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An Update on Arkansas Water Law: Is the Riparian Rights Doctrine Dead?

by

J.W. Looney

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*J. W. Looney**

I. ARKANSAS WATER POLICY: RAINFALL, RICE, AND RIPARIANS

On November 19, 1874 the *Arkansas Gazette* carried an article concerning the potential for rice as a profitable crop for Arkansas farmers.[1] It was over twenty years later, in 1897, that William H. Fuller, a farmer from Lonoke County, saw rice in production in Louisiana and tried a small three acre plot on his land.[2] It was yet another few years before commercial production commenced in a major way in Arkansas. However, by 1907 there was significant acreage devoted to rice production in Northeast Arkansas, and by 1910 Arkansas was the third most important state in production of this crop. In recent years Arkansas has ranked first among the states in rice production and in 1989 rice was the leading cash crop in the state, surpassing soybeans for the first time.[3] In addition soybean, cotton, and other crop production has expanded in Arkansas, especially in those areas of the state where soil conditions are particularly suited to these crops. Rice production requires enormous quantities of irrigation water and, in addition these other crops benefit from its availability, as needed, to combat shortages from rainfall. Irrigation use has increased dramatically in recent years mostly from underground

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* Professor, University of Arkansas School of Law. B.S.A. University of Arkansas 1966; M.S. University of Missouri-Columbia, 1968; J.D. University of Missouri-Kansas City, 1971; M.S. University of Missouri-Columbia, 1976. Member of Arkansas, Missouri, and Virginia bars. Special recognition is due my former colleagues at Virginia Tech, Sandra Batie, William Cox, and Leonard Shabman whose study of Virginia water law served as the foundation for many of the ideas expressed here; to former students Bobby Davidson, Connie France, and Curt Huckaby who provided some of the basic research reflected in parts of this Article; and to Randy Young and the staff of the Arkansas Soil and Water Conservation Commission for helpful suggestions in the completion of this review.

1. Arkansas Gazette, Nov. 19, 1874, at 2, col. 3.

2. Clements & Ball, *"This Was The Beginning of Clearing of Land"; The Development and Use of the East Arkansas Stump Saw*, 45 ARK. HIST. QTR. 41 (1986).

3. Arkansas Gazette, Jan. 30, 1990, at C1, col. 2.

aquifers in the Delta basin. Projections of water usage reflect that the total use may triple by the year 2030.[4]

Water use for irrigation, mostly from underground sources, has been so heavy that the groundwater level has been dropping significantly on much of the land irrigated from wells. The Arkansas Soil and Water Conservation Commission (Commission) has determined that a minimum level of twenty feet saturated thickness of the alluvial aquifer in Eastern Arkansas is necessary to maintain a "safe yield," that is, an amount of water which may be withdrawn without causing serious depletion effects. Unfortunately, a number of areas have already reached a saturated thickness below this recommended level. These areas are in Lonoke, Prairie, Craighead, and Poinsett counties. Even larger areas are below sixty feet saturated thickness.[5]

A. Surface Water Use

The story of rice and water use is a part of the parallel history of agriculture and development of water policy in Arkansas. Development of Arkansas water policy has also been a parallel movement of actions by the judiciary and the legislature, particularly in recent years. As a water rich State, it was only natural that in the early years of the State's development, water policy would be more of a matter of dispute resolution on a case by case basis than a systematically developed legislative plan.

The Arkansas courts were inclined to follow the doctrine developed and followed in its sister states based on the assumption of a surplus of water—the riparian rights doctrine.[6] The doctrine provides that each riparian owner is entitled to make reasonable use (in terms of quantity and purpose) of the water from a stream, but the right is extended only to that land which is considered to be riparian. This doctrine developed as an American scheme in the earlier part of the 19th

4. Arkansas Soil & Water Conservation Commission, Arkansas Water Plan: Executive Summary 22 (Jan. 1989) [hereinafter Arkansas Water Plan].

5. *Id.* at 25-27.

6. In more recent years Arkansas courts have extended the concept to groundwater, but it is a doctrine developed initially for surface water uses from streams and lakes. For a discussion of groundwater law in Arkansas see *infra* text accompanying note 13.

century. The landmark decision was an 1827 Rhode Island case, *Tyler v. Wilkinson*,[7] which involved a conflict between owners of two adjacent mills. The court held that the earlier user must allow the later user to share in the flow of the water from the stream. The *Tyler* court announced a number of general principles which have since been adopted by most other courts, including those in Arkansas, concerning the nature of the riparian right.

These principles, by the language of the court, characterized the right to water as usufruct. The riparian owner has no property in the water itself. The right to use water exists by virtue of the ownership of riparian land and all owners of land abutting the watercourse have equal rights to the water. In addition, each riparian is entitled to make reasonable use of the water and the test of reasonableness relates to whether injury results to other proprietors. Finally, no riparian proprietor may use the water to the prejudice of another.[8]

Most of these elements were mentioned in prior cases in the late 1700s and early 1800s, however, it was not until *Tyler* that all the elements were construed to be present in a given situation. Most of the eastern states then followed this doctrine in the 19th century and into the early 20th century to settle conflicts between riparian users.

The direction Arkansas would take was resolved by litigation during a particularly dry period in the early 1950s. In one of these cases, *Thomas v. LaCotts*,[9] the Arkansas Supreme Court recognized the basic idea of "reasonable use" of the riparian rights doctrine. However, the court did not indicate a clear choice between the "reasonable use" theory and the "natural flow" theory which would require that riparian uses not diminish the normal level of a stream or lake. Two cases decided shortly after *Thomas* resolved this issue and other unanswered questions concerning the nature of the riparian right.

In *Harrell v. City of Conway*[10] the court quoted cases

7. 24 F. Cas. 472 (Cir. Ct. D. R.I. 1827) (No. 14,312).

8. Id. *See also* Ausness, *Water Use Problems in a Riparian State: Problems and Proposals*, 66 KY. L. J. 191 (1977).

9. 222 Ark. 171, 257 S.W.2d 936 (1953).

