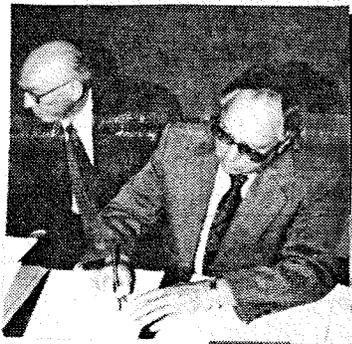
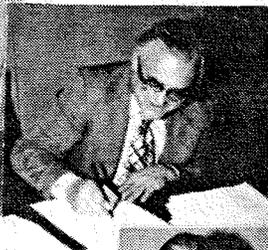
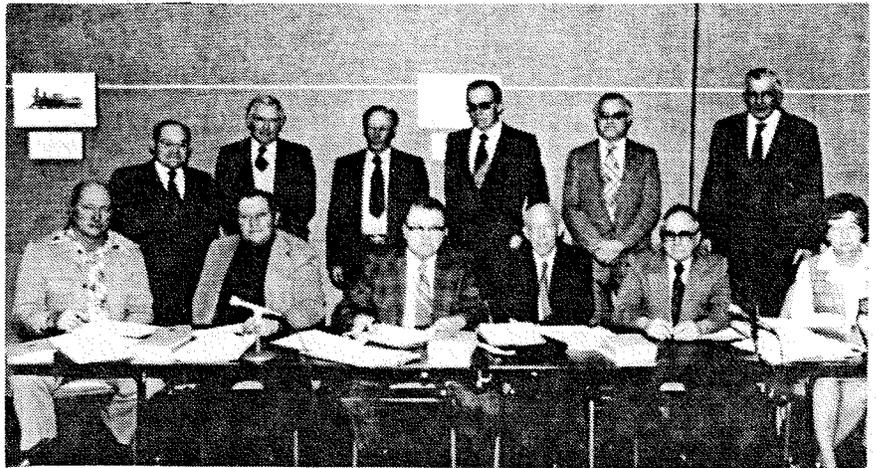

History of the Bear River Compact

By Wallace N. Jibson

November 1991



BEAR RIVER COMMISSION
SALT LAKE CITY, UTAH

COVER PHOTOGRAPHS:

TOP PHOTOGRAPH: **Bear River Commission and support staff at signing of Amended Bear River Compact, December 22, 1978.**

Standing, left to right:

Daniel F. Lawrence, S. Paul Holmgren, J. W. Myers, John A. Teichert,
George L. Christopulos, Simeon Weston

Seated at table, left to right:

Don W. Gilbert, Clifford J. Skinner, J. Daniel Roberts, E. J. Skeen,
Wallace N. Jibson, Connie Borrowman

MIDDLE FIVE PHOTOGRAPHS, LEFT TO RIGHT:

- ***First photograph:*** **Utah Commissioners at signing of Amended Compact.**

Standing: Simeon Weston

Seated, left to right: S. Paul Holmgren and Calvin Funk

Second, third, and fourth photographs: **Wyoming Commissioners at signing of Amended Compact.**

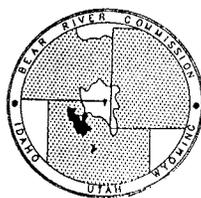
- ***Second photograph:*** George L. Christopulos
- ***Third photograph (to the right):*** J. W. Myers
- ***Fourth photograph (below second & third):*** John A. Teichert
- ***Fifth photograph:*** **Idaho Commissioners at signing of Amended Compact.**
Seated, left to right: Don W. Gilbert, Clifford J. Skinner, J. Daniel Roberts

BOTTOM THREE PHOTOGRAPHS, LEFT TO RIGHT:

- ***First photograph:*** **Commission Chairman signing Amended Compact with Commission Attorney looking on.**
Seated, left to right: E. J. Skeen and Wallace N. Jibson
- ***Second photograph:*** **Commission officers and staff.**
Seated, left to right: Clifford J. Skinner (Vice Chairman), E. J. Skeen (Attorney), Wallace N. Jibson (Chairman), Connie Borrowman (Secretary), and Daniel F. Lawrence (Secretary-Treasurer)
- ***Third photograph:*** United States President Jimmy Carter

History of the Bear River Compact

By Wallace N. Jibson



BEAR RIVER COMMISSION
SALT LAKE CITY, UTAH

November 1991

Preface

The original Bear River Compact of 1958 and the Amended Bear River Compact of 1980, in conjunction with the Bylaws of the Bear River Compact Commission, various court decrees, and the laws of the States of Wyoming, Idaho, and Utah, establish the framework under which the waters of the Bear River are divided. This framework regulates how the waters of the Bear River are distributed to water users in Wyoming, Idaho, and Utah as the River threads its way in and out of state lines, first in a northerly direction, then with a turn to the west and a reversal of directions to the south, and eventually terminating in the Great Salt Lake.

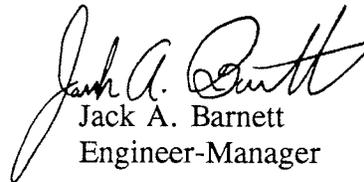
Because of the River's sinuous path across state lines, interstate agreements were necessary. The documents—which compose the legal framework for division of the river between the states—stand for themselves. However, behind those formal documents is a history of intriguing stories, long negotiations, and well-thought-out objectives and compromises. No one has been more involved in the establishment of the framework under which the Bear River is now managed between the three states than the author of this report, Wallace N. Jibson.

Wallace N. Jibson, or as most of us know him—"Wally", has served the water users and the three states with respect to Bear River regulation for more than four decades. The Commission felt that it would be most important to have Wally record for posterity his remembrances with respect to Compact negotiations and administration and to further provide additional background and insight into related issues.

The Commission appreciates Wally's longstanding service and further appreciates the history which he has written. This document does not constitute a formal history of the Bear River Compact Commission nor was it intended to do so. Instead, it represents an extended history of water use, water negotiations and water distribution along the river as seen and remembered by Wally.



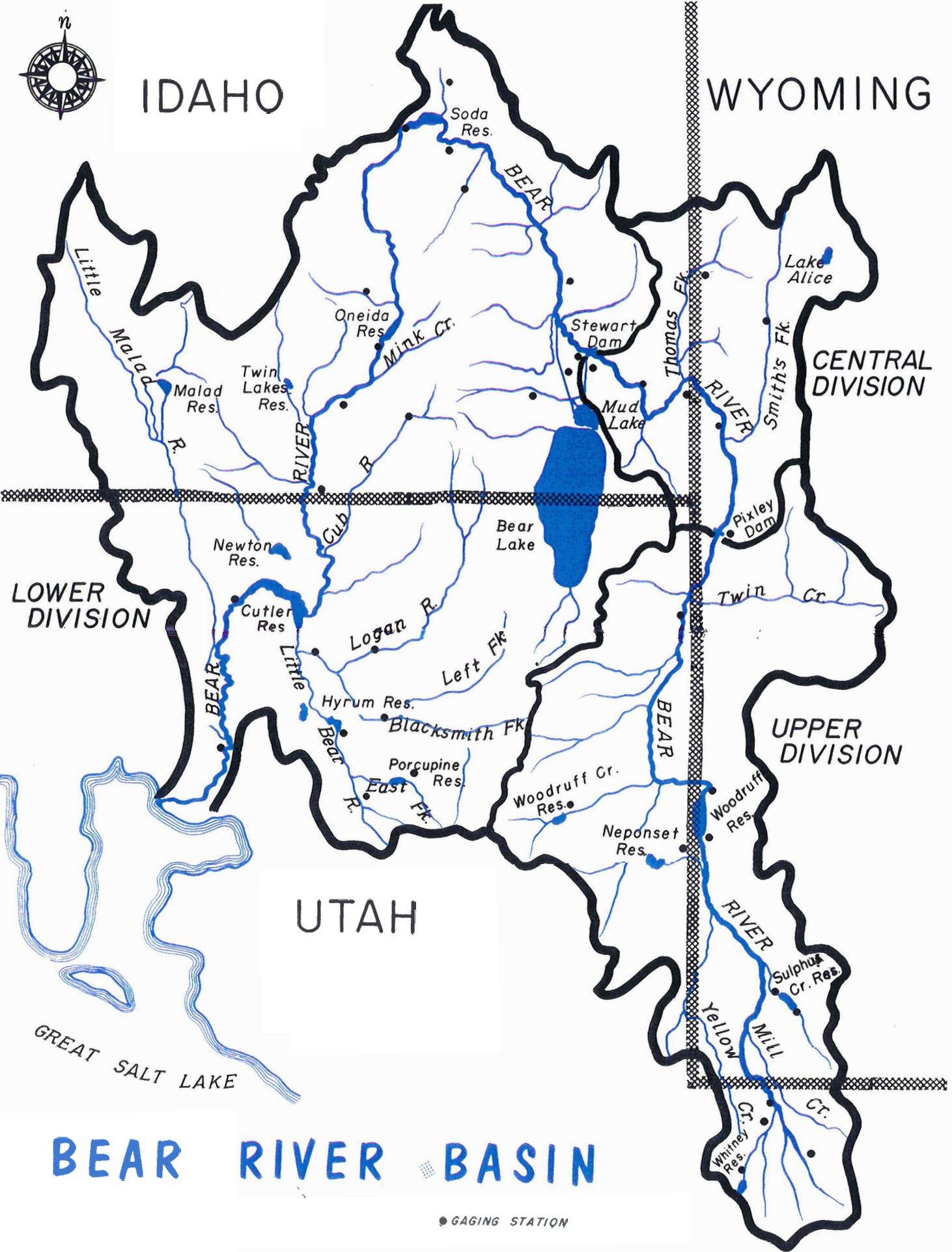
Wallace N. Jibson


Jack A. Barnett
Engineer-Manager



IDAHO

WYOMING



CENTRAL DIVISION

LOWER DIVISION

UPPER DIVISION

UTAH

BEAR RIVER BASIN

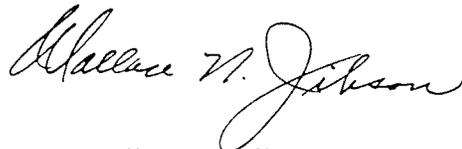
● GAGING STATION

Acknowledgments

The Bear River Commission recognized the need of an unofficial record of events and the personnel that were involved in the formulating and the administration of the Bear River Compact and the Amended Bear River Compact. This record spans some 45 years and involves a large number of Federal, State, private, and local water officials from the three states in addition to many grass-root water users who provided practical and valuable insight into compact negotiations. The Commission provided funding and other assistance in preparing the history, and members have been especially tolerant of several delays beyond the initial time frame for completion.

The author is indebted to members of the Commission and others who reviewed preliminary drafts and offered a number of suggestions, most of which have been incorporated into the history. I especially appreciate the valuable advice and direction of Jack A. Barnett, Bear River Commission Engineer-Manager, and his secretary, Heidi S. Marciniak, who has typed, corrected, and retyped draft after draft of the history. Special appreciation also to Jack for making available his word processor, printer, and other office equipment.

Alan Robertson, Idaho Department of Water Resources, and others who had served on the Technical Subcommittee of the negotiators for the Amended Compact have been very helpful in providing background information. Quantities included in the Amended Compact on storage allocations and depletion limitations have been derived from their hydrologic analysis.

A handwritten signature in black ink, reading "Wallace N. Jibson". The signature is written in a cursive style with a large, looping "J" and "S".

Wallace N. Jibson

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HISTORY of the BEAR RIVER COMPACT

(BY WALLACE N. JIBSON¹)

CHAPTER I EARLY HISTORY OF SETTLEMENT & DEVELOPMENT OF THE BEAR RIVER

Naming of Bear River and Bear Lake

As rivers are measured, Bear River probably has only one distinction: that of being the largest stream in North America whose waters do not reach an ocean. But it is also a stream of geographic and political complexity as it enters the States of Wyoming, Utah, and Idaho a total of five times in its 500-mile circuitous course from Utah's Uinta Mountains to Utah's Great Salt Lake--only 90 miles from headwaters to mouth.

A brief historical background may be of interest beginning with the record of the first white trappers to enter and explore Bear River basin. First to come were fur trappers from Jacob Astor's British-owned American Fur Company in 1812 who gave the name of their leader, Miller, to the Bear River. Then in 1818 trappers of the French and British Northwest Fur Company entered the basin by way of Soda Springs, and Michel Bourdon attached today's name of Bear River because of the many bears encountered along the river. Bourdon traveled downstream and gave the name Little Bear River (also called Bourdon River) to what is now the Logan River. Part of the group moved upstream to Bear Lake Valley and gave the name Black Bear's Lake to the Lake.

