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Citation: 19 J. Land Use & Envtl. L. 47 2003-2004

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This work was originally published as J.B. Ruhl, Equitable  
Apportionment of Ecosystem Services: New Water Law for a New  
Water Age, 19 J. Land Use & Envtl. L. 47 2003-2004.

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# EQUITABLE APPORTIONMENT OF ECOSYSTEM SERVICES: NEW WATER LAW FOR A NEW WATER AGE

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## I. INTRODUCTION

It has been said that "[w]ater litigation is a weed that flowers in the arid West."<sup>1</sup> Well, the seeds have blown east. The eastern states, blessed with bountiful rain and plentiful lakes and rivers, seemed immune to battles over what water was whose, though we have certainly had our share of controversy over water quality. As a consequence, the law of interstate water allocation has been shaped largely by the states of the American West.<sup>2</sup>

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\* Matthews & Hawkins Professor of Property, The Florida State University College of Law, Tallahassee, Florida. This Article is an edited and annotated version of remarks I delivered at The FSU College of Law's forum on *The Future of the Appalachian-Chattahoochee-Flint River System: Legal, Policy, and Scientific Issues*, held on November 5, 2003. The Article is not intended to present a comprehensive review of the interstate water dispute involving the river system, or of the conventional law of equitable apportionment that the U.S. Supreme Court has used to resolve interstate water allocation disputes in the past. Limited references to sources providing that background are provided *infra*. Rather, my purpose is to suggest that the greater understanding we have today of the role ecological processes play in delivering tremendous economic value to human populations demands that the law recognize these important ecosystem services as a critical factor in the interstate water apportionment calculus. The dispute regarding the Appalachian-Chattahoochee-Flint River System, described *infra*, presents the perfect opportunity to press that point. I owe special thanks to my colleague Dave Markell for organizing the forum, and to Dan Tarlock for his invaluable input on the content of the presentation.

1. *United States v. Orr Water Ditch Co.*, 256 F.3d 935, 940 (9th Cir. 2001).

2. See Robert Haskell Abrams, *Interstate Water Allocation: A Contemporary History for*

Alas, our tranquility in the East has been rocked with increasing drought frequency and a vastly increasing population and its demand for more water. The water wars have moved east, and the question is whether the East will simply import interstate water allocation law as it has been shaped in the West, or will forge a new water law for a new water age. My purpose in these comments is to suggest that we try the latter, that we mold water law to meet the ecological realities of our great river systems.

## II. EAST MEETS WEST IN APALACHICOLA

Ironically, Florida has become an epicenter of the eastern version of water wars. We have, for example, the ongoing effort to “re-plumb” the Everglades.<sup>3</sup> And there is the recent controversy over whether to pipe water from northern Florida to our thirsty southern cities.<sup>4</sup> But the real ground zero is the battle over the water in the Apalachicola-Chattahoochee-Flint river basin — the ACF.<sup>5</sup>

The ACF is a new kind of water battle in three ways. First, it is a classic interstate water allocation fight between urban, agricultural, and rural areas of several states, something the East simply has not seen in many decades, certainly not of this magnitude. Second, and here it is unlike even the western tradition, the battle is not simply over a split of water flowing in the basin, or maintaining minimum downstream base flows. Florida’s interest is in maintaining ecological quality downstream of water-hungry Georgia and into Apalachicola Bay, and that will require maintaining an ecologically-based flow regime at the mouth of the Apalachicola River. This has not been the typical claim of a downstream state in such disputes. Finally, if this matter were to get in front of the Supreme Court, which seems likely, it would be the first major interstate apportionment case the Court has

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*Eastern States*, 25 U. ARK. LITTLE ROCK L. REV. 155, (2002) (“To date, with a few notable exceptions, the states of the American West have made the law” of interstate water allocation.).

3. See John J. Fumero, *Florida Water Law and Environmental Water Supply for Everglades Restoration*, 18 J. LAND USE & ENVT’L L. 379, 386-89 (2003).