10. 224 Ark. 100, 271 S.W.2d 924 (1954).

from Pennsylvania and Kansas to support the conclusion that riparian rights do not extend to taking water from a stream and selling it beyond the limits of the watershed. A year later in *Harris v. Brooks*[11] the Arkansas court was faced with a direct conflict between two riparian owners. The court used this occasion to clarify certain aspects of the riparian rights doctrine as applied in Arkansas. In doing so the court made it clear that the riparian right is not absolute but is qualified for surface water and stated a number of general rules and principles applicable in Arkansas:

> (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 the use mentioned above, 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 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.[12]

B. Groundwater Use

The adoption of the riparian rights concept by the Arkansas Supreme Court did not resolve the question of the rights of landowners to use groundwater. It was up to the Arkansas courts in the mid-fifties to apply the riparian rights concept—at least that portion of it dealing with reasonable use—to groundwater. The Arkansas Supreme Court did so in the 1957 case of *Jones v. Oz-Ark-Val Poultry Co.*[13] in which it quoted from the *Restatement of Torts*:

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11. 225 Ark. 436, 283 S.W.2d 129 (1955).
12. *Id.* at 444-45, 283 S.W.2d at 134 (footnotes omitted).
13. 228 Ark. 76, 306 S.W.2d 111 (1957).

> Therefore, each possessor's rights and privileges with respect to the use of subterranean waters are qualified rather than absolute for the same reasons that each riparian proprietor's rights and privileges with respect to the use of water in the watercourse or lake are qualified and not absolute.[14]

By adopting this approach the Arkansas court accepted the so-called "correlative rights doctrine" for groundwater. This doctrine uses an approach similar to that of the surface water reasonable use rule to determine common rights to water.[15]

The court has also dealt with the right to transfer water away from the "riparian land" in groundwater cases. In *Lingo v. City of Jacksonville*,[16] the court indicated that it would be permissible for a "riparian" owner to remove subterranean and percolating water and either use or sell it away from the tract from which it was pumped, if this use did not injure the common supply of the riparian owners.

C. Legislative Efforts

Even as the Arkansas Supreme Court acted to resolve these issues on a case by case basis, it was suggesting that the problems be addressed by legislative action. The court in *Thomas v. LaCotts*[17] referred to suggestions regarding the need for statutory control of water. In addition, Justice McFaddin, in *Harrell v. City of Conway* referred to the "necessity of legislation, certainly as to surface water and possibly also as to subterranean water."[18] Partially in response to Justice McFaddin's call, the 1955 session of the Arkansas General Assembly considered the development of comprehensive water rights legislation. However, this approach was rejected because of opposition to state control and preferential treatment

14. *Id.* at 82, 306 S.W.2d at 115 (quoting RESTATEMENT OF TORTS § 858).

15. Ausness, *supra* note 8, at 212-14.

16. 258 Ark. 63, 522 S.W.2d 403 (1975).

17. 222 Ark. 171, 257 S.W.2d 936 (1953). The court was referring to a speech given in Stuttgart by noted water authority Wells A. Hutchins which had apparently been published by the University of Arkansas College of Agriculture. *Id.* at 177, 257 S.W.2d at 940.

18. 224 Ark. 100, 107, 271 S.W.2d 924, 928 (1954) (McFaddin, J. concurring).

for previous water users.[19]

The 1957 General Assembly did enact legislation which indicated approval of the reasonable use concept for surface water and authorized the Soil and Water Conservation Commission to allocate available water in streams during periods of shortage.[20] The same Act established a permit system for dam construction within streams.[21] The 1957 legislation empowered the Commission to issue dam construction permits and to make allocations during shortages "to the extent and in the manner provided by law."[22] This appears to have been an effort on the part of the legislature to approve the riparian rights concept and, at the same time, to grant the Commission more power to resolve conflicts during times of shortage.

In 1969 the General Assembly enacted legislation requiring the registration of diversions of water from streams, lakes, or ponds. The registration must include information on such things as the source of water, location and manner of diversion, purpose for the use of the diverted water, estimated quantity, location of land on which the water is used, legal description of land irrigated, kinds of crops, and times during which diversion is proposed.[23] Registration was designed to supplement the dam construction system. Interestingly, the legislation originally excluded any penalty provisions for failure to comply. However, a penalty of five-hundred dollars per year is now imposed.[24]

Questions concerning the adequacy of the piecemeal legal principles developed by the courts and the 1957 and 1969 legislation led to the creation by the 1981 legislature of a Water Code Study Commission.[25] This group met throughout late 1981 and all of 1982 and eventually developed a proposal for a comprehensive water code for Arkansas. The proposal was

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19. *See* Ellis, *Some Current and Proposed Water-Rights Legislation in the Eastern States*, 41 IOWA L. REV. 237, 248-51 (1956).

20. 1957 Ark. Acts 81 (codified at ARK. CODE ANN. §§ 15-22-201 to 220 (1987 & Supp. 1989)).

21. ARK. CODE ANN. § 15-22-210, 211 (1987 & Supp. 1989).

22. ARK. CODE ANN. § 15-22-205 (1987).

23. 1969 Ark. Acts 180 (codified at ARK. CODE ANN. § 15-22-215(b) (Supp. 1989)).

24. ARK. CODE ANN. § 15-22-215(g)(1) (Supp. 1989).

25. 1981 Ark. Acts 466.

rejected by the 1983 session of the legislature which, in turn, referred the question of water law revision to an interim committee for study.[26] That committee developed draft proposals for introduction in the 1985 legislative session, but no comprehensive bill was adopted. Groups opposed to the adoption of comprehensive legislation expressed concern about statewide regulation, interference with property rights, and the lack of readily available alternate sources of water in the event usage of current sources was restricted.

D. The 1985 Legislation

The 1985 legislature did pass legislation which significantly modified the riparian rights doctrine.[27] In fact, one could conclude that this legislation, when combined with the registration legislation and implementation of allocation rules authorized by the 1957 and 1969 legislation, ends Arkansas's reliance on the riparian rights doctrine for surface water allocation.