Captain Weber and other Americans evidently "discovered" Bear Lake in 1824 and called it Weaver's Lake. The lake had other names--Little Lake, Sweet Water Lake, etc.

¹Wallace N. Jibson served as an employee of the U.S. Geological Survey (USGS) in Logan, Utah, as the lead investigator of Bear River water resources prior to the first Compact. He was serving as Chairman of the Negotiating Commission's Engineering Committee at the time of agreement (1955) on the Bear River Compact. Upon completion of the first Compact and while still employed by the USGS, in 1958 Jibson became the Assistant Secretary of the Bear River Commission. He was appointed as Federal Representative and Chairman of the Commission by President Gerald Ford on September 9, 1976, and was involved in negotiations leading to the Amended Compact. In 1979, Jibson retired from the USGS, became the first Engineer-Manager of the Bear River Compact Commission, and held this position until he retired in July of 1989.

But the British "Bear Lake,"--shortened from Black Bears Lake--prevailed. Smiths Fork was named for Jedediah Smith who named Cache Valley and Blacksmith Fork.² Hayden Fork of the Bear River and King's Peak, Utah's highest, were named for early investigators with the U.S. Geological Survey.

Irrigation Development and Early Studies

Mormon pioneers in their trek to Utah crossed the Bear River upstream from Evanston. Wes Myers, Bear River Commissioner from Wyoming, tells of his grandfather going on to Salt Lake, where he operated a small business for a year or two, but he returned to the Bear River and eventually started a ranching operation. Today, several miles of river basin are part of the Myers Ranch. Myers' irrigation canal, with an 1862 water right, claims the earliest water right priority on the Bear River and also in the State of Wyoming.

Somewhat surprising is the extent of irrigation development--and potential disputes--that had taken place before statehood, which was granted in 1890 to Idaho and Wyoming and in 1896 to Utah. G.K. Gilbert included a brief study of the Utah part of the basin in a report by Major J.W. Powell to the Congress in 1878. A couple statements of interest were to the effect that sufficient water was available in the river to irrigate about 90 square miles (57,600 acres) "under ditch" in the Woodruff-Randolph area; but if the necessary waters were appropriated, too little would remain for the use of lands bordering the river in Wyoming. These lands would have equal claim, and a "proper" distribution would allocate the supply to the best selection of land in the two Territories. Also, ". . . where the river next enters Utah, it has acquired so great a volume that it is impractical to make use of its entire amount."

In that 1878 report, Major Powell asked the Congress for laws governing priorities and beneficial use of water to be included in the homestead laws. But the Congress took no action, leaving policy to the States and Territories. Again in 1889 in the Eleventh Annual Report of the U.S. Geological Survey, Major Powell discussed the river system including plans to divert up to 2,000 cubic feet per second (cfs) of water where the river leaves Cache Valley. He then posed these questions: "In times of scarcity, who is to apportion this water? What protection do present users enjoy against the stronger and richer canal companies?" Further, ". . . the project and notices of appropriation caused uneasiness among individuals and communities, especially in Idaho, for fear of a contest regarding water"

Major Powell was largely responsible for the establishment of the U.S. Geological Survey (USGS) in 1879 and became its second director in 1881. His efforts were in good

²A.J. Simmonds, Utah State University (USU), and Dale Morgan, Opening of the West, by courtesy of La Mar Berrett, BYU.

part responsible for the enactment of the Irrigation Survey which was placed under the direction of the USGS. A few months later the science of stream gaging was developed, and Bear River near Collinston gaging station was established in July 1889 to be among the first gaging stations in the country. The Irrigation Survey was terminated in 1890, but not the stream gaging program that continues today under the USGS.

The feasibility of diverting water from Bear River into Bear Lake was discussed in Department of Agriculture Bulletin No. 70 in 1898. An estimated 400,000 acre-feet of usable storage could be provided by raising the "turnpike" or natural causeway in several places to provide for a 5-foot range in stage. Priorities across state lines and a common river administration were advocated in this report--possibly an implication of Federal administration in this interstate stream. A further quote, "A great many of the irrigators who are taking water from this stream and experiencing this unsatisfactory condition of affairs have called for a remedy, and have urged a division and adjudication of the waters of the entire stream." The writers also noted the difference in character of rights as between states and stated further, ". . . claims of appropriation could not be taken as a basis for the equitable division of its water." This was to be the subject of many discussions and disagreements some 50 years down the road.

George Swendsen, Utah Agricultural College, working for the Federal Reclamation Service, in 1902-1903 examined Bear Lake as a possible storage reservoir for irrigation and made note of two private projects then under development. Telluride Power Company was constructing a channel (Dingle Inlet Canal) from Bear River to Mud Lake. The Utah Sugar Company was constructing a channel from Mud Lake to the Bear River. Little progress was being made on either project.

We see from these early reports that irrigation was but a few years old when disputes arose on water rights. Territorial rights make up most of the rights in the basin. The United States was the sovereign and confirmed the law of appropriation which existed by local customs, laws, and court decisions in the three territories. This appropriation doctrine was confirmed later by the constitutions of the three States, and rights continued to be acquired.

Utah Power and Light Company³ and Bear Lake

Utah Power and Light Company (UP&L) was organized in 1912, consolidating Telluride Power Company with many other predecessor companies. UP&L continued the Bear River to Bear Lake project started by Telluride and the Utah Sugar Company, and completed the project in 1918. In the period from about 1907 to 1916, the Dingle (Telluride) canal, diverting upstream from the present Rainbow Inlet Canal, intercepted a number of tributary sloughs. According to George Swendsen (1916) the canal diverted

³Utah Power and Light Company merged with PacifiCorp on January 9, 1989.

relatively significant amounts of water into slough areas (Mud Lake), raised the water surface, and overflowed into the Bear Lake natural outlet channel.

In December 1912, UP&L and Utah-Idaho Sugar Company entered into a perpetual agreement whereby the Sugar Company conveyed to UP&L all property in the vicinity of the present Cutler Dam including the diversion dam, canal headworks, existing power plant (Wheelon), transmission lines, and other properties and land. Also conveyed were all approved or pending water rights for power owned by the Sugar Company.

UP&L in return agreed to deliver a continuous flow of 900 cfs between May 1 and October 31 and 150 cfs between November 1 and the following April 30 each year for irrigation, municipal, and other purposes. To the extent that natural flow of the Bear River would not meet this demand, UP&L agreed to make up the difference with stored water. The UP&L also agreed to maintain, operate, and repair the dam, canals, and diverting works for which the Sugar Company in partial consideration would pay \$4,000 annually.

Somewhat surprising is that the contract became effective in 1913, five years before completion of the Bear Lake project. But in this period, the Lake was converted into a storage reservoir by construction of inlet and outlet canals and a pumping plant (Lifton) near the center of the north shore in a natural causeway that was built up by wave action. The pumps lift water from the Lake into the outlet canal where it returns to Bear River at a point just west of Montpelier, Idaho. Five hydropower plants--Soda, Grace, Cove, Oneida, and Cutler--were built and completed by 1927. This is today, in 1990, the most important single development affecting Bear River water and placed the Bear Lake project in the middle of deliberations toward a long-negotiated Bear River Compact.

CHAPTER II EVENTS AND NEGOTIATIONS LEADING TO APPROVAL OF THE ORIGINAL COMPACT

Water Rights, Dietrich Decree

Water rights in Bear River basin are evidenced under state law by court decrees, water applications, or water users' claims in pending suits for adjudication. Rights in Summit, Rich, and Cache Counties, Utah recently have been adjudicated in the courts. Earlier rights in Cache and Box Elder Counties were decreed in the "Kimball Decree" in 1922. Wyoming water rights are tabulated in a document entitled Tabulation of Adjudicated Water Rights of the State of Wyoming, Water Division Number Four. Updated versions are published at 3, 4, and 5-year intervals; also, unadjudicated rights in good standing are published.

Idaho water rights above Stewart Dam are decreed in a State District Court case entitled "Preston-Montpelier Irrigation Company v. Dingle Irrigation Co. et al.," and from Stewart Dam (see map on page ii) to the Utah State line in a Federal District Court decree known as the "Dietrich Decree" filed July 14, 1920. This decree granted a right to Utah Power and Light to divert 5,500 cfs of Bear River water into Bear Lake; thereafter to be released at UP&L's pleasure ". . . for the generation of electric power, and for such irrigation or other beneficial purposes, recognized by law, as the plaintiff (UP&L) may devote or dedicate said released stored water, by use, sale, rental, or otherwise" (quotation from the decree).

Noteworthy is that UP&L's storage right in Bear Lake is the only right to store water in the Lake. The "Irrigation Reserve" (discussed later) in the Compact restricts only the release of stored water under certain conditions. Noted also is that the Dietrich Decree specifies no restrictions relative to lake operating levels, maximum or minimum water surface elevations, or total quantities to be stored.

The first capacity table for usable contents of Bear Lake that I have seen was prepared by A.B. Purton, USGS, in 1942 from a 1922 UP&L contour map. Maximum usable capacity (1,421,000 acre-feet) is shown at a surface elevation of 5,923.65 feet (UP&L Datum) further described by Mr. Purton as "top of outlet works". This elevation has been considered as the upper limit of storage with existing facilities, though the concrete overflow wall or sill is somewhat higher according to a USGS benchmark on the sill. I have determined that the published elevation of 5,924 feet, when adjusted, shown on the 1912 USGS quadrangle map (before influence by man on Bear Lake surface elevations), coincides with the currently accepted upper limit of storage. The published map elevation, 5,924 feet, was rounded from 5,924.1 feet, based on an average of three elevation determinations in 1909 along the east side of the Lake. Datum corrections were made in mean sea level in 1912, 1929, and 1947 totalling a plus 2.25 feet, which, when adjusted to UP&L datum (-2.75 ft), equals 5,923.60 feet. Waterfront property around the lake

shoreline occasionally sustains damage at higher lake elevations from wave action and wind-caused ice encroachment. Owners tend to blame operation of the lake as a storage reservoir for this problem, but evidently it would have taken place under pristine conditions.

The accepted minimum elevation is the bottom of the pump draft tubes or lower limit of existing pumps and is at elevation 5,902.00 feet. This low point or zero usable content point was reached November 9, 1935. Reservoir range then is 21.65 feet, with usable capacity of 1,421,000 acre-feet.

The decreed right to store 5,500 cfs with two priority dates of 1911 and 1912 caused considerable controversy during interstate negotiations toward a compact. Bear River flow reaching Stewart Dam, the point of diversion to Bear Lake, has not in the 68-year period of record exceeded 5,000 cfs (maximum of record, 5,000 cfs in 1984). Rights above Stewart Dam with later dated priorities than 1911 and 1912 might have been subordinate to the Bear Lake storage right. However, only water users in Cache and Box Elder Counties, Utah, and in Idaho were joined as defendants in the Dietrich Decree. Water users in Wyoming and in Rich and Summit Counties in Utah were not parties to the suit and therefore not bound by the decree. Distribution in Idaho has been in accordance with the decree.

Supreme Court Decisions

The Supreme Court of the United States has decided a number of cases between states on an interstate stream where the appropriation doctrine has been adopted in both states. A case involving Wyoming v. Colorado on waters of the Laramie River (259 US.419) is one in which the court held that one state must recognize another state's priorities under the doctrine of appropriation. In a later case, Nebraska v. Wyoming, 325 U.S. 589 decided in 1945, the court referred back to the Laramie River case but concluded that strict adherence to the priority rule may not be possible; one state is not entitled to more than its equitable share of the benefits of an interstate stream.

Water Right Controversy

Each of the principles mentioned above as recognized by the court applies to the Bear Lake storage right, so precedent can be argued either way. In any event, the likelihood of a court injunction resulted in a relatively small amount of storage development in the basin above Bear Lake from 1920 until 1958. The issue was, Would upstream storage be subordinated by the Bear Lake storage right? Wyoming had granted rights for about a dozen small reservoirs that were constructed prior to the Compact with a combined capacity of about 2,000 acre-feet, and with later-dated priorities than the Bear Lake right. Utah users had constructed the Little Creek or Randolph Creek Reservoir, capacity 614 acre-feet, under a 1920 priority. The original Compact recognizes as existing in Idaho only one reservoir on Sheep Creek and three in Wood Canyon (Thomas Fork), with total capacity

of 324 acre-feet. Priority dates were not furnished at the time of a 1955 survey by the author.

