



MINUTES

BEAR RIVER COMMISSION REGULAR MEETING ONE HUNDRED SEVENTEENTH COMMISSION MEETING November 16, 2010

BEAR RIVER COMMISSION

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CHAIR

Dee C. Hansen

IDAHO COMMISSIONERS

Gary Spackman
Rodney Wallentine
Marcus J. Gibbs

UTAH COMMISSIONERS

Dennis J. Strong
Blair Francis
Charles W. Holmgren

WYOMING COMMISSIONERS

Patrick T. Tyrrell
Sam Lowham
Gordon Thornock

ENGINEER-MANAGER
Don A. Barnett

I. Call to order – The regular meeting of the Bear River Commission was called to order by Vice Chairman Sam Lowham at 1:07 p.m. on Tuesday, November 16, 2010, at the Utah Department of Environmental Quality building in Salt Lake City, Utah. This was the one-hundred and seventeenth meeting of the Commission. Lowham welcomed everyone to the meeting and asked them to introduce themselves. Sue Lowry was sitting in as an alternate for Gordon Thornock from Wyoming. An attendance roster is attached to these minutes as Appendix A.

I.C. Approval of agenda – Lowham then addressed the agenda for the meeting. The agenda was approved without change, and a copy is attached to these minutes as Appendix B.

II. Approval of minutes of last Commission meeting – Vice Chairman Lowham asked if there were any changes to the minutes of the previous Commission meeting held on April 20, 2010. Sue Lowry suggested a few minor editorial changes for clarification, which she explained briefly to the Commission. The minutes were approved with those changes.

III. Report of Secretary/Treasurer – Dennis Strong reported that, due to some confusion with the stream gaging bill from USGS, the FY 2011 budget line item for stream gaging was incorrect. Instead of \$54,520, it should be \$59,155 (see Appendix C), which amount has been paid. It will be necessary to amend the budget to show the correct amount.

Strong also mentioned that the Commission has a contract with Barnett Intermountain Water Consulting (BIWC), which is only a half-year contract that goes through December 31, 2010. He indicated that if the Commission continues with BIWC, it would be necessary to amend that contract to include a full year. It would simply require doubling the amount of the contract and would not affect the budget since the budget includes the amount for the full year. This item will be addressed later in the agenda.

Randy Staker then reviewed the Statement of Income and Expenditures, which is attached as Appendix D. He noted that in fiscal year 2009-2010, income from U.S. Fish & Wildlife amounted to \$8,518.73, and interest on savings was \$876.95. Due to the low interest rates, this is considerably less than what was earned in the past. Total expenses were \$149,542.40, resulting in a carry-over into fiscal year 2010-2011 of \$94,446.88. Expenditures to date this year amount to \$84,288.32, leaving a balance of \$133,138.77.

Gary Spackman then addressed the concerns expressed by Strong in the Management Committee meeting regarding the confusion on the stream gaging budget item and his expenditure in excess of what was allowed in the budget. They also discussed two items which were previously approved by the Commission, but had not been included in the budget. These items were the geological publication being written on Bear Lake by the Utah Geological Survey and the website, which were approximately \$1,000 each. Spackman thought it would be appropriate, either through a motion or a resolution, to allow the Secretary and Treasurer, with the oversight of the Engineer-Manager, some latitude to make reasonable adjustments within the limits of the budget. He made a motion to that effect, which was seconded. Pat Tyrrell thought it would be sufficient to record in the minutes that the Commission would allow that kind of flexibility within the constraints of the overall budget. When a situation of this nature comes up and is taken care of within those restraints, Strong could communicate such in a memo to the Management Committee. This process was agreed upon, making the motion unnecessary. The motion was withdrawn. The financial report was then approved by the Commission.

IV.A. Report of the Technical Advisory Committee/Depletions – Don Barnett reported that the Technical Advisory Committee (TAC) was given the assignment by the Commission to look at updating the Compact depletion estimates. They have been working on this assignment and made a report to the Commission in the April 2010 meeting. In their continuing work efforts, the TAC has identified a number of issues, most of which deal with improved technology since the maps were created 20 years ago. Barnett expressed appreciation for the involvement of the state GIS folks in recent months who have taken on the issues and identified potential resolutions. He turned the time over to Eric Edgley from the Utah Division of Water Resources to present the combined ideas from the three states. Barnett added that they were not necessarily looking for specific action from the Commission at this time, but more an agreement that they were on the right track. The plan would be to come back to the spring meeting with a final product for approval or further direction from the Commission.

Edgley reported that the GIS group had come up with four issues, four processes and recommendations to allow them to provide the Commission with a report by sub-basin of acreage increases and decreases. Starting with the GIS data itself, Edgley reported that the first issue was due to the fact that Utah and Wyoming had two digital data sets, one being a stand-alone 1976 data set and the second a combination 1976, 1980, 1990 data set. Due to differences in acreage for the latter data set, they opted to go with the stand-alone 1976 data set and compared that with hard copy maps adopted by the Commission in 1993 to verify that the digital data matched the hard copy maps correctly.

The second issue was how to account for actual changes in acreage and still be able to reclassify areas that might have been mis-classified in 1976. The computer process of overlaying data sets can introduce a number of errors, so they decided upon a process to manually and visually go through the data set sections by sections of land and identify actual areas of change, with the help of a satellite image or aerial photo background. All of the small slivers and inconsistencies between the new data set and the old data set would be disregarded as they don't add up to a lot of error. They also would recommend correcting the classification of areas that appear to have been mis-classified in the 1976 data set. The result at the end of the process would be a corrected 2009 base data set.

The third issue would be to assure that in the future, when this process needs to be revisited, there would be a much better base data set to use for comparison. It would be more accurate and

detailed, would include information from 1976 and 2009 and would specify which changes were actual and which were reclassifications of land.

The fourth issue was that the sub-basin boundary data set was very general and not very hydrologically accurate or precise. With the current availability of much better hydrologic data, specifically from the USGS, those boundaries can be reconstituted much more precisely where they were intended to be. Therefore, final summaries of additions and subtractions would be based on more accurate sub-basin boundaries.

Dennis Strong suggested that at some point there would need to be a discussion about the 1976 base map and whether or not it would be changed, corrected or replaced. He felt that it should be made clear that trying to verify the base map was fine, but that the Commission would have to wait until all the necessary information becomes available that would allow for an intelligent discussion regarding possible changes. Don Barnett added that the GIS people are presently just categorizing everything, and eventually the data will come forward and the Commission will be left with full latitude to make the final decision on what, if any, changes should be made. What will be identified are apparent changes, either additional acreage that has come in or historic acreage that has gone out, and what acres are seen that may have an incorrect classification which does not match their current usage. These items will be coded, allowing for an informed review and decision. Therefore, at this point, there is no recommendation that the 1976 base maps be changed. Strong added that it would be wonderful to have a 2009 map that is as accurate as possible.

Continuing, Edgley explained that by the TAC meeting in February or March of 2011, the GIS group's intention would be to provide a new 2009 basinwide base data set that has attributes and classification from 2009 with a column of added, removed and reclassified areas. There would be another column showing the 1976 base data as well. Also provided would be the more precise sub-basin data set, along with a summary table of actual additions and subtractions by sub-basin.

In response to a question, Barnett explained that the Amended Compact allowed additional depletions, with those depletions being a composite of several numbers. Additional depletion is determined by multiplying additional irrigated acres by a consumptive use number, which can then be compared to those allocations. When this effort was done for 1990, there was a publication and a table presented which identified the amount of additional depletion which had occurred from 1976 to 1990. That value has been published in the Biennial Report ever since it was adopted by the Commission. The ultimate goal in all of this is to update that table.

Barnett then summed up the process presently being pursued. The GIS folks will work on the numbers and do this visual comparison of sections of land and create a tally. They will then report back to the TAC in the February/March time frame. The TAC will then review that information, see if there are remaining questions or issues and then look for an opportunity to bring that forward to the Management Committee and ultimately, to the Commission for review and adoption.

In addition to the information provided on changes in acreage, the evapotranspiration multiplier will need to be addressed. The Commission has an adopted procedure with a specific number to be used as the multiplier. Barnett reported that the State of Utah is presently looking at their consumptive use values through a contract with Utah State University. The TAC will probably be able to report the findings of the study by the State of Utah to the Management Committee by April. Whether or not this will prompt the Commission to consider making a change is uncertain at this time.

In addition, the water resource agencies in each of the states are looking at the municipal and industrial use changes. This will be included in the table. Ultimately, all of this will come together and there will be an update on depletions. This is a step-by-step process. Following a review of the data as it becomes available, the TAC will report back to the Management Committee for direction. Ultimately, the goal is to bring a TAC report to the Commission that the Commission will adopt, providing new numbers for use until the process is repeated at a later time. This report to the Commission may or may not be ready by the April meeting, but if not, at least by the fall meeting.

Pat Tyrrell added, for the minutes, that when we look at sub-basins for purely hydrologic purposes, that is one thing, but this is for climatological purposes because they are being used to segregate areas of different consumptive irrigation requirements. He would be interested to see where the lines are redrawn to see if they fairly segregate irrigation types in areas. That will be a consideration as these findings are evaluated.

IV.B. Stream Gaging – Barnett reported that the TAC continues to look at stream gaging activities. With regard to a report from the Records Committee on stream gaging for the 2011 water year, there was no change with the USGS as far as which gages are maintained. However, at the start of this year, the USGS determined that they could pick up one of the gages under the NSIP program that had historically been cost shared by the Commission. This reduces the cost of the stream gaging program to the Commission by about \$4,600 this year.

Barnett reported that, because of a canal that broke in the Logan area, the canal companies are looking at moving the location of some of the diversions. Whether or not this may impact the Commission stream gaging program is uncertain. The situation will be monitored and reported on in future meetings.