The 1985 Act mandated that the Soil and Water Conservation Commission do the following: Complete a detailed inventory of water needs in the state, define critical water areas, define the term "excess surface water," establish minimum stream flows, indicate where excess surface water areas exist, and develop guidelines for the evaluation of any proposed transfers of water.[28] The legislation authorized the Commission to allow the transportation of excess surface water to nonriparian land (intrabasin or interbasin) in cases where a determination is made that excess surface water exists.[29] For purposes of this legislation "excess surface water" means 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) Existing riparian rights as of the effective date of the Act, (2) water needs of federal water projects existing on the effective date of this Act, (3) the

26. H.B. 60, 74th General Assembly, Regular Session. Referred to an interim committee in 1983 Ark. Acts 376.

27. 1985 Ark. Acts 1051 (codified at ARK. CODE ANN. §§ 15-22-301 to 304 (1987)).

28. ARK. CODE ANN. § 15-22-301 (1987).

29. ARK. CODE ANN. § 15-22-304 (1987).

firm yield of all reservoirs in existence on the effective date of the Act, (4) maintenance of in-stream flows for fish and wildlife, water quality, and aquifer recharge requirements, and (5) future water needs of the basin or origin as projected in the State Water Plan developed pursuant to Act 217 of 1969.[30] In addition, the legislation places restrictions on the transportation and use of water outside the state by requiring a study by the Soil and Water Conservation Commission and a recommendation to the General Assembly as to whether the transfer would be in the public interest. The General Assembly's approval and an interstate compact is required in order to carry out such transfers.[31]

The final requirement of the 1985 Act was to require the reporting of groundwater use. Persons who withdraw groundwater must report that withdrawal on an annual basis, except for individual household wells used exclusively for domestic use and wells having a maximum potential flow rate of less than 50,000 gallons per day.[32]

E. Administrative Authority

Although the Soil and Water Conservation Commission has had the authority to make allocations of water during periods of shortage since 1957, prior to the early 1980s the Commission had not developed any rules for implementing this authority. Following litigation, rules were established for making allocations through a procedure involving Commission hearings and a procedure similar to an adjudication.[33] Following the adoption of the legislation in 1985 the Commission has had to develop new rules for the utilization of excess surface water. In the process, the Commission has developed rules that incorporate the rules for allocation of surface water during periods of shortage with the overall surface water di-

30. ARK. CODE ANN. § 15-22-304(b) (1987).

31. ARK. CODE ANN. § 15-22-303 (1987).

32. ARK. CODE ANN. § 15-22-302 (Supp. 1989).

33. The litigation in Pulaski County Chancery Court, Dec. 4, 1981 is Henry v. Arkansas Soil and Water Conservation Commission. Arkansas Gazette, Dec. 6, 1981, at 10A, col. 1. The initial rules for allocation were published at 7 Ark. Admin. Reg. 101 (1983-84).

version and transfer authorization rules.[34]

Under these rules, a nonriparian owner may divert excess surface water to nonriparian land upon approval of the Commission if the water will be applied to a reasonable and beneficial use and if the diversion will cause no significant adverse environmental impact. When the transfer is interbasin the Commission also must take into account the protection of the watershed of the basin of origin and ensure against an adverse impact of the transfer on other lawful water users.[35] Surface water transfer permits may be issued for a fixed period of up to fifty years.[36] The permit may be canceled if the water is used for purposes other than that stated in the permit or if more water than authorized is diverted.[37] The applicant may be given up to two years from the date of the issuance of the permit to develop the ability to make the water transfer.[38] When the use is to be for irrigation the permits are considered to run with the land and can be assigned only to a subsequent owner or lessee of the land and may not be sold separate and apart from the land itself.[39]

The most controversial part of the Commission's authority surrounds its mandate to establish minimum stream flows.[40] In its rules the Commission has defined "minimum stream flow" to be: "The quantity of water required to meet the largest of the following instream needs as determined on a case by case basis: (1) aquifer recharge, (2) fish and wildlife, (3) interstate compacts, (4) navigation, and (5) water quality."[41]

Further, the rules indicate that maintenance of minimum stream flows for the major river basins is included in deter-

34. Arkansas Soil & Water Conservation Commission, Rules for the Utilization of Surface Water (Dec. 20, 1989) [hereinafter Rules].

35. *Id.* § 304.1; *id.* 304.2 (intrabasin); *id.* § 305.7 (interbasin).

36. *Id.* § 304.7 (intrabasin); *id.* § 305.10 (interbasin).

37. *Id.* § 304.11 (intrabasin); *id.* § 305.15 (interbasin).

38. *Id.* § 304.12 (intrabasin); *id.* § 305.16 (interbasin).

39. *Id.* § 304.13 (intrabasin); *id.* § 305.17 (interbasin).

40. The authority is found in ARK. CODE ANN. § 15-22-301(4) (1987). In 1989 the legislature specified that the Commission is to establish and enforce minimum stream flows through allocation. Ark. Acts 469 (codified as amended in ARK. CODE ANN. § 15-22-217 (Supp. 1989)).

41. Rules, *supra* note 34, § 301.3(w).

mining what constitutes excess surface water.[42] In the Arkansas Water Plan, the Commission indicates that because of significant differences between streams in the different ecoregions, the same procedures for determining in-stream flow requirements would not be applicable to all streams. Likewise, a given percentage of flow would not be appropriate for all streams.[43]

F. Unresolved Questions

The final chapter on Arkansas water law has not been written. It is probable that the regulations for surface water utilization adopted by the Soil and Water Conservation Commission will result in a more efficient allocation of water in the state. The procedures established by the Commission under its authority in the 1985 legislation set forth the basis for making transfers that would have been prohibited under the traditional riparian rights concept. It is possible that portions of the Act itself or portions of the rules may be challenged through litigation. The Commission, in the Arkansas Water Plan, recognizes the continued need to revise certain aspects of the current law.

