The Southeastern Water Compact, Panacea or Pandora's Box? A Law and Economics Analysis of the Viability of Interstate Water Compacts

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THE SOUTHEASTERN WATER COMPACT, PANACEA OR PANDORA’S BOX? A LAW AND ECONOMICS ANALYSIS OF THE VIABILITY OF INTERSTATE WATER COMPACTS

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I. INTRODUCTION

The Chattahoochee River Basin is one of the most important water resources in the Southeastern portion of the United States. The “Hooch,” as it is locally known,1 cuts a more than four-hundred-mile path from Northern Georgia to its point of intersection with the Flint River on the border of Alabama, Florida, and Georgia. Along the way, the river supplies Lake Sidney Lanier, serves as a drinking water supply for Atlanta,2 and forms a great portion of the border between Georgia and Alabama. Further, the “Hooch” combines with the Flint River to form the Apalachiola River, which flows through Northwest Florida before emptying into the Gulf of Mexico.

Increasing development of the Southeastern United States has taxed heavily the region’s water resources. Consequently, the conflict over the Chattahoochee River has grown into a hotly contested battle.3 It has involved not only the states themselves, but also the Federal Government in the form of the U.S. Army Corps of Engineers, the agency in charge of the

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2 The Chattahoochee River supplies 70% of Atlanta’s drinking water. See id. at 201 n.7 (citing River Rivalry, ECONOMIST, Mar. 30, 1991, at 26).

maintenance of Lake Lanier. It is against this backdrop that this Note is
developed.

The purpose of this Note is to take various solutions to interstate
conflicts over water rights and analyze them in a law and economics
framework. Though many authors have argued that one solution to such
conflicts is superior to others, none have done so by applying law and
economics theories to the problem. By looking for a solution to interstate
water rights issues through the lens of law and economics analysis, it is
possible to look beyond political and social concerns which, though
important, should not override the requirement that laws reflect the most
efficient means of resource allocation. Under this framework, federal-
interstate water compacts emerge as the most logical choice for solving
interstate water conflicts.

This Note begins with a discussion of the various water rights regimes
employed by the states. A discussion of the law and economics theories
employed by the author constitutes Part III. Part IV reviews the
circumstances surrounding the current state of the conflict over the “Hooch,”
and discusses recent developments in the negotiating process between the
states and the federal government. Part IV also reviews the three main
solutions to questions of interstate water rights and examines how interstate
water compacts have been used in a variety of settings. Part V examines four
regional approaches to water rights. Finally, Part VI tests the federal
interstate compact solution under the law and economics theories examined
in Part III.

II. TRADITIONAL WATER RIGHTS REGIMES

Though the migratory nature of water makes defining property rights
difficult, three types of water rights regimes have been developed within the

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4 See Rivers and Harbors Act of 1945, 33 U.S.C. § 603a (1994); Flood Control Act of
C.F.R. § 222.7(a)-(d) (1994); 33 C.F.R. § 222.7(f)(9) (1994).
United States to deal with the problem. The regime used by a particular state has a great deal to do with the scarcity of water in that particular region. Furthermore, what is “owned” within these regimes is generally not the water itself, but the right to put that water to use. The East Coast, since colonial times, has been governed primarily under riparianism. The western states, on the other hand, employ some form of the prior appropriation system of water usage. Additionally, in recent years several states have moved away from pure riparianism, and have made use of some form of hybrid system.

A. Riparian Rights

During the colonial period, and particularly during the early portions of the Industrial Revolution, the colonies (and later the eastern states) constructed water rights regimes based upon the traditional notions of European water rights. Blessed with an abundance of water resources, the

5 The three types of water rights regimes include the riparian doctrine, appropriation doctrine, and hybrid systems.


9 States using some form of an appropriation system include: Alaska, Arizona, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, Wyoming. See id.

10 States that use a combination system or other type of system include: California, Florida, Hawaii, Iowa, Kentucky, Minnesota, Mississippi, Washington, and Wisconsin. See id.

eastern seaboard did not have to develop a strict method of water allocation. The result was the riparian system of water rights. Simply stated, riparian rights are those that an owner of land has in the water flowing through a watercourse adjacent to the owner's land.

As development of the East Coast increased during the Industrial Revolution and as industrial powers sought to use rivers and streams to power their mills, new pressures on water resources developed. Against this backdrop two sub-doctrines of riparian rights developed. First is the "natural flow doctrine," which is based on the idea that the owner of property adjacent to a watercourse is entitled to an undiminished portion of the water. The term "undiminished" refers to both quantity and quality of the water.

The second, and more important, sub-set of riparianism is the "reasonable use" doctrine. Under this regime, riparian owners can make any reasonable use of the water adjacent to their land, so long as it does not

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12 See id.
13 Riparian rights only attach to surface watercourses. Ground water (including subterranean streams) is not included in the riparian rights regime. See id. at 204-05.
14 A water course is defined as a "running stream of water; a natural stream fed from permanent or natural sources, including rivers, creeks, runs, and rivulets." BLACK'S LAW DICTIONARY 1592 (6th ed. 1990).
15 See Somach, supra note 11, at 205.
16 See James B. MacDonald, Riparian Doctrine, in WATER RIGHTS OF THE FIFTY STATES AND TERRITORIES, supra note 6, at 19, 20 (discussing the 1827 case of Tyler v. Wilkinson, 24 F. Cas. 472 (C.C.D.R.I. 1827) (No. 14,312)).
18 See id.
19 See id.
20 See id. § 125.
affect adversely the rights of other proprietors along the watercourse.\textsuperscript{21} \textit{Tyler v. Wilkinson}\textsuperscript{22} laid the foundation for the doctrine in 1827:

When I speak of this common right, I do not mean to be understood, as holding the doctrine, that there can be no diminution whatsoever . . . by a riparian proprietor, in the use of water as it flows for that would be to deny any valuable use of it . . . . The true test of the principle and extent of the use is, whether it is to the injury of the other proprietors or not.\textsuperscript{23}

In effect, the "reasonable use" doctrine serves as one of the earliest applications of law and economics theory. In \textit{Wilkinson}, the court's concern about protecting valuable uses illustrated an early interest in ensuring that even a seemingly abundant resource be allocated to the most efficient uses. Efficient uses were protected so long as those uses did not impinge on the abilities of downstream users to make efficient use of the resource.

Apart from generalized recognition of the need for economic resource allocation inherent in the "reasonable use" doctrine, riparian regimes have one other advantage. Riparian systems require very little control from centralized government, as they are, by and large, self-governing.\textsuperscript{24} Unfortunately, this advantage can serve as a disadvantage as well. The fact that riparian rights are so generalized creates several problems, one of which is uncertainty over rights.\textsuperscript{25} This uncertainty, in turn, leads to problems in enforcement of such rights.\textsuperscript{26} Such ambiguity forces parties in a dispute to turn to the most inefficient of all dispute resolution mechanisms—litigation.

\begin{itemize}
  \item \textsuperscript{21} See \textit{id}.
  \item \textsuperscript{22} 24 F. Cas. 472 (C.C.D.R.I. 1827) (No. 14,312).
  \item \textsuperscript{23} \textit{Id.} at 474.
  \item \textsuperscript{24} See MacDonald, \textit{supra} note 16, at 21 (stating that under riparianism there is no need for a government agency to develop and enforce regulations).
  \item \textsuperscript{25} See \textit{id}.
  \item \textsuperscript{26} See \textit{id}. Further exacerbating this situation is an imprecise definition of what exactly constitutes a "reasonable use;" \textit{see also} \textit{William Goldfarb, Water Law} 23 (2d ed. 1989).
\end{itemize}
Finally, and most importantly, pure riparianism is no longer in tune with the reality of water resources. Riparianism inherently was based on the notion that supply is generally large enough to accommodate, at least, all demands for reasonable uses.\(^2\) Present reality simply does not permit such an inference.\(^2\) Instead, increasing consumptive uses are pushing demand closer to supply levels, if not beyond in some cases.\(^2\) Riparian states are addressing slowly this problem by utilizing hybrid systems.