4. See Bruce Ritchie, *Is there a Water Crisis?*, TALLAHASSEE DEMOCRAT, Oct. 29, 2003, at 1A.

5. The ACF River Basin extends from north-central Georgia to Apalachicola on the Florida Panhandle, straddling the lower half of the Alabama-Georgia border. Directly to the west of the ACF is the Alabama-Coosa-Tallapoosa river network, known as the “ACT,” which extends from northwest Georgia through Alabama to Mobile. For an excellent background on the origins and history of the water disputes between the states involved in these two river basins, see C. Grady Moore, *Water Wars: Interstate Water allocation in the Southeast*, 14 NAT RESOURCES & ENVT’ 5, 6-10 (origins & history) (1999); Dustin S. Stephenson, *The Tri-State Compact: Falling Waters and Fading Opportunities*, 16 J. LAND USE & ENVT’L L. 83 (2000).

entertained in the age of mature environmental statutory law. It is not at all clear how thirty years of environmental awareness and regulation may have affected the Court's demeanor when it comes to interstate water allocation.

Hence, as another commentator recently observed, it is no exaggeration to say that the ACF represents a "new and complicated issue on the horizon of water law."<sup>6</sup> So, with negotiations between the states having broken down, I thought it would be useful to examine the state of the river and the state of the law of the river—in particular, how the Supreme Court would approach this controversy were it to make its way to that forum, which seems a distinct possibility.

### III. THE LAW OF THE RIVER (AND WHY THE ACF HAS NONE)

States have been getting into squabbles about water allocation for centuries, and generally there are three ways they can solve them, not counting pitched battle: (1) Congress, exercising its authority over interstate commerce, can legislate a division of water; or (2) the states can enter into a Compact agreeing to a division, which would have to receive congressional approval; or (3) the states can take their dispute to the U.S. Supreme Court, which may exercise its original jurisdiction over disputes between the states to arrive at an equitable apportionment of the water.<sup>7</sup> For major western rivers such as the Colorado, the states along the river have resorted to all of these forums over the decades, and the combination of outcomes — which in the case of the Colorado makes up a dozen or so different agreements and court cases — is known as "The Law of the River."<sup>8</sup>

The Law of the River is distinct from the law each state uses internally for allocation of water rights. For that purpose, western states are associated with the Appropriative Rights system — which is based on first in time — though many of those states have evolved into more complicated systems of adjudicated and regulated rights.<sup>9</sup> The eastern states generally began under the Riparian Rights system, which afforded land adjacent to water the right of

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6. See Grady, *supra* note 5, at 67.

7. For an excellent, and still timely, summary of the law of interstate water allocation, see A. Dan Tarlock, *The Law of Equitable Apportionment Revisited, Updated, and Restated*, 56 U. COLO. L. REV. 381 (1985).

8. For an excellent summary of the Law of the River concept in general, and for the Colorado River in particular, see Antonio Rossman, *A New Law and the "Era of Limits" on the Colorado*, 18 NAT. RESOURCES & ENV'T 3, 3-4 (2003).

9. See Steven T. Miano and Michael E. Crane, *Eastern Water Law: Historical Perspectives and Emerging Trends*, 18 NAT. RESOURCES & ENV'T 14, 14 (2003) (summarizing western water law).

reasonable use. Like the western states, however, many eastern states have modified the traditional riparian rules with permit systems and other regulations.<sup>10</sup>

The two principal disputants in the ACF situation, Georgia and Florida, have well-defined bodies of state water law, though each is taking a careful look at possible changes to meet internal needs. But the ACF itself has for all practical purposes no defined Law of the River. Georgia has been doing its thing with its share of the ACF, and Florida the same. Of course, the U.S. Army Corps of Engineers is also in the picture in a big way. Since the 1940s the Corps has been implementing Congress' mandates to tame the Chattahoochee and Apalachicola Rivers for navigation purposes. But there simply is no Law of the River in the same sense that there is for many western rivers — no resolution of water rights between the states.<sup>11</sup>

After several years of negotiation under a compact, which was basically a compact to negotiate,<sup>12</sup> the states failed to reach a consensus on the proper allocation. Georgia wanted to retain rights sufficient to serve its vast urban and agricultural demands in times of drought, whereas Florida demanded that ecological flow regimes be retained on behalf of Apalachicola Bay.<sup>13</sup> It seems unlikely that Congress will come to the rescue through federal legislation, so that leaves the matter to the Supreme Court.<sup>14</sup> Anticipating this state of affairs, I have been thinking about how the Court might approach this situation, given some of the new twists it presents.

