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THE FAILURE OF THE APALACHICOLA-CHATTAHOOCHEE-FLINT RIVER BASIN AND ALABAMA-COOSA-TALLAPOOSA RIVER BASIN COMPACTS AND A GUIDE TO THE SUCCESSFUL ESTABLISHMENT OF INTERSTATE WATER COMPACTS

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INTRODUCTION

Forging interstate water compacts is extremely difficult. The hydrology is often a complicated, moving target. Thus, the mechanisms for allocating water also tend to be complex and sometimes unwieldy to implement. Finally, any politicians who sign off on these compacts immediately expose themselves to opportunistic criticism for “giving away” their state’s water, even if the agreements represent a reasonable compromise.

The Apalachicola-Chattahoochee-Flint River Basin (“ACF Basin”) and the Alabama-Coosa-Tallapoosa River Basin (“ACT Basin”) Compacts fell prey to the many perils inherent in the compact process. This Article provides a postmortem and analysis of these Compacts and concludes with more hopeful prospects for forging new compacts. Part I provides a concise survey of water allocation mechanisms—the heart of any interstate water compact. Part II recounts the emblematic birth, life, and untimely death of the ACF Basin and the ACT Basin Compacts. Part III considers the alternative to the Compacts. Part IV considers the advantages of interstate water compacts in general. Finally, Part V discusses how, in light of all these factors, states can successfully create compacts.

I. TYPICAL INTERSTATE WATER COMPACT ALLOCATION MECHANISMS

[1] However, in the absence of a congressional apportionment, the interstate compact and the equitable apportionment lawsuit are the only mechanisms that parties have successfully utilized to achieve this end.^[2] The goal of interstate compacts is to provide the final division of waters between states and to avoid the lengthy and expensive process of equitable apportionment lawsuits.^[3] Unfortunately, while these compacts may be equitable, they are rarely final. In most cases, parties eventually litigate the terms.^[4]

Although compacts contain numerous provisions, traditionally the most important is the one allocating the water. Interstate water compacts contain three principle types of allocation clauses. The first is a provision that mandates the delivery of a specific quantity of water at the border between the two states or at some delivery point between water basins.^[5] The Colorado River Compact of 1922 contains this type of provision.^[6] These kinds of compacts carry the advantage of clarity, but as demonstrated below, clarity does not always yield simplicity.^[7] A second type of clause places a cap on the consumption of the upstream state.^[8] Compacts with these provisions are almost always subject to litigation because downstream states frequently accuse upstream states of consuming more than their allotments.^[9] The Pecos River Compact contains an example of this type of restrictive clause.^[10]

A third type of clause uses a set of index points, requiring that if X quantity of water passes a gauge upstream, Y amount must remain available to the downstream state.^[11] This is preferable to a fixed amount because it factors in variations of flow. The Rio Grande Compact contains this type of formula.^[12] A fourth kind of clause allocates

percentages of the total watershed shared by the states.^[13] This kind of clause is the least likely to lead to litigation because it accounts for variations in supply and does not require delivery of a specific amount. However, it does lead to debate over how much water each state is actually putting to beneficial use and how much water natural losses consume. The Upper Colorado River Compact contains this type of provision.^[14]

The ACF Basin and the ACT Basin Compacts were unique because, while they contained a request that Congress allow the signatory states to enter into compacts, they contained no final apportionment.^[15] The Compacts have terminated, per their own terms, because the political process failed to provide an allocation mechanism acceptable to the states.^[16] However, the Compacts can nonetheless teach valuable lessons.

II. THE APALACHICOLA–CHATTAHOOCHEE–FLINT RIVER BASIN COMPACT: A CONTEMPORARY ATTEMPT AT RESOLUTION OF INTERSTATE TRANSBOUNDARY WATER CONFLICTS

The U.S. Army Corps of Engineers has provided a succinct description of the ACF Basin:

The Apalachicola-Chattahoochee-Flint (“ACF”) River Basin originates in north Georgia and Alabama and ends in Florida’s Apalachicola Bay. It extends a distance of approximately 385 miles and encompasses 19,600 square miles. The drainage area is comprised of the Apalachicola, Chattahoochee, and Flint rivers and their tributaries. During the last 160 years, the water resources in the basin have been developed to meet various demands for municipal and industrial water supply, flood control, hydropower, navigation, fish and wildlife conservation, recreation, and agricultural water supply. There are hundreds of small reservoirs in the basin, but 16 (5 federal and 11 non-federal) are located on these three principal rivers. They provide for regional uses of the basin water resources for navigation, hydropower, flood control, water supply, recreation, and fish and wildlife.^[17]

A. *The Formation of the ACF Basin Compact*

In the 1960s, state and local officials in Georgia began to recognize that the Chattahoochee River and Lake Lanier, Atlanta’s primary sources of water, would be inadequate to meet the City’s projected growth.^[18] In addition to supplying Atlanta’s water needs, other management objectives for both the Chattahoochee River and Lake Lanier included peak hydropower production, flood control, and navigation support below Columbus, Georgia.^[19]

In 1973, the Atlanta Regional Commission (“ARC”), the Georgia Mountains Regional Development Center (“GMRDC”), the Georgia Department of Natural Resources (“GADNR”), and the United States Army Corps of Engineers (“Corps”) began collaborating on a study to determine metropolitan Atlanta’s water needs through 2010, options to meet those needs, and the costs associated with each option.^[20] In 1980, they issued an interim report that predicted significant, negative economic consequences for the region if it did not secure a long-range water supply.^[21] The report suggested several options to remedy the situation, including construction of a regulation dam 6.8 miles below Lake Lanier, raising the elevation of Lake Lanier’s summer pool, increasing storage in the Morgan Falls Reservoir through silt removal, and reduction of hydropower generation in favor of increased storage water supplies.^[22] The 1981 Final Report recommended the regulation dam option, and in 1986, over opposition from the environmental community, Congress authorized the dam’s construction.^[23] However, in 1988, the Corps recalculated the cost-benefit ratios of the various options and determined that the reallocation of storage in Lake Lanier was more viable.^[24]

In 1989, the Corps completed a Draft Post Authorization Change Document recommending the reallocation of storage in Lake Lanier, Carters Lake, and Allatoona Lake; the Document proposed using the latter two lakes to meet the future water supply needs of Chatsworth and Cartersville, Georgia.^[25] That same year, the ARC completed negotiations with the Southeastern Power Administration and Oglethorpe Power to compensate the federal government for lost revenues due to the reallocation.^[26] Also in 1989, the GADNR and the West Georgia Regional Water Authority announced the proposed construction of the West Georgia Regional Reservoir.^[27] It was one of several potential regional reservoir projects, all part of a plan to “drought proof” Georgia.^[28]

