

## ARKANSAS WATER RIGHTS: REVIEW AND CONSIDERATIONS FOR REFORM

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On paper, Arkansas has far more water resources than required to meet its current needs. Average annual rainfall ranges from forty to fifty-eight inches.<sup>1</sup> The state's rivers yield an estimated 280 billion gallons per day. Arkansas impoundments hold over fifteen million acre-feet at normal levels, and the estimated yield of federal reservoirs alone is about 557 million gallons per day (mgd).<sup>2</sup> Yet, Arkansas's total reported consumptive use in 1995 was only about 8800 mgd.<sup>3</sup>

So, why are some of Arkansas's major groundwater aquifers in danger of running dry? Why does Arkansas continue to wrestle with complicated regulatory regimes governing water use? Simply stated, Arkansas's mathematical water surplus does not exist in the right place at the right time to meet demand, especially during drought periods. Widespread controversy over if, when, how, and at what cost the excess water should be transferred or stored to provide for use where and when it is needed, has prevented development of an effective comprehensive water use program in Arkansas.

Arkansas's high consumption of groundwater, primarily for agricultural irrigation, has raised serious concerns over aquifer depletion for many years.<sup>4</sup> In 2000 there were 50,887 registered wells reported in the state, and ninety-seven percent were agricultural wells in eastern Arkansas.<sup>5</sup> In 1999 reported groundwater use was 6558 mgd, up from 5456 mgd in 1995, when the state ranked fourth in the nation for groundwater withdrawals.<sup>6</sup> The al-

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1. ARK. SOIL & WATER CONSERVATION COMM'N, ARKANSAS WATER PLAN: EXECUTIVE SUMMARY 5 (1990) [hereinafter ARKANSAS WATER PLAN].

2. *Id.* at 6–7.

3. ARK. SOIL & WATER CONSERVATION COMM'N, ARKANSAS GROUNDWATER PROTECTION AND MANAGEMENT REPORT FOR 2001, at 41 (2002) (citing T.W. HOLLAND, WATER USE IN ARKANSAS, 1995: U.S. GEOLOGICAL SURVEY OPEN-FILE REPORT 99-188 (1999)) [hereinafter 2001 GROUNDWATER REPORT].

4. JEANNE L. JACKSON & LESLIE E. MACK, ARKANSAS WATER: WHY WAIT FOR THE CRISIS? 16 (1982).

5. 2001 GROUNDWATER REPORT, *supra* note 3, at 41.

6. *Id.* at 14, 41.

luvial aquifer in eastern Arkansas has been pumped in steadily increasing amounts since records were kept in the early 1900s.<sup>7</sup> For example, the potentiometric surface (water level) of the alluvial aquifer has fallen as much as 130 feet in Arkansas County since pumping began.<sup>8</sup> The prolonged intensive use of groundwater in large areas of eastern Arkansas has resulted in widespread progressive declines in aquifer water levels and, in some areas, increases in salt content.<sup>9</sup>

The groundwater depletion problem in eastern Arkansas has spawned a number of proposals and recommendations. For example, since 1982 the United States Army Corps of Engineers (“Corps”) has studied the feasibility of various agricultural water supply projects in its Eastern Arkansas Comprehensive Study Project. In 1996 Congress directed the Corps to develop an implementation plan for one agricultural water supply demonstration project.<sup>10</sup> The Grand Prairie area of eastern Arkansas was selected because groundwater depletion there was comparably more severe. The aquifer yield on the Grand Prairie is projected to decline to its sustainable recharge level<sup>11</sup> by the year 2015, which will drastically curtail the amount of water available for irrigated agriculture.<sup>12</sup>

The Grand Prairie Area Demonstration Project (“Grand Prairie Project”) includes plans for a pumping station to divert excess water from the White River, a network of new canals, existing natural and man-made channels, pipelines, channel structures, and an assemblage of on-farm storage

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7. *Id.* at 14. The alluvial aquifer extends north from Arkansas into Missouri, south into Louisiana, and under the Mississippi River into Tennessee and Mississippi. In Arkansas, it occupies the eastern portion of the state between the north and south boundaries and between the Mississippi River to the east and the Fall Line on the west. *Id.*

8. *In re* The Designation of the Alluvial and Sparta Aquifers, No. CGWA 1998-2 (Ark. Soil & Water Conservation Comm’n Nov. 15, 2001).

9. *Id.* at 9–10. Groundwater levels generally are dropping slowly, but in some areas withdrawals exceed the natural recharge of the aquifer, resulting in constantly falling levels. The most critical declines are found in a five-county area in southern Arkansas and the Grand Prairie area in eastern Arkansas, both of which have been formally designated by the Arkansas Soil and Water Conservation Commission (ASWCC) as critical groundwater areas. *Id.*

10. 1 UNITED STATES ARMY CORPS OF ENG’RS, MEMPHIS DIST., EASTERN ARKANSAS REGION COMPREHENSIVE STUDY: GRAND PRAIRIE AREA DEMONSTRATION PROJECT GENERAL REEVALUATION REPORT (1999), available at <http://www.mvm.usace.army.mil> [hereinafter GRAND PRAIRIE REPORT].

11. Sustainable recharge is that level of groundwater withdrawal that an aquifer can sustain on a continuing basis with natural recharge, defined numerically for the Grand Prairie as 35,574 acre-feet per year. *Id.* at 23; see also ARKANSAS WATER PLAN *supra* note 1, at 18 (stating twenty feet of saturated thickness is required to sustain agricultural wells).

12. GRAND PRAIRIE REPORT, *supra* note 10, at 23. At current pumping rates, the aquifer will continue to be depleted, and 187,129 acres of irrigated cropland will be converted to dry land farming by 2015, resulting in an estimated annual net revenue decrease to area farmers of about nine million dollars. *Id.*

reservoirs to provide surface water to the depleted areas.<sup>13</sup> Even though the project incorporates water conservation and wildlife enhancement features, it has drawn tremendous fire from environmental activist groups and from a significant number of area farmers that are content with the status quo and fear loss of control and increased irrigation costs.<sup>14</sup> The Grand Prairie Project exemplifies the myriad of problems inherent in dealing with water rights and allocation issues under the current system of Arkansas law.<sup>15</sup> The aquifer depletion problem that gave rise to the project emphatically illustrates the inadequacy of Arkansas water law to deal with water management issues effectively.

Periods of water shortage historically have led to increased litigation and legislation involving water rights in Arkansas.<sup>16</sup> As a result, much of our state's common law interpretation and legislative framework related to water law developed in response to water shortage crises. A prolonged period of below normal rainfall from 1992–2000<sup>17</sup> caused persistent drought conditions and again has increased interest in Arkansas water rights issues.

This article provides a review of the development of Arkansas water rights in the courts and through statutory and regulatory changes. Following the review is a summary of considerations for reforming or refining the current system.

#### I. SURFACE WATER IN ARKANSAS: COMMON LAW DEVELOPMENT OF RIPARIAN RIGHTS

The term “water right,” as used here, refers to a claim or entitlement to water in a natural source such as a stream, lake, spring, or groundwater aquifer.<sup>18</sup> Historically, two major systems of water rights have been applied to

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13. *See generally id.*

14. *See, e.g.*, TAXPAYERS FOR COMMON SENSE & NAT'L WILDLIFE FED'N, TROUBLED WATERS: CONGRESS, THE CORPS OF ENGINEERS, AND WASTEFUL WATER PROJECTS 17 (2000), available at [www.taxpayer.net/corpswatch/troubledwaters/troubledwater.pdf](http://www.taxpayer.net/corpswatch/troubledwaters/troubledwater.pdf). The report claims that: “The Corps’ project would dramatically reduce river flow, lead to major wetland loss, and increase pollutant loads through the White River National Wildlife Refuge, a wetland of international importance.” *Id.* However, the activist groups have produced no scientific support for this claim.

15. *See* J.W. LOONEY, *Institutional and Legal Aspects of Project Development and Implementation*, in 11 GRAND PRAIRIE REPORT, *supra* note 10, app. F, § 2.

16. *See generally* J.W. Looney, *Modification of Arkansas Water Law: Issues and Alternatives*, 38 ARK. L. REV. 221, 235–38 (1984).

17. Based on data from the National Oceanic and Atmospheric Administration's National Climatic Data Center, Little Rock Adams Field Station, Arkansas, the average rainfall was below normal every year but one between 1992 and 2000, and averaged 6.4 inches below normal per year for the entire period.

18. Rights to water after it is withdrawn from a natural source, such as a right to obtain water from a pipeline or irrigation supply ditch, typically are not referred to as water rights

surface water sources in the United States—the riparian rights doctrine in most of the eastern states and the appropriation doctrine primarily in the arid western states. The appropriation doctrine basically is a “first in time—first in right” system with exclusive rights often established by administrative procedure or adjudication.<sup>19</sup> Appropriative rights are not an incident of real property ownership, but rather are independent property rights acquired by capturing (appropriating) water and applying it to beneficial use.<sup>20</sup>

Unlike appropriative rights, under the riparian rights doctrine, only riparian landowners (those owning land adjacent to a water body) have water rights.<sup>21</sup> Historically, two distinct principles were applied to define the scope of a riparian owner’s right to use the water flowing past his land—the natural flow theory and the reasonable use theory.<sup>22</sup> In most riparian states today, a riparian owner has a right to the reasonable use of the water.<sup>23</sup> The older natural flow theory (also called the English Rule) attempted to protect the unimpaired natural flow of the watercourse for the benefit of all downstream riparian owners.<sup>24</sup> As discussed in more detail below, Arkansas generally has followed the basic tenets of the riparian rights reasonable use doctrine.<sup>25</sup> A more complete understanding of common law water rights in Arkansas can be gained by a chronological review of the important decisions.

#### A. *McLaughlin v. City of Hope*<sup>26</sup>

*McLaughlin* is the earliest Arkansas case dealing directly with the issue of riparian rights. The plaintiff leased land along a stream and moved his sawmill there, intending to use the stream water for making steam to run the mill. The trial court found the City of Hope liable to the plaintiff, a downstream riparian owner, for polluting the stream with sewage, thereby render-

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by most water professionals, and are not included in this discussion. George A. Gould, *Water Rights Systems*, in *WATER RIGHTS OF THE EASTERN UNITED STATES* 7 (Kenneth R. Wright ed., 1998).