#### IV. CONVENTIONAL INTERSTATE WATER ALLOCATION LAW

The Supreme Court's law of interstate water allocation goes back almost 100 years. The Court first announced that it had the

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10. See *id.* at 15-16 (summarizing eastern water law).

11. This is not unusual for eastern rivers. There has been only a handful of Supreme Court water decisions in the East, most notably in the protracted dispute between New York and downstream states of the Delaware River Basin. See Tarlock, *supra* note 7, at 396-98. There have also been several significant interstate water compacts, most notably the Susquehanna Basin Compact (Maryland, New York, and Pennsylvania), the Great Lakes Basin Compact (Great Lakes states and Quebec and Ontario), and the Delaware River Basin Commission Compact (Delaware, New Jersey, New York, and Pennsylvania). See Miano & Crane, *supra* note 9, at 17-18.

12. See Grady, *supra* note 5, at 7 ("The heart of the ACT and ACF compacts is the agreement to negotiate an equitable apportionment of the surface waters in each basin.").

13. See Letter to Editor of Tallahassee Democrat from David Struhs, Secretary, Florida Department of Environmental Protection, *Unwilling to Accept Agreement that Relied on Minimum Flow*, TALLAHASSEE DEMOCRAT, Sept. 7, 2003, at 4E ("In the end, Florida was unwilling to accept an agreement that relied on the minimum flow . . .").

14. See *id.* ("Florida will pursue an equitable allocation formula in the U.S. Supreme Court.").

authority, under its original jurisdiction power, to apportion interstate streams in 1907, in a dispute between Kansas and Colorado over the Arkansas River.<sup>15</sup> That case is important because the Court rejected Colorado's argument that its territorial sovereignty gave it the right to deplete the entire flow of the river.<sup>16</sup> Since then the Court has laid down three important foundational principles about the rights of states respective to others, as recently summarized in the 1983 case of *Idaho v. Oregon*.<sup>17</sup>

- First, a state may not preserve solely for its own inhabitants the natural resources located within its borders.
- Second, no state has inherent priority, absolute or presumptive, over another state in the use of water from an interstate stream.
- Third, all states have the affirmative duty to take reasonable steps to conserve prospective water use, and even to augment water supply, as a condition to making a successful claim to a fair share of an interstate water.

The Court had foreshadowed these principles by its early willingness to develop a federal common law of interstate nuisance, premised on the principle that no state had the right to abuse its territory to the detriment of another state.<sup>18</sup> It was only a short step to these principles, which extended the same idea to interstate waters. The upshot is that, just because Georgia is upstream of Florida, it has no inherent right to deplete the flow of water to Florida, or take priority over Florida in use of the ACF waters, or use interstate waters within its boundaries however it sees fit.

Now, while these principles may sound good for Florida's interests, there is more to it. First, the Court has set a high standard of injury as a prerequisite to seeking relief in the form of a claim to the right to more water from an interstate stream. The complaining state must show clear and convincing evidence of a substantial injury to its interests as a result of another state's use of the resource.<sup>19</sup> Particularly in the East, where the Riparian Rights system dominates state water law, this burden places states interested in water conservation at a disadvantage to states interested in rapid development of water resources.<sup>20</sup> Florida, for example, is interested in leaving water in the ACF to promote

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15. *Kansas v. Colorado*, 206 U.S. 46 (1907).

16. *Id.*

17. 462 U.S. 1017, 1020-27 (1983); see generally Tarlock, *supra* note 7, at 400-07.