In response to the proposed West Georgia Regional Reservoir Project, Alabama filed a lawsuit in federal court in June 1990. It sought to prevent the Corps from proceeding with the reallocation proposals on the basis of inadequacies in the Draft Post Authorization Change Document.^[29] Florida joined the lawsuit in September of 1990.^[30] After considerable effort, the states agreed to negotiate a resolution of their differences.^[31]

The GADNR filed a Section 404 application for the West Georgia Regional Reservoir in 1990.^[32] In 1991, Georgia and Alabama developed a Letter of Agreement for additional withdrawals of water from Allatoona Lake—15.3 million gallons per day (“mgd”)—and from Carters Lake near Cartersville—1.82 mgd.^[33] The agreement further stipulated that the Corps must obtain approval for the water contracts mentioned above and that Georgia would participate fully in a comprehensive study of the situation.^[34] Moreover, the Letter of Agreement stated that Georgia would withdraw its West Georgia Regional Reservoir Section 404 application.^[35] Finally, the Letter of Agreement contained a pledge by Florida and Alabama to cooperate with all parties to resolve any present or future conflicts.^[36]

The three states and the Corps developed a Memorandum of Agreement and additional supplemental agreements to set

the parameters of a Joint Comprehensive Study of the two Tri-Rivers Basins (“Comprehensive Study”).^[37] The parties designed the first Memorandum of Agreement, signed on January 3, 1992, as a supplement to the 1991 Letter of Agreement.^[38] The Memorandum of Agreement stipulated that the Corps would withdraw its Draft Post Authorization Change Notification Report and further required that the Corps operate all federal reservoirs in the ACF Basin to “maximize” the water resource benefits to the Basin as a whole.^[39] Moreover, the parties agreed to a three-year time limit for completing all or a substantial portion of the Comprehensive Study, which had to include: 1) a plan for the management of all water resources within the ACF Basin, 2) an assessment of current and future needs regarding human, natural, and other systems, and 3) an appropriate mechanism to implement all findings or recommendations.^[40] The Memorandum of Agreement also required Alabama and the Corps to petition the court to move the lawsuit to an inactive docket and retain jurisdiction until the parties completed the Comprehensive Study.^[41] The ACF Basin Compact ultimately failed.^[42] Since the ACF Basin Compact failure, the states involved have brought litigation in the federal district court of Georgia^[43] and in the D.C. Circuit.^[44] In addition, Alabama has amended its complaint in the federal litigation in Alabama.^[45] A full discussion of that litigation is beyond the scope of this Article, but a brief overview is in order.

The Eleventh Circuit deemed that Georgia’s case did not rise to the level of a dispute between states within the meaning of Article III of the United States Constitution.^[46] Consistent with this view, the United States District Court for the District of Columbia has rendered a decision validating a settlement that approves an exchange of municipal water for forgone hydropower opportunities.^[47] That decision is currently on appeal.^[48] Meanwhile, the federal district court in Alabama is attempting to assert jurisdiction over the dispute in an action directed predominately against the Corps.^[49]

None of these decisions adopts the premise that this situation involves an equitable apportionment of water between the states.^[50] In addition, none of these cases provides the parties with an opportunity for final resolution of the interstate issues. Given these facts and the Eleventh Circuit’s view that this is not an interstate dispute, the Supreme Court is highly unlikely to entertain an equitable apportionment action.

The most salient fact of the circumstances giving rise to the litigation is that Georgia is the upstream state. Absent judicial or congressional intervention, Georgia has the right to retain the water of the ACF and the ACT Basins and has the physical capacity to do so. Except for water stored in a federal reservoir, Georgia can retain the basins’ water free of any federal constraints other than those imposed by the Commerce Clause. The extent of those constraints at this point is far from clear. As a result, Georgia holds the high ground in this controversy. It has the legal capacity to divert water directly from any of its river systems so long as those diversions do not violate specific federal laws.^[51] Certainly federal environmental laws might be temporary roadblocks, but in the long run, Georgia has the ingenuity to fashion diversions that comply with federal law. Thus, Florida and Alabama must now wait and see whether they ever suffer the clear and substantial injury sufficient to invoke the jurisdiction of the Supreme Court in an equitable apportionment case. The actions proceeding in the lower federal courts will not increase the chances of a downstream state getting into the Supreme Court; to the contrary, they may decrease them. Resuming the negotiation process might be the only solution since the Supreme Court and the lower courts do not appear to offer a clear avenue for resolution.

B. The Comprehensive Study: A Valuable Educational Tool in a Compacting Process That Failed

As the Corps’s Environmental Impact Statement notes,

The Comprehensive Study was undertaken by Alabama, Florida, Georgia, and the Corps for both the ACF and ACT basins The Study was consensus-based, requiring the approval of all participants on all of the elements. The purpose of the Comprehensive Study was:

. . . to determine the capabilities of the Water Resources of the basins, to describe the water resource demands of the basins, and to evaluate alternatives which utilize the Water Resources to benefit all user groups within the basins.

The Comprehensive Study has provided technical understanding of the water resources in both river basins and basin-specific tools to evaluate the water management alternatives.^[52]

Table 1 presents the approved and funded areas of the Comprehensive Study.

Table 1 Elements of the ACF/ACT Comprehensive Study^[53]

Process Support Elements	Water Resources Availability	Water Demand Elements	Comprehensive Management Strategy
Population and Employment forecasts Database Public involvement	Surface water Groundwater	Agriculture water Demand Environmental water Demand Power resources water Demand Navigation water Demand Recreation water Demand Water quality Demand Apalachicola River and Bay water Demand	Basin-wide management Coordination mechanism

The ACF Basin Compact created “an interstate administrative agency, the ACF Basin Commission, composed of the Governors of Alabama, Florida, and Georgia”—who were also ACF Compact Commissioners—and a Federal Commissioner appointed by the President of the United States.”^[54] The Compact directed the signatory parties

to develop an allocation formula for equitably apportioning the surface waters of the ACF Basin among the states while protecting the water quality, ecology, and biodiversity of the ACF, as provided in the Clean Water Act, 33 U.S.C. Sections 1251 et seq., the Endangered Species Act, 16 U.S.C. Sections 1532 et seq., the National Environmental Policy Act, 42 U.S.C. Sections 4321 et seq., the Rivers and Harbors Act of 1899, 33 U.S.C. Sections 401 et seq., and other applicable federal laws.^[55]