It is clear that the major and most critical water problem facing Arkansas has yet to be addressed by either the legislation or the implementing rules. That is, the problem of groundwater depletion. Aside from requiring and reporting groundwater use, no legislative attention has been directed to this problem. The hope is, of course, that by allowing interbasin transfers and transfers to nonriparian land, some of the pressures can be alleviated which arise from the excess pumping of groundwater.

The purpose of this Article is to review the major modifications the legislature has made to the common law doctrine of riparian rights and, in particular, the rules adopted by the

42. *Id.* § 301.3(r). The "initial phase" involves maintaining minimum stream flows for all or parts of eight major streams. These include all of the Arkansas River, Black River, Eleven Point River, Red River, and the Spring River located in Arkansas plus the Ouachita River from Lake Catherine to the Louisiana boundary, the St. Francis River from Marked Tree to the mouth and the White River below Bull Shoals Lake to Mouth. Other streams will be added as "needs arise and resources are made available." *Id.* § 301.3(r)(4).

43. Arkansas Water Plan, *supra* note 4, at 23-25.

Soil and Water Conservation Commission to implement these changes. This review will reflect that, at least with regard to surface water, the combined effect of the legislation and the administrative program is that the riparian rights doctrine has little remaining application in Arkansas. In the course of the review some major questions raised by the new scheme will be identified and some suggestions offered as to how these questions might be resolved. Finally, the major water policy question in Arkansas remains unresolved: that is, the question of an acceptable regulatory program for groundwater. This issue will be reviewed and a modest proposal outlined which might serve to address the continuing problem of groundwater depletion.

II. MOVING AWAY FROM THE RIPARIAN RIGHTS DOCTRINE

The 1985 legislation represents significant movement away from the riparian rights system in Arkansas. By authorizing the Soil and Water Conservation Commission to approve the transfer of "excess surface water" in either interbasin or intrabasin transfers, the legislature rejected the concept that water could be used only on riparian land, a basic tenet of the riparian rights system.

In determining whether surface water is available for transfers to nonriparian land the Commission may authorize use of only "excess surface water" (and then only up to twenty-five percent of the amount available on an annual basis) once existing riparian rights, along with other specified uses, are taken into account.[44] As a part of the Arkansas Water Plan the Commission has calculated "excess surface water" for each of the five major basins of the state. In doing so, the agency projected existing riparian uses, along with instream flow requirements for fish, wildlife, and navigation to the year 2030. These needs were subtracted from the average annual flow, and the mandated twenty-five percent figure was used to calculate the "excess." Using that procedure, the Ouachita Basin has some 725,000 acre feet per year of excess water; the Red River Basin 1,100,000 acre feet; the White

44. Ark. Code Ann. § 15-22-304 (1987).

River Basin 1,700,000 acre feet; the Arkansas River Basin 2,700,000 acre feet; and the Delta Basin 4,100,000 acre feet.[45]

The Commission also designated certain areas of the state as "critical surface water areas"—those which presently have surface water supply problems. These problems are the result of off-stream water withdrawals, water quality degradation, or water management constraints.[46]

Designation of excess surface water areas and critical surface water areas is the first step in implementing a system to permit transfers of water to nonriparian land. The rules of the agency detail the procedures for authorizing either an intrabasin or interbasin transfer and, for that matter, an interstate transfer.[47]

The rules reflect the legislative determination to move away from the riparian rights system to an agency administered system. The Arkansas legislation is specifically based on an interest in making a more efficient use of the state's water resources.[48] This is one of the usual goals of water legislation and is one of the criteria by which an allocation system may be judged.[49]

A. The "Place of Use" Restrictions Under the Riparian Doctrine

A basic characteristic of the riparian doctrine is that it restricts the use of water to riparian land. An essential first step in the application of this doctrine is the determination of which land is riparian.

1. The "Watershed Restriction"

With regard to the definition of riparian land, it appears that the basic requirement is physical contact with the stream

45. Arkansas Water Plan, *supra* note 4, at 34-35.

46. *Id.* at 31.

47. Rules, *supra* note 34, § 304.1-.16 (intrabasin); *id.* § 305.1-309.20 (interbasin); *id.* § 306.1-.6 (interstate).

48. The rules indicate the purpose is "to encourage and facilitate the conservation, development and efficient use of surface water." *Id.* § 301.1(a).

49. A set of criteria which includes reference to "highest and best use" (efficiency) is set out in a report by W. Cox, L. Shabman, S. Batie & J. Looney, Virginia's Water Resources: Policy and Management Issues 1-2 to 1-3 (1981).

in question. For example, in *Town of Gordonsville v. Zinn*,[50] the Virginia Supreme Court recognized the following general limitation on the extent of riparian land:

> "According to the weight of authority, riparian land is, in any event, limited in its extent by the watershed of the stream; in other words, lands beyond the watershed cannot be regarded as riparian, though part of a single tract, held in common ownership, which borders upon the stream."[51]

This limitation is intended to insure that water returns to the stream of origin after use and serves as an obstacle to interbasin transfer.

For purposes of applying this "watershed restriction," the courts in some states have held that each tributary is considered to have its own watershed, independent of that of the main stream.[52] Therefore, land within the watershed of the tributary is not within the watershed of the main stream, and it can be riparian only if it abuts on the tributary. All of a single tract of land adjoining both streams is riparian, but only that portion of the land in the watershed of each stream is riparian to that respective stream. If an estate bordering the main stream extends into the watershed of the tributary, but does not touch upon it, that portion of the land within the watershed of the tributary is non-riparian property.

2. The Extent of Riparian Land

In addition to the watershed restriction there is also the question of the extent of riparian land. The Arkansas court has never clearly resolved this issue, although Justice McFaddin in *Harrell v. City of Conway*[53] summarized some of his "individual conclusions" concerning the riparian right. His conclusion indicated that he felt the place of use restriction would result in a smaller and smaller parcel being considered riparian for use in water purposes. He said:

> Suppose the Sovereign of the soil conveys a tract of 160 acres adjacent to the stream. The extent of the Sover-

50. 129 Va. 542, 106 S.E. 508 (1921).
51. *Id.* at —, 106 S.E. at 511 (quoting from the note to 11 L.R.A. (N.S.) 1062).
52. *Id.* at —, 106 S.E. at 512.
53. 224 Ark. 100, 271 S.W.2d 924 (1954).