V. Climate change – Randy Julander gave a power point presentation (Appendix E). He reported that NRCS has made some recent installations in the Bear River Basin. He mentioned new SNOTEL sites which have been upgraded to full hourly instrumentation. They include Burts Miller Ranch, Tony Grove Ranger Station, Klondike Narrows, Garden City Summit, Bear River Ranger Station, Blacks Fork Junction, East Fork of Blacks Fork Guard Station, and Kilfoil Creek. He added that there are more SNOTEL sites in the Bear River Basin than in any basin of its size west-wide.

Julander reviewed general climatic conditions. He reported that currently we are at 90 percent of average snow water equivalent. Bear River precipitation was 190 percent of average during the month of October. This is significant because the soil moisture, when it comes early in the season, tends to persist most of the way through the year. This sets up a very good runoff scenario for the spring. In summary, the outlook for water year 2011 in the Bear River Basin looks really good. There are excellent soil moisture conditions and an 80 percent probability that snowpack will be average or above, with a 25-35 percent probability that it will be more than 120 percent.

Julander then addressed the subject of climate change. With regard to watershed conditions, “streamflow is the last check paid out of your watershed budget.” Everything that happens on a watershed changes the hydrology of the watershed. He made a distinction between “Is climate change happening now?” and “What may happen 50 years from now?” He addressed what is happening now.

Julander showed graphs with running averages over periods of 5, 15 and 30 years, showing that we are losing snowpack. The question is what's causing that decline. He showed pictures of different areas, comparing what the area looked like many years ago to what it looks like today. Many of these areas have gone from open meadows to aspen groves and then to heavily forested areas. He reported that with a conifer coverage, you will lose 40-50 percent of the snowpack. As the snow is intercepted by the branches, it hangs there and then is sublimated away, not allowing a buildup of snowpack on the ground. He explained that a forester loves trees, but a hydrologist sees trees as nothing more than a water pump, keeping water out of the watershed. Another factor shown in one area was the building of irrigation ponds in a meadow. These are leaky ponds which cause sub-surface irrigation, melting snow from the bottom up. The pictures show a greatly reduced snowpack in the pond areas. There is an obvious impact of vegetation and ponds on the snow course.

Julander concluded that, of the 16 snow courses in Utah, if the site had declining snowpack, it was because of a change in vegetation in 100 percent of the cases. There were eight snow courses where there was no vegetation change, and those showed no change in snowpack. He stated that it was an ironclad conclusion that vegetation was driving the decline in snowpack, not climate.

Another thing that Julander addressed was in regard to the claim that snowpack is coming later and melting earlier. He reported that when SNOTEL first came in, they were using stainless steel pillows instead of the more recent hypalon pillows. The pillow is the sensor that actually measures the snow water equivalent. The hypalon pillows were much better and more stable. Testing showed that steel pillows accumulated more snow than hypalon pillows. The change to hypalon pillows introduced a declining snow water equivalent bias into the data set. Hypalon pillows also collect snow later and melt earlier due to the increased heat from the materials used and the construction of the pillows. If the data set is adjusted for this bias in the SNOTEL system, there is no evidence to support the claim that snowpack is coming later and melting earlier.

The last issue is whether or not streamflow is decreasing. The slight declines seen in several cases are statistically insignificant, so the question is what additional factors might have caused a decline. Grazing allowed over more than a century has fluctuated greatly, with increased grazing causing depleted vegetation, erosion and flooding. As grazing became better controlled, water was able to be infiltrated into the soil, resulting in a different hydrologic response. Another measure taken was to install mechanical devices called contour trenches all over the western United States. These were specifically designed to hold water on the watershed, again changing the hydrology of the watershed. Mining was another factor. In order to refine ore onsite, numerous trees were cut down for use as fuel in the smelting process. Also, many trees were used for railroad ties as railroads were built. With a huge decrease in logging, the areas have re-vegetated, resulting in decreased water flowing into the watershed. One additional factor would be the "Smokey the Bear" effect, trying to protect the forests from fire. At the turn of the century, 10-30 million acres of forest burned annually compared with 2-5 million acres now. In the 1960-70s, with the environmental movement, there was a paradigm shift in land management. The result is that watersheds which used to have 5-20 trees per acre now have up to 200 trees per acre. The bottom line is the more trees you have, the less water you produce. So, if you want to manage the forests for water, you would have to eliminate a lot of trees, either by logging or by allowing Mother Nature to burn it. Julander also reported on Utah forest mortality on the Bear and the north slope of the Uintas, indicating that there are almost 250,000 acres of standing dead timber. On the upper part of the Bear, a huge mortality factor is a beetle infestation. This infestation has not yet made it to the Idaho

and Wyoming side. Again, this loss of trees will yield an increase in streamflow. In summary, with all of these factors affecting the watershed, it doesn't make sense to blame it on climate change.

Break

VI. Records & Public Involvement Committee report – Marc Gibbs reported on the items discussed in the meeting of the Records & Public Involvement Committee. He noted that the contract amount for USGS stream gaging for the coming year would be lower because USGS will be taking over one of the sites, saving the Commission about \$4,600. He indicated that they were working on an agreement with the water quality folks to help with the cost of stream gaging, since much of the data collected is vital to their concerns. They will contribute an amount equal to about 20% of the Commission's yearly cost. He reported that there are several more real time sites going up, particularly at stations in Idaho, which allow the watermaster to collect much better data and have greater control. This information has previously been available on the bearriverbasin.org website, but that resource is no longer available, and the Management Committee is working at finding an alternative that can be up and available by spring.

Gibbs also reported that a year ago, the Commission had authorized work on a new Commission website, but the work was halted due to financial constraints. They now have permission to continue work on the website. The same is true of the Biennial Report, which they will now move forward on. He also mentioned that the Bear Lake Reader is very near completion and should be available by spring. Jack Barnett shared some historical documents with the committee that had to do with Wally Jibson and also some very early information collected on the Bear River in 1889 by F. H. Newell who was with the federal agency that would become the USGS. He felt it was worthy of being preserved and included in the archives.

VII.A/B. Operations Committee report – Blair Francis, as Chairman of the committee, first turned some time over to Claudia Conder to report on PacifiCorp operations. She reviewed the numbers in the Summary of Bear Lake Operations, attached hereto as Appendix F. She reported that they had to do some maintenance work at the Oneida Reservoir, which required drawing down the water level. The numbers in the report do not include the refill for Oneida, but they do include the refill done for the Soda Reservoir during October and November of 2009. The releases from Oneida will be accounted for next year. Conder pointed out a graph on the back of the handout which shows flow at the Rainbow Inlet Canal for the past two years, as well as a running twelve-year average. There is a significant spike on the graph in June which was a result of the large amount of rain in the spring. This was unexpected, and it left the lake in better health and provided a better start for the next water year.

Francis reported that no inter-state regulation was necessary on the Bear River. The numbers were pretty gloomy in the spring, but things improved immensely with the precipitation received later and things went well with deliveries on the river. As far as carryover in the reservoirs, he indicated that they would be able to fill and spill over the winter no matter what happens with Bear Lake.

The committee discussed new water resource development proposals, but Francis didn't feel a need to go into detail on them. The final item was in regard to Woodruff Narrows Reservoir. People bought shares in the reservoir when it was built, 17 percent in Wyoming and 83 percent in Utah. There is an annual assessment on the shares which is used for supplemental water to augment the natural flow. The Bear River Compact uses Pixley Dam as the line between Divisions. There is a shareholder who wants to take some shares in Woodruff Narrows downstream from the Pixley

structure and take his water out via a pump. Francis wasn't sure what the solution should be and felt it would be good for the TAC to review it. Strong suggested that, since there have been other situations like this, it would be a good idea for the TAC to look at the issues and bring a report and recommendation back to the Commission.

VII.C. Activities of the Bear River Water Users Association – Carly Burton gave a report on the Bear River Water Users Association. His handout is attached to the minutes as Appendix G. He mentioned that the Utah Small Irrigators group is now a member of the Association. Collectively, the companies in the Association irrigate 141,000 acres of land, representing about 94 percent of the lands under contract with PacifiCorp below Bear Lake. He reported that, due to the wet, cool June, only 54 percent of the allocation was used, allowing continued recovery of Bear Lake. He mentioned that there was a pre-hearing conference coming up the next day regarding the application by Twin Lakes Canal Company to build a dam on the Bear River below Oneida. There have been many protests and a lot of concern about this project. He also reported that the Association was able to contribute \$2,000 this past year to the real-time data monitoring program.

VIII. Water Quality Committee report – Walt Baker was standing in for Barry Burnell and reported on the meeting of the Water Quality Committee. They discussed the Bear River Water Information System (WIS). There has been a considerable investment in this effort, which needs to be sustained. Utah and Wyoming have contracted with Utah State University (USU) to keep the system up to date and functioning. Idaho will be joining them as well. It will be necessary to meet with USU and have continuing communication with them to make sure the system is functioning properly and that the Commission is getting the information that is needed.

Baker reported that for the last five years, there has been a cooperative agreement between the three states concerning basinwide water quality monitoring which has allowed for the more efficient collection of data. They will be reviewing the agreement for any changes that need to be made, but are committed to sustaining the agreement into the future.

There was a report on bacteriological monitoring which has been occurring every two weeks on Bear Lake at eight stations, monitoring the recreational use of the waters. Baker reported that, at least in Utah, they are looking with more scrutiny at the use of public waters to make sure the public health is being preserved.

He mentioned that the Departments of Environmental Quality from the three states have agreed to step up and fund 20 percent of the cost of the stream gaging stations that the Commission has contracts for with USGS. This will be done with a joint funding agreement beginning this year.

The Committee was advised about a study occurring on Mud Lake relative to flow regimes and water quality issues. This is a thesis project at USU conducted by Cody Allen who is now an employee of the Idaho Department of Water Resources. He will be invited to address this topic at the spring Commission meetings.

From the state reports, Baker mentioned a couple of noteworthy things. The Cutler Reservoir TMDL was recently approved by the Utah Water Quality Board, following an intensive four-year process. This will result in some good things, including Logan City entering into an agreement with the State of Utah to upgrade its waste water treatment plant. There is also a new waste water treatment plant at the end of the Bear River that will provide enhanced treatment and improve water quality. In Wyoming, there is the completion of a TMDL on the Bear River for sediments. In

Idaho, an addendum to the 2006 TMDL is being prepared and they are very pleased with the improved water quality in the Idaho reach of the Bear River.