The water allocation formula, which the State Commissioners were to develop and unanimously approve, would become binding

upon receipt by the Commission of a letter of concurrence with said formula from the Federal Commissioner. If, however, the Federal Commissioner fails to submit a letter of concurrence to the Commission within two hundred ten (210) days after the allocation formula is agreed upon by the State Commissioners, the Federal Commissioner shall within forty-five (45) days thereafter submit to the ACF Basin Commission a letter of nonconcurrence with the allocation formula setting forth therein specifically and in detail the reasons for nonconcurrence; provided, however, the reasons for nonconcurrence as contained in the letter of nonconcurrence shall be based solely upon federal law. The allocation formula shall also become effective and binding upon the parties to this Compact if the Federal Commissioner fails to submit to the ACF Basin Commission a letter of nonconcurrence^[56]

In ratifying the Compact, Congress stated that “the Federal Commissioner may submit a letter of concurrence with the

allocation formula unanimously adopted by the State Commissioners within 255 days of such adoption.”^[57]

As is evident in Table 1 above, competition for the river resources includes interests ranging from navigation for barges to water retained upstream for recreation and from consumptive uses of Lake Lanier above Atlanta to minimum flows for Apalachicola Bay in Florida.^[58] Based upon the results of the Comprehensive Study, the Corps constructed a model that integrated all of these factors by allowing manipulation of various scenarios while holding others constant.^[59] Thus, one could include in the model a scenario that limited hydropower and navigation use but that honored first delivery of water for municipal and industrial uses. One could further refine these scenarios by stipulating that river releases mimic the traditional, pre-development hydrograph to the greatest degree possible, thus protecting the environment. According to Georgia officials, the operation of the model in this manner would optimize economic values by diverting water from lower-valued uses such as barge traffic and navigation. Florida disagreed and argued that the proposed flows offered by Georgia were insufficient to meet Florida’s needs.^[60] As noted above, the effort to develop an allocation formula eventually failed, despite years of negotiations.^[61]

Parties to the ACF Basin Compact process assumed that the political will to reach a mutually beneficial compromise would produce an acceptable allocation mechanism. Unlike the state-line delivery requirement compacts, the percentage-allocation compacts or the consumption-limitation compacts, the ACF Basin Compact contained no formulae at all.^[62] In the end, the three states concluded that they would prefer to take their chances in court—ultimately, in equitable apportionment litigation—rather than control their own destinies through compromise.^[63] Only the future will demonstrate their wisdom or the lack thereof. Even so, the Comprehensive Study and its progeny have produced a wealth of knowledge about the basins that will serve the states well in the future.

III. THE ONLY ALTERNATIVE OPEN TO GEORGIA, ALABAMA AND FLORIDA IN THE ABSENCE OF THE APALACHICOLA –CHATTAHOOCHEE–FLINT RIVER BASIN AND THE ALABAMA–COOSA–TALLAPOOSA RIVER BASIN COMPACTS

Now that Georgia, Alabama, and Florida have chosen not to negotiate an interstate compact or to allocate by compromise, the courts have become the only alternative. The pertinent criteria applied by the Supreme Court raise numerous issues, the most pressing of which include the following:¹⁶⁴

- (1) Does the fact that water originates in one state mean that the upstream state of origin has a better right?
- (2) Does the first state to put the water to beneficial use have a better right?
- (3) Do the relative efficiencies of existing uses in the competing states dictate who has the better right?
- (4) Does water conservation play a role? And why should one state conserve if the fruits of its conservation will only aid another state?
- (5) What about the non-economic values of water? Are they entitled to weight, and if so, how are they measured?

These factors are of course only a few of those that arise in the context of interstate basin management by United States Supreme Court decree. Indeed, the Supreme Court has created a laundry list of “equitable apportionment” factors in its decisions.¹⁶⁵ No one factor appears controlling; the Court could place value on a single one, on a combination, or conceivably on all of them. Table 2 sets forth a compendium of these factors.

TABLE 2

Factor	1.1 Seminal Case	1.2 Relevant text
<p>1. Beneficial use.</p>	<p>Kansas v. Colorado, 206 U.S. 46 (1907).</p>	<p>“They have taken the waters of the perennial stream before it reaches this sieve, through which it wasted; they have lifted that stream out of the sandy channel in which it had flowed and applied it to beneficial uses upon the land”^[66]</p> <p>Under the principles of the common law, which have resulted in the doctrine of “riparian rights,” the inhabitants of arid lands along the upper reaches of the Arkansas River have a prior right <i>ex jure naturae</i> to the beneficial use of its water to the full extent required for their adequate sustenance and welfare.^[67]</p> <p>In ten or more acts relating to arid and desert lands, beginning in 1866, Congress has not only recognized the right of appropriation of water in the arid states for beneficial uses but has also recognized the right of each state to control the same within its boundaries.^[68]</p> <p>Federal law does not supercede any agreement if “the right to the use of the water acquired under the provisions of this act shall be appurtenant to the land irrigated [and if] beneficial use shall be the basis, the measure, and the limit of the right.”^[69]</p>
<p>2. Harm to various parties or to aspects of the water system, including:</p>		
<ul style="list-style-type: none"> • Physical conditions of the river; • Climatic conditions of the area; • Consumptive use of water on the river; • The character and rate of return flows; • The extent of established uses; • The practical effect of wasteful uses on downstream areas; • The damage to upstream areas as 	<p>Nebraska v. Wyoming, 325 U.S. 589 (1945).</p>	<p>Factors include: “physical and climatic conditions, the consumptive use of water in the several sections of the river; the character and rate of return flows, the extent of established uses, the availability of storage water; the practical effect of wasteful uses on downstream areas, [and] the damage to upstream areas as compared to the benefits to downstream areas if a limitation is imposed on the former.”^[70]</p>