> eign's grant limits the riparian use of the water; and a tract lying immediately behind the 160-acre conveyed tract has NO riparian rights because the grant has cut off such other land from the stream. If the grantee of the 160-acre tract should convey the 80 acres *immediately adjacent* to the stream, the riparian rights contract to the conveyed tract; and the remaining 80-acre tract—not adjacent to the stream—loses all riparian rights. Should the riparian owner of the 80-acre tract on the stream later purchase the land behind the 80-acre tract such purchased land would not re-acquire riparian rights.[54]

3. Enforcement of the Restrictions

With regard to the degree of enforcement of the riparian land restriction, a number of courts appear to have adopted the general qualification that allows use on nonriparian land in situations where other riparian owners on the stream are not injured. For example, the Virginia Supreme Court in *Virginia Hot Springs Co. v. Hoover*[55] quoted, with apparent approval, the following statement from a decision by the Massachusetts Supreme Court concerning the rights of a nonriparian user:

> If he diverts the water to a point outside the watershed or upon a disconnected estate, the only question is whether there is actual injury to the lower estate, for any present or future reasonable use. The diversion alone, without evidence of such damage, does not warrant a recovery of even nominal damages.[56]

After quoting this statement, however, the court found the nonriparian use in question to be unlawful because it was causing substantial harm. Therefore, its position with regard to non-injurious nonriparian use was not directly related to its decision in the case.

Consideration of the extent to which the states have enforced the riparian land restriction reveals considerable variation. Isolated cases can be found where nonriparian use has been held unlawful without regard to the question of injury.

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54. *Id.* at 108, 271 S.W.2d at 929 (emphasis in original).

55. 143 Va. 460, 130 S.E. 408 (1925).

56. *Id.* at —, 130 S.E. at 410 (quoting Stratton v. Mt. Hermon Boys' School, 216 Mass. 83, 103 N.E. 87 (1913)).

One example is a 1914 decision by the Supreme Court of Pennsylvania.[57] The case arose from the use of water by a railroad company for use in its locomotives. The court granted an injunction against this use even though it acknowledged that the flow of the stream was more than adequate to satisfy the needs of both parties to the controversy.

Exceptions to this general qualification can be found which indicate that non-riparian use may be lawful even if it does produce some injury, provided that it is otherwise reasonable. This position is illustrated by an early New Hampshire case which rejected the concept that *any* nonriparian use is unlawful and expressed the view that nonriparian uses are entitled to the same considerations as to reasonableness that are given to riparian uses.[58] However, the particular nonriparian use under consideration in the case had not damaged any riparian use. Therefore, the significance of the court's language is reduced because it was not directly related to the holding in the case.

The fact that nonriparian use is not categorically prohibited somewhat mitigates the theoretical restrictiveness of the riparian doctrine. However, the existence of the condition in many jurisdictions that such use must cause no injury in order to be tolerated is a significant constraint in itself. Whenever supplies are not adequate to meet all riparian needs and competition exists, nonriparian use becomes unreasonable *per se* without regard to the relative utilities of the riparian and nonriparian uses. Thus the right to use water on nonriparian land under these conditions is dependent on the existence of surplus water after riparian uses are satisfied—a very restrictive condition.

The Arkansas courts recognized this basic tenet of the riparian rights system in the 1950s. In *Harrell v. City of Conway*[59] the Arkansas Supreme Court rejected an argument that a city could take water beyond the limits of the watershed to sell commercially. The court specifically stated that a city, like any other riparian landowner, could use water for pur-

57. Markleton Hotel Co. v. Connellville & State Line Ry. Co., 242 Pa. 509, 89 A.703 (1914).

58. Gillis v. Chase, 67 N.H. 161, 31 A.18 (1892).

59. 224 Ark. 100, 271 S.W.2d 924 (1954).

poses "incident to" the riparian acreage. A city could not divert and take water from a stream and sell the water commercially to city inhabitants without compensating those whose rights were affected.

There is some question in Arkansas as to the application of this restriction in times of abundant water. In *Miller v. United States*,[60] a case which also involved the City of Conway's water supply, Federal Judge Henry Woods indicated that an interpretation of *Harrell* which prohibited interbasin transfer was "deficient" and added: "It therefore can be 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 watershed."[61] He based this conclusion on language in *Harrell* which indicates that the riparian rights concept comes into play whenever a shortage is present.

> 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 90% of the time) no need arises to apportion the water. When however, a shortage is present, then the law, as indicated, of riparian rights comes into play and must apply.[62]

The so-called "watershed restriction" of the riparian rights system, along with the rule restricting use to riparian land, has been generally accepted as a means of protecting the rights of riparian owners who might wish to commence use in the future. The flow would be available if needed by future riparian users.[63] However, the riparian doctrine restrictions on interbasin transfer, even if applicable only in times of shortage, create a disincentive for investment in facilities for making surface water more readily available for irrigation uses.

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60. 492 F. Supp. 956 (E.D. Ark. 1980), *aff'd*, 654 F.2d 513 (8th Cir. 1981).

61. *Id.* at 965.

62. *Id.* (quoting Harrel v. City of Conway, 224 Ark. 100, 105, 271 S.W.2d 924, 927 (1954)).

63. *See* Johnson & Knippa, *Transbasin Diversion of Water*, 43 TEXAS L. REV. 1035 (1965).