IX. Management Committee report – Pat Tyrrell reported that some of the things discussed in the Management Committee meeting have already been mentioned, including the financial assistance by the state groups for the stream gaging program and the permission to move forward on the web page and the Bear Lake Reader. They also discussed seeking a two-year contract with Stonefly or its sister company regarding the web hosting of real-time data. The additional cost is nominal and, with a contractual agreement fixing costs for a period of time, there should be no surprises there.

The Management Committee also discussed the contract with BIWC. At the April 2010 meeting, Jack Barnett announced that he was going to step back in his involvement with the Commission, and the Commission made the decision to appoint Don Barnett as interim Engineer-Manager for a six-month period, both to allow him a chance to perform and to allow the Committee to take care of this in the right manner. During the past six months, the Management Committee did some legal research to determine if there were any impediments to hiring a new Engineer-Manager, and they found none. They interviewed Don Barnett in October regarding his possible future role as Engineer-Manager, and that interview went very well. The Management Committee now recommends that Don Barnett be retained as the full time Engineer-Manager for the Bear River Commission. That appointment carries with it the need to amend the contract under which Don Barnett and BIWC are operating to a full year. Tyrrell added that the Management Committee had been very pleased with the interview and with Don Barnett's performance through the summer. Tyrrell made a motion to retain Don Barnett as the Engineer-Manager on a full time basis and extend the contract for a full year, as has been done in the past. The motion was seconded.

Gary Spackman took the opportunity to add his approval of Don Barnett as Engineer-Manager. As a result of the interview, he felt that Don Barnett would be very objective in responding to the three states and dealing with competing demands. His answers were well thought out and very deliberate. He added that he was impressed with the work that Don Barnett had done in the past six months regarding the pressing issues of the Commission, and expressed his full support for this appointment. Dennis Strong expressed his agreement with what Spackman had said, along with his support. Lowham asked for a vote of the Commission members, and the motion passed unanimously.

X. Engineer-Manager Report/INL proposal – Don Barnett had no additional items to discuss as Engineer-Manager. He turned some time over to Hal Anderson, who recently retired from working with IDWR and is now working at Idaho Water Engineering as a consultant, to share some ideas and concepts he wanted to bring to the Commission. He had with him Greg Stormberg from the Idaho National Laboratory (INL). Anderson mentioned that INL has numerous technical experts in science and modeling, along with the resources to provide system, operational and modeling support. They had created the concept of a Mountain West Water Institute, a science technology and research institution based on delivering strategic relationships and solutions. Their idea is to provide technical assistance to the Bear River Commission or state agencies to help them become more efficient and effective in their efforts, particularly in their modeling and data activities. The intent is not to change current processes, but to help them improve what they are doing. The Bear River is a complex system with numerous entities and people coming together, and there may be ways to improve operations within the Bear River Basin. Anderson was requesting permission from the Commission to work with the TAC over the winter to see if there might be some areas,

such as technical issues, modeling issues, reservoir operation, etc. where problems might be solved or improvements made with the help of the vast resources of INL. There would be no commitment required, just the exploring of possible opportunities and a report back to the Commission in the spring. Permission was given for them to pursue this effort. Pat Tyrrell added that the TAC has a very full agenda and they shouldn't meet just to spend time on finding ways to hire INL. Tyrrell felt that Anderson understood this and would be sensitive to it and judicious with the TAC's time. He felt that there may be a time down the road where the TAC might have a nagging technical question beyond the ability of the staffs in the states to solve where the assistance of INL might be an obvious fit.

XI.A. Utah State Report – Dennis Strong reported that the Division of Water Resources continues in its Bear River development process, but it has slowed somewhat because of relaxed demand.

Concerning the depletion study, Strong mentioned that he finds it fascinating that the Colorado River Basin is talking about the same kinds of things – how to determine how much water is used in a compacted system, especially when the use is based on depletion. He felt that it might be a good idea to look for some partnership opportunities in this effort as they move forward.

He reported that the Division of Water Resources has invested in RiverWare, which is the modeling tool that Reclamation uses to model the activities on the Colorado River. He was excited about the prospect of being more active in modeling all of the rivers in Utah to determine how they can be better used, what the potential impacts of climate change might be, etc. This will be helpful as the demand for water continues to increase with the growing population and other factors.

XI.B. Wyoming State Report – Pat Tyrrell reported that Wyoming will have a new governor in January. As the current governor made appointments for a limited period of time, a large number of these positions (approximately 70 statewide) will come due in January and will need to be reappointed. The new governor is Matt Mead, an attorney.

Tyrrell mentioned that there are two very interesting bills coming forward to the Legislature in Wyoming. The first has to do with Certificates of Adjudication for stock watering rights on public lands. About a year earlier, Wyoming ceased issuing certificates that had the grazing permittee's name on them and adjudicated in the name of the land owner only. This has riled a few people in Wyoming who feel that they have lost a property right when their name doesn't show up on the certificate. Legislation has been proposed that would not allow federal entities to hold stock water rights because they do not own the cattle. Tyrrell opposes this legislation and likes the current situation where the federal government is not treated differently than any other appropriator. The other bill has to do with people who have "trapped acres," irrigated acres with adjudicated rights that have no way to get water to them and have been that way for 90 years. The bill would give those particular rights, even though they have already been forfeited by statute, a five-year window to change the place of use with no loss of value for the fact that they have had no recent historic use. Tyrrell feels this is extremely dangerous because it minimizes or ignores the concept of beneficial use and legitimizes non-use.

In regard to the lawsuit with the State of Montana claiming some violations under the Yellowstone River Compact, exceptions were filed during the summer and it has been set for oral argument in front of the United States Supreme Court on one issue. That will take place on January 10, and it

will be very interesting to go back to Washington to watch the Wyoming Attorney General's staff argue the case in front of the Supreme Court.

XI.C. Idaho State Report – Gary Spackman discussed the Twin Lakes filing. In the past, Twin Lakes had agreed that it should wait to proceed with the water right application until the Federal Energy Regulatory Commission (FERC) had made a determination regarding their application for either a preliminary permit or an exemption. For whatever reason, Twin Lakes desired to move forward. He felt it would be interesting to see how their process dovetails into the FERC process and what evidentiary matters they would consider, particularly in light of the fact that there are questions out there of federal preemption through the Federal Power Act, and what it is that the state should now be reviewing.

Spackman mentioned that they had been embroiled in a dispute in the Preston area with the Preston Whitney folks and Cub River folks with some landowners who own land in one of the drainages. The dispute has to do with flows in Worm Creek which have been diverted by some of the landowners on the lower end that are now unavailable to them. There are questions about the nature of the flows and many issues being raised. Along with those issues, they are discovering places of use that are unrecorded and points of diversion where the diversions are not being measured. Consequently, they are trying to tighten up the administration of the area and better assess what is happening. This is a micro example of what they face every day.

In talking with the watermaster, Spackman was encouraged about the number of sites that are being automated and that those sites and that information will be posted and available. He appreciates that cooperation among the three states. Spackman also mentioned that the State of Idaho is looking very seriously at acquiring RiverWare software because Reclamation feels very strongly about using it and Idaho Power is also looking at using the software for modeling. He added that any evaluation about modeling ought to include other alternatives, including RiverWare.

Lastly, Spackman reported that they recently received a court decision from one of the district court judges that established a standard of proof in the proceedings when there is a delivery call by a user of a decreed, or even a perfected, water right. The judge has said that if there is an assertion that anything other than what is listed on the water right should be diminished in delivery (this is just in administration, not in a forfeiture proceeding) where, in countering the delivery call, the other side is asserting that there is a reduced need for water, less than what the right calls for, the standard of proof to establish that lesser quantity of water is a clear and convincing evidence standard, not a preponderance of evidence standard. He said they were trying to sort out what that means in terms of delivery calls, not only groundwater to surface water in conjunctive management, but in surface water matters generally.

XII. Other/Public comment – Rodney Wallentine commented that, as this was his last meeting, he wanted to express appreciation to everyone with whom he had worked for many years. He felt it had been a pleasure to be involved in this effort and would miss working with everyone.

Carly Burton expressed appreciation to Jack Barnett for his leadership, work and valuable contribution to the Commission over many years. He took the Commission through a number of controversies during that time and did a marvelous job, and he did it with dignity. There was a round of applause from those in attendance.

XIII. Next Commission meeting – Lowham announced that the next Commission meeting would be held on April 19, 2011.

The meeting was adjourned at 4:00 p.m.

