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## Updating the Colorado River compact

Jeffrey A. Freer

*University of Nevada Las Vegas*

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# UPDATING THE COLORADO RIVER COMPACT

A Thesis submitted in partial satisfaction of the  
requirement for the degree of  
Bachelor of Arts  
in

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Las Vegas

by

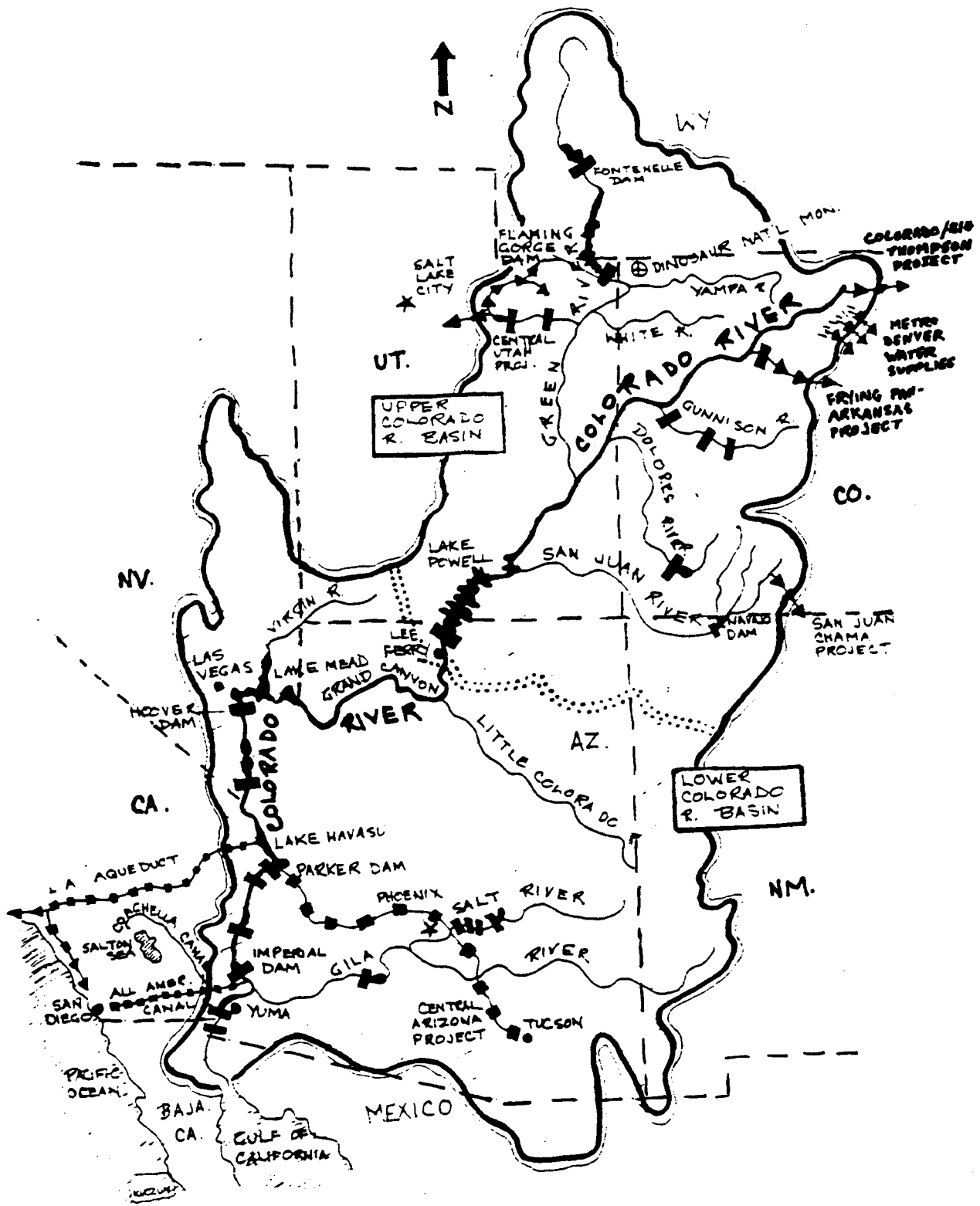
Jeffrey A. Freer  
Spring 1995

Thesis Advisor: Dennis L. Soden Ph.D.  
Environmental Studies  
UNLV



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from Bates (1993)

## INTRODUCTION

Water is essential to life in the arid environment of the western United States. For centuries, humans have used the Colorado River to fulfill their needs and until the past 100 years, the use of the river was sustainable. Over the last 100 years, the Colorado River has been dammed and diverted to "reclaim" the arid west for man's use. In 1946, a Department of the Interior report stated that "Tomorrow the Colorado will be utilized to the very last drop. Its water will convert thousands of additional acres of sagebrush desert to flourishing farms and beautiful homes for servicemen, industrial workers, and native farmers who seek to build permanently in the West" (U.S. Department of Interior 1946). "Water was a commodity that needed to be removed from the river channel and 'put to use'. Water left wild and flowing in the channel was 'wasted'" (Bates 1993: 4). Indeed, the West exists as it does today because it has become "one big, complex plumbing system" (Fradkin 1981: 9). In 1922, the Colorado River Compact was drafted to allocate the waters of the river between the two halves of the Colorado River Basin to encourage development. The development that has occurred in the basin states due to the availability of water has been

unprecedented. At this time it would appear that the Colorado River Compact should be revised to account for changes in the region as well as the inadequacies of the original document.

#### BACKGROUND

The states of the Colorado River Basin grew as they did because the federal government had adopted a populist policy which was intended to entice thousands of people to move west and to economically anchor the small communities that were being created (High Country 1987: 159). The seven basin states consisted of Arizona, Colorado, New Mexico, Nevada, Utah, Wyoming, and California. Through government marketing, people living in the east were offered cheap land with plentiful water for agriculture. With this offer, thousands packed up their families and moved west. In the 1890's, the standard for this Manifest Destiny attitude was "The Conquest of Arid America" (Fradkin 1981: 25). The Carey Act of 1894 gave land to the western states if they would promote the reclamation and settling of that land (Fradkin 1981: 80). In 1893, William E. Smythe, a newspaper editor, not only saw room for a million new homes but also a hundred million new

inhabitants in the West (Fradkin 1981: 25). Limits on growth were, and too often still are, "frequently regarded as being something vaguely communist, or at best a socialist plot" (Fradkin 1981: 25).

The population of the Colorado River Basin from the Civil War to 1900 was about 260,000. Just before World War II the population of the Colorado River Basin had climbed steadily to about 1 million (Fradkin 1981: 27). Southern California alone grew from about 260,000 in 1900, which was prior to any major diversions, to 3.5 million people in 1940 (Fradkin 1981: 27). The population of Southern California grew at about seven to eight percent annually throughout the 1960's. Population growth in the 1960's and 1970's occurred due to people moving west for retirement and recreation (Fradkin 1981: 27). By the end of the 1960's, much of the west's population was centered in the cities (Fradkin 1981: 28). In the 1970's, people started to move back towards the rural areas. It was at this time that the growth rate in Southern California began to stabilize and the majority of growth was outside the state (Fradkin 1981: 28). The lower basin states of Nevada, Arizona, and California have, however, seen tremendous growth



through the 1980's and into the 1990's. The population of the Nevada counties included as part of the basin grew sixty-five percent between 1980 and 1990. The California counties grew by sixty-three percent and Arizona grew by thirty-four percent in this same period. Colorado, an Upper Basin state, experienced a population increase of sixty-six percent between 1980 and 1990 (Kaseko 1995: App. 1). The Colorado River has been overused and overallocated in order to supply this influx of settlers.

The Colorado River is approximately 1400 miles long and has its headwaters in Colorado's Rocky Mountain National Park (High Country News 1987: 165). The river stretches to the Gulf of California in Mexico but the water does not usually make it there anymore because of its extreme use (High Country News 1987: 165). There are five main tributaries of the river; the Green River with its headwaters in the Wind River Range of Wyoming, the Colorado which connects to the Green in Utah's Canyonlands National Park, the San Juan River which starts in the San Juan Mountains of southwestern Colorado, and the Yampa and Gunnison Rivers (Fradkin 1981: 30). The separate tributaries drain a watershed of about 242,000 square

miles of the United States and about 2,000 in Mexico (Fradkin 1981: 31). The Colorado starts in "pristine mountain wildernesses", goes through the "flat desert steppes and pasturelands of the high country" and drops into "canyon country" before it finally comes out into the "hot, low deserts" (Fradkin 1981: 31). The Colorado River now has the "reputation as the most legislated, litigated, and debated river in the world" (Carrier 1991: 11).

In 1886, the California Development Company was created to construct a canal that would deliver water from the Colorado River to Southern California's Imperial Valley for irrigated agriculture. This canal, which had crossed the Mexican border, failed during a flood in the late 1800's. The Imperial Valley farmers then went to the federal government and lobbied for a dam that would control the Colorado and a canal that would not cross the Mexican border. In 1902, the Reclamation Service finally decided to build what would later become Hoover Dam, as a part of a comprehensive plan to develop the Colorado (Fradkin 1981: 186). The construction of a dam that would only benefit California worried the upstream states of the Colorado River Basin who saw a great potential

for losing their water rights to California. California realized that it would have to appease the upper basin states if they were going to get a federally funded dam (Fradkin 1981: 186). To solve this dilemma, the Colorado River Compact was written in 1922 (Fradkin 1981: 186). Without the allocation of water stipulated in the compact, California could have potentially claimed all the water and hydroelectricity available from the Colorado River (High Country News 1987: 159).

#### INTERSTATE COMPACTS

A compact is defined as "the most binding legal arrangement possible between two or more states" (Hardy 1982: foreword). Compacts are entered into for the purpose of dealing with a problem that goes beyond state boundaries (Hardy 1982: 1). Authorization for interstate compacts is found in the United States Constitution which states that "no state shall without the consent of Congress enter into any agreement or compact with another state or with a foreign power" (Hardy 1982: 2). A water allocation compact is usually developed to "apportion equitably the waters of interstate

streams in order to further their development and to avoid any controversy among neighboring states about their relative rights to the waters" (Doerkson 1975: 39).

Through the supremacy clause of the federal government, the interstate compact would take "precedence over inconsistent state laws (Sax 1991: 733). A compact is seen as a "contract" between the states and would take precedence over prior statutory law due to the "contract impairment clause" (Hardy 1982: 3). Interstate compacts cannot be unilaterally amended or repealed meaning that a state cannot make changes or back out without the approval of the other states (Hardy 1982: 3).