18. See, e.g., *Georgia v. Tennessee Copper Co.*, 237 U.S. 474 (1907).

19. See *Missouri v. Illinois*, 200 U.S. 496, 521 (1906).

20. See Abrams, *supra* note 2, at 170-71.

ecological resources, while Georgia seeks ever more water for its urban and agricultural sectors. It is difficult for a state in Florida's position, under the conventional burden of proof, to pinpoint the nature and magnitude of injury needed to open the Court's door.

If that hurdle is passed, the Court applies a rather open-ended doctrine known as "equitable apportionment" to resolve the dispute. As summarized in *Nebraska v. Wyoming*,<sup>21</sup> the factors that go into this mix include, but are not limited to:

- Established rights under state water law
- Physical and climactic conditions
- Consumptive use patterns
- Character and rate of return flows
- Extent of established uses
- Availability of water storage
- Practical effect of wasteful uses on downstream areas
- Damage to upstream areas as compared to benefits to downstream areas if the former are limited

In other words, equitable apportionment encompasses whatever seems relevant to a fair division of the resource between the states. This means equitable apportionment is a flexible doctrine, able to incorporate new knowledge not only about water demands and uses, but also about the ecology of water in general.<sup>22</sup> The ACF presents just such an occasion.

#### V. INCORPORATING ECOLOGICAL REALITY INTO THE LAW OF INTERSTATE WATER ALLOCATION

Because of the way Florida has described its interests, focusing on maintaining natural flows rather than simply minimum base flows, the ACF situation presents some unusual factors for consideration under the doctrines of substantial injury and equitable apportionment.<sup>23</sup> Indeed, the ACF case presents an opportunity for the Court to update its law of interstate water allocation with a dose of ecological reality.

The ACF presents a novel situation for the substantial injury test. For the most part the Court's focus in determining the presence of injury is on economic injury. That would seem to favor

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21. 325 U.S. 589, 618 (1945). See generally Tarlock, *supra* note 7, at 399-401.

22. Tarlock describes the doctrine as having "considerable evolutionary potential." See Tarlock, *supra* note 7, at 384.

23. See Grady, *supra* note 5, at 67 ("[T]he 'natural flow regime' approach to allocation proposed by Florida elevates environmental concerns to a new level in water quantity disputes.").

Georgia, which has monstrous Atlanta and its recreational playground, Lake Lanier, to offer versus the puny, by comparison, town of Apalachicola and its oyster industry.

But what of the ecological injury Georgia's unquenchable thirst poses downstream? It is well-demonstrated that the disruption of natural flow regimes on the ACF has disastrous effects on downstream fishery resources in the river and the bay, and could seriously alter riparian habitat regimes as well.<sup>24</sup> Surely Florida will want to press the case for this kind of injury in the Court.

Yet Florida need not stop there, for increasingly today we understand that ecological injury in fact *is* economic injury, because healthy functioning ecosystems provide immensely valuable services to human populations.<sup>25</sup> Indeed, recent work on the value of such ecosystem services suggests that the Apalachicola River and its floodplain basin are as or more economically valuable than the Lake Lanier based recreational economy. The natural flow regime supports huge values in Florida in the form of flood control, nutrient regulation, food for estuary fishes, and other important services. While a graduate student here at FSU, Greg Garrett estimated the economic value of those ecosystem services to be well over \$5 billion per year.<sup>26</sup>

Indeed, although most of the Court's jurisprudence focuses on water, it has made clear that in interstate disputes all natural resources are subject to its original jurisdiction. Thus, in *Idaho v. Oregon*, the Court apportioned salmon runs in the Columbia-Snake River system between the two states, saying that "a dispute over the water flowing through the [river] system would be resolved by the equitable apportionment doctrine; we see no reason to accord different treatment to a controversy over a similar natural resource of that system."<sup>27</sup>

Like fish flowing through the river system, ecosystem services do as well, delivering true economic value in many different ways

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24. See Bruce Ritchie, *Florida Willing to Take River Battle to Court*, TALLAHASSEE DEMOCRAT, Aug. 27, 2003, at 3B ("Constant minimum flows will hurt oysters in Apalachicola Bay, scientists say. Farther upstream, the minimum flows will prevent the river from flowing across the floodplain and into sloughs where fish feed and reproduce.").