19. Looney, *supra* note 16, at 225 (citing Raphael J. Moses & Timothy J. Beaton, *The Initiation of New Water Rights in the Western States*, 4 *AGRIC. L.J.* 153 (1982)).

20. Gould, *supra* note 18, at 10.

21. See generally Joseph W. Dellapenna, *The Rights to Consume Water Under “Pure” Riparian Rights*, in 1 *WATER AND WATER RIGHTS* ch. 7 (Robert E. Beck ed., LEXIS Repl. 2001).

22. See *Harrell v. City of Conway*, 224 Ark. 100, 102–03, 271 S.W.2d 924, 926 (1954).

23. See *RESTATEMENT (SECOND) OF TORTS* §§ 850, 850A (1977).

24. James N. Christman, *Riparian Doctrine*, in *WATER RIGHTS OF THE EASTERN UNITED STATES*, *supra* note 18, at 23; Dellapenna, *supra* note 21. Carried to its logical extreme, the natural flow theory would prohibit all consumptive use of water by any riparian owner, except perhaps the last downstream landowner. See Christman, *supra*, at 23; Dellapenna, *supra*.

25. See *Harris v. Brooks*, 225 Ark. 436, 283 S.W.2d 129 (1955).

26. 107 Ark. 442, 155 S.W. 910 (1913).

ing the stream water unsuitable for making steam to run the mill. The Arkansas Supreme Court affirmed and described the doctrine of riparian rights as follows:

The owner of the land on a stream has the right to have the water which flows from the land of an upper owner in as pure and wholesome a condition as a reasonable and proper use of the stream by the upper owner will permit. He must also submit to the natural drainage and wash coming from cities and towns.<sup>27</sup>

In this early expression, the court seems to have merged the two theories of riparian rights to express what might be called a reasonable natural flow theory.

Quoting liberally from several treatises on the subject, the Arkansas Supreme Court also made clear that riparian rights were valuable property rights, and thus began a long line of references to private property and the potential for constitutional takings issues:

It may be laid down as a well-settled principle that every proprietor over or past whose land a stream of water flows has a right that it shall continue to flow to and from its premises in the quantity, quality and manner in which it is accustomed to flow by nature, subject to the right of the upper proprietor to make a reasonable use of the stream as it flows past his lands. This right is part of his property in the land and, in many cases, constitutes its most valuable element . . . . These riparian rights are property . . . and are valuable . . . and cannot be abridged or capriciously destroyed or impaired. They are rights to which, once vested, the owner can only be deprived in accordance with the law of the land, and, if necessary that they be taken for public use, it must be for due compensation.<sup>28</sup>

B. *Meriwether Sand & Gravel Co. v. State*<sup>29</sup>

In *Meriwether*, the court again considered riparian rights in the context of a pollution case. The trial court had permanently enjoined the sand and gravel operation from discharging silt from its gravel washing operation into Bodcaw Creek. The practice impaired water quality, making the creek unsuitable for fishing and swimming.<sup>30</sup> In affirming, the court announced “the general rule as to the rights of riparian owners” as follows:

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27. *Id.* at 447, 155 S.W. at 911.

28. *Id.*, 155 S.W. at 910 (quoting 1 JOHN LEWIS, LEWIS ON EMINENT DOMAIN §§ 61, 84 (1909)).

29. 181 Ark. 216, 26 S.W.2d 57 (1930).

30. *Id.* at 222, 26 S.W.2d at 60.

Every such proprietor is entitled to the usual flow of a stream in its natural channel over his land, undiminished in quantity and unimpaired in quality, subject to the reasonable use by upper proprietors and with the right to make any reasonable use of the water necessary for his convenience or pleasure, including, in nonnavigable waters, the exclusive privilege of taking fish from the stream. Riparian rights inhere in the owner of the soil, and are part and parcel of the land itself, and are vested and valuable rights which no more may be destroyed or impaired than any other part of a freehold.<sup>31</sup>

Thus, by 1930, four elements of the reasonable natural flow theory of riparian rights were established in Arkansas. Every riparian owner was entitled to (1) the usual flow of a stream in its natural channel; (2) undiminished in quantity and unimpaired in quality; (3) subject to reasonable use by upper proprietors; and (4) riparian rights were part of the bundle of real property rights of riparian owners and were vested and valuable.

C. *Anderson v. Reames*<sup>32</sup>

The Arkansas Supreme Court, in *Anderson*, considered the rights of riparian owners and the public with regard to navigable waters. The court held that a commercial boat dock operator had no right to use the privately-owned shore of a navigable water body, but had “the same common right of hunting and fishing in such waters as other members of the public would have.”<sup>33</sup> The court stated the general rule that the rights of riparian owners on navigable streams include: “(1) the right of access to the water; (2) the right to build a pier out to the line of navigability; (3) the right to accretions; and (4) the right to a reasonable use of the water as it flows past the land, and have been often so enumerated.”<sup>34</sup>

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The pools and lakes in which the urchins and grown folks were wont to bathe are now so discolored and befouled by the foreign matter brought from the gravel plant above and held in suspension in the water, that they are no longer clean and clear, but discolor and coat the bodies of bathers with an unpleasant slime. Consequently, bathing is no longer indulged in. The fish have abandoned the waters and the fishermen can only make an occasional catch, where once fish abounded in plenty.

*Id.* at 224, 26 S.W.2d at 60.

31. *Id.* at 226–27, 26 S.W.2d at 61 (citing *Taylor v. Steadman*, 143 Ark. 486, 220 S.W. 821 (1920); *City of El Dorado v. Scruggs*, 113 Ark. 239, 168 S.W. 846 (1914); *McLaughlin*, 107 Ark. at 442, 155 S.W. at 910; *Miss. Mills Co. v. Smith*, 11 So. 26 (Miss. 1892)).

32. 204 Ark. 216, 161 S.W.2d 957 (1942).

33. *Id.* at 222, 161 S.W.2d at 960 (quoting *State v. Parker*, 132 Ark. 316, 200 S.W. 1014 (1917)).

34. *Id.* at 222–23, 161 S.W.2d at 960 (quoting 45 C.J. NAVIGABLE WATERS § 143 (1928)).

The *Anderson* decision established that private riparian owners along navigable waters could not interfere with the public's use of such waters or the use of the shoreline below the high water mark for recreational uses such as swimming, hunting, fishing, and boating. But, the court added that such uses should not unreasonably interfere with the riparian owner's right of ingress and egress.<sup>35</sup>

D. *Thomas v. LaCotts*<sup>36</sup>

The *Thomas* case is the first of several important decisions that arose during the drought years of the 1950s.<sup>37</sup> Neighboring riparian landowners on Mill Bayou in eastern Arkansas had constructed various dams, canals, and pumps to use the bayou water to enhance "rice growing" and "duck-shooting privileges."<sup>38</sup> In a very fact intensive decision, the Arkansas Supreme Court enumerated these elements of riparian rights:

- (1) Subject to reasonable uses by upstream riparians, a riparian owner is entitled to the "unimpaired natural flow" of a water course over his land.<sup>39</sup>
- (2) Riparian rights "inhere in the soil and are vested."<sup>40</sup>
- (3) No riparian landowner has priority in the use of water in derogation of other riparians' rights.<sup>41</sup>
- (4) Riparian rights do not depend on use and are not lost by non-use.<sup>42</sup>

All of the early Arkansas cases make reference to riparian rights as vested. The term "vested right" has been interpreted by the Arkansas Supreme Court in another context as meaning "free from all contingencies."<sup>43</sup> It is "something more than a mere expectation based upon the anticipated

35. *Id.* at 223, 161 S.W.2d at 960–61.

36. 222 Ark. 171, 257 S.W.2d 936 (1953).

37. *Id.*, 257 S.W.2d at 936; see LOONEY, *supra* note 16, at 235; see also *infra* note 52 and accompanying text.

38. *Thomas*, 222 Ark. at 172, 257 S.W.2d at 937.

39. *Id.* at 177, 257 S.W.2d at 940.

40. *Id.*, 257 S.W.2d at 940.

41. *Id.*, 257 S.W.2d at 940.

42. *Id.* at 177–78, 257 S.W.2d at 940.

43. *Matthews v. Bailey*, 198 Ark. 830, 836, 131 S.W.2d 425, 433 (1939).

continuance of existing laws.”<sup>44</sup> The possessor of a vested right has “a title to the present or future enjoyment of property.”<sup>45</sup>

The application of the vested right concept to riparian rights, however, is not entirely clear. Certainly, it would violate the property right of a riparian owner to strip him completely of his correlative right to reasonably use water flowing past his property. But, there is a large contingent element to the exercise of any particular quantity of water use associated with riparian ownership. The court recognized this limitation to riparian rights in *Thomas*:

The use of water on tract ‘G’ may have begun fifty years ago and may have been continuous, and valuable improvements may have been made which will be seriously [impaired] if the tract is deprived of the use of a substantial part of the stream flow; yet the owner of tract ‘E’ may begin use today and lawfully demand his share of the flow, with the result that tract ‘G’ will hereafter be entitled to only a partial use of the stream.<sup>46</sup>

So, while the riparian owner’s right to make *some* use of the water may be considered vested, the magnitude of that use is subject to ever-increasing limitations whenever another riparian owner initiates a reasonable use.

E. *Harrell v. City of Conway*<sup>47</sup>

In 1952 the City of Conway built a concrete dam on Cadron Creek to impound water for its municipal water supply, creating a pool of water that extended about ten miles upstream. During the drought of 1953, upstream landowners began to withdraw large amounts of the impounded water for irrigation. The City sued, and the trial court enjoined the upstream owners from pumping when the water depth fell to a certain level.<sup>48</sup> The Arkansas Supreme Court reversed, holding that the City had no right, as a riparian owner, to take impounded water from the creek and sell it commercially beyond the watershed to municipal customers.<sup>49</sup> Since the City was using the water to benefit customers beyond the riparian land, it was not a riparian use and could not be enforced. But, so long as no shortage existed among

44. *Id.*, 131 S.W.2d at 433 (quoting *Steers v. Kinsey*, 68 Ark. 360, 58 S.W. 1050 (1900)).