B. Elimination of "Place of Use" Restrictions

To allow for more efficient utilization of surface water in Arkansas the 1985 Act allows transfers to nonriparian land under specified conditions.[64] The legislation does not mention "interbasin" transfers as such, but permits "transportation of excess surface water to nonriparians."[65] No restrictions are placed on transfers outside the watershed. Also, one of the factors to be considered by the Soil and Water Conservation Commission in determining whether excess surface water is available for transportation to nonriparians is the "future water needs of the *basis of origin*."[66] In addition, the definition of "excess surface water" refers to "that amount of water available on an average annual basis *from any watershed* . . . ."[67] Clearly, the legislature contemplated interbasin transfers in the authorization of transportation to nonriparian land. This authorization is consistent with the recommendation of the 1981 Water Code Study Commission which based much of its work on the premise that interbasin transfers should be allowed.[68]

The implementing rules of the Soil and Water Conservation Commission explicitly recognize the two possible types of nonriparian uses and set out separate but parallel procedures for approval of interbasin and intrabasin transfers.[69] For purposes of the interbasin transfer rules, the State is divided into five basins: Arkansas River Basin, White River Basin, Delta Basin, Ouachita River Basin, and Red River Basin.[70] The interbasin rules would be applicable to transfers from one of these basins to another. The intrabasin transfer rules would be applicable to any transfers within these basins. This administrative determination of the physical limits of a basin resolves a problem which courts must confront in considering the watershed restriction of the riparian doctrine. For purposes of the riparian doctrine, a transfer from one tributary of

64. 1985 Ark. Acts 1051.

65. ARK. CODE ANN. § 15-22-304(a) (1987). For examples of legislation which contains "watershed prejudice" restrictions see Johnson & Knippa, *supra* note 63.

66. ARK. CODE ANN. § 15-22-304(b)(5) (1987) (emphasis added).

67. ARK. CODE ANN. § 15-22-304(b) (1987) (emphasis added).

68. *See* Minutes of the Water Code Study Commission (Nov. 5, 1981).

69. Rules, *supra* note 34, § 304.1-.16 (intrabasin); *id.* § 305.1-.20 (interbasin).

70. *Id.* § 305.1.

a major stream to another is usually considered as "beyond the watershed."[71] Designating in advance which transfers are considered interbasin transfers alleviates the difficulty of resolving this question as disputes arise.

Of particular concern in authorizing interbasin transfers is the question of damage to the originating basin and, in particular, the tributary that is the point of origin of the diversion. The 1985 Act specifies that the Commission is to consider the environmental impact of a proposed transfer—presumably in both the originating and receiving basin.[72] In addition, the legislation directs the Commission to evaluate every proposal in terms of the availability at reasonable cost of alternative sources of water, along with the nature and extent of the impact of the transfer on other water uses.[73] Before a proposed interbasin transfer can be approved the agency rules require a determination of the supply of water available in the basin of origin as well as whether there are shortages in the receiving basin.[74] The proponent must prove that "no significant damages should result to the basin of origin as a result of the proposed transfer."[75] The application may be approved with special conditions to protect the environment of the "watershed" of origin to "insure against an unacceptable adverse impact of the transfer on other lawful water uses."[76] Since the Commission has already determined the basins in which excess surface water exists, the apparent intent of the rules is to provide for protection in the actual area of proposed diversions. This is implied in the rules because the agency is to determine the amount of excess surface water "*at the point of diversion* of the basin of origin."[77]

Further, the fact that a Notice of Application for an interbasin transfer is to be published in the county from which the diversion would be made (as well as in the receiving

71. Johnson & Knippa, *supra* note 63, at 1049.

72. ARK. CODE ANN. § 15-22-304(c)(2) (1987).

73. ARK. CODE ANN. § 15-22-304(c)(1), (3) (1987).

74. Rules, *supra* note 34, § 305.5(a), (d).

75. *Id.* § 305.6(d).

76. *Id.* § 305.9. The term "watershed" is defined elsewhere in the Rules as "[t]he drainage area of a stream and its tributaries." *Id.* § 301.3(nn). Presumably, the term is used interchangeably with "basin."

77. *Id.* § 305.5(b) (emphasis added).

county) implies that the Commission's concern at the time of the application is more localized than the entire basin.[78]

Nonriparian intrabasin transfers may be approved under a procedure similar to that for interbasin transfers.[79] The rules for intrabasin transfer, however, do not provide for public notice and less attention is directed toward protecting the point of origin. The rules do provide that approval is to be granted only after a determination that the water to be used is "excess surface water," that it is for a reasonable and beneficial use, and that the transfer "will cause no significant adverse environmental impact."[80] A provision is included for special conditions to protect the environment of the watershed of origin and to insure against an unacceptable adverse impact on other lawful water users.[81]

The place of use restrictions of the riparian rights system contribute to inefficient resource use in riparian states.[82] To avoid challenge of transfers to nonriparian land, legislative modification of the riparian rights system is necessary. The 1985 Act does this by specifically authorizing nonriparian use under agency control. The legislation establishes general guidelines under which these transfers can occur. The Commission rules detail a procedure for approval of proposals for both intrabasin and interbasin transfers which appears to offer protection against adverse environmental impacts and for lawful uses of water in the originating basin. By using an agency approval process the necessity of a procedure for adjudicating claims of holders of riparian rights affected by the transfers is avoided. This procedure should eliminate the possibility of a multitude of lawsuits that might otherwise result from those whose property interests would be infringed.

C. Administrative Allocation of Water

Another basic tenet of the riparian rights system is that riparian landowners can implement a reasonable use at any

78. *Id.* § 305.4.
79. *Id.* § 304.1-.16.
80. *Id.* § 304.2.
81. *Id.* § 304.6.
82. Levi & Schneeberger, *The Chain and Unity of Title Theories for Delineating Riparian Land: Economic Analysis as an Alternative to Case Precedent*, 21 BUFFALO L. REV. 439, 443-47 (1972).

time. The co-equal nature of the rights of riparian owners is illustrated in a quote by noted water authority Wells Hutchins from a speech he gave at Stuttgart in January, 1940.