B. The Western Model: Prior Appropriation

The scarcity of water, coupled with the demands of extensive mining concerns, forced the western portions of the United States to move away from the riparian system.\(^3\) What developed in its place was the prior appropriation system, a regime based upon the economically beneficial use of water.\(^3\) The three general requirements of the doctrine are an intent to divert the water to a beneficial use,\(^3\) an actual diversion, and the application of the water for the use intended.\(^3\) What exactly is considered to be an “economically beneficial use” is difficult to determine, as it varies from state to state.\(^4\)

\(^2\) See GOLDFARB, supra note 26, at 24 (stating that riparianism presumes a surplus of water).

\(^2\) See id. at 24-25.

\(^2\) Atlanta, for example, planned to siphon off 529 million gallons of water per day from the “Hooch” by 2010, a 50% increase over 1990 levels. See River Rivalry, supra note 3, at 26. But see A. Dan Tarlock, Introduction to Symposium on Eastern Water Rights, 24 WM. & MARY L. REV. 535, 535-45 (1983) (asserting that riparianism still may be a workable model for the future).

\(^3\) See GOLDFARB, supra note 26, at 32.

\(^3\) See id. at 33.

\(^3\) Traditionally, this meant domestic and economic uses, but has been extended to include recreation, scenic beauty, and ecological concerns. See id. at 35-36.

\(^3\) See id. at 35; see also GETCHES, supra note 7, at 79.

\(^4\) Generally, states employ a hierarchy of uses. Domestic, agricultural (irrigation, stockwatering) and industrial uses (power generation, mining, milling) are accorded top preference, followed by fish, wildlife and recreation uses. See GOLDFARB, supra note 26, at 37.
Even if an owner is granted the right to take water away from a stream, the state still can apply restrictions on the types of usage. It is not uncommon for western states to restrict transportation of water, return flow rates, and the like, in the interest of protecting downstream water users.\(^{35}\) Moreover, state water administrations may require those seeking access to water to purchase licenses or permits for use.\(^ {36}\) In a manner of speaking, then, western states actually attempt to put a price on water usage.\(^ {37}\) By doing so, those who use the water can develop cost estimates that reflect the actual cost to society of doing business. In a law and economics sense, this is good law, though it is not without flaws.

One of the backbones of the prior appropriation doctrine is the idea that earlier appropriators have precedence over those who recently have acquired water rights.\(^ {38}\) In short, prior appropriation doctrine is based on the notion of "first in time, first in right."\(^ {39}\) Though the rights of prior appropriators can be forfeited through abandonment or adverse possession,\(^ {40}\) the system could favor older interests over the most efficient uses.\(^ {41}\) The system also provides the possibility for interested parties to purchase rights from owners so that water resources can be traded like fuels and other natural resources.\(^ {42}\) Thus, water is allocated to the most economically beneficial use.

\(^{35}\) See Somach, supra note 11, at 210-12.

\(^{36}\) See id.

\(^{37}\) Although this price is different from the usual prices that consumers pay to the water company for water.

\(^{38}\) See David Elliott Prange, Note, Regional Water Scarcity and the Galloway Proposal, 17 ENVTL. L. 81, 85 (1986) (calling this doctrine the "principal tenet of Western water law").

\(^{39}\) The Supreme Court coined this phrase in Arizona v. California, 373 U.S. 546, 555 (1963).

\(^{40}\) See William R. Fischer & Ward H. Fischer, Appropriation Doctrine, in WATER RIGHTS OF THE FIFTY STATES AND TERRITORIES, supra note 6, at 23, 28.

\(^{41}\) This is true particularly in times of shortage. See Kathleen Marion Carr & James D. Crammond, Introduction, in WATER LAW TRENDS, POLICIES AND PRACTICE xix, xx (Kathleen M. Carr & James D. Crammond eds., 1995).

\(^{42}\) See id.
This is what law and economics theorists intend when they assert that laws should direct society to the most efficient use of its resources.\textsuperscript{43}

C. The New Eastern Philosophy: Hybrid Systems

Due to the failure of the riparian system to adequately deal with increasing claims on decreasingly available stream flows, many eastern states have moved towards hybrid systems.\textsuperscript{44} While recognizing the riparian rights of prior landowners, these systems institute permit schemes for new drains on watercourses.\textsuperscript{45} In addition, these hybrid systems focus less on priority of rights than do western prior appropriation systems.\textsuperscript{46} Permits are granted and administered by one central agency, with the exception of Florida, which employs a regional system.\textsuperscript{47} The major drawback is that, though these systems do provide for application fees for permits, most states do not have a means to collect royalty payments for continued use.\textsuperscript{48} However, hybrid systems are a step in the right direction and are the trend in the East, rather than an exception to the rule.\textsuperscript{49}

\textsuperscript{44} See supra note 10 and accompanying text.
\textsuperscript{45} See Goldfarb, supra note 26, at 26.
\textsuperscript{46} See id.
\textsuperscript{47} See id.
\textsuperscript{48} See id. at 27.
\textsuperscript{49} See George A. Gould, Water Rights Systems, in Water Rights of the Fifty States and Territories, supra note 6, at 6, 9 (citing the trend towards hybrid systems in the East); MacDonald, supra note 16, at 22.
III. ECONOMIC ANALYSIS OF THE LAW

Law and economics theory, as applied in a non-anti-trust setting, is a fairly recent development in jurisprudence. The general idea underlying law and economics analysis is that "many of the doctrines and institutions of the legal system are best understood and explained as efforts to promote the efficient allocation of resources." The scope of law and economics theory has both a normative and a positive aspect. Normative analysis consists of looking at how policy decisions would lead to differing results in terms of lost opportunity cost. Though the economist does not make value judgments per se, the economist can look at how different solutions would result in trade-offs between efficiency and other social values. The economist also can look at past policies and determine their efficiency.

Positive economic analysis, on the other hand, looks at the present situation and discusses how things became the way they are. Together, these normative and positive elements direct economic analysis to the most efficient outcomes for society. Judge Posner refers to this as the efficiency theory of common law. Though he believes that statutory or constitutional laws tend to focus less on efficiency, Posner notes the possibility of efficient allocation of resources by statutory means. Interstate water compacts, for example, create just such an efficient solution to resource problems.

51 POSNER, supra note 43, at 22.
52 See id. at 23.
53 See id.
54 See id.
55 See id.
56 See id. ("Statutory or constitutional as distinct from common law fields are less likely to promote efficiency, yet even they . . . are permeated by economic concerns and illuminated by economic analysis.")
It is now possible to take a positive law and economics analysis of how different water rights regimes have developed in the various regions of the U.S. The starting point for such an analysis is what is commonly referred to as "the tragedy of the commons."\(^5\) This doctrine states that public goods are likely to be utilized inefficiently by society.\(^5\) A fitting example is a lake full of fish. Fishermen with no economic stake in the lake itself are unlikely to care about maximizing long-term harvests. As a result, the fishermen are likely to overfish the lake, squandering its value.

Consider, however, a fisherman who seeks to assert ownership over the lake. Harold Demsetz proposed the theory that property rights will be developed if they will add to economic efficiency.\(^5\) Demsetz applied this theory to the development of property rights in French Canada as a result of the fur trade.\(^6\) The right to property included the right to harvest the pelts of animals on that land.\(^6\) Demsetz also argued that property interests made it prudent for landowners to protect their resources, both from other hunters and from their own over-hunting.\(^6\)

Returning to the lake example, an economically rational fisherman decides that the best way to ensure a high income level is to gain control of the lake. The fisherman buys the lake from the state and secures it from other fishermen. Two things immediately result. First, overfishing is stopped

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\(^5\) See Garrett Hardin, *The Tragedy of the Commons*, 162 *Sci.* 1243 (1968) (postulating that the population dilemma does not have a technical solution, but requires a moral solution).