45. *Id.*, 131 S.W.2d at 433 (quoting *Pearsall v. Great N. Ry. Co.*, 161 U.S. 646, 673 (1896)).

46. *Thomas*, 222 Ark. at 177, 257 S.W.2d at 940 (quoting Mr. Wells A. Hutchins, an irrigation economist for the United States Department of Agriculture, who delivered an address on “water uses and appurtenant legal rights” in Stuttgart, Arkansas, in 1940).

47. 224 Ark. 100, 271 S.W.2d 924 (1954).

48. *Id.* at 102, 271 S.W.2d at 925.

49. *Id.* at 104, 271 S.W.2d at 927. The City apparently owned about twenty acres of riparian land, but the water was not being used on riparian property. *Id.* at 101, 271 S.W.2d at 925.

riparian users, there was no legal impediment to the City's transportation of water for use outside the watershed.<sup>50</sup>

For the first time, the court recognized the two separate theories of riparian rights (natural flow and reasonable use) and acknowledged it had overlapped the concepts in prior cases.<sup>51</sup> The court defined the two schools of thought as follows:

According to the *natural flow theory*, each riparian owner is entitled to have the watercourse maintained in its natural state, not sensibly diminished in quantity or impaired in quality. Under this theory a riparian owner may withdraw water for domestic uses but not for such artificial uses as the irrigation of crops or the operation of a factory.

Under the *reasonable use theory* each landowner is entitled to make any reasonable use of the water, provided that such use does not unreasonably interfere with the beneficial use of the stream by others. Under this theory a riparian owner may use the water for irrigation or for any other purpose, the reasonableness of the use being the only measure of riparian rights.<sup>52</sup>

Although the court appeared to favor the reasonable use theory, it stopped short of clearly adopting either one.<sup>53</sup> Justice McFaddin, in his concurring opinion, pointed out the uncertainty of Arkansas law at that time and provided his own views.<sup>54</sup> His expression of concern and plea for legislative intervention undoubtedly was a reflection of the heightened anxiety over water resources during the drought period of the 1950s.<sup>55</sup>

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50. *Id.* at 105, 271 S.W.2d at 927.

Until there is insufficient water to serve the needs of each and all of the riparian owners, on the creek, their relative rights are not in question, for while the supply is plentiful (as it appears for more than ninety percent of the time) no need arises to apportion the water.

*Id.*, 271 S.W.2d at 927.

51. *Id.* at 102–03, 271 S.W.2d at 926.

52. *Id.*, 271 S.W.2d at 926 (emphasis added).

53. *Harrell*, 224 Ark. at 102–03, 271 S.W.2d at 926. By implication, the court favored the reasonable use theory because it considered irrigation to be an acceptable water use for a riparian owner. Irrigation, by the court's definition, is not allowed under the natural flow theory. *Id.*, 271 S.W.2d at 926.

54. *Id.* at 107–09, 271 S.W.2d at 928–30 (McFaddin, J., concurring).

55. *Id.* at 107, 271 S.W.2d at 928 (McFaddin, J., concurring). This plea for legislative change from the supreme court bench was not the last during the drought of the 1950s. *See Nilsson v. Latimer*, 281 Ark. 325, 331, 664 S.W.2d 447, 451 (1984) (Hickman, J., dissenting).

F. *Harris v. Brooks*<sup>56</sup>

*Harris* presents a classic contest between two riparian landowners over the use of water in a non-navigable lake—one riparian using the lake for a commercial boating and fishing enterprise and the other withdrawing water for agricultural irrigation. The trial court denied the injunctive relief sought by the boating and fishing enterprise, even though the irrigation pumping apparently had reduced the water level of the lake to the point it was unsuitable for fishing and boating. The Arkansas Supreme Court reversed and used this context to explain and formally adopt the reasonable use theory of riparian rights:

This theory appears to be based on the necessity and desirability of deriving greater benefits from the use of our abundant supply of water. It recognizes that there is no sound reason for maintaining our lakes and streams at a normal level when the water can be beneficially used without causing unreasonable damage to other riparian owners . . . . “The use of the stream or water by each proprietor is therefore limited to what is reasonable, having due regard for the rights of others above, below, or on the opposite shore. In general, the special rights of a riparian owner are such as are necessary for the use and enjoyment of his abutting property and the business lawfully conducted thereon, qualified only by the correlative rights of other riparian owners, and by certain rights of the public, and they are to be so exercised as not to injure others in the enjoyment of their rights.” It has been stated that each riparian owner has an equal right to make a reasonable use of waters subject to the equal rights of other owners to make the reasonable use.<sup>57</sup>

The court further laid down the following general rules and principles of the riparian rights reasonable use theory:

- (a) The right to use water for strictly domestic purposes—such as for household use—is superior to many other uses of water—such as for fishing, recreation and irrigation.
- (b) Other than [domestic use], all other lawful uses of water are equal. Some of the lawful uses of water recognized by this state are: fishing, swimming, recreation, and irrigation.
- (c) When one lawful use of water is destroyed by another lawful use the latter must yield, or it may be enjoined.
- (d) When one lawful use of water interferes with or detracts from another lawful use, then a question arises as to whether, under all

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56. 225 Ark. 436, 283 S.W.2d 129 (1955).

57. *Id.* at 442–43, 283 S.W.2d at 133 (citation omitted).

the facts and circumstances of that particular case, the interfering use shall be declared unreasonable and as such enjoined, or whether a reasonable and equitable adjustment should be made, having due regard to the reasonable rights of each.<sup>58</sup>

The court, however, retained some flexibility to interpret how the reasonable use doctrine would apply in Arkansas on a case-by-case basis.<sup>59</sup> The court noted the following two specific limitations that could apply in appropriate cases: (1) some riparian landowners may have accrued “vested rights” that could not constitutionally be negated,<sup>60</sup> and (2) nothing can infringe upon the powers of the Arkansas Game and Fish Commission, pursuant to Amendment 35 to the Arkansas Constitution, to protect the state’s fishery resources, including the regulation of water removal if necessary.<sup>61</sup> *Harris* continues to be the landmark decision defining common law riparian rights in Arkansas.

G. *De Vore Farms v. Butler Hunting Club*<sup>62</sup>

In *De Vore Farms*, the court addressed another Mill Bayou dispute involving dams and ducks. The court reviewed the facts and opposing expert opinions in the record and ultimately deferred to the chancellor’s findings.<sup>63</sup> The *De Vore Farms* opinion, however, contains a questionable summary of the applicable law. The supreme court seemed to backslide a little and referred to both the natural flow and reasonable use theories again, after formally adopting the reasonable use doctrine in *Harris*, just one year earlier.<sup>64</sup> The court stated it was “well settled” that a riparian owner had “no right to obstruct or interfere with the [natural water course] to the detriment or damage of other riparian owners,” without any reference to the reasonableness of the action or the principles articulated in *Harris*.<sup>65</sup>

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58. *Id.* at 444–45, 283 S.W.2d at 134.

59. *See id.* at 443–44, 283 S.W.2d at 134.

60. *Id.* at 444, 283 S.W.2d at 134.

61. *Id.*, 283 S.W.2d at 134. This limitation is particularly interesting and suggests that the Arkansas Game and Fish Commission could, by regulation, set minimum stream flows necessary for fish protection and restrict surface water withdrawals.

62. 225 Ark. 818, 286 S.W.2d 491 (1956).

63. *Id.* at 818–23, 286 S.W.2d at 491–94.

64. *Id.* at 823, 286 S.W.2d at 494.

65. *Id.*, 286 S.W.2d at 494.

#### H. *Scott v. Slaughter*<sup>66</sup>

The *Scott* court considered a dispute between two riparian owners along Roc Roe Bayou, both of whom operated commercial hunting and fishing facilities on their property. The upper riparian owner had constructed three successive dams on the bayou. The lower riparian owner sought an injunction for the removal of the dams, arguing that the impoundments were an unreasonable use of the water, depriving him of waters that otherwise would have flowed through his property. The court conducted a complex, fact intensive review, quoting and applying the four enumerated principles of reasonable use from *Harris*, and remanded the case with specific orders for modification of the injunction.<sup>67</sup> Sounding much like a trial court of equity, the Arkansas Supreme Court directed the result in great detail, dictating the precise river gauge level at which the spillways must operate.<sup>68</sup> This case demonstrates why case-by-case adjudication of water rights disputes through the court system is cumbersome and often inadequate to provide timely resolution.

#### I. *State v. McIlroy*<sup>69</sup>

The *McIlroy* case is the leading case in Arkansas for the proposition that a river is navigable if it is capable of supporting recreational use (canoeing) for a substantial portion of the year.<sup>70</sup> It is cited here primarily to emphasize the Arkansas Supreme Court's apparent willingness to alter the traditional common law of water-related rights in the name of progress and evolving public policy. In altering the traditional commercial navigability test previously applied, the court stated, "Since that time [apparently referring to a 1915 case] no case presented to us has involved the public's right to use a stream which has a recreational value, but lacks commercial adaptability in the traditional sense. Our definition of navigability is, therefore, a remnant of the steamboat era."<sup>71</sup>

The court recognized that its previous decisions may or may not have anticipated such recreational use. Nevertheless, it found the Mulberry River

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66. 237 Ark. 394, 373 S.W.2d 577 (1963).

67. *Id.* at 398-99, 373 S.W.2d at 579.

68. *Id.* at 399, 373 S.W.2d at 579-80. The court directed

that appellant's north and middle dams be lowered to a level which will permit the waters from White River and/or Roc Roe Lake, after filling the reservoir created by the dams, to pass over such dams or spillways when the Clarendon gauge shows a stage in excess of 17 feet.

*Id.*, 373 S.W.2d at 579-80.