compared to the benefits to the downstream areas if a limitation is imposed on the former;		
• The availability of storage water;	Wyoming v. Colorado, 259 U.S. 419 (1922).	The reasonable measure of the supply available in Wyoming for practical use is not the lowest natural yearly flow but something considerably greater—the amount obtainable by storage. ^[71]
• Wildlife and wildlife habitat;	Nebraska v. Wyoming, 515 U.S. 1 (1995).	“Wyoming . . . suggests that allegations of injury to wildlife are as yet purely speculative and would be best left to other forums. Wyoming’s arguments are not persuasive.” ^[72]
• Seniority of water rights;	Wyoming v. Colorado, 259 U.S. 419 (1922). Nebraska v. Wyoming, 325 U.S. 589 (1945).	The Wyoming appropriations senior to the proposed Colorado appropriation require 272,500 acre feet, and as a result, the Court restricted the surplus available for that appropriation to 15,500 acre feet, per annum. ^[73] “Priority of appropriation is the guiding principle . . .” ^[74]
• Existing uses;	Arizona v. California, 373 U.S. 546 (1963).	“[T]he Arizona contract . . . provides that its terms are ‘without prejudice to any of the respective contentions of said states and water users as to . . . what limitations on use, rights of use, and relative priorities exist as to the waters of the Colorado River system.’” ^[75]
• Future uses;	Colorado v. New Mexico, 459 U.S. 176 (1982).	“The flexible principle of equitable apportionment applies to a State’s claim to divert water for future uses, and the criteria relied upon by the Special Master comport with this Court’s prior cases.” ^[76]
• Need for municipal water;	Connecticut v. Massachusetts, 282 U.S. 660 (1931).	“Boston and the surrounding metropolitan area are faced with a serious water shortage in the near future, and there is need for a large quantity of additional water.” ^[77]
• Established local economies.	Kansas v. Colorado, 206 U.S. 46 (1907).	The established economy in Colorado’s section of the river basin based on existing use of the water should be protected. ^[78]
3. Reasonable conservation measures, including:	Wyoming v. Colorado, 259 U.S. 419 (1922).	Computation should rely on “the unalterable need for a supply that is fairly constant and dependable, or is susceptible of being made so by storage and conservation within practicable limits.” ^[79]
• Avoiding wasteful and inefficient uses;	Colorado v. New Mexico, 467 U.S. 310 (1984).	“Wasteful or inefficient uses will not be protected.” ^[80]
• Avoiding careless administration, repairing infrastructure;	Colorado v. New Mexico, 467 U.S. 310 (1984).	“Moreover, with respect to reasonable conservation measures available, the Master indicated his belief that more careful water administration in New Mexico would alleviate shortages from unregulated stock ponds, fishponds, and water detention structures, prevent waste from blockage and clogging in canals, and ensure that users fully devote themselves to development of available resources.” ^[81]
• Monitoring and	Colorado v. New Mexico,	“New Mexico users, individuals, or

regulation;	467 U.S. 310 (1984).	otherwise, cannot expect to be able to take the available water in the Vermejo River at their convenience without taking the time and energy to implement changes and development to help conserve and augment the available water. Careful monitoring and regulation as part of a program of administration would aid all users in full development of their water supply and demands.” ^[82]
• Limiting groundwater pumping.	Kansas v. Colorado, 514 U.S. 673 (1995).	The Special Master had “no difficulty in concluding that [post-Compact] pumping in Colorado ha[d] caused material depletions of the usable Stateline flows of the Arkansas River, in violation of the Arkansas River Compact.” ^[83]
4. The weighing of all relevant factors against one another.	Colorado v. New Mexico, 467 U.S. 310 (1984).	“[T]he equitable apportionment of appropriated rights should turn on the benefits, harms, and efficiencies of competing uses” ^[84]

IV. INTERESTS THE NEGOTIATION OF AN INTERSTATE COMPACT CAN PROTECT

In the face of far-reaching and sometimes unpredictable court decisions, a state may wish to reconsider the value of an interstate water compact. Once Congress has approved an interstate compact, it becomes federal law and provides much-needed finality or, at a minimum, certainty for a term of years. A compact could include provisions that protect the following interests with much greater precision than a judicial decree. For example, a compact could:

- (1) **Provide that all states have maximum flexibility in how they utilize their allotted water once they satisfy compact commitments;**
- (2) **Allow continued economic development in all states provided that this economic development does not cause concrete injury to another compact state;**
- (3) **Allow the maximum opportunity for either surface or underground storage and reward states that promote reuse of water resources or engage in water conservation;**
- (4) **Allow construction of whatever infrastructure is necessary to promote the public welfare of each state as long as its construction does not injure another compact state;**
- (5) **Make it clear that no state can demand water from another unless it has an actual, demonstrable use for the water, whether for consumptive beneficial use or instream environmental use;**
- (6) **Allow for inter-basin transfers and link together all of the rivers of each state so as to minimize the possibility of the creation of artificial demand because of a refusal of any state to utilize its other water resources;**
- (7) **Address the issues of existing or potentially endangered species and specify the relationship between any federal participants in the compact and pertinent federal legislation as well as determine the effect of any existing or future designation;**
- (8) **Ensure that no state can wield its failure to meet any compact water standards as a sword to compel higher quality water from a sister state;**
- (9) **Provide flexibility to allow existing uses to expand and permit market forces to allocate water to the remaining future uses anticipated under the compact, including water banking;**
- (10) **Contain a voluntary mechanism on a state-to-state basis for the exchange of allocated water for payment or other consideration so that the states can develop the maximum use of water;**

- (11) Require advance notice from the federal government or any pertinent state regarding activities that might require an Environmental Impact Statement or otherwise affect the water supplies in the basin;**
- (12) Provide for decision making by consensus with committees containing a federal representative, allowing full—though non-voting—participation by this representative;**
- (13) Limit any disputes to those that are factual in nature not those that focus on the interpretation compact terms by clearly specifying these limitations;**
- (14) Provide a procedure for mandatory mediation with the results and the record being confidential and judicially reviewable;**
- (15) Provide for drought “triggers” whereby the states may suspend the compact’s terms and shift its function to address short-term drought through emergency measures;**
- (16) Provide the possibility of appointed subcommittees or advisory groups to assess river basin health, update projections for economic growth, evaluate hydrologic assumptions and river modeling, and evaluate assumptions regarding the hydrologic connections between ground and surface water use; and finally,**
- (17) Provide a mechanism for the parties to rescind the compact or revise it in the event of fundamental computer or hydrologic error in the assumptions that underlie the basic allocation, stream flows, or reservoir levels.**

Now that the negotiating parties have abandoned the ACF Basin Compact legislation, we will see whether the judicial branch can provide a decision that considers all of these factors and reaches an adequate result.