ATTENDANCE ROSTER

BEAR RIVER COMMISSION REGULAR MEETING

Department of Environmental Quality Building
Salt Lake City, Utah
November 16, 2010

IDAHO COMMISSIONERS

Marc Gibbs
Gary Spackman
Rodney Wallentine

WYOMING COMMISSIONERS

Patrick Tyrrell
Sam Lowham
Jade Henderson (Alternate)
Sue Lowry (Alternate)

UTAH COMMISSIONERS

Dennis Strong
Charles Holmgren
Blair Francis
Norm Weston (Alternate)

ENGINEER-MANAGER & STAFF

Don Barnett
Jack Barnett
Donna Keeler

OTHERS IN ATTENDANCE

IDAHO

Jeff Peppersack, Department of Water Resources
Liz Cresto, Department of Water Resources

UTAH

Will Atkin, Division of Water Rights
Todd Adams, Division of Water Resources
Randy Staker, Division of Water Resources
Eric Edgley, Division of Water Resources

WYOMING

Mike Johnson, State Engineer's Office
Don Shoemaker, Water Commissioner

OTHERS

Carl Mackley, UDWRi
Randy Julander, NRCS Snow Survey
Cory Angeroth, U.S. Geological Survey
Carly Burton, Bear River Water Users
Claudia Conder, PacifiCorp Energy
Annette deKniyf, USFWS-Bear Lake Wildlife Refuge
Claudia Cottle, Bear Lake Watch
Dan Davidson, Bear River Canal Company
Hal Anderson, Idaho Water Engineering
Greg Stormberg, Idaho National Laboratory
Scott Clark, Barnett Intermountain Water Consulting

**BEAR RIVER COMMISSION REGULAR MEETINGS
November 15-16, 2010**

All Meetings
Utah Department of Environmental Quality
195 North 1950 West
Salt Lake City, Utah

COMMISSION AND ASSOCIATED MEETINGS

November 15

- 10:00 a.m. Water Quality Committee Meeting – Red Rock Conference Room
- 3:00 p.m. Technical Advisory Committee Meeting – Red Rock Conference Room

November 16

- 9:00 a.m. Operations Committee Meeting – Red Rock Conference Room Francis
- 10:15 a.m. Records & Public Involvement Committee – Red Rock Conference Room Gibbs
- 11:15 p.m. Informal Meeting of Commission – Red Rock Conference Room D. Barnett
- 11:30 p.m. State Caucuses and Lunch Strong/Spackman/Tyrrell
- 1:00 p.m. Commission Meeting – DEQ Conference Room Hansen

AGENDA
REGULAR COMMISSION MEETING

November 16, 2010

Convene Meeting: 1:00 p.m., Chair Dee Hansen

- | | | |
|------------------|---|---------------|
| I. | Call to order | Hansen |
| | A. Welcome of guests and overview of meeting | |
| | B. Recognitions | |
| | C. Approval of agenda | |
| II. | Approval of minutes of last Commission meeting (April 20, 2010) | Hansen |
| III. | Report of Secretary/Treasurer | Strong/Staker |
| | A. Expenditures | |
| | B. Other issues | |
| IV. | Report of the Technical Advisory Committee | D. Barnett |
| | A. Depletions | |
| | B. Stream gaging | |
| | C. Future work | |
|
BREAK | | |
| V. | Climate change | Julander |
| VI. | Records & Public Involvement Committee report | Gibbs |
| VII. | Operations Committee report | |
| | A. Committee meeting | Francis |
| | B. PacifiCorp operations | Baldwin |
| | C. Activities of the Bear River Water Users Association | Burton |
| VIII. | Water Quality Committee report | Baker |
| IX. | Management Committee report | Tyrrell |
| X. | Engineer-Manager report | D. Barnett |
| | A. INL proposal | Anderson |
| | B. Other | D. Barnett |
| XI. | State reports | |
| | A. Utah | Strong |
| | B. Wyoming | Tyrrell |
| | C. Idaho | Spackman |
| XII. | Other / Public comment | Hansen |
| XIII. | Next Commission meeting (April 19, 2011) | Hansen |

Anticipated adjournment: 3:45 p.m.

BEAR RIVER COMMISSION

APPROVED BUDGET FOR FY 2011 AND PROPOSED BUDGETS FOR FY'S 2012 & 2013

	FY 2011 APPROVED BUDGET	FY 2012 PROPOSED BUDGET	FY 2013 PROPOSED BUDGET
	-INCOME-	-INCOME-	-INCOME-
BEGINNING BALANCE	94,446.88	91,526.88	87,406.88
IDAHO	40,000.00	40,000.00	40,000.00
UTAH	40,000.00	40,000.00	40,000.00
WYOMING	40,000.00	40,000.00	40,000.00
USF&WS	8,200.00	8,400.00	8,600.00
INTEREST ON SAVINGS	1,200.00	1,500.00	1,800.00
TOTAL INCOME	223,846.88	221,426.88	217,806.88
	-EXPENDITURES-	-EXPENDITURES-	-EXPENDITURES-
STREAM GAGING-U.S.G.S.	54,520.00	54,520.00	56,000.00
PERSONAL SERVICES CONTRACT	57,000.00	58,700.00	60,500.00
TRAVEL	1,200.00	1,200.00	1,200.00
OFFICE EXPENSES	1,600.00	1,600.00	1,600.00
BIENNIAL REPORT	1,000.00	1,000.00	1,000.00
TREASURER'S BOND & AUDIT	1,400.00	1,400.00	1,400.00
PRINTING	1,600.00	1,600.00	1,600.00
REALTIME WEB HOSTING	6,000.00	6,000.00	6,000.00
CLERICAL	5,000.00	5,000.00	5,000.00
CONTINGENCY	3,000.00	3,000.00	3,000.00
TOTAL EXPENDITURES	132,320.00	134,020.00	137,300.00
UNEXPENDED CASH BALANCE	91,526.88	87,406.88	80,506.88

BEAR RIVER COMMISSION

STATEMENT OF INCOME AND EXPENDITURES

FOR THE PERIOD OF JULY 1, 2009 TO JUNE 30, 2010

INCOME	CASH ON HAND	OTHER INCOME	FROM STATES	INCOME
Cash Balance 07-01-09	108,593.60			108,593.60
State of Idaho		-	40,000.00	40,000.00
State of Utah		-	40,000.00	40,000.00
State of Wyoming		-	40,000.00	40,000.00
US Fish & Wildlife		8,518.73		8,518.73
Interest on Savings		876.95		876.95
EPA/STONEFLY		6,000.00		6,000.00
TOTAL INCOME TO 30-Jun-10	108,593.60	15,395.68	120,000.00	243,989.28

DEDUCT OPERATING EXPENSES

	APPROVED BUDGET	UNEXPENDED BALANCE	EXPENDITURES TO DATE
Stream Gaging/USGS Contract	59,155.00	-	59,155.00
SUBTOTAL	59,155.00	-	59,155.00
EXPENDED THROUGH COMMISSION			
Personal Services BIWC	64,000.00	(11,533.34)	75,533.34
Travel (Eng-Mgr)	1,200.00	420.16	779.84
Office Expenses	1,600.00	867.95	732.05
Printing Biennial Report	1,000.00	108.97	891.03
Treasurer Bond & Audit	1,400.00	1,300.00	100.00
Printing	1,600.00	280.84	1,319.16
Web Page/Data	12,000.00	5,968.02	6,031.98
Clerical	5,000.00	-	5,000.00
Contingency	3,000.00	3,000.00	-
SUBTOTAL	90,800.00	412.60	90,387.40
TOTAL EXPENSES	149,955.00	412.60	149,542.40
CASH BALANCE AS OF 06-30-10			94,446.88

BEAR RIVER COMMISSION

DETAILS OF EXPENDITURES

FOR PERIOD ENDING JUNE 30, 2010

699	BIWC	4,750.00
700	STONEFLY	6,000.00
701	SEE FY 09	-
702	BIWC	4,935.36
703	USGS	59,155.00
704	BIWC	5,154.58
705	BIWC	4,982.33
706	BIWC	5,903.74
707	BIWC	13,414.81
708	BIWC	5,525.37
709	BIWC	5,877.87
710	C N A Surety	100.00
711	STONEFLY	31.98
712	BIWC	4,972.01
713	BIWC	4,854.80
714	BIWC	5,226.56
715	VOID	-
715	BIWC	18,657.99

TOTAL EXPENSE 149,542.40

BANK RECONCILIATION

Cash in Bank per Statement 06-30-10	(13,454.88)
Plus: Intransit Deposits	
Less: Outstanding Checks	
Total Cash in Bank	(13,454.88)
Plus: Savings Account-Utah State Treasurer	107,901.76
TOTAL CASH IN SAVINGS AND IN CHECKING ACCOUNT	94,446.88

BEAR RIVER COMMISSION

DETAILS OF EXPENDITURES

FOR PERIOD ENDING NOVEMBER 15, 2010

717	BIWC	9,500.00
718	USGS	59,155.00
719	BIWC	4,998.60
720	BIWC	5,086.79
721	BIWC	5,547.93

TOTAL EXPENSE 84,288.32

BANK RECONCILIATION

Cash in Bank per Statement 11-15-10	(66.52)
Plus: Intransit Deposits	
Less: Outstanding Checks	
Total Cash in Bank	(66.52)
Plus: Savings Account-Utah State Treasurer	133,205.29
TOTAL CASH IN SAVINGS AND IN CHECKING ACCOUNT	133,138.77