25. For a comprehensive background on the role and value of ecosystem services, see NATURE'S SERVICES: SOCIETAL DEPENDENCE ON NATURAL ECOSYSTEMS (Gretchen Daily ed. 1997).

26. See Gregory W. Garrett, *The Economic Value of the Apalachicola River and Bay* (Jan. 6, 2003) (unpublished masters degree paper). Garrett used ecological economics principles forged by noted economist Robert Costanza, who made quite a splash in 1997 with his work on the value of global ecosystem services. See Robert Costanza et al., *The Value of the World's Ecosystem Services and Natural Capital*, 387 NATURE 253 (1997).

27. 462 U.S. at 1024.



and locations. Injury to those economically valuable resources ought, therefore, to count in the “substantial injury” analysis.

Likewise, once those ecosystem services are recognized for both their ecologic and economic values, the Court should focus its equitable apportionment doctrine on the apportionment of resources associated with those services, which in this case is the natural flow regime of the ACF River. In other words, it is not enough to protect a minimum base flow for Florida, as Georgia has emphasized; rather, the real medium of apportionment should be the flow regime itself.

The suggestions that the Court should take injury to ecosystem services into account for purposes of its substantial injury test, and should focus on ecosystem services in the apportionment phase of the case as well, are novel propositions, but they are the logical, incremental extensions of the Court’s analysis in *Idaho v. Oregon*. The salmon and trout involved in that case were the resource of interest for Idaho — they moved within the river system and were, for all practical purposes, what made the water valuable to the state.

Ecosystem services, like the salmon, are economically valuable resources that flow within the water system of the ACF and any other river. Moreover, with each year we understand more about the nature and value of ecosystem services — to leave them out of the interstate water apportionment analysis would simply be to ignore the ecological and economic realities of river systems such as the ACF.

Why would the Court bother to engage in apportionment of interstate water, and of interstate fish, but not of interstate ecosystem services? What would be the point of leaving the latter out of the calculus? To be sure, water has value of its own in the consumptive sense — we drink it and use it for irrigation and other industrial applications. But water left in the river is also immensely valuable, not as a commodity but because of the ecosystem functions it performs. You can’t have salmon without some water in the river. Wetlands aren’t wet without water in the river. Riparian habitat isn’t riparian if there is no water in the river. These are the ecosystem functions of water left in the river, and they provide valuable services which the Court could, and should, take into account in the water apportionment calculus.

Indeed, the Court did essentially that in 1931, in the pre-Clean Water Act case of *New Jersey v. New York*,<sup>28</sup> when it ruled that New York must provide the downstream Delaware Basin states with

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28. 283 U.S. 336, 345-48.

sufficient minimum base flow in the river to dilute New York City's waste discharges. With today's greater understanding of the role and value of ecosystem services that instream water provides, such as not only waste dilution but nutrient and temperature regulation and riparian habitat support, the Court should be more than willing to move beyond the minimum base flow criterion to one embracing the natural flow regime.

In short, a river is about more than water, thus so too must the Court's doctrine of equitable apportionment extend beyond the mere question of water quantity. Justice O'Connor recently observed that the distinction between water quantity and water quality is "artificial."<sup>29</sup> To the extent anyone suggests the Court's equitable apportionment jurisprudence is about only water quantity, therefore, they too rely on an artificiality that must cede to ecological reality. The ACF may very well become the test case for that proposition, and potentially the dawn of a new era for the doctrine of equitable apportionment.

