BEAR RIVER COMMISSION

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MINUTES

BEAR RIVER COMMISSION
ANNUAL MEETING

Utah Power Salt Lake Service Center
Salt Lake City, Utah
April 16, 1996

The annual meeting of the Bear River Commission was called to order by Chair Denice Wheeler at 1:30 p.m. on April 16, 1996 at the Utah Power Salt Lake Service Center in Salt Lake City, Utah. Chair Wheeler welcomed everyone to the Commission meeting and asked those in attendance to introduce themselves. A copy of the attendance roster is attached as Appendix A.

Chair Wheeler presented the agenda for the meeting. The agenda was approved without change and is attached as Appendix B. The Commission then considered the proposed minutes from the Regular Meeting held on November 28, 1995 in Salt Lake City. The minutes were approved without change. Wheeler then moved to agenda item III, the election of officers. Nominations were accepted for the Vice Chairman. Don Gilbert from Idaho was nominated as Vice Chairman. Wheeler informed the audience that the Commission generally rotates the Vice Chairman position through the states and it is Idaho's time for nomination. There were no other nominations from the Commission. There was a motion that Don Gilbert be the Vice Chairman of the Bear River Commission and the motion was carried and seconded. Nominations were then accepted for Secretary/Treasurer. It was moved and seconded that Larry Anderson continue in this position.

Chair Wheeler moved to agenda item IV and asked Jack Barnett to make an introduction. Barnett introduced Kimball Goddard, the new Utah District Chief for the U.S. Geological Survey. Mr. Goddard replaces Lee Case and is a geologist. He studied at Penn State University and has had experience with the USGS in South Dakota, Colorado, Arizona and Idaho. The time was then turned to Kimball Goddard and Jim Kolva for the USGS presentation. Jim Kolva passed out a handout regarding the proposed 1997

stream gaging program for the Bear River Commission and the USGS. A copy of the handout is attached as Appendix C. There are 13 gaging stations, 3 of which are partial record gaging stations. There is also support for three Data Collection Platforms (DCP's) for real time data. The cost share is 50-50. The partial record stations are: 1) Bear River below Pixley Dam, which is a 6-month station (during irrigation season); 2) Bear River below Smith's Fork (run for 8 months); and 3) Bear River at Border (run for 8 months). The hydrographs for Smith's Fork and Border are comparable. The Border station is very difficult to get a good winter record and the Smith's Fork is very difficult to get a good summer record, so the two are combined to obtain a good record for that section of the Bear River. The DCP's are supported at Bear River above the reservoir near Woodruff, Bear River at Border and Bear River at the Idaho-Utah state line.

Kolva then asked for questions. Jeff Fassett asked about the fairly substantial increase in cost. Kolva indicated that the costs are increasing due to inflation, the need to upgrade cable ways and instrumentation, OSHA requirements and safety concerns. Nationwide, the USGS has discussed the need to have 2 people on field trips instead of one. There is new data availability such as on the INTERNET which adds a cost. Generally, due to cut-backs in state and federal budgets, there is a loss of gaging stations and the cost of the remaining stations goes up. An additional reason for cost increase is that the USGS is now managing stations for real time data. There are additional field trips, etc. Cal Funk asked that if the gages on Smith's Fork and Border are combined, are they viewed as a single gage cost. Kolva indicated that they needed to be run at least 8 months to get the month overlap on each side. There would not be any comparison if they were run just 6 months.

Karl Dreher corrected one statement that Kolva made regarding cut-backs in state budgets. It isn't the cut-backs in state budgets that have resulted in dropping in gaging stations. It has been the increases in the USGS costs. In the State of Idaho, the government agencies are being asked to do the same things that USGS is but they are not being given any more money to do it. The only choice that the states have is to cut gaging stations or look at other alternatives to have the measurements taken. Kolva indicated that the USGS absorbs some of the cost. Dreher pointed out that the costs are about 11% higher than last year. Kolva indicated that that was correct. Kolva also pointed out that the costs in the Utah district are still the lowest in the western United States.

Jeff Fassett proposed that the Engineer-Manager, working through the Technical Advisory Committee, re-ignite the efforts to evaluate the options. The Commission may have to continue to drop gaging stations. Larry Anderson raised the issue of signing the USGS contract sooner. Kolva indicated that the Inspector General of the Department of the Interior has required that the USGS have a signed agreement before any work is done. The next meeting of the Commission is not until November. The fiscal year for the USGS starts in October so the USGS does need a signed joint funding agreement before October. Kolva indicated that the agreement must be signed before October 1. Anderson pointed out that the assignment will be given to the TAC to look at the gages. Today the Commission has a cost of $50,900 that would be in the contract. If the TAC decides to drop gages, the contract amount could be less.

Chair Wheeler then moved to agenda item V and requested a report from the Secretary/Treasurer, Larry Anderson. Anderson asked that Bert Page give a report on the Statement of Income and Expenditures. Page passed out handouts which are attached as Appendix D. As of April 1, 1996, the cash balance carried forward is $75,335.53. The states have all met their assessments. The interest on savings is $3,002.93 and the City of Evanston has paid $1800 towards their gage. The Commission paid the stream gaging bill of $46,320 to the USGS. The Engineer-Manager has been paid $28,650.64 to date for his contract. The total expenditure is $79,827.13, and the cash balance is $90,311.33. On page two of the handout is a listing of issued checks and the bank reconciliation. There were no questions for Bert Page.

Larry Anderson then discussed the expenditure projections for the remainder of FY 96. On Page One of Appendix D is shown the approved budget of $86,400. It was noted that the Secretary/Treasurer has tried to project ahead (see Page Three) as to what the Commission will possibly be spending by the end of June. Anderson felt that the Commission would probably exceed the budget by about $2,000. Most of the difference would be in the Personal Services Contract line-item for the Engineer-Manager. This is completely dependent on how much the Commission asks Jack to do. There are several extra meetings coming up and it is felt that Barnett will exceed his contract amount by about $2,000.

Anderson indicated that the issue has come up that the Commission has authorized the binding of some of the old historic documents. It was estimated that this binding would cost about $250. There is still about $300 left in the budget so there should be enough to cover this expense. Anderson then moved to the second column on Page Three and indicated that the Commission needs to approve the FY 97 budget. The budget has been modified slightly from what was originally approved last year. It should be noted that the Engineer-Manager contract has been increased by 4%. The State of Utah employees received a 3.9% increase in salary. Historically the Commission has tied any raises to the Engineer-Manager contract to whatever the State of Utah employees have received. Anderson also pointed out that six months ago the Commission authorized him to sign the contract with the USGS for the stream gaging. Anderson moved that the Commission approve the budget of $87,350. The motion was seconded and carried. Anderson indicated that the Secretary/Treasurer would need authorization from the Commission to sign the USGS contract for FY 98 for up to $50,900. He indicated that the TAC was going to review the gages and if the TAC recommends and the Management Committee agrees to drop some of the gages, the contract would be reduced proportionately. It was moved to approve the signing of the USGS contract with the stipulation that TAC negotiations might change the amount contracted for. Karl Dreher asked that the TAC identify any feasible alternative and circulate their findings prior to Larry Anderson signing the contract. The motion was seconded and carried.

Chair Wheeler then moved to agenda item VI, the Snow Survey report by Ray Wilson. Mr. Wilson passed out a handout of the snowpack information. This handout is attached as Appendix E. The first graph is a comparison of the percent of average snowpack on April 1 vs the current year. The year was running pretty close to average until January 15. There was then a two-week period where the percentage jumped 34%. Nearly 1/3 of the total water year's

normal snowpack was received in two weeks. Larry Anderson asked if Mr. Wilson was talking about the entire drainage or just Utah's portion of the Bear River Basin. Wilson indicated that the graph on Page One was only for Utah. Page Three of Wilson's handout is a map of the Basin which shows snowpack numbers. The number to the left is the April 1 percent of average, and the number on the right is the April 15 percent of average. It should be noted that most of the lower sites have gone down slightly. For instance, at Little Bear, the percentage has gone from 70% down to 14% in two weeks. At the upper end of the watershed, Hayden Fork, the percentage has gone from 139% to 199%. Page Four of the handout shows precipitation which includes snow and liquid rainfall for the water year. There are a few sites just slightly below average, but most of the sites are above average.

The reservoir storage is shown on Page Five of Appendix E. Porcupine, Hyrum, Woodruff Creek and Woodruff Narrows are all near capacity. Montpelier Creek is coming up, and Bear Lake is still less than half full but is 20% fuller than last year. Page Six shows the streamflow forecast. They are all either average or up to 30% above average. There are near average flows projected at Montpelier Creek and Thomas Fork. In the upper end there is 131% at Randolph, 131% at Woodruff and 130% at the State Line. On the Cache Valley streams, there is 109% on the Cub River, 125% on the Logan and 115% on Blacksmith's Fork. Pages Seven and Eight are the Bear River page out of the monthly Water Supply Outlook report. The snowpack graph on Page Seven shows the maximum on record, the minimum on record and the dashed line is the average snowpack for the entire Basin. The precipitation plot shows that there have been three months below average and three months above average, but the below average months have still been 90% or more of normal. Page Eight is the tabular form of all the charts and graphs. The middle column is the most likely forecast and then there are probabilities associated with the drier and wetter than normal conditions to the left and right.

Chair Wheeler indicated that the Commission had received a request from Reed Gardner and Craig Thomas that they have an opportunity to give a presentation on the Tri-State Water Quality effort at the Commission meeting. Prior to the meeting, the Commissioners received a packet with some of the information. Mr. Gardner introduced himself as the Chairman of the Western Wyoming RC&D. He is also the Co-Chair of the Bear River Water Quality Task Force. Gardner explained that RC&D was established in the late 1960's, and it is a vehicle for the grassroots approach for rural America to help themselves accomplish the tasks they have set forth. The sponsors are the County Commissioners, the Soil Conservation Districts and the cities and towns. The RC&D were asked in 1993 at the Bear River Symposium, which was held at Utah State University, if they would be the coordinating group to help with a water quality study on the Bear River Basin. When the RC&D started, there were three states, a number of counties and quite a few cities involved in the water quality effort on the Bear River Basin. Each of the three state governors were approached and they each agreed to give their support to the program. Since that time, there have been two new governors, one in Wyoming and one in Idaho. The process is moving along and the RC&D have accomplished many things.

The group feels that they can take care of their own problems without the help of the federal government. The people involved are not hydrologists or engineers but they feel they

can work together to find the people who can help them with the water quality. Mr. Gardner indicated that the key to success is cooperation and coordination. Everyone along the river has a responsibility to recognize water quality problems. However, if you have more people involved, you will have more problems. Through local direction and activities, the process can be moved along without the assistance of Washington or EPA.

Mr. Gardner then turned the time to Craig Thomas of the Bear Lake Regional Commission. Mr. Thomas indicated that the Bear River Basin Water Quality Task Force has 65 members. The packet given to the Commissioners includes a list of the members. The RC&D is heavily relied upon. There are two Co-Chairs, one from Caribou County and the other from Western Wyoming. The Bear Lake Regional Commission serves as Secretary to the Task Force. There has been a steering committee organized which is made up of members from the federal government (Bureau of Reclamation), industry (PacifiCorp), environment (Eulalie Langford, LOVE Bear Lake) and recreation. The three committees formed are: 1) the Technical Committee headed by a Utah Division of Water Quality representative; 2) the Planning and Development Committee, also headed by a Utah Division of Water Quality representative; and 3) the Information and Education Committee headed by the Bear Lake Regional Commission. Recently a grant was received to expand the efforts on information and education.

The Task Force mission statement is to establish a path and direction for cooperation and coordination of water quality work across all jurisdictions for the Bear River Basin. From the mission statement, there are two key goals: 1) to measurably improve the overall water quality and stream integrity of the Bear River and its tributaries (including lakes and reservoirs) and to support multiple beneficial uses and development; and 2) to develop and implement a coordinated tri-state basinwide water quality planning approach with strong local involvement and leadership. From these two goals there were established four objectives. The first three relate to public involvement. The fourth objective is to establish a coordinated data gathering system and assessment, including historical, current and future data needs. They also want to look across state lines at the water quality standards, at methodologies of collecting data.

Thomas then turned the time to Vince Lamarra with Ecosystem Research Institute in Logan. Mr. Lamarra has been a contractor to the Task Force through the Bureau of Reclamation. Mr. Lamarra passed out handouts which are attached as Appendix F. Lamarra indicated that the Task Force is in place to be a source of information for the Commission as it goes through the various processes in looking at the beneficial uses in the Bear River. The overall goal was to first develop, and then integrate into the decision making process, a comprehensive water quality data base. Having good, strong scientific information will help strengthen management decisions. To achieve their goals, several tasks have been developed. These tasks are listed on Page Two of the handout. With regards to filling data gaps, they plan on analyzing the data and providing a complete database or summary to many interested parties. The Task Force has come to the conclusion that the Bear River Basin is an integrated watershed. The Task Force is in the process of using the GIS systems and dividing the basin into sub-basins. There are key environmental features that need to be evaluated, those being Bear Lake, the major reservoirs in the system, and the inter-reservoir river reaches.

Mr. Lamarra then gave some examples of some of the information that has been collected. He indicated that the Task Force is in the first quarter of the third year of a three year contract. Lamarra spoke of where the historical data sites are and the contaminant parameters that they have seen in searching the data. The obvious parameters are sediments and nutrients. If the sediments are cleaned out of the system, a brown river is quickly going to become a green river because of the enormous amount of nitrogen and phosphorus in the system. If the nitrogen and phosphorus are attacked at the same time, there will be clean water. Lamarra then talked of a reach/gain analysis of the river system and discussed the various databases listed on Page Six of the handout. About 95% of the data have been collected in Utah, 20% in Idaho, and 6% in Wyoming. One third of the data is in electronic format.

Page Eight of the handout shows the mass loading crossing four different locations in the Bear River. BR-SC indicates Bear River at Sage Creek, BR-ASF indicates Bear River Above Smith's Fork, BR-BSF indicates Bear River Below Smith's Fork, and BR-BTF indicates Bear River below Thomas Fork. In 1982, on the wet side of an average year, a significant amount of sediments was generated. The same pattern is shown in 1992, although much reduced in magnitude. This is a flow-related phenomena. The numbers mean the average daily mass passing each station on the river. If this is divided by 100, 200 tons of sediment is generated per day. The sediment gets transported down river and ultimately enters the Bear Lake marsh at the north end of Bear Lake at Stewart Dam. The water flows out of Stewart Dam into the Mud Lake complex and either enters through Lifton station or goes through the outlet, depending on how the hydrology is routed relative to irrigation demand.

Lamarra indicated that on Page Ten he plotted on the graph the concentration of sediment at each one of the stations for 18 months. The size of the peaks shows the concentration of sediment as the water actually moved down through the marsh. Sediment that entered at Stewart Dam remained in the marsh at the north end of Bear Lake. Essentially, it acted like a large sedimentation basin in the lake itself. They have found that that particular mechanism not only removes sediments, but it also removes significant quantities of other contaminants, like nitrogen and phosphorus. Page Twelve shows an example of the annual amount of material that stayed in Dingle Marsh, which is a negative number below the line and how much actually was generated within the marsh above the line. In almost every case, Dingle Marsh at the north end of Bear Lake had a major reduction in the amount of nitrogen and phosphorus that moved through it. It was acting like a large sponge. There were a few years where Dingle Marsh was acting as a source for nitrogen. The marsh at the north end of Bear Lake is having a major effect on the Bear River which flows into it. It is reducing the amount of materials dramatically.

From a quantitative standpoint, there is also a significant amount of data in and around Bear Lake. The Bear Lake Regional Commission has been collecting environmental data on the lake since 1975 on a monthly basis. A detailed investigation was done in 1981 and 1982, and subsequent investigations have been made. Page Thirteen shows the type of data that has been collected. Each arrow represents a hydrologic source to Bear Lake and to the marsh. A quantitative mass balance has been made to the lake and to the marsh. It was found that 51%

of the nitrogen enters through Lifton and 37% enters through the causeway. About 80% of the nitrogen entering Bear Lake comes through the north end.

Having 20 years of environmental data gives patterns that normally would not be seen in a particular aquatic resource. Since 1975, ortho phosphate has been increasing in the lake, which is not a good sign. However, nitrogen has been decreasing over that same time period. Going through wet and dry cycles, particular contaminants respond very differently to seasonal effects. When there are long periods of data, it allows management of the system.

There were several missing data gaps that have begun to fill. After the first year of the project, the Task Force has instigated a new set of monitoring stations. Page Fifteen shows individual loadings in kilograms per day from river mile 415 (near Woodruff Narrows) down river to the Corrine station. The height of the line represents the average loading that passes that station on the river every day. The last page of the handout shows where the major sources of sediment are at and where sediments are being lost. Information will be available to the Commission as the Task Force struggles through beneficial uses and determines where to attack water quality impacts in the system.

Chair Wheeler thanked Mr. Thomas, Mr. Gardner and Mr. Lamarra for their presentation. Larry Anderson indicated that Utah has an extensive on-going monitoring program in the lower end of the Bear River and felt that Mr. Lamarra would be interested in getting that information. Jack Barnett indicated that Mr. Lamarra was trying to bring all sources of information together. It is also his understanding that the USGS might be coming in the first of the fiscal year with a NAWQA study where the dollars for collection of data will be greatly increased. That will be a very critical time for coordination. Kim Goddard indicated that the USGS has held a number of liaison meetings over the past few years. The study was then put on hold for the past couple of years because of budgetary problems.

Chair Wheeler then called on Carly Burton of PacifiCorp for input on the activities of the Bear Lake Preservation Advisory Committee (BLPAC). Burton reported that the BLPAC is functioning well. This is the committee that was formed as a result of the settlement agreement that was reached between the Bear Lake interests, the irrigation interests and PacifiCorp. The agreement was signed in April of 1995. The most recent meeting was held on April 2, 1996 and 52 people were in attendance. A tamarix removal program was identified by Jim Kimbal at the meeting (a copy of a Kimbal's wanted poster is attached as Appendix G). Burton indicated that Tamarix is a noxious weed which has totally taken over the Colorado River Basin.

At that April 2 meeting, Vince Lamarra discussed Mud Lake water quality. Dick Shustrom from the Fish and Wildlife Service made a presentation on activities at the Bear Lake Refuge, which is the Mud Lake complex north of Bear Lake. Jack Barnett discussed the activities of the Commission. Kent Hortin, with the Bear River Water Users Association, discussed their issues. PacifiCorp submitted a letter to the secretary of the Bear River Water Users Association. Under the terms of the settlement agreement, each year PacifiCorp will

submit to the Bear River Water Users Association an annual allocation of water from Bear Lake based on the formulas that were agreed to in the agreement. This year, based on the March 1 elevation of Bear Lake and the projected forecast and lake level, the allocation will be 230,000 acre-feet. A copy of the PacifiCorp letter is attached as Appendix H. It is anticipated that another meeting will probably be held in the fall. There are three Chairpersons for the Committee, Carly Burton, Kent Hortin and Jim Kimbal.

Jeff Fassett indicated that when the Committee was created, it was thought that it was more directly related to the allocation of storage. The agenda seems to be expanding. Fassett asked if there was further documentation as to the membership, the scope, the charter, the direction, the issues that this group is wrestling with and how it may or may not overlap or relate to the Bear River Commission. There are confusing signals. Fassett felt that there is a great expansion beyond the issues associated with the settlement agreement. Burton indicated that there were so many interested groups so many issues that it was felt that everyone who was interested in Bear Lake issues and activities should be invited. The Committee is evolving. The mission statement of the Committee is "To promote water conservation and efficient use practices; to promote more reliable water supplies in Bear Lake and Bear River for all users; to promote soil and energy conservation and improved water quality; to pursue means other than litigation to resolve conflicts; to periodically review the Allocation Proposal and recommend changes in that policy to PacifiCorp as may be appropriate; and to promote the concept of a single allocation model for administration of water on the Bear Lake/Bear River System.".