\(^6\) See id. at 1244.

\(^5\) See Harold Demsetz, *Toward a Theory of Property Rights*, 57 *Am. Econ. Rev.*, Papers and Proc. 348, 350 (1967) (Demsetz's thesis is that "property rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization").


\(^6\) See id.
because outsiders are excluded and the prudent fisherman seeks to maximize long-term income by stock management. Second, the price of the fish taken from the lake increases. At first, this would seem to be a negative externality on society; however, that is not the case. The higher price now more fully reflects the true cost to society of using fish from that lake. The price signals the relative scarcity of the resource and its value to society. Without such protection, the price may remain low, at least until the fish are depleted. At that point, the price of fish caught (surely not of the quality previously sold) will skyrocket, and ultimately no fish will remain for harvesting. Thus, in the absence of property rights, the tragedy of the commons will have generated a long-term, dead weight loss on society.

The prior appropriation doctrine of the Western United States is a fine example of Demsetz’s principle. The scarcity of water led those seeking water rights to construct a regime to protect their interests. By doing so, water-rights owners maximized their economic utility without fear of others impinging on those rights. The system creates certainty, which, in turn, fosters greater development. On the other hand, riparianism arguably illustrates a weak form of the tragedy of the commons. Though the reasonable use doctrine does put some emphasis on economically efficient uses, the uncertainty of rights under the riparian regime has led to over-utilization of water resources by upstream users, often adversely affecting more efficient downstream uses. It is precisely for this reason that the trend away from riparianism is such a positive step towards a more beneficial system for society on the whole.

Two models that deal with the question of what is, in fact, beneficial to society are the Pareto and Kaldor-Hicks (“K-H”) models. Both the Pareto model and the K-H model do much to explain why certain developments in law lead to net gains for society. Each model, however, works from
somewhat different premises.\textsuperscript{68} The notion of Pareto superiority is simple; an economic outcome is superior so long as at least one member of society is positively affected, with no detrimental effects falling on any other member of society.\textsuperscript{69} An example of such a policy would be a tax cut that encourages better investment by individual members of society rather than the government. With each member of society using the money to improve his or her economic standing, the net gain to society would be greater than the value of any loss of government services that may occur.

K-H superiority works somewhat differently. An outcome is K-H superior if one party could compensate the other and still maintain a net economic gain.\textsuperscript{70} In effect, one party buys off another and puts the resources to better use. An example may be a cement factory buying out neighboring residential developments because the value of goods created by the factory is far greater than the aggregated value of the residential properties.\textsuperscript{71} This does not mean, necessarily, that the cement company may pay only the bare minimum to get the other parties back to where they would have been had no action taken place (though that it a possible outcome). Any “pay off” up to the surplus value created by the more efficient use is K-H superior.

While all Pareto superior outcomes are K-H superior, the reverse is not always the case.\textsuperscript{72} Still, the benefit to society under a K-H superior system can be excellent in the long run, as resources flow to more efficient uses. The problem with K-H analysis is that it can fail to deal with intangible

\textsuperscript{68} In fact, the K-H Model is sometimes referred to as potential Pareto superiority. See POSNER, supra note 43, at 14-15.

\textsuperscript{69} See id. at 13-14.


\textsuperscript{72} See POSNER, supra note 43, at 13-14.
values. A home, for example, may have much more value to a family than the price of the property. As a result, those who promote K-H solutions constantly must be aware that other values may have to be weighed against efficiency.

Additionally, law and economics theorists face the problem posed by Scitovszky’s paradox. Scitovszky recognized the economic benefits of K-H models, but stated that they are inadequate to deal with original rights. Turning to the example of the lake, though the fisherman, once in control of the lake, can enter into K-H transactions, how does one compensate another if no tangible property right exists to begin with? Likewise, the absence of tangible property rights in the context of watercourses poses a tremendous hurdle. It is difficult to determine who exactly “owns” the entitlement to water. The systems in place could not be scrapped easily without removing hundreds of years of development based upon previously erected original rights. In fact, there is now systemic inertia in place that makes a full-scale revision of water rights difficult. This is one powerful reason why many states moving away from riparian systems have grandfathered in previous riparian rights. By working within these original rights, however, it is possible to erect a system that enables water resources to flow to those who will put the resources to the best possible use.

The Coase theorem serves as a powerful benchmark against which to measure the efficiency of any water rights policy. The theorem itself is part of a greater framework laid out by Ronald Coase in his article The

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73 See id.
74 See Tibor Scitovszky, A Note on Welfare Propositions in Economics, 9 REV. ECON. STUD. 75, 77 (1941).
75 See id.
76 See infra note 77 and accompanying text.
77 Even prior appropriation states locked into interstate compacts have sought to protect previously held rights. See, e.g., Colorado River Compact art. VIII, COLO. REV. STAT. ANN. § 37-61-101 (West 1990).
78 See Coase, supra note 50, at 1.
The article suggests a five "pillar" strategy for tackling economic analysis in the legal context. The first pillar is the Coase theorem itself, which states that in the absence of transaction costs, parties will seek out the allocatively efficient result. The second pillar suggests that harm is often joint; each party in a dispute creates a negative externality upon the other. For example, a hotel owner could decide to build a fourteen-story addition to a hotel which borders a residential property. The addition will affect negatively the residential owner by blocking out sunlight. On the other hand, a challenge to the hotel owner's right to expand operations will limit the hotel's profitability. Whoever wins in a dispute like this inflicts a negative externality upon the other. Furthermore, the level of harm created can be ascertained only after the court has decided who owns the entitlement to the affected property.

The third pillar could be termed "Positive Coase." This pillar reiterates the idea introduced by the second pillar—that an externality is harmful only if an entitlement to the affected property is owned by the aggrieved party. The third pillar points out that the best way that law determines an externality is vis-à-vis property rights. Thus the fisherman, introduced earlier, only can claim an injury to his fish if it is determined that

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79 Id.
80 The five pillars of Coase’s theory can be distilled from the various subsections of his article. See id.
81 See id. at 3-8.
82 See id. at 2.
83 See Fountainebleau Hotel Corp. v. Forty-Five Twenty-Five, Inc., 114 So. 2d 357 (Fla. Dist. Ct. App. 1959). For other examples of joint harm see Sturges v. Bridgman, 11 Ch. D. 852 (1879) (involving the alleged nuisance to practice of doctor caused by the use of two mortars and pestles by a confectioner located next door); Travis v. Moore 377 So. 2d 609 (Miss. 1979) (efforts by residential property owners to enjoin a funeral parlor from locating in the area); Prah v. Maretti, 108 Wis. 223, 321 N.W.2d 182 (1982) (dealing with claim of owner of solar-heated home against proposed construction by neighbor that would have interfered with access to the sun).
84 See Coase, supra note 50, at 19-28.
85 See supra text accompanying notes 82-84.
86 See Coase, supra note 50, at 3-8.
the fisherman has an entitlement to the lake. When examined from this standpoint, an externality in the context of the tragedy of the commons is a misnomer to some extent. Because no one specifically owns an entitlement to public property, it is impossible to have an externality in the Coasian sense. However, that does not suggest that public property is not owned by society as a whole. In fact, that is the only way to look at externalities in the public property sense. Everyone is affected by the externality, because everyone has an entitlement.

