprinting base maps. The Commission had previously authorized an expenditure of \$4,000. However, as errors were found in three maps requiring that they be reprinted, the costs associated with those corrections and reprinting would be an additional \$432.

With respect to the FY 94 budget, Anderson indicated that it contained a 3 percent increase in the personal services contract for Engineer-Manager Jack Barnett. Total expenditures were anticipated to be \$77,970, bringing the carryover to \$67,504. The Commission approved the FY 94 budget as presented. Anderson also briefly touched on projected income and expenditures for FY 95 and FY 96. The Commission voted to approve, for planning purposes, the budgets outlined by Anderson for FY 95 and FY 96, keeping state assessments at the \$30,000 level through FY 96.

Keith Higginson requested that the annual billing for state assessments be sent out before the end of June. Anderson committed that Bert Page would send the bills to each state sometime in May.

Vice Chairman Myers asked Randy Julander of the Soil Conservation Service to report on snowpack and streamflow forecasts. Julander distributed a number of handouts on Bear River snowpack, precipitation, and streamflow forecasts (see Appendix E). Julander indicated that as of April 12, 1993, overall snowpack in the Bear River basin was at 116 percent of average. At the Bear River's headwaters in the Uintah's, snowpack ranged from 120 to 150 percent of normal. In the western side of the basin farther downstream, snowpack was somewhat less, ranging from 81 to 118 percent of average. Julander indicated that streamflow for the forthcoming irrigation season appeared to be double or triple the previous year's projection.

Julander indicated that April precipitation had played a great part in bringing snowpack and streamflow forecasts to their current levels, as April precipitation was well above normal throughout the basin, particularly at the higher elevations. From March 1 to April 1, snowpack increased by several inches above the 7,000 foot elevation, but was still slightly below average levels. From

April 1 to April 12, however, snowpack was 12 to 26 percent ahead of average above the 7,000 foot elevation.

Julander also reviewed year-to-date precipitation from October 1, 1992, through April 12, 1993. He indicated that precipitation ranged from 105 to 140 percent of average throughout the basin. Julander further reported that streamflow forecasts as of April 1 showed projected flows to be below normal in the Bear River basin, ranging from about 81 to 89 percent of normal. However, he indicated that with the more recent April snows (April 1 to April 12), those projections were probably closer to 100 percent of normal. Julander reviewed streamflows at various gaging stations in the Bear River basin during the 1992 irrigation season. He observed that during the April to July period, streamflows in 1992 ranged from 8 to 51 percent of average.

With respect to reservoir status as of April 1, the last page of Julander's handout shows Bear Lake was at 19 percent of capacity, Hyrum Reservoir at 99 percent capacity, Woodruff Narrows at 44 percent, and Porcupine Reservoir at 71 percent. The table further shows that both Bear Lake and Woodruff Narrows were projected to receive 132,000 acre-feet of inflow. Julander indicated that the Bear Lake projections were probably somewhat inaccurate, as they did not include inflow from some of the tributaries of the Bear River, but the SCS had used the available data at the closest point.

Higginson thanked Julander for accommodating the Commission's needs by providing a basin-wide report. The Commission instructed Engineer-Manager Barnett to obtain from Julander an update of the Bear River streamflow forecasts and distribute it to the three states.

Vice Chairman Myers asked Carly Burton to report on Bear Lake levels and 1993 operations. Burton indicated that Bear Lake peaked at 5910.5 on April 24, 1992. Irrigation releases from the lake by PacifiCorp (Utah Power) also started on that date—the earliest ever. Releases were stopped on September 2, 1992.

Burton reflected that the 1992 irrigation season was incredibly difficult. Irrigation delivery by PacifiCorp were based on a percentage of storage water used in 1990, and not all irrigators were happy with this approach. The low elevation at Bear Lake occurred on November 1, with Bear Lake bottoming out at 5905.4. Burton indicated that as of April 14, Bear Lake was at an elevation of 5906.85 and the lake was on its way up.

Burton distributed a number of graphs illustrating Bear River snowpack water content, Bear Lake elevation, and Bear Lake net runoff vs. irrigation demand (Appendix F). The first graph compared the snowpack water content in the upper Bear River in the 1992 and 1993 water years with the 30-year average. During the November to April period, it was noted that 1993 snowpack water content was greater in each month than in the 1992 water year, excepting December. Further, from February through April of 1993, the snowpack water content was above the 30-year average.

The second graph comparing lower Bear River snowpack water content for the same period showed similar values. Again, the 1993 snowpack water content was considerably higher than 1992 levels and at or above the 30-year average.

The third graph was a comparison of Bear Lake elevation for the 1992 and 1993 water years. Burton indicated the 1993 data for May through July was based on computer predictions. He further pointed out that of the 5-foot decrease in elevation from May to November of 1992, 2 feet resulted from evaporation and 3 feet from releases.

Burton indicated that Bear Lake was projected to peak at an elevation of 5910.6 feet. PacifiCorp anticipated starting releases in mid to late June. At the end of the irrigation season, Burton indicated that Bear Lake was forecasted to be at 5907.5 feet.

Burton's final handout was an envelope curve showing Bear Lake net runoff vs. irrigation demand from 1922 to 1992. Burton noted that 100,000 to 110,000 acre-feet was needed to meet irrigation demands. Average net runoff was somewhere around 300,000 acre-feet. However, during 1992, Bear Lake experienced a negative net runoff, while irrigation releases exceeded 200,000 acre-feet.

Burton reminded the Commission that PacifiCorp had filed for a dredging permit in Bear Lake. However, as a number of agencies and individuals expressed concern, they had determined to hold a public hearing in Idaho. Burton indicated that PacifiCorp had yet to receive approval on its dredging permit. PacifiCorp would delay making a decision on dredging until after the 1993 irrigation season.

Burton reported that PacifiCorp had contacted all of the irrigators with contracts with the company in the Bear River basin to advise them that their 1993 allocations would be the same as 1992, less the amount of 1993 water they chose to use in 1992. Jeff Fassett expressed interest in that correspondence and asked that Burton send a copy to Engineer-Manager Barnett for distribution to the Commission.

Burton indicated that PacifiCorp had expressed some concern with respect to Utah's and Idaho's accounting methods with regards to storage water in Bear Lake. There was a 40 to 50 percent discrepancy between the two states. He indicated that PacifiCorp would like to see Utah and Idaho agree upon a single model.

Burton reported that 1992 runoff into Bear Lake was forecasted to be 40 to 50 percent of normal, which would have resulted in about 120,000 to 130,000 acre-feet of runoff. However, actual runoff was only 16,000 acre-feet. He was happy to report that already in 1993, March to April runoff was 29,000 acre-feet.

Vice Chairman Myers asked Blair Francis to give the Records Committee Report. Francis reminded the Commission that the Records Committee was in the process of putting together the

Seventh Biennial Report of the Bear River Commission. The organization of that report called for an introductory "background" section which would include each state's highlights of activities during the 1991-1992 biennium. That background section would be followed by a chapter containing a summary of events in the 1991 water year. The third section would be a chapter discussing events in the 1992 water year. It was anticipated that the Biennial Report would be out in June. Francis indicated that should anyone desire information on diversions in the lower portion of the river in advance of that printing, Engineer-Manager Barnett could make that data available upon request.