Fassett felt that the organization seems loosely organized. The parties to the particular settlement seemed to be more focused. Burton indicated that it was not the intention to shut anyone out. How the group grows or shrinks over time only time will tell. There were no further questions or comments regarding this agenda item.

Chair Wheeler moved to the report of the Operations Committee by Commissioner Cal Funk. Funk indicated that the report of the Operations Committee was very optimistic and brief because of precipitation and projected lake level. With an adequate water supply, it is felt that operations will be very smooth and there are no foreseeable complications. There perhaps will not be any regulation in the Upper Division. The assignment to work out procedures, accounting, and delivery schedule was turned over to the Management Committee.

Wheeler then turned the time to Carly Burton for the Bear Lake report. Burton's handouts are attached as Appendix H. The model is predicting a peak elevation of about 5917. Last year, on April 15, the lake was at 5908.77. On April 15, 1996, the level was at 5912.92. It is rising about 0.05 feet per day. The inflow is nearly 1400 second-feet. After April 15, 1995, the lake rose 3.6 feet and reached a high elevation of 5912.37. Based on the projected increase from the model, it would indicate an increase of a little over 4 feet this year. Burton pointed out that the Logan River is an important indicator because it shows that there will be sufficient water supply in the Lower Basin to meet irrigation needs well into July. There will not only be a good runoff, but the water that is stored will be kept because the natural runoff level of Bear Lake will be able to sustain the irrigation demands well into the irrigation season.

There was a question directed to Burton regarding the Alexander Reservoir being drawn down. Burton indicated that PacifiCorp has to operate the spillway gates at full operation. So the reservoir is being drawn down, all the spillway gates will then be operated, and the reservoir will then be filled again. This is some FERC license compliance work that is going on right now. Burton indicated that FERC requires this as part of the Dam Emergency Action Plan program. The gates have to be operated fully opened and fully closed once every 5 years. The process takes just hours rather than days.

One additional question was asked by Eulalie Langford. She asked about the dates and the locations of the FERC relicensing hearings. Burton indicated that he did not know dates yet. There should be three meetings. Someone in the audience indicated that a meeting will be held in Pocatello on May 14, in Soda Springs on May 15 and in Preston on May 16.

Chair Wheeler then moved to the report of the Records Committee by Commissioner Francis. Francis indicated that the 1995 chapter for the Biennial Report is behind schedule due to data from the USGS being a little late. This information should be received in about 3 weeks. The Compact and Bylaws booklet is not going to be reprinted until adopted Commission procedures can be included. Francis pointed out that a few years ago, the Records Committee assigned the Engineer-Manager and his staff to take all Commission meeting minutes and reports and bind them. This is currently being worked on.

Wheeler then turned to Commissioner Dreher for a report from the Management Committee. Dreher indicated that there were four items to report on: 1) the formal 20-year review of the Compact; 2) the Lower Division procedures for handling water emergencies; 3) accounting for Lower Division consumptive use of ground water; and 4) involvement with the Western Water Policy Review Advisory Commission. Members of the Management Committee met for a good part of the day on April 15 and again in the morning of April 16. The review of the Compact was discussed and the Committee suggests that the Commission begin receiving public comment on the need for amendment. To facilitate receiving the public comments, it was suggested that a Compact Review Committee be appointed. The representative for Idaho will be Rod Wallentine. The Compact Review Committee will meet and discuss a meeting date in each division, with an additional meeting being held in the vicinity of Bear Lake. The time frame for these meetings will possibly be in September. The public comments will be recorded but not transcribed. The Engineer-Manager will assemble and consolidate the comments. The Commission will then evaluate the comments and begin the amendment process if that is the determination of the Commission. Larry Anderson indicated that the Utah representative on the Committee will be Cal Funk. Jeff Fassett indicated that Jim Crompton will represent Wyoming on the Committee.

Dreher then addressed the issue of the development of procedures for managing a water emergency in the Lower Division. Members of the Management Committee have met four times on this issue: on January 22 in Salt Lake City; on February 22 in Boise; on March 21 in Washington, D.C.; and on April 15 in Salt Lake City. There has been some progress as state representatives have discussed the concept of developing and adopting interim regulations. No

agreement has been reached yet concerning the review mechanism. Discussions have been held regarding common ground in terms of when these procedures are triggered. One elevation of Bear Lake could be used to trigger the procedures. Idaho and Utah are progressing in the development of models in each state which would predict the same results in terms of accounting for use of natural flows and storage flows. No agreement has been reached regarding when to run the accounting model and how the Commission should or should not be involved in a water emergency. The development of a delivery schedule has not been discussed yet. An agreement has been reached between Idaho and Utah on including ground water use in both states. Idaho is working diligently in extracting the ground water use information from the water rights database, summarizing all of the water rights based upon their relation to a specific reach of the lower Bear River, and assembling the ground water rights by decade of development. The next step will be to calculate or estimate a depletion.

Dreher then reported on the involvement with the Western Water Policy Review Advisory Commission (WWPRAC). This is a federal commission that was revived by President Clinton, with the charge to examine federal involvement in western water policy and provide a report with recommendations on how the federal government should be involved in future western water policy. Most of the states have already provided testimony to the WWPRAC. A number of states, including Idaho, are concerned about the direction that the WWPRAC could take. Dreher submitted a lengthy letter to the WWPRAC in Portland and spoke before the WWPRAC in Lewiston, Idaho. During the meeting of state representatives on April 15, the wisdom of having the Commission prepare a written statement to be submitted to the WWPRAC was discussed. It was felt that the Bear River Basin was unique in the lack of federal involvement and its ability to resolve differences without the help and money of the federal government. Barnett drafted a statement last evening and it was reviewed by individual Commissioners during the hours prior to the Bear River Commission meeting. Dreher suggested that Commission members provide comment to Barnett prior to April 25. It was moved that the Commission submit the written statement developed by Jack Barnett to the WWPRAC, with the provision that individual Commissioners would have the opportunity to submit any additional comments in writing to Barnett prior to April 25. If such comments are not received by April 25, the statement would stand as approved. The motion was moved and seconded.

Chair Wheeler then asked Jack Barnett to report on the Technical Advisory Committee. Barnett indicated that there were several assignments give to the TAC and to himself, namely: 1) to provide the statement to the WWPRAC; 2) to keep abreast of the relicensing process by PacifiCorp; 3) to evaluate the stream gaging program; 4) to participate in the 20-year review of the Compact; 5) to help the States with verbiage with respect to the Lower Division procedures; and 6) to complete the 1995 chapter for the Biennial Review. Karl Dreher indicated that the Management Committee had also asked Barnett to develop some pluses and minuses with regards to considering various elevations in Bear Lake as triggering mechanisms for different aspects of the Lower Division procedures. Barnett agreed.

Wheeler asked if there were any individuals who wanted to comment regarding the Lower Division. One person indicated that perhaps, if the Commission deems it advisable, a letter

should be written to the Army Corps of Engineers to ask that the entire Bear River be put into one Corps district rather than three. Dreher, Anderson and Fassett agreed that a letter would be advisable. It was moved, carried and seconded that a letter should be prepared.

Chair Wheeler then invited Liz Paul, representing Idaho Rivers United to give a presentation. A copy of Ms. Paul's remarks are attached as Appendix J. In her presentation, Ms. Paul spoke regarding Black Canyon. Don Gilbert invited Ms. Paul to visit with him during the summer to discuss several items.

Wheeler then asked Jack Barnett to discuss briefly the process by which the Compact is changed. Barnett indicated that the original Compact was adopted in 1958 by the process he will describe. When it was adopted, it was required that the Commission review the Compact within at least 20 years to determine if amendments were needed. A review did occur in the first 20 years and in 1976 the Compact was amended. We are now approaching another 20 years and so the Commission has decided to now move ahead and investigate whether there is a need to amend the Compact. The Commission, once they have input from the meetings, from written comments and from the Committee, could have a number of options. It could be determined that no amendments are needed, it could be decided that there might be a need for change in procedures or bylaws without amending the Compact, or the Commission could determine that there is a need for revision to the Compact. This latter option could start a very intense period of discussions about revisions of the Compact.

The Commission would move forward with a formal meeting process and language would be drafted, agreed upon by all three states, and voted on by the Commission. This would ultimately result in legislative language. The conclusion by the Commission to move ahead with revisions would then lead to the Commission ultimately submitting to the three state legislatures legislation that would concur in the Commission's recommendations. The passed legislation through the three legislatures would ultimately be forwarded to Congress. The Congress would have to act on federal legislation that would allow for the revisions suggested. Then the President would need to sign the legislation. If there is a decision to revise the Compact, it is a significant and involved process. It is not just a vote of the Commission.

Eulalie Langford stated that in Karl Dreher's report he indicated that there might be a meeting in the Bear Lake area in September. She asked if the meetings will be open to the public and if and how they will be advertised. Dreher indicated that the meetings will be open to the public. That is the purpose of having the meetings, to obtain public comment. The meetings will be advertised in newspapers and through announcements in various water user association newsletters, etc.

Larry Anderson mentioned that the time frame for coming to agreement on the original Compact was from 1942 and 1958, 16 years. The time involved in making a simple amendment to the Compact took from 1970 until 1980. The process, if changes are made, would be very long. Wheeler indicated that there are changes to policies or bylaws which could be made without the long legislative process.

Chair Wheeler then asked for the state reports. Commissioner Fassett reported for Wyoming. Fassett indicated that this year's legislative action in Wyoming authorized the development of a new state-wide water planning process. The last major undertaking in Wyoming was a 3-4 year effort in the early 70's. The Wyoming legislature believes that some additional and on-going water planning work across the state is advisable.

Karl Dreher then reported for Idaho. Dreher indicated that Idaho also has a comprehensive water planning process within individual basins. The individual basin plans are updated every 5 years. The Supreme Court in Idaho came down with a decision regarding an appeal decision from the District Court presiding over the Snake River Basin Adjudication. The decision basically denied party status to a coalition of environmental groups. The environmental groups had sought to intervene in the Snake River Basin Adjudication on the basis that they represented local public interest and the public trust. The Supreme Court upheld the court's decision not to allow full party status to the environmental groups. A comment, through dicta, inserted words to the effect that all water rights in Idaho are involved with the public trust doctrine. The dicta ruling inflamed the water users in Idaho and they sought legislative relief. They did get the sponsored legislation passed by the legislature which limited the application of the public interest doctrine in Idaho. This was an action taken by the Idaho Water Users Association, not the Idaho Department of Water Resources. The Department of Water Resources did not support the legislation.

The passed legislation was signed into law by Governor Batt. It stated that in Idaho the public trust doctrine shall not be applied to any other purpose other than the alienation or incumbrance of the title to the beds of navigable waters as set forth in Idaho statutes. Management or disposition of lands held for the benefit of the endowed institutions of the state, typically the Board of Education, is not affected by the public trust doctrine. The public trust doctrine shall not apply to the appropriation or use of water, the granting, transfer, administration or adjudication of water or water rights. There is a provision in Idaho statutes that does require the Department of Water Resources, in granting new water right permits or the transfer of water rights, to weigh the local public interest (separate from public trust) in reaching those decisions. The legislation also says that the public trust doctrine shall not apply to the protection or exercise of private property rights and that nothing in this limitation can be construed to authorize the public or private use of the beds of navigable waters. This legislation was not well received by many in the state. Undoubtedly it is headed back to court.

Commissioner Anderson then gave a report for Utah. Anderson indicated that Utah has a developed basin plan for the Bear River. He felt that the three states might want to work together to prepare a document that would incorporate all three states' interests in the Bear River and make sure that the effort is coordinated. Fassett indicated that at the moment the Bear River basin is not the highest priority in Wyoming but felt that this was a great opportunity.

Anderson reported that the State of Utah is interested in a development in the Lower Bear River. Various alternatives and options are being looked at regarding water development in the Cache/Box Elder County area. The main emphasis for that development is still to deliver more

water to the Wasatch Front. The Salt Lake, Davis and Weber counties have a large need for additional water in the next 15-20 years. Anderson further indicated that he has a number of new board members who are not familiar with the Bear River. He will be holding a board meeting, including a tour, on June 21 in Brigham City to familiarize individuals with the Bear River. Anderson also indicated that he was very optimistic that through the Management Committee the Commission will be able to adopt Lower Division interim procedures. A question was asked regarding the tour and board meeting to be held on June 21. Anderson indicated that the board meeting is open to the public, but the tour is not open to the public.

As there were no questions for the state representatives, Chair Wheeler discussed the next Commission meeting. It was suggested that the regular meeting of the Commission be held on November 19, 1996 in Salt Lake City. The motion was moved and seconded.

Karl Dreher indicated that the next three state meeting being held to discuss the Lower Division procedures is scheduled for May 28 in Denver, Colorado.

There were no further comments. Chair Wheeler adjourned the Commission meeting at 3:58 p.m.

APPENDIX A

ATTENDANCE ROSTER

BEAR RIVER COMMISSION
ANNUAL MEETING
Utah Power Salt Lake Service Center
Salt Lake City, Utah
April 16, 1996

IDAHO COMMISSIONERS
Karl J. Dreher
Don W. Gilbert
Rodney Wallentine

WYOMING COMMISSIONERS
Gordon W. Fassett
S. Reed Dayton
James L. Crompton

FEDERAL CHAIR
Denice Wheeler

UTAH COMMISSIONERS
D. Larry Anderson
Blair R. Francis
Calvin Funk
Dean Stuart (Alternate)

ENGINEER-MANAGER & STAFF
Jack A. Barnett
Don A. Barnett
Nola Peterson

OTHERS IN ATTENDANCE

IDAHO
Pete Peterson, River Commissioner

UTAH
Robert M. Fotheringham, Division of Water Rights
Norman Stauffer, Division of Water Resources
Bert Page, Division of Water Resources
William Atkin, Division of Water Rights
Jim Christensen, Division of Water Quality
Bob Morgan, Division of Water Rights
Karl Kappe, Division of Sovereign Lands & Forestry
Stephen Ogilvie, Legislative Fiscal Analyst

WYOMING
Sue Lowry, State Engineer's Office
Kevin Wilde, State Engineer's Office
Jade Henderson, State Engineer's Office
Keith Burron, Attorney General's Office

OTHERS
Jim Kolva, U.S. Geological Survey
Jody Williams, PacifiCorp (Utah Power)
Carly Burton, PacifiCorp (Utah Power)

APPENDIX A
PAGE TWO

Craig Thomas, Bear Lake Regional Commission
J. Kent Hortin, Bear River Water Users
David Styer, Bear River Canal Co.
Eulalie Langford, Love Bear Lake, Inc.
Jerry Wilde, Bear River Canal Co.
Liz Paul, Idaho Rivers United
Jim Kimbal, Bear Lake Preservation Advisory Committee
Height Proffit, Wyoming Board of Ag.
Ralph Stahley, Western Wyoming RC&D
Lee Baxter, Bureau of Reclamation
Kirk Heaton, NRCS/Western Wyoming RC&D
Kimball Goddard, USGS
Allen Harrison, Bear Lake Regional Commission
Dee Johnson, Bear Lake Regional Commission
Scott Johnson, PacifiCorp
Maureen Wilson, PacifiCorp
Reed Gardner, Western Wyoming RC&D
Doyle Winterton, Bureau of Reclamation
Vince Lamarra, ERI
Karla Knoop, Great Basin Earth Science
Paul Nelson, Preston-Montpelier Irrigation Co.
Ray Wilson, NRCS/Salt Lake City
Golden B. Keetch, Preston-Montpelier Irrigation Co.
Randy Lowe, Idaho Bear River Basin Advisory Group

APPENDIX B

AGENDA

Bear River Commission Annual Meeting
April 16, 1996

Utah Power Salt Lake Service Center
Conference Room 2/3
1569 West North Temple
Salt Lake City, Utah

COMMISSION AND ASSOCIATED MEETINGS

April 16

9:00 a.m.	Operations Committee Meeting, Conference Room 1	Funk
10:00 a.m.	Records Committee Meeting, Conference Room 1	Francis
11:00 a.m.	Informal Meeting of Commission, Conference Room 1	Barnett
11:15 a.m.	State Caucuses and Lunch	Dreher/Fassett/Anderson
1:30 p.m.	Commission Meeting	Wheeler

ANNUAL COMMISSION MEETING

April 16, 1996

Convene Meeting: 1:30 p.m., Chair Denice Wheeler

I. Call to order — Wheeler
   - A. Welcome of guests and overview of meeting
   - B. Introduction of new members and committee assignments
   - C. Approval of agenda

II. Approval of minutes of last Commission Meeting (November 28, 1995) — Wheeler

III. Election of Officers — Wheeler
   - A. Vice Chairman
   - B. Secretary/Treasurer

APPENDIX B
PAGE TWO

IV.	USGS	
	A. Introduction of new Utah District Chief Kimball Goddard	Barnett
	B. Cost of stream gaging in FY 97	Kolva
V.	Report of Secretary-Treasurer	Larry Anderson
VI.	Snow Survey Report	Ray Wilson
VII.	Tri-State Water Quality Effort	Reed Gardner and Craig Thomas
VIII.	Activities of Bear Lake Advisory Council	Carly Burton
IX.	Report of Operations Committee	Funk
	A. Bear Lake report	Burton
X.	Report of the Records Committee	Francis
	A. Preparation of the annual report	
XI.	Report of the Management Committee	Dreher
	A. Formal 20-year Review of the Compact	Dreher
	B. Procedures for the Lower Division	Dreher
	C. Accounting for Lower Division consumptive use of ground water	
	1. Utah	Norm Stauffer
	2. Idaho	Hal Anderson
XII.	Report of and assignments to TAC	Barnett
XIII.	Engineer-Manager Report	Barnett
XIV.	Suggestion for Commission consideration concerning Lower Division from users	Wheeler
XV.	Comment from Idaho Rivers United	Liz Paul
XVI.	State Reports	
	A. Wyoming	Fassett
	B. Idaho	Dreher
	C. Utah	Anderson
XVII.	Next Commission Meeting - November ____, 1996 (Regular Meeting, third Monday of November, as set forth in Bylaws, is November 18, 1996)	Wheeler

Anticipated adjournment: 4:30 p.m.

1

APPENDIX C

1

3/22/96 PAGE 1

PROPOSED 1997 PROGRAM FOR BRC AND USGS

STATION NUMBER	STATION NAME	SW USGS	SW BRC	TOTAL COOP
10011500	BEAR R NR UT-WYO STATE LINE	4,000	4,000	8,000
10015700	SULPHUR CR AB RES NR EVANSTON WY (*)	4,000	4,000	8,000
10020100	BEAR R AB RES NR WOODRUFF	4,000	4,000	8,000
10020100	BEAR R AB RES NR WOODRUFF (DCP)	1,000	1,000	2,000
10020100		5,000	5,000	10,000
10020200	WOODRUFF NARROWS RES NR WOODRUFF	4,000	4,000	8,000
10020300	BEAR R BEL RES NR WOODRUFF	4,000	4,000	8,000
10028500	BEAR R BEL PIXLEY DAM (PART REC)	2,300	2,300	4,600
10032000	SMITHS FORK NR BORDER WY (*)	4,000	4,000	8,000
10038000	BEAR R BEL SMITHS FK NR COKEVILLE WY	2,800	2,800	5,600
10039500	BEAR R AT BORDER WY	2,800	2,800	5,600
10039500	BEAR R AT BORDER WY (DCP)	1,000	1,000	2,000
10039500		3,800	3,800	7,600
10068500	BEAR R AT PESCADERO ID	4,000	4,000	8,000
10092700	BEAR R AT ID-UT STATE LINE	4,000	4,000	8,000
10092700	BEAR R AT ID-UT STATE LINE (DCP)	1,000	1,000	2,000
10092700		5,000	5,000	10,000
10109000	LOGAN R AB STATE DAM NR LOGAN	4,000	4,000	8,000
10126000	BEAR R NR CORRINE	4,000	4,000	8,000
		50,900	50,900	101,800

APPENDIX D

BEAR RIVER COMMISSION

STATEMENT OF INCOME AND EXPENDITURES

FOR THE PERIOD OF JULY 1, 1995 TO APRIL 1, 1996

INCOME	CASH ON HAND	OTHER INCOME	FROM STATES	TOTAL REVENUE
Cash Balance 07-1-95	$75,335.53			$75,335.53
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
City of Evanston		$1,800.00		1,800.00
Interest on Savings		$3,002.93		3,002.93
TOTAL INCOME TO April 1, 1996	$75,335.53	$4,802.93	$90,000.00	$170,138.46

DEDUCT OPERATING EXPENSES

EXPENDED THROUGH U. S. G. S.