Bear Lake storage right for years was a sore spot to users in the upper basin. But, on the other side of the coin, distribution of natural flow in the 1931-1935 drouth period created serious problems for Idaho users, and to a lesser extent for Rich County users in Utah. In each instance, Wyoming has the "hiority" if not the priority, and has the first chance to divert Bear River water from the Uinta watershed and to divert Smiths Fork water ahead of Idaho in the central part of the basin. The 1931-1935 period is the driest consecutive five years in the 65-year period, 1922-1986 (water supply to Bear Lake in the 5-year period, 1987-1991, was less than in 1931-1935). Irrigators dependent on Bear Lake for a partial or full supply of water fared better during this period because of improved runoff in 1932 and 1933 that replenished the dwindling holdover in Bear Lake. This holdover was totally depleted by November 1935.

Users above Bear Lake however, experiencing six below-average years (1930-1935) of runoff, had no storage as a backup and had moderate to severe deficiencies through the entire period. Aggravated by inequitable sharing between states, the situation prompted Idaho users to vow that relief must come through the courts or by an interstate compact.

Early Compact Negotiations

Friction among upper basin users over Bear Lake storage rights and lack of interstate control over irrigation season natural flow, together with the U.S. Bureau of Reclamation's concern for future Reclamation project development, brought about negotiations toward an interstate compact.

A series of informal meetings began in March 1943 in which the three State Engineers, with USGS and Reclamation personnel, laid the groundwork for future more formal negotiations. Ed Watson, Utah State Engineer, was chosen as Chairman of the group. E. J. Skeen, Assistant to the Attorney General in Utah, was chosen as Secretary. Idaho was represented by James Spofford (succeeded by Mark Kulp), State Reclamation Engineer; Fred Cooper, Grace; and E. J. Baird, Soda Springs. Wyoming was represented by L.C. Bishop, State Engineer; David Miller, Rock Springs; and Emil Gradert, Robertson. Utah was represented by Ed Watson, State Engineer; and E. J. Skeen. UP&L was represented by F. Gerald Irvine, Attorney, and E. G. Thorum, Hydrologist.

First approved was a rather comprehensive streamflow data collection program which included all tributary flow records in addition to expanding existing gaging sites on the main stem. Initially, this was a joint effort of USGS and Reclamation, with financial support from the states and local users. Then a project office in Logan was established by the USGS with W.V. (Vaughn) Iorns in charge, who not only directed the streamflow program but was given permission by the USGS to assist the States in an engineering and advisory capacity.

The Congress, as required by the Constitution, granted consent July 24, 1946, to the States to negotiate and enter into a compact (HR 4870, 12-3-4S), and E. O. Larson, Regional Director of Reclamation, was appointed as the Federal Representative by President Truman on August 6, 1946. The authorizing legislation gave considerable latitude to the States to use any basis they chose in negotiations.

Early negotiations toward administering the entire river on a priority basis without regard to state lines met with much resistance which threatened to halt further negotiations. Also, water in the system essentially was fully appropriated which meant that on a priority basis, storage allowance above Bear Lake was out of the question. Further, strict priority distribution between Wyoming and Idaho in the Central Division would create such serious deficiencies in supply for 10,000 acres in the Smiths Fork drainage that in many years total crop failures would result. Thus, recognition by the Supreme Court (*Nebraska v. Wyoming*, 325 U.S. 589, 1945) (page 8) that strict adherence to the priority rule may not be feasible became very pertinent to continuing efforts to negotiate a compact.

Storage Allocation Above Bear Lake

Two concepts then became evident fairly early in negotiations. First, an annual storage allocation to users above Stewart Dam would be granted that would not be junior to the Bear Lake storage rights. Second, division of natural flow water between Wyoming and Utah in the Upper Division and between Wyoming and Idaho in the Central Division would be based on respective irrigated acreages.

Neither concept was readily accepted by UP&L or Idaho negotiators. We should keep in mind that Bear River hydropower was then the lifeblood of UP&L, whose five hydropower plants below Bear Lake (115,000 kw) were generating an estimated 75 percent of its total power production as compared to less than 5 percent in 1990. Increased usage or depletion above Bear Lake was a matter of serious concern to UP&L representatives on the Negotiating Committee. Large quantities of water released from Bear Lake solely for power production in the 1924-1927 period lowered the Lake about 14 feet to approximately 5,909 elevation and set the stage for the Lake being depleted to zero usable content by November 1935.

Bear Lake had become the lifeblood also to thousands of irrigated acres in Idaho and lower Utah. Frequently the question is asked, "Why did the initial Compact fail to divide direct flow and future developable water between States in the Lower Division?" The answer primarily is that even though power production may have had equal or first priority over irrigation in the first years of Bear Lake operation, stored water from the Lake has been adequate each year (except 1934) to fill supplemental irrigation requirements for more than 150,000 acres in Idaho and Utah. Essentially, because of Bear Lake, there was no controversy between Idaho and Utah users, and the negotiators had all the controversy they needed in the upper basin. The Compact did, however, recognize priorities of Utah users against diversions with junior priorities in Idaho.

About eight unofficial meetings of negotiators had been held between March 5, 1943, and June 23, 1948, when the first official meeting was held at Jackson with E. O. Larson conducting as Federal Representative and Chairman. A second meeting at Preston was held December 13 and 14, 1948. The Negotiating Committee included Mark Kulp, Fred Cooper, and William Hunter for Idaho; Clark Bishop, David Miller, and Reed Dayton for Wyoming; and Ed Watson, L. B. Johnson, and Orson Christensen for Utah. E. J. Skeen continued as Secretary to the Commission. Analytical work, including the writing of a tentative compact, had been done by Vaughn Iorns, USGS, with some assistance from Leshor Wing, Federal Power Commission. E. K. Thomas, Reclamation, analyzed future storage development potential for the negotiators. Engineering and legal committees were appointed.

Two years went by before the next meeting of the Commission because of critical attacks on a compact draft presented at Preston in which a storage allocation above Bear Lake was not included. This was a low point in negotiations, with serious doubts that agreement would ever be reached.

I attended the Preston meeting as an understudy of Mr. Iorns, and after hearing him assailed from all sides, considered asking for a transfer--preferably to Kansas. The tempo picked up after 1950 with two or three meetings each year, until final approval of a compact by the States on February 4, 1955. Suggested allocations for upstream storage ranged from "zero," proposed by Idaho, to 150,000 acre-feet annually requested by Wyoming. Many studies, many proposals and counter-proposals, and considerable "horse-trading" took place in the 5-year period before settling on an allocation of 36,500 annual acre-feet, including 1,000 acre-feet to be stored on Thomas Fork for use in Idaho. Actually, the allocation had more basis than just negotiation. Engineering Committee studies analyzed supplemental needs in each state section based on acceptable patterns of diversion, consumptive use, headgate requirements, effects of compact regulation on future needs, and other pertinent analysis. The Committee also investigated existing reservoir sites and projected water supplies and shortages at each site.

Thomas Fork Controversy

The Thomas Fork allocation became the subject of controversy and held up approval of the Compact by one year in the Congress. An Engineering Committee study in May 1953 looked at storage requirements and storable supplies above Bear Lake in which Thomas Fork irrigated land (Idaho) showed a supplemental requirement of 9,000 acre-feet. A reservoir site in Wyoming, with available supply could take care of most of this need.

Thomas Fork was not discussed until the second meeting following the study, December 2, 1954, when George D. Clyde, Utah commissioner, questioned the appropriateness of considering this Idaho tributary for a storage allocation, the contention being that it was an Idaho problem and should not be part of an interstate compact. Even so, Idaho commissioner Fred Cooper suggested an allocation of 1,000 acre-feet. To me this

was a token amount that would accomplish nothing and would create a situation among Thomas Fork users like dividing one bone among ten dogs. According to Mark Kulp, Idaho Reclamation Engineer, the allocation was based on his recommendation several years earlier in connection with WPA (Works Progress Administration) funding for storage development.⁴

Representatives from Thomas Fork were not present at the December meeting, nor did they attend until two meetings later on January 12, 1955, when the Compact was in the final stages of approval. They protested the allocation, citing our study showing the need for 9,000 acre-feet. During a recess, I talked with Mr. Linford and Mr. Walter, representing Thomas Fork users, and suggested that they consider withdrawing the inadequate allocation and negotiate outside the Compact with UP&L and Idaho officials. Their answer: "No. We will accept the 1,000 acre-feet as a 'foot in the door' situation and negotiate later."

Much to our surprise, Linford and Walter took their grievance to Congresswoman Gracie Pfof and convinced her that negotiating meetings had not been publicized, that UP&L was depriving users of water rights, and that Thomas Fork had been ignored and then suddenly Thomas Fork became part of the Compact. These claims were false, but Congresswoman Pfof delayed action in the house from 1957 to 1958 when approval was given. Late filing in the Wyoming Legislature delayed action from 1955 until 1957, so three years passed from Commission signing in 1955 until Presidential approval on March 17, 1958.

Bear Lake Irrigation Reserve

While on the subject of storage allocation, another important part of the Compact, the irrigation reserve, should be explained, especially in view of recent arguments and misunderstanding on the part of some Utah users in the lower basin.

One of the difficulties in formulating an interstate compact on Bear River was the question of allowing additional development of irrigation reservoirs above Bear Lake without the decreasing water supply available to Bear Lake adversely affecting users in Idaho and Utah who are dependent on the Lake for part or all of their irrigation supply. The additional storage rights above Bear Lake to be of any value could not be subject to the earlier priority of UP&L rights to divert water to the Lake; therefore, additional storage development would decrease the flow available for storage in Bear Lake. Irrigators in Idaho and Utah felt that they should be assured of at least the same supply that had been available to them in past years and particularly in the 5-year critical period (1931-1935) when Bear Lake was pumped to its lowest level.

⁴Bear River Commission Minutes of Meeting, Phoenix, Arizona, November 7, 1957.

Obviously, the only way this assurance could be given would be to reduce the use of Bear Lake water solely for the generation of power over the amount used in prior years. This reduction in the use of stored water for power production could be accomplished by selecting a water level in Bear Lake below which water could not be released solely for the generation of power. This level would be selected at such elevation that if basin runoff were to occur again in precisely the same amounts as occurred in the past, the lower users could be assured a supply equal to that of the 5-year critical period, even though 36,500 acre-feet of additional water would be stored each year above Bear Lake.

Simulated lake operation studies indicated that, with some allowance for return flow from the new storage, an elevation of 5,914.70 feet (UP&L datum) would accomplish this purpose, and water below such elevation would constitute an "irrigation reserve." Further, it was concluded that inasmuch as the new storage allowed above Bear Lake would likely take several years to develop, a number of irrigation reserve elevations should be selected corresponding to 5,000 acre-feet increments of storage as it was developed. This resulted in an elevation of 5,912.91 feet being selected as an irrigation reserve level which would be applicable until the first 5,000 acre-feet of storage was developed. Thereafter, the elevation would be raised in accordance with the table given in Article V of the Compact.

By October 1970, 30,883 acre-feet of new storage had been developed above Bear Lake, so the irrigation reserve elevation was raised to 5,914.61 feet (active storage: 794,000 acre-feet) corresponding to the storage block of 30,000 acre-feet. It remains at this level in 1990. The Lake was below the reserve elevation for periods in the sixties, winter period in 1977-1978, and since August 7, 1989. The following hydrograph allows the reader to better understand the fluctuations of Bear Lake levels.