Bear River Commission – Nov, 2010



**Recent Snow Survey
installations...
Burts Miller Ranch**



Tony Grove Ranger Station



Klondike Narrows



Garden City Summit



**Bear River RS,
replaces
Stillwater
Camp snow
course.**

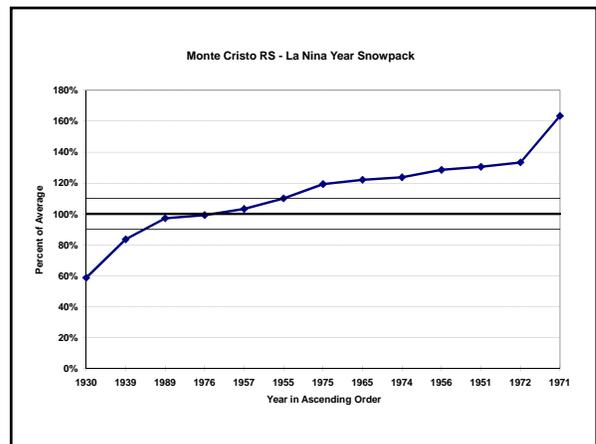
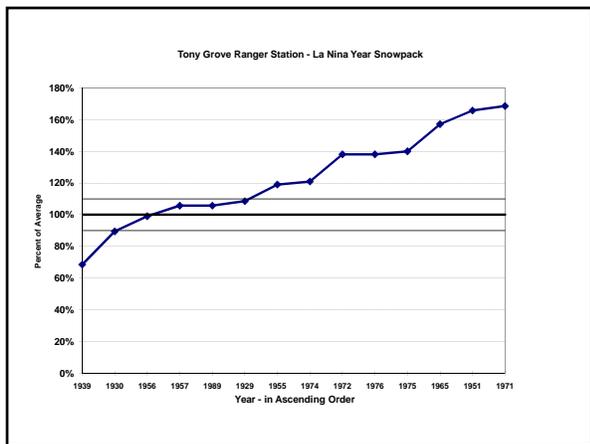
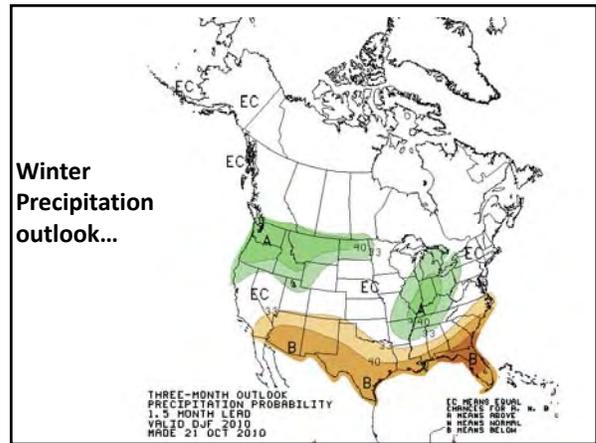
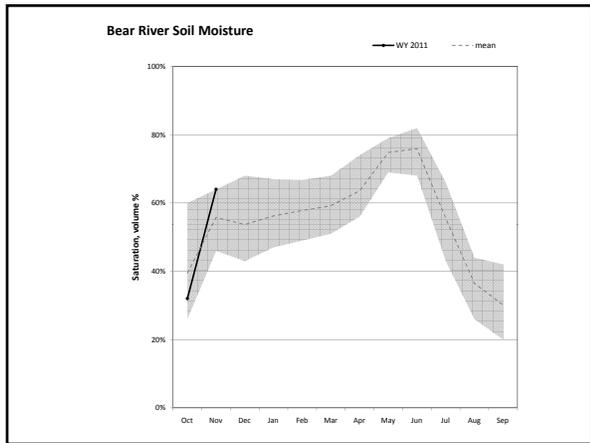
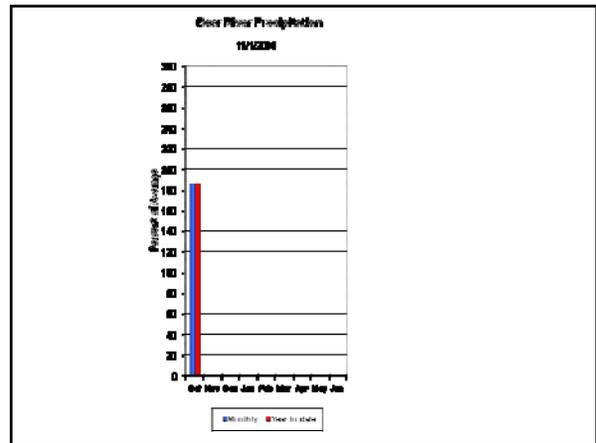
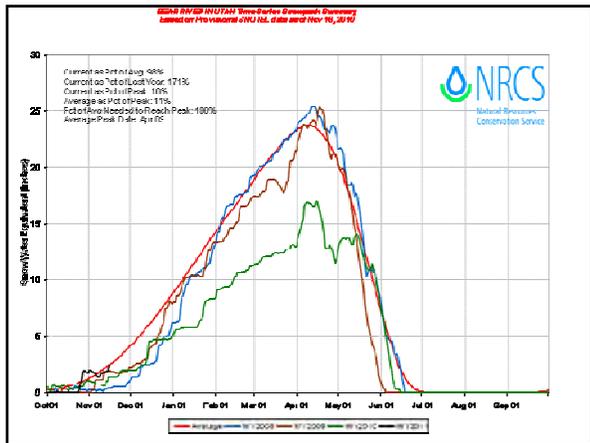


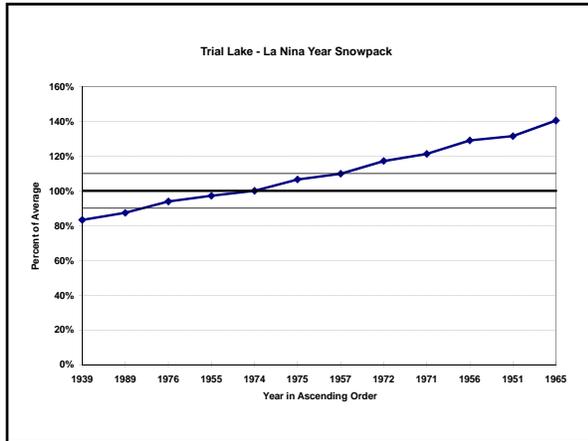


- Current sites in or close to the Bear River Watershed.
1. Trial Lake
 2. Hayden Fork
 3. Bear River RS
 4. Lily Lake
 5. Burts Miller Ranch
 6. Blacks Fork Jct
 7. EF Blacks Fork
 8. Lightening Ridge
 9. Monte Cristo
 10. Dry Bread Pond
 11. Bug Lake
 12. Tony Grove RS

13. Klondike Narrows
14. Franklin Basin
15. Garden City Summit
16. USU Doc Daniels
17. Emigrant Summit
18. Kelly RS
19. Salt River Summit
20. Giveout
21. Oxford Spring
22. Sedgewick Peak
23. Slug Creek Divide
24. Spring Creek Divide

25. Kilfoil Creek
 26. Little Bear
 27. Temple Fork
- The Bear River has more SNOTEL data than any other basin anywhere...





Water Year 2011 outlook

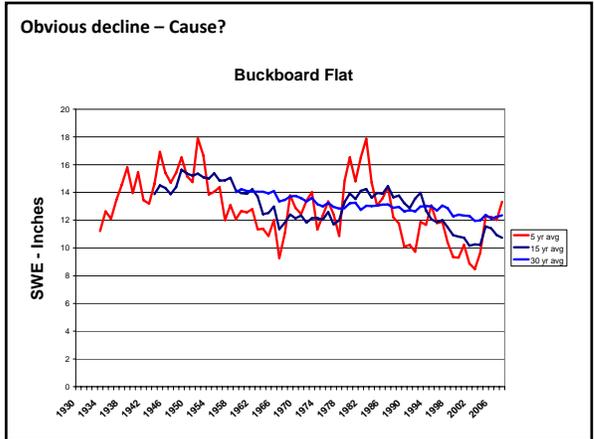
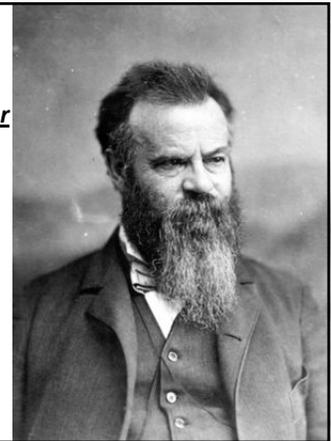
1. Excellent soil moisture conditions
2. Outlook for snowpack – 80% probability of average or above
3. 25% to 35% probability of greater than 120% of average snowpack
4. 10% to 15% probability of below average snowpacks...

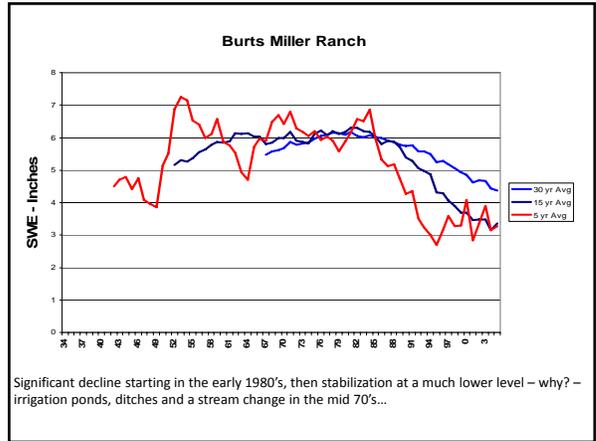


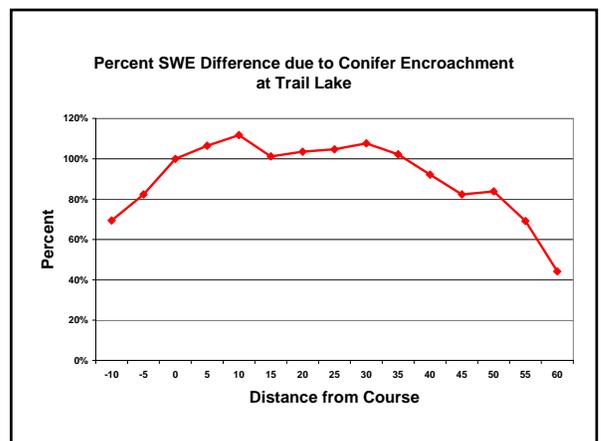
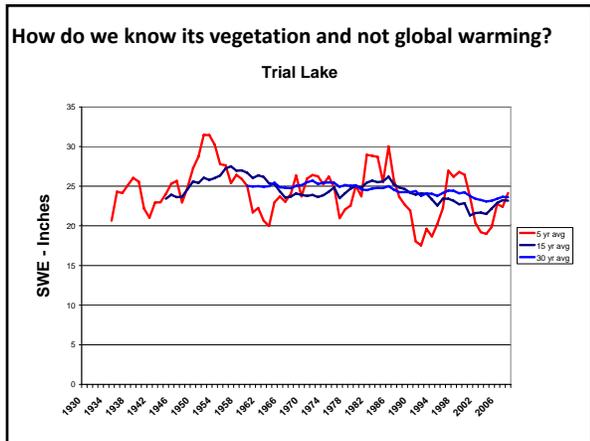
That which has been is
not now

And that which is, never
will be again.