> "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. The riparian right does not depend upon use and is not lost by non-use. This is in direct conflict with the appropriative right, which may be declared forfeited if nonuse of the water continues for a period prescribed by statute, and which can be lost instantly by abandonment of the right."[83]

This basic concept has meant that courts must allocate available water in disputes between riparian owners regardless of when their uses commenced. In Arkansas, *Harris v. Brooks*[84] illustrates the necessity of such determinations. There the conflict was between a lessee of riparian land who conducted a commercial boating and fishing enterprise on a privately owned non-navigable lake and a rice farmer who used water from the lake for irrigation purposes. Because of the unusually dry conditions in the early 1950s, the water level of the lake was below normal. Continued pumping by the irrigator was found to unreasonably interfere with another lawful use even though the irrigation use had been underway for over twenty years before the boat docks were constructed.

When competition over uses occurs, as in *Harris*, the resolution through adjudication is generally inefficient and costly. Moreover, because of the delay inherent in the resolution of conflicts through the courts, this method is particularly unsuited to situations involving water use. This is one of the major criticisms of the riparian rights system.[85] As a result, one of the first steps away from the riparian rights system is

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83. Thomas v. LaCotts, 222 Ark. 171, 177-78, 257 S.W.2d 936, 940 (1953) (quoting the paragraph from Hutchins's speech).

84. 225 Ark. 436, 283 S.W.2d 129 (1955).

85. National Water Commission, Water Policies for the Future 280-81 (June 1973).

the adoption of an alternative decision-making process for water allocation. This has been done in a number of eastern states even though they retain other major features of the riparian rights system.[86]

Arkansas's initial movement away from the riparian rights doctrine occurred in 1957 with the adoption of legislation authorizing the Soil and Water Conservation Commission to allocate available stream water during periods of shortage.[87] For many years the Commission did not find it necessary to use this statutory authority—perhaps because severe shortages were rare. However, in more recent years disputes over water use appear to be more common, especially in unusually dry years such as 1980 or 1988. The Commission's failure to adopt procedures for making allocations under the statute was successfully challenged in 1981.[88] Following this decision the Commission adopted new rules which have now been revised to make them compatible with the 1985 legislation and subsequent amendments.[89]

1. Order of Preference

A 1989 amendment to the statute authorizing administrative allocation attempts to provide additional guidance to the Commission in making allocation decisions.[90] The original allocation legislation provided that the Commission could, during periods of shortage, allocate the available water "among persons affected by the shortage of water in a manner that each of these may obtain his fair share of the available water remaining in the stream . . . ."[91] Because a variety of consumptive and non-consumptive uses might be involved, an effort was made in the original statute to indicate, by general categories, the order of preference: (1) sustaining life, (2)

86. *Id.*

87. 1957 Ark. Acts No. 81 (codified at ARK. CODE ANN. §§ 15-22-205(3), 217 (Supp. 1989)).

88. *See supra* note 33.

89. Rules, *supra* note 34, §§ 307.1-313.2.

90. 1989 Ark. Acts 469 (amending ARK. CODE ANN. § 15-22-217 and other sections).

91. 1957 Ark. Acts 81 (codified as amended in ARK. CODE ANN. § 15-22-217(a) (1987)).

maintaining health, and (3) increasing wealth.[92] The 1989 amendment attempts to establish priority for certain specific *uses* and amends the language of the statute to provide for allocation "among the *uses*" (instead of "among persons") and substitutes "equitable portion" for "fair share."[93] Further, the amendment indicates that, *prior* to allocation, water for some needs is to be reserved. These include (1) domestic and municipal-domestic, (2) minimum streamflow, and (3) federal water rights.[94]

The Commission rules are more specific. Once the reserved uses are met, allocation by the Commission gives preference in the following order: (1) agriculture, (2) industry, (3) hydropower, and (4) recreation.[95] Presumably, all of these uses are a subcategory of "increasing wealth" since the two higher statutory preferences ("sustaining life" and "maintaining health") are met by the reservation for domestic, municipal-domestic, and minimum streamflow purposes.

The recent reservation by statute for domestic, municipal-domestic, and minimum streamflow purposes is consistent with the earlier declaration that "sustaining life" and "maintaining health" are to be considered before any other allocations can be made. This is also consistent, in part, with the generally accepted view under the riparian rights doctrine that domestic uses are superior to any other.[96] "Domestic" uses as defined in the rules include use for "ordinary household purposes including human consumption, washing, the watering of domestic livestock, poultry and animals and the watering of home gardens for consumption by the household."[97] The inclusion of a category of "municipal-domestic" uses recognizes the distribution of domestic water by a central distribution system and defines the uses to include "human consumption, laundry, bathroom facilities, fire protection, and the watering

92. ARK. CODE ANN. § 15-22-217(c) (Supp. 1989).

93. ARK. CODE ANN. § 15-22-217(a) (Supp. 1989) (as amended by 1989 Ark. Acts 469).

94. ARK. CODE ANN. § 15-22-217(e) (Supp. 1989) (as amended by 1989 Ark. Acts 469).

95. Rules, *supra* note 34, § 307.4.

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

97. Rules, *supra* note 34, § 301.3(q).

of home gardens."[98] These definitions are an effort to recognize these superior uses as necessary to "sustain life" and "maintain health."

The category of "federal water rights," also a reserved use, is not defined by statute. In the regulations, however, reference is made to federal water rights: "There may be some water over which the United States has a preemptive right that is superior to rights of others."[99]

If the effort to recognize federal water rights was an attempt to meet any demands of the federal government for those uses traditionally associated with the federal government, such as interstate compacts and navigation, the statutory language designating "federal water rights" as a reserved use is unnecessary because it is already accounted for in another reserved category, "minimum streamflow." The statutory definition of "minimum streamflow" includes the quantity necessary to meet interstate compacts and navigation needs, which are recognizably "federal" in nature. Fish and wildlife, water quality, and aquifer recharge needs are also a part of minimum streamflow and, to a degree, these may be "federal" in nature as well.[100] Interestingly, in the rules hydropower is given lower priority during allocations than industry and agriculture.[101] This could be construed as contradictory to the recognition of superior federal water rights if federal hydropower projects are involved.