With respect to the printing of base maps, Francis reported that as Secretary-Treasurer Anderson had mentioned, some errors were detected in a few of the quadrangles, which required the expenditure of an additional \$432 to make those corrections.

Francis indicated that the Records Committee was getting closer to putting the Commission-Approved Procedures in final form. The Technical Advisory Committee (TAC) had devoted considerable time and effort in their April 13, 1993, meeting to fine-tuning the procedures. Francis indicated the TAC still needed to iron out a procedure for handling evaporations from reservoirs, but they hoped to have a document ready for the Commission's review in advance of the November 1993 Commission meeting.

Francis reported on the Records Committee's efforts to locate and preserve minutes for all of the Bear River Commission meetings since its inception. Francis reminded Commission members that Ed Skeen believed he had a complete set of original minutes from all of the Bear River Commission meetings which he could give the Commission. As it turned out, however, the documents in Skeen's possession were actually created prior to the formation of the Bear River Commission. Francis indicated that Wally Jibson may still have some minutes in his basement, and Jibson had already given Engineer-Manager Barnett several boxes containing minutes dating back to as early as 1943, perhaps to the present. Francis indicated the Records Committee would continue to work with Barnett and Jibson to locate a complete set of minutes. Francis also reminded the Commission that once those minutes were compiled, Bob Morgan had volunteered to perhaps let the Commission use a microfilm camera from the State Engineer's office to film a copy of the minutes.

Vice Chairman Myers asked Cal Funk to give the report of the Operations Committee. Funk indicated that with the precipitation this spring, it was anticipated that all of the small reservoirs on the Bear River would fill. He reminded Commission members that as Bear Lake was below 5911, Woodruff Narrows Reservoir was restricted by the Compact to a capacity of 28,612 acre-feet (35.58 on the gage). Funk felt that although the reservoir would come close to filling, they could regulate outflow in such a way that the reservoir would not exceed that storage restriction.

Funk indicated that with PacifiCorp restricting irrigators in 1993 to 85 percent of their 1992 allocations, irrigators downstream of Woodruff Narrows Reservoir would probably be glad to receive any storage that Woodruff Narrows Reservoir was required to release under the Compact. Last year the river had gone into emergency status at an early date, but Funk indicated that the Operations

Committee did not know when in 1993 diversions might start, as they could not predict when an emergency might exist.

Vice Chairman Myers asked Engineer-Manager Barnett to give the report of the Technical Advisory Committee. Barnett indicated that as stated by Francis, the TAC had completed a line-by-line edit of the Commission-Approved Procedures the preceding day. Barnett reported that Bob Hill had felt that he could come up with some better numbers for inclusion in one of the appendices. Mr. Hill is completing studies to refine his numbers, but the TAC felt they were not significant enough changes to be brought before the Commission. Also, Barnett indicated that the TAC needed to address the question of how to handle evaporations for all water surfaces in the Bear River basin. Once that issue was addressed, the procedures would be brought before the Commission for its approval.

With respect to future work efforts, Barnett reminded Commission members that under Compact provisions, the Compact is to be reviewed at least once every 20 years. The TAC was doing some advance thinking in anticipation of making that review in the next 4 or 5 years. Further, the TAC was continuing to look at the issue of treating Mud Lake as a part of Bear Lake. In addition, in connection with the preparation of the Biennial Report, the TAC was given the assignment of coming up with a photograph for the cover. Barnett indicated that the TAC would hold its next meeting sometime this summer.

Barnett reported that the Bureau of Reclamation, under its new start program, had funds available to allow them to participate in about six different studies in the Bear River basin. Two new start projects—one dealing with water quality and one with water quantity—were ongoing. In addition, Reclamation has a technical assistance project with the Utah Division of Wildlife Resources to map the littoral zone of Bear Lake. Further, there are two drought relief projects, one which would enhance opportunities at the Bear River Bird Refuge.

With respect to stream gaging, Barnett reported that some gaging stations are going to be operated by PacifiCorp rather than by the USGS. This would apply to the gages around Lifton, for example. Barnett indicated that the automated gage at Woodruff had proved very helpful during the 1992 irrigation season, as it had assisted him in being able to tell the Woodruff Narrows Irrigation Company their required releases to pass through the reservoir's natural flows. Barnett also reported that Evanston City had agreed to cover half of the cost of the Sulphur Creek gage, so the Commission would have that gage's data available to them during the irrigation season.

Higginson indicated that with respect to the requirement that the Compact be reviewed every 20 years, he felt the TAC should be somewhat limited in their assignment. He believed it was Commission members' responsibility to make policy changes in the Compact; the TAC should primarily focus on technical items rather than revisions to the entire document.

Larry Anderson indicated that he believed it would be helpful if Engineer-Manager Barnett could advise the Commission on a regular basis (every other week) as to the level of Bear Lake, the

flow at Rainbow Inlet Canal, and water quantity information. Barnett indicated he would prepare such a memo every week to ten days.

Vice Chairman Myers asked Management Committee members to report on current activities in their respective states, starting with Keith Higginson. Higginson reported that in Idaho, they were trying to establish a protected lake level in Bear Lake. Under the Idaho Department of Water Resource Board, Higginson indicated the Board had authority to preserve streams for fish and wildlife benefits, etc. Higginson indicated the Board can also, in the process of protecting their water rights, establish protected lake levels. The Board was moving ahead to investigate their options.

Higginson indicated that the issue of a protected lake level was raised in connection with Bear Lake's low level and PacifiCorp's petition for a dredging permit. Idaho was concerned with PacifiCorp's channel potentially drawing down the lake to 5902 or even 5895 feet. Meetings were held with the Idaho State Legislature concerning the water board's authority to appropriate lake levels. The board determined that they would proceed to make the application. Higginson indicated the board will hold a public information meeting in the area (perhaps in July at Montpelier or Paris) to get comments or support to forward the application. Based on the outcome, procedures will be developed. Idaho felt the action was necessary to protect the level of Bear Lake, and hence they are proceeding.

On another item, Higginson reported that, for its first year, Idaho had been put under a moratorium with respect to new uses of water in the state. They were in the process of reviewing the moratorium. Higginson felt that although the moratorium may be revised, restrictions would not be entirely lifted.

Jeff Fassett asked what water right established that PacifiCorp could pump the lake down to 5902. Burton responded that the 5902 level related to the rights the power company holds for diversion of water as set forth in the Deitrich Decree, and the past history and usage of the pumps. The top of the intake is at 5902. If the lake level drops below 5902, the water is below the pumps, so they cannot operate. Fassett requested that Higginson send him a copy of Idaho's application to protect Bear Lake's level when it is filed. He also expressed an interest in receiving information on Idaho's legislation with respect to the protection of instream flows and minimum lake levels.

Fassett reported on Wyoming's activities with respect to the Bear River. He indicated that Wyoming was currently in the process of adjudicating the enlargement of Woodruff Narrows. He also indicated that with respect to the Cokeville Meadows Wildlife Refuge, the Fish and Wildlife Service was moving ahead to seek funding and purchase land within the designated refuge area.