Though there are not specific guidelines in which interstate compacts are developed, there is a basic format that is often followed.

There are five steps which must be, or may be, taken in negotiating and concluding an interstate compact; these are: 1) Congress authorizes the negotiation of the compact and outlines its purposes; 2) The State legislature authorizes commissioners representing them to meet and negotiate a compact; 3) The commissioners meet (under the chairmanship of a Federal representative) to negotiate and sign the compact; 4) The State legislatures ratify the compact; and 5) Congress ratifies the compact (Doerkson 1972: 7).

After ratification by Congress, the provisions of the compact become law (Doerkson 1972: 5). More often than not, the attempts of states to develop a compact fail to make it all the way through these steps. These steps are not always followed to the letter. For instance, many early compact negotiations did not include a federal representative. Interstate compacts do, however, require the ratification of the state and federal legislatures.

The purpose of the Colorado River Compact was to allocate water between the two halves of the Colorado River Basin, an upper and lower basin, and to promote development of the region through water storage and flood protection (Hardy 1982: 4). This was the first use of a compact to resolve a regional problem (Hardy 1982: 4). The states involved in the Colorado River Compact were Nevada, Arizona, California, Colorado, Utah, New Mexico, and Wyoming. The river was divided into two basins, an upper and a lower, at the arbitrary dividing point of Lee's Ferry, Arizona just downstream of the Utah border. A state that contained tributaries that flowed into the Colorado above Lee's Ferry were to be considered Upper Basin states while a state with tributaries draining into the river below

Lee's Ferry would be a Lower Basin state. The compact allocated a portion of the river's annual flow to each of these basins. The actual amounts that were allocated were based on what was thought to be an annual flow of about 16.8 million acre-feet of water (High Country News 1987: 159). Each basin was allocated 7.5 million acre-feet a year from the 16.8 million (High Country News 1987: 176). The lower basin was also allocated an additional 1 million acre-feet of water above the 7.5 million. The compact requires that the lower basin gets its share before the upper basin and forbids the upper basin from withholding water that cannot be put to a beneficial use (Viscoli 1991: 889). Mexico was to get any remaining water (Fradkin 1981: 299). The amount of water allocated turned out to be on the high side because the measurements were done between 1896 and 1921, an unusually wet period. The estimated annual flow past Lee's Ferry from 1922 until 1976 was about 13.9 million acre-feet and from 1931 to 1940 it was about 11.8 million acre-feet (Fradkin 1981: 188). In 1990, less than 5.5 million acre-feet of water made it to Lake Powell, which was not nearly the amount of water required downstream (Carrier 1991: 22). Tree ring studies in the basin

have shown the average water flow over the past 400 years to be about 13.6 million acre-feet a year (Fradkin 1981: 188).

The Colorado River Compact was not fully implemented until 1944 when Arizona finally ratified it (Fradkin 1981: 190). Arizona wanted to ensure itself at least some water before a treaty was signed guaranteeing Mexico 1.5 million acre-feet of water. The reason for the delay was that the compact had allocated water between the two basins and not the individual states. This did not keep Arizona safe from California's thirst for water. Water was not allocated between the Lower Basin states until after the 1964 Supreme Court case of Arizona vs. California in which the Central Arizona Project (CAP) was authorized (Fradkin 1981: 190).

#### WATER USE IN THE BASIN

The principal use of Colorado River water is irrigated agriculture. Farmers in the West did not want to have to rely on rain because it is too unpredictable. They wanted irrigation water because it is a more dependable source. It has been estimated that about 90 percent of water in the upper basin is used for irrigating crops (Fradkin 1981: 31).

Approximately 85 percent of the lower basin's water goes to agriculture (Fradkin 1981: 32). Much of the water is used to grow water intensive crops such as alfalfa, cotton, small grains, and rice (Carrier 1991: 28). Of the 1.6 million irrigated acres in the upper basin, 88 percent is used to grow feed for livestock. In the lower basin, 82 million out of 99 million acres is rangeland (Fradkin 1981: 32). "In terms of the largest amounts of water consumed and land used, it (the West) is a vast feedlot for livestock" (Fradkin 1981: 31). In 1975, agriculture used 7.5 million acre-feet of the Colorado River Basin's water while cities and industry only took 630,000 acre-feet (Fradkin 1981: 76). Recreation, fish, and wildlife required 50,000 acre-feet and evaporation accounted for 2.3 million acre-feet (Fradkin 1981: 76). The 2.3 million acre-feet lost to evaporation was more than what was used by all of the upper basin plus Nevada (Fradkin 1981: 76).

Much of the water is diverted out of the basin altogether. More water is taken out of the Colorado River basin than from any other U.S. basin (Fradkin 1981: 76). The lower Colorado consists of a few large diversions. Southern California has the Colorado River Aqueduct, the Imperial and



Coachella Valleys have the All American Canal, and Arizona has the Central Arizona Project (High Country News 1987: 199).

The upper Colorado, in contrast, has numerous smaller diversions (High Country News 1987: 199). With the completion of the Central Arizona Project in the mid-1980's, the Colorado also supplies Phoenix and Tucson with river water (High Country News 1987: 169). Even before the Central Arizona Project was completed in the 1980's, the two basins used 11 million acre-feet out of an average annual flow of about 14 million acre-feet. The CAP now takes an additional 2 million acre-feet that belongs to the upper basin (High Country News 1987: 200). Both Arizona and California have become dependent on the millions of acre-feet of water that the upper basin is not yet using. In addition, many of the upper basin states are attempting to find ways to utilize their full allotment of water before they lose it permanently to the lower basin states.

#### WESTERN WATER LAW

The Upper Basin's concerns about losing its water to the Lower Basin are not unfounded. As the West was being

developed and irrigated it was necessary to create a "complete property law of water rights" (Tarlock 1990: 5-5). Water became a commodity to be privatized as shown in a statement once made by present Secretary of the Interior Bruce Babbitt, "the history of western water politics is an unthinking divestment of the water resource to the states and from them to the users with the federal government a co-conspirator in the reclamation process that accelerated that divestment" (Babbitt 1993: 935). State laws define water rights and also regulate land use policies that affect water use yet remain subject to federal authority (Feldman 1991: 66). A water right is "best characterized as a use privilege, since there is not tangible property to which ownership could be claimed" and it is "specified in terms of diversion and use with a time, location, and quantity of flow dimension" (Hartman 1970: 17). The federal government bases its authority of water rights on the Commerce Clause of the Constitution which permits regulation of waterways for navigation and interstate commerce involving water use and federal reserved rights under the Winters Doctrine (Feldman 1991: 66).

## Prior Appropriation

Western water law is based on the concept of "prior appropriation". The party that starts using the water first maintains the right to that water. "First in time, first in right" is the basis for prior appropriation (Fradkin 1981: 115). This gives the oldest users almost unquestionable seniority and ownership of a water right (Carrier 1991: 19). To give the prior appropriation doctrine legal standing, Congress passed the Act of 1866 which stated:

That whenever by priority of possession, rights to the use of water for mining, agriculture, manufacturing, or other purposes, have vested and accrued, and the same are recognized by local customs, laws, and the decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same (Tarlock 1990: 5-8).

Through prior appropriation, water users obtain rights through the priority of a beneficial use and have an exclusive right to that allotment (Dzurik 1990: 27). The right-holders are divided into senior and junior appropriators. The senior appropriators are entitled to a fixed amount of water that is equal to that amount originally vested. The junior appropriator obtains whatever water is left over after the

senior appropriators (Dzurik 1990: 27). Therefore, if there is a senior appropriator on a waterway and there is a shortage, the senior appropriator will get his entire allotment even if the others go dry (Franks 1991: 551). The vested rights acquired through prior appropriation continue for only as long as "the type and place of their beneficial use and point of diversion remain the same" (Dzurik 1990: 29). Through the beneficial use clause, "no appropriator can divert more water than actually needed" (Dzurik 1990: 29). A beneficial use, however, has been defined very loosely over the years. For instance, the flooding of fields to kill gophers has even been accepted as a beneficial use (Bates 1993: 181). The main criticism of the prior appropriation and beneficial use doctrines are that they promote waste and do not encourage conservation. When the right-holder tries to conserve water, anything left over is put back into the system for appropriation by others. The right-holders do not want to lose their right through the "use it or lose it" clause and often flood their fields in order to maintain their allocation (Tietenberg 1992: 232).

## Federal Water Rights

Federal-reserved water rights are also an important consideration when allocating water from the basin. Federal rights are reserved for federal lands such as national parks, forests, monuments, or Indian reservations (Dzurik 1990: 34). These federal lands have implied water rights which usually have seniority over appropriators (Babbitt 1993: 938). This is based on the Winters Doctrine and the Supreme Court case of Arizona vs. California which reserved water rights to any federal land which Congress had designated for a use (Babbitt 1993: 938). The federally reserved water rights are not based on a beneficial use and cannot be taken away for non-use (Dzurik 1990: 36). Federal water rights, however, are not unlimited. The Supreme Court case of the United States vs. New Mexico held that "implied reservation of water rights doctrine reserves only that amount of water necessary to fulfill the purpose of the reservation and no more" (Dzurik 1990: 35).

## ELEMENTS OF AN INTERSTATE COMPACT

Law and policy concerning water in the West is certainly a complex system but interstate compacts can be a positive way for the states to come together. There are several elements that can make an interstate compact successful.

### Mutual Agreement and Negotiation Provisions

The inclusion of a provision regarding mutual agreement is one important element of a good compact. Unanimity is usually required in "matters requiring commission action" (Doerkson 1975: 46). The compact should contain a "mutually acceptable method for resolving paralyzing impasses" to encourage agreement (Sax 1991: 738). In the absence of mutual agreement or congressional action the states have a basis for "equitable apportionment" (Sax 1991: 746). In equitable apportionment, each state is equal in standing. When a state's action affects another state, the matter must be settled in federal court. This can be a very costly and time consuming way in which to settle disputes between states. If the compact has a way of encouraging consensus, the process can be made more efficient and less costly.

The amount of time required to reach an agreement between states can be a factor that could make an interstate compact undesirable. Interstate compacts tend to involve a lengthy period of time to get established because they must be negotiated by the state representatives who often have conflicting interests (Hardy 1982: 20). Decreasing the length of time necessary to negotiate a compact can be accomplished in several ways. Negotiation can be facilitated if there is a sense of a common threat to the system. For instance, this occurred when the upper basin states felt that California might get a large share of the Colorado if these states did not act quickly. Negotiation can be successful if: the states feel that their interests will be protected, the states see the provisions of the compact as being mutually beneficial, and the number of issues raised is limited (Doerkson 1975: 14). A "generalized acceptance of responsibility can be a unifying factor in interstate negotiations" (Doerkson 1975: 13). The average length of time involved in the negotiation of interstate compacts has been calculated as four years and nine months. The length of time increases to six years and nine months if natural resources are involved and eight years

and nine months if water resources are included (Doerkson 1972: 18).