Coase also recognized the importance of transaction costs in real disputes. The fourth pillar suggests that transaction costs do matter in determining an efficient solution. One of the most important costs facing economic analysis is strategic in nature. Strategic costs take two major forms: holdouts and free-riders. The concept of the holdout and the free-rider are not altogether different; they are opposite sides of the same coin. Holdouts invariably drive up transaction costs by refusing to negotiate until a windfall can be achieved, whereas free-riders refuse to bear the costs of positive externalities. In effect, a holdout is a free-rider on the coattails of the transaction. The law must take into account these realities, because elimination of the problem is improbable.

The final pillar posits that courts should try to achieve K-H superior results. Because Pareto optimization is difficult to achieve, it is generally infeasible for the courts to apply the Pareto model. However, once a court has determined who owns an entitlement, it is much easier for a court to analyze the situation and determine the proper outcome.

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87 See id. at 15-18 (major costs include communication and monitoring expenses, once a solution has been determined).
88 See id.
89 See id.
90 See id. at 27-28. Though not mentioning K-H efficiency, Coase does state that “[w]hat has to be decided is whether the gain from preventing the harm is greater than the loss which would be suffered elsewhere as a result of stopping the action which produces the harm.” Id.
91 For example, a court could determine the nature of the rights protected and whether compensation should be awarded.
The major problem behind a law and economics approach is that in some cases economics cannot answer the question of how a resource will be distributed. There are always cases where no amount of efficiency analysis can generate an outcome favorable to the parties, particularly if society sees other concerns as superior to economic efficiency. One additional problem involves information. To achieve a truly rational economic decision, a party must have access to all available information. A judge or administrative body must be knowledgeable about the issues and values related to entitlements. Making sure that this information is available should be the paramount concern in any attempt to institute a system following law and economics principles.

IV. THE SOUTHEASTERN WATER PACT

One of the major problems facing the states involved in the dispute over the Chattahoochee River is that the states employ two different regimes. Florida utilizes a system governed by statute, while both Georgia and Alabama are governed by a riparian regime.

The Chattahoochee, as mentioned earlier, is the major source of drinking water for the metro-Atlanta area. The United States Army Corps of Engineers was directed to create Lake Sidney Lanier for precisely that

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92 An example may be found in the rise of the “Public Trust Doctrine” growing out of National Audubon Soc’y v. Superior Court, 658 P.2d 709 (Cal. 1983) (The Mono Lake Case). The Public Trust Doctrine is based on the notion that “environmental demands now could be made on existing uses of water rights, and that those uses might have to be adjusted in order to maintain or restore natural ecosystem values.” Joseph L. Sax, Bringing an Ecological Perspective to Natural Resources Law: Fulfilling the Promise of the Public Trust, in NATURAL RESOURCES POLICY AND LAW: TRENDS AND DIRECTIONS 148, 149 (Lawrence J. MacDonnell & Sarah F. Bates eds., 1993). As Sax explains, Public Trust Doctrine has as its underlying precept “public entitlement to the benefit of natural systems.” Id. at 150. Economically, this may not be the best use for land, yet society has deemed aesthetic, spiritual, and environmental concerns paramount.

93 See Flood, supra note 8, at 43.

94 See id. at 37, 43.

95 See supra note 2 and accompanying text.
A 1990 plan for Atlanta’s growth included provisions to create reservoirs that would have held back an additional 529 million gallons of water a day from the river. The reason for such a large increase in the amount retained in Lake Lanier was Atlanta’s robust growth projections for upcoming years.

The reaction from Alabama was fairly swift. In 1991 Alabama, seeking to enjoin the Army Corps of Engineers from enacting the plan, filed suit in Federal Court. This suit was later joined by Florida in an effort to secure water flows in the Apalachiaola River. The parties set aside the suit while the Army Corps of Engineers conducted a comprehensive study of water usage in the river basin. Uncertainty over the study results, coupled with Georgia’s desire for an expedited resolution to the controversy, led the states and the Corps of Engineers to form a compromise agreement in 1992. Alabama was especially eager to enter into such an agreement because its claim to the Chattahoochee River is questionable.

The agreement stipulates that each state support a three million dollar study of water resources in the Chattahoochee River Basin. Second,
Alabama agreed to halt its legal action, and in return, water use levels were frozen temporarily, with increases only taking place after notification to all parties. Finally, the states agreed to negotiate and share information with each other. This agreement has been renewed twice since its enactment, with the ultimate goal of establishing a regional solution to the conflict over the "Hooch."

There are three typical solutions for water rights disputes such as the one now existing in the Southeast: congressional apportionment, judicial apportionment, and interstate compacts. While water rights occasionally are apportioned by Congress or the Supreme Court, the use of interstate compacts is, undoubtedly, the most common and desirable method. The reason for this conclusion is that congressional and judicial apportionment schemes often are based on incomplete information, and, in the case of legislative apportionment, often reflect non-economic concerns that dictate decisions.

A. Congressional Apportionment

The Supreme Court originally held in Kansas v. Colorado that congressional apportionment of water rights was not valid under the Constitution. This ruling was overturned a half century later, when the Court held in Arizona v. California that Congress's implied powers, especially under the Commerce Clause, allowed for legislative apportionment of water rights in the Colorado River. However, Congress has seemed reluctant to apply this power to all water rights disputes. In fact, the only

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105 See id. at 2-3, 6.
106 See id. at 2.
108 See Memorandum of Agreement, supra note 104, at 1.
109 206 U.S. 46 (1907).
110 See id. at 97.
112 See id. at 564-67.
instance since Arizona v. California in which Congress has decided to apportion water rights was the conflict over the Truckee and Carson Rivers and Lake Tahoe.\footnote{See Jerome C. Muys, Approaches and Considerations for Allocation of Interstate Waters, in Water Law Trends, Policies and Practice, supra note 41, at 311, 312.}

The success of the apportionment scheme in the "Truckee Dispute," at least in the short run, has prompted some commentators to promote more pervasive use of congressional apportionment of water rights.\footnote{See E. Leif Reid, Note, Ripples from the Truckee: The Case for Congressional Apportionment of Disputed Interstate Water Rights, 14 Stan. Envtl. L.J. 145, 147-48 (1995).} Though it is attractive to have Congress usurp control of all water disputes, this approach has two important flaws that make congressional apportionment, from a law and economics perspective, an inefficient choice. The first major shortcoming is that Congress is often not very well informed about the problems facing a particular region, and even if that information is available, a question of genuine interest also is raised.\footnote{See Muys, supra note 113, at 311-12.} Congress, through the use of hearings and other investigative mechanisms, can inform itself to a certain point regarding a particular water dispute.\footnote{See id.} On the other hand, it is highly unlikely that a typical member of Congress has the type of specialized knowledge necessary to deal with certain aspects of water disputes.\footnote{See id.} Furthermore, it is unlikely that a senator from Maryland will be particularly interested in a dispute over the Canada River. What is likely to result in such a setting is a solution that is made with inadequate information—a clear violation of the five pillars of Coase.\footnote{See supra notes 78-91 and accompanying text.} Thus, the allocation mechanism that Congress would enact is likely to be based on water values that do not have a strong basis in reality.

A second, and more cynical reason for opposing congressional apportionment is based on political reality. Congress is not an economic body, but is influenced by powerful interests.\footnote{Muys, supra note 113, at 312.} Thus, any decision made by...
Congress is not necessarily based on notions of efficiency. Instead, individual members of Congress could give in to "special interests" and therefore vote against economically advantageous decisions. For example, if a Southern Cotton Growers lobby could exert enough influence on members of Congress from the southeast region, Georgia could wind up with windfalls, while Alabama and Florida would be forced to deal with fewer water resources. It is because of special interest influence, more than the informational restraints, that congressional apportionment should be avoided at all costs.