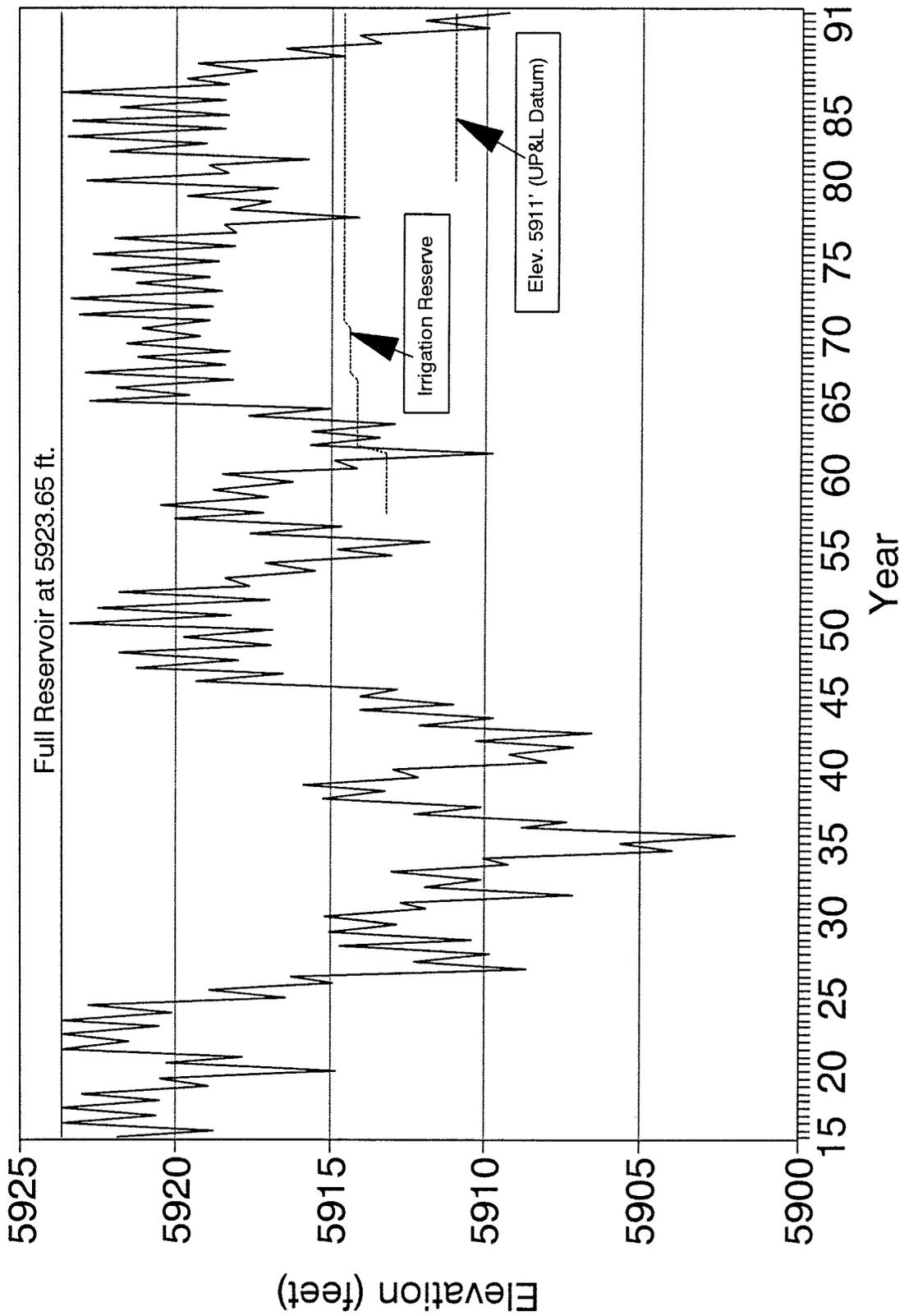
The provision prohibits release of Bear Lake stored water, except in emergency, for the sole purpose of generating power when the Lake is below the irrigation reserve elevation. Further, water from this reserve may be used for hydropower as it is conveyed down the river channel for diversion to irrigation. The provision does modify the basic storage right in the Dietrich Decree as it pertains to the release and use of stored water. The right of UP&L to divert Bear River water to storage in Bear Lake remains as decreed. The Compact does not grant to irrigators the right to store water in the Lake because of the irrigation reserve.

Natural Flow Allocation

Returning to the second major issue to be agreed upon--that of an equitable division of natural flow above Bear Lake--we noted earlier that irrigated acreage as a basis for allocation became the least controversial alternative discussed. Even so, Idaho insisted through many sessions of deliberation that interstate priorities should be given more weight. Some consideration of priorities in this instance was tied to the initiating criteria of when to begin interstate regulation (flow at Border and divertible flow) that will be discussed later. Priority between Wyoming and Utah was not an issue.

BEAR LAKE ELEVATION

ANNUAL MAXIMUM & MINIMUM ELEVATIONS



Negotiators reached early agreement on several other concepts. For instance, under a priority system seldom would tributaries, except Smiths Fork, be regulated for benefit of main stem users. So Smiths Fork was the only tributary included in allocations, and other tributary streamflow records were discontinued after 1945. Also, a combination of irrigated acreage and relative priorities would be controlling factors in allocation of natural flow. Interstate priorities however became less important as negotiations continued.

Again based on priorities, the basin could be divided into three divisions in which an upper division seldom if ever would be regulated for the benefit of a downstream division. The Upper Division extends from the headwaters down to and including diversions at Pixley Dam, about 11 miles upstream from Cokeville. The Central Division comprises that portion of the basin from Pixley Dam to and including Stewart Dam, the point of diversion to Bear Lake. The Lower Division includes the basin below Stewart Dam including Bear Lake and its peripheral tributaries.

To proceed and incorporate these concepts, the States furnished tabulations of water rights and acreages. Reclamation and USGS personnel determined irrigated acreage based on photography taken in about 1938 in which all irrigated land was delineated and planimetered. These were used to check and cross-reference acreages and water rights furnished by the States. Reclamation personnel had done extensive field checking, and the measured acreages were quite accurate.

Emphasis on direct flow allocation was directed principally to Wyoming and Idaho Sections in the Central Division in analytical studies and negotiations. This had been the area of controversy and greatest need for interstate regulation. An extremely dry year, 1954, came along late in negotiations and shifted the emphasis somewhat to the Upper Division where Wyoming again had the "priority" over Utah. Negotiators agreed that interstate allocation should be provided for in both divisions.

The Upper Division includes four state sections: Upper Utah, a small irrigated area in Summit County; Upper Wyoming, comprising about half of the Division irrigated acreage above and below Evanston; Lower Utah, main stem lands in Rich County accounting for about 40 percent of the Upper Division; and Lower Wyoming, main stem lands from the state line below Randolph to Pixley Dam upstream from Cokeville that includes about 10 percent of the Division.

Acreage within each state, as planimetered on Reclamation land use maps, was the starting point in arriving at compact percentage allocations. Hilliard East Fork, Lannon, Lone Mountain, and Hilliard West Side canals divert in Upper Utah for irrigation in Wyoming. Wyoming insisted on jurisdiction over these canals, so 5,653 acres in these canals adjudicated by Utah was added to Upper Wyoming acreage before computing the Compact allocation of 49.3 percent. Acreage in Utah under Francis Lee and Bear River Canals (2,151 acres) was adjudicated in Wyoming and included in Wyoming acreage and allocation. Likewise, Lower Wyoming measured acreage was reduced by 1,884 acres in this section (B.Q. West Side Canal) adjudicated and allocated in Lower Utah. Based on

irrigated acreage as adjusted, Upper Utah received 0.6 percent of divertible flow (see next paragraph); Upper Wyoming, 49.3 percent; Lower Utah, 40.5 percent; and Lower Wyoming, 9.6 percent.

Similar thinking prevailed in the Central Division. Acreage in the Idaho Section of the Central Division under the Cook Canal (2,476 acres) was adjudicated by Wyoming and included in the Wyoming acreage and allocation. Compact acreage for the Central Division then became: Wyoming 17,284 acres (43 percent) and Idaho 23,278 acres (57 percent).

Divertible Flow

"Divertible flow" in the Upper and Central Divisions is defined as the total water being diverted at any given time, plus the flow in cfs leaving the division. In the Upper Division, this would include flow passing Pixley Dam and in the Central Division, flow passing Stewart Dam. Criticism still arises occasionally that the Rainbow Inlet Canal, diverting water at Stewart Dam into Bear Lake (Mud Lake) is counted as a diversion when it irrigates no acreage in the Central Division. For Compact purposes, the Rainbow Canal diversion is in the same category as water leaving the division past Stewart Dam. Ironically, the criticism has come from Wyoming users whose allocation includes 43 percent of the discharge in the Rainbow Canal by definition of divertible flow in the Central Division. Nevertheless, this is a natural reaction by Wyoming users who, while being regulated, observe "surplus" water in the Rainbow Canal rather than being diverted to Idaho land in the Central Division. The primary reason for what may seem to be an inequity is that Idaho meadow rights are cut off July 1 each year. Other diversions being limited to adjudicated rights cannot utilize this meadow water which remains in the system and reaches the Rainbow Canal. Total Idaho acreage after July 1 is receiving far less water per acre than Wyoming acreage except in dry years.

Assuming the Rainbow Inlet Canal did not exist, obviously the divertible flow in the Central Division would not change, and Wyoming Section would get the same allocation as today. Idaho diversions would still be administered under state law, and unused water would be leaving the division. Diversion into the Rainbow Inlet Canal during the irrigation season is highly significant to Idaho users below Bear Lake because, by the Dietrich Decree, this flow plus flow below Stewart Dam is the first measure of natural flow earmarked for the Last Chance Canal Company in accordance with its priority.

Initiation of Water Emergency

When the divertible flow in the Upper Division, as defined on page 14, is less than 1,250 cfs, a water emergency is in effect during the irrigation season. Such an emergency in the Central Division is in effect when either the divertible flow is less than 870 cfs or the flow passing the Bear River at Border, Wyoming gaging station is less than 350 cfs. Water

emergencies terminate on September 30 (Amended Compact) each year unless the date is changed by the Commission.

The flow rates that initiate water emergencies in the Upper and Central Divisions were agreed upon after considerable discussion in a number of meetings. Analysis of historical records showed that small changes in these initiating flow rates did not significantly change the periods of regulation in either division. To arrive at initiating flow rates (next paragraph), which related to quantities available to fill basic rights in each of the States, required a look at rates of allocation under state law. Wyoming basic rights are allocated at the rate of 1 cfs for each 70 acres, with a surplus right of double this amount when water is available; Summit and Rich Counties in Utah were not yet adjudicated, but claims were based on canal capacity with a maximum seasonal diversion of 3.0 acre-feet per acre. (In dry years, no one is able to divert 3.0 acre-feet per acre, so the wide range in diversion rates has caused some controversy within the state.) Adjudication in Idaho varied according to "meadow" rights or "agricultural" rights; so, the Commission used a basis of 1 cfs for 33 acres during the flood water period and 1 cfs for 50 acres during the balance of the season.

The initiating rate in the Upper Division of 1,250 cfs of divertible flow is the approximate total of rights in the division on a basis of 1 cfs for each 70 acres. In the Central Division, the divertible flow criterion of 870 cfs was a negotiated takeoff from 810 cfs which are total rights in the division based on 1 cfs for 50 acres. The flow passing Border of 350 cfs initially was 400 cfs, represented an approximate flow when there is sufficient supply in the two states to divert 1 cfs for each 50 acres. The final compact amounts of 350 cfs at Border or divertible flow of 870 cfs in average years occur within a few days of each other. In dry years, divertible flow generally falls below 870 cfs first and initiates the emergency.

Final Negotiation and 1958 Compact

Intensive negotiations in a series of seven meetings, December 2, 1954, to February 4, 1955, resulted in much compromise, threatened walkouts, and apparent insurmountable differences. But, the old negotiators with important newcomers, George D. Clyde assisted by Jay R. Bingham of Utah, hammered out their differences and on February 4, 1955, signed a Bear River Compact. E. J. Skeen, signing as Secretary to the Commission, played an important role in negotiations not only as secretary but in taking the lead in drafting the Compact and in including necessary provisions to get approval of the Congress.

As we are now operating under an Amended Bear River Compact with different signers, it is desirable for the record to list those signers of the initial Compact. They were, for Idaho: Mark R. Kulp, Fred M. Cooper, and Melvin Lauridsen; for Utah: George D. Clyde, Lorenzo Weidman, A. V. Smoot, Lawrence B. Johnson, Alonzo Hopkin, E. M. Van Orden and Orson A. Christensen; and for Wyoming: L. C. Bishop, H. T. Person, Howard B. Black, Emil C. Gradert, and S. Reed Dayton. Signing for the United States was E. O.

Larson, and as Secretary, E. J. Skeen. President Dwight D. Eisenhower signed approving legislation on March 17, 1958.