John Wesley Powell,
1888

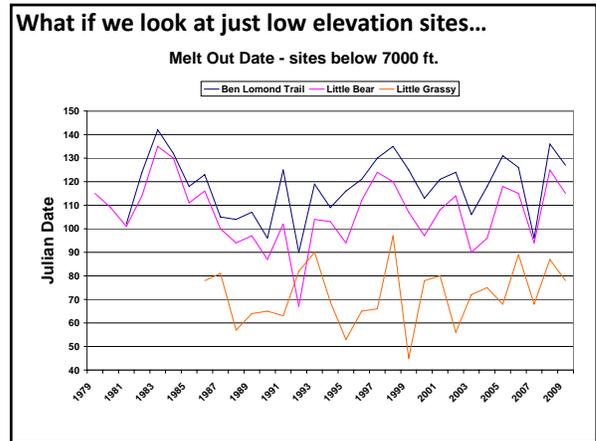
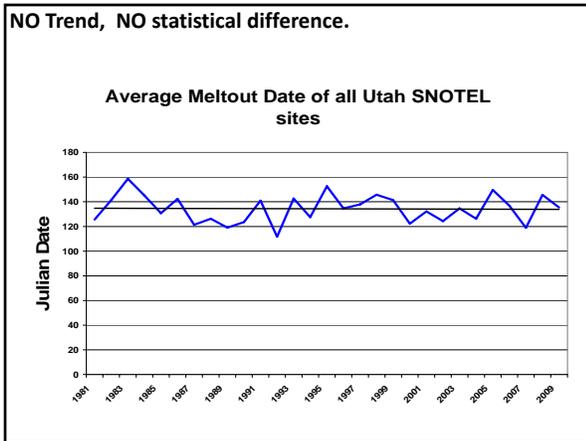
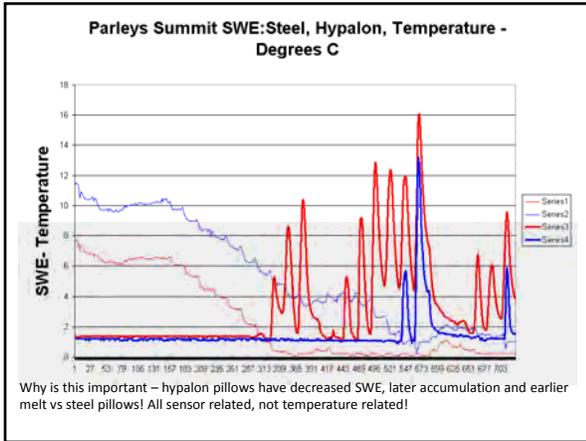
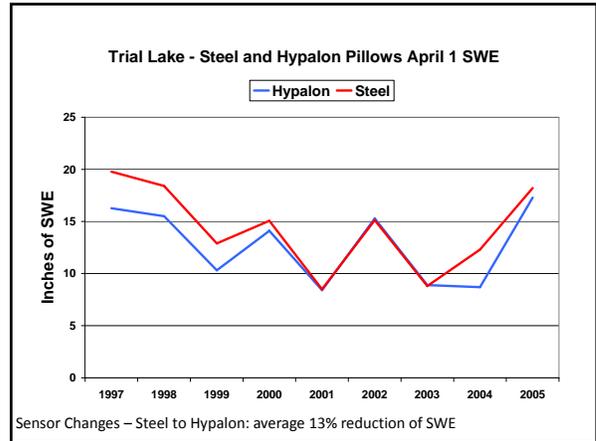


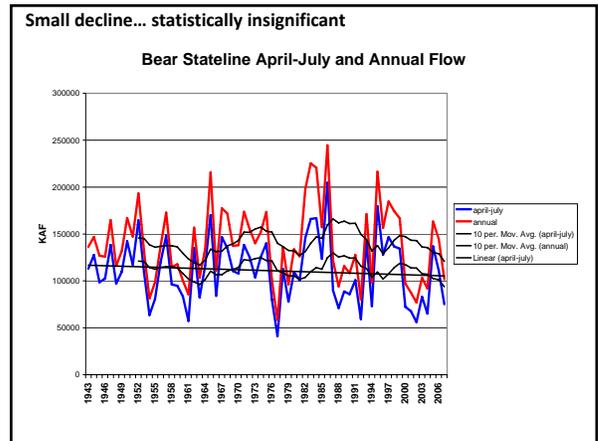
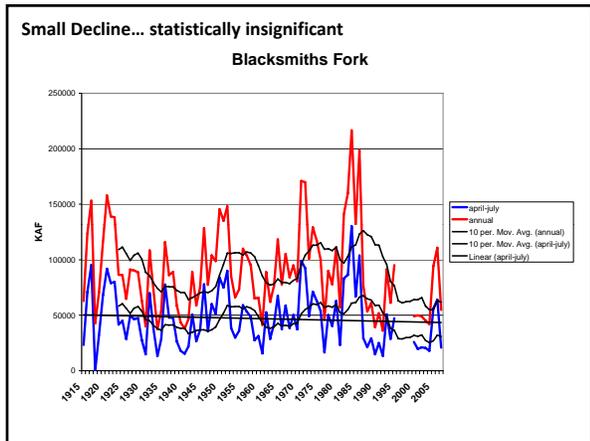




Conclusions on vegetation on 16 long term snow courses in Utah – updated to include all current data....

1. If the site had significant vegetation change – SWE is Declining
2. If the site has not had vegetation change, SWE is Stable
3. General finding is that observed declines in snowpack are still not attributable to climate change at this time.





So, we have a small decline in streamflow compared over the period of record...

Statistically insignificant...

But,

What might have caused such a decline????

Are there factors in addition to climate change???

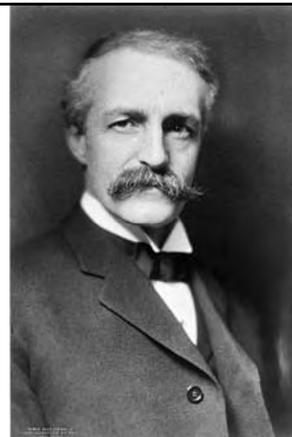


From the 1860's to the Taylor Grazing Act of the 1930's – western watersheds were hammered!



" we rode from Bear Lake to the Cache Valley and saw 100,000 sheep and not a single tree"

Gifford Pinchot, late 1800's.



In 1870 in the 17 western states there were:

4,100,000 cows

4, 800,000 sheep

In 1900, in the 17 western states there were:

19,600,000 cows – 478% increase

25,100,000 sheep – 523% increase

These were brought in from the east and midwest by speculators...



The resulting floods caused huge damage over long periods of time. A good example of changed hydrology via changes in watershed.



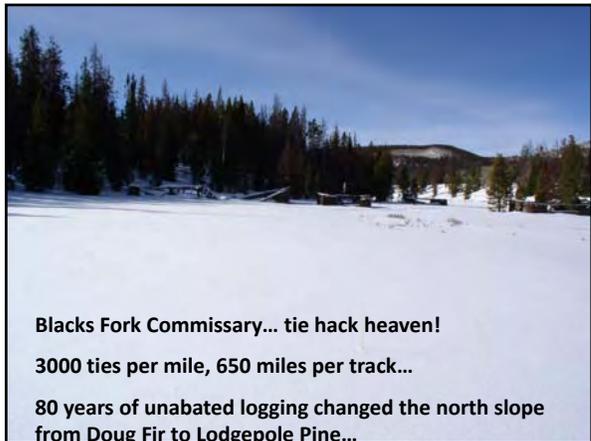
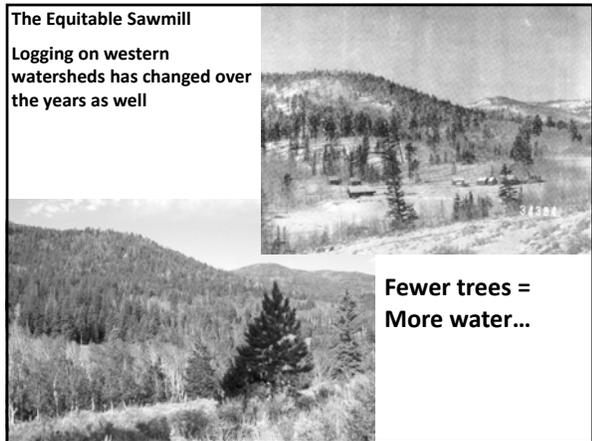
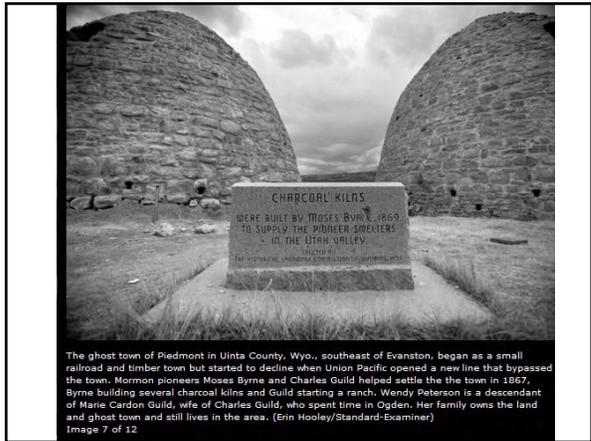
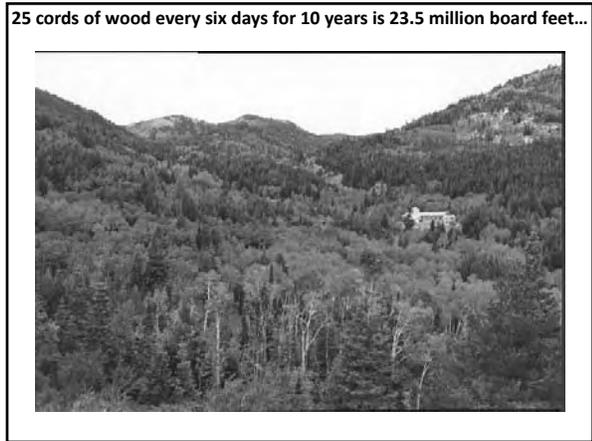
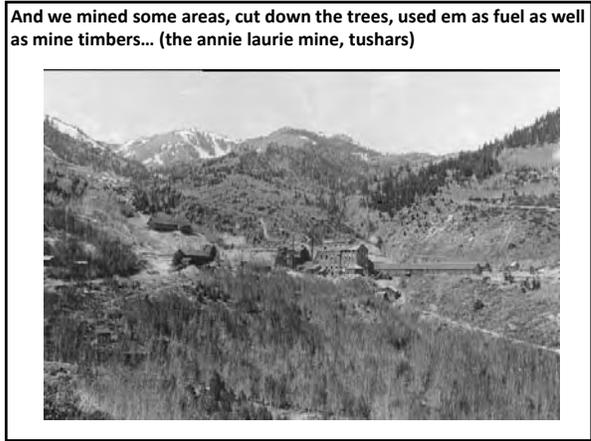
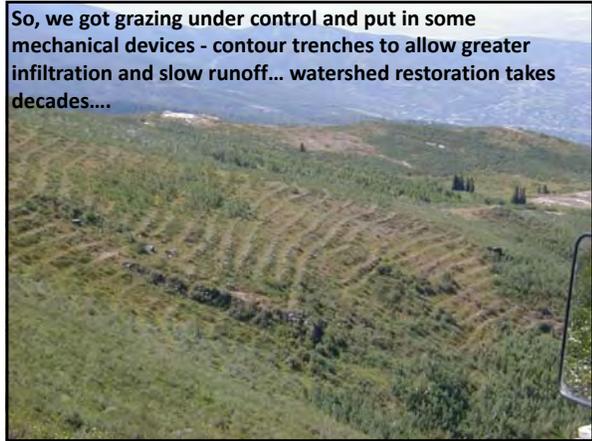
North twin lakes 1920