V. THE COLORADO RIVER COMPACT: A COMPACT THAT HAS LEFT THE HARD QUESTIONS FOR THE COURTS

Although it is easy to criticize those unable to reach an acceptable compromise, one must also consider that sometimes a compromise without clarity of purpose or knowledge of hydrology can create more problems than it solves. The Colorado River Compact, though artfully drafted, is an example.^[85] Written in 1922 and put into effect in 1929, it binds Colorado, Nevada, New Mexico, California, Arizona, Utah, and Wyoming.^[86] No court has ever authoritatively construed the Compact in its entirety, but the decision of the Supreme Court in *Arizona v. California* clarifies some of its ambiguities.^[87]

The Colorado River Compact covers the entire basin of the Colorado River, including not only natural drainage areas but also any other area to which a party beneficially applies Colorado River waters.^[88] It divides the Colorado River Basin into upper and lower basins, the dividing point being Lees Ferry, Arizona.^[89] It apportions Colorado River waters between the two basins; the apportioned water includes the waters of the tributaries.^[90] It does not apportion the water of each basin to the individual states, however.^[91] Also, one unique and troublesome fault of the Colorado River Compact is that, somewhat surprisingly, the term “domestic use” includes mining, milling, and industrial use but specifically excludes the use of water for “generation of electrical power.”^[92]

The Colorado River Compact places a limit on the amount of water that states can apply to “beneficial consumptive use” (a term not defined in the Compact) in each basin.^[93] The upper basin cannot acquire firm water rights to more than 7.5 million acre feet (“maf”) per year and the lower basin cannot acquire firm water rights in excess of 8.5 maf per year.^[94] The Compact includes any existing vested rights that existed at the time.^[95] At the time of the signing of the Colorado River Compact, all hydrologic wisdom presumed that the basin would yield around 18 maf a year.^[96] Thus, the upper basin should have had the advantage by delivering only 7.5 maf a year to the lower basin.^[97] We now realize that the recent hydrologic period of record was an extraordinarily wet one and that the actual yield is more in the neighborhood of 13.5 maf.^[98] Hence, a major difficulty in negotiating a compact, such as the ACF Basin Compact, is establishing a realistic expectation for the capacity of the basin. If the upper basin states overestimate supply, they will shortchange all existing uses. This is what occurred on the Colorado River.^[99]

By inference, these maximums on beneficial use per basin define what constitutes a “surplus”—any water left over after the two basins use 16 maf is “surplus” water—which goes toward the annual 1.5 maf treaty obligation to Mexico

discussed below.¹⁰⁰¹ The basins divide any surplus over the 17.5 maf if and when either basin uses its full apportionment.¹⁰¹¹

Article III(d) of the Colorado River Compact sets out the only actual grant of water in terms of obligatory, guaranteed flow.¹⁰²¹ This provision states that the upper basin cannot deplete the flow of the River in the main stream at Lees Ferry below 75 maf in any period of ten consecutive years measured in a progressive series.¹⁰³¹ This will ordinarily mean that the upper basin must provide an average annual flow of 7.5 maf at Lees Ferry, Arizona. While this seemed like an easy task when the states entered into the Compact, contemporary hydrology has demonstrated that to do so does not divide water equally between the basins; rather, it shorts the upper basin.¹⁰⁴¹

In addition to the 75 maf obligation over a decade, Article III(e) prohibits the upper basin from withholding water that it cannot reasonably apply to domestic and agricultural use.¹⁰⁵¹ Keep in mind that power generation is not a “domestic use.” Conversely, Article III(e) also prohibits the lower basin from requiring the delivery of water that it cannot reasonably apply to domestic and agricultural uses.¹⁰⁶¹

The Colorado River Compact thus raises a number of questions. However, until the upper and lower basins fully appropriate their entire supplies and the price of water goes up and until ecological demands increase and political tensions rise to the point that states must find answers, these questions will remain largely theoretical.

One thing is nonetheless clear from the legislative history of the Colorado River Compact: The priority of power generation was subordinate to agricultural production.¹⁰⁷¹ Article III(e) does not allow the lower basin to demand water for power generation, and the upper basin cannot retain it for that purpose.¹⁰⁸¹ No one knows who will win a fight over surplus water if both basins intend to use it for power. Alternatively, could lower basin agricultural users, who use their total apportioned rights, nevertheless demand “surplus” water that the upper basin is using for power generation?¹⁰⁹¹ The question is complicated by the fact that lower basin power suppliers have long been distributing energy produced by upper basin coal plants. The potential political ramifications of all this could generate a tremendous internal struggle in California.

The Colorado River Compact provides that, if there is insufficient “surplus” water to meet the 1.5 maf treaty obligations to Mexico, both basins will bear the obligation equally.¹¹⁰¹ Ambiguities immediately arise. For example, if the total supply is 15 maf and the lower basin is using its full 8.5 maf but the upper basin is using only 3.5 maf, does the upper basin have to cut back its consumption by 750,000 acre feet to meet the equality of burden principle of the Colorado River Compact?

Another problem would arise if, at the end of a ten-year period, the upper basin has not met the 75 maf obligations, but the lower basin demands water not for domestic or agricultural use, but for power consumption.¹¹¹¹ Professor Meyers, in his early leading article on the Colorado River, argued persuasively that the upper basin would have to meet its 75 maf obligation if it were merely storing the water in the upper basin.¹¹²¹ If, however, the upper basin put the water to agricultural or domestic use and the lower basin demand was for electrical power generation, the upper basin would not have to deliver.¹¹³¹

One could still ask what would happen if the upper basin met the 75 maf/decade obligation at the end of eight rather than ten years and stored the excess water in reservoirs? Would the upper basin’s desire to store water against future ten-year obligations and Mexican Treaty commitments take priority over a lower basin request for water to generate electric power? The answer is unknown.

The Compact does not address the issue of the quality of water that the upper basin delivers at Lees Ferry.¹¹⁴¹ Article IV(b) *could* be read to require delivery of water of sufficient quality for agricultural purposes.¹¹⁵¹ With increased development in the upper basin raising the salinity of the river, litigation could occur over this.¹¹⁶¹

Adding to the overall confusion, finally, is the fact that the Boulder Canyon Project Act makes no reference to groundwater.¹¹⁷¹ At the time that the states drafted the Colorado River Compact, experts did not fully understand the conjunctive relationship between ground and surface water.¹¹⁸¹ Now, however, with progress in the field of groundwater hydrology, scientists understand much more.¹¹⁹¹ If one fully accounts for the effect of groundwater pumping on stream flows, the impact on each basin’s calculated “beneficial consumptive use” in alluvial valleys could be immense. The Supreme Court’s opinion in *Arizona v. California* lends support to the view that each basin’s

consumptive quantity should include related groundwater.^[120] The *Arizona v. California* opinion does not provide a dispositive answer to the question, but the logic that the Court used suggests that consumption totals must include all depletions, however they occur.^[121]

Thus, allocating water by compact is a complex, policy-laden task, and it is no surprise that sometimes even the most able and well-meaning negotiators fail. Indeed, a compact that defers decisions on all of the hard issues may be worse than no compact at all.