Larry Anderson indicated that the State of Utah was still pursuing development of the Bear River through the Bear River Task Force. The Utah State Legislature had appropriated \$2 million for studies in the Bear River. Utah was continuing its investigations into potentially raising Hyrum Dam and reviewing water quality data. Further, the Task Force was moving towards completion of the

water quality management plan. Anderson indicated these three efforts would make use of the \$2 million appropriation.

Anderson indicated that at Hyrum Dam, they had contracted with the Bureau of Reclamation to conduct some geotechnical research. That research involved drilling 10 to 15 holes around the reservoir basin. Some landslides had occurred in the past around the bank of the current reservoir.

Anderson congratulated the organizers and participants in the Bear River Water Quality Symposium held in early April in Logan, Utah, on a very successful seminar. Anderson indicated that the seminar addressed a variety of water quantity and water quality issues. The speakers were very good, and some 190 people were in attendance, including 7 or 8 from EPA Denver.

As a final item, Anderson indicated he had run across a poem written by Orval Anderson, who retired from Utah Power and Light in 1976. The poem is entitled the "Old Bear River," and is attached to these minutes as Appendix G.

Vice Chairman Myers asked if there were any additional items that needed to be brought before the Commission. Bob Morgan mentioned that the Bear River Bird Refuge had filed for a number of water rights on the Bear River. He indicated that the Bear River was being adjudicated in the State of Utah. Keith Higginson requested a copy of the filing, and Barnett indicated he had a copy he would distribute to Commission members.

The Commission determined to hold its next Commission meeting on November 23, with pre-commission meetings on November 22. The meetings would be in Salt Lake City at the Utah Department of Natural Resources Building. The Commission meeting adjourned at 3:00 p.m.

hsm

## AGENDA

Bear River Commission Annual Meeting  
April 14, 1993

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

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### PRE-COMMISSION MEETINGS

#### April 13

9:00 a.m.                      Technical Advisory Committee meeting                      Barnett

#### April 14

8:00 a.m.                      Records Committee meeting                      Francis

10:00 a.m.                      Operations Committee meeting                      Funk

11:30 a.m.                      Informal meeting--agenda overview  
in advance of state caucuses                      Barnett

11:45 a.m.                      State caucuses                      Higginson/Fassett/Anderson

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### ANNUAL COMMISSION MEETING

April 14, 1993

**Convene Meeting:** 1:30 p.m., Vice Chairman Wes Myers

- I.      Call to order                      Myers
  - A.      Welcome and overview of meeting
  - B.      Approval of agenda
  - C.      Introductions
  
- II.     Approval of minutes of last Commission meeting (November 24, 1992)                      Myers
  
- III.    Report of Chairman                      Myers
  - A.      Election of officers

- |       |   |                            |
|-------|---|----------------------------|
| IV.   | Report of Secretary-Treasurer   | Anderson                   |
|       | A. Budget   |                            |
|       | B. Assessments  |                            |
|       | C. Contract with Barnett  |                            |
| V.    | Snowpack and streamflow forecasts<br>and 1993 outlook                       | Julander                   |
| VI.   | Bear Lake levels and 1993 operations  | Burton                     |
| VII.  | Report of the Records Committee   | Francis                    |
|       | A. Biennial Reports   |                            |
|       | B. Printing of base maps  |                            |
|       | C. Commission-Approved Procedures   |                            |
|       | D. Other items  |                            |
| VIII. | Report of the Operations Committee  | Funk                       |
|       | A. Woodruff storage   |                            |
|       | B. Other reservoirs   |                            |
|       | C. Declaration of water emergencies   |                            |
|       | D. Other items  |                            |
| IX.   | Report of the Technical Advisory Committee                                  | Barnett                    |
|       | A. Items proposed for future work efforts                                   |                            |
|       | B. Other items  |                            |
|       | C. Assignments from the Commission  |                            |
| X.    | Items from the Management Committee   | Higginson/Fassett/Anderson |
| XI.   | Other items from Commission members   | Myers                      |
| XII.  | Next Commission meeting   |                            |
|       | A. Date: November 22, 1993 (Regular<br>Meeting - fourth Monday of November) |                            |
|       | B. Location   |                            |

**Anticipated adjournment: 4:00 p.m.**

**ATTENDANCE ROSTER**

**BEAR RIVER COMMISSION  
ANNUAL MEETING  
Salt Lake City, Utah  
April 14, 1993**

**IDAHO COMMISSIONERS**

R. Keith Higginson  
Rodney Wallentine  
Floyd Jensen

**UTAH COMMISSIONERS**

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

**WYOMING COMMISSIONERS**

Gordon W. Fassett  
J. W. Myers

**ENGINEER-MANAGER & STAFF**

Jack A. Barnett  
Don A. Barnett  
Heidi S. Marciniak

**OTHERS IN ATTENDANCE**

**IDAHO**

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

**UTAH**

Robert M. Fotheringham, Division of Water Rights  
Norman Stauffer, Division of Water Resources  
Robert L. Morgan, State Engineer, Division of Water Rights  
Bert Page, Division of Water Resources  
Dean Stuart, Water User

**WYOMING**

Sue Lowry, State Engineer's Office  
John Yarbrough, State Engineer's Office  
Kevin Wilde, River Commissioner  
Lisa L. H. Johnson, State Engineer's Office  
Jade Henderson, State Engineer's Office  
Marvin Bollschweiler, Retired Hydrographer

**OTHERS**

Carly Burton, PacifiCorp  
Randy Julander, Soil Conservation Service  
Jody Williams, PacifiCorp  
Craig H. Thomas, Bear Lake Regional Commission  
Larry Herbert, U.S. Geological Survey  
Mike ReMillard, U.S. Geological Survey

BEAR RIVER COMMISSION

STATEMENT OF INCOME AND EXPENDITURES

FOR THE PERIOD OF JULY 1, 1992 TO JUNE 30, 1993

INCOME	CASH ON HAND	INTEREST INCOME	FROM STATES	TOTAL REVENUE
Cash Balance 07-31-92	\$66,359.00			\$66,359.00
State of Idaho			\$30,000.00	30,000.00
State of Utah			30,000.00	30,000.00
State of Wyoming			30,000.00	30,000.00
Interest of Savings and other income		\$2,685.89		2,685.89
<b>TOTAL INCOME TO April 1, 1993</b>	<b>\$66,359.00</b>	<b>\$2,685.89</b>	<b>\$90,000.00</b>	<b>\$159,044.89</b>

DEDUCT OPERATING EXPENSES

EXPENDED THROUGH U. S. G. S.