B. Judicial Apportionment

A second means to allot water rights between states is the doctrine of judicial apportionment. The Supreme Court has constitutional authority over "[c]ontroversies between two or more States," and additional legislative authority from Congress provides that the Court "shall have original and exclusive jurisdiction over all controversies between two or more States."

Using this authority, the Court developed its own system of allocation of water rights in disputes between states. The doctrine of "Equitable Apportionment" was first introduced in Kansas v. Colorado. The term states exactly the goal of the Court in applying the standard—equitably dividing the pie for all parties. To do so, the Court laid out a number of factors to consider, including: priority of appropriation, physical and

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120 See id.
121 U.S. CONST. art. III, § 2, cl. 1.
124 206 U.S. 46, 117 (1907); see also Nebraska v. Wyoming, 325 U.S. 589 (1945) (applying the equitable apportionment principle).
climatic conditions, consumptive uses of water in the different sections of
the river, character and rate of return flows to the river, the extent of
established uses, availability of storage water, practical effect of wasteful
uses on downstream users, and damages to upstream users as compared to benefits
downstream. The Court asserted that this list was not exhaustive, thereby
laying the groundwork for a nearly infinite number of considerations.

Although the Court in *Nebraska v. Wyoming* asked the right
questions, it freely admitted that it was not the best venue in which to decide
the issue. The Court restated this idea in *Texas v. New Mexico*. The
central criticism of judicial allocation of water resources under the Equitable
Apportionment doctrine is that the court lacks the expertise that is necessary
to make allocation decisions of such monumental importance. In fact,
unless the Justices of the Supreme Court were educated fully as to the issues
involved in water apportionment decisions, it would be impossible for them
to establish an economically optimal decision. To educate the Court to a
point where it could make a somewhat informed decision requires far too
many resources to be truly efficient. For example, *Arizona v. California*
cost several million dollars to litigate, with thousands of pages of data, most

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125 *Nebraska v. Wyoming*, 325 U.S. at 618.
126 *See id.*
127 325 U.S. 589 (1945).
128 *See id.* at 616. In fact, the court, in cases of water rights disputes, employs a Special
Master to hear the evidence, decide on motions, determine legal questions, and recommend
the solution. Though the Court has the final decision, it pays greater deference to the Special
Master’s determination. *See William D. Olcott, Comment, Equitable Apportionment: A
130 *See Erhardt, supra* note 1, at 213-14; *see also* GOLDFARB, *supra* note 26, at 53 (claiming
the court lacks the technical resources to handle complicated questions involved in
apportioning water rights).
of which would appear to be nothing more than scientific nonsense to one without a technical background.132

Second, even if the Supreme Court could develop a solution for a particular water rights dispute, the system created would amount to nothing more than a series of quick fixes.133 This is true because the only mechanism available to states with a grievance under an equitable apportionment system is more litigation. The Court does not have the resources to monitor constantly the parties to a dispute, creating an incentive for states to “cheat” because further litigation is ungainly and incremental increases in consumption by upstream users may go unnoticed. Even if noticed, the chance that another state would mount a full-scale judicial attack on that action is slim. After all, it took a fairly drastic plan by Georgia and the Army Corps of Engineers to push Alabama to action in 1992.134

Together, the lack of Court expertise, high cost of litigation, adjudicatory elements, and incentives to cheat, all create a system fraught with extremely high transaction costs that will, even in the short run, amount to inefficient allocation of water rights. It is precisely for this reason that the Court is so reluctant to play the role of referee in a water rights dispute.135 It is also for this reason that the Court openly favors the use of interstate compacts.136

132 See Erhardt, supra note 1, at 214 n.74 (“In addition, judicial apportionment is expensive . . . the Special Master in Arizona v. California received, as compensation (not including expenses), $185,000. Prof. Corker, who represented California in the litigation, estimates total costs at $50 million.”) (quoting CHARLES MEYERS & A. DAN TARLOCK, WATER RESOURCE MANAGEMENT 402 (2d ed. 1980)); see also GOLDFARB, supra note 26, at 53 (discussing the high cost of litigation).

133 See Erhardt, supra note 1, at 214 n.75 (discussing the lack of finality inherent with equitable apportionment).

134 See supra text accompanying notes 99-108

135 See supra notes 127-29 and accompanying text.

136 See supra notes 127-29 and accompanying text.
C. Interstate Water Compacts

The final means to divide water rights between states is the use of an interstate compact. The key issue underlying these compacts is prior appropriation for future use. While negotiating compacts, states attempt to anticipate future uses of water and apportion rights accordingly. Therefore, the most important aspect of any compact is the enforcement mechanism, which could take one of two forms. The first model is a prescriptive mechanism that provides guidelines for state agencies to implement. The purpose of such a scheme is "to delimit the scope of the arrangements, to control the use of the resource, to control the activities of the management agencies themselves, and to protect the arrangement." In effect, the agreement becomes the enforcement mechanism for apportioning water rights between the states.

A second approach is the use of an interstate commission or agency. Such commissions consist of representatives of each state involved and

137 Buck, Gleason, and Jofuku divide interstate compacts into three groups: binding without congressional consent, binding with congressional consent, and non-binding. The authors point out that though the non-binding compacts would appear unlikely to work well, they are in fact effective. See Susan J. Buck et al., "The Institutional Imperative: Resolving Transboundary Water Conflict in Arid Agricultural Regions of the United States and the Commonwealth of Independent States," 33 Nat. Resources J. 595, 619 (1993).

138 See Bueys, supra note 113, at 314 n.17 (citing the Colorado River Compact); see also Saunders, Reflections of Sixty Years of Water Law Practice, 1 Colo. L. Rev., Resource Law Notes 7, 9-10 (1989); Richard A. Sims et al., Interstate Compacts and Equitable Apportionment, 34 Rocky Mt. Min. L. Inst. § 23.01, § 23.03 (1988).


140 Buck et al., supra note 137, at 619 (quoting V. Tinsely & L. Nielsen, Interstate Fisheries Arrangements: Application of a Pragmatic Classification Scheme for Interstate Arrangements, 6 Va. J. Nat. Resources L. 265, 272 (1987)).

141 See id. (the Upper Colorado River Compact, Rio Grande Compact and Delaware River Basin Compact are examples of this form of administration).
usually includes the federal government.\textsuperscript{142} It is within these commissions that the true worth of a water compact is revealed. Commissions, as permanently standing bodies, can accumulate information and can remain constantly in negotiation, thus adapting to changing circumstances. Additionally, the commission system lowers transaction costs, because all information collection and negotiation is centralized. For these reasons, the use of interstate water compacts results in both short-term and long-term efficiency.

One constraint on these negotiated solutions is that the compacts often are subject to congressional approval\textsuperscript{143} under Article I of the Constitution.\textsuperscript{144} There is some dispute over how the Compact Clause applies in practice. In particular, the issue is whether the nature of the compact dictates whether it must be approved by Congress or not.\textsuperscript{145} One view, building upon the language of \textit{Virginia v. Tennessee},\textsuperscript{146} asserts that a compact only needs to be approved when it threatens the political balance of power.\textsuperscript{147} The general consensus, however, which finds support in \textit{Dyer v. Sims},\textsuperscript{148} is that all compacts require congressional consent. In fact, in the water rights context this seems particularly true. Because nearly every river is to some degree tied to interstate trade, Congress’s power under the Commerce Clause allows the national legislature to have a say in any state action that affects a


\textsuperscript{143} This is true notwithstanding the classification made by authors Buck et al. \textit{See supra} note 137.

\textsuperscript{144} \textit{See} U.S. CONST. art I, § 10, cl. 3 ("No State shall, without the Consent of Congress . . . enter into any Agreement or Compact with another State, or with a foreign Power . . . .").