<http://extension.usu.edu/rra/> - 1600 pairs of repeat photographs...

North Twin Lakes, 2005





Danish Meadow, 1900, frequent fires.

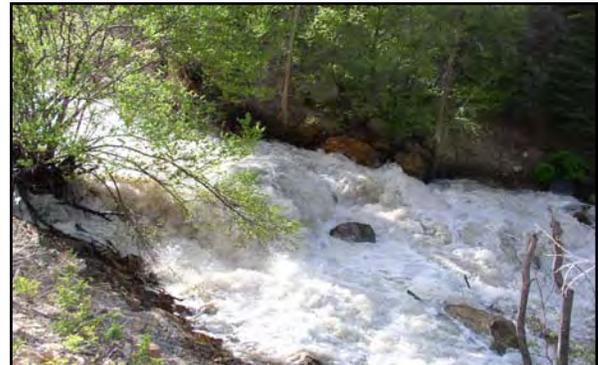


Danish Meadow current, no fires for ~100 years



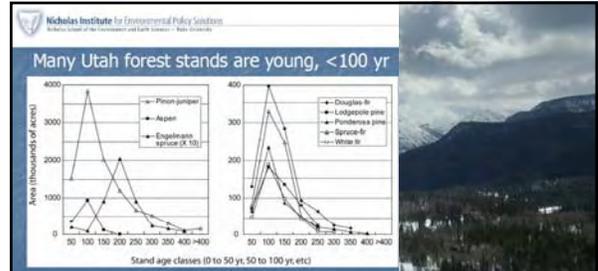
Fire Suppression – 10 to 30 million acres burned annually in the 1930's to between 2 and 5 million acres in the 1960's and later...

This single issue has changed the composition and extent of western forests and landscapes over time



For 100 years, we did everything possible to increase streamflow (unintentionally)

Paradigm shift in the 60's and 70's in the environmental movement led to yet another huge change in watersheds and thus impacts on streamflow...



Watersheds now have increased numbers of trees – as much as 200 trees + per acre... **MORE TREES = LESS WATER**

Fool Creek Experiment – 40% more water for 20 years and +25 from 30 to 50 years...

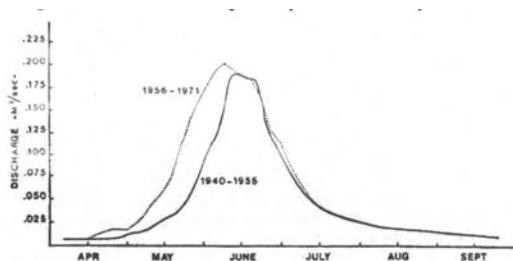
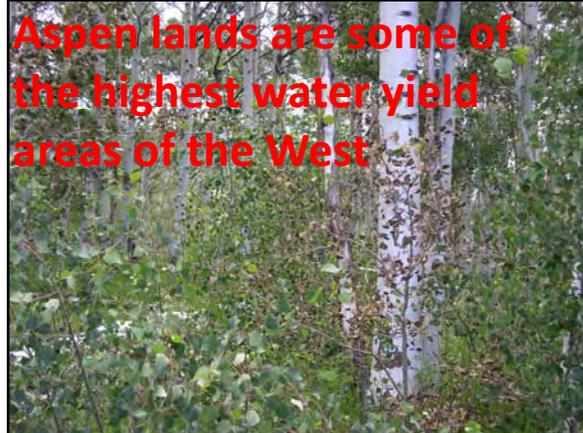
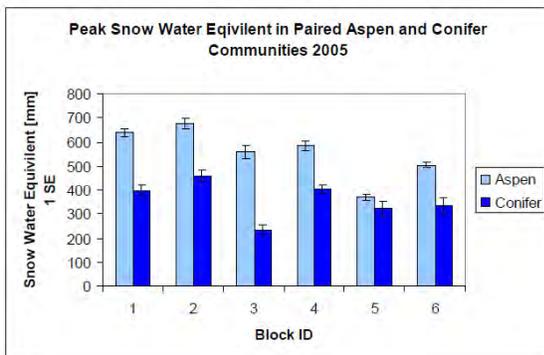


Figure 4. — Average annual hydrographs for Fool Creek for the period before (1940-1955) and after (1956-1971) timber harvest.



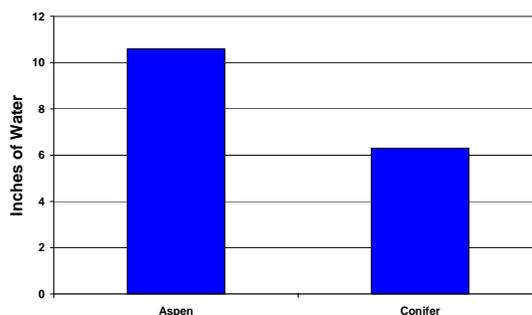
LaMalfa, Ryel



Much less SWE under conifers than aspens... (34% less)

4.3 inches more Soil Moisture in Paired Aspens vs Conifers

Winter Soil Moisture - Aspen vs Conifer



Overall, there was **42% less** available water (soil moisture + SWE ~10.5 inches total water) Conifers vs the Aspens

Utah and Colorado have lost about 2.5 million acres of Aspen to conifer encroachment

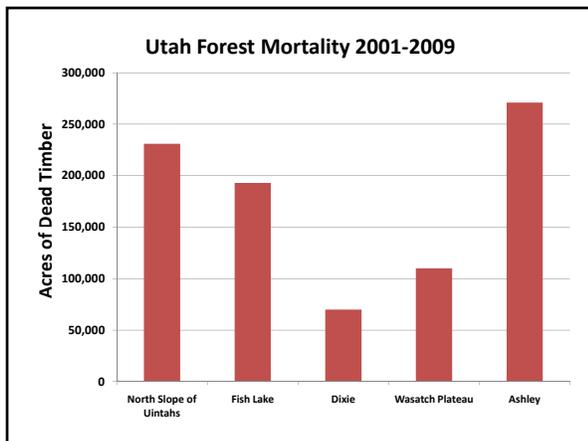
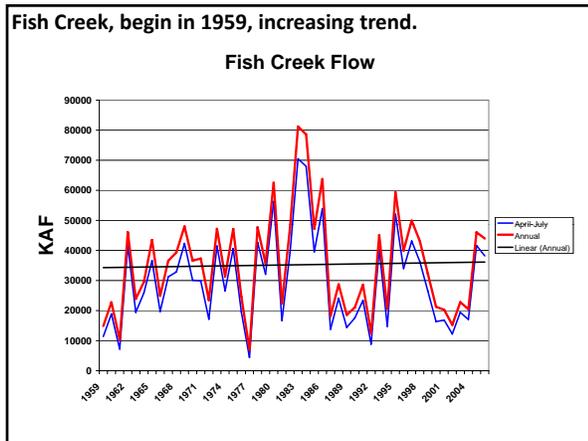
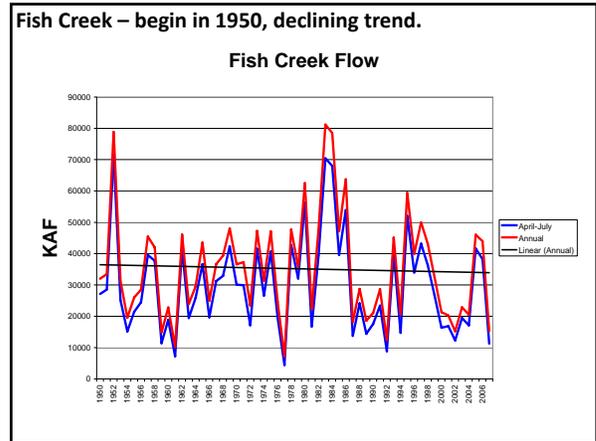
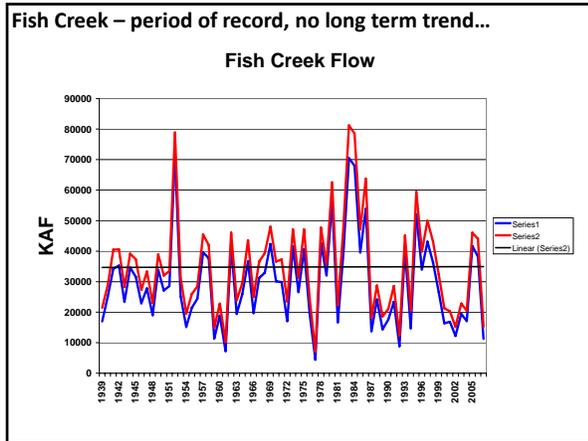
That is 210,000 acre feet of water lost **per 1 inch of water yield!**

That is **2.6% to 10.6%** of the annual inflow to Lake Powell (1 to 4 inches of lost yield)

With all these changes in the same pot:

1. Agriculture
2. Diversions
3. Dams
4. Fire
5. Mining
6. Logging
7. Grazing
8. Aspens
9. Watershed restoration – trenches, furrows..
10. Groundwater withdrawals
11. Climate





So, what does this mean for streamflow?