Two additional meetings of the Negotiating Committee were held following the signing of the Compact by the states on February 4, 1955: one at Phoenix, Arizona, on November 7, 1957; and the second at Salt Lake City on February 20, 1958. During these meetings, in addition to pursuing Congressional approval of the Compact, contacts were made with USGS authorities in Washington to get approval for the author to assist in the administration of the Compact. This approval was granted with some limitations; namely, as a Federal employee, I was not to be involved in actual regulation of diversions. Preservation of the authority of the Commission and the States was to be of first importance.

The first official meeting of the newly organized Bear River Commission was held April 5, 1958. Nominees for Federal Representative and Chairman were made. Budget and Operations Committees were appointed. Bylaws were approved in the second meeting on April 26, 1958, and Jay R. Bingham, who had assisted George D. Clyde in negotiations, was appointed Secretary of the Commission. In compliance with U.S. Geological Survey limitations and the desire of the Commission with respect to Federal employees, Wallace N. Jibson was first appointed Assistant Secretary and, after retirement from Federal service, as Engineer-Manager. Utah commissioners were Jay R. Bingham, Lawrence B. Johnson, and A. V. Smoot. Wyoming commissioners were Earl Lloyd, S. Reed Dayton, and J. W. Myers. Idaho commissioners were George N. Carter, Fred M. Cooper, and Melvin Lauridsen. E. O. Larson was appointed as Federal Representative by President Eisenhower on June 16, 1958, and by Article III, Larson assumed the duties of Chairman. E. J. Skeen was appointed Legal Advisor in Regular Meeting on November 28, 1960.

Direct flow allocation in the Compact has achieved in general an equitable division of water between the States and has produced no particular surprises from our early projections. Comparable diversion rates, published in biennial reports, between Wyoming and Idaho in the Central Division, show effectiveness of interstate regulation in dry years by the small spread in diversion rate per acre. In average and better years, Wyoming has diverted on the average 1.5 acre-feet per acre more than Idaho, but in dry years, only 0.3 acre-feet per acre more. Gravelly soils in Smiths Fork require a higher rate of diversion but also yield higher return flows.

One direct-flow provision in the Compact that has been more significant than probably anticipated is Article IV, A, e, regarding diversions in the Upper Division. It permits unused allocation in a state section to be available first for use in the other section of that state. This provision was a latecomer in negotiations being proposed just a few weeks before final approval of the Compact and adopted with only cursory studies of its effect on interstate regulation.

Common practice has been to shut down irrigation in Lower Wyoming (B.Q. and Pixley Dams) in the first few days in July, with a flush of water leaving the division as

water is released from behind B.Q. and Pixley Dams. This practice has not changed appreciably since adoption of the Compact. The effect on interstate allocations is to allow the 9.6 percent allocated to Lower Wyoming to be available initially for use in Upper Wyoming. In most years, the additional allocation comes at a time when Upper Wyoming's diversion rate starts to exceed the basic allocation of 49.3 percent--not because of an increased diversion rate, but because of rapid decline in supply and divertible flow. The extra allocation quite often becomes the difference between compliance and non-compliance with allocations for the next two or three weeks until Utah shuts down irrigation for haying operation. We may not argue the fairness of this provision, but doubt that anyone expected it to be a factor in most years.

The transfer of unused allocation and the very rapid decline in supply between the time that the divertible flow reaches 1,250 cfs and the time lower sections in the Upper Division shut down irrigation for haying operation, may lead some to question the value of direct-flow allocation in the Upper Division.

Comparison of river operation in 1990 and prior to the Compact leaves little question in my mind about the value of interstate allocation. For instance, few canals in Upper Wyoming were equipped with adequate headgates to effectively regulate the diversion, flow monitoring was not being done, actual regulation in accordance with rights appeared to be minimal, and very few canals were equipped with measuring flumes or weirs. In 1990, all diversions can be and are being regulated in accordance with adjudicated rights. Thanks to Wes Myers and others in his company who set an example, many diversions are now equipped with Parshall flumes and all major diversions are equipped with continuous recorders. Regulation in accordance with adjudication--without direction of the Commission--for the most part has kept this section within Compact allocation, even though allocation by practical necessity often has been an "after the fact" determination.

Definitions and Explanation of Articles

General

Occasionally, questions arise on individual articles in the Compact as to why certain definitions or recognition of rights were included and others excluded. The following discussion of articles related to such questions may be beneficial.

Article II

Article II lists definitions of certain terms used in the Compact. Paragraphs 18-24 define those tributaries of Bear River and Smiths Fork, diversions from which are part of the divertible flow in the Central Division. Canals defined in paragraphs 25-28 (Hilliard canals) are Utah diversions in Summit County that irrigate only acreage in Wyoming. These canals have late-dated Utah rights, and some have suggested that points of diversion

were purposely located in Utah to avoid Wyoming regulation. Wyoming State Engineer, L. C. Bishop, made it known early in negotiations that he would not agree to a compact that did not give him administrative supervision over these canals. They are therefore included in Upper Wyoming Section diversions and allocations.

Francis Lee Canal, paragraph 29, is one of two canals (also Bear River Canal) diverting in Wyoming below Woodruff Narrows Reservoir and serving some acreage in Wyoming, but most in Utah. Utah acreage under the Francis Lee Canal had not been included in Wyoming adjudication, but was recognized in the Compact. (See also Article X and "Tabulation of Wyoming Rights" with Report 13, December 15, 1959, in Commission files.)

The Chapman Canal and Neponset Reservoir, paragraphs 30 and 31, were also included in definitions because of a question in Wyoming adjudication (see discussion of Article IX--Article X, Amended Compact). Article IV again refers to interstate canals in the Upper Division as defined, and specifies the state section to which their allocations of direct flow are included. Also included in this article is the right to transfer unused allocation as discussed earlier in this history. Interstate canals are supplied from the state section allocation in which the point of diversion is located, with the exception of the Hilliard canals diverting in Utah for use in Wyoming as described earlier.

Article V

Article V (Article VI, Amended Compact) recognizes existing pre-compact storage rights in constructed reservoirs above Stewart Dam. This recognition is confined to aggregate acre-feet by states.

Legal and Engineering Committees in August 1951 requested that the USGS conduct a field survey of existing reservoirs in the basin. This survey would then be updated to the date of Compact approval so that existing reservoirs could be confirmed in the Compact and segregated from new upstream storage that would be allocated. Each state would furnish a listing by name, source, location, priority, and adjudicated capacity. Non-adjudicated reservoirs, if located, were to be included in the survey.

The author, assisted by Budd Robison of the USGS, conducted a field reconnaissance in September and October of 1951 and summarized findings in Report 22, Existing Irrigation Reservoirs in Bear River Basin, dated November 28, 1951.

Considerable discussion in the negotiating group ranged from listing each existing reservoir in the Compact to including the aggregate capacity as a part of the new allocation. Significant is the approved final wording, "Existing storage rights in reservoirs heretofore constructed . . ." (initial Compact). Existing reservoirs without adjudication rights were not included in the totals, but neither are they chargeable to new storage allocation. In general, if the measured capacity in a reservoir was less than adjudicated, the smaller quantity was

used in the total. Likewise, if measured capacity was greater than adjudicated, again the smaller quantity was used. The only tabulation and record of surveys of these reservoirs is in the above-mentioned Report 22 (Commission files).

Article IX

Article IX (Article X, Amended Compact) recognizes and confirms certain rights on which questions were raised during negotiations. Adjudication was pending on Summit County water user claims but on the Hilliard East Fork Canal, there was no record of a claim being filed. The Wyoming State Engineer furnished the irrigated acreage and date of priority. Recognized primary right in the Hilliard East Fork Canal of 28.00 cfs was based on the highest recorded daily flow, 1944-1950, and in general agreed with Utah user claims based on canal capacity. (Flow rate exceeded 28 cfs in 1952, an extremely wet year.)

Amount of irrigated acreage in Utah under the Chapman Canal varied widely from 14,276 acres adjudicated by Wyoming to 7,889 acres finally approved. Consistency in what constitutes irrigated land for Compact allocation had to be maintained in the three states. A general rule was to include willow land and grass/brush land under canals where water was being applied. Another was to include lands that had been irrigated but were temporarily out of production, though not permanently abandoned. Extensive field checking with state (Utah) hydrographic survey maps, together with aerial photos, was carried out by Vaughn Iorns in 1951 with representatives of Deseret Land and Livestock Company (DL&L). Wyoming adjudication rate of 1 cfs for 70 acres was applied to Utah and Wyoming lands to arrive at the primary rights as recognized.

Under state law, Wyoming could not issue a permit for Neponset Reservoir, an out-of-state reservoir served by Chapman Canal. The state did, however, issue an earlier certified letter stating that DL&L had complied with all requirements for adjudication and such letter could be used for evidence in future interstate negotiations.

Somewhat puzzling in view of this evidence was a rather heated discussion between attorney Burton for DL&L and L. C. Bishop, Wyoming State Engineer, on the Neponset right. It was, however, confirmed as a component part of the irrigation right for Utah lands. The author made a survey of the Neponset Reservoir spillway which apparently had washed out and was temporarily replaced with sand bags. This survey, referenced to Bureau of Reclamation bench marks, showed a sand bag capacity of 6,900 acre-feet, which was recognized and confirmed in the Compact. The sandbag spillway has been replaced with concrete, but no further survey was made by the Commission.

The maximum flow limitation of 134 cfs in the Chapman Canal was based on the maximum flow which had been measured up to the date of the Compact. The object of course was to prevent enlargement of the right, but the footnote wording, "Under the right as herein confirmed . . ." does not prevent enlargement of the canal capacity under a new

right. Was this an oversight, or did the negotiators assume that a late-dated priority would be of little practical value either for storage in an enlarged reservoir or for supplemental direct flow application?

Article X

The Francis Lee Canal right, a diversion in Wyoming for irrigation in Wyoming and Utah, was recognized and confirmed in Article X to correct an apparent oversight in Wyoming adjudication. The adjudication recognizes the right to 154 acres in Wyoming but, though recognizing use in Utah, did not adjudicate for 519 acres located in Utah.