#### Federal Representation

The inclusion of a federal representative can also be beneficial to the negotiation and implementation of a compact. The "federal government by legislative action becomes one of the parties in the compact" (Doerkson 1972: 11). The support of the federal government is crucial to the ultimate success of a compact attempt (Doerkson 1975: 13). There may be an improved chance of Congressional ratification if the federal government was able to provide its input from the beginning. This gives the process an opportunity for cooperation instead of the potential for conflict. Congress may give the federal representative the "responsibility to administer the division of interstate streams (Sax 1991: 738). Some compacts allow the federal representative a vote on commission matters or have the authority to vote in the case of a tie-breaker (Sax 1991: 738). This close interaction between the states and the federal government has the potential to make the compact process much more efficient. Federal-state compacts, for



instance, would require both the states and the federal government to conform their water resource programs to a plan (Doerkson 1972: 12).

### Flexibility

A compact that is open to revision and therefore not inflexible has also been shown to be an effective tool.

"Change is inevitable, and any lasting decision-making framework can be only that - a framework that is flexible and can adapt to changing circumstances" (MacDonnell 1993: 225).

"The compact can be written to include provisions for an expedited process of amendment, provisions for periodic review of the compact, or other types of provisions such as one that grants the compact clear authority to change in the face of certain conditions and events" (Hardy 1982: 10). Revisions and amendments to a compact often require consensus of the states involved which could require the complete renegotiation of the provisions. This can be somewhat alleviated by giving the compact commissions sufficient authority to work through problems (Hardy 1982: 21). A way around inflexibility is to include "amendment and termination provisions" to the compact

allowing more efficient changes (Hardy 1982: 21). Hardy states that inflexibility may not always be undesirable. It would be desirable in areas such as water rights "where a degree of finality is necessary" (Hardy 1982: 21). Flexibility in a compact would enable the states to work out any problems without the use of equitable apportionment.

#### Interstate Commissions

The creation of an interstate basin management agency can also be a positive element of a compact. An interstate commission would encourage the free flow of information between the involved states as well as the concept of the river as a regional resource. A criticism of states without this type of commission is that they have a "lack of a single, responsible, disinterested, overall responsibility and leadership to balance and overcome state particularism and resolve conflicting issues" (Doerkson 1972: 17). A regional commission would provide for a party immune to bias. For a commission to be successful it needs to have a substantial degree of authority, it needs to be independent of other governmental structures, and have assured funding (Colborn

1990: 195). Early compacts gave the state water administrators the responsibility of carrying out the provisions of the compact. Later compacts provided for a "permanent administrative body", or commission to accomplish this (Doerkson 1975: 40). Commissions are often made up of state representatives and a representative of the federal government (Doerkson 1975: 40). Most are dependent on the individual states for funding (Doerkson 1975: 43). Commissions are usually empowered to implement the provisions found in the compact (Doerkson 1975: 43). They are "generally authorized to undertake only those activities related to fact finding and general commission operating functions" while enforcement of the compact commissions findings is often left up to the signatory states (Doerkson 1975: 44). A criticism of this approach, however, is that it does not give the commission adequate authority.

#### Public Input

Public input is also an important element of a good compact. The "free flow of information and ideas between concerned citizens and government officials is an essential

element in the development and implementation of public policy" (Colborn 1990: 214). Public input allows all of the interests affected by a policy to express their views and not just the views of the rich and powerful. Public input gives the authorities a party to whom they must answer. This gives the public more say and more information about matters that may closely concern them.

#### CASE STUDIES OF INTERSTATE COMPACTS

There are dozens of interstate compacts that have been created to solve disputes between states. Some of these compacts have survived the negotiation process and been implemented successfully while others have never gotten past negotiation. Many of the successful compacts have included one or more of the elements discussed previously.

##### The Delaware River Basin Compact

The Delaware River Basin Compact was approved in 1961 and is an example of a successful compact. This compact involved the states of Delaware, New Jersey, New York, and Pennsylvania and is an example of a federal-interstate agreement. The

purpose of the Delaware compact was to "promote interstate comity" and to protect the region's water resources as well as "encourage and provide for the conservation, utilization, development, management, and control" of the water (Doerkson 1975: 48). The need for a compact started in 1931 when the states went to the Supreme Court seeking the equitable apportionment of water from the river basin. Not satisfied with the court's decision, the states entered into a compact in 1961 that would administer the basin as a shared resource instead of through individual allocations.

The Delaware River Basin Commission was created out of the compact and consists of former state governors, one from each state, and a federal representative (Doerkson 1975: 49).

The federal representative is appointed by the president and has the right to vote on compact matters. A unanimous vote of all members is required on issues involving water allocation while a majority vote is required on other matters (Sax 1991: 742). The purpose of this commission was to "formulate a comprehensive plan for present use and the long-term development of the basin" (Sax 1991: 742). The Delaware

Commission was originally given only recommendatory and evaluative powers, but later was given enforcement authority to actually implement the provisions of the compact (Doerkson 1975: 50). This change gave the commission the authority to make and enforce rules and establish standards (Doerkson 1975: 52). The commission was empowered to "approve all projects in the basin having substantial effect on the water resources of the basin" as well as insisting that the states follow conservation requirements (Sax 1991: 743). This commission obtains its funding through state appropriations and private money markets.

Positive aspects of this compact are that it recognized conservation and long term development as being important. The compact was also written in a manner which allowed flexibility. Changes to the provisions of the compact were allowed as necessary. For instance, the commission had the "authority to make water allocation adjustments among the states and their political subdivision as conditions warrant" (Doerkson 1975: 53). This compact then, was "designed to overcome an inflexible apportionment of waters" (Doerkson 1975: 53). This allows for extreme situations such as drought

and avoids costly litigation between the states (Doerkson 1975: 53).

#### The Connecticut River Basin Compact

The Connecticut River Basin Compact includes several of the positive elements of a good compact. This compact encompasses Vermont, New Hampshire, Massachusetts, and Connecticut. In 1927, several major floods hit the New England area which prompted the states to collaborate effectively and quickly on flood control measures (Gere 1968: 18). Another reason why the New England states acted quickly was so the federal government would not have set up a federal water authority which would have decreased the states sovereignty. Conflict did arise over ideological differences between the regions which did slow the negotiation process. The states involved had different viewpoints regarding the loss of homes and lands and the construction of flood control facilities. Negotiations over the disagreements lasted several months. The federal government, not wanting the delay to last any longer, took the position that if the situation was not straightened out, there would not be an interstate

compact. The attitude of the time was that the role of the federal government should be limited which prompted the states to action. This points to an obvious positive role of including the federal government in the compact process. By having an outside party involved, there is a way to break up stagnant negotiations.

Part of this compact, as it was originally written, consisted of a provision that the states would have the right to power development. The federal government opposed this section because it felt the provision would give the states too much authority. The first attempts at an interstate compact failed largely due to the inclusion of this provision (Gere 1968: 25). Much time may have been saved if a federal representative had been included in the negotiation process from the start. The federal government's position would have been heard at a much earlier date saving a lot of time. Even though these first compacts did not succeed, they did create a foundation for later success.

In 1945, the New England states once again attempted to create an interstate compact for flood control purposes. The New England Interstate Flood Control Commission was created to



resolve conflicts arising from the federal-interstate relationship (Gere 1968: 31). The negotiation process for this compact was delayed many times. The commission was in a continuous state of flux with members constantly changing. These new members needed to be brought up to date on commission matters slowing the process down drastically. Also, the commission members did not want this attempt to fail. They created several drafts of the compact in an attempt to satisfy both the states and the federal government. Whereas the 1937 attempt at a compact was multipurpose in nature, the 1945 draft focused simply on flood control and left out other areas such as the power clause making it much simpler for the commission to reach a consensus. This compact was ratified by Congress in 1952, only seven years after this attempt started and thirty years after the process first began.

The Connecticut River Valley Flood Control Commission created from the 1937 compact had the powers to acquire land for reservoir easements, operate and maintain reservoirs, pay the cost of leasing land, and work with the federal government on developing flood control plans (Gere 1968: 24). This

commission also had the responsibility of calculating tax and economic loss figures for the upstream and downstream states. The commission determined the downstream states share of the economic losses. Coordination between the states, as well as the states and the federal government, was prevalent after the compact was ratified. The line separating each entity's responsibilities was clearly spelled out eliminating much of the conflict that had previously existed.

#### The New England Interstate Water Pollution Control Compact

Like the New England flood control compacts, the New England Interstate Water Pollution Control Compact was developed and implemented by the states in order to head off federal intervention. This compact was only one year in the making. The need for a compact dealing with water pollution control was first addressed in 1946 and was approved by the state legislatures and Congress in 1947. This compact includes a provision which acknowledges flexibility as an important tool for interstate compacts. One of the compact provisions states that each state would prepare water classification schedules. "Such classifications would be

subject to periodic change, of course, as conditions and requirements on interstate streams changed..." (Gere 1968: 40).

#### The Upper Colorado Basin Compact

In 1948, the Upper Colorado Basin Compact was drafted as a way to allocate Colorado River water between the Upper Basin states of Colorado, New Mexico, Utah, and Wyoming. These states acted quickly because they felt that if they did not they may lose the water to the lower basin. Instead of allocating a fixed amount of water such as the Colorado River Compact did, this compact allocated a percentage of the water actually available (Nathanson 1980: 97). The Upper Basin states, based on previous experience, realized that the amount of water in the river would vary from year to year. By allocating the water in this way, there is less chance of a dispute over water quantities that are insufficient to fulfill a state's allocation. In order to fulfill their obligations to the Lower Basin, the compact requires that, in the case of a shortage, each Upper Basin state contributes a proportionate quantity of water (Nathanson 1980: I.90). With this provision

there is a decreased opportunity for disputes among the states involved.

This compact allowed for the creation of a regional commission that had not only research and recommendatory powers but also the authority to adopt rules and regulations. The commission consisted of one representative from each of the states and a federal representative who would have full voting rights (Doerkson 1975: 41).