VI. A GUIDE TO A PROCESS FOR DEVELOPING COMPACTS THAT WILL MEET CONTEMPORARY SOCIETIES' REQUIREMENTS

As the 21st century begins, there is a tremendous need for mechanisms that address interstate allocation of water. At a minimum, any process for developing a compact must include the following:

- (1) **Impartiality;**
- (2) **Early intervention to defuse tensions;**
- (3) **Development of multi-disciplinary, technical-support teams; and**
- (4) **A fact-driven process to produce consensus.**

This last element must, furthermore, allow local water users to:

- (a) **Develop a common set of data and indices of desired future conditions;**
- (b) **Negotiate compatible objectives;**
- (c) **Reach a provisional agreement; and**
- (d) **Establish mechanisms for continuing cooperation.**

Scarcity manifests latent discord. Amid constraints, uses and values that are compatible in times of abundance can become incompatible. Increasing demand is now testing at every turn policies for the management of water that once seemed certain. The following are examples.

In economic terms, new water uses typically have greater value than historical water uses. That is, the ratio of monetary value produced per unit of water consumed tends to be higher in new water uses (e.g., urban and domestic consumption, recreation, and light industry such as semi-conductor production) than in most historical uses (e.g., agriculture, ranching, transportation, and heavy industry). At the same time, society should respect historical uses and should not allow the market alone to determine how to distribute water. Reduced water supplies bring to the surface the tension between these two sets of values, and federal policies that once seemed self-evident may no longer meet society's needs, even though legislation that has been in effect for half a century expresses these policies.

Urban vitality depends on a continuing expansion of municipal revenues, fed by ever-improving standards of living. Cities with large tax bases can offer residents dependable infrastructure and services, well-equipped public schools, and many other amenities. These benefits give current residents reasons to stay, and they attract new residents, including corporations with high salary jobs. The desirable results of expanding cities may not, however, extend indefinitely into the future. There are points of diminishing returns. Water availability represents one such point because it comprises a physical constraint on municipal growth. Water quality is another. Prosperity at the cost of degraded ground and surface waters eventually will unravel. These prospects raise questions of inter-generational equity. That is, when multiple water needs push against one another and supply cannot satisfy them all, water consumers may end up choosing—for their children if not for themselves—between economic security and a certain quality of life.

Issues of water quantity and quality also affect the environments in which we all live. For example, river basins were

home to wildlife and flora before they hosted humans. The amounts and kinds of water needed by these other life forms may vary widely and differ from our own requirements. Whose needs should come first? When arid regions store spring runoff for planting-schedule releases, a river's flow can slow to a trickle. In the East, changes in rainfall can alter river flows on a year-by-year basis, dramatically altering ecosystems, and without reservoirs, the effects can be devastating. In today's America, plant and animal communities have claims on water resources recognized by state and federal law, but in practical terms, humans remain the arbiters of these claims.

Furthermore, dams and other waterworks enable streams and rivers to store and deliver water and to generate power. However, riverine systems have other values, some of which require noninterference with their natural behavior. For instance, the aesthetic appreciation of rivers and lakes—hearing water splash on rocks or lap against the keel of a boat, seeing light and shadow play on a still pool and being cooled by a breeze across an undisturbed stream surface—may clash with their more utilitarian purposes.

Given all this complexity and pursuant to the two lists with which this section began, the first step in establishing a contemporary compact should be development of a common data set concerning water supplies and water demands throughout the drainage basin. Among other information, this set will contain:

- (1) Hydrologic data (e.g., historical base flow in the watershed, relative contributions to the watershed's annual yield from rainfall and from tributary and groundwater inflow, and relative amounts and locations of annual diminution of water quality due to pollution);**
- (2) Climate and weather data (e.g., seasonal temperatures, precipitation averages, and evaporation rates);**
- (3) Formally permitted water rights (e.g., quantities of permitted water rights for diversionary and instream uses for all ground and surface sources);**
- (4) Seasonal or annual quantities of uses within each type of use;**
- (5) Continuing scheduled water delivery obligations (e.g., compact and treaty responsibilities and reservoir holding and release agreements);**
- (6) Demographic statistics (e.g., basin area population, growth projections, and associated water use information); and**
- (7) Measures of ecological resilience (e.g., general stream and watershed health).**

After compact states develop this set of data, they should build and calibrate a hydrologic model of the water system. This requires using one of the industry standard hydrologic models to construct a profile of the drainage basin. The profile should take account of tributaries along with requisite instream flows and all withdrawals for municipal, industrial, agricultural, and riparian uses.

The next step is modeling current conditions and future scenarios reflecting water supply and water quality effects that the states should try to achieve or avoid. At this point, participants can assemble this common data as model flow rates and annual yield, and then they can project them onto various water use scenarios for determining flows and desired regimes throughout the basin. These projections can, for example, produce wet and dry year hydrographs for various stream reaches of particular interest, or they can combine and explore future possibilities involving increases and decreases in agricultural water demand, in municipal and industrial water use, in stream health, in water-centered recreational activities, in navigation, and in wildlife habitat. Participants can run these projections as many times, and in as many ways, as necessary to answer any stakeholder's questions.

After identifying the pertinent constraints through exhaustive data collection and repeated modeling, participants can thoroughly explore and weigh:

- (1) Values in water as expressed by the stakeholders;**
- (2) Related short- and long-term scenarios that each stakeholder wishes to achieve or avoid; and**

(3) Legal factors affecting any water management or water sharing agreement by stakeholders.

The discussions and negotiations, together with the previous modeling steps, will provide insights into water use tradeoffs between, for example, river health in certain reaches and specific economic development possibilities. Thus, although the choices themselves may be no easier than they would have been without the steps described above, participants will make those choices with a clearer understanding of the likely consequences. Moreover, having taken pains to cooperatively construct knowledge about their shared water systems, the participants will have had numerous opportunities and reasons to acquire mutual understanding of each other's values and water needs and, in turn, to develop the mutual respect that is the hallmark of sustainable agreements.

Once the parties have finalized and settled upon negotiation results, they should integrate them into a memorandum of agreement that contains provisions for monitoring and oversight responsibilities, routine updating of the data base, regular meetings of an executive group chosen by the participants, and any other mechanisms needed to ensure continuing coordination and cooperation. The memorandum of agreement should provide that all basin stakeholders have desktop access to the common database and the watershed modeling software as well as simple instructions about how to use these materials to better appreciate the sources and uses of their common waters.