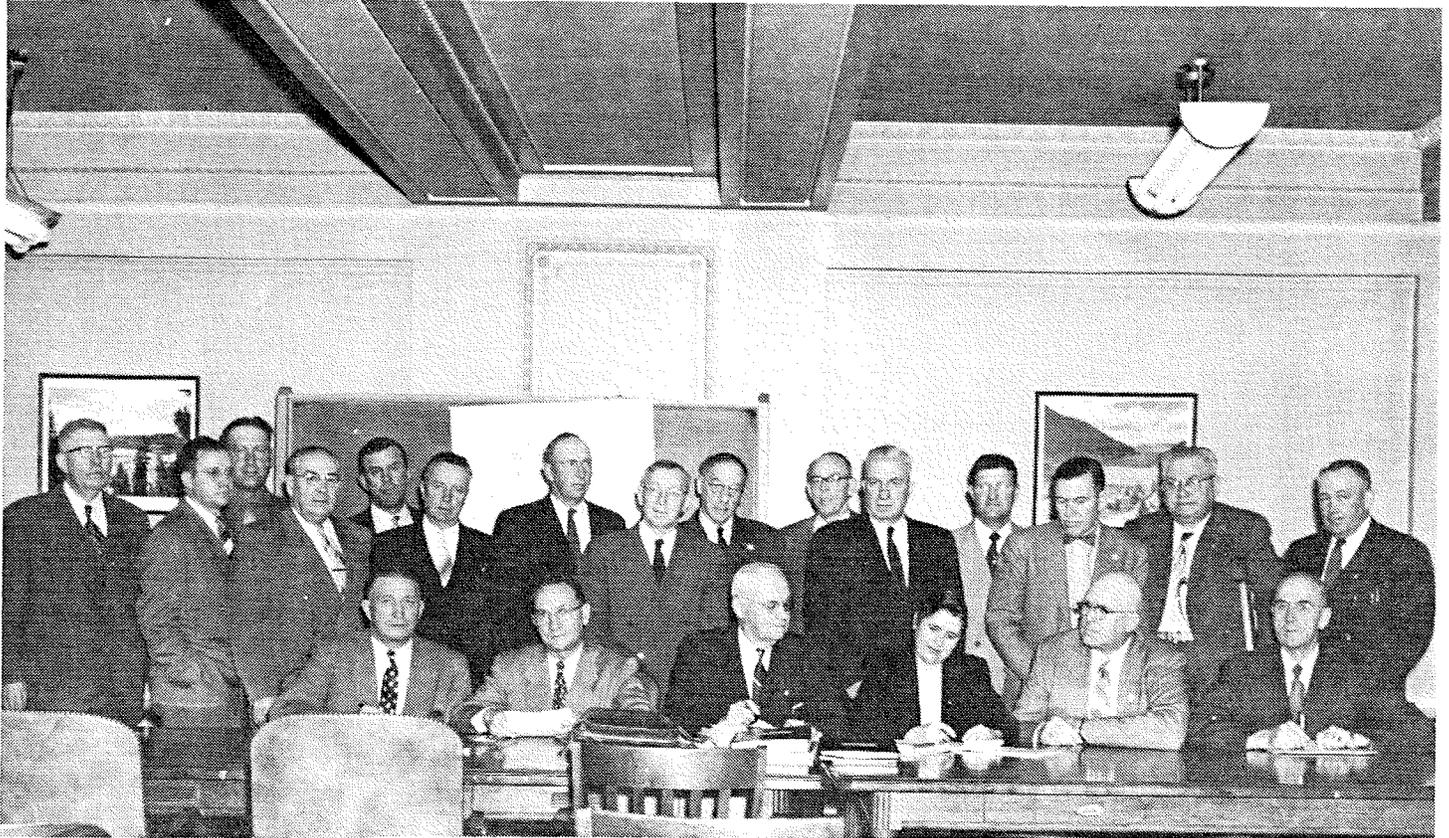
First Years of Operation

Initiating the Compact in a dry cycle had advantages and disadvantages. In the four-year period 1958-1961, supplies ranged from 80 percent of average in 1958 down to 43 percent (Smiths Fork) in 1961. Interstate regulation was badly needed and achieved an equitable division of natural flow during these first years of operation, but also in 1961 (the driest since 1934 and 1940) we saw the futility of regulating in the Upper Division after about mid June. With divertible flow decreasing rapidly in the 400-600 cfs range, most acreage in Lower Utah (Rich County) receives little if any water from flat-gradient canals when discharging less than half capacity under a falling head. Thus, little was gained from interstate regulation during these periods.

A major difficulty in these first efforts to comply with interstate allocation during these dry years was resistance to regulation by users in the Central Division. Wyoming users had very little in-state regulation prior to the Compact, but now they were faced with very severe regulation for the benefit of another state. The Operations Committee of the Commission met with state and local officials in 1959 and cleared the air on several controversial issues.

The Cokeville commissioner resigned in the middle of the 1960 irrigation season and gave no assistance in training a new commissioner. Fortunately, Stanley Nate accepted the unpopular position and was trained in stream gaging by USGS personnel. Stan did an excellent job for several years as commissioner.

To complicate matters, a suit was filed in District Court by a user of Pine Creek water against the Wyoming State Engineer. The suit claimed that Pine Creek was not a tributary to Smiths Fork; therefore, users could not be regulated in order of priority with other Smiths Fork and tributary users. Sections of Pine Creek had been dry at times because of seasonal transbasin diversions by the plaintiff, other diversions, and a small storage reservoir on Pine Creek. The assertion was completely without merit in my opinion but because of a very inept defense the court ruled for the plaintiff.



Negotiating Commission at Signing of Bear River Compact, February 4, 1955

Standing, left to right:

E.M. Van Orden, Wallace N. Jibson, Mr. Linford, Warren Serrine, Mr. Walter, C.R. Nate, Melvin Lauridsen, Mark R. Kulp, Emil C. Gradert, E.J. Skeen, Howard B. Black, S. Reed Dayton, H.T. Person, J. Lorenzo Weidman, A.V. Smoot.

Seated at table, left to right:

Fred M. Cooper, E.O. Larson, L.C. Bishop, Mrs. Crowther, George D. Clyde, Orsen A. Christensen

The Bear River Commission was not a party to this suit, and provisions of the Compact remain intact with diversions from Pine Creek still included in Wyoming diversions. However, the ruling not only demoralized local water officials, but drew threats from other Smiths Fork users that they would fight future regulation of earlier-dated priorities than those on Pine Creek.

Most of the storage water allocated to Wyoming and Upper Utah was developed soon after the Compact became law in 1958. Utah allocated most of her share to Woodruff Narrows Reservoir, completed in 1961, and Woodruff Creek Reservoir, completed a few years later. Wyoming's Sulphur Creek Reservoir was under construction when the Compact was approved. Woodruff Narrows Reservoir's compact allocation included 3,000 (now 3,250) acre-feet from Wyoming. Whitney Reservoir (4,200 acre-feet), a Wyoming allocation, was developed in 1966. A Wyoming allocation to Smiths Fork of 4,100 acre-feet still has not been developed. Smaller reservoir allocations in each state are shown in biennial reports.

An improved water supply following the drouth year of 1961, together with operational experience, did much to ease administrative difficulties. Return flows from Woodruff Narrows Reservoir storage water increased irrigation season supply entering the Central Division to the benefit of both Wyoming and Idaho sections, even though these users are not participants in the Woodruff Narrows project. Likewise, storage from Whitney Reservoir and from Sulphur Creek Reservoir lessened the severity of interstate regulation in the Upper Wyoming Section.

Certainly the initial Compact provided a workable agreement that corrected the two most serious problems leading up to the pact: storage allowance above Bear Lake and an equitable division of natural flow. An important consideration throughout negotiations and during years of operation was that of accomplishing the purposes of the Compact with as little interference as possible in the administration of water under state law.

CHAPTER III THE AMENDED BEAR RIVER COMPACT

Review of Provisions

Article XIII of the 1958 Compact states that at intervals not exceeding 20 years, the Commission shall review provisions of the Compact and, after public hearings, may propose amendments. Such proposed amendments must be ratified by legislatures of signatory states and consented to by Congress. During the first 10 or 12 years of river operation under the 1958 Compact, even though administrative difficulties had been overcome, it became evident that the Compact had not gone far enough in some areas, and a number of concerns pointed out the need for amending the Compact. A discussion of these concerns follows.

The 1958 Compact provided that by petition from an aggrieved user in Utah, water delivery between Idaho and Utah would be based on priority of rights without regard to state line. Such was the extent of any division between Idaho and Utah. Because of the availability of Bear Lake storage water in the river channel each year, delivery by priority has not been called for. The complexity of segregating natural flow from storage water also raised a question of the practicability of administering this provision of the Compact. However, current progress in computer modeling techniques and automated transmission of streamflow data will simplify this segregation.

Concerns and Need for Amendments

It soon became apparent that the priority provision between states in the Lower Division created an undesirable situation in which Idaho looked with apprehension at any Utah filing(s) which would appropriate significant amounts of mainstream water senior in priority to subsequent Idaho development. The answer to this dilemma was not to be involved in a race for development between states, but rather to work toward an equitable apportionment between Idaho and Utah of the undeveloped water flowing into Great Salt Lake.

The Bureau of Reclamation in the early sixties completed a rather comprehensive study of Bear River development at the Oneida Narrows in Idaho. A high dam was proposed that would impound more than 300,000 acre-feet of water to be used in Idaho and Utah. This became a controversial plan not only because of divided opinion within Idaho but because Idaho and Utah could not agree on an equitable division between states. Obviously a large interstate project was out of the question without a firm allocation of developable water to each state.

A second concern dealt with additional storage and development above Bear Lake over and above 1958 Compact allocations. Upper users had been less than enthusiastic about their 1958 storage allocation of 35,500 acre-feet annually when the upper watersheds

contributed all of the 337,000 acre-feet (1937-86) annual flow entering Idaho. Then too, the Thomas Fork allocation of 1,000 acre-feet had not been developed, being too small to spread out among users who are entitled to this storage.

A third concern dealt with ground water and its unrestricted use and development permitted by the Compact. Will further unrestricted use in the basin above Bear Lake seriously affect users of Bear Lake water in spite of the irrigation reserve and the further restriction on new storage allocation tied to a minimum level in Bear Lake? Idaho studies of applications to appropriate ground water filed after 1958 show that this will be the case and will adversely affect the protection afforded by the Compact unless it is counted and becomes a part of an annual depletion allowance.

A fourth concern was the need for depletion limits not only on ground water use but on new storage allocation that may be granted by an amendment, and on all other types of uses that would affect Bear Lake inflows. Depletion or actual consumptive use of water is not part of the 1958 pact though it was studied and given consideration by the negotiators who rejected depletion because of administrative complexity.

A fifth general concern was that any Compact revisions proposed should not adversely affect any existing irrigation rights. Obviously additional storage development above Bear Lake even with annual depletion limits will affect the inflow to Bear Lake. Likewise, an increase in ground water and surface water use will affect the inflow even with upper limits on the depletion. To give protection to irrigation use against the added depletion would mean some reduction of water used only for power production. Continued ground water development would have resulted in some reduction of power water without any Compact modification.

History of Negotiations, Amended Compact

Idaho and Utah governors met in Salt Lake City on September 25, 1967, as a result of controversy over the Bureau of Reclamation proposed project at Oneida Narrows. They agreed on the need for interstate negotiation if further development was to take place. This led to Wyoming involvement and a Tri-state Negotiating Committee appointed by the three governors. Committee members included Bear River Commission members and representatives from state water resource agencies. A meeting in Pocatello on January 7, 1970, was the first in a series of 17 meetings held over the next six years until the Committee and the Commission finally agreed on a draft of revisions.

Negotiations in the Committee charged with making recommendations for amending the Compact were not without controversy. In many ways it was history repeating itself as upstream storage, downstream protection, and decrease in Bear Lake water available for power generation were deliberated. A proposed draft of revisions was prepared in 1976 and discussed in information meetings by each state group, then in official public hearings in each state conducted by the Bear River Commission.

After the first round of public hearings on the Amended Compact in late November of 1976, the Commission decided to forget about seeking legislative approval in 1977 and concentrate on overcoming objections. Again, UP&L felt a threat to their water rights and ability to generate hydropower. Idaho and Utah irrigation interests demanded protection of Bear Lake storage similar to the initial irrigation reserve. Several Idaho interests felt they were on the short end of the Idaho-Utah division of remaining water in the Lower Division.

Addition of a provision to prohibit new storage above Bear Lake when the Lake level is below 5,911 feet overcame the most serious objections. Eliminating a reserve of 120,000 acre-feet for the Bear River Migratory Bird Refuge, for which further development would now come from Utah allocation (discussed later), erased what some considered a favorable position for Utah in apportioning the lower river.

A proposed Compact, with changes as noted, was then presented in a second round of public hearings in Logan, Montpelier, and Evanston on December 11-13, 1978. At these hearings, the Compact, in general, met with public approval. The Chairman and Mr. Skeen, Legal Advisor, met the following week with officials of UP&L and received their assurance of support for the Amended Compact. The Bear River Commission, in Regular meeting in Salt Lake City, December 22, 1978, then approved the Amended Bear River Compact, after hearing some objection from Russell Stoker, Idaho Bear River watermaster.

Idaho commissioners and the Chairman again met with UP&L officials in February of 1979 relative to approval of the Amended Compact in the Idaho Legislature. The Chairman and Idaho Commissioner, Dan Roberts, also addressed the Resources and Environmental Committee of the Idaho State Senate on March 12, 1979. Amending legislation was approved in Idaho on April 5, 1979.

State amending legislation was approved in the Wyoming Legislature on March 6, 1979, and in the Utah Legislature on May 8, 1979. Little, if any, opposition was registered in any of the state legislatures.

Preliminary drafts of the Amended Compact included a reservation of 120,000 acre-feet for further development of the Bear River Migratory Bear Refuge in Box Elder County, Utah. Federal Fish and Wildlife officials, represented by Donald G. Stewart of the Denver office, questioned the adequacy of this amount, and after some discussion, negotiators decided to delete from the Compact this provision and any reference to further development for the Refuge. This did not settle the issue, however, as Federal Wildlife officials continued to express their concern for Bird Refuge rights and further development.

A meeting was held May 30, 1979, prior to congressional hearings, with Mr. Stewart and others representing Wildlife interests; Wallace N. Jibson, Commission Chairman; Roland Robison, Department of the Interior Solicitor's Office (Salt Lake City), who served as Legal Advisor to the Chairman; and Dan Lawrence and Dee Hansen, Utah Water Resources officials and Compact negotiators. It was agreed that a letter of understanding on the Refuge right would be written to Mr. Stewart from Dee Hansen, State

Engineer. This letter reconciled concerns and headed off threatened objections to congressional approval of the Amended Compact.

House and Senate hearings were held in the fall of 1979, and congressional approval was given on January 23, 1980. The Amended Compact became law with approval by President Carter on February 8, 1980.