	APPROVED BUDGET	UNEXPENDED BALANCE	EXPENDITURES TO DATE
Stream Gaging	\$53,225.00	(\$5.00)	\$53,230.00
<b>SUBTOTAL</b>	<b>\$53,225.00</b>	<b>(\$5.00)</b>	<b>\$53,230.00</b>

EXPENDED THROUGH COMMISSION

Personal Services	Jack	\$30,765.00	7977.40	\$22,787.60
Travel (Eng-Mgr)		1,100.00	842.66	257.34
Office Expenses		1,300.00	590.97	709.03
Printing Biennial Report		0.00	0.00	0.00
Treasurer Bond & Audit		980.00	5.00	975.00
Printing		250.00	66.00	184.00
Legal Retainer		500.00	500.00	0.00
Special Studies				
1976 Depletion Study		14,859.00	26.00	14,833.00
Reprinting Base Maps		4,000.00	1,221.60	2,778.40
<b>SUBTOTAL</b>		<b>\$53,754.00</b>	<b>\$11,229.63</b>	<b>\$42,524.37</b>

<b>TOTAL</b>		<b>\$106,979.00</b>	<b>\$11,224.63</b>	<b>\$95,754.37</b>
<b>CASH BALANCE AS OF 4-1-93</b>				<b>\$63,290.52</b>

BEAR RIVER COMMISSION  
DETAILS OF EXPENDITURES

FOR PERIOD ENDING APRIL 1, 1993

294	JACK BARNETT	\$2,286.26
295	ALPHAGRAPHS	\$27.23
296	STATE OF WYOMING	\$14,833.00
297	JACK BARNETT	\$2,286.26
298	GEO/GRAPHS	\$1,500.00
299	ALPHAGRAPHS	\$7.20
300	JACK BARNETT	\$2,454.81
301	JACK BARNETT	\$2,315.98
302	U S G S	\$53,230.00
303	GILCHRIST, SADLER, HARDEN, CPAS	\$875.00
304	VOID	0.00
305	JACK BARNETT	2,397.55
306	JACK BARNETT	2,309.05
307	ALPHAGRAPHS	112.48
308	JACK BARNETT	2,534.48
309	ALPHAGRAPHS	71.52
310	JACK BARNETT	2,416.41
311	JACK BARNETT	2,354.54
312	STATE OF IDAHO	1,278.40
313	FIRST SECURITY INSURANCE	100.00
314	JACK BARNETT	2,364.20
	TOTAL EXPENSE	\$95,754.37

BANK RECONCILIATION

Cash in Bank per Statement 4-1-93	\$4,217.59
Plus: Intransit Deposits	0.00
Less: Outstanding Checks	2,364.20
Total Cash in Bank	\$1,853.39
Plus: Savings Account-Utah State Treasurer	61,437.13
TOTAL CASH IN SAVINGS AND IN CHECKING ACCOUNT	\$63,290.52

## BEAR RIVER COMMISSION

## EXPENDITURE FORECAST THRU FY 93 &amp; PROPOSED FY 94 AND FY 95 BUDGET

DESCRIPTION	FY 93 EST'D JUNE 30	FY 94 BUDGET MODIFIED	FY 95 PROPOSED	FY 96 PROPOSED
INCOME				
BEGINNING BALANCE	\$66,359.00	\$52,474.00	\$67,504.00	\$80,714.00
IDAHO	30,000.00	30,000.00	30,000.00	30,000.00
UTAH	30,000.00	30,000.00	30,000.00	30,000.00
WYOMING	30,000.00	30,000.00	30,000.00	30,000.00
INTEREST ON SAVINGS	3,100.00	3,000.00	3,200.00	3,400.00
TOTAL INCOME	\$159,459.00	\$145,474.00	\$160,704.00	\$174,114.00
EXPENDITURES				
STREAM GAGING-U.S.G.S.	\$53,230.00	\$40,850.00	\$42,900.00	\$45,000.00
PERSONAL SERVICES CONTRACT-BARNETT	30,765.00	31,690.00	32,650.00	33,650.00
TRAVEL	600.00	700.00	800.00	900.00
OFFICE EXPENSES	900.00	1,000.00	1,000.00	1,100.00
PRINTING BIENNIAL REPORT	500.00	2,000.00	900.00	1,600.00
TREASURER'S BOND & AUDIT	975.00	980.00	990.00	1,000.00
PRINTING	250.00	250.00	250.00	250.00
LEGAL CONSULTANT	500.00	500.00	500.00	500.00
SPECIAL STUDIES				
1976 DEPLETION STUDY	14,833.00	0.00	0.00	0.00
REPRINTING BASE MAPS	4,432.00	0.00	0.00	0.00
TOTAL EXPENDITURES	\$106,985.00	\$77,970.00	\$79,990.00	\$84,000.00
UNEXPENDED CASH BALANCE	\$52,474.00	\$67,504.00	\$80,714.00	\$90,114.00

1. Reprinting base maps has been increased by \$432 to cover the cost of correcting minor errors on 3 maps and making 72 copies.

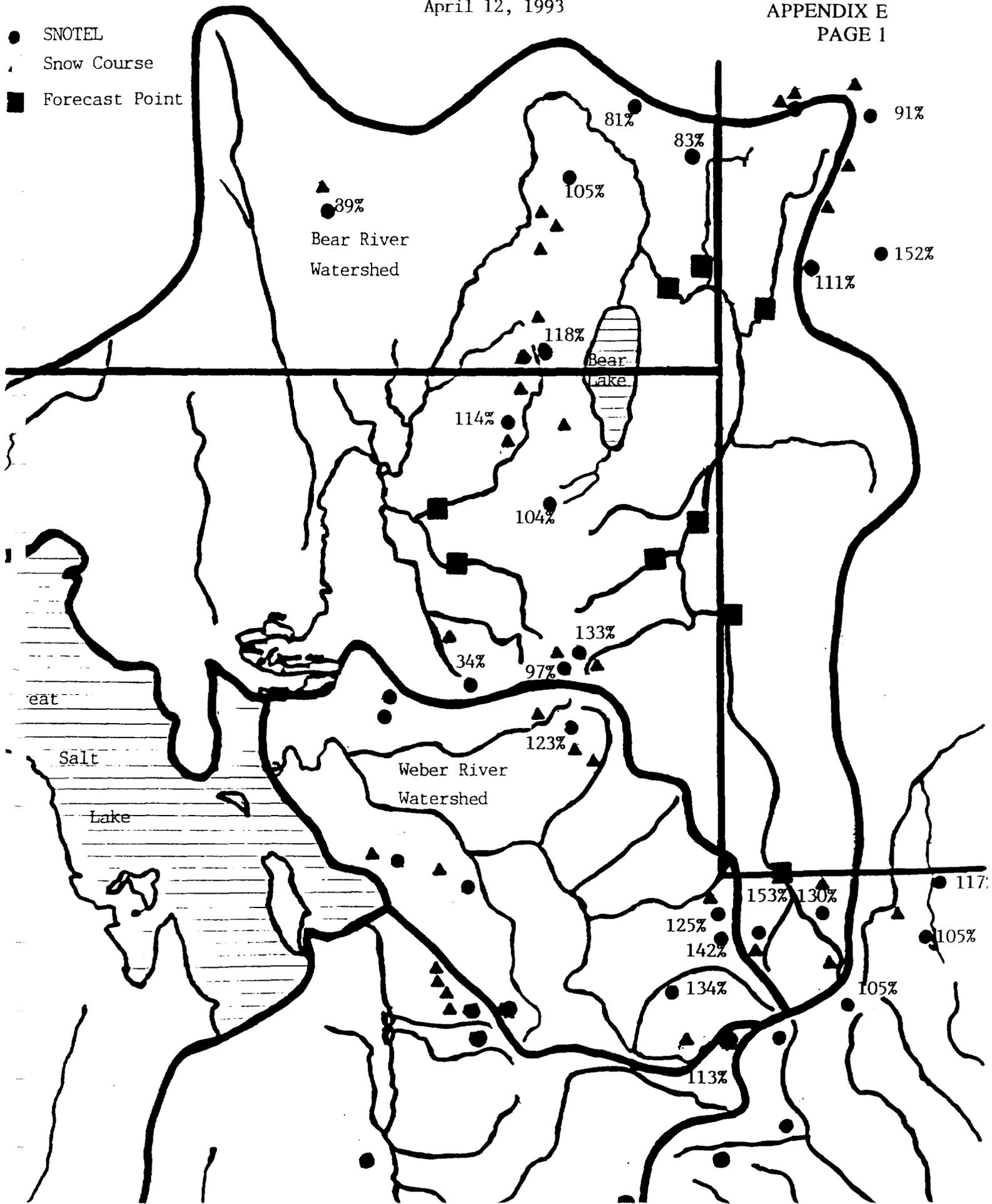
Bear River Watershed Snowpack  
 April 12, 1993