		APPROVED BUDGET	UNEXPENDED BALANCE	EXPENDITURES TO DATE
Stream Gaging		$46,320.00	0.00	$46,320.00
	SUBTOTAL	$46,320.00	0.00	$46,320.00

EXPENDED THROUGH COMMISSION

Personal Services	Jack	$34,280.00	$5,629.36	$28,650.64
Travel (Eng-Mgr)		900.00	250.45	649.55
Office Expenses		1,100.00	435.42	664.58
Printing Biennial Report		1,600.00	90.37	1,509.63
Treasurer Bond & Audit		1,100.00	-42.00	1,142.00
Printing		1,100.00	209.27	890.73
	SUBTOTAL	$40,080.00	$6,572.87	$33,507.13
TOTAL		$86,400.00	$6,572.87	$79,827.13
CASH BALANCE AS OF 04-01-96				$90,311.33

APPENDIX D
PAGE TWO

BEAR RIVER COMMISSION

DETAILS OF EXPENDITURES

FOR PERIOD ENDING APRIL 1, 1996

401	JACK BARNETT	$5,713.34
402	PETERSON'S PORTRAIT STUDIO	44.52
403	JACK BARNETT	2,934.12
404	ALPHAGRAPHICS	99.53
405	JACK BARNETT	3,246.53
406	JACK BARNETT	2,943.09
407	U S G S	46,320.00
408	JACK BARNETT	2,989.52
409	ALPHAGRAPHIC	1,512.87
410	JACK BARNETT	3,465.21
411	DALTON,GILCHRIST,HARDEN	1,042.00
412	JACK BARNETT	2,892.84
413	FIRST SECURITY INSURANCE	100.00
414	JACK BARNETT	2,963.13
415	JACK BARNETT	3,560.43
	TOTAL EXPENSE	$79,827.13

BANK RECONCILIATION

Cash in Bank per Statement 04-01-96	$2,546.09
Plus: Intransit Deposits	5,000.00
Less: Outstanding Checks	3,560.43
Total Cash in Bank	$3,985.66
Plus: Savings Account-Utah State Treasurer	86,325.67
TOTAL CASH IN SAVINGS AND IN CHECKING ACCOUNT	$90,311.33

BEAR RIVER COMMISSION

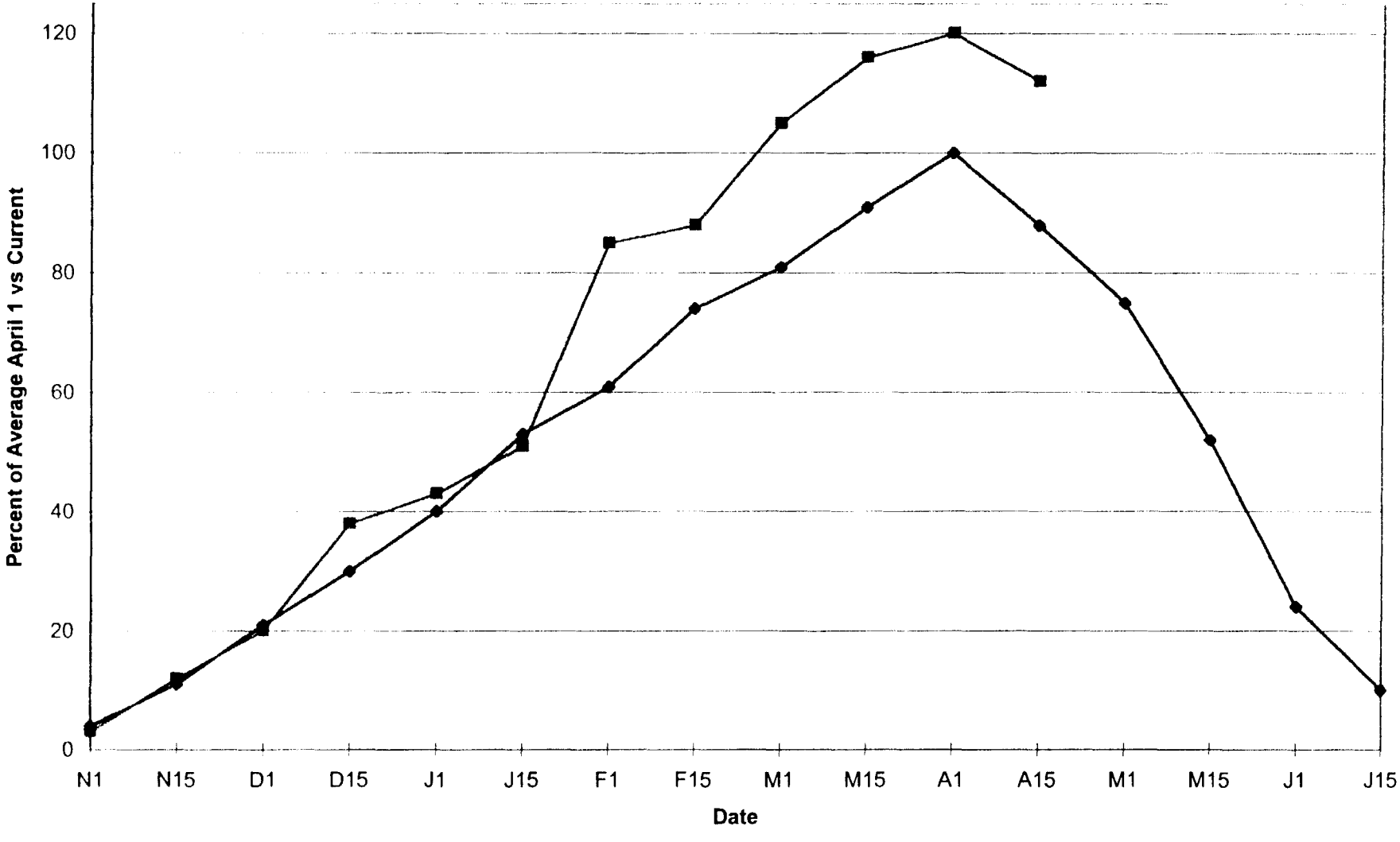
EXPENDITURE FORECAST THRU FY 96 & PROPOSED FY 97 AND FY 98 BUDGET

DESCRIPTION	FY 96 EST'D JUNE 30 INCOME/EXPENSE	FY 97 ADOPTED BUDGET	FY 98 PROPOSED BUDGET
INCOME			
BEGINNING BALANCE	$75,336.00	$82,944.00	$91,994.00
IDAHO	30,000.00	30,000.00	30,000.00
UTAH	30,000.00	30,000.00	30,000.00
WYOMING	30,000.00	30,000.00	30,000.00
EVANSTON CITY	$1,800.00	$1,900.00	$2,000.00
INTEREST ON SAVINGS	4,100.00	4,500.00	5,000.00
TOTAL INCOME	$171,236.00	$179,344.00	$188,994.00
EXPENDITURES			
a STREAM GAGING-U.S.G.S.	$46,320.00	$45,400.00	$50,000.00
b PERSONAL SERVICES CONTRACT-BARNETT	36,320.00	35,650.00	37,070.00
TRAVEL	900.00	1,100.00	1,200.00
OFFICE EXPENSES	900.00	1,100.00	1,300.00
PRINTING BIENNIAL REPORT	1,510.00	1,600.00	500.00
TREASURER'S BOND & AUDIT	1,142.00	1,200.00	1,200.00
PRINTING	1,200.00	1,300.00	1,300.00
TOTAL EXPENDITURES	$88,292.00	$87,350.00	$92,570.00
UNEXPENDED CASH BALANCE	$82,944.00	$91,994.00	$96,424.00

NOTE. a. FOR CONTRACT PURPOSES, THE FY98 USGS STREAM GAGE BUDGET FOR $50,000 NEEDS TO BE APPROVED, SO THE CONTRACT CAN BE SIGNED IN MAY 1996. THE CONTRACT RUNS FROM OCTOBER 1, 1996 TO SEPTEMBER 30, 1997.

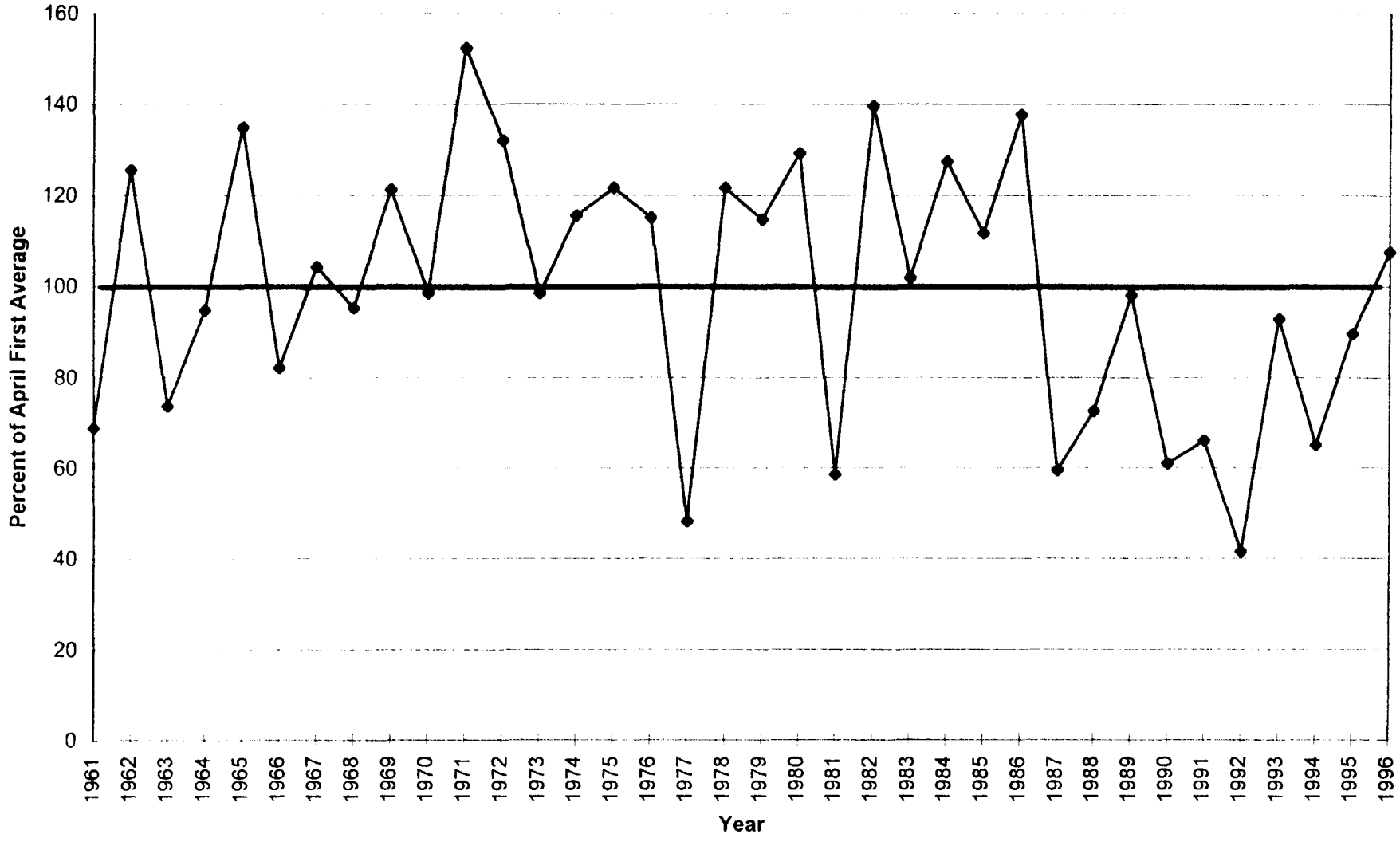
b. THE PERSONAL SERVICE CONTRACT FOR BARNETT HAS BEEN INCREASED BY 4% IN FY 97 AND FOR BUDGET PROJECTIONS, AN ADDITIONAL 4% IN FY 98.