Summary of Changes

Amendments provide for the following principal changes to the 1958 Compact:

1. Direct-flow allocation of water in the two divisions above Bear Lake is unchanged. Allocation in the Lower Division is unchanged for water applied to beneficial use prior to January 1, 1976. All surface and ground water applied to beneficial use in the Lower Division after January 1, 1976, is divided on a depletion basis with Idaho being granted the first right to develop and deplete 125,000 acre-feet, Utah is granted the second right to 275,000 acre-feet, and the next 150,000 acre-feet is divided equally. Water in excess of the above allocations is divided with Idaho receiving 30 percent and Utah 70 percent.
2. Additional storage is granted above Bear Lake for 74,500 acre-feet, of which 4,500 acre-feet is granted to Idaho and 35,000 acre-feet each to Utah and Wyoming. This storage plus water appropriated including ground water applied to beneficial use after January 1, 1976, shall not result in an increase in depletion of more than 28,000⁵ acre-feet in excess of that on January 1, 1976. Thirteen thousand (13,000) acre-feet of the additional depletion is allocated to each of Utah and Wyoming, and 2,000 acre-feet is allocated to Idaho.
3. Additional rights are granted to store water above Bear Lake which would otherwise be spilled or bypassed from Bear Lake when all other direct flow and storage rights are satisfied.

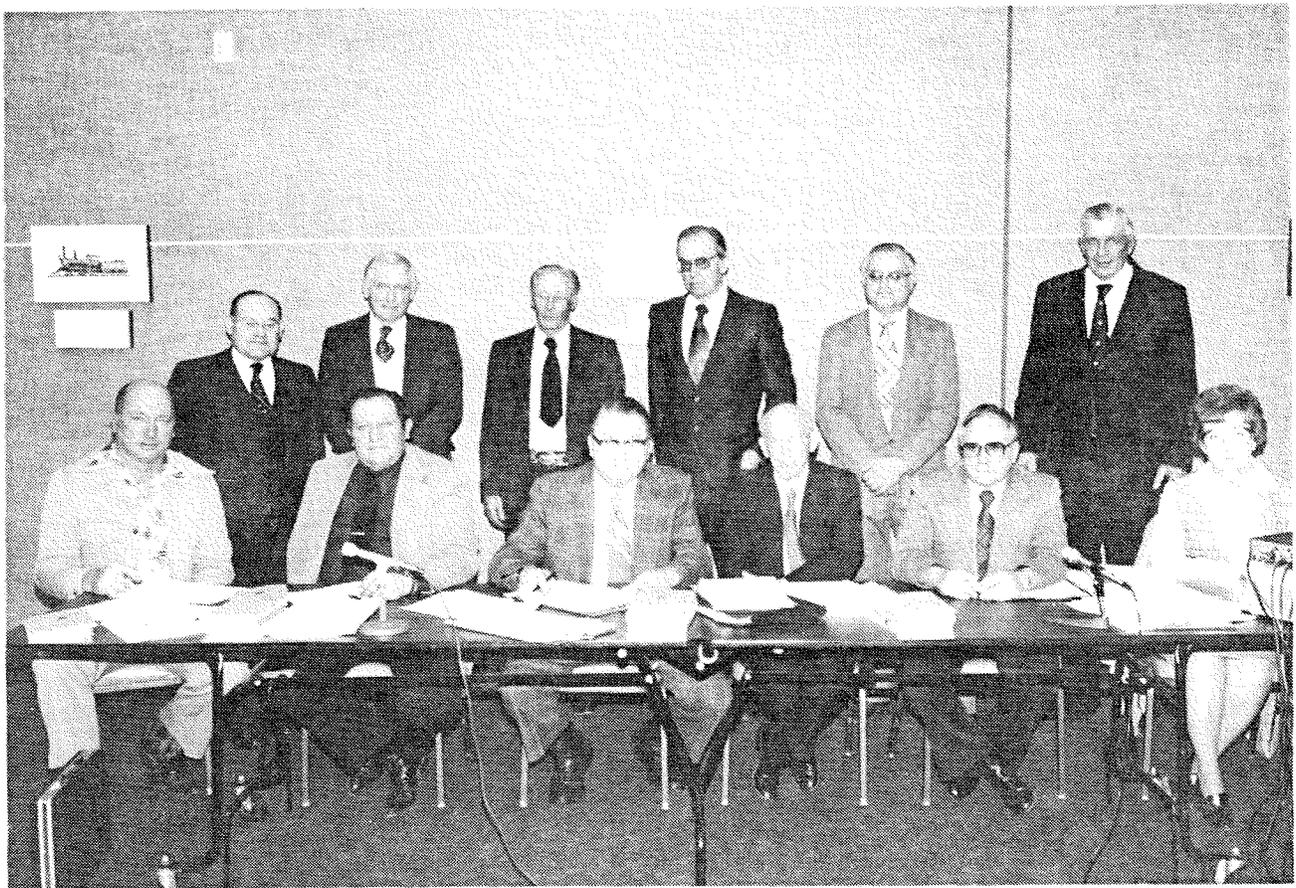
⁵ A study (June 30, 1976) by the Technical Subcommittee of the negotiating group indicated that an average of 31,000 acre-feet per year of Bear Lake water could be depleted by additional upstream uses without adverse effect on present irrigation use of the Lake water. The Lake would be drawn down to zero content however in a repeat of the critical five-year period in the thirties. A depletion limitation of 28,000 acre-feet for all additional upstream uses was then negotiated.

4. Additional diversion to storage as provided by amendments to the Compact shall not be permitted when Bear Lake level is below 5,911.00 feet, UP&L datum. Last Chance Canal Company in Idaho had proposed a minimum Bear Lake level against additional upstream storage which would correspond to a three-year reserve. The selected level of 5,911.00 feet with 28,000 acre-feet maximum allowable annual depletion would allow Bear Lake to meet present requirements through the worst runoff sequence on record. Further, this level would prohibit upstream storage under the Amended Compact allocation in many of the most critical storage seasons on record. As the 5,911.00 elevation is also below the existing irrigation reserve, no water could be released solely for power generation. The relationship between the 5,911.0 elevation, the irrigation reserve, and lake levels can be seen on the graph on page 12.

To implement depletion determination required in the Amended Compact, contractual work has been done by the University of Utah and by Utah State University with assistance from the Universities of Idaho and Wyoming. The contract with the University of Utah was for determination of irrigated acreage on or near January 1, 1976, by the use of Landsat satellite pictures. We have learned that Landsat photography clearly is not the only tool to be used in determining land use. However, on-site investigation and the use of all available data is necessary to accurately depict the irrigation that is occurring.

The Utah State University study, spearheaded by Dr. Robert W. Hill, collected field data from 1982-1988 to get verification of empirical methods for estimating depletion as used in the Amended Compact. Results of this study will assist the Commission in estimating water depletion from irrigated meadows, cropland, rangelands, wetlands, and open water. An estimated depletion from each of these areas is required to administer the Amended Compact.

Signers of the Amended Compact include: for Idaho--Clifford J. Skinner, J. Daniel Roberts, and Don W. Gilbert; for Utah--S. Paul Holmgren, Simeon Weston, and Daniel F. Lawrence; for Wyoming--George Christopulos, J. W. Myers, and John A. Teichert. The Amended Compact was approved for the United States by Wallace N. Jibson, and was signed by Daniel F. Lawrence, Secretary of the Bear River Commission.



Bear River Commission and Support Staff at Signing of Amended Bear River Compact,
December 22, 1978

Standing, left to right:

Daniel F. Lawrence, S. Paul Holmgren, J.W. Myers, John A. Teichert, George L. Christophulos, Simeon Weston

Seated at table, left to right:

Don W. Gilbert, Clifford J. Skinner, J. Daniel Roberts, E.J. Skeen, Wallace N. Jibson, Connie Borrowman

CHAPTER IV REFLECTIONS, CONCLUSIONS, AND A LOOK AHEAD

It has been my privilege to serve both negotiating groups in deliberations leading to the 1958 Compact and the Amended Bear River Compact. I served as Chairman of the Negotiating Committee's Engineering Committee when the first Compact was approved and served as Chairman and Federal Representative to the Bear River Commission when the Amended Compact was approved.

A significant difference in negotiation for the two Compacts is noteworthy. Technical and legal studies for the Commission in deliberating terms of the 1958 Compact were spearheaded by Federal personnel assisted by state and private individuals sitting on legal and engineering committees. State-staffed technical subcommittees performed these services for the Amended Compact Committee with a minimum of Federal input. Implementation of the Amended Compact with respect to Commission-approved procedures is also an in-house effort, except for the University studies. This is a commendable trend in the states' role in water development and administration.

Though no group or interest received every consideration that was requested either in 1958 or in the Amended Compact, I believe the stated purposes of the Bear River Amended Compact are being accomplished: interstate comity, equitable apportionment, removal of controversy, and additional development. The Compact has modified state law and administration only where deemed necessary and proper by the signatory states. The Federal interest has been given due consideration by eliminating certain concepts that may not have been in the Federal interest, e.g. not limiting new land or change in use of land or water.

As I reflected on those who were actively involved in trying to find a way to equitably apportion the river between the three states, I found that my mind went back over nearly five decades, and I became somewhat nostalgic as I reflected upon old friends, many of whom are no longer available for consultation. When I thought about those who were formally involved, the list approached 100. As my memory has faded over time, when attempting to list those who were active participants, I am certain there will be some important names inadvertently left off the list. However, I feel that it is most important that individuals be named. Therefore, the following is my best attempt at outlining the commissioners, negotiators, and advisors who have served the Commission over time. I have listed these individuals by date and made comments with respect to meetings which were held and changes which were made with respect to representation.

<u>DATE</u>	<u>EVENT</u>
1943-46	<p>Informal meetings between State and Federal officials to lay groundwork for stream-gaging programs and future negotiations toward an interstate compact.</p> <p>IDAHO: James Spofford (Mark Kulp) State Engineer; Fred Cooper and E. J. Baird.</p> <p>UTAH: Ed Watson, State Engineer; and E. J. Skeen, Assistant Attorney General.</p> <p>WYOMING: L. C. Bishop, State Engineer; David Miller and Emil Gradert.</p> <p>FEDERAL: W. V. Iorns, et. al.; USGS; and E. K. Thomas, USBR.</p>
6-23-48	<p>First Meeting of Negotiating Commission, Jackson, Wyoming.</p> <p>FEDERAL: E. O. Larson, Chairman and Federal Representative; Leshner Wing, Federal Power Commission; W. V. Iorns, USGS; and E.K. Thomas, USBR.</p> <p>IDAHO: Mark Kulp, Fred Cooper, and William Hunter.</p> <p>UTAH: Ed Watson, L. B. Johnson, and Orson Christensen.</p> <p>WYOMING: L. C. Bishop, David Miller, and S. Reed Dayton.</p>
12-13-48	<p>Second Meeting, Preston, Idaho</p> <p>Engineering Committee appointed: Mark Kulp, Fred Cottrell, R. D. Goodrich, and E. K. Thomas.</p> <p>Legal Committee appointed: Robert Smiley, Clinton Vernon, and Norman Jones.</p>
12-19-50	<p>Third Meeting, Evanston, Wyoming</p> <p>Drafting Committee appointed: Norman Grey and H. T. Person, Wyoming; Fred Cooper and A. L. Merrill, Idaho; Clinton D. Vernon and C. O. Roskelley, Utah; E. J. Skeen, Legal Advisor to the Chairman; and W. V. Iorns, USGS.</p>
12-20-51	<p>Fifth Meeting, Salt Lake City</p> <p>Advisory Group: IDAHO: Melvin Lauridsen, Lynn Crandall, A. L. Merrill, Gerald Irvine (UP&L).</p> <p>UTAH: L. B. Johnson, Alonzo Hopkin, L. B. Caine, E. M. Van Orden, J. L. Weidman, and A. V. Smoot.</p> <p>WYOMING: S. Reed Dayton, J. W. Myers, Emil C. Gradert, H. T. Person, David Miller, E. B. Hitchcock, and S. Harnsberger.</p>
1-31-52	<p>Wallace N. Jibson succeeded W. V. Iorns as Chairman, Engineering Committee.</p>