116% 4/12

100% 4/1

APPENDIX E  
 PAGE 1

- SNOTEL
- ▲ Snow Course
- Forecast Point

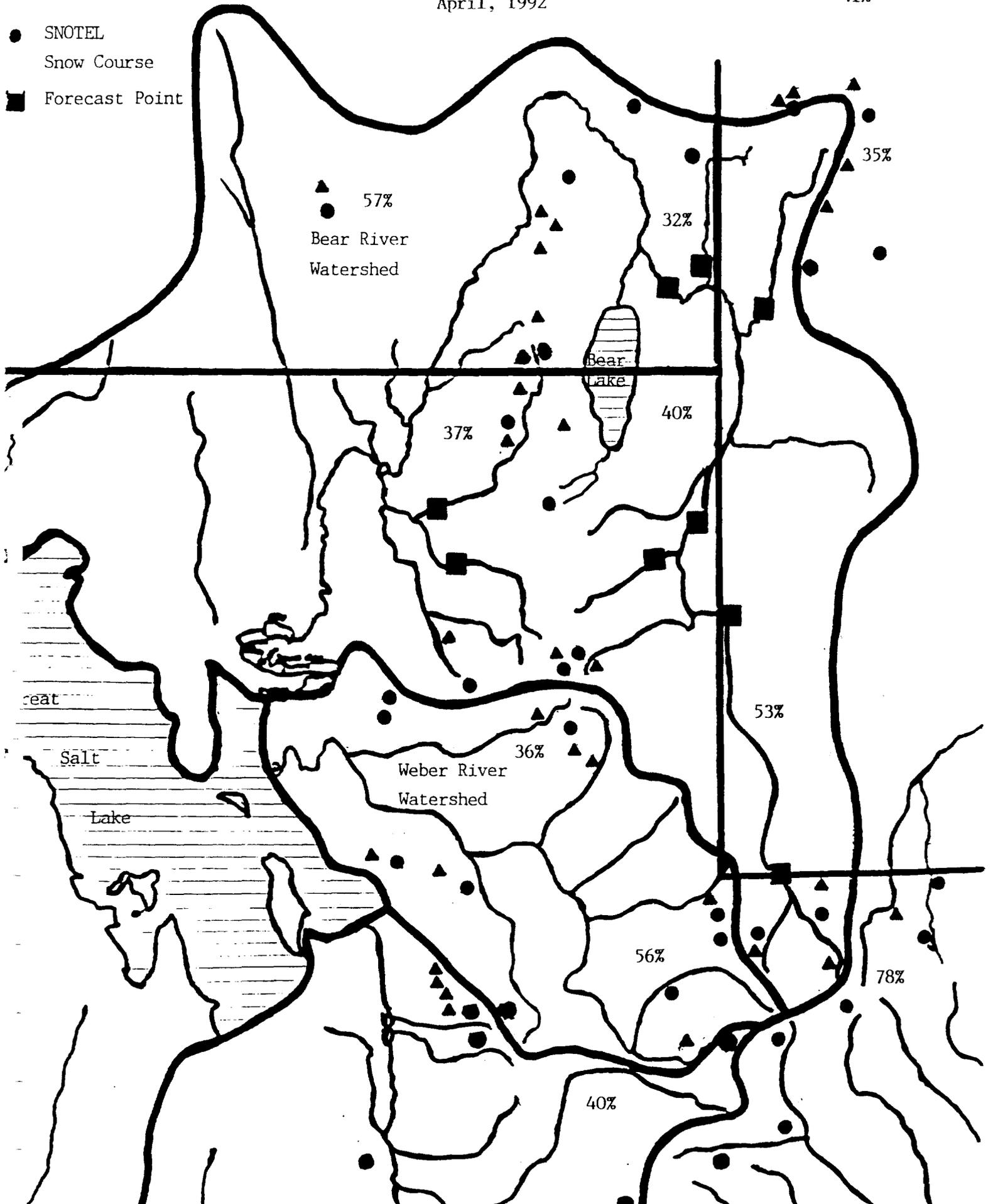


Bear River Watershed Snowpack

April, 1992

41%

- SNOTEL
- Snow Course
- Forecast Point



SNOWPACK CHANGE BY ELEVATION  
MARCH 1 TO APRIL 1, 1993

BEAR RIVER BASIN

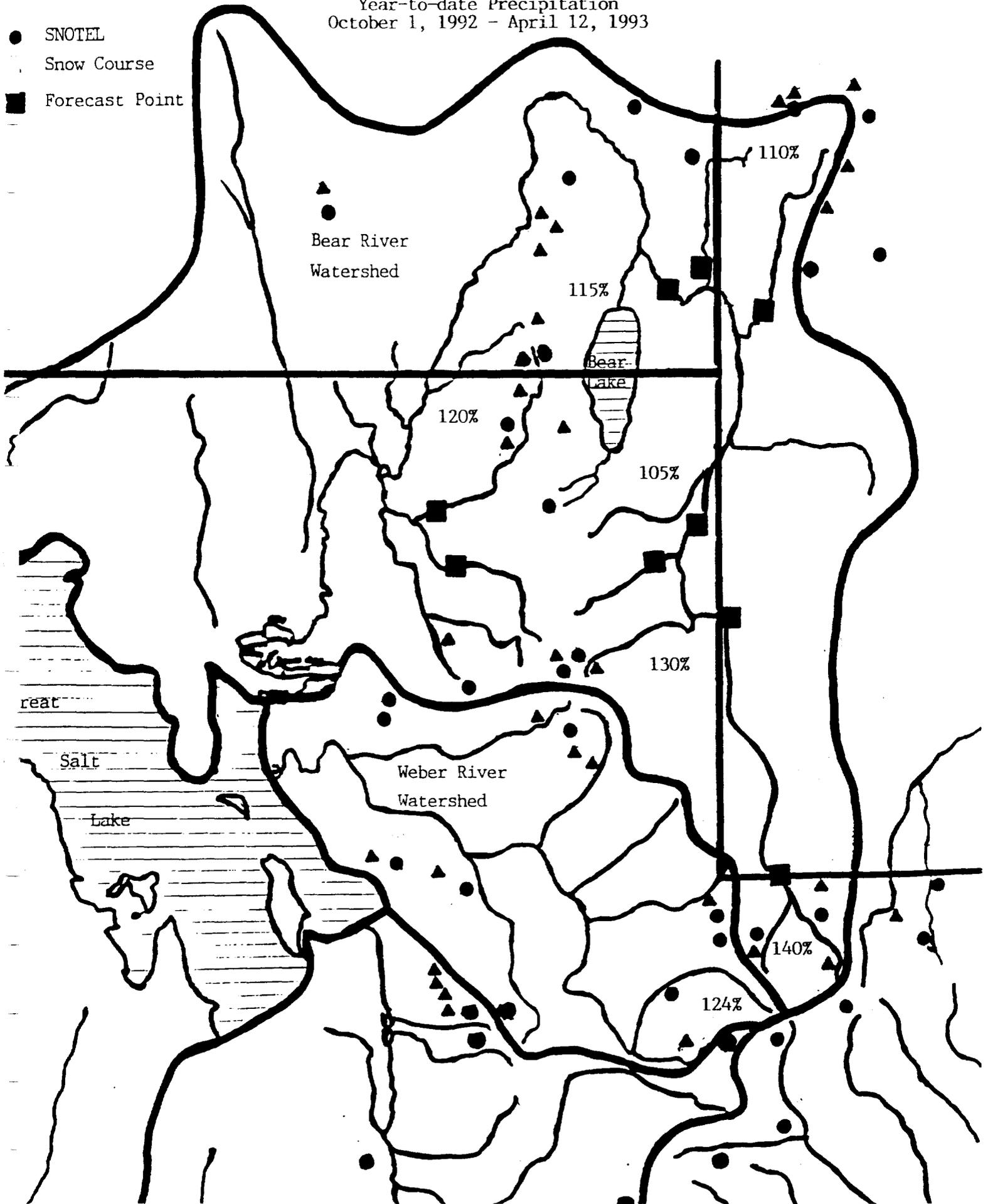
ELEVATION	CHANGE (INCHES)	CHANGE %
>9000	+2.9	-4%
8000-9000	+6.1	-6%
7000-8000	+3.1	-4%
6000-7000	-5.8	-42%