\textsuperscript{145} \textit{See} Muys, \textit{supra} note 113, at 314, 318 n.16.

\textsuperscript{146} 148 U.S. 503 (1893) (boundary dispute case between Virginia and Tennessee).

\textsuperscript{147} \textit{See} 148 U.S. at 518-19.

\textsuperscript{148} 341 U.S. 22 (1951) (holding compact to control water pollution is not invalid because it delegates police power to the federal government).
In the dispute over the Chattahoochee, congressional involvement is especially important, due to the strong presence of the U.S. Army Corps of Engineers. Thus, any final action regarding the "Hooch" certainly requires Congressional approval. The need for such approval is not a particularly large hurdle to clear for states wishing to utilize water compacts. Since Congress first approved a water compact dealing with the Colorado River in 1922, it has approved at least thirty other compacts dealing with various interstate water rights issues. Furthermore, Congress rarely refuses to ratify a compact, once negotiated.

As mentioned before, one of the principal advantages of water compacts over other methods of apportionment is that water compacts centralize information and thus lower transaction costs. Tied to this advantage is the idea of certainty. Because compacts create a baseline for apportionment of rights in the long run, as well as establishing an authorized body to deal with, compacts generate a level of certainty for those utilizing water resources. Certainty, the basis of contract theory, assists in planning for all economic actors, be they public or private. The contract analogy goes further than that recognized by the Supreme Court in *Texas v. New Mexico*. The Court pointed out that because compacts had such a

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150 See *supra* text accompanying notes 95-108.


152 However, Congress did not approve the 1970 Compact between California and Nevada to solve the Tahoe Truckee dispute. See Reid, *supra* note 114, at 160 n. 95.

153 See *supra* text accompanying notes 137-42.

154 See Charles Seabrook, *State Releases Details of Plans on Waterways Formulas to be Worked out with Fla., Ala.*, *ATL. J. & CONST.*, Dec. 12, 1996, at A21, available in 1996 WL 8245987 ("Under the compacts, Georgia will 'give up some sovereignty' over the rivers that originate within its boundaries, but it 'would gain certainty' in how much water it can depend on for growth . . . ."").

contractual similarity, contract remedies such as rescission or reformation were possible.\textsuperscript{156} Thus, compacts have a judicial safety valve built into them should the commission system fail to adequately deal with unforeseen circumstances. On the whole, the commission system allows for equitable and efficient allocation of resources, without many of the efficiency concerns haunting the judicial and congressional apportionment schemes.

This is not to say, however, that compacts are flawless. One of the biggest problems facing states using such compacts is that water supply estimates often are inaccurate.\textsuperscript{157} This is troublesome because these estimates form the basis for long-term “fine-tuning” of allocations. If estimates are sufficiently inaccurate, the basis for the system is undermined. Consequently, commissions must be especially careful to keep such problems in mind when dealing with any estimates.

A second flaw in the system is the specter of federal interference with the compact mechanism.\textsuperscript{158} One aspect of this problem is the need for congressional approval of water compacts.\textsuperscript{159} By requiring such approval, the system limits the contractual rights of the states, and thus the Supreme Court’s contract analogy falls short. Also, state water compacts, in several cases, do not adequately deal with federal water uses. A compact that does not account for federal drains on water resources is doomed to fail. All users must be accounted for and dealt with for a compact to be successful. An omission of the federal government’s interests in water rights means that any decisions made will fail under Coase’s five pillars.\textsuperscript{160}

\textsuperscript{156} See id. (noting the ability of the Court to fashion remedies for failure to perform, along with mandating future performance).

\textsuperscript{157} See Muys, supra note 113, at 314 n.17 (suggesting that 13.5 million acre-feet per annum is the actual use of the upper basin, instead of the 17.5 million allocated by the compact).

\textsuperscript{158} In the case of the “Hooch,” the federal government is represented by the large presence of the U.S. Army Corps of Engineers and its role in development of the Chattahoochee Lake Lanier. See Erhardt, supra note 1, at 217-24.

\textsuperscript{159} See supra notes 143-52 and accompanying text.

\textsuperscript{160} See supra text accompanying notes 78-91.
Another problem with the compact paradigm is that commissions are not given free rein over water policy. The representatives on commissions still must answer to their state legislatures.\(^{161}\) Furthermore, if the federal government is not a signatory to the compact, there is always the possibility of bullying by the federal government. Additionally, compacts can create an incentive for parties to break the agreement. The situation in a water compact is somewhat analogous to that of the famous "prisoner's dilemma."\(^{162}\) Even after an effective mechanism is in place, each state has much to gain by ignoring the agreement.\(^{163}\)

One final problem, on the public side of the equation, is the role of special interests within each state. The fact that rights are apportioned to each state does not necessarily mean that water will, by definition, flow to the most efficient users within each states. Instead, those who have the greatest political power can exact privileges within the state that may put resources to inefficient uses.\(^{164}\)

On a private level, water compacts can create short-term uncertainty for users. Though compacts are forward looking, there may be sacrifices in short- and long-term consumption that must be made. These sacrifices will, to some measure, fall on large private users to the point that such compact-induced scaling back could rise to the level of a constitutional “taking.”\(^{165}\) A compact, to truly reflect economic reality, must have some means by which


\(^{163}\) This is true because the generally accepted solution to the “prisoner’s dilemma” is for each party to act selfishly. See id.

\(^{164}\) See supra notes 119-20 and accompanying text.

to compensate the losers. This is the requirement of K-H efficiency,\footnote{See supra notes 70-77 and accompanying text.} and one of Coase's pillars.\footnote{See supra notes 93-98 and accompanying text.}

V. The Regional Approach To Water Rights

The water supply situation in the Southwestern United States is similar to the dilemma facing Alabama, Florida, and Georgia.\footnote{See supra notes 90-91 and accompanying text.} Like the Chattahoochee River, the combination of the Colorado and Rio Grande Rivers account for a huge portion of the Southwest’s irrigation.\footnote{Combined, the rivers constitute 90% of the irrigation resources for the region. See Buck et al., supra note 137, at 610.} Also like the Chattahoochee/Apalachiola River Basin, the Colorado and Rio Grande pass through several states, each with conflicting claims to the waters.\footnote{The Colorado passes through Arizona, California, Colorado, New Mexico, Utah, Wyoming. The Rio Grande passes through Colorado and New Mexico, and then forms the Texas-Mexico border. See id.} These conflicting claims have led to the development of three main region-based regimes to deal with water apportionment.\footnote{See id. at 619.} These regimes are based on the Colorado River Compact,\footnote{Colorado River Compact, COLO. REV. STAT. ANN. § 37-61-101 (West 1990).} Upper Colorado River Compact,\footnote{Upper Colorado River Compact, COLO. REV. STAT. ANN. § 37-62-101 (West 1990).} and Delaware River Basin Compact.\footnote{Delaware River Basin Compact, DEL. CODE ANN. tit. 7, § 6501 (1974).} Additionally, the conflict over the Delaware River Basin has led to a substantially more advanced system of interstate water rights: the federal-interstate compact.\footnote{See Erhardt, supra note 1, at 224-27.}
A. The Colorado River Basin Regimes

1. The Colorado River Compact

The Colorado River Compact of 1922\textsuperscript{176} ("CRC") is based on the notion of "equitable division and apportionment of the use of the waters of the Colorado River system"\textsuperscript{177} and beneficial consumptive use.\textsuperscript{178} It provides 7,500,000 acre feet of water per year for economically beneficial use\textsuperscript{179} to the states of both the upper\textsuperscript{180} and lower basin.\textsuperscript{181} The CRC also preserves "present perfected rights" in the beneficial use of the Colorado River,\textsuperscript{182} thus building certainty for past users. The establishment of predictability for original uses is essential because only the certainty of basic entitlements allows the law to distribute those rights peripherally under a K-H setting.\textsuperscript{183}

What the CRC lacks, however, is a mechanism for an interstate committee. Instead, any disputes are handled on an ad hoc basis.\textsuperscript{184} Herein lies one of the more troubling aspects of this type of regime. The benefits of having set water allocations are disrupted by the fact that there is limited flexibility inherent in the system.\textsuperscript{185} The lack of a standing commission

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greatly increases transaction costs whenever a dispute arises. There are costs in naming commissioners, setting up negotiations, gathering information, and ultimately negotiating a new deal. All of these costs could be reduced dramatically by the institution of a permanent body to administer the river.