Article XVI of this compact states that "the failure of any state to use the water, or any part thereof, the use of which is apportioned to it under the terms of this Compact, shall not constitute a relinquishment of the right to such use to the Lower Basin or to any other State, nor shall it constitute a forfeiture or abandonment of the right to such use" (Nathanson 1980: I.96). This was an attempt by the Upper Basin states to try to save any water that they might not use. According to the Colorado River Compact, any water not used by the Upper Basin must be allowed to go downstream. The Upper Basin states did not want the Lower Basin to claim that this water was now theirs.

## The California-Nevada Interstate Compact

The California-Nevada Interstate Compact was created to protect the Tahoe Basin from the effects of development and tourism. The compact allowed the creation of the Tahoe Regional Planning Agency (TRPA) which was given substantial authority. The jurisdiction of the TRPA was defined by the natural watershed of the region instead of traditional political boundaries. The compact required that the TRPA must adopt "environmental standard[s] necessary to maintain a significant scenic, recreational, educational, scientific, or natural value of the [Tahoe] region" (MacDonnell 1993: 220). It also required that activities that would "substantially affect the resources of the basin" be reviewed (MacDonnell 1993: 220). The TRPA held a consensus-building workshop in which all interest groups were invited to participate. The compact now includes a limit on the number of residential building permits and a slightly more relaxed permitting system for commercial development that a local government can issue (MacDonnell 1993: 220). The TRPA system also includes "special protection for stream environment zones (SEZs) where no permanent disturbance is allowed except for roads and

public facilities, and provisions calling for strict regulation of activities on designated environmentally sensitive lots" (MacDonnell 1993: 220). Along with the emphasis on conservation, the TRPA mandated restrictions on growth in the Tahoe region in order to minimize the detrimental effects on the area (MacDonnell 1993: 220). There was a realization that without limits on growth, any attempts to obtain their goals would be fruitless.

#### The Multistate Tax Compact

The Multistate Tax Compact was created as a response to a Supreme Court ruling regarding the taxation of interstate businesses. The compact was developed with the purpose of determining and collecting taxes that were owed by these businesses. The states had concluded that the traditional state tax administration, as it was designed, was inefficient and costly (Hardy 1982: 1). The states set out to find a way in which they could make the system more efficient without having too much federal intervention. Indeed, the states which were involved with this document were able to draft and implement the provisions while the federal government was

still looking into what could be done. The Multistate compact was written with several positive elements. It promotes uniformity and compatibility, it facilitates convenience and compliance, and avoids duplication (Hardy 1982: 1). The compact also established a commission comprised of representatives from all the member states. This commission was given a substantial amount of authority, one of the elements necessary for a successful commission. It was empowered to carry out the provisions of the interstate compact and had the responsibility to facilitate the proper determination of liabilities, equitable apportionment, and the settlement of disputes among the states (Hardy 1982: 1).

Along with the interstate compacts that have been successful, there have been compacts that have not. Examples of these would be the Columbia River Interstate Compact and the Great Lakes Water Quality Agreement.

#### The Columbia River Interstate Compact

The Columbia River Interstate Compact was created from a desire to allocate the river for hydropower (Doerkson 1972:

23). The compact involved the states of Washington, Oregon, Idaho, Montana, Nevada, Utah, and Wyoming. Nevada and Utah were later taken out of the compact negotiation. The compact was an "attempt to establish a regional institutional structure for river basin development as an alternative to more development by federal government" (Doerkson 1972: 1). Compact negotiation was based on a need to allocate water and instream flows (Doerkson 1975: 7). Conflicts developed from the fact that dams would need to be constructed in the downstream states whereas storage reservoirs would need to be constructed in the upstream states. The upstream states did not want to see their land drowned under reservoirs built for the benefit of the downstream states. They wanted to make sure that "downstream non-consumptive uses were subordinated to upstream consumptive uses" (Doerkson 1975: 33). Instream flows were important in "negotiations because of their relationship to allocation of water" (Doerkson 1975: 18). Water quality and fish and wildlife management also needed to be taken into consideration in the negotiation process (Doerkson 1975: 20).



Other aspects that needed to be considered in the compact negotiation process included federal interests, intrastate water-use priorities, and Native American water rights (Doerkson 1975: 10). The federal interests would be concerned with "established federal uses and water rights", the states would be concerned about effects on their preferred water uses, and the question of Native American water rights would have had a bearing on the amounts of water available for allocation (Doerkson 1975: 9).

There are several potential reasons that the Columbia River Compact failed to be ratified. The diversity of the Pacific Northwest could be one of these reasons. The different priorities and viewpoints of the state representatives made any consensus almost impossible. Each state had its own special interests. The downstream states did not want to become "energy parks" for California (Lee 1980: 242). Idaho and Montana, both considered upstream states, were reluctant to give "energy service" to the downstream states (Lee 1980: 242). The upstream states wanted to keep the water for different reasons. Also, Idaho wanted to keep it for irrigation while Montana wanted it for

environmental reasons (Lee 1980: 242). Washington, a downstream state, wanted water for hydro-electric power while Oregon, another downstream state, was focused on the water available for its intrastate streams (Doerkson 1975: 11).

Another potential reason for failure was that "the Compact became embroiled in an ideological conflict related to power marketing" (Doerkson 1972: 181). There was a strong conflict at the time over private versus publicly owned utilities in the region. The public power groups wanted more federal involvement in power generation which the private power advocates felt would decrease their market share (Doerkson 1972: 34). The prevalent attitude of the time was against excess government interference at the federal level. The states wanted more sovereignty (Doerkson 1975: 24). The provisions of this compact may have also been adverse to the interests of federal agencies. It may have interfered with federal water rights and the "repayment ability of federal power plants in downstream states" (Doerkson 1972: 88). Also, there may have been too many issues at stake to get the full approval of all the states. These included water allocation, hydropower, fish and wildlife, and irrigated agriculture. The

various states all had different priorities. One unifying factor in the negotiation process was the states' consensus that the potential for water diversion to the southwest needed to be eliminated (Doerkson 1975: 22). By allocating all the water through a compact, it was felt that the southwestern states would not be able to appropriate any of the Columbia.

An early attempt at negotiating this compact included a provision for the creation of the Interstate Compact Commission. The commission "represented an attempt to achieve local control of water resources and river development by private enterprise, as an alternative to further development by the federal government and policies favoring public power groups" (Doerkson 1972: 57). This commission was often at odds with the Columbia Basin Inter-Agency Committee which consisted of federal authorities. The state commission was not permitted to participate in the decision-making process of the federal committee which led to much resentment. Much of the state commission's authority was overshadowed by the federal committee. The state commission did not have a chance to succeed due to this extra layer in the system. The commission needed to be independent of other governmental

structures and given more authority. The later Pacific Northwest River Basins Commission had a more significant presence in the process partly due to a general acceptance of federal involvement (Doerkson 1975: 26). This entity provided for more state-federal interaction than the previous attempt. By decreasing the number of groups that deal with the basin, the process was made more efficient.

The authority given to the Pacific Northwest River Basins Commission, however, created conflict. There were questions of whether the commission would only be able to make recommendations or if they could also construct water projects and raise funds (Doerkson 1972: 81). It was finally decided that the commission would have the authority to evaluate and make recommendations but not have the power for financing and construction (Doerkson 1972: 82). Another source of controversy found in the commission structure was that it contained members with many different attachments, some of which conflicted (Doerkson 1972: 57). For a commission to be effective it has to have some sort of cohesion, leadership, and resources, elements which the Columbia River Commission lacked (Doerkson 1972: 58).

The length of negotiation time is shown in Columbia River compact attempts. Attempts to ratify the compact were made in 1955, 1957, 1961, 1963, and 1965, all of which failed (Doerkson 1972: 177). The commission spent eighteen years in the negotiation process and made several attempts at ratification (Doerkson 1972: 1). The 1963 compact attempt apparently was rejected by the Oregon legislature due to a lack of provisions for the control of water pollution which led to its demise (Doerkson 1975: 36). The 1965 compact was killed for the same reason.

#### The Great Lakes Water Quality Agreement

The 1978 Great Lakes Water Quality Agreement between the United States and Canada was created to improve the water quality and environment of the lakes. This compact was based on the Boundary Waters Treaty of 1909 which stipulated that any boundary waters or water flowing across the boundary would not be polluted (Colborn 1990: 194).

There are a few apparent reasons for the failure of the Great Lakes Water Quality Agreement. First of all, there was little support given towards reaching the objectives of the

agreement by either of the national governments (Colborn 1990: 194). The support as spelled out in the agreement was not provided. Another apparent reason for the agreement's failure was that the United States and Canada could not resolve their differences in political philosophies, laws, and policy making (Colborn 1990: 196).

The 1909 agreement created the International Joint Commission (IJC) to implement the provisions of this agreement (Colborn 1990: 195). The Great Lakes compacts gave their commissions purely recommendatory power and only limited resources (Doerkson 1975: 47). It was not given substantial authority nor was it independent of other governmental structures. Both of the national governments felt that the IJC should be limited in its authority (Colborn 1990: 200). The IJC's role of implementing the provisions of the compact was hindered because of having to contend with multiple layers of government. The organizational structure of the system "placed responsibility for the Lakes in at least three separate internal administrative regions" (Ashworth 1986: 247). In Canada, there was only one province that was involved in the agreement which limited the number of

governmental levels that were encountered in that country. There were many more state-federal interactions encountered in the United States. In both countries, the actual implementation of the provisions was left to the local governments, adding another significant layer to the process (Colborn 1990: 198). Until an amendment in 1987, the line separating the responsibilities of the International Joint Commission and the national governments was unclear which caused an unwillingness of its members to take on certain responsibilities (Colborn 1990: 198). A protocol drafted in 1987 clarified the IJC role of evaluation of the Great Lakes system and advisement to the national governments though the political differences of the two countries were still an obstacle. The IJC is under the authority of the Great Lakes Water Quality Board which is made up essentially of government officials. This raises the concern that the assessments of the IJC may not have the unbiased position that they should.

One positive aspect of this compact attempt is that it included public input, though input was less likely to occur in Canada due to an implicit trust in the national government. The IJC is authorized to hold public meetings and to

disseminate information about the activities involving the agreement. Another positive aspect of the compact is that it took environmental impacts into consideration. According to the compact, "diversions not allowed if they would have significant, adverse impacts on lake levels, in-basin uses, and the Great Lakes ecosystem" (Colborn 1990: 213).

#### COLORADO RIVER COMPACT: RECOMMENDATIONS FOR REVISION

While the Colorado River Compact was initially acceptable as an early attempt to allocate water, it is insufficient in some important areas such as water quality and Native American water rights. Also, the Colorado River Basin has changed dramatically since this document was drafted creating a need for its revision to account for current conditions in the Basin.