69. 268 Ark. 227, 595 S.W.2d 659 (1980).

70. *Id.* at 237, 595 S.W.2d at 665.

71. *Id.* at 236, 595 S.W.2d at 664.

to be legally navigable “with all the incidental rights of that determination.”<sup>72</sup> Chief Justice Fogelman strongly dissented, pointing to “two overriding and interrelated legal principles, i.e., the effect of a rule of property and the vesting of property rights.”<sup>73</sup> “Even a legislative enactment cannot destroy vested rights which riparian owners have in a nonnavigable stream.”<sup>74</sup>

J. *Miller v. United States*<sup>75</sup>

In *Miller*, the United States District Court for the Eastern District of Arkansas reviewed a challenge to the Environmental Impact Statement for a proposed municipal water supply reservoir to be built for the City of Conway by the Corps. The court rejected the Corps’ argument that Arkansas law prohibited the interbasin transfer of surface water without a taking by eminent domain or payment of damages.<sup>76</sup> Relying primarily on *Harrell v. City of Conway*,<sup>77</sup> the district court “concluded that an interbasin transfer of water can take place when a surplus of water exists. Absent such a surplus the water may not be removed from the watershed.”<sup>78</sup> Although the Arkansas Supreme Court’s decision in *Harrell* clearly pointed to this conclusion, the *Miller* court was the first to directly address the propriety of an interbasin transfer in Arkansas.

K. *Nilsson v. Latimer*<sup>79</sup>

Nilsson and Latimer owned land on opposite sides of the Little Cossatot River and Mill Slough in southwestern Arkansas. During a period of low flow, conflict arose over the parties’ respective uses of fishing and irrigation. First, the Arkansas Supreme Court reaffirmed the general rule in Arkansas “that riparian landowners on a non-navigable stream take title to the thread, or center of the stream.”<sup>80</sup> Then, the court considered whether Latimer’s irrigation use of the water was unreasonable under the particular facts of the case. The dispute arose when Latimer pumped two or three river pools dry during an exceptionally dry year.<sup>81</sup> Latimer’s pumping deprived Nilsson of occasional recreational fishing at those particular pools, a recrea-

72. *Id.* at 237, 595 S.W.2d at 665.

73. *Id.* at 238, 595 S.W.2d at 665 (Fogelman, C.J., dissenting).

74. *Id.* at 243, 595 S.W.2d at 668 (Fogelman, C.J., dissenting).

75. 492 F. Supp. 956 (E.D. Ark. 1980).

76. *Id.* at 964.

77. 224 Ark. 100, 271 S.W.2d 924 (1954); *see supra* notes 47–55 and accompanying text.

78. *Miller*, 492 F. Supp. at 965.

79. 281 Ark. 325, 664 S.W.2d 447 (1984).

80. *Id.* at 327, 664 S.W.2d at 449.

81. *Id.* at 330, 664 S.W.2d at 450.

tional activity that the court called “arguably an insignificant amount overall.”<sup>82</sup>

The *Nilsson* court began its analysis by repeating the rule that recognized recreational and commercial uses as equal. But, the court found that *Nilsson* failed to demonstrate that his loss of recreational fishing use was more than negligible, or that it exceeded “the reasonable amount of inconvenience and annoyance which may be imposed upon one riparian owner by another when riparian rights compete.”<sup>83</sup> The *Nilsson* court’s analysis, however, conflicts with the rules the court laid down in *Harris v. Brooks*.<sup>84</sup>

The result in *Nilsson* clearly contradicts one of the four basic tenets of the riparian rights reasonable use doctrine adopted in Arkansas: “When one lawful use of water is destroyed by another lawful use the latter must yield, or it may be enjoined.”<sup>85</sup> Because the recreational fishing use, however insignificant it may have been, surely was destroyed when Latimer pumped the pools dry, the court should not have engaged in any balancing of harms or test of reasonableness.<sup>86</sup> Only when one lawful use “interferes with or detracts from” another without destroying it does a question arise as to whether, under all the facts, the interference is unreasonable.<sup>87</sup> The court, perhaps inadvertently, weighed occasional fishing use against agricultural irrigation and found the latter more important.

In his dissent, Justice Hickman also called for legislative change:

In a broader sense, we have reached the time in our state when we have to start thinking seriously in terms of a scarcity of water and of the competing interests for our water which must be fairly reconciled. No longer can we assume there is an abundance of water there for everyone’s taking for any and all purposes. We now know that most of our water actually belongs to no one. Subterranean water constantly moves, small branches create nonnavigable streams, which, in turn, create navigable bodies of water. All are interrelated and affected by any damage to the other. The general assembly, an appropriate body to resolve these problems, has so far failed to deal with them in any definitive way. It would

82. *Id.*, 664 S.W.2d at 450.

83. *Id.*, 664 S.W.2d at 450.

84. *Harris*, 225 Ark. 436, 445, 283 S.W.2d 129, 134 (1955); *see also* notes 57–61 and accompanying text.

85. *Harris*, 225 Ark. at 445, 283 S.W.2d at 134.

86. *See id.*, 283 S.W.2d at 134.

87. *Id.*, 283 S.W.2d at 134. Justice Hickman agreed in his dissent. “The fact the appellant may have wanted to use the holes to fish is enough to find he was deprived of that right however slight it may have been. A riparian owner does not abandon his rights merely because she does [not] use them.” *Nilsson*, 281 Ark. at 331, 664 S.W.2d at 451 (Hickman, J., dissenting).

be better if they addressed the problem in a comprehensive way rather than if we settled all the conflicting interests in a case-by-case way.<sup>88</sup>

Justice Hickman's words remain equally applicable today.

## II. GROUNDWATER IN ARKANSAS: COMMON LAW APPLICATION OF RIPARIAN RIGHTS—REASONABLE USE DOCTRINE

The common law of groundwater rights in Arkansas remained undefined until 1957, when the Arkansas Supreme Court decided *Jones v. Oz-Ark-Val Poultry Co.*,<sup>89</sup> immediately on the heels of the series of surface water cases during the drought of the 1950s.<sup>90</sup> In *Jones*, the supreme court reversed the trial court and directed that appellee, a poultry processing plant, be enjoined from withdrawing unreasonable quantities of water by operation of its seven wells.<sup>91</sup> The neighbors blamed the plant's wells for causing their domestic water supply wells to go dry.

With very little explanation, the court directly applied the riparian rights reasonable use rule to groundwater: "As to water rights of riparian owners, this [s]tate has adopted the reasonable use rule. We see no good reason why the same rule should not apply to a true subterranean stream or to subterranean percolating waters."<sup>92</sup> The reference to both subterranean streams and subterranean percolating waters clarified that the rule would apply to all groundwater, regardless of its character. Historically, some common law rules distinguished between flowing underground waters considered to be streams,<sup>93</sup> and so-called percolating waters,<sup>94</sup> which included all other types of groundwater.

88. *Nilsson*, 281 Ark. at 331–32, 664 S.W.2d at 451 (Hickman, J., dissenting).

89. 228 Ark. 76, 306 S.W.2d 111 (1957).

90. *See id.* at 78, 306 S.W.2d at 113. Justice McFaddin's dissent directly refers to the heightened focus on water rights both in the courts and in the Arkansas legislature during this period:

It is well known in Arkansas that in the past two sessions of the [l]egislature, the question of legislation concerning water has been one of the most controversial issues. We have had a great deal of trouble trying to decide surface water cases; and subterranean water cases are far more difficult.

*Id.* at 84, 306 S.W.2d at 116 (McFaddin, J. dissenting).

91. *Id.* at 82, 306 S.W.2d at 115.

92. *Id.* at 79, 306 S.W.2d at 113 (internal citations omitted).

93. *Id.*, 306 S.W.2d at 113. "Flowing subterranean waters consist of waters whose courses are well-defined and reasonably ascertainable and whose existence is not of a temporary or ephemeral character." *Id.*, 306 S.W.2d at 114.

94. *Id.* at 79–80, 306 S.W.2d at 114.

The term "percolating waters" includes all waters which pass through the ground beneath the surface of the earth without a definite channel and not shown to be supplied by a definite flowing stream; percolating waters are those which seep, ooze, filter, and otherwise circulate through the subsurface strata without defi-

The *Jones* court also reviewed the various common law approaches to groundwater rights applied by other courts. Under the English Rule, or absolute ownership doctrine, the surface landowner is entitled to withdraw all of the groundwater he could obtain from beneath his land.<sup>95</sup> The English Rule is a rule of capture, giving the surface owner absolute ownership of all groundwater captured for his use, regardless of any harm to his neighbor.<sup>96</sup>

On the other hand, the American Rule described in *Jones*, sometimes called the rule of correlative rights,<sup>97</sup> gives each surface owner

a common and correlative right to the use of this [underground] water upon his land, to the full extent of his needs if the common supply is sufficient, and to the extent of a reasonable share thereof, if the supply is so scant that the use by one will affect the supply of the others.<sup>98</sup>

Courts have applied a number of intermediate variations and modifications of the various rules.<sup>99</sup> The *Jones* court, quoting from the *Restatement of Torts*, emphasized that each landowner's right to use groundwater is not absolute, but is qualified in the same manner that a riparian owner's right to use surface water is qualified with respect to other riparian owners.<sup>100</sup>

The court's review of the various rules of groundwater rights in *Jones*, however, should not be confused with the court's holding. While the survey of rules provides some assistance in understanding basic concepts and historical context, the only statement of Arkansas law is the court's apparently wholesale adoption of the riparian rights reasonable use doctrine as previously applied to surface waters in Arkansas.<sup>101</sup> Therefore, to better define the groundwater rule in Arkansas, one must look to the Arkansas surface water cases.

The surface owner is considered the riparian owner in the rule's application to groundwater. The stream, lake, or other watercourse referred to in riparian cases is analogous to the underground source of water, whatever its character. It is also reasonable to assume that every surface owner whose land lies above a common source of groundwater would be considered a

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nite, or defined, channels, or in a course that is unknown and not discoverable from surface indications without excavation for that purpose.

*Id.*, 306 S.W.2d at 114.