The last step, and the one which requires the greatest effort and which is the most difficult to achieve, is to get a state's political leaders to understand that a compact containing some but not all of what they seek may be better than a court judgment offering very little.^[122]

CONCLUSION

As indicated above, interstate water compacts can be unruly beasts. Capturing and taming them in the thickets of bureaucratic requirements, legal complexities, political exigencies, public opinion, and the vagaries of weather and climate can be an all but impossible task. However, states that reject compacts and instead look hopefully to the courts may discover that, in so doing, they have given up crucial aspects of control and have placed themselves at the mercy of a process that is sometimes unpredictable. Like people who bring in a tiger to kill a predatory lion, those states may find themselves in even more peril than before.

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[1]. See, e.g., Charles J. Meyers, *The Colorado River*, 19 STAN. L. REV. 1, 1 (1966).

[2]. See Josh Clemons, *Interstate Water Disputes: A Road Map for States*, 12 SOUTHEASTERN ENVTL. L.J. 115, 116-17 (2004), available at <http://www.olemiss.edu/orgs/SGLC/acf.htm>.

[3]. See GEORGE WILLIAM SHERK, *DIVIDING THE WATERS: THE RESOLUTION OF INTERSTATE WATER CONFLICTS IN THE UNITED STATES* 29 (Kluwer Law International ed., 2000).

[4]. See *id.* at 49.

[5]. See, e.g., Colorado River Compact, Art. III, COLO. REV. STAT. § 37-61-101 (1995).

[6]. *Id.*

[7]. See discussion *infra* Part V.

[8]. See, e.g., Pecos River Compact, Art. III, TEX. WATER CODE ANN. § 42.010 (1996).

[9]. See, e.g., Texas v. New Mexico, 462 U.S. 554, 559-62 (1983).

[10]. See, e.g., Pecos River Compact, Art. III, TEX. WATER CODE ANN. § 42.010 (1996).

[11]. See Rio Grande Compact, TEX. WATER CODE ANN. § 41.009 (Vernon 1996).

[12]. See *id.* at Art. IV.

[13]. See, e.g., Upper Colorado Compact, Art. III, COLO. REV. STAT. § 37-62-101 (1995).

[14]. See *id.*

[15]. See Apalachicola-Chattahoochee-Flint River Basin Compact, Pub. L. No. 105-104, § 1, Art. VII, 111 Stat. 2219, 2222-24 (1997) (expressing the intent of the signatory parties to develop a formula for equitable allocation), available at <http://www.acfcompact.alabama.gov/pdfs/ACFCompact.pdf>.

[16]. See Charles Seabrook, *Water Costs Likely to Rise*, ATLANTA J. CONST., Sept. 8, 2003, at 1F, available at 2003 WL 61734096.

[17]. UNITED STATES ARMY CORPS OF ENGINEERS, MOBILE DISTRICT, WATER ALLOCATION FOR THE APALACHICOLA-CHATTAAHOOCHEE-FLINT (ACF) RIVER BASIN: ALABAMA, FLORIDA, AND GEORGIA: DRAFT ENVIRONMENTAL IMPACT STATEMENT ES-2 (1998) [hereinafter ENVIRONMENTAL IMPACT STATEMENT], available at <http://www.sam.usace.army.mil/pd/actacfeis/acfmain.pdf>.

[18]. See *id.* § 1.1.2.

[19]. See Clemons, *supra* note 2, at 135.

[20]. See *id.* at 135-36.

[21]. See generally *id.*; *Review of Selected 1997 Georgia Legislation*, 14 GA. ST. U. L. REV. 47 (1997) [hereinafter *1997 Georgia Legislation*].

[22]. See generally Clemons, *supra* note 2; *1997 Georgia Legislation*, *supra* note 21.