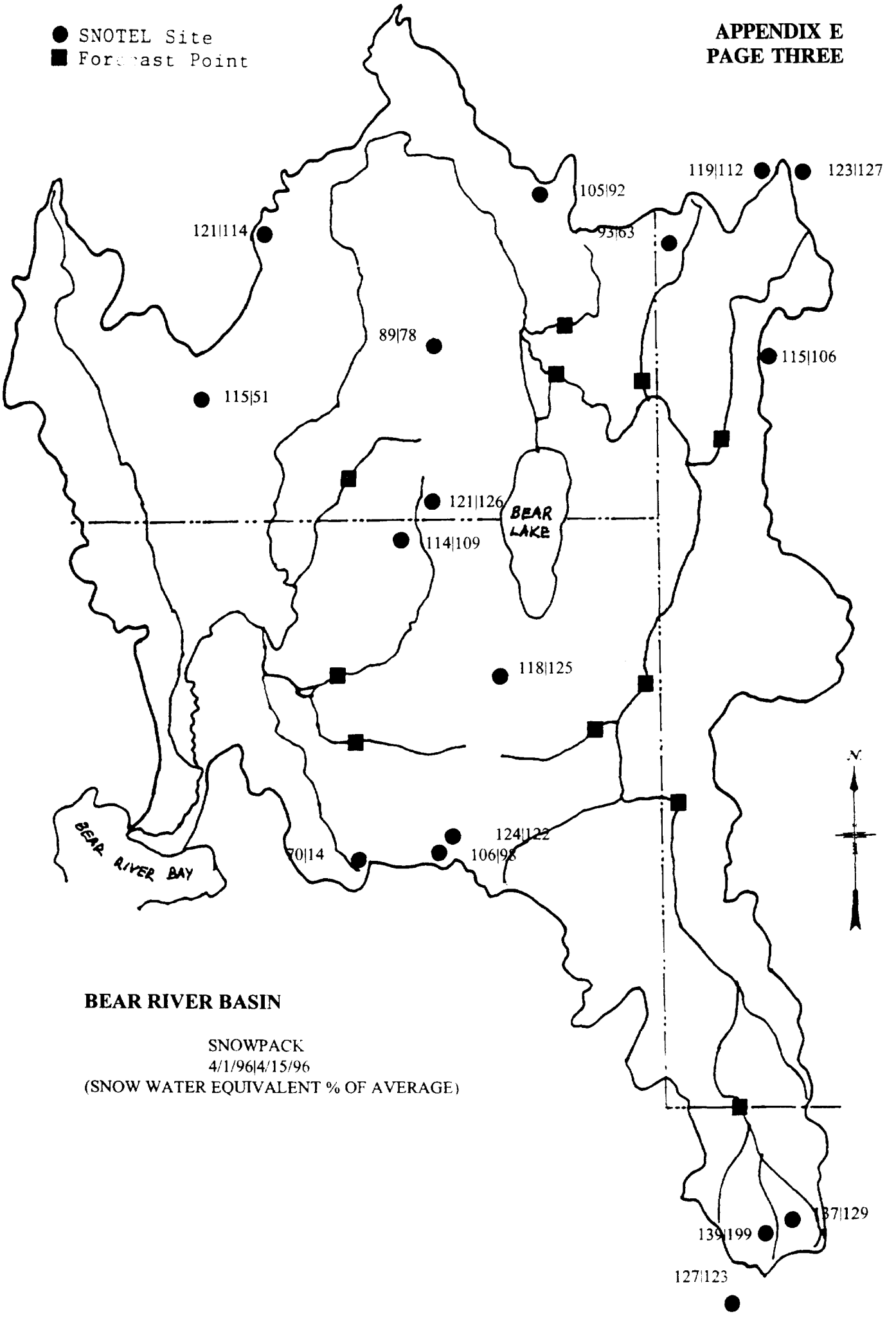
BEAR RIVER BASIN SNOWPACK



APPENDIX E

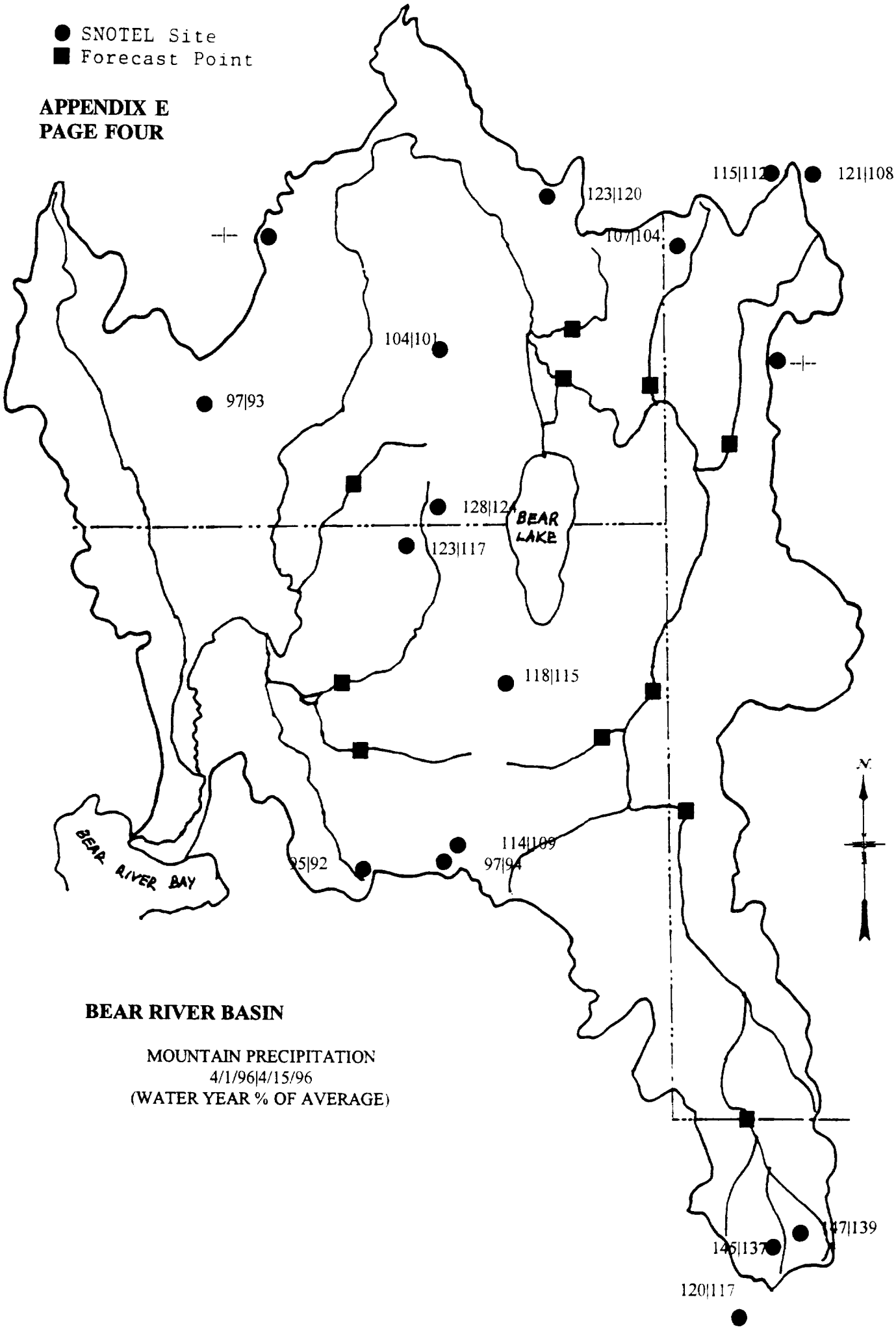
BEAR RIVER SNOWPACK ON APRIL FIRST

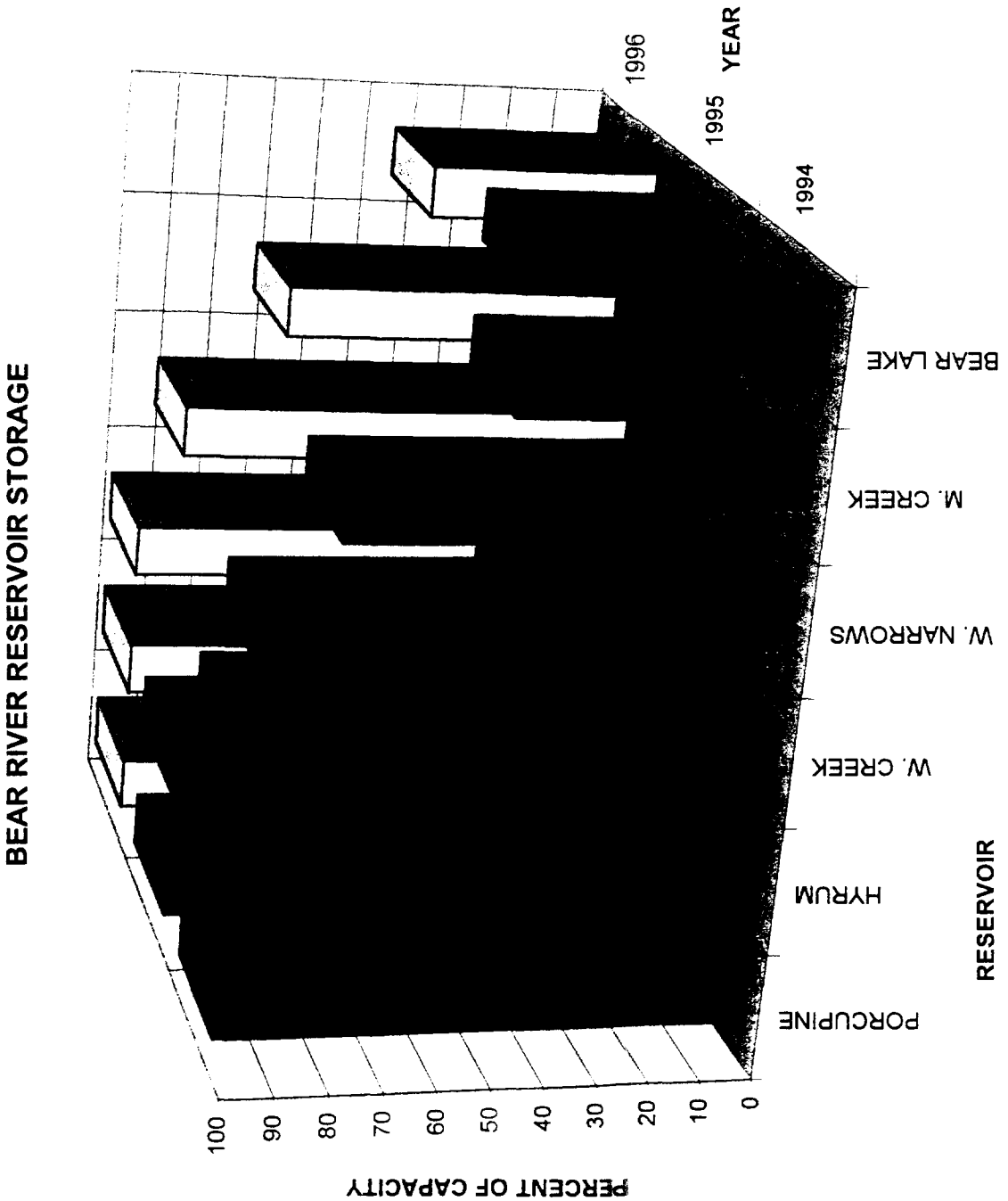


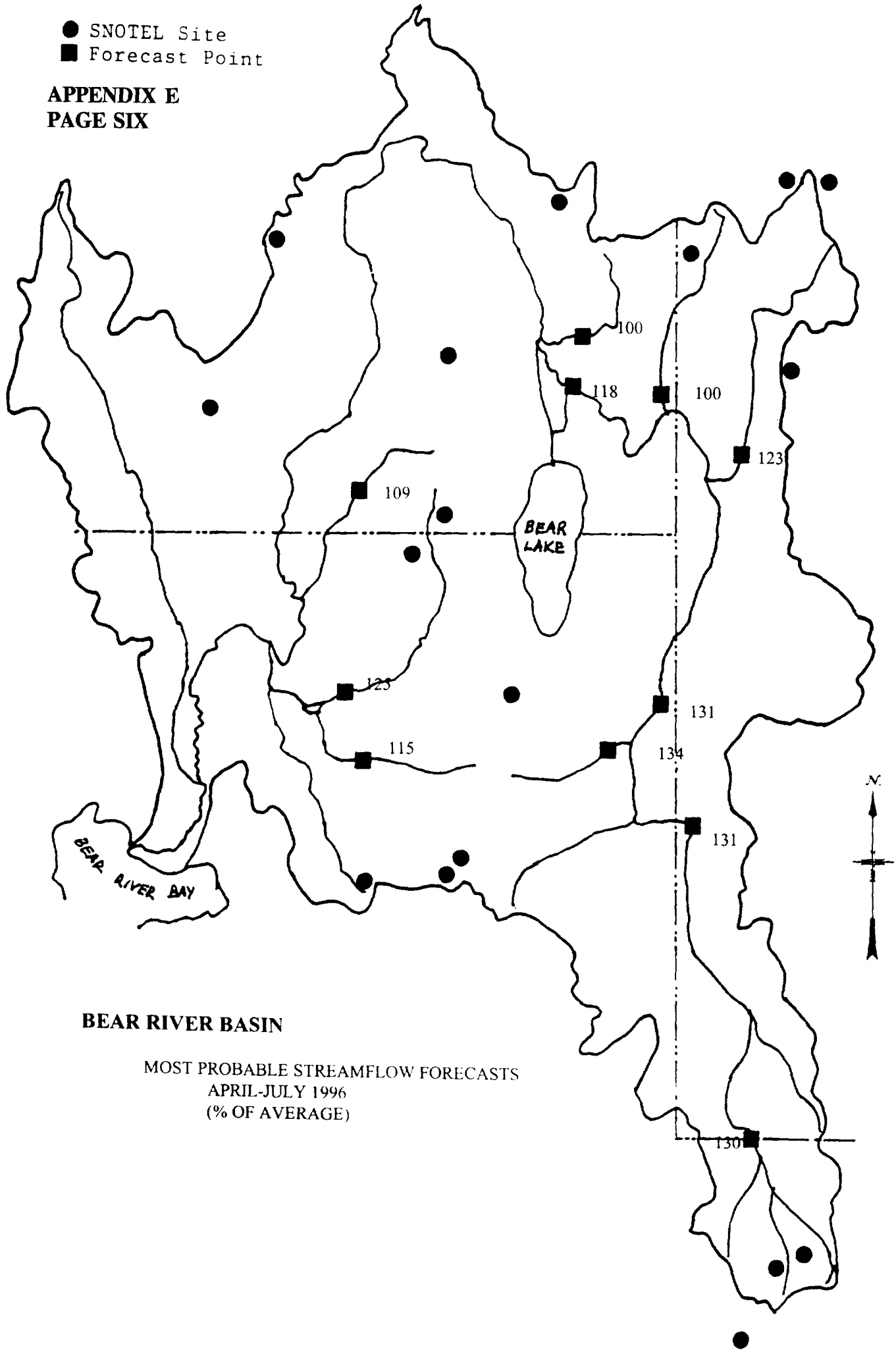


BEAR RIVER BASIN

SNOWPACK
4/1/96|4/15/96
(SNOW WATER EQUIVALENT % OF AVERAGE)


SNOTEL Site
Forecast Point
APPENDIX E
PAGE FOUR
115|112
121|108
123|120
107|104
104|101
97|93
128|124
BEAR LAKE
123|117
118|115
N
BEAR RIVER BAY
95|92
114|109
97|94
147|139
145|137
120|117
BEAR RIVER BASIN
MOUNTAIN PRECIPITATION
4/1/96|4/15/96
(WATER YEAR % OF AVERAGE)


BEAR RIVER RESERVOIR STORAGE
PERCENT OF CAPACITY
100
90
80
70
60
50
40
30
20
10
0
RESERVOIR
PORCUPINE
HYRUM
W. CREEK
W. NARROWS
M. CREEK
BEAR LAKE
YEAR
1994
1995
1996



APPENDIX E
PAGE SIX

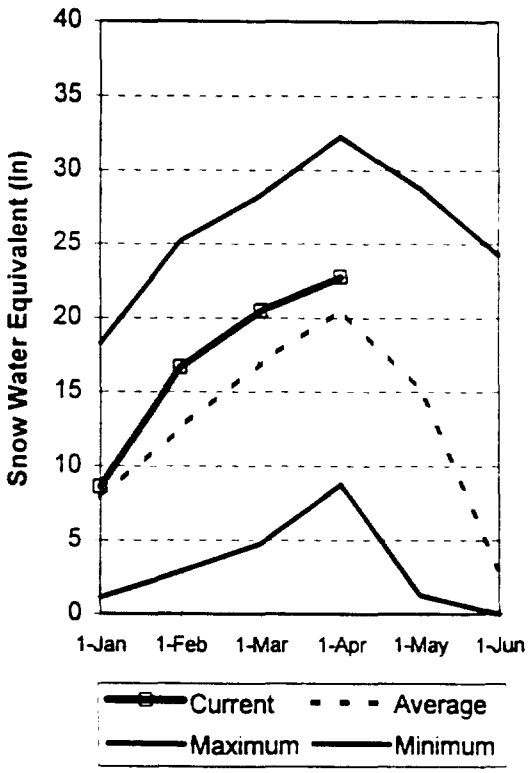
BEAR RIVER BASIN

MOST PROBABLE STREAMFLOW FORECASTS
APRIL-JULY 1996
(% OF AVERAGE)

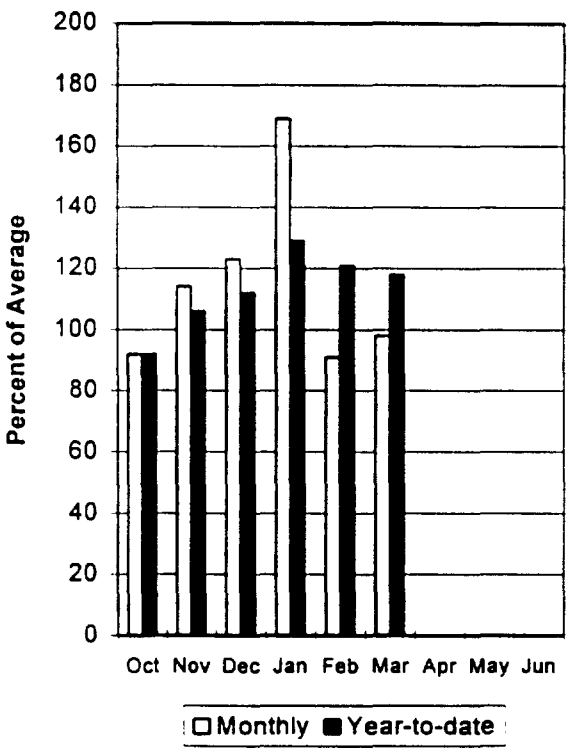
Bear River Basin
Apr 1, 1996

Snowpack on the Bear River Basin is above average at 111% of normal, ranging from 50% to 137% of average at specific sites. The Upper Bear Watershed has a much larger snowpack (121%) than the Lower Watershed in Idaho and Wyoming (104%). March precipitation across the Bear Watershed was near normal at 98%, which brings the seasonal accumulation (Oct-Mar) to 118% of average. Water supply conditions are excellent and above average runoff is expected. Reservoir storage in the Bear River drainage is near capacity with the exception of Bear Lake which is 46% full.

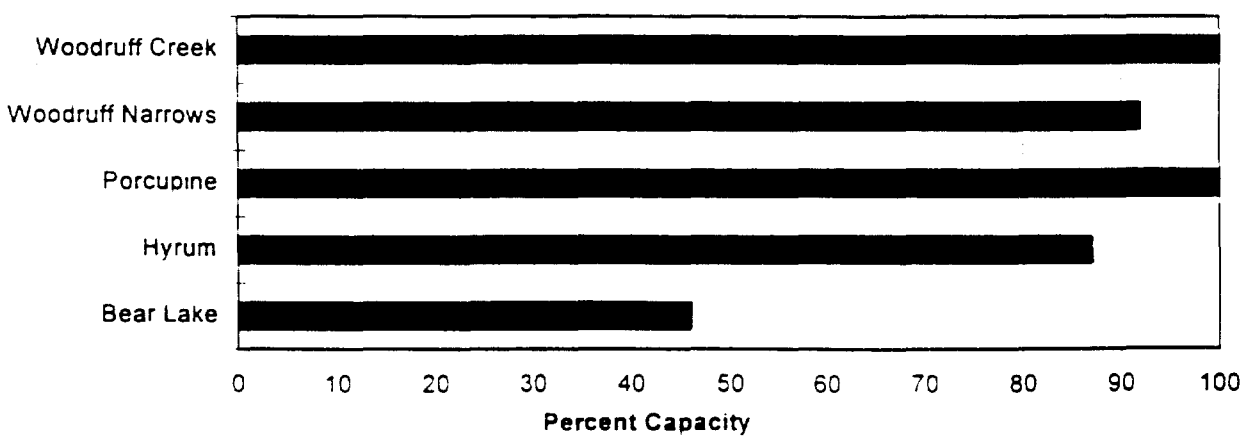
Mountain Snowpack



Precipitation



Reservoir Storage



BEAR RIVER BASIN

Streamflow Forecasts - April 1, 1996

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BEAR R nr UT-WY State Line	APR-JUL	116	135	150	130	166	193	115
BEAR R nr Woodruff (2)	APR-JUL	95	154	195	131	236	295	149
BIG CK nr Randolph	APR-JUL	1.48	3.64	5.10	134	6.56	8.72	3.80
BEAR R nr Randolph, UT	APR-JUL	90	129	155	131	181	220	118
SMITHS FORK nr Border, WY	APR-JUL	102	116	125	123	134	148	102
THOMAS FK nr WY-ID State Line	APR-JUL	20	27	33	100	40	53	33
BEAR R blw Stewart Dam nr Montpelier	APR-JUL	248	303	340	118	377	432	288
MONTPELIER CK nr Montpelier (2)	APR-JUL	8.3	10.5	12.2	100	14.2	17.8	12.2
CUB R nr Preston	APR-JUL	42	47	51	109	55	60	47
LOGAN R nr Logan	APR-JUL	111	124	134	125	144	161	107
BLACKSMITH Fk nr Hyrum	APR-JUL	52	58	62	115	67	74	54

BEAR RIVER BASIN

Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	658.5	385.3	1002.1
HYRUM	15.3	15.3	13.4	12.2
PORCUPINE	11.3	11.3	11.3	5.0
WOODRUFF NARROWS	57.3	53.0	28.5	---
WOODRUFF CREEK	4.0	4.0	4.0	---

BEAR RIVER BASIN

Watershed Snowpack Analysis - April 1, 1996

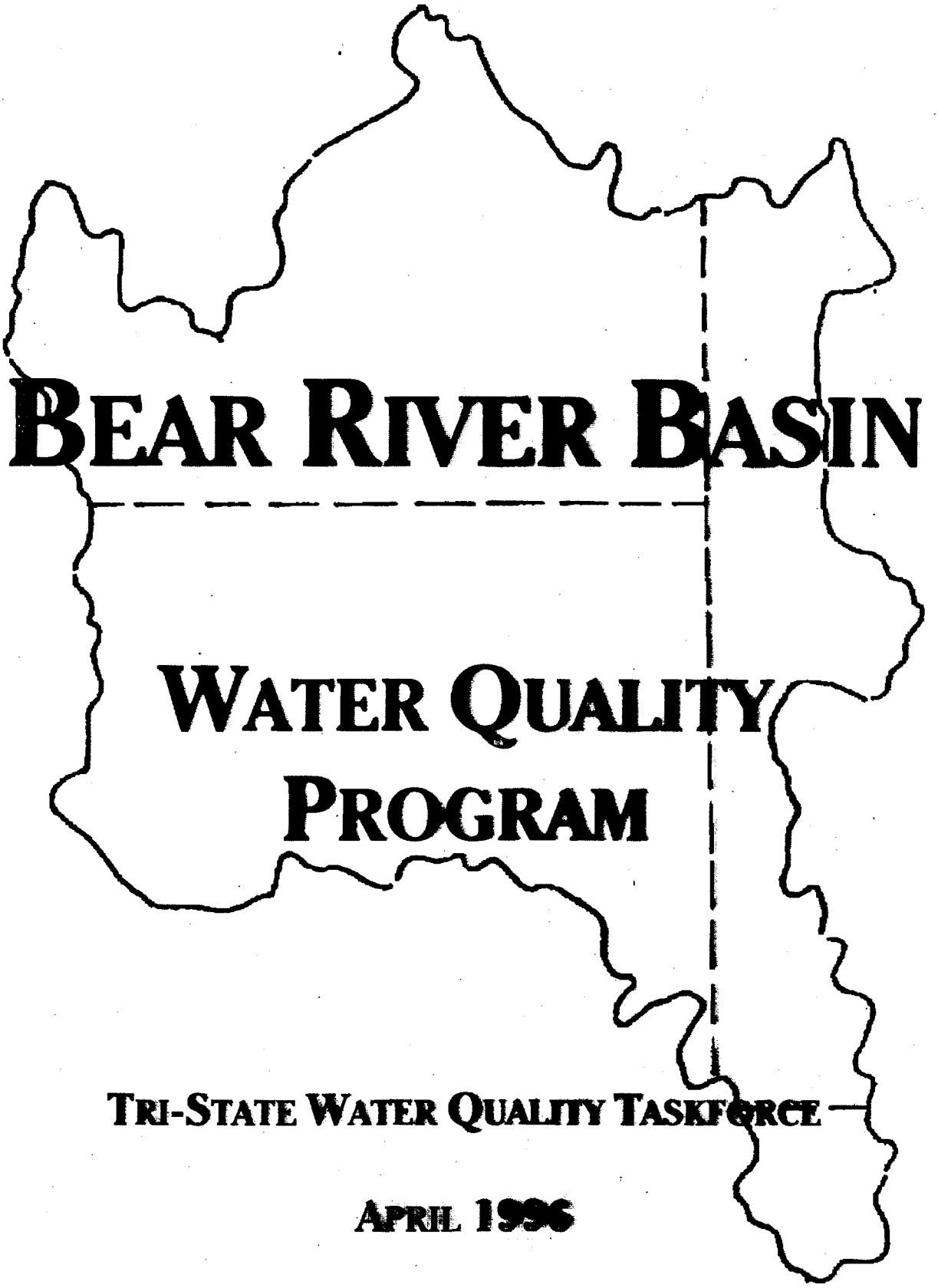
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
BEAR RIVER, UPPER (abv Ha	6	122	126
BEAR RIVER, LOWER (blw Ha	7	125	107
LOGAN RIVER	4	128	112
RAFT RIVER	2	110	107
BEAR RIVER BASIN	13	123	115

* 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 1961-1990 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.