95. *Jones*, 228 Ark. at 79–80, 306 S.W.2d at 114.

96. Christman, *supra* note 24, at 30 (citing *Wheatley v. Baugh*, 25 Pa. 528 (1855)).

97. *Jones*, 228 Ark. at 81, 306 S.W.2d at 115; *see also* Christman, *supra* note 24, at 30; Looney, *supra* note 16, at 226.

98. *Jones*, 228 Ark. at 81, 306 S.W.2d at 115.

99. *Id.*, 306 S.W.2d at 115; *see also* Christman, *supra* note 24, at 30; Looney, *supra* note 16, at 226.

100. *Jones*, 228 Ark. at 81–82, 306 S.W.2d at 115 (quoting RESTATEMENT OF THE LAW OF TORTS § 858 (1939)).

101. *Id.* at 79, 306 S.W.2d at 113.

riparian landowner in determining relative rights or allocation of the groundwater, when necessary.

The groundwater reasonable use rule in Arkansas (recast from the mold in *Harris v. Brooks*) would, therefore, be as follows: Each surface owner above a common source of groundwater has an equal right to make a reasonable use of the groundwater subject to the equal rights of other surface owners to make a reasonable use.<sup>102</sup> The general rules and principles of the groundwater reasonable use doctrine would be:

- (a) The right to use groundwater for strictly domestic purposes—such as for household use—is superior to many other uses of groundwater—such as for irrigation and other commercial uses.<sup>103</sup>
- (b) Other than domestic use, all other lawful uses of groundwater are equal. Lawful uses of groundwater in this state include irrigation, manufacturing, and other commercial uses.<sup>104</sup>
- (c) When one use of groundwater destroys another use and both are lawful, the latter must yield or be enjoined.<sup>105</sup>
- (d) When one use of groundwater impedes another use and both are lawful, an issue arises, considering all the facts and circumstances, whether the detracting use is unreasonable and therefore enjoined or is subject to a reasonable and equitable adjustment, with regard to the reasonable rights of each surface owner.<sup>106</sup>
- (e) A surface owner above a source of groundwater has no right to withdraw groundwater and use it beyond the boundary of the property from which it was withdrawn. But, so long as no shortage exists among other surface owners above the common groundwater source, there is no legal impediment to such use.<sup>107</sup>

In 1975 the Arkansas Supreme Court again considered the law of groundwater rights in *Lingo v. City of Jacksonville*.<sup>108</sup> The City of Jacksonville (in Pulaski County) had purchased several small parcels of land in ad-

102. See *Harris v. Brooks*, 225 Ark. 436, 442–43, 283 S.W.2d 129, 133 (1955); see also *supra* note 57 and accompanying text.

103. *Harris*, 225 Ark. at 444, 283 S.W.2d at 134.

104. *Id.* at 444–45, 283 S.W.2d at 134.

105. *Id.* at 445, 283 S.W.2d at 134.

106. *Id.* at 444–45, 283 S.W.2d at 134; see also *supra* note 58 and accompanying text.

107. See *Harrell v. City of Conway*, 224 Ark. 100, 104–05, 271 S.W.2d 924, 927 (1954); see also *Lingo v. City of Jacksonville*, 258 Ark. 63, 522 S.W.2d 403 (1975); *supra* notes 44–45 and accompanying text.

108. 258 Ark. at 63, 522 S.W.2d at 403.

joining Lonoke County. The City installed five wells to supplement its water supply for sale to its customers about five miles away. Nearby homeowners, fish farmers, rice farmers, and a manufacturer sued, claiming that the City's pumping would deplete the quantity and quality of groundwater available for their use.<sup>109</sup> The trial court entered an injunction restricting the City to certain pumping parameters, appointed masters to monitor groundwater levels, and retained jurisdiction. The nearby landowners appealed, arguing that the City should be restricted to using groundwater only on the overlying land in absence of an eminent domain proceeding and just compensation.<sup>110</sup> The court affirmed and reinforced the tenets of the riparian right reasonable use theory as applied to groundwater.<sup>111</sup>

It is permissible for a riparian owner to remove subterranean and percolating waters and use it away from the lands from which it was pumped if it does not injure the common supply of other riparian owners. The rationale is that adjacent riparian owners cannot complain if they are not damaged by the removal.<sup>112</sup>

Like the riparian right reasonable use rule with regard to surface water, a surface owner's right to withdraw any particular quantity of groundwater is continually subject to ever-increasing limitations whenever another surface owner above the common source initiates a reasonable use. As sensible and fair as the reasonable use rule seems on the surface, it is woefully inadequate to deal with the geological nature of groundwater and the realities of its development and exploitation in Arkansas. Consider this oversimplified example: When landowner A withdraws groundwater in an amount exceeding the rate of natural recharge, eventually the water level in the underlying aquifer will decline.<sup>113</sup> However, if adjoining landowners B, C, and D also have wells in the common source, they may or may not perceive any effect from A's overuse.<sup>114</sup> If each of their wells is drilled to a level fifty feet below the surface of the groundwater, and A's overpumping causes the water level to drop one foot per year, it will take fifty years for the other landowners to run out of water. By then, the damage could be irreversi-

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109. *Id.*, 522 S.W.2d at 403.

110. *Id.* at 65, 522 S.W.2d at 405.

111. *Id.* at 68, 522 S.W.2d at 406.

112. *Id.* at 66, 522 S.W.2d at 405 (citation omitted).

113. Of course, impacts of pumping on groundwater resources is much more complex than this simple illustration. For an excellent discussion of the effects of pumping on groundwater, see R. ALLAN FREEZE & JOHN A. CHERRY, *GROUNDWATER* 303-82 (1979).

114. Frank J. Trelease, *A Water Management Law for Arkansas*, 6 U. ARK. LITTLE ROCK L. REV. 369, 373 (1983) ("When more water is pumped by modern deep wells than nature replenishes into the aquifer, no well goes dry. The water table or pressure falls, pumping costs go up, disaster approaches, but the water comes as long as the pump is switched on.").

ble.<sup>115</sup> Similarly, if another landowner E drills a new well after A has overpumped for twenty-five years, he will have to drill deeper and incur greater pumping costs due to the declining water table or pressure. And, what if the common aquifer covers many square miles and there are hundreds or thousands of landowners like A who have been overpumping for years? Who can give E relief when he drills his well and there is no water?

Obviously, Arkansas common law has proven ineffective in dealing with the state's groundwater resources and its chronic overuse. This problem and others have led Arkansas to enact a series of legislative changes to water law, which are reviewed briefly in the following sections of this article.

### III. ARKANSAS STATUTORY AND REGULATORY CHANGES TO WATER RIGHTS

#### A. Surface Water

During the drought of the 1950s, while the Arkansas Supreme Court was wrestling with individual water disputes and defining riparian rights, the Arkansas General Assembly was debating water rights issues and considering statutory change. Partially in response to Justice McFaddin's plea in *Harrell v. City of Conway*,<sup>116</sup> the Arkansas General Assembly considered comprehensive legislation during the 1955 session that would have established an appropriation system in Arkansas.<sup>117</sup> The 1955 bill would have provided for superior rights based on priority in time, created absolute ownership, and established a Water Control Commission to approve applications for appropriation and to adjudicate disputes, among other things.<sup>118</sup> Ultimately, the 1955 bill was withdrawn by its sponsor and never voted on.<sup>119</sup> In 1957 Justice McFaddin wrote in *Jones v. Oz-Ark-Val Poultry*: "It is well-known in Arkansas that in the past two sessions of the [l]egislature, the question of legislation concerning water has been one of the most controversial issues."<sup>120</sup> Coincidentally, in 1955, the neighboring state of Mississippi became the only eastern state to ever adopt a statutory system of appropriative rights, which it eventually repealed in 1985.<sup>121</sup>

115. FREEZE & CHERRY, *supra* note 113, at 370–78.

116. 224 Ark. 100, 107, 271 S.W.2d 924, 928 (1954) (McFaddin, J., concurring); *see also* Looney, *supra* note 16, at 235.

117. S.B. 69, 1955 Leg., 62nd Sess. (Ark. 1955).

118. *Id.*

119. Looney, *supra* note 16, at 235.

120. 228 Ark. 76, 84, 306 S.W.2d 111, 116 (McFaddin, J., dissenting).

121. MISS. CODE ANN. §§ 51-3-3 to -7 (1999). *See generally* William Champion, *Prior Appropriation in Mississippi—A Statutory Analysis*, 39 MISS. L.J. 1 (1967); Joseph W. Dellapenna, *Issues Arising Under Riparian Rights: Replacing Common-Law Riparian Rights*

Beginning in 1957 the General Assembly enacted various statutes affecting surface water rights and allocation in Arkansas. Professor J.W. Looney has suggested that perhaps the combined effect of the various statutes ends Arkansas's reliance on the riparian rights doctrine for surface water.<sup>122</sup> However, the riparian rights reasonable use doctrine continues to play an integral role in Arkansas law, both directly and indirectly. First, the patchwork of legislative and regulatory schemes simply does not address some aspects of established riparian rights. Furthermore, some of the basic concepts and goals of the riparian rights reasonable use doctrine have been interwoven into the fabric of statutes and regulations. Finally, frequent references to riparian rights as "vested property rights" and to "takings" in Arkansas Supreme Court opinions raise the specter of constitutional concerns over regulatory programs and undoubtedly will require continuing interpretation and, almost certainly, litigation. A brief survey of the development of statutory and regulatory authorities follows.

### 1. 1957 Water Legislation

The 1957 legislation<sup>123</sup> authorized the Arkansas Soil and Water Conservation Commission (ASWCC) to issue dam construction permits and gave ASWCC power to allocate water from streams during times of shortage, generally based on the reasonable use concept. With certain conditions, the person constructing a dam under permit is given the exclusive right to use the impounded water. ASWCC's power to allocate water is to be carried out "to the extent and in the manner provided by law."<sup>124</sup> The "manner provided by law" apparently refers to the common law of riparian rights reasonable use because no other provisions of law in existence at the time would have been applicable.<sup>125</sup> Arguably, any act of allocation by ASWCC pursuant to this authority could be subject to challenge if it is inconsistent with the riparian rights reasonable use rule established in Arkansas.