Fewer trees = more water...

Likely increased streamflow on the Bear for the next 20 to 50 years....

More water, not less...

Likely flow shifted forward in time...

**SUMMARY OF BEAR LAKE OPERATION FOR WATER YEAR 2010
AND IRRIGATION ALLOCATION FOR 2011**

<u>Date</u>	<u>Hydrologic Information/Event</u>	<u>Contents (% of Full) Discharge (% of Normal)</u>
10-01-09	Bear Lake Beginning Elevation – 5910.65'	534,157 Ac. Ft. (38%)
11-10-09	Bear Lake Minimum Elevation – 5910.46'	521,903 Ac. Ft. (37%)
	Apr. 1 runoff forecast – April through July	40,000 Ac. Ft. (17%)
	Rainbow Inlet Canal (April-July)	105,000 Ac. Ft. (45%)
04-10-10	Bear Lake Irrigation Storage Allocation (based on estimated spring maximum elevation of 5912.1')	216,000 (94 %)
06-26-10	Bear Lake High Elevation – 5913.16'	698,131 Ac. Ft. (49%)
	Outlet Canal Releases: 06/24-10/02 (100 days)*	182,000 Ac. Ft.*
	Lifton Pump Operation: 06/28-09/10; 09/28-10/09 (87 days)	
07-22-10	Outlet Canal Maximum Release – 1,540 cfs	
	Bear Lake Storage Release	117,000 Ac. Ft.
	Allocation for Lake Recovery	99,000 Ac. Ft.
09-30-10	Bear Lake Ending Elevation – 5910.27'	509,669 Ac. Ft. (36%)
	Bear Lake Settlement Agreement “System Loss” Volume^	12,100 Ac. Ft.
	Rainbow Inlet Canal Discharge	177,000 Ac. Ft.
	Bear River Discharge Below Stewart Dam	2,380 Ac. Ft.
	Bear Lake Net Runoff (Computed Total Inflow less Lake Evaporation)	211,000 Ac. Ft.

* additional releases to refill irrigation storage release from Oneida reservoir Oct 26 – Nov 1, 2010. This period is not included in the total number of days nor in the total release. However, the total release *does* include releases made in October and November 2009 to refill Soda.

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

Notable Events

The poor runoff forecast (17% of normal) in the spring combined with the plentiful irrigation storage allocation sparked fears that peak irrigation demand would exceed Lifton pump capacity. However, spring rain provided adequate runoff (45% of normal) that came intensely during the latter part of the normal runoff period and supplied some of the early irrigation water. The runoff came in through natural flow downstream of Bear Lake and as excess flow in the Rainbow Inlet Canal.

Maintenance on the spill gates at Oneida Reservoir required that the reservoir be drawn down during the irrigation season. The reservoir water was used for irrigation downstream. The reservoir was subsequently refilled after the irrigation season. The detailed water accounting was provided to Commission and interested parties.

Current Status

Recent Bear Lake minimum elevation of 5909.96' was observed on November 9, 2010.

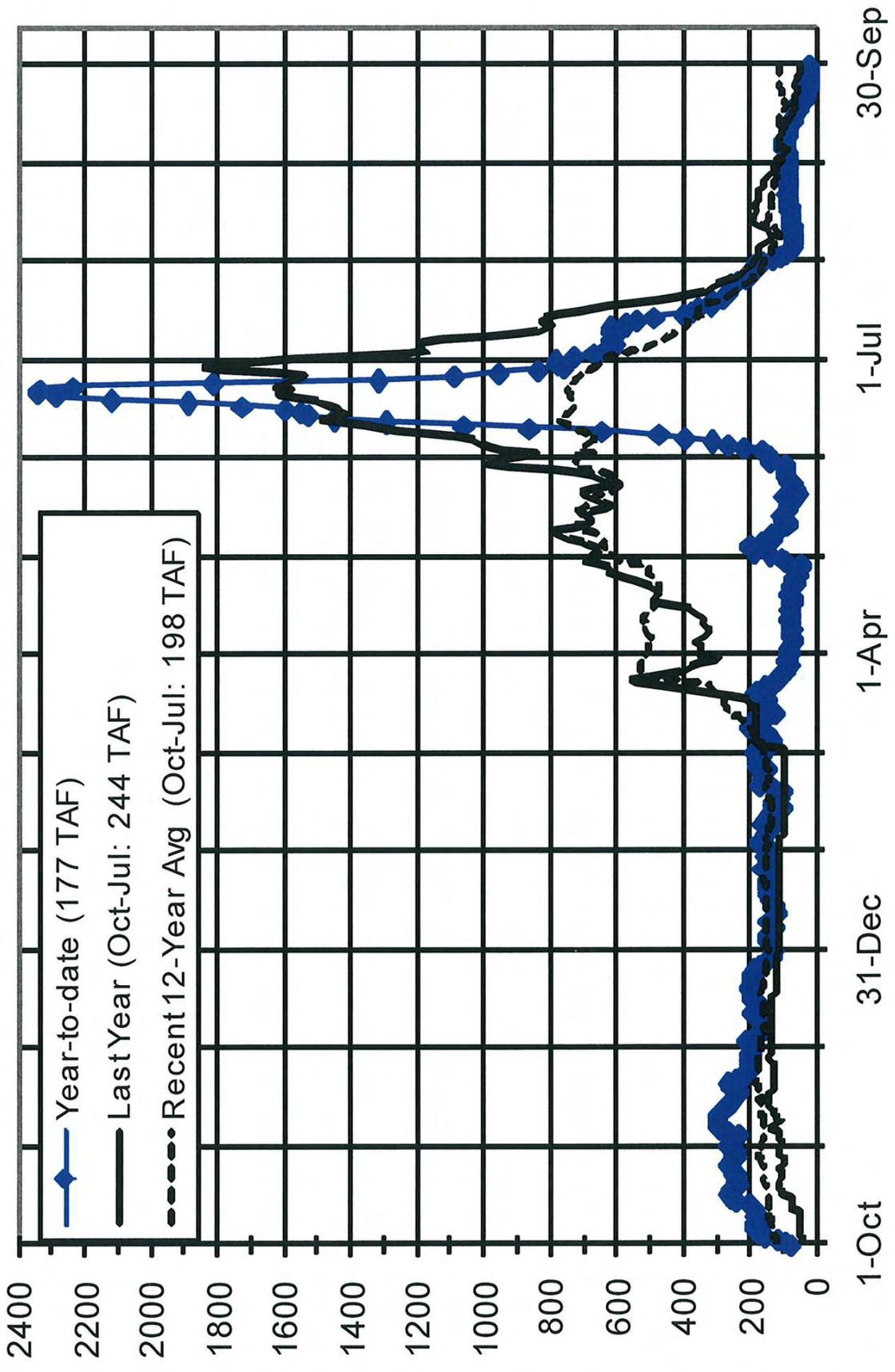
Bear Lake elevation as of November 14, 2010 was 5909.98'

Rainbow Inlet canal 155 cfs and filling Bear Lake.

Irrigation Allocation Scenarios

- If Bear Lake rises only 2' to about 5912 in the spring, the irrigation allocation would be 215,000 Ac. Ft. (93%). Basis is 230,000
- If Bear Lake rises 6' like it did in 2005, then the irrigation allocation would be 245,000 (full allocation).

Rainbow Inlet Canal Flow (cfs) - Water Year 2010



**BEAR RIVER WATER USERS ASSOCIATION
REPORT TO THE BEAR RIVER COMMISSION
NOVEMBER 16, 2010**

Association Membership

At the present time the Bear River Water Users Association includes Last Chance Canal Company, Cub River Irrigation Company, West Cache Canal Company, Bear River Canal Company and, I am happy to now report, if I didn't do so last spring, the Utah Small Irrigator's group. Collectively these companies irrigate 141,000 acres of land and are under contract to receive Bear Lake storage water. This represents about 94% of the lands under contract below Bear Lake. I would love to get the remaining 6% into the Association's membership so I would throw out this request to the Idaho Small Irrigator's group. We would welcome you with open arms and we are hopeful that the entire contracted irrigation group be under the umbrella of the Bear River Water Users Association at some point in the not so distant future.

2010 Irrigation Season

This year again proved to be quite unremarkable in terms of comparing it with irrigation seasons of the past. It was unremarkable because the total storage use this year was a meager 117,000 or only 54% of the allocation. Thanks to a wet cool June and a continued conservation awareness by the irrigators below Bear Lake, the 99,000 acre feet of the allocation not used was kept in the lake for Bear Lake recovery. This is equivalent to 1.4 feet of recovery on Bear Lake. This isn't something out of the ordinary. Over the past several years the actual storage use has been substantially less than the allocation which is something of great benefit to all of those who benefit from Bear Lake.

Water Rights Activities

This year has been somewhat quiet in terms of numerous and controversial new water applications. However, recently the Idaho Dept. Of Water Resources has advertised the application by Twin Lakes Canal Company to build a dam on the Bear River below Oneida. Numerous entities have protested this application, including Bear River Water Users Association, PacifiCorp and Bear Lake Watch. Idaho has scheduled a pre-hearing conference on this application tomorrow in Pocatello. This application will be followed closely in the months ahead.

Real-Time Data Monitoring Program

This past year the Association has participated in the cooperative effort to include all the diversions on the Bear River under the real-time monitoring program. The Association provided funding for \$2,000 to help the effort as well as some in-kind support in the effort.