The CRC also suffers from the exclusion of the United States as a signatory. The Directors of the United States Reclamation Service and the United States Geological Survey are bound to cooperate, ex officio, but there is nothing else within the terms of the agreement that places any burden on the federal government to limit its potential uses.186 It is very difficult to effectively allocate resources with one major user left out of the equation. Hence, the Colorado River Compact falls short of the economic ideal.

2. Upper Colorado River Compact

The Upper Colorado River Compact187 ("UCRC") is a step in the right direction. Its purpose is to specifically allocate the 7,500,000 acre feet of water provided to the upper river basin in the CRC.188 Rather than set exact numbers,189 the states are granted percentages of the water flow190 in order to follow the concepts of equitable apportionment and beneficial use. This apportionment works in conjunction Article III of the CRC to maintain exact proportions, depending on water supplies in the Colorado, during times of surplus and shortfall.191

The UCRC represents a significant step beyond the CRC by including, within its provisions, the formation of the “Upper Colorado river commission."192 The Commission has the power to adopt rules and

186 See id. art. V.
188 See id. art I(a).
189 Arizona is limited to 50,000 acre-feet per year. See id. art. III(a)(1).
190 Under the Agreement, Colorado is entitled to 51.75%, New Mexico receives 11.25%, Utah receives 23%, and Wyoming has claim to 14% of the 7,500,000 minus Arizona’s 50,000 acre-feet. See id. art. III(a)(2).
191 See id. art. IV.
192 Id. art. VIII.
regulations, engage in studies of the river and its tributaries, study stream
flows and uses, and, most importantly, "determine the quantity of the
consumptive use of water, which use is apportioned by article III hereof."
Thus, the UCRC erects a mechanism for flexible application of the compact.
The advantages of such a system are significant. With long-standing
commissioners working together and information equally available to all
parties, any negotiations regarding future use require lower transaction costs.

The federal specter remains, however. Like the CRC, the United
States is not a signatory. Nevertheless, the UCRC does request the President
to appoint a commissioner. This measure is a good step, but ultimately, it
falls short. Mere congressional approval of the UCRC and the appointment
of a commissioner does not bind the federal government to any set level of
usage. In fact, the UCRC provides that nothing within the statute can affect
any "rights or powers of the United States of America, its agencies or
instrumentalities, in or to the waters of the upper Colorado river system, or
its capacity to acquire rights in and to the use of said water." Thus, the
very purpose of such an agreement, the efficient allocation of water rights, is
defeated because one of the major users of water is left out of the equation.
One must look elsewhere for the economically optimal solution.

B. The Rio Grande Compact

The Rio Grande Compact ("RGC") is slightly more troublesome to
decipher. Based on the notion of equitable apportionment, the compact
forces Colorado and New Mexico to allow certain levels of water to reach
downstream users. The RGC painstakingly lays out requirements for the

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193 Id. art. VI.
194 See id. art. VIII(a).
195 Id. art. XIX.
197 See Buck et al., supra note 137, at 622.
198 See id.
parties, but allows for a certain level of flexibility within parameters set out in the document.¹⁹⁹

Like both of the Colorado River regimes, the RGC does not include the federal government as a signatory. Further, any representative sent by the United States government only would serve as a non-voting chair of the commission created by the Compact.²⁰⁰ For the reasons discussed above,²⁰¹ this may not be an optimal solution.

C. The Delaware River Basin Compact

The Delaware River Basin Compact²⁰² ("DRBC") represents a significant step towards efficiency in the use of water compacts. The DRBC arose out of the realization that potentially 40,000,000 people will live within the basin by the year 2010.²⁰³ Though water resources are plentiful, the resource must be managed properly for any potential population increase.²⁰⁴ The DRBC represents one of the first attempts to create a truly integrated water allocation mechanism.²⁰⁵ The DRBC accomplishes this by including the federal government as a signatory to the pact, thus replacing the overlapping authority of forty-three state agencies, fourteen interstate

¹⁹⁹ See Rio Grande Compact arts. 1, IV-VIII.
²⁰⁰ See id. art. XII.
²⁰¹ See supra text accompanying notes 186, 195.
²⁰³ See id. § 1.
²⁰⁴ See id. § 1.3(d).
²⁰⁵ The text of the Compact points out that:

WHEREAS decisions of the United States Supreme Court relating to the waters of the basin have confirmed the interstate regional character of the water resources of the Delaware River Basin, and the United States Corps of Engineers has in a prior report on the Delaware River Basin (House Document 179, 73d Cong. 2nd Sess.) officially recognized the need for an interstate agency and the economies that can result from unified development and control of the water resources of the basin.

Id. § 1.
agencies, and nineteen federal agencies with one commission given broad powers for administration of the river basin.\footnote{See id.}

The ramifications of this choice of administration are significant. Under the DRBC, the federal government is no longer free to do as it wishes on the Delaware River.\footnote{Section 1 of the Delaware River Basin Compact states that the Interstate River Commission on the Delaware River Basin "concluded that regional development of the Delaware River Basin is feasible, advisable and urgently needed; and has recommended that an interstate compact with federal participation be consummated to this end." Id.} Instead, the federal government must comply with the water levels allocated to it by the compact, via the enforcing commission.\footnote{See id. arts. II, III.} The pact tracks the doctrine of equitable apportionment, most likely as an effort to avoid the rigidity of traditional compacts and to avoid interference from the Supreme Court.

The DRBC meets several of the criteria of Coasian analysis. Transaction costs are lowered because state and federal interests are weighed concurrently and because the information acquired from federal sources adds to the overall picture of water usage in a particular river basin. This type of complete information is essential for parties to determine the allocatively efficient level of water usage by each user of the watercourse.\footnote{See supra notes 68-91 and accompanying text.} The ability of the states to operate with the federal government on an equal basis within the committee mechanism, centralizes negotiations further lowering costs.

Additional efficiency measures in the compact include the ability of the commission to condemn property, including riparian rights, for use in projects sponsored by the commission.\footnote{Delaware River Basin Compact § 14.14.} Condemnation proceedings set up a typical K-H system by which those who lose their entitlements are compensated for the loss, allowing the entitlement to be used for more efficient purposes. Also, the DRBC includes a section providing for penal sanctions in the event "[a]ny person, association or corporation"\footnote{Id. § 14.17.} violates

\begin{footnotes}
\footnote{See id.}
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\footnote{See supra notes 68-91 and accompanying text.}
\footnote{Delaware River Basin Compact § 14.14.}
\footnote{Id. § 14.17.}
\end{footnotes}
the terms of the compact or the rules of the commission. These efficiency measures are a tremendous leap beyond the Colorado and Rio Grande Compacts. Furthermore, the inclusion of the federal government as an active participant in all decisions means that any determinations reached by the commission have the air of greater authority. The imprimatur of authority, in turn, may have the effect of limiting, at least to some extent, the incentive for parties to engage in opportunistic activity.