#### Creation of an Interstate Commission

The Colorado River Compact does not provide for a regional, or basin-wide, management agency to deal with water matters. An interstate commission would encourage the free flow of information between the involved states as well as the



concept of the river as a regional resource. Currently, the Colorado River Basin states have a "lack of a single, responsible, disinterested, overall responsibility and leadership to balance and overcome state particularism and resolve conflicting issues" (Doerkson 1972: 17). The basin states each have at least one agency that deals with water from the Colorado. These agencies tend to work independently of each other and are usually only looking out for what is in the best interest of their state, usually in the short term instead of the long term. The basin should be considered a regional resource and managed appropriately. A tug-of-war between the states for control of the water supply can not only have detrimental effects on the basin but also the people of the region. For this commission to be successful it would need to have a substantial degree of authority, be independent of other governmental structures, and have assured funding (Colborn 1990: 195).

#### Amendment Provisions

The Colorado River Compact also should be open to revision to avoid inflexibility. "The compact can be written

to include provisions for an expedited process of amendment, provisions for periodic review of the compact, or other types of provisions such as one that grants the compact clear authority to change in the face of certain conditions and events" (Hardy 1982: 10). A way around inflexibility is to include "amendment and termination provisions" to the compact allowing more efficient changes to the compact (Hardy 1982: 21). Flexibility in a compact would enable the states to work out any problems without the use of equitable apportionment. This is currently important to the Colorado River Basin because of the dramatic growth that the region has experienced in the past few years. If the compact was more flexible, the states could potentially work out compromises for needed water that could benefit all concerned.

#### Public Input

A revised compact should include more public input. The Native Americans and Mexico were not given any input during the drafting of the compact. The compact did not deal with Native American water rights and the only water it granted to Mexico was whatever was left over after the states were

through with it. A later treaty between the United States and Mexico that was signed in 1944 gave Mexico 1.5 million acre-feet of Colorado River water a year but did not mention water quality (High Country News 1987: 177). The Native Americans were not only left out of the Colorado River Compact but in a 1948 compact as well. They are now claiming their rights to Colorado River water under the Prior Appropriation Doctrine. The Winters Doctrine from the early 1900's assured the Native Americans that they would get as much water as they needed because they possessed "prior and superior rights" (Fradkin 1981: 144). In the 1963 and 1983 Supreme Court cases of Arizona vs. California, the federal government, acting as the trustee for the tribes, claimed that the Native Americans should have rights to the water before others since they were on the land first (Fradkin 1981: 157). The Native American claim to water may even be "aboriginal", meaning that they would have priority over the federal government as well (Franks 1991: 551). Political pressure from the states defeated this move in short order. The federal government saw an implied obligation to the Native Americans to create a livable environment on the reservation. But like other

federal lands, the reservations did not have the right to unlimited amounts of water (Dzurik 1990: 36). In Arizona vs. California, water was only made available for "practicably irrigable acreage" which was land that could be economically planted (Fradkin 1981: 144). The water use would be seen as economically feasible if, after a cost/benefit analysis, the benefits outweighed the costs (Franks 1991: 553). This was quite a difference from the way water was used by the agricultural interests who were flooding their fields with their water allocations. The views of the Native Americans and Mexico were obviously left out of the original compact. The viewpoints of these groups, as well as any other groups with an interest in the river, should be taken into consideration in any future compact discussions.

#### Water Allocation

The method of water allocation to the states and basins should also be readdressed. There are several ways that the water of the Colorado can be allocated: 1) by specification of minimum flows at the point of entry into the downstream state. This method guarantees a certain amount of water to be

delivered to the downstream states. This would be most felt by the upstream states in times of drought. 2) Distribution among the states on the basis of a fixed percentage. This method "is more equitable to upstream states in dry years but it does not provide the predictability for downstream states". 3) Division of actual amounts of water annually which is the method used in the Colorado River Compact. This involves allocating a specific amount of water to the states on an annual basis. Upstream storage of water is required in this method in order to guarantee water flows over the course of the year. 4) Allocation by a compact commission making decisions over time based on then current flow conditions. This method allocates actual existing water and is not dependent on future projections though it does not give the states a predictable quantity of water (Doerkson 1975: 8). There has to be a way to account for the "year to year variability" of water supplies in order to have an efficient allocation (Tietenberg 1992: 226). Two of these methods seem to be reasonable for use in the Colorado River Basin and they do not include the current method. One would be to allocate the river water using the method used in the Upper Basin. By

allocating a percentage of the water actually available there is less room for a conflict over who is being cheated out of what. The other would be to have a commission make the allocations, though this method would be time consuming.

#### Environment and Conservation

The compact should also include provisions dealing with the environment. Darrell Knuffke, the Central Rockies regional director of the Wilderness Society has stated "As the river has been divided, subdivided, ditched, dammed and diverted, everyone's interests except the land's have been considered" (Gray 1991: 25). The "guiding principle" for the Colorado River Compact, as well as all other resource related doctrines, should be "conservation, equity, and ecology" (Bates 1993: 196). "Conservation recognizes that waste is harmful, that diverse uses are not possible without care, that limits must be imposed on some uses, and that some reasonable charge must be imposed on developers who now use public water for free. Ecology requires that watercourses, as living ecosystems, be given specific and meaningful protection" (Bates 1993: 196). If Colorado River water cannot be set

aside for environmental purposes in the text of the compact, then environmentally oriented groups should be allowed to purchase water rights to accomplish this.

A major reason that provisions regarding the environment should be included in the compact is the presence of extremely high salinity levels in the river. The high salinity levels are a product of irrigated agriculture in the United States and have devastated Mexican agriculture. The Colorado River naturally picks up 4.7 million tons of salt (High Country News 1987: 202). As pure water is diverted out, there is less for dilution. Due to the high saline content of the river water and the marginal soil quality that the water is being placed on, agricultural lands are taking even more water to obtain an equal or lesser amount of crops. As the salty water is used to irrigate fields the salt builds up around the root systems of crops. A larger amount of water is then needed to flush away the salts from the plants. This practice, however, only increases the problem by adding even more saline water to the system. The resulting concentrations are enough to damage plumbing and industrial fixtures and to stunt the growth of crops (High Country News 1987: 202). There have been

estimates that each additional part per million of salt causes \$600,000 in damage (High Country News 1987: 202). In other words, each 11,000 tons of salt added to the river causes \$600,000 in damage to the lower basin and Mexico (High Country News 1987: 202). Further development of the upper basin would result in more salinity for the downstream users. (High Country News 1987: 202). The United States government has only made token gestures at resolving this situation. A positive trend, however, is that an increasing number of farmers are discovering that more efficient irrigation practices, such as a drip system, can actually increase their crop yield and decrease a major cause of the salt buildup (Carrier 1991: 32).

Conservation is also an important element that needs to be considered in the compact. More and more, conservation has been looked at as a source of new water supplies. The amount of water lost for use through the process of diversion has been becoming more of an issue since the Colorado River has been overallocated. For example, the All-American Canal, which delivers water to the Imperial Valley loses as much as 106,000 acre-feet of water per year. This water soaks into



ground and never makes it to the fields. Plans have been made to line this canal, as well as the other major canals, in an attempt to save this water. One-million acre-feet of water is estimated to run off and under the Imperial Valley's irrigated fields per year (Carrier 1991: 32). It has also been estimated that about two million acre-feet of water are lost through evaporation from the reservoirs (Carrier 1991: map). As the amount of water available for use from the Colorado River has decreased, more attempts to decrease water lost to use have been made. Investments made by the municipalities for conserving agricultural water can increase agricultural productivity, reduce costs, and improve irrigation practices (Bates 1993: 154).

The compact should include provisions that encourage conservation. Changes in the prior appropriation and beneficial use doctrines are needed to eliminate the detrimental effects that they now have on the system. Under these provisions, parties that hold water rights have to put their entire allocation to a beneficial use or risk losing their right to it. Most water users would tend to utilize their allocation to the very last drop which moves far away

from any idea of conservation. Water users that do try to conserve water usually see their right decline by the amount that they had conserved. The beneficial use clause can be "fixed" by adopting part of the decision of the 1939 Nebraska Supreme Court case of Enterprise Irrigation District vs. Willis. In this case, the court determined that a beneficial use "shall not exceed the least amount of water that experience indicates is necessary in the exercise of good husbandry for the production of crops" (Bates 1993: 148). Spanish water law also recognized that a water right did not include the right to waste that water. The holder of a water right "could not deprive his neighbor of its use simply by wasting that which he did not need" (Brown 1987: 39).

#### Water Markets

Conservation can be encouraged through the acceptance of water markets. By heavily subsidizing the cost of Colorado River water available to farmers, the federal government has encouraged waste. "The illusion of plenty hides the consequences of waste" (Bates 1993: 135). The low cost of water, as well as the prior appropriation doctrine, has

encouraged wasteful uses of water such as flood irrigation and the planting of water intensive crops such as cotton (Gray 1991: 24). In a water market, conservation would be encouraged because agricultural interests could take any water that was conserved and sell it in the market. Water marketing would bring the price of water closer to its "free market" cost due to municipalities that are willing to buy water from the farmers at a higher price.

There can be an efficient allocation of water by allowing the transfer of water rights to high value uses from low value uses through a free market system (Hartman 1970: 13).

"Traditionally, a market is defined as a set of arrangements where buyers and sellers are brought together by the price mechanism" (Colby 1993: 8). It is made up of the "interactions of actual and potential buyers and sellers of one or more interrelated water commodities" (Colby-Saliba 1987: 1). A market is created when the potential buyers and sellers believe that there are economic gains, or net benefits, to be made by transferring water rights from current uses to new uses (Colby-Saliba 1987: 4). "The value of water in the marketplace is increasing as a result of growing demand

and relatively finite quantities" (Brown 1987: 18). One state would be able to sell parts of its allocation to another state. The purchasing state would simply have to take that water directly out of the river. Water hungry Southern Nevada becomes a potential buyer in this system. The Upper Basin states, on the other hand, could be potential suppliers because they do not usually use their entire allotment of river water. A state could also pay another state to conserve its agricultural water and then take the conserved amount out of the river (Hynes 1993: A1). The states, and not the individual right holder, should be the agents in such a market. Water transfers handled by district courts or administrative agencies may decrease detrimental effects on third parties (Hartman 1970: 7). This would enable the states to only allow water transfers that would not be detrimental to communities or the state itself.