BEAR RIVER BASIN

WATER QUALITY PROGRAM

TRI-STATE WATER QUALITY TASKFORCE

APRIL 1996

GOALS

First develop, and then integrate into the decision making process, a comprehensive water quality database.

TASKS

Acquire all available water quality data.

Develop a data management system.

Integrate current monitoring programs.

Evaluate and qualify water quality data for future analysis

Fill datagaps.

Analyze data and provide the completed database or summaries to interested parties.

Future: Prioritize and implement remedial activities.

APPROACH

Bear River Basin is an integrated watershed.

- ✔ Division by subbasins
- ✔ Bear Lake
- ✔ Reservoirs
- ✔ Inter-reservoir river reaches

EXISTING DATA

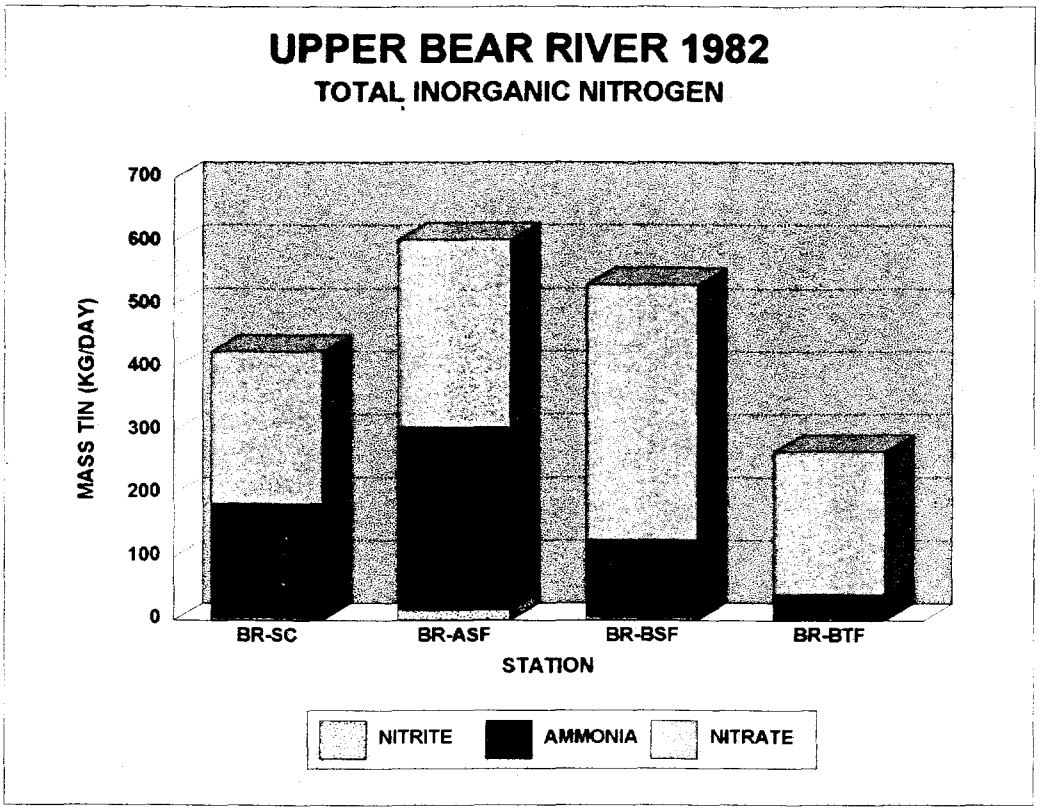
Example of Existing Data:

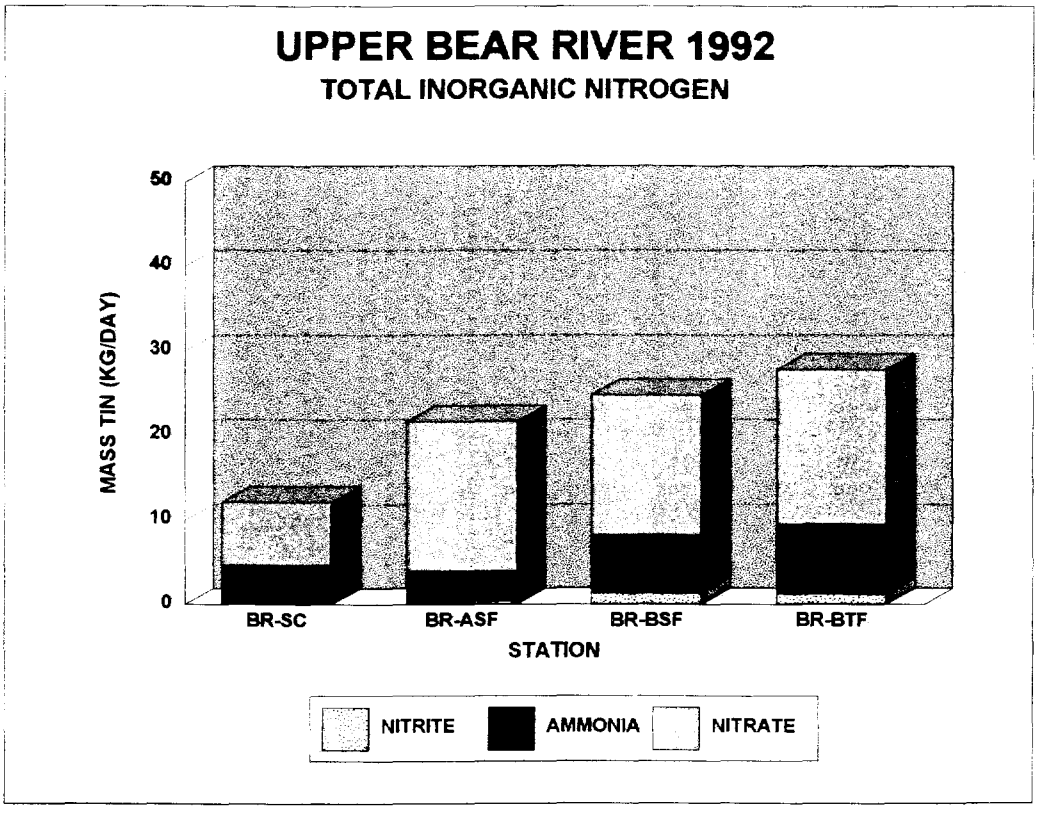
- ✔ Historical Locations
- ✔ Contaminant Parameters
  - Sediments
  - Nutrients (nitrogen, phosphorus)
- ✔ Analysis (reach gain/loss)

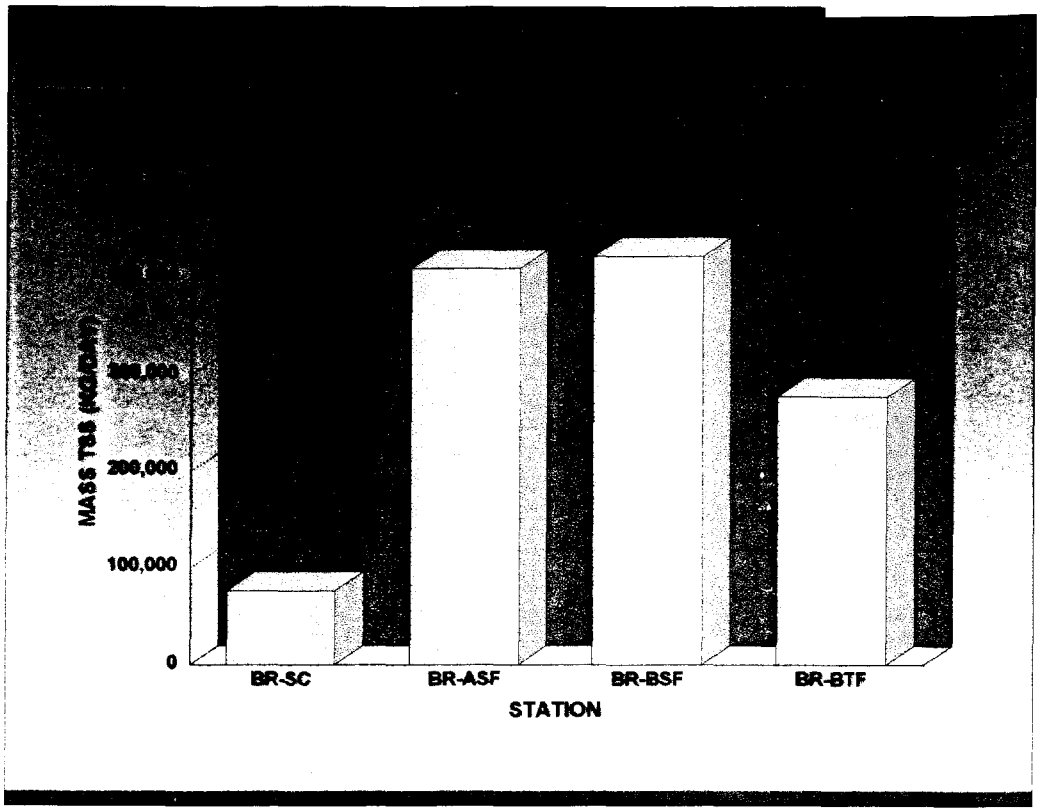
A summary of water quality investigations conducted on the Bear River.

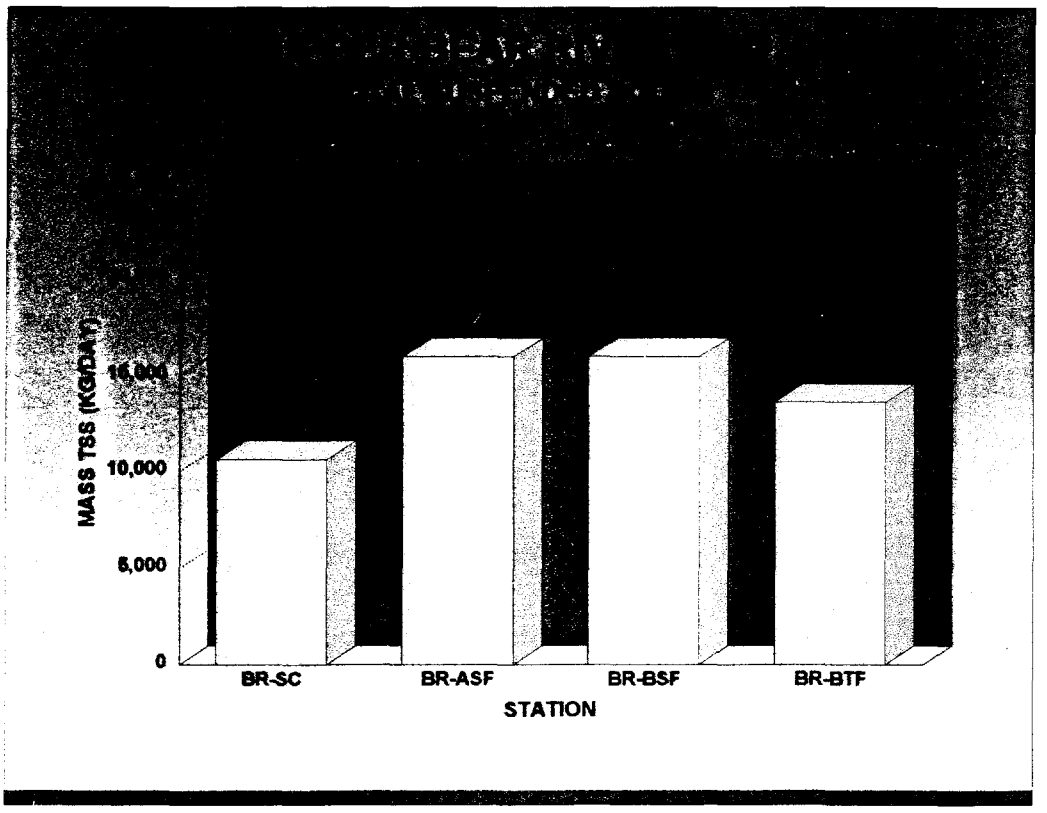
		LOCATIONS			PARAMETERS						
Author	Data date	BR UT	BR ID	BR WY	Flow	Nutrients	TSS	Salts	Metals	Bacteria	Biological
Thorne & Thorne 1951	1949	X			X			X			
Clyde 1953	1953	X	X		X		X				
Ward & Skoubye 1959	1958-59	X			X	X	X	X	X	X	
Bangerter 1965	1963-67	X									X
Waddell 1970	1952-68	X	X	X	X		X	X			
Hill et al. 1973	1971-72	X	X	X	X			X			
Israelson et al. 1975	1973-74	X				X					
UWRL 1974a	1974	X				X				X	
UWRL 1974b	1974	X				X				X	
Drury et al. 1975	1972-73	X				X					
UWRL 1976	1975-76	X	X	X	X	X	X	X	X	X	
Perry 1978	1978		X				X	X		X	X
Heimer 1978	1975-76		X				X				
Lamarra 1979	1977-78	X				X					
Lamarra & Adams 1980	1980	X			X	X	X			X	
Wienecke et al. 1980	1976-77	X				X	X				
Messer et al. 1981	1980	X	X		X		X				
Rupp & Adams 1981	1979-80	X			X						
UBWPC 1982	1975-82	X				X	X	X		X	
Messer et al. 1984	1979-84	X			X	X					
Montgomery 1984	1984	X			X		X				
Sorensen et al. 1984	1977-83	X				X	X	X			
UBWPC 1984	1982-84	X				X	X	X		X	X
Grenney et al. 1985	1976-82	X				X					
UDPC 1985	1985	X									X
Sorensen et al. 1986	1984-85	X	X			X	X	X	X		
UBWPC 1986a	1984-86	X				X	X	X		X	
UBWPC 1986b	1986	X									X
Sorensen et al. 1987	1985-86	X	X		X	X					
UBWPC 1987	1987	X									X
UBWPC 1988	1986-88	X				X	X	X		X	
Barker et al. 1989	1987	X	X		X	X		X			
UBWPC 1990	1988-90	X				X	X	X		X	
ERI 1991	1990-91	X	X		X	X	X	X		X	
PacifiCorp Electric Operations	1991	X									X
UBWPC 1991a	1988-89	X									X
UBWPC 1991b	1889-90	X									X
UDWQ 1992a	1990-92	X				X	X	X		X	
BLRC & ERI 1993	1991			X	X	X	X	X			X
UDWQ 1993a	1990-91	X									X
UDWQ 1993b	1991-92	X									X
UDWQ 1993c	1990-91	X									X
UDWQ 1993d	1991-92	X									X
ERI 1994	1992-93	X			X	X	X		X	X	X
UDWQ 1994a	1992-93	X									X
UDWQ 1994b	1992-93	X									X
UDWQ 1995	1993-94	X									X

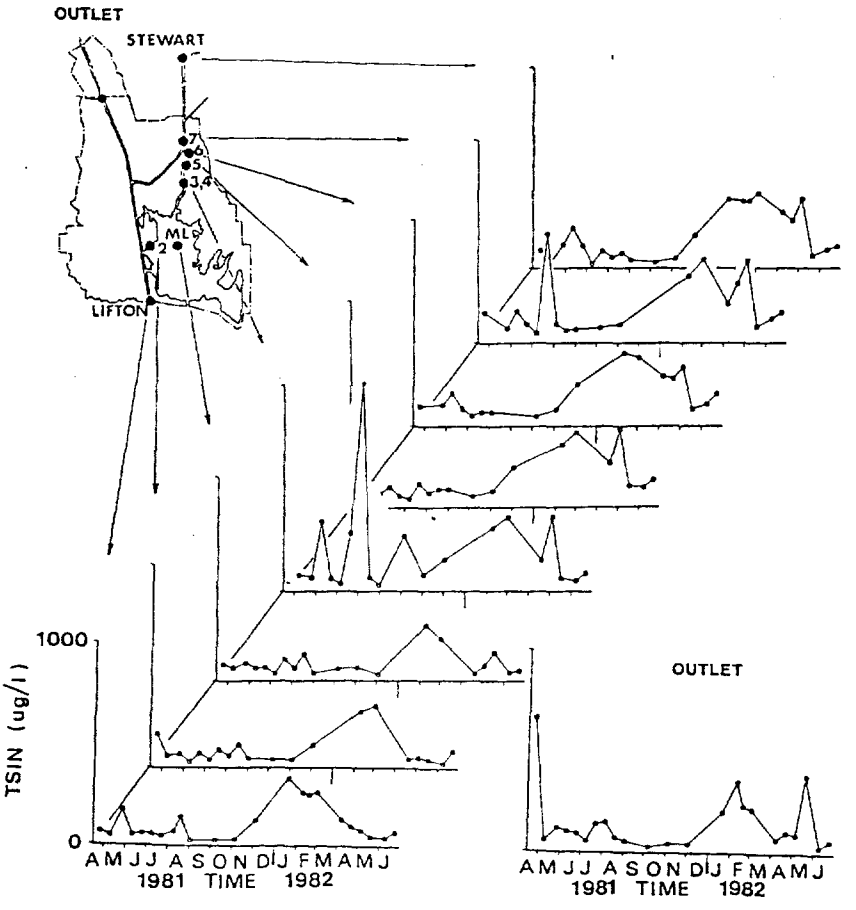
	AVERAGE CONCENTRATIONS (mg/l)			
	BRIDGER CREE	TWIN CREEK	SMITHS FORK	THOMAS FORK
TP	3.712	.254	.314	.160
OP	.087	.023	.015	.010
NO2	.010	.003	.001	.012
NO3	.345	.033	.014	.524
NH3	.093	.026	.041	.051
TIN	.448	.062	.056	.587
TSS	6541	235	64	21

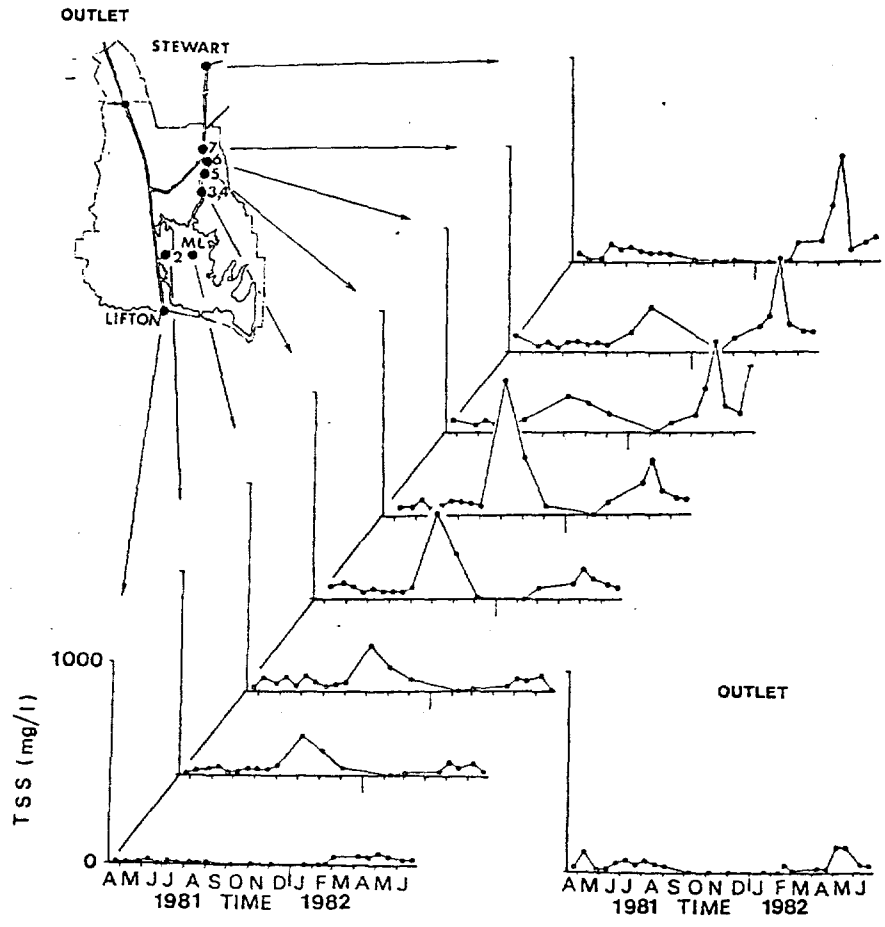

UPPER BEAR RIVER 1982
TOTAL INORGANIC NITROGEN
MASS TIN (KG/DAY)
700
600
500
400
300
200
100
0
BR-SC
BR-ASF
BR-BSF
BR-BTF
STATION
NITRITE
AMMONIA
NITRATE