- [23]. See generally Clemons, *supra* note 2; 1997 Georgia Legislation, *supra* note 21.
- [24]. See generally Clemons, *supra* note 2; 1997 Georgia Legislation, *supra* note 21.
- [25]. See ENVIRONMENTAL IMPACT STATEMENT, *supra* note 17, § 1.1.2.
- [26]. See Peter Kent, *Full Lakes Haven't Ended Metro Area's Water Woes*, ATLANTA J. CONST., July 3, 1989, at A12, available at 1989 WL 6059439.
- [27]. See ENVIRONMENTAL IMPACT STATEMENT, *supra* note 17, § 1.1.2.
- [28]. See Carrie Teegardin, *Al. Trying to Dry Up Ga. 'Drought-Proofing' Plan: Fears Reservoirs Would Hurt Its Supply*, ATLANTA J. CONST., Dec. 13, 1990, at A1, available at 1990 WL 7039311.
- [29]. See ENVIRONMENTAL IMPACT STATEMENT, *supra* note 17, § 1.1.2; Clemons, *supra* note 2.
- [30]. See ENVIRONMENTAL IMPACT STATEMENT, *supra* note 17, § 1.1.2.
- [31]. See *id.*
- [32]. See *id.*
- [33]. See *id.* § 1.1.3.
- [34]. See *id.*
- [35]. See *id.*
- [36]. See ENVIRONMENTAL IMPACT STATEMENT, *supra* note 17, § 1.1.3.
- [37]. See *id.* § 1.1.4. Again, the two basins at issue are 1) the Apalachicola-Chattahoochee-Flint Basin ("ACF Basin") and 2) the Alabama-Coosa-Tallapoosa Basin ("ACT Basin"). The latter receives only occasional mention here, but it is in many ways analogous to the former.
- [38]. See *id.*
- [39]. See generally *Alabama Coosa Tallapoosa Apalachicola Chattahoochee Flint River Basins Comprehensive Water Resources Study*, Northwest Florida Water Management District, at <http://www.state.fl.us/nwfwdmd/rmd/acfcomp/cstudy.htm> (last visited Jan. 30, 2005).
- [40]. See *id.*
- [41]. See *id.*
- [42]. See Seabrook, *supra* note 16; Clemons, *supra* note 2.
- [43]. Georgia v. U.S. Army Corps of Eng'rs, No. 2:01CV-0026-RWS (N.D. Ga. Filed Feb. 7, 2001).
- [44]. S. Fed. Power Customers, Inc. v. Caldera, 301 F. Supp. 2d 26 (D.C. Cir. 2004).
- [45]. Alabama v. U.S. Army Corps of Eng'rs, No. CV-90-H-01331-E (N.D. Ala. filed June 29, 1990).
- [46]. See Georgia v. U.S. Army Corps of Eng'rs, 302 F.3d 1242, 1256 n.11 (11th Cir. 2002).
- [47]. See S. Fed. Power Customers, Inc. v. Caldera, 301 F. Supp. 2d 26, 35 (D.C. Cir. 2004).
- [48]. See *id.* at 26, *appeal docketed*, No. 04-5143 (D.C. Cir. Feb. 8, 2005).
- [49]. Alabama v. U.S. Army Corps of Eng'rs, No. CV-90-H-01331-E (N.D. Ala. filed June 29, 1990).
- [50]. See *id.*; Georgia v. U.S. Army Corps of Eng'rs, 302 F.3d 1242, 1256 n.11 (11th Cir. 2002); S. Fed. Power Customers, Inc., 301 F. Supp. 2d at 26.
- [51]. See Clemons, *supra* note 2, at 138.
- [52]. ENVIRONMENTAL IMPACT STATEMENT, *supra* note 17, at ES -2.
- [53]. *Id.* at ES-3.
- [54]. *Id.*
- [55]. Apalachicola-Chattahoochee-Flint River Basin Compact, Pub. L. 105-104, § 1, Art. VII, 111 Stat. 2219, 2222-23 (1997), available at <http://www.acfcompact.alabama.gov/pdfs/ACFCompact.pdf>.
- [56]. § 1, Art. VII, 111 Stat. 2219, 2223.
- [57]. § 1, Art. XX, 111 Stat. 2219, 2230.
- [58]. ENVIRONMENTAL IMPACT STATEMENT, *supra* note 17, at ES -3.
- [59]. *Id.* at ES-6.
- [60]. See Clemons, *supra* note 2, at 139-40.
- [61]. *Id.*
- [62]. *Id.*
- [63]. *Id.*
- [64]. *Id.* at 126.
- [65]. *Id.* at 119-27.
- [66]. Kansas v. Colorado, 206 U.S. 46, 53-54 (1907).
- [67]. *Id.* at 47-48.
- [68]. *Id.* at 48.
- [69]. *Id.* at 93 (quoting The Reclamation Act of 1902, Pub. L. No. 57-161, § 8, 32 Stat. 388, 390 (1902)).
- [70]. Nebraska v. Wyoming, 325 U.S. 589, 618 (1945).
- [71]. See Wyoming v. Colorado, 259 U.S. 419, 484 (1922).
- [72]. Nebraska v. Wyoming, 515 U.S. 1, 12 (1995).
- [73]. See Wyoming, 259 U.S. at 496.
- [74]. Nebraska, 325 U.S. at 618.
- [75]. Arizona v. California, 373 U.S. 546, 625 (1963) (Harlan, J., dissenting) (quoting a contract between Arizona and United States).
- [76]. Colorado v. New Mexico, 459 U.S. 176, 183-88 (1982).
- [77]. Connecticut v. Massachusetts, 282 U.S. 660, 664 (1931).
- [78]. See Kansas v. Colorado, 206 U.S. 46 (1907).
- [79]. Wyoming v. Colorado, 259 U.S. 419, 480 (1922).
- [80]. Colorado v. New Mexico, 467 U.S. 310, 335 (1984).
- [81]. *Id.* at 318.
- [82]. *Id.* at 334 n.4.
- [83]. Kansas v. Colorado, 514 U.S. 673, 694 (1995).
- [84]. Colorado v. New Mexico, 467 U.S. 310, 323 (1984).
- [85]. See Colorado River Compact, COLO. REV. STAT. § 37-61-101 (1995).
- [86]. See *id.*
- [87]. See Arizona v. California, 373 U.S. 546 (1963).
- [88]. See Colorado River Compact, Art. II(a)-(b), (f)-(g), COLO. REV. STAT. § 37-61-101 (1995).

- [89]. *See id.*
- [90]. *See id.*
- [91]. *See id.*
- [92]. *See* Colorado River Compact, Art. II(h), COLO. REV. STAT. § 37-61-101 (1995).
- [93]. *See* Colorado River Compact, Art. III, COLO. REV. STAT. § 37-61-101 (1995).
- [94]. *See id.*
- [95]. Colorado River Compact, Art. III(a)-(b), COLO. REV. STAT. § 37-61-101 (1995).
- [96]. *See* Daniel Tyler, *Delphus Emory Carpenter and the Colorado River Compact of 1922*, 1 U. DENV. WATER L. REV. 228, 249-50 (1998).
- [97]. *See id.* at 249-50.
- [98]. *See* Justice Gregory J. Hobbs, Jr., *The Role of Climate in Shaping Western Water Institutions*, 7 U. DENV. WATER L. REV. 1, 21-22 (2003); Eric L. Garner, *Future Shock? The Law of the Colorado River in the Twenty-First Century*, 27 ARIZ. ST. L.J. 469, 472 (1995) (citing Tom Jensen, *The Law of the Colorado River: Carefully Planning to Drive Off the Cliff*, 8 WATER STRATEGIST 3, 13 (1994)).
- [99]. *See* Hobbs, *supra* note 98, 21-22.
- [100]. *See* Colorado River Compact, Art. III(f), COLO. REV. STAT. § 37-61-101 (1995).
- [101]. *Id.*
- [102]. *See* Colorado River Compact, Art. III(d), COLO. REV. STAT. § 37-61-101 (1995).
- [103]. *See id.*
- [104]. *See* David Parrish, Note, *Where Has All the Water Gone? Water Marketing and the Colorado River Delta*, 13 TRANSNAT'L L. & CONTEMP. PROBS. 369, 370 (2003).
- [105]. *See* Colorado River Compact, Art. III(e), COLO. REV. STAT. § 37-61-101 (1995).
- [106]. *See id.*
- [107]. Colorado River Compact, Art. IV(b), COLO. REV. STAT. § 37-61-101 (1995); *see* 64 Cong. Rec. 2710-13 (1923) (statement of Secretary of Commerce Herbert Hoover).
- [108]. *See* Colorado River Compact, Art. III(e), COLO. REV. STAT. § 37-61-101 (1995).
- [109]. *See* Meyers, *supra* note 1, at 20.
- [110]. *See id.* at 24-25.
- [111]. *See id.* at 21.
- [112]. *See id.* at 21-22.
- [113]. *See id.* at 21.
- [114]. *See id.* at 25-26.
- [115]. *See* Meyers, *supra* note 1, at 25-26.
- [116]. *See id.*
- [117]. *See id.* at 25-26.
- [118]. *See id.* at 26.
- [119]. *See id.*
- [120]. *Arizona v. California*, 376 U.S. 340, 347-50 (1963).
- [121]. *See id.*
- [122]. *See* Table 2, *supra* Part III.