The question then arises of whether these markets are legal across state lines. The legality of water transfers has long been questioned. The 1824 case of Gibbons vs. Ogden made all the surface water in the United States fall under federal regulation (Feldman 1991: 66). In the later Supreme Court

case of Sporhase vs. Nebraska, it was ruled that the federal government could no longer defer water regulation to the states. The court held that a Nebraska law that limited exports of water out of the state was an unconstitutional restriction of the Federal Commerce Clause (Feldman 1991: 67). This opinion made water subject to interstate commerce regulation (Tarlock 1990: 5-29). The resulting restrictions on water transfers make a water market inefficient. Due to restrictive regulation and the allocation of water rights by prior appropriation, the ability to transfer water rights has been lessened (Tietenberg 1992: 232). This combination reduces the market's ability to move toward the optimal level for all uses. One result of current intrastate transfers is that many agricultural communities that are dependent on revenues generated from farmers are losing their tax base and are slowly shrinking as the farmers sell out. If some of these problems could be resolved, "treating water rights as permanent property rights could be advantageous, promoting reallocation of water by making rights to its use saleable, leasable, and otherwise transferable to more socially desirable uses" (Bates 1993: 157).

Transferring water to the cities is not going to help the problem of waste though. Until the people in this region start paying what the water actually costs there will be waste in the form of lawns in the desert, swimming pools in every backyard, and fountains in front of hotels and subdivisions. Demand for water is much higher if the price is zero or if there is a set price for any quantity of water used (Brajer 1989: 262). As the price of water goes up, demand goes down quickly. When the price rises, water supplies are used for higher value uses such as direct human consumption instead of landscaping, car washes, and swimming pools. "Simple economic theory dictates that any resource artificially priced below its 'equilibrium price' will encounter excess demand" (Brajer 1989: 260). Consumers would be more aware of where the water was going. "By setting up markets to reallocate the water we are already using, it will allow those who need more water and who are willing to pay a higher price to move that water from lower valued uses in a thoughtfully regulated manner" (Babbitt 1993: 942).

## CONCLUSION

The Colorado River Compact should be revised to account for inadequacies in the original draft and to account for the dramatic changes that have occurred in the Basin. In summary, the revisions that could possibly make the Colorado River Compact a more efficient tool for use in the Colorado River Basin are: the creation of an Interstate Basin Commission; the addition of provisions for amendment; the encouragement of public input; a change in the method used to allocate water; the addition of provisions regarding the environment and conservation; and the acceptance of water markets to move water to higher valued uses. The chance that all of these elements can be integrated into the Colorado River Compact is slim. However, if the Colorado River Basin is to reach a position in which its states can coexist peacefully with each other and their environment, all of these elements should at least be taken into consideration. If the Basin is viewed as a regional resource, all of the elements just might fall into place.

Westerners have been slow to realize that the Colorado River is a finite resource (Gray 1991: 22). As the present

Secretary of the Interior Bruce Babbitt once said, "we are now engaged in the effort of this generation to find the strings to pull the water back, to see if we can find some balance, so that Western water will not just be used, misused, and polluted but instead will be part of a living, sustainable use, multi-purpose environment" (Babbitt 1993: 935). To reach this state, the West must not wholly depend on economic solutions. They need to review their ideals and lifestyles and begin to conserve and reuse the West's most precious resource. A revised Colorado River Compact may be the tool in which this process can begin.





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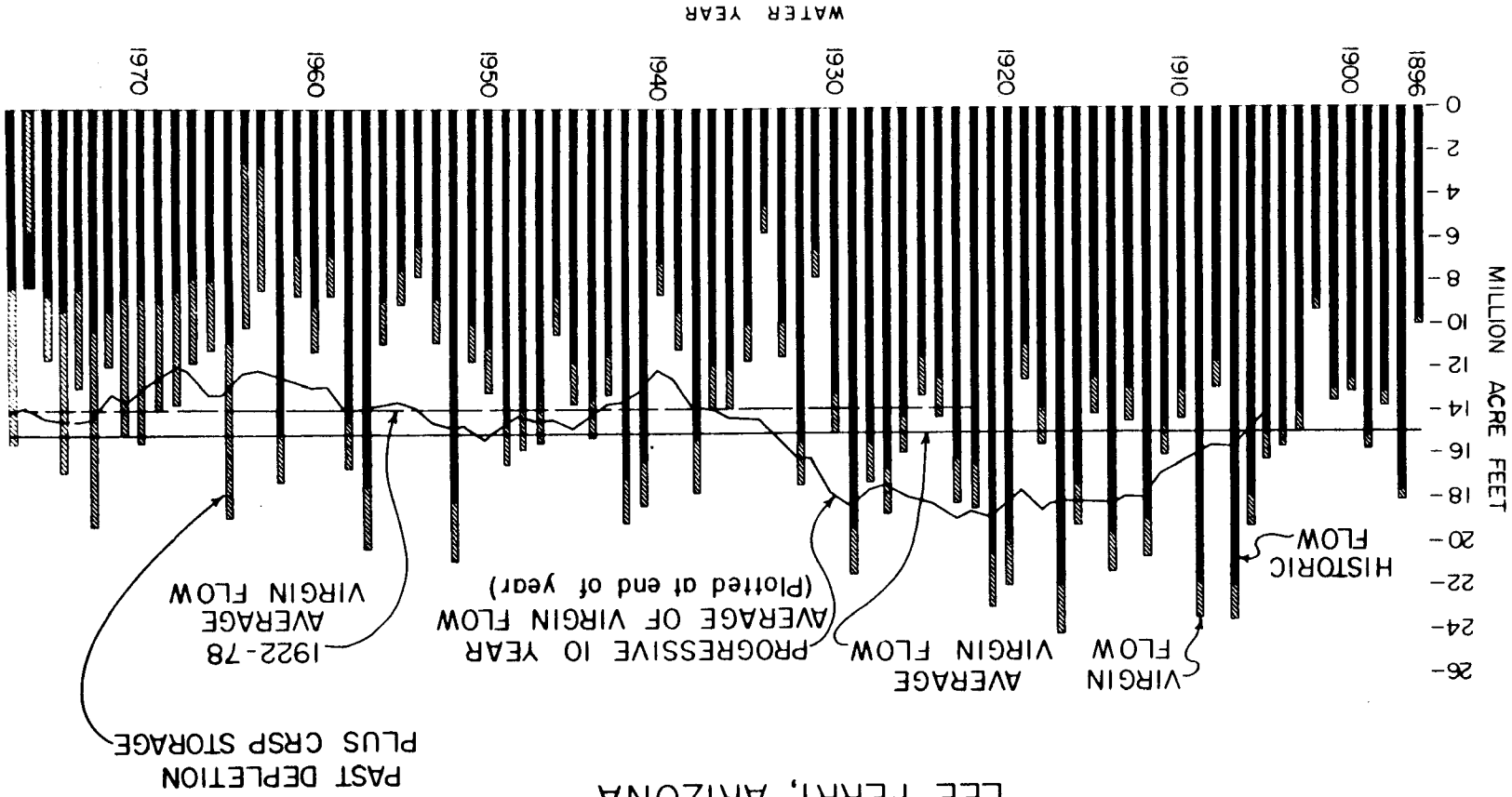
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APPENDIX



# COLORADO RIVER FLOW AT LEE FERRY, ARIZONA

1 A.2 - Bar Chart of Water Supply



1-V

APPENDIX I

I-3

UPDATING THE HOOVER DAM DOCUMENTS

1 B.4

**Colorado River Compact, 1922**

The States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming, having resolved to enter into a compact under the Act of the Congress of the United States of America approved August 19, 1921 (42 Statutes at Large, page 171), and the Acts of the Legislatures of the said States, have through their Governors appointed as their Commissioners:

W.S. Norviel for the State of Arizona,  
W.F. McClure for the State of California,  
Delph E. Carpenter for the State of Colorado,  
J.G. Scrugham for the State of Nevada,  
Stephen B. Davis, Jr., for the State of New Mexico,  
R.E. Caldwell for the State of Utah,  
Frank C. Emerson for the State of Wyoming,

who, after negotiations participated in by Herbert Hoover appointed by The President as the representative of the United States of America, have agreed upon the following articles:

ARTICLE I

The major purposes of this compact are to provide for the equitable division and apportionment of the use of the waters of the Colorado River System; to establish the relative importance of different beneficial uses of water, to promote interstate comity; to remove causes of present and future controversies; and to secure the expeditious agricultural and industrial development of the Colorado River Basin, the storage of its waters, and the protection of life and property from floods. To these ends the Colorado River Basin is divided into two Basins, and an apportionment of the use of part of the water of the Colorado River System is made to each of them with the provision that further equitable apportionments may be made.

ARTICLE II

As used in this compact—

(a) The term "Colorado River System" means that portion of the Colorado River and its tributaries within the United States of America.

(b) The term "Colorado River Basin" means all of the drainage area of the Colorado River System and all other territory within the United States of America to which the waters of the Colorado River System shall be beneficially applied.

(c) The term "States of the Upper Division" means the States of Colorado, New Mexico, Utah, and Wyoming.

(d) The term "States of the Lower Division" means the States of Arizona, California, and Nevada.

(e) The term "Lee Ferry" means a point in the main stream of the Colorado River one mile below the mouth of the Paria River.

(f) The term "Upper Basin" means those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the System above Lee Ferry.

(g) The term "Lower Basin" means those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the System below Lee Ferry.

(h) The term "domestic use" shall include the use of water for household, stock, municipal, mining, milling, industrial, and other like purposes, but shall exclude the generation of electrical power.



## APPENDIX I

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### ARTICLE III

(a) There is hereby apportioned from the Colorado River System in perpetuity to the Upper Basin and to the Lower Basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist.

(b) In addition to the apportionment in paragraph (a), the Lower Basin is hereby given the right to increase its beneficial consumptive use of such waters by one million acre-feet per annum.

(c) If, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River System, such waters shall be supplied first from the waters which are surplus over and above the aggregate of the quantities specified in paragraphs (a) and (b); and if such surplus shall prove insufficient for this purpose, then, the burden of such deficiency shall be equally borne by the Upper Basin and the Lower Basin, and whenever necessary the States of the Upper Division shall deliver at Lee Ferry water to supply one-half of the deficiency so recognized in addition to that provided in paragraph (d).

(d) The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact.

(e) The States of the Upper Division shall not withhold water, and the States of the Lower Division shall not require the delivery of water, which cannot reasonably be applied to domestic and agricultural uses.

(f) Further equitable apportionment of the beneficial uses of the waters of the Colorado River System unapportioned by paragraphs (a), (b), and (c) may be made in the manner provided in paragraph (g) at any time after October first, 1963, if and when either Basin shall have reached its total beneficial consumptive use as set out in paragraphs (a) and (b).