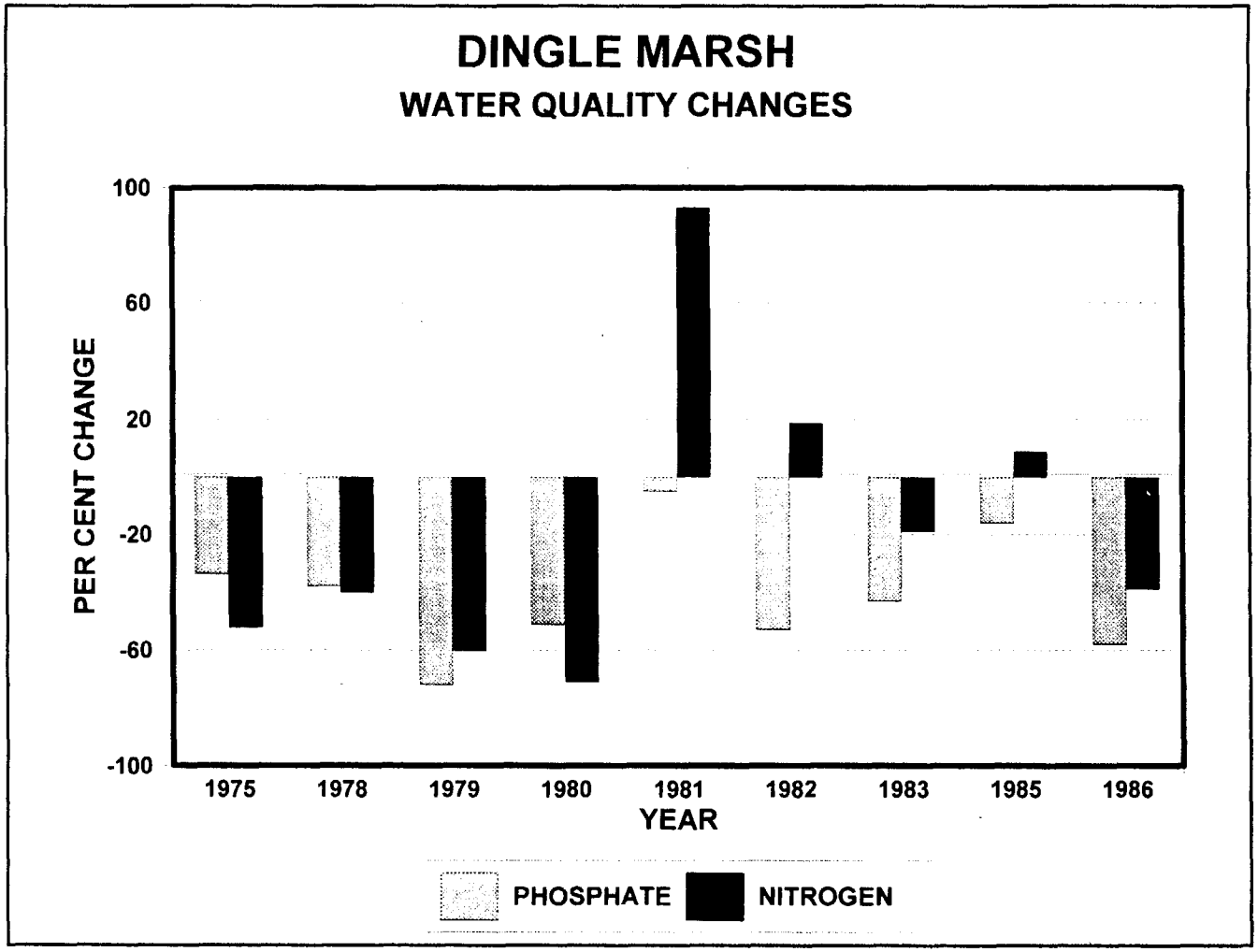

UPPER BEAR RIVER 1992
TOTAL INORGANIC NITROGEN
MASS TIN (KG/DAY)
50
40
30
20
10
0
BR-SC
BR-ASF
BR-BSF
BR-BTF
STATION
NITRITE
AMMONIA
NITRATE


MASS TSS (KG/DAY)
200,000
100,000
0
BR-SC
BR-ASF
BR-BSF
BR-BTF
STATION


MASS TSS (KG/DAY)
10,000
5,000
0
BR-SC
BR-ASF
BR-BSF
BR-BTF
STATION


OUTLET
STEWART
7
6
5
3,4
ML
2
LIFTON
1000
0
TSIN (ug/l)
A M J J A S O N D J F M A M J
1981 TIME 1982
OUTLET
A M J J A S O N D J F M A M J
1981 TIME 1982


OUTLET
STEWART
7
6
5
3,4
ML
2
LIFTON
1000
0
TSS (mg/l)
A M J J A S O N D J F M A M J
1981 TIME 1982
OUTLET
A M J J A S O N D J F M A M J
1981 TIME 1982


DINGLE MARSH
WATER QUALITY CHANGES
PER CENT CHANGE
100
60
20
-20
-60
-100
1975
1978
1979
1980
1981
1982
1983
1985
1986
YEAR
PHOSPHATE
NITROGEN

Y.B.I.
B.I.R.C.

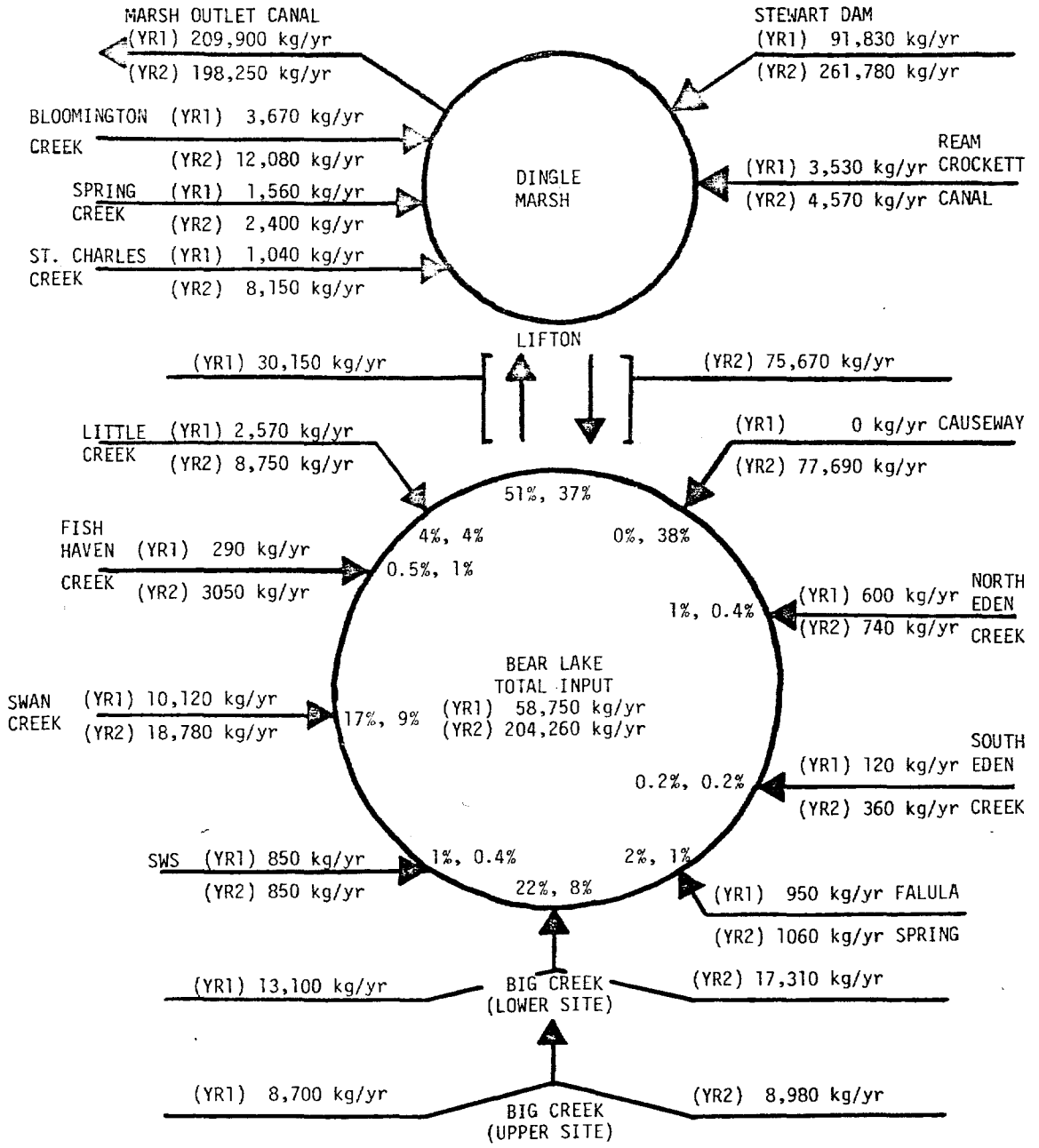
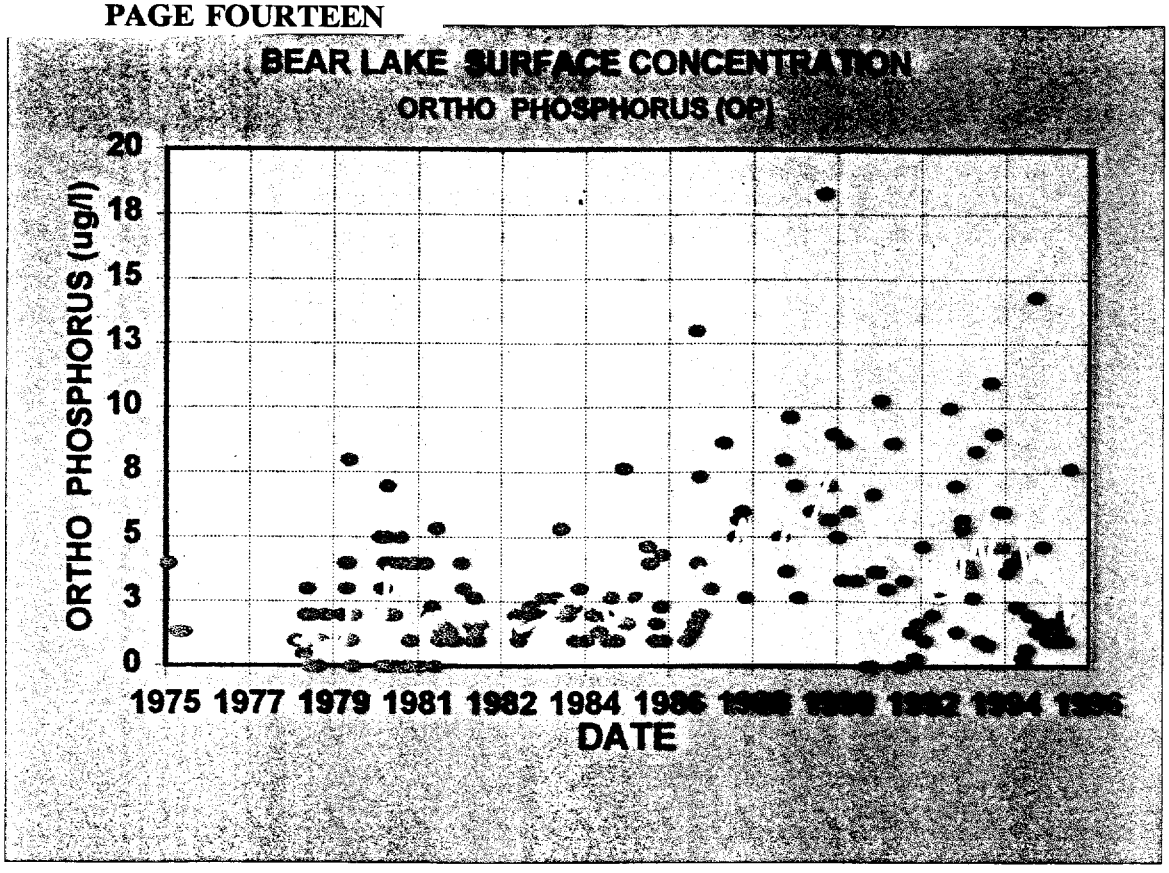
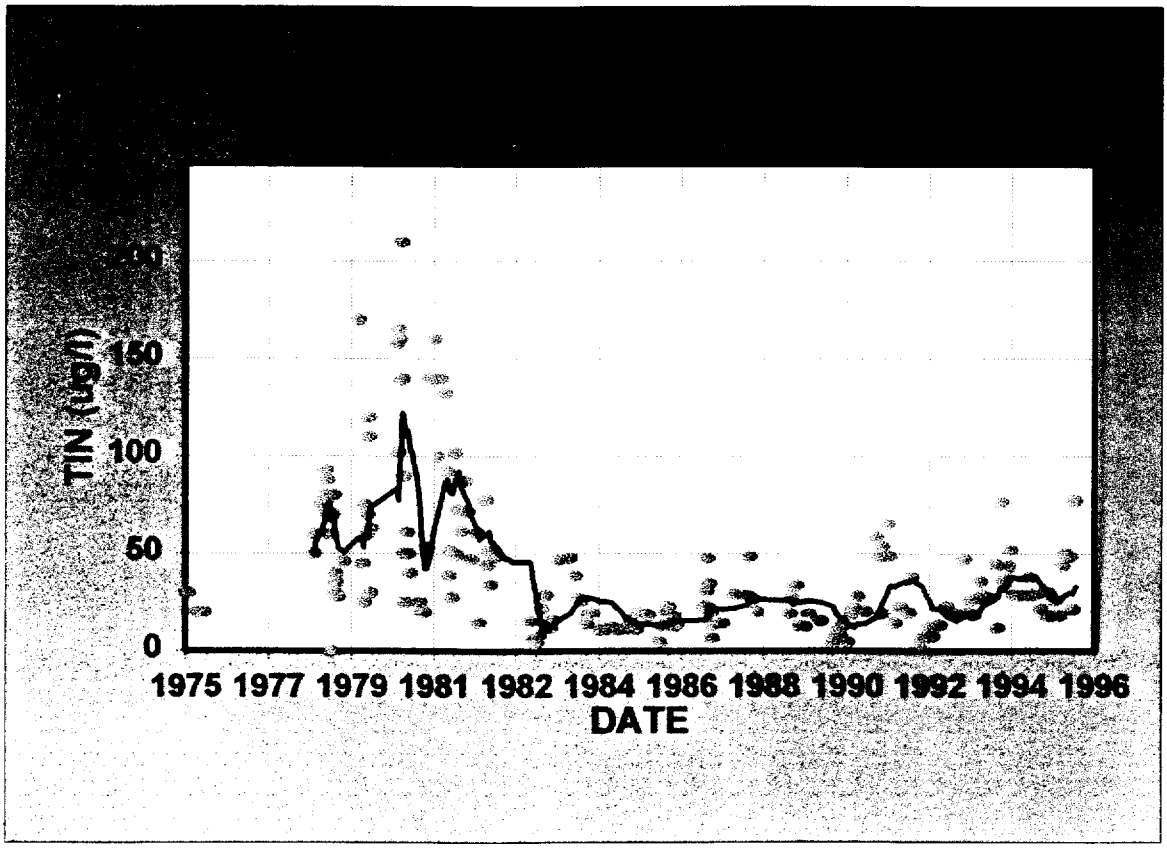
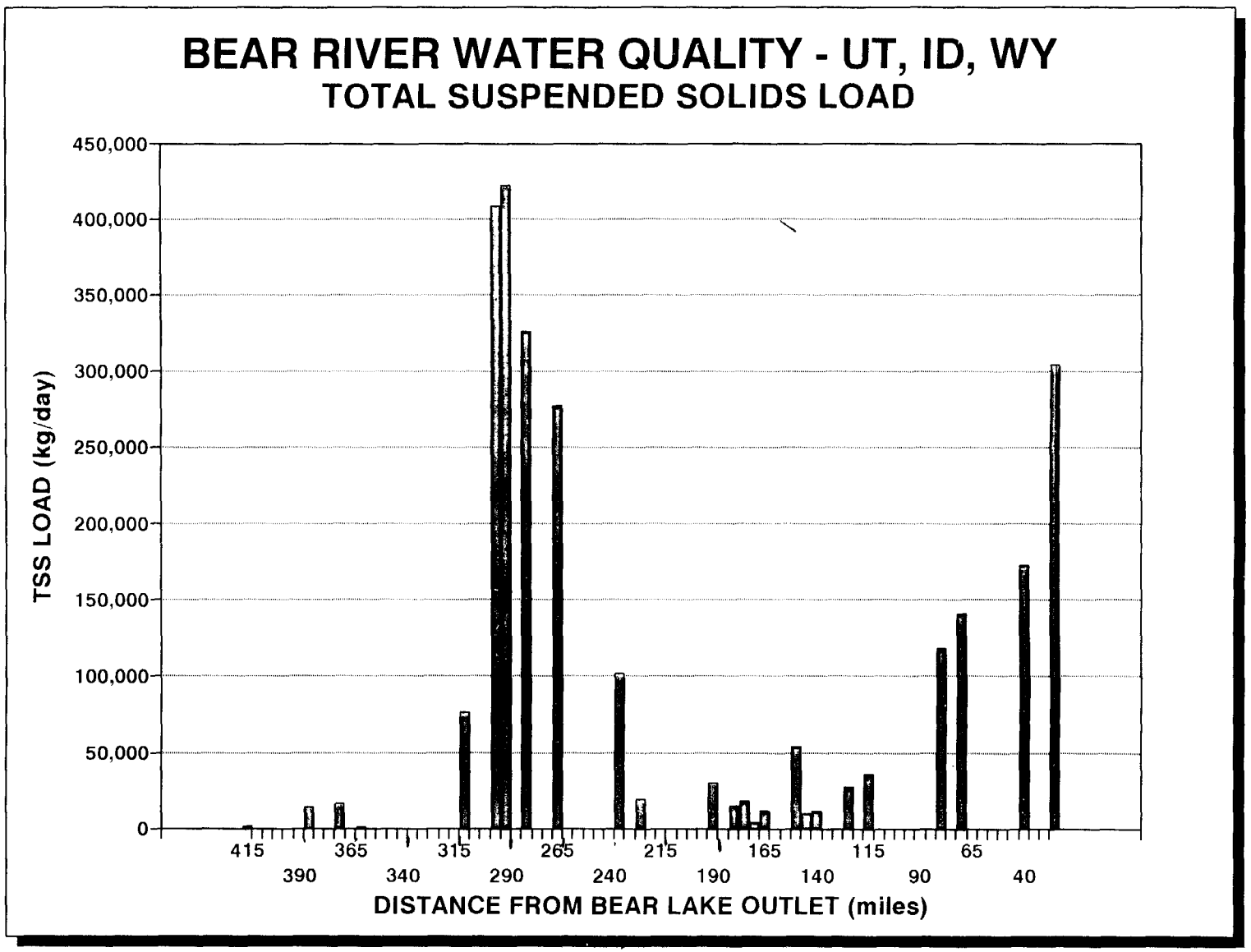
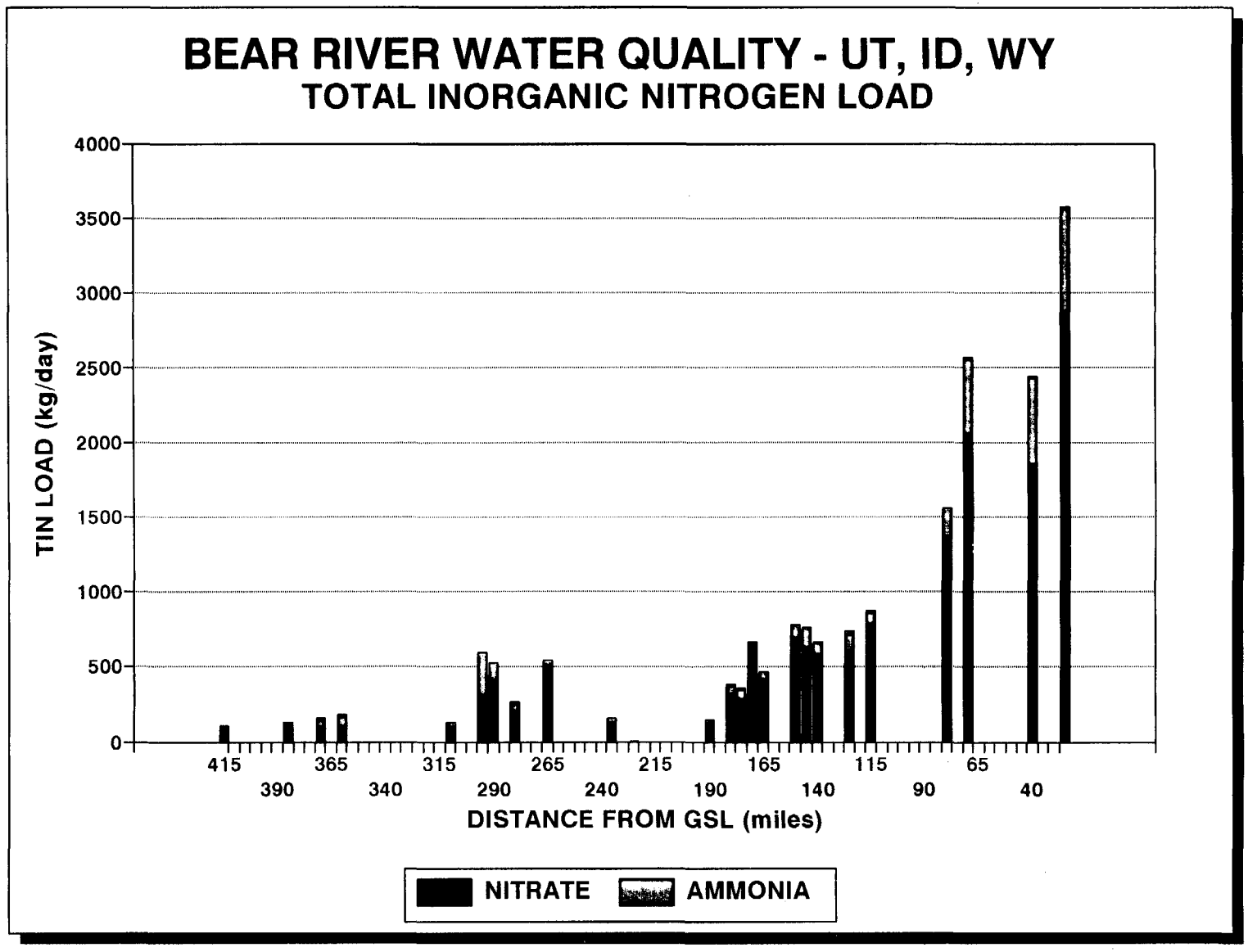