APRIL 1 TO APRIL 12, 1993

>9000	+3.9	+26%
8000-9000	+4.5	+17%
7000-8000	+1.6	+12%
6000-7000	-2.8	-13%

Bear River Watershed  
Year-to-date Precipitation  
October 1, 1992 - April 12, 1993

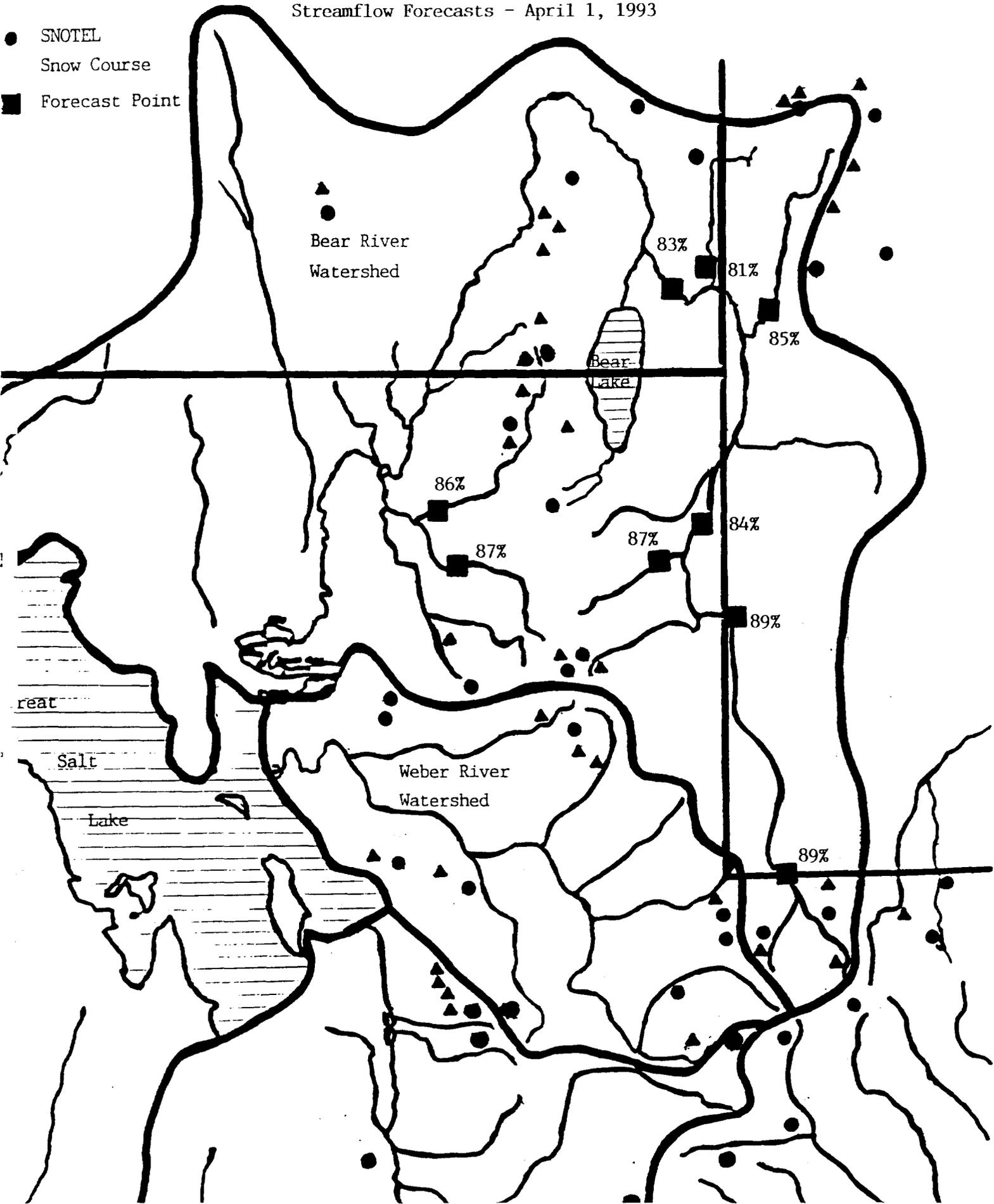
- SNOTEL
- ▲ Snow Course
- Forecast Point