(g) In the event of a desire for a further apportionment as provided in paragraph (f) any two signatory States, acting through their Governors, may give joint notice of such desire to the Governors of the other signatory States and to The President of the United States of America, and it shall be the duty of the Governors of the signatory States and of The President of the United States of America forthwith to appoint representatives, whose duty it shall be to divide and apportion equitably between the Upper Basin and Lower Basin the beneficial use of the unapportioned water of the Colorado River System as mentioned in paragraph (f), subject to the legislative ratification of the signatory States and the Congress of the United States of America.

### ARTICLE IV

(a) Inasmuch as the Colorado River has ceased to be navigable for commerce and the reservation of its waters for navigation would seriously limit the development of its Basin, the use of its waters for purposes of navigation shall be subservient to the uses of such waters for domestic, agricultural, and power purposes. If the Congress shall not consent to this paragraph, the other provisions of this compact shall nevertheless remain binding.

(b) Subject to the provisions of this compact, water of the Colorado River System may be impounded and used for the generation of electrical power, but such impounding and use shall be subservient to the use and consumption of such water for agricultural and domestic purposes and shall not interfere with or prevent use for such dominant purposes.

(c) The provisions of this article shall not apply to or interfere with the regulation and control by any State within its boundaries of the appropriation, use, and distribution of water.

### ARTICLE V

The chief official of each signatory State charged with the administration of water rights, together with the Director of the United States Reclamation Service and the Director of the United States Geological Survey shall cooperate, ex-officio:

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(a) To promote the systematic determination and coordination of the facts as to flow, appropriation, consumption, and use of water in the Colorado River Basin, and the interchange of available information in such matters.

(b) To secure the ascertainment and publication of the annual flow of the Colorado River at Lee Ferry.

(c) To perform such other duties as may be assigned by mutual consent of the signatories from time to time.

## ARTICLE VI

Should any claim or controversy arise between any two or more of the signatory States: (a) with respect to the waters of the Colorado River System not covered by the terms of this compact; (b) over the meaning or performance of any of the terms of this compact; (c) as to the allocation of the burdens incident to the performance of any article of this compact or the delivery of waters as herein provided; (d) as to the construction or operation of works within the Colorado River Basin to be situated in two or more States, or to be constructed in one State for the benefit of another State; or (e) as to the diversion of water in one State for the benefit of another State; the Governors of the States affected, upon the request of one of them, shall forthwith appoint Commissioners with power to consider and adjust such claim or controversy, subject to ratification by the Legislatures of the States so affected.

Nothing herein contained shall prevent the adjustment of any such claim or controversy by any present method or by direct future legislative action of the interested States.

## ARTICLE VII

Nothing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes.

## ARTICLE VIII

Present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this compact. Whenever storage capacity of 5,000,000 acre-feet shall have been provided on the main Colorado River within or for the benefit of the Lower Basin, then claims of such rights, if any, by appropriators or users of water in the Lower Basin against appropriators or users of water in the Upper Basin shall attach to and be satisfied from water that may be stored not in conflict with Article III.

All other rights to beneficial use of waters of the Colorado River System shall be satisfied solely from the water apportioned to that Basin in which they are situate.

## ARTICLE IX

Nothing in this compact shall be construed to limit or prevent any State from instituting or maintaining any action or proceeding, legal or equitable, for the protection of any right under this compact or the enforcement of any of its provisions.

## ARTICLE X

This compact may be terminated at any time by the unanimous agreement of the signatory States. In the event of such termination all rights established under it shall continue unimpaired.

## ARTICLE XI

This compact shall become binding and obligatory when it shall have been approved by the Legislatures of each of the signatory States and by the Congress of the United States. Notice of approval by the Legislatures shall be given by the Governor of each signatory State to the Governors of the other signatory States and to

the President of the United States, and the President of the United States is requested to give notice to the Governors of the signatory States of approval by the Congress of the United States.

IN WITNESS WHEREOF, the Commissioners have signed this compact in a single original, which shall be deposited in the archives of the Department of State of the United States of America and of which a duly certified copy shall be forwarded to the Governor of each of the signatory States.

DONE at the City of Santa Fe, New Mexico, this twenty-fourth day of November, A.D. One Thousand Nine Hundred and Twenty-two.

W. S. NORVIEL  
W. F. McCLURE  
DELPH E. CARPENTER  
J. G. SCRUGHAM  
STEPHEN G. DAVIS, JR.  
R. E. CALDWELL  
FRANK C. EMERSON

Approved:

HERBERT HOOVER

#### NOTES

*Congressional consent to negotiations.*—The Act of August 19, 1921 (42 Stat. 171), gave Congress' consent to the negotiation by the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming of "a compact or agreement not later than January 1, 1923, providing for an equitable division and apportionment among said States of the water supply of the Colorado River and of the streams tributary thereto \* \* \*." Provision was made in the Act for appointment by the President of a person to participate in the negotiations "as the representative of and for the protection of the interests of the United States \* \* \*." It was also provided that no compact so negotiated should become effective "unless and until the same shall have been approved by the legislature of each of said States and by the Congress of the United States."

*Congressional consent to compact.*—By section 13, subsection (a), of the Boulder Canyon Project Act (45 Stat. 1057, 1064), the Congress "approved" the Colorado River Compact and waived the provision of Article XI requiring that it be ratified by the legislatures of all seven States. In so doing, it provided that the Congress' approval should "become effective when the State of California and at least five of the other States mentioned, shall have approved or may hereafter approve said compact \* \* \* and shall consent to such waiver \* \* \*." Section 4, subsection (a), of the same Act provided, among other things, that the Act should not be effective until the compact had been ratified by all seven States or until it had been ratified by California and five other States and "until the State of California by act of its legislature, shall agree irrevocably and unconditionally with the United States and for the benefit of the States of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming, as an express covenant and in consideration of the passage of this Act, that the aggregate annual consumptive use (diversions less returns to the river) of water of and from the Colorado River for use in the State of California, including all uses under contracts made under the provisions of this Act and all water necessary for the supply of any rights which may now exist, shall not exceed four million four hundred thousand acre-feet of the waters apportioned to the lower basin States by paragraph (a) of Article III of the Colorado River compact, plus not more than one-half of any excess or surplus waters unapportioned by said compact, such uses always to be subject to the terms of said compact." For the Act of the California legislature agreeing to this condition, see its Act of March 4, 1929, Cal. Stats. 1929, p. 38. For the President's proclamation of June 25, 1929, declaring that the conditions of the Boulder Canyon Project Act had been fulfilled, see 46 Stat. 3000.

The evolution of the Boulder Canyon Project Act can be traced in the following bills and the hearings, committee reports and floor debate thereon indicated:

H.R. 11449, 67th Congress (Hearings before House Committee on Irrigation of Arid Lands, 1922-23).

H.R. 2903, 68th Congress (Hearings before House Committee on Irrigation of Arid Lands, 1923, and before House Committee on Irrigation and Reclamation, 1923-24).

S. 727, 68th Congress (Hearings before Senate Committee on Irrigation and Reclamation, 1924-25).

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H.R. 6251 and H.R. 9826, 69th Congress (Hearings before House Committee on Irrigation and Reclamation, 1926; H. Rept. No. 1657 on H.R. 9826, 1926; Hearings before House Committee on Rules, 1927; 67 *Cong. Rec.* 5424-5427; 68 *Cong. Rec.* 2633-2637, 2652-2654, 3073-3080, 3272-3273, 3292-3294, 5822-5832).

S. 3331, 69th Congress (Hearings before Senate Committee on Irrigation and Reclamation, acting pursuant to S. Res. 320, 68th Congress, 1925-26; S. Rept. No. 654, 1926; 67 *Cong. Rec.* 8139-8150, 12619-12627; 68 *Cong. Rec.* 2369-2374, 2761-2765, 4156-4161, 4290-4307, 4309-4326, 4405-4416, 4421-4424, 4426-4456, 4495-4523, 4529-4530, 4541-4542, 4652-4653, 4655, 4763-4766, 4892, 4896-4900).

H.R. 5770, 70th Congress (Hearings before House Committee on Irrigation and Reclamation, 1928).

S. 728 and S. 1274, 70th Congress (Hearings before Senate Committee on Irrigation and Reclamation, 1928; S. Rept. No. 592 on S. 728, 1928; 69 *Cong. Rec.* 7245-7253, 7387-7397, 7515-7544, 7622-7627, 7630-7638, 9433-9443, 9449-9464, 9886-9891, 10200-10202, 10257-10266, 10271-10282, 10287-10302, 10462-10510, 10511-10513).

H.R. 5773, 70th Congress (Hearings before House Committee on Irrigation and Reclamation, 1928; H. Rept. No. 918, 1928; Hearings before Committee on Rules, 1928; 69 *Cong. Rec.* 9486-9513, 9622-9658, 9662-9664, 9760-9769, 9770-9786, 9975-9991; 70 *Cong. Rec.* 67-80, 227-245, 264-269, 277-298, 314-340, 381-402, 458-474, 518-530, 565-603, 615-621, 830-838; P.L. 642, 70th Congress).

*State ratifications.*—Arizona, Act of February 24, 1944 (Sess. L. 1944, p. 428; *Ariz. Rev. Stat. Ann.* 1956, sec. 45-571).

California, Act of March 4, 1929 (Stats. 1929, p. 37; Deering's Gen. L. (1944), Act 1491).

Colorado, Act of February 26, 1925 (Sess. L. 1925, p. 525; *Colo. Rev. Stat.* 1963, sec. 149-2-1).

Nevada, Act of March 18, 1925 (Stat. 1925, p. 134; *Nev. Rev. Stat.* 1957, sec. 538.010).

New Mexico, Act of March 17, 1925 (Laws 1925, p. 116; *N.M. Stat.* 1953 *Ann.*, sec. 75-34-3 note).

Utah, Act of March 6, 1929 (Laws 1929, p. 25), on which see 36 *Op. Atty. Gen.* 72 (1929), holding this act in conformity with the requirements of the Boulder Canyon Project Act.

Wyoming, Act of February 25, 1925 (Sess. L. 1925, p. 85; *Wyo. Stat.* 1957, sec. 41-505).