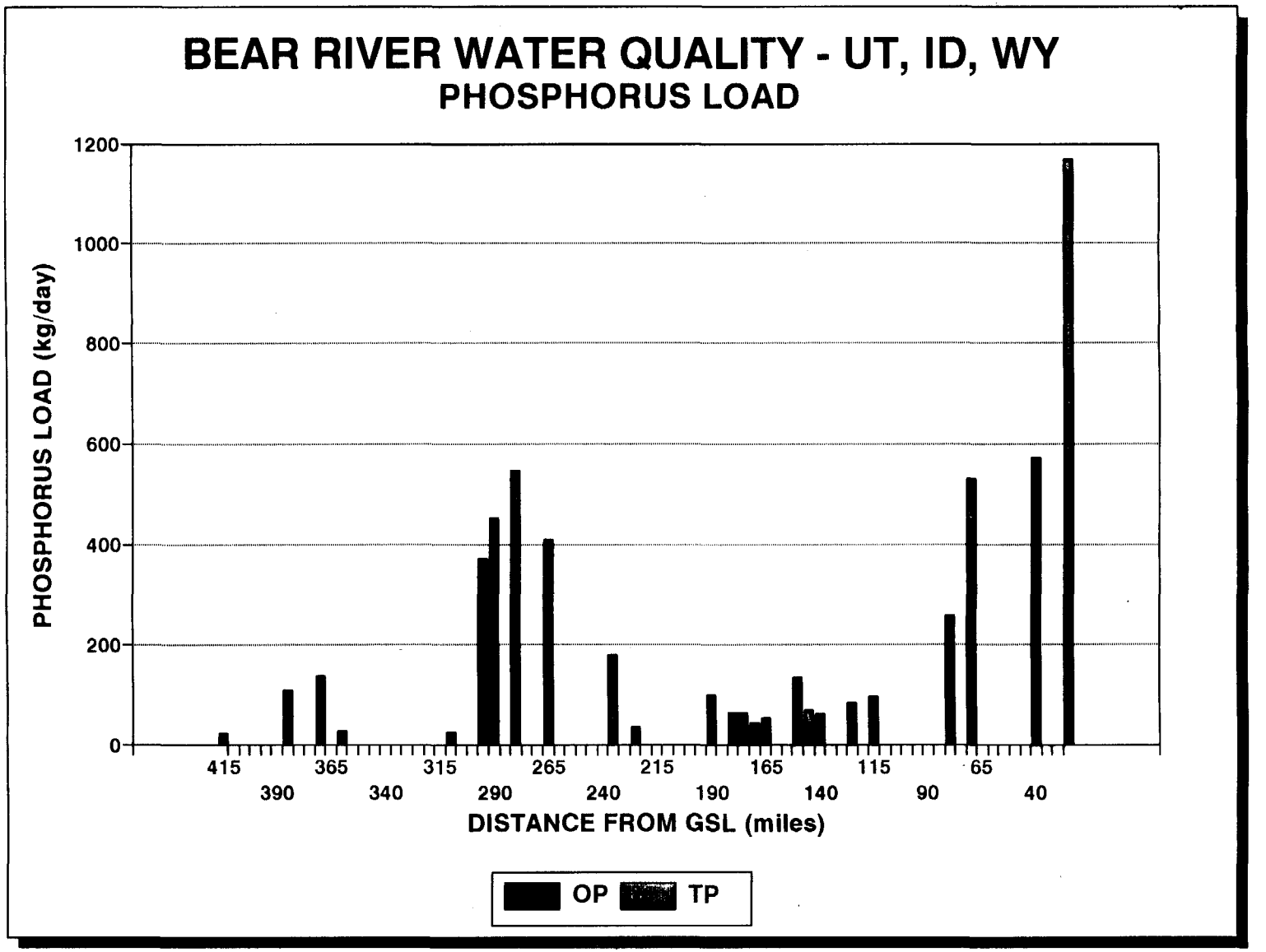
Figure : Bear Lake total nitrogen budget for sampling year 4/24/81 - 4/24/82 (YR1) and sampling year 6/23/81 - 6/23/82 (YR2).


BEAR LAKE SURFACE CONCENTRATION
ORTHO PHOSPHORUS (OP)
ORTHO PHOSPHORUS (ug/l)
20
18
15
13
10
8
5
3
0
1975 1977 1979 1981 1982 1984 1986
DATE


TIN (ug/l)
150
100
50
0
1975 1977 1979 1981 1982 1984 1986 1988 1990 1992 1994 1996
DATE

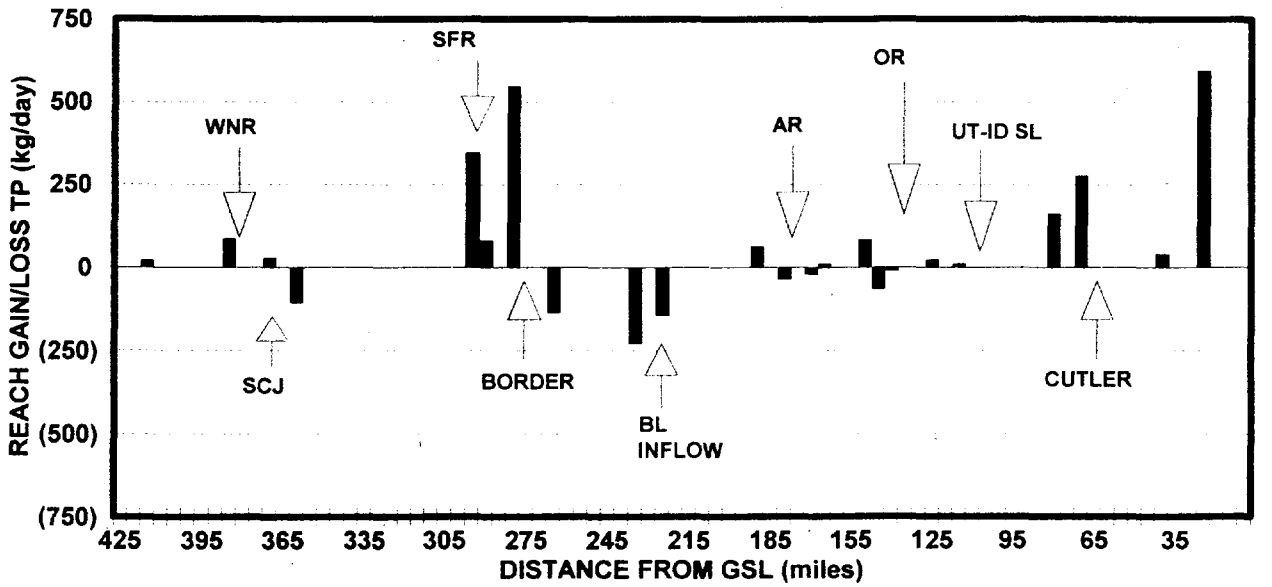

BEAR RIVER WATER QUALITY - UT, ID, WY
TOTAL SUSPENDED SOLIDS LOAD
TSS LOAD (kg/day)
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
415
390
365
340
315
290
265
240
215
190
165
140
115
90
65
40
DISTANCE FROM BEAR LAKE OUTLET (miles)


BEAR RIVER WATER QUALITY - UT, ID, WY
TOTAL INORGANIC NITROGEN LOAD
TIN LOAD (kg/day)
4000
3500
3000
2500
2000
1500
1000
500
0
415
390
365
340
315
290
265
240
215
190
165
140
115
90
65
40
DISTANCE FROM GSL (miles)
NITRATE
AMMONIA


BEAR RIVER WATER QUALITY - UT, ID, WY
PHOSPHORUS LOAD
PHOSPHORUS LOAD (kg/day)
1200
1000
800
600
400
200
0
415
390
365
340
315
290
265
240
215
190
165
140
115
90
65
40
DISTANCE FROM GSL (miles)
OP
TP