Bear River Watershed

Streamflow Forecasts - April 1, 1993

- SNOTEL
- Snow Course
- Forecast Point



1992 STREAMFLOW SUMMARY

BEAR RIVER BASIN

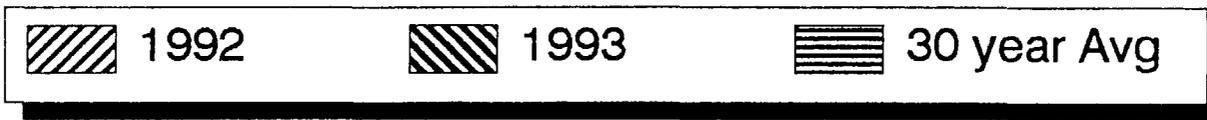
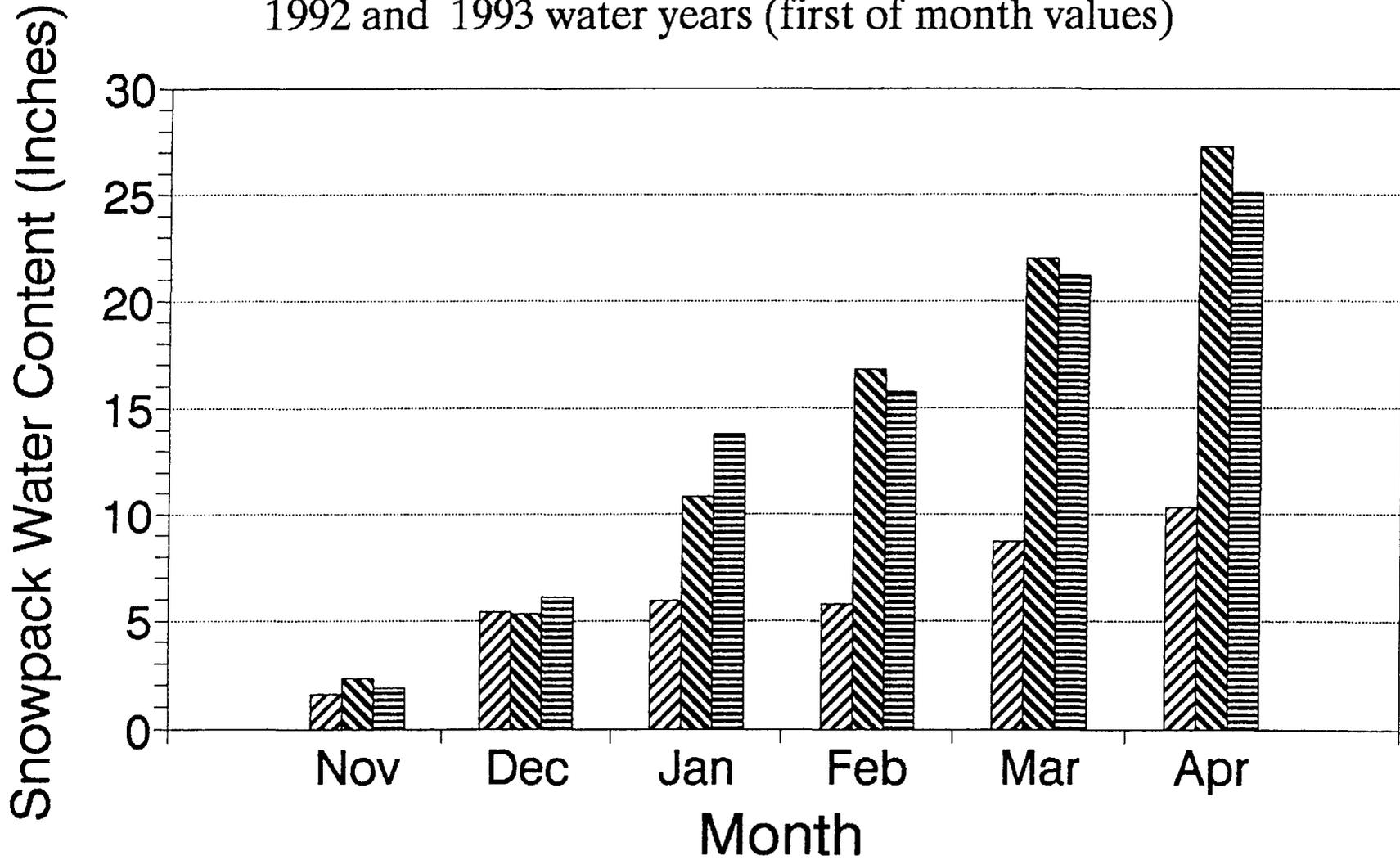
STATION	APRIL-JULY OBSERVED FLOW PERCENT OF AVERAGE
-----	
STATELINE	51%
WOODRUFF NARROWS	32%
SMITHS FORK	43%
THOMAS FORK	19%
HYRUM INFLOW	08%
LOGAN, LOGAN	45%
BLACKSMITHS FORK	24%

RESERVOIR STATUS, APRIL 1, 1993

RESERVOIR	% CAPACITY	1000 A-F TO FILL	FCST	+ FILL
BEAR LAKE	19%	1148	132	-1116
HYRUM	99%	0.2	43	42.8
WOODRUFF NARROWS	44%	31.5	132	101.5
PORCUPINE	71%	3.3		

# Comparison of Snowpack Water Content For Upper Bear River (Trial Lake)

1992 and 1993 water years (first of month values)

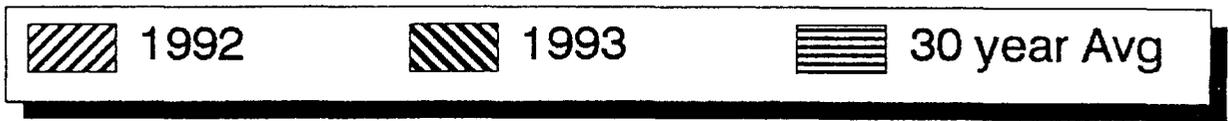
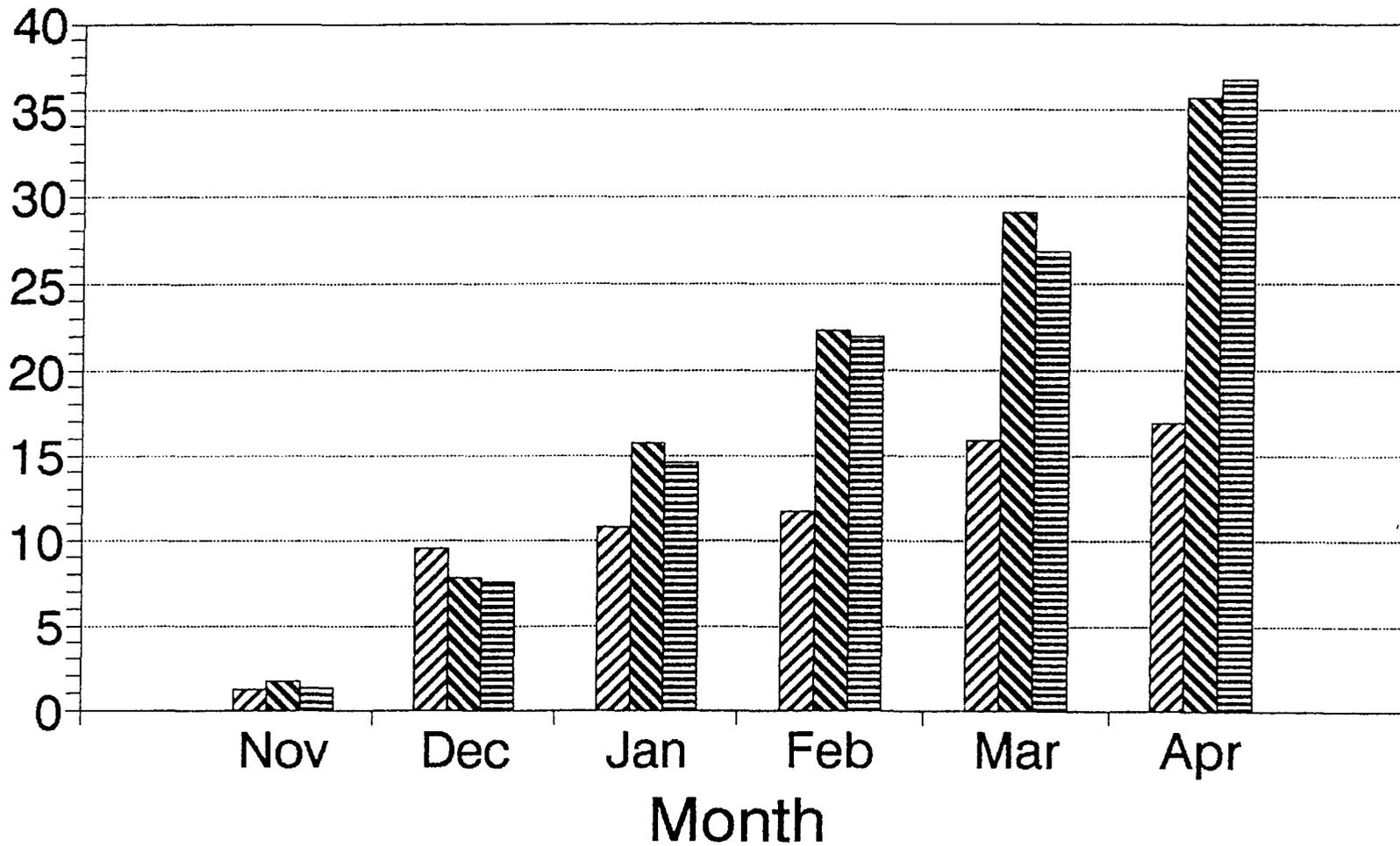