## VI. THE "NEW" LAW OF THE LAW OF RIVERS

Any discussion of interstate water allocation in modern times would be remiss not to include consideration of the influence of public law on the river system, particularly laws regulating environmental quality and natural resource conservation. Regardless of what the Supreme Court does, the ACF also is likely to experience what has transpired in the great river systems of the West. Gradually, the "Old" Law of the River throughout rivers in the West is yielding to a "New" Law of the River. Most of the interstate compacts, congressional legislation, and Supreme Court cases fixing the Law of the River for western waters predate the age of mature environmental laws. What western states are finding is that the Law of the River, once thought to be settled, is no match for the law of the Endangered Species Act (ESA), the Clean Water Act (CWA), and other modern environmental laws. The Law of the River doesn't always work well under those statutes, and court after court has said it must yield to them. And this "New" Law of the River springs not from interstate compacts and Supreme Court decisions, but from federal administrative agencies, citizen suit litigation, and the lower federal courts.

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29. PUD No. 1 v. Washington Dep't of Ecology, 511 U.S. 700, 701 (1994) ("Petitioners' assertion that the [Clean Water] Act is only concerned with water quality, not quantity, makes an artificial distinction, since a sufficient lowering of quantity could destroy all of a river's designated uses, and since the Act recognizes that reduced stream flow can constitute water pollution.").

This is all very disconcerting to western states used to waging their water wars on familiar grounds and with familiar foes.<sup>30</sup> While time does not permit a full exploration of how laws such as the ESA and CWA could play out in the ACF, my hunch is that the situation will remain dynamic for some time to come. In other words, don't expect the Supreme Court to settle once and for all how the ACF gets divided up. An endangered mussel here or threatened fish there, and you get a whole different set of issues and players. Indeed, particularly under the conventional law of interstate water allocation, which favors states that rapidly develop water uses over states interested in conservation, states like Florida may find strategic use of ESA and CWA litigation effective in the short run for controlling their thirsty neighbors.<sup>31</sup>

#### VII. MERGING ECOLOGY AND ECONOMICS IN A NEW WATER LAW FOR A NEW WATER AGE

All of this talk about ecosystem services and the Endangered Species Act probably has economic development interests running for the hills. But they should instead be running with the concepts all the way to the bank. This case is about far more than a small struggling oyster fishery in a sleepy southern town. It is about Florida's largest flowing river, the lifeblood of one of the most biologically diverse estuaries in the nation, and Apalachicola Bay, a major playground of the Florida Panhandle. Every banker, resort operator, marina owner, restaurant proprietor, housing developer, fishing outfitter, boat retailer — basically, anyone who depends on there being an economy in the Florida Panhandle — ought to envision what his or her livelihood and lifestyle would be like were the Apalachicola to go the way of the Colorado River, which in many years fails to reach its historical delta.<sup>32</sup> Sure, you may say, that'll never happen here. Are you so sure of that? Do you trust Atlanta politicians, Lake Lanier party boaters, and South Georgia farmers to make sure of it?

I hesitate to make this sound like a war between Georgia and Florida, but that's what an interstate water dispute is like. Just ask anyone in Arizona how they feel about California when it comes to

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30. See Rossman, *supra* note 8, at 4-5 (covering this phenomenon and its effect on water politics and law for the Colorado River).

31. See Abrams, *supra* note 2, at 171-72. ("Resort to non-allocational devices related to water quality and instream flow requirements offer a . . . protective strategy for states that do not make present beneficial use of the water off stream.")

32. For a comprehensive review of the Colorado River's ecological conditions and legal context, see A. Dan Tarlock, *The Recovery of the Colorado River Delta Ecosystem: A Role for International Law?*, COLO. J. INTL. ENVTL. L. & POL'Y 9 (2002).

water. This isn't just hardball, it's kickboxing. And the reality is that under the Supreme Court's conventional approaches to interstate water allocation, Florida loses. If it wants to prevail, Florida *must* urge the Court to consider the full import of the underappreciated ruling in *Idaho v. Oregon* to make its equitable apportionment jurisprudence align with the real reason we care about water — its ecosystem service values. This is, in other words, no eastern version of a western water case — it is about forging a whole new water law for a new water age.