In making any surface water allocation, ASWCC is required to give preferences to sustaining life, maintaining health, and increasing wealth—in that order.<sup>126</sup> It must consider nonconsumptive uses including recreation, fish and wildlife, and "other ecological needs" in addition to domestic and

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with *Regulated Riparianism*, in *WATER RIGHTS OF THE EASTERN UNITED STATES*, *supra* note 18, at 40.

122. J.W. Looney, *An Update on Arkansas Water Law: Is the Riparian Rights Doctrine Dead?*, 43 ARK. L. REV. 573, 579 (1990).

123. Act of Feb. 25, 1957, No. 81, 1957 Ark. Acts 81 (codified at ARK. CODE ANN. §§ 15-22-201 to -220 (LEXIS Repl. 2000)).

124. ARK. CODE ANN. § 15-22-205(a)(3).

125. See Looney, *supra* note 122, at 578.

126. ARK. CODE ANN. § 15-22-217(c).

municipal water supply, agricultural, industrial, and navigational requirements.<sup>127</sup> A 1989 amendment to the allocation statute identifies domestic and municipal domestic water supply, minimum streamflow, and federal water rights to be “reserved” priorities that are not subject to allocation.<sup>128</sup>

Arkansas courts have confirmed ASWCC’s primary jurisdiction over water disputes involving permitted dams. In *Styers v. Johnson*,<sup>129</sup> upper riparian owners had constructed a dam pursuant to a properly obtained permit from ASWCC and impounded the flow from a spring on their property, thereby obstructing its natural flow into Mill Creek.<sup>130</sup> Lower riparian owners sued, alleging the wrongful obstruction of flow to their property and interference with their irrigation and domestic uses.<sup>131</sup> The lower riparian owners did not object to issuance of the dam permit by ASWCC, but argued that the dam owners should be required to guarantee a continuing flow from the dam, approximating the natural stream flow.<sup>132</sup>

The Arkansas Court of Appeals in *Styers* agreed that the authorizing statute required ASWCC to condition dam permits on maintenance of a stream flow designed to protect lower riparian rights.<sup>133</sup> The trial court had entered an order requiring the dam owners to make water available to the lower riparian owners in an amount equal to the flow from the spring before it was dammed, but the court of appeals reversed and dismissed the case.<sup>134</sup> The court agreed that ASWCC properly had conditioned the dam permit on a discharge rate approximating natural flow.<sup>135</sup> Nevertheless, the court held that ASWCC had original jurisdiction of the cause and that the lower riparian owners must first seek their remedy before ASWCC.<sup>136</sup> The *Styers* court recognized the continuing integral role of the riparian rights reasonable use decisions in the application of the statutes on the subject when it stated that ASWCC “is empowered to allocate available water whenever a shortage exists. This statutory scheme provides [ASWCC] with authority to issue dam-building permits and, at the same time, recognizes and encompasses Arkansas’s case-law authority dealing with the rights of riparian owners.”<sup>137</sup>

127. *Id.* § 15-22-217(d).

128. Act of Mar. 10, 1989, No. 469, 1989 Ark. Acts 469 (codified in part at ARK. CODE ANN. § 15-22-217(e)). For an explanation of the import of these reservations, see Looney, *supra* note 122, at 594–95.

129. 19 Ark. App. 312, 720 S.W.2d 334 (1986).

130. *Id.* at 313, 720 S.W.2d at 335.

131. *Id.*, 720 S.W.2d at 335.

132. *Id.* at 314, 720 S.W.2d at 336.

133. *Id.* at 314–15, 720 S.W.2d at 336; see ARK. CODE ANN § 15-22-210(1) (LEXIS Repl. 2000).

134. *Styers*, 19 Ark. App. at 316, 720 S.W.2d at 337.

135. *Id.* at 314–15, 720 S.W.2d at 336.

136. *Id.* at 315–16, 720 S.W.2d at 337.

137. *Id.* at 315, 720 S.W.2d at 336.

## 2. 1969 Water Legislation

In 1969 the General Assembly added the requirement that diversions of surface water from streams, lakes, and ponds be registered with ASWCC.<sup>138</sup> At the time, however, there were no penalties for noncompliance. A later amendment added a \$500 late registration fee.<sup>139</sup> The 1969 legislature also gave ASWCC authority to begin work on the first Arkansas State Water Plan (“Arkansas Water Plan”).<sup>140</sup> The 1969 Act designated ASWCC as the primary agency responsible for statewide water resources planning and mandated that ASWCC create a water plan. The Arkansas Water Plan must reflect the “public interests of the entire state” and give due consideration to “existing water rights.”<sup>141</sup> A later amendment requires formal ASWCC approval of compliance with the Arkansas Water Plan before public funds can be spent on water project development.<sup>142</sup>

In *City of Benton v. Arkansas Soil and Water Conservation Commission*,<sup>143</sup> ASWCC had determined that the City of Malvern’s proposed water development project complied with the Arkansas Water Plan, a prerequisite for project construction.<sup>144</sup> Project opponents appealed the circuit court’s affirmance of ASWCC’s decision. The Arkansas Supreme Court upheld the administrative decision against various allegations of procedural irregularities and due process violations. The court’s opinion emphasized the administrative role of ASWCC and the need to develop a proper record of both factual allegations and legal arguments before ASWCC in order to preserve the issues for appeal.<sup>145</sup>

## 3. 1985 Water Legislation

Legislation in 1985 appears to represent a more significant departure from Arkansas’s common law riparian rights reasonable use doctrine, although the impact has not been entirely realized. This change came after the formation of the Water Code Study Commission in 1981<sup>146</sup> and the rejection

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138. Act of Mar. 7, 1969, No. 180, 1969 Ark. Acts 180 (codified at ARK. CODE ANN. § 15-22-215 (LEXIS Repl. 2000)).

139. ARK. CODE ANN. § 15-22-215(g)(1).

140. Act of Mar. 10, 1969, No. 217, 1969 Ark. Acts 217 (codified at ARK. CODE ANN. § 15-22-503 (LEXIS Repl. 2000)).

141. ARK. CODE ANN. § 15-22-503(b)–(c).

142. *Id.* § 15-22-503(e).

143. 345 Ark. 249, 45 S.W.3d 805 (2001).

144. *See* ARK. CODE ANN. § 15-22-503(e).

145. *City of Benton*, 345 Ark. at 260–61, 45 S.W.3d at 812–13.

146. Act of Mar. 13, 1981, No. 466, 1981 Ark. Acts 466. For a more detailed discussion of the Water Code Study Commission, see Looney, *supra* note 122, at 578–79.

of more comprehensive legislation proposed in 1983.<sup>147</sup> In 1985 the General Assembly directed ASWCC to update the Arkansas Water Plan, broadening ASWCC's responsibilities to include: (1) completing an inventory of Arkansas's water resources; (2) determining current and future water needs in the state; (3) defining critical water areas; (4) setting minimum stream flows; (5) determining the existence of "excess surface water"; (6) developing guidelines to evaluate proposed transfers of water to nonriparians; and (7) developing guidelines to determine compensation for damages from proposed water transfers.<sup>148</sup>

Arguably, the most significant aspect of the 1985 legislation was the express authority to develop guidelines for the transfer of "excess surface water" outside the basin of origin.<sup>149</sup> "Excess surface water" is defined as twenty-five percent of that amount of water available on an average annual basis from any watershed above the amount necessary to satisfy the following: (1) riparian rights existing as of June 28, 1985; (2) water needs of federal water projects existing on June 28, 1985; (3) firm yield of existing reservoirs; (4) maintenance of instream flows for fish and wildlife, water quality, and aquifer recharge requirements; and (5) future water needs of the basin of origin as projected in the Arkansas Water Plan.<sup>150</sup> For the White River Basin only, the definition was amended in 1995, such that "a transfer shall not exceed on a monthly basis an amount which is fifty percent of the monthly average of each individual month of excess surface water."<sup>151</sup>

But, the significance of the perceived change to Arkansas law may be overstated. The Arkansas cases applying riparian rights reasonable use have never per se prohibited the transfer of water outside riparian land. For example, in *Harrell v. City of Conway*, the Arkansas Supreme Court clearly found no legal impediment to the City of Conway's transfer of water outside the watershed so long as there was sufficient water "to serve the needs of each and all of the riparian owners."<sup>152</sup> The same rule was applied to groundwater in *Lingo v. City of Jacksonville*.<sup>153</sup> Of course, under Arkansas's case law, any nonriparian user would always run the risk that its use would be usurped by the reasonable needs of riparian owners in times of shortage.

Likewise, that same limitation seems to be built into the statutory scheme—by virtue of reserved rights, priorities, and the definition of "ex-

147. See Looney, *supra* note 122, at 578–79.

148. Act of Apr. 17, 1985, No. 1051, 1985 Ark. Acts 1051 (codified at ARK. CODE ANN. §§ 15-22-301 to -304 (LEXIS Repl. 2000)).

149. See Looney, *supra* note 122, at 583.

150. ARK. CODE ANN. § 15-22-304(b).

151. *Id.* § 15-22-304(e).

152. 224 Ark. 100, 105, 271 S.W.2d 924, 927 (1954).