- 9-28-54** E. J. Skeen succeeded Clinton Vernon as Secretary to the Commission. George D. Clyde and Jay R. Bingham, new members of the Utah Delegation.
- 2-4-55** Bear River Compact approved by Negotiators:
- For IDAHO: Mark R. Kulp, Fred M. Cooper, and Melvin Lauridsen.
- For UTAH: George D. Clyde, L. B. Johnson, Alonzo Hopkin, E. M. Van Orden, Orson Christensen, Lorenzo Weidman, and A. V. Smoot.
- For WYOMING: L. C. Bishop, H. T. Person, Howard Black, Emil Gradert, and S. Reed Dayton.
- For UNITED STATES: E. O. Larson
- SECRETARY: E. J. Skeen
- CONGRESSIONAL APPROVAL: March 17, 1958
- 4-5-58** Bear River Commission organized:
- Chairman and Federal Representative: E. O. Larson (appointed 6-16-58).
 IDAHO: George N. Carter, Fred M. Cooper, and Melvin Lauridsen.
 UTAH: Jay R. Bingham, Lawrence B. Johnson, and A. V. Smoot.
 WYOMING: Earl Lloyd, S. Reed Dayton, and J. W. Myers.
 SECRETARY: Jay R. Bingham
 ASSISTANT SECRETARY: Wallace N. Jibson.
 LEGAL ADVISOR: E. J. Skeen (appointed 11-28-60)
- 12-61** Cleo L. Swendsen succeeded Idaho Commissioner Fred Cooper (deceased).
- 1963** Carl E. Tappan succeeded Idaho Commissioner George Carter (deceased).
 Floyd Bishop succeeded Wyoming Commissioner Earl Lloyd.
- 1965** Evan M. Kackley succeeded Idaho Commissioner Melvin Lauridsen (deceased) and was succeeded by Lloyd Dunn.
- 1966** Grover Harper succeeded Utah Commissioner A. V. Smoot.
- 1967** Idaho Commissioners succeeded by Cecil Foster, Ferris M. Kunz, and Stephen L. Smith with Ex officio member R. Keith Higginson.
- 1968** Daniel F. Lawrence succeeded Utah Commissioner Jay R. Bingham. Gordon Peart succeeded Utah Commissioner L. B. Johnson (deceased).
- 1970** S. Paul Holmgren succeeded Utah Commissioner Grover R. Harper.
 William G. Jenkins succeeded Idaho Commissioner Stephen Smith.

- 1971** J. C. Hedin succeeded Idaho Commissioner Cecil Foster.
- 1974** Clifford J. Skinner succeeded Idaho Commissioner Ferris Kunz (deceased).
- 1975** George L. Christopulos succeeded Wyoming Commissioner Floyd Bishop.
- 1976** Wallace N. Jibson succeeded E. O. Larson as Chairman and Federal Representative. J. Daniel Roberts succeeded Idaho Commissioner J. C. Hedin.
- 1978** Don W. Gilbert succeeded Idaho Commissioner W. G. Jenkins (deceased). C. Stephen Allred succeeded Ex officio member R. Keith Higginson.
- 12-22-78** Amended Bear River Compact approved by Bear River Commission:
 For IDAHO: Clifford J. Skinner, J. Daniel Roberts, and Don Gilbert.
 For UTAH: Daniel F. Lawrence, Simeon Weston, and S. Paul Holmgren.
 For WYOMING: George Christopulos, J. W. Myers, and John Teichert.
 APPROVED, UNITED STATES: Wallace N. Jibson.
 ATTEST: Daniel F. Lawrence, Secretary.
 APPROVED by The President, February 8, 1980.
- 1979** Simeon Weston succeeded Utah Commissioner Gordon Peart (deceased). John Teichert succeeded S. Reed Dayton for two years.
- 1980** Don Rex succeeded Idaho Commissioner Clifford Skinner (deceased).
- 1981** Kenneth Dunn succeeded Ex officio member C. Stephen Allred.
- 1983** Kenneth T. Wright appointed Federal Representative to succeed Wallace N. Jibson who was then appointed Engineer-Manager. Rodney Wallentine succeeded Idaho Commissioner Don Rex. Blair Francis succeeded Utah Commissioner Simeon Weston, and Dean Stuart was appointed Alternate Commissioner from Utah.
- 1985** Larry Anderson succeeded Utah Commissioner Daniel Lawrence. Nancy Fullmer succeeded Connie Borrowman, secretarial duties.
- 1987** Calvin Funk, Alternate Commissioner, succeeded Paul Holmgren (deceased). Glen Nelson appointed Alternate Utah Commissioner. Gordon W. Fassett succeeded Wyoming Commissioner George Christopulos. R. Keith Higginson succeeded Kenneth Dunn as Ex officio member.
- 1989** Jack A. Barnett succeeded Wallace N. Jibson as Engineer-Manager. Floyd Jensen succeeded Idaho Commissioner Daniel Roberts. R. Keith Higginson succeeded Idaho Commissioner Don W. Gilbert. Heidi Marciniak succeeded Nancy Fullmer, secretarial duties.

Many individuals have played a very important part in keeping the records of the Commission. For many years meetings leading up to decisions with respect to adoption of compacts and with respect to formal commission meetings were kept verbatim. Those records are available for anyone who might wish to conduct detailed research into the actions of the Commission.

I remember that early on Clinton Vernon was given an assignment to keep records of Negotiation Meetings. In connection with that, E. J. Skeen was given the title of Legal Advisor and Secretary. Mr. Skeen personally kept some valuable records. With time, the responsibility of secretary was given to those working for the Utah Water and Power Board and assigned by Jay Bingham or Dan Lawrence to keep record of the meetings.

With respect to detailed minutes for several meetings just prior to approving the 1958 Compact, there was a Mrs. Crowther who was given responsibility and kept very accurate verbatim minutes. In more recent years, Connie Borrowman kept the records for the Commission. Later her assignments were passed on to Nancy Fullmer. Most recently, Heidi Marciniak has taken on the responsibilities of keeping records at the Commission meetings. I feel most grateful for all of those who kept the records which we now rely upon when we review the history of the Commission and the compact negotiations.

In a more official sense, I felt it would be helpful to record those who served the three states in representing their governor's designation, and to also identify those who were assigned by the Federal Government as Federal Representatives, as well as others who held official capacities with other organizations, such as Utah Power and Light, and the Commission's Engineer-Managers. The following is a list designating the official participation as I am able to reconstruct it from my memory and from the records of the Commission:

BEAR RIVER COMMISSIONERS, ALTERNATES, AND ADVISORS

IDAHO

James Spofford, 1943-46
 E. J. Baird, 1943-48
 Fred Cooper, 1943-61
 Mark Kulp, 1948-58
 William Hunter, 1948-50
 Robert Smiley, 1948-50
 Lynn Crandall, 1948-52
 A. L. Merrill, 1950-55
 Melvin Lauridsen, 1951-64
 Wesley Hubbard, 1958-?
 Warren Sirrine, 1958-?
 E. N. Humphrey, 1958-?
 George Carter, 1958-63
 Cleo L. Swendsen, 1961-67
 Carl E. Tappan, 1963-67
 Evan Kackley, 1965
 Lloyd Dunn, 1965-67
 Stephen L. Smith, 1967-70
 Cecil Foster, 1967-71
 Ferris Kunz, 1967-74
 Keith Higginson, 1967-78; 1987-
 William G. Jenkins, 1969-78
 J. C. Hedin, 1971-76
 Clifford Skinner, 1974-80
 Daniel Roberts, 1976-89
 Don W. Gilbert, 1978-89
 Stephen Allred, 1978-81
 Don Rex, 1980-83
 Kenneth Dunn, 1981-87
 Rodney Wallentine, 1983-
 Floyd J. Jensen, 1990-

UTAH

Ed Watson, 1943-50
 E. J. Skeen, 1943-46 (state)
 Fred Cottrell, 1948-50
 Clinton Vernon, 1948-54
 Orson Christensen, 1948-58
 C. O. Roskelley, 1948-58
 L. B. Johnson, 1948-68
 J. L. Weidman, 1951-56
 Alonzo Hopkin, 1951-58
 L. B. Caine, 1951-58
 E. M. Van Orden, 1951-58
 A. V. Smoot, 1951-66
 George D. Clyde, 1954-58
 Jay R. Bingham, 1954-68
 R. J. Potter, 1964-65
 Glen McKinnon, 1964-66
 Wayne Criddle, 1964-67
 Ross Plant, 1964-71
 Robert B. Porter, 1964-75
 Grover Harper, 1966-70
 Calvin Funk, 1967-
 Clyde Ritchie, 1967-71
 Hubert C. Lambert, 1967-73
 Dallin W. Jensen, 1967-88
 Gordon Peart, 1968-78
 Daniel Lawrence, 1968-85
 Simeon Weston, 1969-83
 Paul Holmgren, 1969-86
 Dee C. Hansen, 1973-85
 Blair Francis, 1979-
 Dean M. Stuart, 1983-
 D. Larry Anderson, 1985-
 Robert L. Morgan, 1985-
 Glen Nelson, 1987-
 Michael Quealy, 1988-

WYOMING

David Miller, 1943-55
 L. C. Bishop, 1943-58
 Emil Gradert, 1943-58
 S. Reed Dayton, 1948-
 Norman Jones, 1948-?
 R. D. Goodrich, 1948-50
 Norman Grey, 1948-51
 H. T. Person, 1949-58
 H. B. Hitchcock, 1951-54
 S. Harnsberger, 1951-54
 Howard Black, 1956-58
 Paul A. Rechard, 1956-58
 J. W. Myers, 1958-
 Earl Lloyd, 1958-63
 Floyd Bishop, 1963-75
 John Teichert, 1963-
 George Christopoulos, 1975-87
 Gordon Fassett, 1987-

FEDERAL AND OTHERS

W. V. Iorns, 1943-52
 E. K. Thomas, 1943-58
 E. O. Larson, 1943-76
 E. J. Skeen, 1946-(Fed.)
 Wallace N. Jibson, 1947-89
 Leshler Wing, 1948-50
 Gerald Irvine, 1948-60
 E. G. Thorum, 1952-58
 Jay Haight, 1953-82
 M. T. Wilson, 1957-65
 Ted Arnow, 1965-86
 Carly Burton, 1973-
 Jody Williams, 1981-
 Kenneth T. Wright, 1983-
 Lee Case, 1987-
 Jack A. Barnett, 1989-

Progress is being made in administrative procedures, though many problems still are not completely resolved such as accurate determination and updating of acreage with respect to depletion provisions of the Compact. Perhaps more consideration of field reconnaissance or state hydrologic surveys to supplement satellite imagery would be in order where extensive changes since 1976 have taken place.

I feel confident that results of the USU depletion study can be applied to make reasonable estimates of consumptive use for various cropping patterns in the several areas of the basin.

Serious drouth conditions in recent years promise to be more severe than that of the early thirties. Governors in Idaho and Utah have appointed members of a Task Force in each State. These committees are charged with studying further development in the lower river and in Utah of dividing the State's share of Compact allocation among interested entities from Cache County to the Wasatch Front.

Utah Power and Light, under increasing demand for the shrinking Bear Lake storage water, is insisting on accurate segregation of natural flow and storage water in Idaho and Utah below Bear Lake. With this segregation, UP&L wants state law based on the priority doctrine to be strictly applied.

This aggressive policy, though perhaps long overdue, is a far cry from the complacency that has developed through the years as many irrigators knew little and cared less about their natural flow rights. Bear Lake storage water was always there--by contract or otherwise--to supplement the natural flow.

The relationship of the use of surface and ground water in the Cache Valley has not been comprehensively addressed. Municipalities and other water users have developed ground-water sources, but the priority dates of the ground-water rights are generally more recent than the priority dates for surface-water rights. Large public supply wells producing good quality water have been developed and put to use in recent years along the east side of the valley. I view with apprehension some issues that might be raised concerning the interrelationship of ground water and surface water. There are complex questions as to how the use of one resource has an interaction upon the other. Currently there is a state/federally funded U.S. Geological Survey study being undertaken to provide more and much needed information about the ground-water resources of the Cache Valley.

Controversy over water is likely to go on and on as man continues in his efforts to harness and share and respect this life-giving resource for the use and sustenance of society. In the many water meetings attended in the last dozen or so years, I don't recall an instance where reference to the Bear River Compact has been in criticism, but always in respect as the governing law of Bear River.

To the many who have served and persevered in accomplishing an equitable apportionment of the waters of this complex and important river, I express my commendation and dedicate this history to them and to the memory of those who are no longer with us.