# Comparison of Snowpack Water Content

For Lower Bear River (Tony Grove)

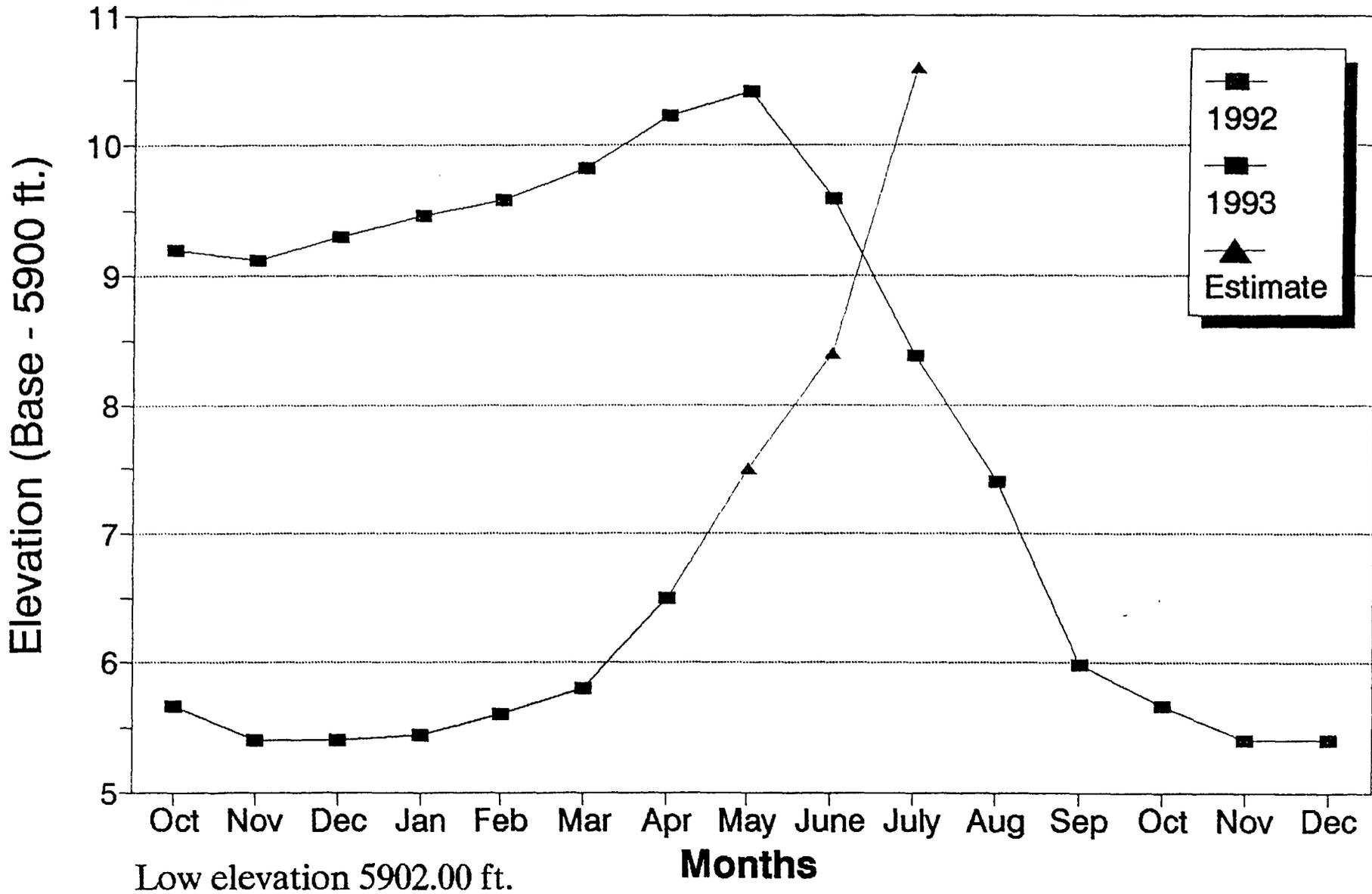
1992 and 1993 water years (first of month values)

Snowpack Water Content (Inches)



# Comparison of Bear Lake Elevation For 1992 and 1993 Water Years

Full elevation 5923.65 ft.



# ENVELOPE CURVE

## BEAR LAKE NET RUNOFF VS IRRIGATION DEMAND

### PERIOD OF RECORD 1922-1992

IRRIGATION RELEASE (1000'S OF AC. FT.)

400  
300  
200  
100

-200 -100 0 100 200 300 400 500 600 700 800 900 1,000

BEAR LAKE NET RUNOFF (1000'S OF AC. FT.)

1988  
1934  
1977  
1961  
1931  
1992  
1990

1981

**OLD BEAR RIVER**

(by Orval Anderson - 1973)

For a million years with a bound and leap,  
it cut the canyons wide and deep.  
Or valleys high it had to make  
its winding way to Great Salt Lake.  
The people read by candle light;  
not thinking that some day there might,  
be power plants along the stream  
to give them light so bright and clean.

With man and beast the work did start,  
and then machinery became a part.  
Not 1 not 2 not 3 but 4, and then  
a pumping plant for more.  
The men were proud to be a part,  
when Utah Power got its start.

The camps were green with scrub and lawn  
and then automation came along.  
The forces dwindled from teens to tens,  
a lot of jobs won't be again.  
Sometimes it makes your old heart quiver  
to see what's happening to the **OLD BEAR RIVER.**

(Orval Anderson worked for UP&L for 35 years.  
At the time of his retirement in 1976 he was  
the 1st Operator at the Oneida Station.)