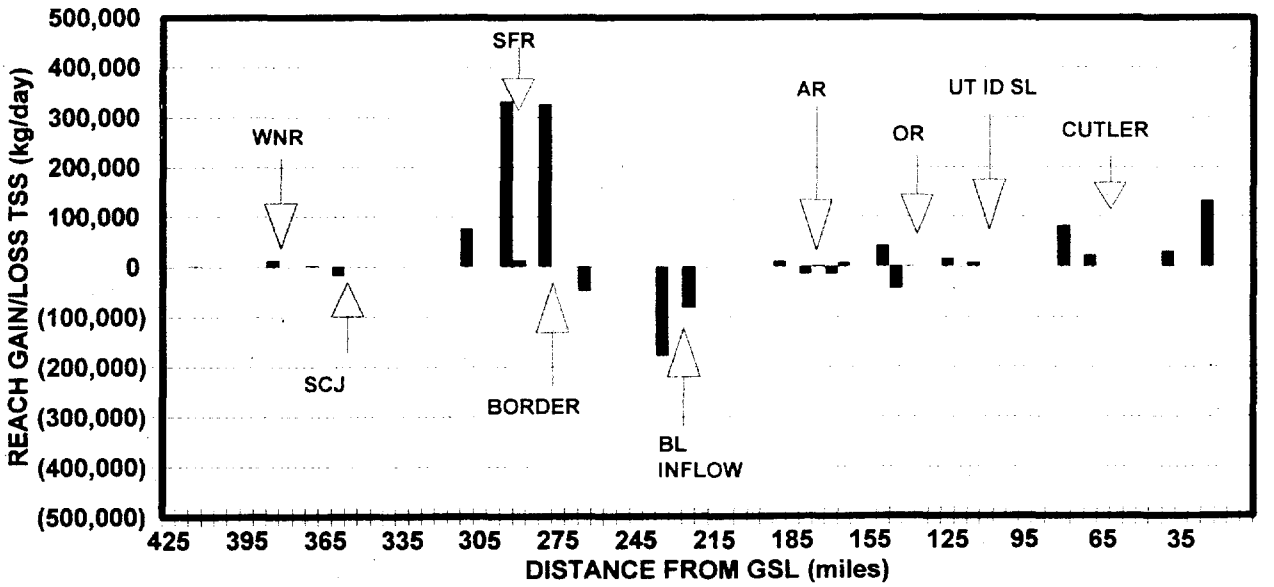
BEAR RIVER WATER QUALITY- UT, IDA, WYO

REACH GAIN TOTAL PHOSPHOROUS



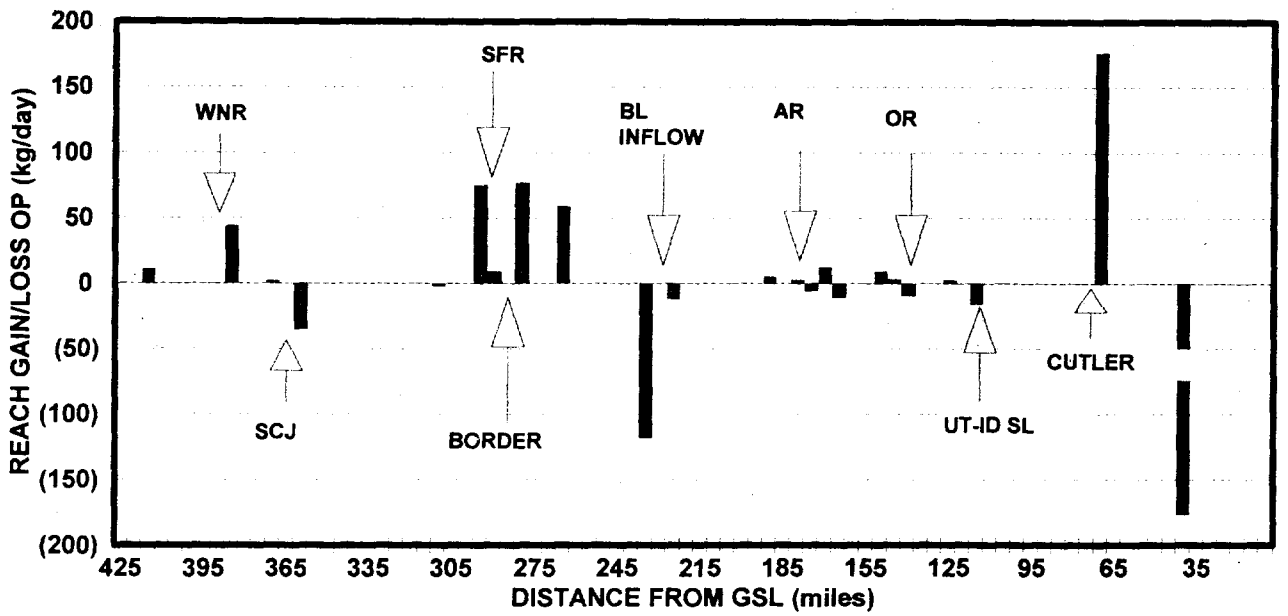
BEAR RIVER WATER QUALITY- UT, IDA, WYO

REACH GAIN TOTAL SUSPENDED SOLIDS



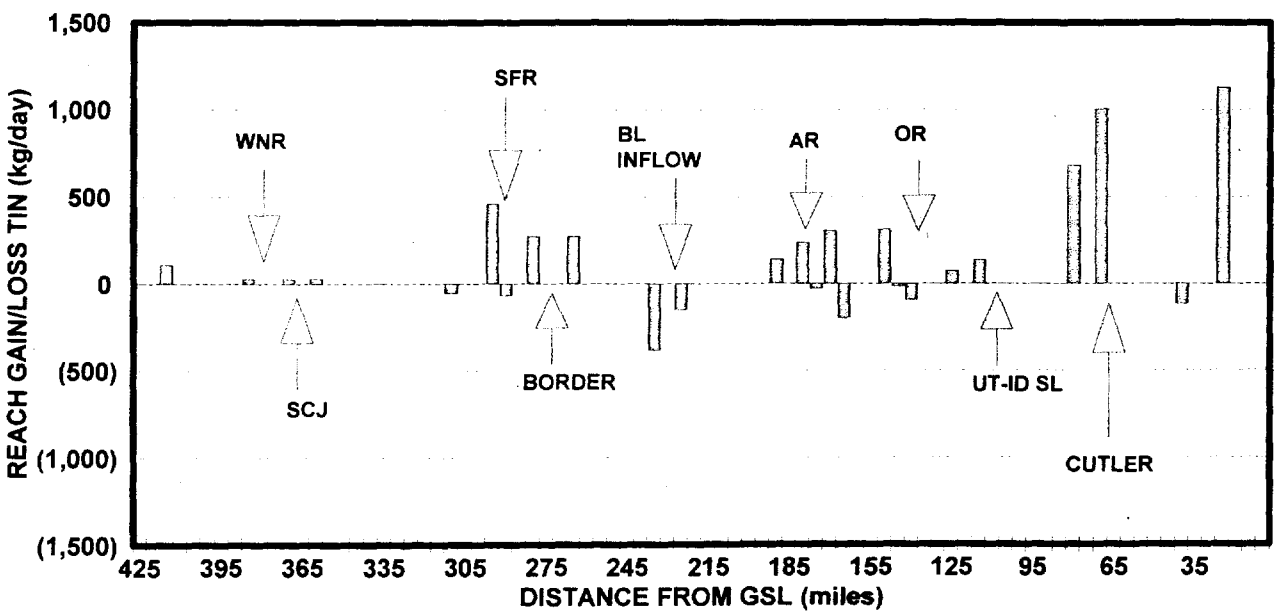
BEAR RIVER WATER QUALITY- UT, IDA, WYO

REACH GAIN ORTHO- PHOSPHOROUS

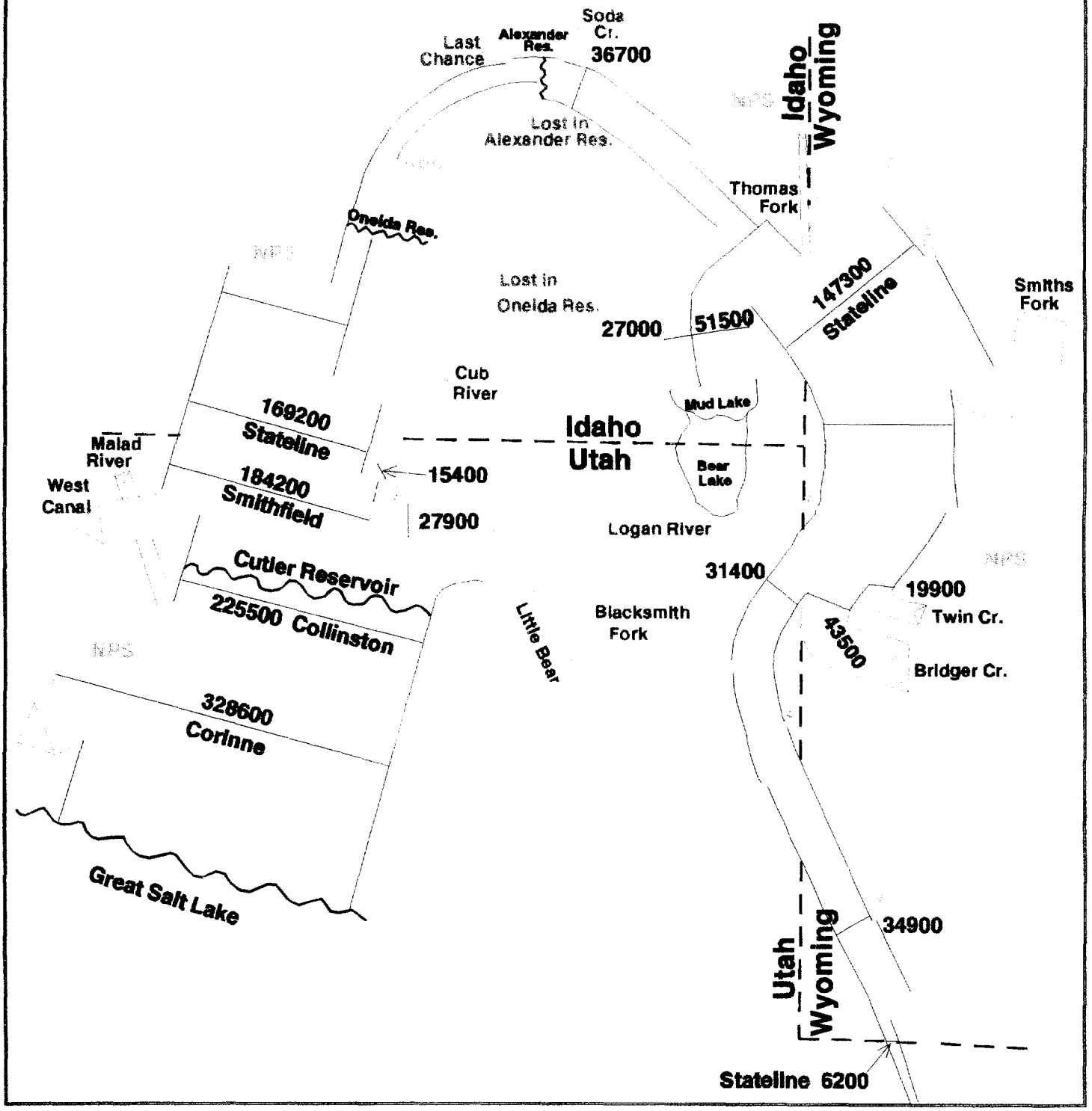


BEAR RIVER WATER QUALITY- UT, IDA, WYO

REACH GAIN TOTAL INORGANIC NITROGEN

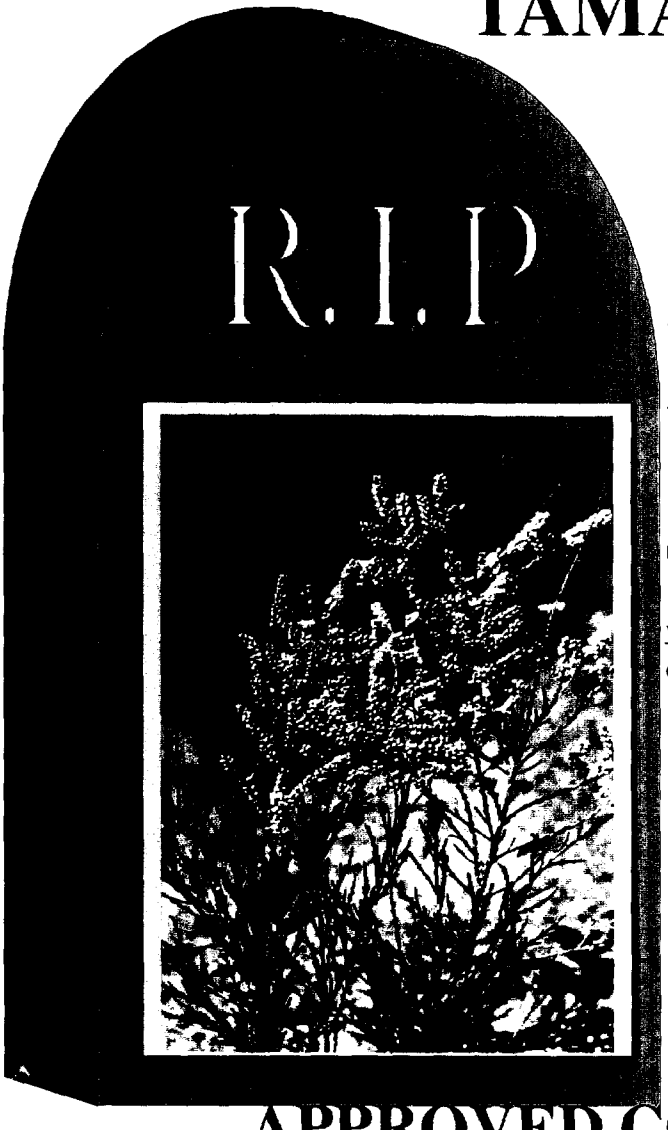


Bear River
Total Suspended Solids
Average Daily Loads (Kg/day)



WANTED
DEAD NOT ALIVE! !

TAMARIX SPP.



ALIAS "TAMARIX" OR "SALTCEDAR"

The common name "tamarisk" is often confused with "tamarack", a coniferous tree. Other similar species along the shoreline are Cotton Wood and Willow. Both have larger leaves (with no blossoms) and **should not be removed!**

TAMARIX is one of the **10 worst noxious weeds** in the U.S. Cultivated and escaped to the shoreline of Bear Lake and along the Bear River.

TAMARIX is a shrub or small tree of up to 10 to 12 feet high and its root system can be extensive. The plant produces many very small pink or lavender blooms from early spring to late fall. The plant has minute, scale like leaves; sepals and petals 4 to 5; stamen 5-10; fruit a capsule with numerous seeds. Tamarix is found either in colonies or as individual plants.

APPROVED CONTROL METHOD

CITIZENS ARE URGED AND AUTHORIZED TO PULL THE INDIVIDUAL *TAMARIX PLANT* EITHER BY HAND OR MACHINE WITH A MINIMUM OF SOIL DISTURBANCE. REMOVE THE PLANT TO THE UPLAND FOR DISPOSAL

SPONSORED BY THE BEAR LAKE PRESERVATION ADVISORY COMMITTEE.

For more information, please call the Bear Lake Regional Commission at (208)945-2333 or 2661 U.S. Highway 89, Fish Haven, Idaho 83287.

1407 West North Temple
Salt Lake City, Utah 84140
(801) 220-2000

APPENDIX H

PACIFICORP
PACIFIC POWER UTAH POWER

April 2, 1996

Mr. Kent Horton, Secretary
Bear River Water Users Association
587 Wasatch Blvd.
Smithfield, Utah 84335

Dear Kent:

This letter is to confirm the Bear Lake allocation for 1996 pursuant to the Bear Lake Settlement Agreement of 1995. Based on the March 1, 1996 Bear Lake elevation of 5911.94 and the March forecast for Bear River at Stewart Dam of 310,000 acre feet (108% of average) of which 268,000 acre feet is available for storage, the computed elevation is equal to 5915.96 feet (886,000 acre feet).

Based on this calculated elevation, the Bear Lake storage allocation for 1996 is 230,000 acre feet or 100% as defined in the Settlement Agreement.

Although snowpack in the basin is well above average, you are urged to continue conservation efforts on your farms in order to minimize Bear Lake storage releases to the extent possible. Hopefully, natural runoff will meet irrigation demands well into July.

The Association should proceed to develop and implement an allocation schedule for all contracted companies and individual members. We will assist you as needed to develop the allocation schedule for 1996.

Sincerely,

Carly B. Burton
Hydrological Supervisor

cc: Norm Young - Idaho Dept. Water Resources
Bob Fotheringham - Utah Division of Water Rights
Jeff Fassett - Wyoming State Engineer
Jack Barnett - Bear River Commission
Merlin Olsen - Bear Lake Watch
Jim Kimbal
Al Harrison - Bear Lake Regional Commission

ms\horton.doc

BEAR LAKE OPERATION
COMPARISON OF 1995 AND 1996 CONDITIONS
(APRIL 15, 1996)

	1995	1996
BEAR LAKE ELEVATION	5908.77	5912.92
LAKE RISE AFTER APRIL 15 (FT)	3.6	4.08
HIGH ELEVATION	5912.37	5917.0*
INFLOW (CFS)	435	1370
APRIL 1 RUNOFF		
FORECAST (BEAR RIVER AT STEWART DAM)	255,000	340,000
FORECAST % OF AVG.	89%	118%
ACTUAL RUNOFF - STEWART DAM	205,000	?
APRIL 1 RUNOFF (LOGAN RIVER)	96,000	134,000
FORECAST % OF AVG.	90%	125%

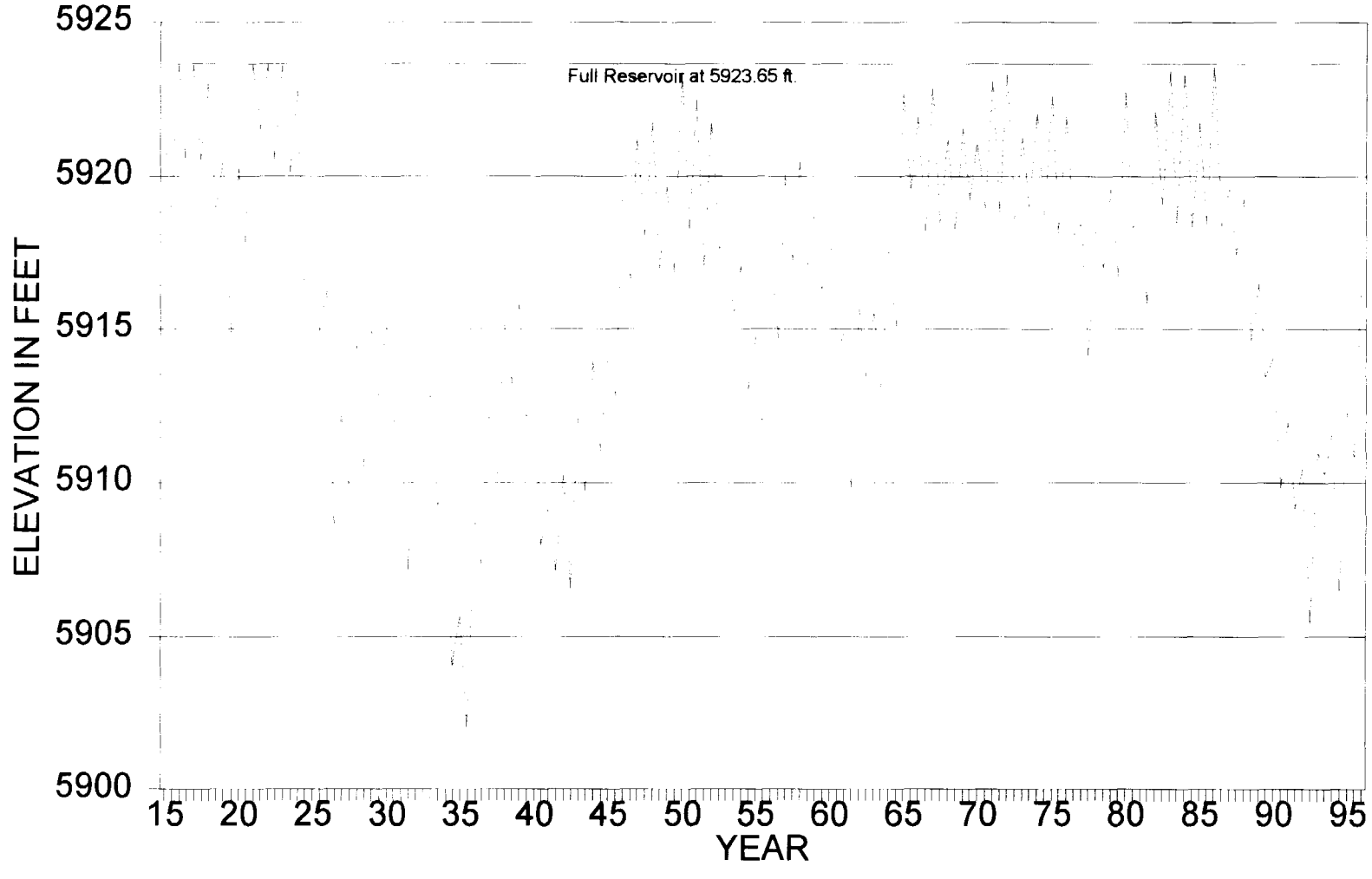
*BASED ON APRIL 1 MODEL PREDICTION

OVHEAD.

APPENDIX I

BEAR LAKE ELEVATION

FROM 1916 TO 1996



1996 High was estimated on April 1, 1996

IDAHO RIVERS UNITED
PO BOX 633, BOISE, ID 83701
(208) 343-7481
EMAIL iru@igc.apc.org

Comments to the Bear River Commission
From Liz Paul, Associate Director
April 16, 1996

Good afternoon. I really appreciate the opportunity to address the Commission, especially on such short notice. I'd like to take a few minutes to talk about Idaho Rivers United and explain our interest in the Bear River.

Idaho Rivers United is a non-profit membership organization. Although we are a fairly young organization, having been founded in 1990, we now have over 1,400 members. It's hard to categorize our members, we're not a boating group or a fishing group or a property rights group. Our members are an amazingly diverse collection of citizens concerned about the management of Idaho's rivers. We have a sizable membership in southeast Idaho and Utah. We're headquartered in Boise, and have seven full time staff. We are governed by a volunteer board of directors.

Idaho Rivers United works on a whole host of river and fishery related issues. Our major program areas include salmon and steelhead restoration, water policy, public lands river management, hydropower licensing and relicensing, and water pollution prevention. We are involved in Idaho legislative issues every year and do a bit of lobbying in Washington D.C. We're in the business of helping folks help rivers and we rely heavily on our members for direction and action.

Idaho Rivers United has been involved in Bear River issues for many years. We campaigned against the Oneida Narrows hydroelectric project. Our members and allies let us know that the Oneida Narrows was a special area they didn't want sacrificed for a hydroelectric plant. More recently we supported BLM's efforts to determine which sections of the Bear River qualify for Wild and Scenic River designation. We believe that the Bear River has many outstanding and unique features which put it into consideration for national recognition.

But there has never been as great an opportunity to improve the Bear River as is currently provided by the relicensing of PacifiCorp's four hydroelectric projects. I'll just remind you that the Soda, Grace, Cove and Oneida projects are all being relicensed in the next five years. Idaho Rivers United is very interested in taking advantage of the opportunities offered by relicensing. This is truly a once-in-a-lifetime chance to

improve management of the hydroelectric projects to benefit the river and all of its users.

Idaho Rivers United recognizes that water management in the Bear River is a highly complex and sensitive issue. We know that the irrigators have made considerable effort to work out allocation conflicts. And it appears that some of the conflicts between water users and Bear Lake residents have been resolved. It is not our intention to interfere with these agreements.

Fully respecting all water rights and working within the parameters of the Bear River Compact and the other agreements, we do, however, believe that steps can be taken by PacifiCorp to improve the Bear River. While our position is far from finalized, I'll share some of the ideas we are considering.

Operations of the projects can be modified to benefit water quality, fish, wildlife and recreation. Of special concern is the lack of minimum stream flows below the projects and the rapid flow fluctuations. Water quality could be improved if water levels were stabilized and riparian vegetation reestablished. Fish and wildlife would benefit from minimum flows, cleaner water and healthier riparian areas. Less flow fluctuation would also improve conditions at the reservoirs. Recreational boaters are very keen to have a few days of scheduled whitewater releases in Black Canyon each year and to have more predictable flows in the Oneida Narrows.

On site mitigation could include improving public access to the river. Purchase of easements may be desired. There may be a need for more or improved recreational facilities. Fish stocking and riparian restoration are also possibilities.

There are many impacts for which there is no reasonable mitigation, such as the blockage of fish passage. The dams have dissected the river and isolated fish populations. Idaho's native Bonneville Cutthroat trout are in decline in part because of the dams. So, Idaho Rivers United is also looking at off-site mitigation. We're wondering if there isn't something PacifiCorp can do to reduce silt levels in the river. Maybe they could contribute to the purchase of land to be used for settling out some of the silt, or maybe they could help restore land along some of the tributaries to reduce erosion. Many utilities are agreeing to contribute funds to a river enhancement and restoration trust managed by representatives of a variety of stakeholders. Those funds can be used where needed to benefit the river and watershed.

Idaho Rivers United would like the scope of PacifiCorp's environmental analysis to include all of the Bear River in Idaho. While the diversion and pumping operations at Bear Lake are not officially part of the project area, we think that this is the time to examine the

full impacts of those facilities. Again, we would be foolish to attack the finely crafted agreements which are now in place, but we firmly believe there is a need to gather more information about the watershed. We must use that information to develop reasonable solutions to exisiting problems in the watershed.

Relicensing is a long process, and things are just getting started. Idaho Rivers United is interested in finding the best ways to meet the needs of the Bear River and all its users. We need to know what you think and what your vision for the Bear River is, what you're afraid of and what you're hoping for. We want to work with the irrigators and everyone else concerned with the Bear River to bring a healthy river into the 21st century.

The renewal of the Bear River compact is another concern of Idaho Rivers United. To be honest, we don't believe that the Compact provides for a healthy Bear River. An example of this would be the lack of minimum stream flows in the bypass reach at Bear Lake. We hope that the Commission takes advantage of this opportunity to review the Compact and make changes to better provide for the river and all its users. Idaho Rivers United would like to be involved in Compact discussions.

The Bear River is an amazing resource for Utah, Wyoming and Idaho. But its full potential has not been reached yet. And I'm not talking about more water storage or more irrigation. I'm talking about recreation. The Utah commissioners are well aware of the vital role of recreation in Utah's economy, and recreation is on the rise in Idaho and Wyoming. With some cleaning up and care, the Bear River could really shine.

A new day is dawning for the Bear River. There is renewed hope that the river can thrive once again. Through relicensing and the renewal of the Compact, Idaho Rivers United hopes to begin the process of restoration. I urge the Bear River Commission to join us in this undertaking.