The foregoing citations are to the final ratifications by the States concerned. Those of California, Colorado, Nevada, New Mexico, Utah, and Wyoming contained a waiver of the seven-State approval provision of Article XI of the compact. For earlier ratifications of the compact as a seven-State instrument, see *Cal. Stat.* 1923, p. 1530; *Cal. Stats.* 1929, p. 1; *Colo. Sess. L.* 1923, p. 684; *Nev. Stat.* 1923, p. 393; *N. Mex. Laws* 1923, p. 7; *Utah Laws*, 1923, p. 4; *Wyo. Sess. L.* 1923, p. 3. And, for earlier ratifications of the compact as a six-State instrument, see *Cal. Stats.* 1925, p. 1321; *Utah Laws* 1925, p. 127, repealed *Utah Laws* 1927, p. 1.

*Related legislation.*—In addition to the Boulder Canyon Project Act (45 Stat. 1057), sections 4(a), 6, 8, 13 and 18, see the Acts of August 30, 1935 (49 Stat. 1028, 1039) (Headgate Rock dam, Arizona), July 30, 1947 (61 Stat. 628) (Gila project, Arizona), October 11, 1951 (65 Stat. 404) (San Diego Aqueduct, California), July 3, 1952 (66 Stat. 325) (Collbran project, Colorado), August 31, 1954 (68 Stat. 1045) (Palo Verde weir, California), April 11, 1956 (70 Stat. 105) (Colorado River storage project and participating projects), September 2, 1958 (72 Stat. 1726) (Boulder City, Nevada), June 13, 1962 (76 Stat. 96) (Navajo and San Juan-Chama projects, New Mexico-Colorado), August 6, 1962 (76 Stat. 389) (Fryingpan-Arkansas project, Colorado), September 2, 1964 (78 Stat. 848) (Dixie project, Utah), October 22, 1965 (79 Stat. 1068) (Southern Nevada project, Nevada), and September 30, 1968 (82 Stat. 885) (Colorado River Basin project).

Section 6 of the Boulder Canyon Project Act, cited in the preceding paragraph, provides that Hoover dam shall be used "First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River compact; and third, for power." See *Arizona v. California*, pp. 531, 534f. *post* on the relation between this provision and Article IV, paragraph (a), of the Colorado River Compact.

*Litigation.*—In addition to the four cases entitled *Arizona v. California*, pp. 531ff *post*, all of which involve aspects of the Colorado River Compact, see *United States v. Arizona*, 295 U.S. 174 (1935), dealing with the authority of the Secretary of the Interior to construct Parker Dam on the Colorado River.

*Departmental decisions.*—Solicitor's opinion M. 28389 (April 4, 1936), advising that the Colorado River Compact authorizes the diversion of water from the natural watershed into another watershed "if the diverted water is to be used within the boundaries of the States through which the Colorado River system extends and . . . if the amount of that diversion does not create a use of Colorado River water in excess of that allowed by the provisions of the compact." See also Solicitor's opinion dated August 30, 1934 (54 I.D. 593), advising that section 4(a) of the Boulder Canyon Project Act, taken with Article III(a) of the compact, limits the authority of the Secretary of the Interior in making contracts for the sale and delivery of water impounded behind Hoover Dam to users outside of California to such quantities as will not "interfere with the apportionment to California" made in the section of the Boulder Canyon Project Act cited.

*Proposed Lower Colorado River Compact.*—By its Act of March 3, 1939 (Ariz. Laws 1939, p. 71), the legislature of Arizona proposed and "approved and accepted" a compact with the States of California and Nevada, neither of which has ratified the document. The proposed compact reads as follows:

"The states of Arizona, California and Nevada, desiring to enter into a compact or agreement under the Act of Congress of the United States of America approved December 21, 1928 (45 Statutes at Large, page 1057, 'Boulder Canyon Project Act'), have agreed upon the following articles:

"ARTICLE I

"The major purposes of this Compact are to provide for the equitable division and apportionment of the use of the waters of the Colorado River System apportioned to the Lower Basin under the Colorado River Compact; to establish the relative importance of different beneficial uses of such water; to promote interstate comity; to remove causes of present and future controversies; and to secure the expeditious agricultural and industrial development of the Lower Basin, the storage of its waters, and the protection of life and property from floods.

"ARTICLE II

"As used in this compact:

" 'Colorado River System' means that portion of the Colorado River and its tributaries within the United States of America;

" 'Colorado River Basin' means all of the drainage area of the Colorado River System and all other territory within the United States of America to which the waters of the Colorado River System shall be beneficially applied:

" 'States of the Upper Division' means the states of Colorado, New Mexico, Utah, and Wyoming;

" 'States of the Lower Division' means the states of Arizona, California and Nevada;

" 'Lee's Ferry' means a point in the main stream of the Colorado River one mile below the mouth of the Paria River;

" 'Upper Basin' means those parts of the states of Arizona, Colorado, New Mexico, Utah and Wyoming within and from which waters naturally drain into the Colorado River System above Lee's Ferry, and also all parts of said states located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the system above Lee's Ferry;

" 'Lower Basin' means those parts of the states of Arizona, California, Nevada, New Mexico and Utah within and from which waters naturally drain into the Colorado River System below Lee's Ferry, and also all parts of said states located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the system below Lee's Ferry;

" 'Domestic Use' includes the use of water for household, stock, municipal, mining, milling, industrial, and other like purposes, but excludes the generation of electrical power.

"ARTICLE III

"(a) The aggregate annual consumptive use (diversions less returns to the river) of water of and from the Colorado River for use in the state of California, including all uses under contracts made under the provisions

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of the Boulder Canyon Project Act and all waters necessary for the supply of any rights which may now exist, shall not exceed four million, four hundred thousand acre feet of the waters apportioned to the Lower Basin States by paragraph (a) of Article III of the Colorado River Compact, plus not more than one-half of any excess or surplus waters unapportioned by said Colorado River Compact, such uses always to be subject to the terms of said compact.

"(b) Of the seven million, five hundred thousand acre feet annually apportioned to the Lower Basin by paragraph (a) of Article III of the Colorado River Compact, there is hereby apportioned annually to the state of Nevada three hundred thousand acre feet and annually to the state of Arizona two million, eight hundred thousand acre feet for the exclusive beneficial consumptive use by said states of Nevada and Arizona, respectively, in perpetuity.

"(c) The state of Arizona may annually use one-half of the excess or surplus waters unapportioned by the Colorado River Compact.

"(d) In addition to the water covered by paragraphs (b) and (c) hereof, the state of Arizona shall have the exclusive beneficial consumptive use of the Gila River and its tributaries within the boundaries of the state of Arizona in perpetuity.

"(e) The waters of the Gila River and its tributaries, except return flow after the same enters the Colorado River, shall never be subject to any diminution whatever by any allowance of water which may be made by treaty or otherwise to the United States of Mexico, but if, as provided in paragraph (c) of Article III of the Colorado River Compact, it shall become necessary to supply water to the United States of Mexico from waters over and above the quantities which are surplus as defined by said Colorado River Compact, then the state of California shall and does mutually agree with the state of Arizona to supply, out of the main stream of the Colorado River, one-half of any deficiency which must be supplied to Mexico by the Lower Basin.

"(f) Neither the states of Arizona, California nor Nevada will withhold water nor require the delivery of water which can not reasonably be applied to domestic and agricultural uses.

"(g) All the provisions of this compact or agreement shall be subject in all particulars to the provisions of the Colorado Compact.

## "ARTICLE IV

"This compact or agreement shall take effect and become binding and obligatory when it shall have been approved by the Congress of the United States of America, by the legislatures of each of the states of Arizona, California and Nevada and when the States of Arizona, California and Nevada shall have ratified the Colorado River Compact. When approved by the legislature of a signatory state the original and four copies of this compact or agreement shall be signed by the governor of such state and notice of such approval and signing shall be given by such governor to the governors of the other signatory states and to the President of the United States of America. The governor last signing shall forward the original copy for deposit in the archives of the Department of State of the United States of America and one copy to the governor of each of the other signatory states."

By the second paragraph of section 4, subsection (a), of the Boulder Canyon Project Act (45 Stat. 1057, 1059), the Congress "authorized" Arizona, California, and Nevada "to enter into an agreement which shall provide (1) that of the 7,500,000 acre-feet annually apportioned to the lower basin by paragraph (a) of Article III of the Colorado River compact, there shall be apportioned to the State of Nevada 300,000 acre-feet and to the State of Arizona 2,800,000 acre-feet for exclusive beneficial consumptive use in perpetuity, and (2) that the State of Arizona may annually use one-half of the excess or surplus waters unapportioned by the Colorado River compact, and (3) that the State of Arizona shall have the exclusive beneficial consumptive use of the Gila River and its tributaries within the boundaries of said State, and (4) that the waters of the Gila River and its tributaries, except return flow after the same enters the Colorado River, shall never be subject to any diminution whatever by any allowance of water which may be made by treaty or otherwise to the United States of Mexico but if, as provided in paragraph (c) of Article III of the Colorado River compact, it shall become necessary to supply water to the United States of Mexico from waters over and above the quantities which are surplus as defined by said compact, then the State of California shall and will mutually agree with the State of Arizona to supply, out of the main stream of the Colorado River, one-half of any deficiency

which must be supplied to Mexico by the lower basin, and (5) that the State of California shall and will further mutually agree with the States of Arizona and Nevada that none of said three States shall withhold water and none shall require the delivery of water, which cannot reasonably be applied to domestic and agricultural uses, and (6) that all of the provisions of said tri-State agreement shall be subject in all particulars to the provisions of the Colorado River Compact, and (7) said agreement to take effect upon the ratification of the Colorado River compact by Arizona, California, and Nevada."

*Cf.* section 8, subsection (b), of the Boulder Canyon Project Act (45 Stat. 1057, 1062) providing that in the event a compact between Arizona, California, and Nevada or any two of them was negotiated and consented to by the Congress on or before January 1, 1929, the United States would be controlled thereby in its construction, management, and operation of Hoover dam and the other works authorized by the Act, but that if such a compact were concluded after that date the compact should be subject to all contracts entered into by the Secretary of the Interior under authority of section 5 of the Act prior to the date of Congress' consent thereto.

*Upper Colorado River Compact.*—For text, see pp. 339ff post.

*Mexican Water Treaty.*—For text, see pp. 456ff post.

*Bibliography.*—Olson, *The Colorado River Compact* (1963); Wilbur and Ely, *The Hoover Dam Documents* (2d ed., 1948; House Document No. 717, 80th Congress). The minutes of the first 18 meetings of the commission which negotiated the Colorado River Compact were published in 1948 by the Colorado State Water Conservation Board; those of the 19th-25th, 26th (first part), and 27th meetings were reproduced by the Department of Justice in 1953. All of these minutes were also reproduced by the Upper Colorado River Commission, Grand Junction, Colo., 1956.