It is on this point, however, that an important shortcoming of the DRBC reveals itself. Congress insisted on a “safety valve” clause within the compact, which allows the federal government to effectively “seize” the resources of the river in times of need. This provision creates the possibility, albeit a remote one, that the federal government could circumvent completely the other terms of the compact. If such a use were so important to the nation, it is likely the committee and the respective states would agree to shift water usage accordingly. This would protect the integrity of the compact at a fairly low cost in terms of negotiation and collection of information. Yet, this important shortcoming is far outweighed by the large gains in efficiency that are produced by the DRBC. Because of the tremendous efficiency advantages, a federal-interstate compact represents the most economically intelligent idea for Alabama, Florida, and Georgia to pursue. The following section will look more closely to the efficiency concerns addressed and raised by such a compact.

212 See id.

213 “[F]ederal codification ‘limits the ability of a compacting state to withdraw from the compact on any terms other than those set forth in the compact itself.’” Reid, supra note 114, at 161 (quoting JOSEPH L. SAX ET AL., LEGAL CONTROL OF WATER RESOURCES 736 (2d ed. 1991)).

214 See Delaware River Basin Compact § 1.4.
VI. LAW AND ECONOMICS ANALYSIS OF FEDERAL-INTERSTATE WATER COMPACTS

The use of an federal-interstate water compact is not a painless undertaking by any means. There are a number of problems that must be considered before attempting to implement such a system. Foremost is the problem of negotiating such a compact. As the drawn out negotiations over the “Hooch” show, even the most urgently needed compact can take years to negotiate. Upstream users are often in a very strong position in such negotiations, as they are the first in time and right. Under a riparian regime, such leverage is not particularly important due to the system’s protection of downstream users. However, state regimes are just that—applicable to a particular state. As has been the case in the battle over the “Hooch,” only the fear that the Supreme Court would create a wholly unacceptable solution brought the parties to the bargaining table.

The bargaining process also is ripe for the possibility of “free-riders” by allowing certain threatened states to do less of the work while enjoying all of the benefits. In the case of the Chattahoochee, the low number of states involved makes it easy to see if any one party attempts to free-ride in the negotiating process. However, if such negotiations took place between the signatories to the Colorado River Compact, for example, the opportunity for free-riding is always present. An analogous problem arises after the compact has been approved. Returning to the “prisoner’s dilemma” problem, it is always profitable, in the short-term, for one party to a compact to break ranks and opportunistically “take from the cookie jar.” Some authors note, on the other hand, that compacts actually eliminate the incentive to “shirk” or “free-ride,” and that “[r]emoving discussion from the local level . . . moderated the interests of the states as separate parties in collective action deliberations.”

215 See Reid, supra note 114, at 175.
216 The Southeastern Water Pact has been negotiated over constantly since 1992.
218 Buck et al., supra note 137, at 626.
What is important to note is that incentives for opportunism continue to exist even with the institution of a compact system, and that additional steps may be required to prevent such activities. The Delaware River Basin Compact represents a significant step in the right direction because of its inclusion of penal sanctions for those who violate the compact.

A second major problem with the concept of a federal-interstate compact is the ever-present specter of federal meddling. In the case of the Southeastern Water Compact, the role of the Army Corps of Engineers makes the federal government an especially important player. As discussed earlier, the Corps has had a strong presence in the basin since the middle of the century by virtue of several congressional acts. In addition, a federal-interstate compact would raise Commerce Clause problems. Congress always will hold a Commerce Clause trump card over any action by the commission, though making the United States a party to the compact limits that power considerably.

The DRBC solution, despite these shortfalls, serves as the most appropriate means to allocate water rights between states. The reason is that even with limited participation by the federal government, the commission still can create a more vivid picture of the uses of water within the region and prompt the parties to adjust accordingly. Further, a commission, with all parties accounted for, remains a very flexible mechanism for apportioning rights. A great deal of the formality of negotiating can be eliminated by using such a compact because the parties are authorized to negotiate only subject to certain restrictions. Any major change would require formal approval by the states and the federal government, but minor changes can be implemented and then “rubber stamped” by the respective governments with little fear that interests are being sacrificed.

Again, the five pillars of Coase are useful to analyze the economic efficiency of a compact, in particular, the DRBC model. The basic theorem

\[ \text{See supra note 158-60 and accompanying text. This could take the form of “bullying” during the negotiation process for favorable terms (as could be the case with the escape valve clause in the DRBC).} \]

\[ \text{See supra note 4 and accompanying text.} \]

\[ \text{See U.S. Const. art I, § 8, cl. 3.} \]
SOUTHEASTERN WATER COMPACT

states that in a world absent transaction costs, parties will negotiate the most economically efficient outcome.\textsuperscript{222} Thus the question is raised—would an interstate water compact, modeled after the DRBC, create the most efficient solution for Alabama, Florida, Georgia, and the United States government? The fact that transaction costs would be reduced greatly by such an arrangement already has been discussed.\textsuperscript{223} The DRBC model also recognizes the importance of property rights within the scheme.\textsuperscript{224} The ideal compact serves as the ingredients of a pie which can later be fixed in final form and equitably divided by the commission. The DRBC is set up in just such a way. In fact, such a system goes beyond K-H optimization, almost achieving Pareto superior allocations which increase the size of the pie for all. The DRBC system creates certainty as well, by generating parameters within which all parties can work, while also constructing a mechanism (the commission) by which adjustments can be made depending on circumstances.\textsuperscript{225}

Finally, the use of condemnation provisions\textsuperscript{226} allows the commission to achieve pure K-H efficiency. Those users that must be supplanted by projects deemed essential by the commission can be compensated for their loss subject to federal and state condemnation laws. While these condemnation actions may be subject to takings criticism, economic efficiency requires that if a resource can be put to a better use, it should. Economic efficiency is especially vital when a scarce resource like water is involved.

CONCLUSION

The Southeastern Water Compact marks an important step in the development of the Chattahoochee/Apalachiola River basin. Growth comes

\textsuperscript{222} See supra notes 78-91 and accompanying text.
\textsuperscript{223} See supra text accompanying note 209.
\textsuperscript{224} See supra text accompanying notes 210-12.
\textsuperscript{225} See Erhardt, supra note 1, at 225; see also Muys, supra note 113, at 316-18.
\textsuperscript{226} See supra text accompanying note 210.
at a price, however. In the case of Alabama, Florida, and Georgia that price
is the potential scarcity of water resources in the basin. Water is a resource
that has historically been vehemently fought over and this case is no different.

Southern states were faced with three potential choices for dealing
with the dispute: congressional apportionment, judicial apportionment, or the
use of an interstate compact. Though Alabama originally intended to resort
to the Supreme Court for a remedy to the dispute over the “Hooch,” it
realized the dangers of such a solution and turned, along with all the parties,
to the compact system. The choice now facing the parties is exactly which
system to follow. There are three possible approaches: the Colorado River
Compact, the Upper Colorado River Compact/Rio Grande Compact, or the
Delaware River Basin Compact. Each has its merits, but the failure of the
first two types of compacts to include the federal government as a party
makes them less attractive in terms of true economic efficiency.

What remains is the solution proposed by the Delaware River Basin
Compact. Such a compact would provide Alabama, Florida, Georgia, and the
federal government with a means to properly deal with allocation of water
rights in the Chattahoochee/Apalachiola river basin. Though not flawless, the
DRBC Model comes closest to true economic efficiency by ensuring that
resources are initially divided according to economic use, while allowing
flexibility to long-term apportionment—all at relatively low transaction costs.

Normative economic analysis steers rational policy makers away from
the Colorado/Rio Grande models, while positive economic analysis
illuminates the advantages and possible trade-offs that must be made by
choosing the DRBC. Wherever the parties in the dispute over the “Hooch”
ultimately end up, it is safe to say that the states at least have taken a step
towards achieving the law and economics goal of efficiency by choosing the
compact route.