153. 258 Ark. 63, 522 S.W.2d 403 (1975); see *supra* notes 108–12 and accompanying text.

cess surface water,” which is a limitation on the authority to approve a transfer.<sup>154</sup> Surface water cannot be considered excess unless, among other things, existing riparian rights as of June 28, 1985, are first satisfied.<sup>155</sup> It is significant that the statute refers to rights rather than uses. Under the riparian rights reasonable use doctrine applied in Arkansas, riparian rights are not acquired by use and are not diminished by nonuse.<sup>156</sup>

Even if riparian rights are somehow fixed at a given point in time, the magnitude of the total allowable water use pursuant to those rights may be ever-increasing as new reasonable uses are developed by riparian owners, up to the limits of the riparian water supply. By definition, the amount of excess surface water necessarily would contract in direct proportion to the increase in riparian use. The supreme court has pointed out that these rights “could not, of course, [be] constitutionally negate[d].”<sup>157</sup>

#### 4. 1989 Water Legislation

Further legislative changes occurred in 1989.<sup>158</sup> The 1989 Act directed ASWCC to “establish and enforce minimum stream flows for the protection of instream water needs.”<sup>159</sup> In doing so, ASWCC must follow administrative rulemaking procedures and must consult formally with the Arkansas Game and Fish Commission, the Arkansas Pollution Control and Ecology Commission, and “other interested state boards and commissions.”<sup>160</sup> The legislature also gave ASWCC authority to delegate the power to allocate water during shortage to conservation districts and regional water districts.<sup>161</sup> Such a delegation could have constitutional implications.<sup>162</sup>

#### 5. ASWCC Surface Water Regulations

To implement its statutory duties related to surface water allocation, ASWCC promulgated Title III Rules for the Utilization of Surface Water (“Title III”).<sup>163</sup> Title III defines key terms, covers surface water diversion

154. ARK. CODE ANN. § 15-22-304.

155. *Id.* § 15-22-304(b)(1).

156. *Harrell*, 224 Ark. at 106, 271 S.W.2d at 928; *Thomas v. LaCotts*, 222 Ark. 171, 177–78, 257 S.W.2d 936, 940 (1953).

157. *Harris v. Brooks*, 225 Ark. 436, 444, 283 S.W.2d 129, 134 (1955).

158. Act of Mar. 10, 1989, No. 469, 1989 Ark. Acts 469 (codified at ARK. CODE ANN. §§ 15-22-221 to -222 (LEXIS Repl. 2000) and amendments to various other sections).

159. ARK. CODE ANN. § 15-22-222(a).

160. *Id.* § 15-22-222(b)(1).

161. *Id.* § 15-22-221.

162. *See Leathers v. Gulf Rice Ark., Inc.*, 338 Ark. 425, 994 S.W.2d 481 (1999) (dealing with an unconstitutional delegation of legislative power).

163. ARK. SOIL & WATER CONSERVATION COMM’N, TITLE III RULES FOR THE UTILIZATION

registration,<sup>164</sup> sets permitting procedures for intrabasin transfers,<sup>165</sup> inter-basin transfers,<sup>166</sup> and interstate transfers,<sup>167</sup> and develops procedures and guidelines for allocation of water during periods of shortage,<sup>168</sup> as well as establishing various related administrative procedures. Noticeably absent from Title III are any specific rules for determination of minimum stream flows.<sup>169</sup>

Prior to any allocation, ASWCC must first find that a shortage exists, i.e., “when there is not sufficient water in a stream to meet all beneficial uses.”<sup>170</sup> “Beneficial Use” is defined as “[t]he instream and offstream uses of water in such quantity as is economical and efficient and which use is for a purpose and in a manner which is reasonable, not wasteful, and compatible with the public interest.”<sup>171</sup> In a recent draft report, ASWCC listed the following as beneficial uses: municipal, domestic, industrial and agricultural, aquifer recharge, water quality maintenance, fish and wildlife, interstate compacts, and navigation.<sup>172</sup> Title III recognizes the statutory “reserved water rights” of domestic and municipal domestic, minimum stream flow, and federal water rights, which must be preserved prior to allocation for any other purposes.<sup>173</sup> After reserved water rights are satisfied, ASWCC must give preference in the following order for water uses and types of water diversions, during an allocation:

A. Priority of Water Use:

- (1) Agriculture
- (2) Industry
- (3) Hydropower
- (4) Recreation

B. Priority of Water Diversions:

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OF SURFACE WATER (1994) [hereinafter RULES] (implementing the statutory directives found at ARK. CODE ANN. §§ 15-22-201 to -223).

164. *Id.* at subtitle II.

165. *Id.* at subtitle IV.

166. *Id.* at subtitle V.

167. *Id.* at subtitle VI.

168. *Id.* at subtitles VII–XI.

169. RULES, *supra* note 163, at subtitle III (establishing minimum stream flow as “reserved”).

170. *Id.* § 307.1.

171. *Id.* § 301.3(G).

172. ARK. SOIL & WATER CONSERVATION COMM’N, WHITE RIVER ALLOCATION, BULL SHOALS TO THE MISSISSIPPI RIVER, TECHNICAL ANALYSIS 2 (2000) [hereinafter TECHNICAL ANALYSIS].

173. RULES, *supra* note 163, § 307.3.

- (1) Riparian
- (2) Non-riparian intrabasin transfer
- (3) Non-riparian interbasin transfer
- (4) Out of state transfer<sup>174</sup>

An allocation proceeding may be initiated by any affected person,<sup>175</sup> or by ASWCC.<sup>176</sup> A technical analysis and draft allocation plan for the White River was produced by ASWCC in December 2000.<sup>177</sup> After substantial comments, it is undergoing continued review.

## B. Groundwater

Unfortunately, Arkansas's most threatened water resource—its groundwater—has received the least amount of legislative attention and no effective regulation to curb its critical over-exploitation. Perhaps due to the historical natural abundance of this resource and surface water resources in Arkansas, as well as the strong agricultural lobby, no statutes addressed the issue until relatively recently. Pursuant to 1985 legislation,<sup>178</sup> groundwater use, for the first time, was required to be registered and reported to ASWCC, except from individual household wells or wells producing less than a maximum 50,000 gallons per day. The General Assembly also directed ASWCC to define critical water areas.<sup>179</sup>

### 1. *Arkansas Ground Water Protection and Management Act*

Finally, in 1991 the Arkansas Legislature took the first steps to build a framework for groundwater protection by passing the Arkansas Ground Water Protection and Management Act (AGPMA).<sup>180</sup> AGPMA creates a potential groundwater regulatory program, but includes substantial limitations to actual implementation. First, the regulatory scheme is designed to apply only in areas formally designated as "critical groundwater areas."<sup>181</sup> The Arkansas Water Plan describes critical groundwater areas as those areas

174. *Id.* § 307.4.

175. *Id.* § 308.1.

176. *Id.* § 310.1.

177. *See* TECHNICAL ANALYSIS, *supra* note 172.

178. Act of Apr. 17, 1985, No. 1051, 1985 Ark. Acts 1051 (codified in part at ARK. CODE ANN. § 15-22-302 (LEXIS Repl. 2000)).

179. *Id.* (codified at ARK. CODE ANN. § 15-22-301(9) (LEXIS Repl. 2000)).

180. 1991 Ark. Acts 342 (codified at ARK. CODE ANN. §§ 15-22-901 to -914 (LEXIS Repl. 2000 & Supp. 2001)).

181. ARK. CODE ANN. §§ 15-22-503, -903 (LEXIS Repl. 2000 & Supp. 2001).

where the “quantity of groundwater is rapidly becoming depleted or the quality is being degraded.”<sup>182</sup> If an area is designated as a critical groundwater area, then ASWCC could allocate groundwater in that area through the issuance of permit-like “water rights” for beneficial uses.<sup>183</sup> Prior to passage of the AGPMA in 1991, there was no mechanism under Arkansas law for groundwater allocation, except through the laborious process of case-by-case litigation.

But, under the AGPMA in its present form, ASWCC is, for all practical purposes, powerless to actually carry out its mission of critical groundwater management, despite the admonition that it “shall develop a comprehensive groundwater protection program.”<sup>184</sup> Major limitations on implementation of water rights allocation render the program ineffective for reducing groundwater depletion. Before any groundwater regulation may occur, the critical groundwater area must be delineated and designated as such through a formal rule-making process.<sup>185</sup> Following designation of the critical groundwater area, ASWCC must make a declaration of necessity before any regulation may occur.<sup>186</sup>

Even more significant is the provision that existing wells and wells constructed within one year of program initiation have grandfathered rights.<sup>187</sup> For alluvial aquifer wells (which provide the majority of agricultural irrigation water), *no reduction or limitation* may be placed on a grandfathered withdrawal right “unless alternative surface supplies are available or can be made available at a cost to the person no greater than the operating cost of the person’s wells within the critical area, including depreciation costs over the life of the well.”<sup>188</sup> “[S]ustaining aquifer” wells with grandfathered withdrawal rights cannot be limited unless alternative surface supplies are available, but without the “equal cost” protection.<sup>189</sup>

Subject to all of these restrictions, however, the AGPMA authorizes ASWCC to regulate groundwater withdrawal by requiring adherence to “water rights” issued by ASWCC.<sup>190</sup> In reality, such regulation is virtually impossible and has never been implemented. Indeed, an ASWCC fact sheet posted on the agency’s website states that “critical ground water designa-

182. ARKANSAS WATER PLAN, *supra* note 1, at 21.

183. ARK. CODE ANN. §§ 15-22-909 to -911 (LEXIS Repl. 2000 & Supp. 2001).

184. ARK. CODE ANN. § 15-22-906(a).

185. *Id.* § 15-22-908; Ark. Soil & Water Conservation Comm’n, Title III Rules for the Protection and Management of Ground Water §§ 403.1–403.2 (1994) [hereinafter GROUND WATER RULES].

186. ARK. CODE ANN. § 15-22-909; GROUND WATER RULES, *supra* note 185, § 404.2.

187. ARK. CODE ANN. § 15-22-910; GROUND WATER RULES, *supra* note 185, § 404.3.

188. ARK. CODE ANN. § 15-22-905(1)(A) (LEXIS Supp. 2001).

189. *Id.* § 15-22-905(1)(B).

190. *Id.* § 15-22-909(a)(4); GROUND WATER RULES, *supra* note 185, § 404.2.

tion” is *not* a regulatory program at all and that ASWCC has not proposed regulation anywhere in Arkansas.<sup>191</sup>

ASWCC has formally designated the following as two critical groundwater areas in Arkansas: a five-county area of the Sparta aquifer in southern Arkansas that was designated a critical groundwater area in 1996 and the Grand Prairie area in eastern Arkansas for which both the alluvial and Sparta-Memphis aquifers were designated as critical in 1998.<sup>192</sup> A group of Arkansas County farmers challenged the propriety of the Grand Prairie area designation, and a March 1999 decision of the Arkansas County Circuit Court struck the original groundwater designation and remanded the issue to ASWCC for further proceedings.<sup>193</sup> ASWCC subsequently issued an order confirming the designation.<sup>194</sup>

## 2. *Sparta Aquifer Critical Counties’ Remediation Act*

During the 1999 legislative session, several bills were introduced proposing more stringent regulation of groundwater in eastern and southern Arkansas. Some of the proposals included a tax on groundwater use, which were met with great opposition. However, in Union, Ouachita, Columbia, Calhoun, and Bradley counties in southern Arkansas, a strong coalition formed favoring more drastic measures to protect their rapidly diminishing groundwater resources. The resulting legislation was the Sparta Aquifer Critical Counties’ Remediation Act (“Sparta Act”).<sup>195</sup> The stated intent of the Sparta Act is “to make available revenues and resources to address this crisis and to discourage the withdrawal of Sparta Aquifer water by certain large water users” in the affected counties.<sup>196</sup>

The Sparta Act declared a groundwater crisis in the affected counties and provided for the establishment of county conservation boards to develop an improvement plan in their respective counties.<sup>197</sup> The boards have

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191. ARK. SOIL & WATER CONSERVATION COMM’N, FACT SHEET: CRITICAL GROUNDWATER DESIGNATION, *available at* [http://www.state.ar.us/aswcc/critical\\_groundwater\\_designation\\_fact\\_sheet.pdf](http://www.state.ar.us/aswcc/critical_groundwater_designation_fact_sheet.pdf) (last visited Oct. 5, 2002). “Will regulation be imposed as a result of designation? No. There is no regulation of water associated with critical area designation. Regulation cannot be initiated without a new process involving lengthy legal proceedings, additional notice and public hearings. Regulation has not been proposed anywhere in the state.” *Id.*

192. 2001 GROUNDWATER REPORT, *supra* note 3, at 9–10.

193. *See In re The Designation of the Alluvial and Sparta Aquifers*, No. CGWA 1998-2 (Ark. Soil & Water Conservation Comm’n Nov. 15, 2001).

194. *Id.* at 1.

195. Act of Apr. 1, 1999, No. 1050, 1999 Ark. Acts 1050 (codified at ARK. CODE ANN. §§ 15-22-1201 to -1218 (LEXIS Repl. 2000)).

196. ARK. CODE ANN. § 15-22-1202(b).

197. *Id.* § 15-22-1202(a), -1205.

broad governmental powers, including the power of eminent domain, in carrying out their functions.<sup>198</sup> Perhaps most significantly, the Sparta Act levies a “conservation fee” on the withdrawal of groundwater at the following rates: (1) twenty-four cents per thousand gallons until May 1, 2001, and (2) thirty-six cents per thousand gallons thereafter.<sup>199</sup>

The success of the Sparta Act during the 1999 legislative session is somewhat surprising, given the history of groundwater regulation in Arkansas. One reasonable explanation is that industry makes up a much larger proportion of the groundwater use in southern Arkansas, compared to eastern Arkansas areas where agriculture is predominant. The economic impact of the regulation, therefore, fell on fewer constituents directly, and the conservation effort was largely supported by industry in the area. A similar bill submitted in 1999 would have imposed a groundwater conservation fee on portions of the Grand Prairie area of eastern Arkansas, a predominantly agricultural area.<sup>200</sup> While the bill was defeated, the vote was much closer than many expected.<sup>201</sup> The 1999 legislative session should have been a wakeup call to groundwater users in those areas of the state where aquifer levels are declining.<sup>202</sup>

#### IV. CONSIDERATIONS FOR REFORM

In *Harris v. Brooks*, the Arkansas Supreme Court expressed its struggle to respond properly to water resource issues:

In all our consideration of the reasonable use theory as we have attempted to explain it we have accepted the view that the benefits accruing to society in general from a maximum utilization of our water resources should not be denied merely because of the difficulties that may arise in its application. In the absence of legislative directives, it appears that this rule or theory is the best that the courts can devise.<sup>203</sup>

The significant water resource problems facing Arkansas today cannot be solved with the same legal framework that helped create the problems in

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198. *Id.* § 15-22-1212.

199. *Id.* § 15-22-1214.

200. S.B. 895, 82nd Leg. (Ark. 1999) (Senator Scott). Senate Bill 895 proposed a four cents per thousand gallons conservation fee, a significant cost to irrigated agricultural operations. The alluvial aquifer commonly yields water to wells at a rate of 1000 to 2000 gallons per minute (GPM), and the Sparta aquifer commonly yields 500 to 1500 GPM. ARKANSAS WATER PLAN, *supra* note 1, at 12.

201. Senate Bill 895 passed the Senate by a vote of twenty-three to four, but failed by one vote to make it out of the Agriculture Committee in the House. S.B. 895, 82nd Leg., *in* ARKANSAS LEGISLATIVE DIGEST at S-N-69 (Apr. 30, 1999).

202. *See supra* notes 6–16 and accompanying text.

203. 225 Ark. 436, 446, 283 S.W.2d 129, 135 (1955).

the first place. Arkansas's most critical water problems, including imminent aquifer failure from chronic overpumping, cannot be resolved on a case-by-case basis. Furthermore, individual adjudication of water disputes is driven by the polarized interests of adverse parties, none of which may reflect the best interests of society. Arkansas's lawmakers should consider a comprehensive revision of the regulatory and management framework for water resources. Such efforts have been defeated in the past.<sup>204</sup> It is doubtful whether the state's elected officials today, as a whole, possess both a thorough awareness of the problem and the political will to make hard choices and lead Arkansas in developing a sound water management program.

The regulatory programs administered by ASWCC provide a good starting point for reform. But, they do not go far enough. The Arkansas Water Plan needs to be updated on a routine basis to provide its intended benefits of education and planning.<sup>205</sup> Existing surface water allocation regulations are cumbersome and have never been implemented in any comprehensive fashion. Groundwater regulations consist of little more than a policy statement and a registration program. The legislature has provided ASWCC no meaningful regulatory or enforcement tools to address the catastrophic decline in groundwater resources. Without more proactive intervention, the groundwater crisis will resolve itself only when enough wells go dry and enough Arkansans go broke.

The function of water rights law is to manage water resource allocation during periods of shortage. A shortage occurs only when man's desire to use water exceeds the supply at a particular place and time. As pointed out by Professor Frank Trelease: "Shortages do not exist in nature. In some years streams are high, in some years they are low. Only when the stream becomes a supply for man's needs, and only when his demands exceed that supply, is there a shortage."<sup>206</sup> A shortage may be cured by either increasing the water supply or decreasing the demand for water. A comprehensive program should facilitate both transportation and other mechanisms to develop "unused" water for beneficial use (increase supply), encourage conservation, and, when necessary, restrict use to a level that conserves the resource and preserves future options. The law should strive to allocate available water resources during times of shortage to the "highest and best uses" from society's point of view.<sup>207</sup> An effective water management law also incorpo-

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204. Comprehensive legislation was proposed by the Water Code Study Commission and rejected during the 1983 legislative session. *See* Looney, *supra* note 122, at 578-79.

205. No comprehensive revision of the Arkansas Water Plan has occurred since 1990. *See id.*

206. Trelease, *supra* note 114, at 373.

207. ASWCC is charged with developing the Arkansas Water Plan "by a regard for the public interest of the entire state." ARK. CODE ANN. § 15-22-503(b) (LEXIS Repl. 2000).

rates resource knowledge and planning to avoid or minimize the development of shortages.

Conflicts over water resource allocation often reflect deep-seated societal values and philosophies about human interaction with the environment. Prioritizing water uses is complex, implicating many important factors such as land use policy, economics, natural resource conservation, agricultural policy, wildlife and fishery values, property rights, taxes, cultural preservation, and even religion.<sup>208</sup> People depend on water for their basic biological needs, livelihood, prosperity, and general welfare. Arkansas needs a more comprehensive system of water rights because Arkansans need the government's help to preserve these values.<sup>209</sup>

Arkansas already has recognized that a pure riparian rights system is inadequate to serve as the sole basis for an efficient and beneficial law of water rights. Since the 1950s, about half of the states in the eastern United States have instituted some form of permit system to replace traditional riparian rights.<sup>210</sup> Integrated legal systems combining riparian rights with regulatory processes of study, planning, management, and allocation have become known generally as "regulated riparianism."<sup>211</sup> The American Society of Civil Engineers sponsored the development of a regulated riparian model water code, designed with the particular needs of eastern states in mind.<sup>212</sup> The model code's basic policy is stated as follows:

§ 1R-1-01. PROTECTING THE PUBLIC INTEREST IN THE WATERS OF THE STATE. The waters of the State are a natural resource owned by the State in trust for the public and subject to the State's sovereign power to plan, regulate, and control the withdrawal and use of those waters, under law, in order to protect the public health, safety, and welfare by promoting economic growth, mitigating the harmful effects of drought, resolving conflicts among competing water users, achieving balance between consumptive and nonconsumptive uses of water, encouraging conservation, preventing excessive degradation of natural environments, and enhancing the productivity of water-related activities.<sup>213</sup>

208. The Bible teaches that Adam and Eve were given dominion over the land and the sea and all living creatures, and God directed them to subdue the earth and put it to their use. *Genesis* 1:28.

209. See Trelease, *supra* note 114, at 390.

210. Joseph W. Dellapenna, *Issues Arising Under Riparian Rights: Replacing Common-Law Riparian Rights with Regulated Riparianism*, in *WATER RIGHTS OF THE EASTERN UNITED STATES*, *supra* note 18, at 40.

211. *Id.*

212. See generally *THE REGULATED RIPARIAN MODEL WATER CODE* (Joseph W. Dellapenna ed., 1997).

213. *Id.* at 1–2.

The beginnings of a regulated riparian system in Arkansas already are evident in the collection of statutes and ASWCC regulations, but the job is incomplete. The task of finding the best solution is not an easy one, but it must not be ignored.