Another possible category of "federal right" was already recognized in existing legislation; that is, the right to acquire and use water stored in a federal government reservoir. The original 1957 legislation granted, "to the extent that the State of Arkansas can grant that right," the right to acquire absolute title to water stored in reservoirs created by federal agencies such as the Corps of Engineers.[102] The only requirement for the exercise of such a right is notice to the Commission along with an annual report of the amount of water

98. *Id.* § 301.3(x).

99. *Id.* § 307.7.

100. ARK. CODE ANN. § 15-22-202(10) (Supp. 1989). This definition was incorporated in the Rules, *supra* note 34, § 301.3(w).

101. Rules, *supra* note 34, § 307.4.

102. ARK. CODE ANN. § 15-22-218 (1987).

withdrawn.[103]

If federal uses for federal facilities and federal lands was intended to be given reserved status, the granting of these rights is curious in light of the usual approach which recognizes that states may allocate their water under state allocation systems and that these federal uses are subject to state allocation program requirements.[104] There is, however, a line of reasoning that would grant the federal government special recognition of rights associated with federal lands. This concept, referred to as a "federal reserved right," is premised on the theory that when the federal government withdraws land from the public domain it reserves water rights in unappropriated water which may be exercised at any time.[105] Unless this reserved right was receiving legislative recognition in Arkansas, it is not clear what was intended by giving superior recognition to "federal water rights" beyond those included in categories for interstate compacts, navigation, and federal impoundments.

2. Riparian vs. Nonriparian Uses

The Commission rules on allocation also attempt to establish a priority of diversions by granting riparian uses a higher priority than nonriparian uses.[106] This is consistent with the 1969 amendment to the allocation legislation which grants the Commission authority to make allocations between uses. However, this amendment also specifically states in language referring to registration of diversions that the legislation does not operate "to allow a nonriparian use of water to su-

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103. ARK. CODE ANN. § 15-22-218(b)-(d) (1987).

104. *See, e.g.*, United States v. Rio Grande Irrigation Co., 174 U.S. 690 (1899).

105. The reserved right doctrine is usually referred to as the "Winters Doctrine" from Winters v. United States, 207 U.S. 564 (1908). It has been applied in the western states where large tracts of federal land have been reserved for uses such as Indian reservations. The idea is of less consequence in riparian states because the federal government could assert rights as a riparian, as necessary. The concept might be extended to argue that the federal government also has other superior rights as well.

> If the constitutionally enacted statute gives an agency of the United States the power to perform a federal function on any federal land in any state, . . . and that function requires the use of water, no state's law can block or limit the use of the water or the acquisition of a water right.

Trelease, Federal-state Relations in Water Law, National Water Commission Legal Study No. 5 147 (1971).

106. Rules, *supra* note 34, § 307.4(b).

persede, subordinate or otherwise take priority or precedence over a riparian right to divert water from a stream, lake or pond."[107] This language was not eliminated from the statute in 1985, in spite of the explicit recognition of nonriparian uses. As a result, the allocation rules continue to give riparian uses a higher priority than nonriparian uses.

It would appear that all riparian diversions would take priority during an allocation over all nonriparian diversions even if the nonriparian use was of a higher preference in the "order of uses." For example, a riparian recreational use would apparently be of higher priority than a nonriparian agricultural use, even though "agriculture" is designated as first in the "order of uses."

However, this is not always the case. For example, one complicating factor is the provision in the rules that a riparian landowner who has "not previously diverted water nor timely registered any previous diversion," shall not be granted an allocation during shortages (above that required for domestic uses).[108] The 1969 amendment supports this rule in that it clearly provides that one is not entitled to be granted any allocation unless the user has complied with the registration requirements.[109] Thus, a nonregistered riparian use would receive a lower preference than allowed nonriparian uses even in light of the original statutory language specifying that registration is not to operate in a manner which allows nonriparian uses to "supersede, subordinate or otherwise take priority or precedence over a riparian right . . . ."[110] The rules also add confusion on this point by specifically recognizing that nonriparian uses, previously authorized by the Commission, may be granted an allocation during shortages if the use does not interfere with specific enumerated uses.[111] These "enumerated uses" include the reserved categories (municipal-domestic, minimum streamflow, and federal water rights) and registered riparian users. However, reference is also made to a section in which one of the enumerated uses is the "unregistered ripa-

107. ARK. CODE ANN. § 15-22-215(f) (Supp. 1989).
108. Rules, *supra* note 34, § 307.9.
109. ARK. CODE ANN. § 15-22-215(f) (Supp. 1989).
110. *Id.*
111. Rules, *supra* note 34, § 307.10.

rian user." This language may have been intended to recognize the domestic uses of the unregistered riparian because the section referred to actually states: "Any riparian landowner who has not previously diverted water nor timely registered any previous water diversions with the Commission, may not be granted any allocation of water during times of shortage above that required for domestic use."[112]

Unfortunately, this allocation scheme does not clearly address the actual priority position of the riparian user who has previously used water but has not registered a diversion. On the one hand, such a non-registered user is entitled to no allocation during a shortage because the legislation requires registration to be entitled to an allocation. On the other hand, the legislation retains language protecting "riparian rights" and the rules refer to the person who has "not previously diverted water nor timely registered" as one who is not entitled to a right to receive an allocation. The question of where the non-registered (but previously diverting) riparian user fits into the scheme of priorities is not addressed. The logical place seems to be ahead of all nonriparian uses if the statute is to be given any continued authority.

The original legislation contained no penalty for failure to file or register a diversion. Some attempt to avoid the difficulties encountered by the Commission in dealing with these users was made in another 1989 amendment which adds a "late reporting fee" of up to five hundred dollars per year for each year a person fails to register a diversion.[113] This amendment strengthens the registration statute, however, the failure of the legislation to remove the language retaining priority for all riparian uses continues unnecessary confusion.

A particularly interesting approach in the rules relating to nonriparian transfers is provision for advance determination of allocations that may be made in times of shortage.[114] This is *not* automatic but may be done if the Director of the Commission determines that it is "desirable and appropriate." This advance determination of allocations is to be conducted first in watersheds where a water shortage is most likely to

112. *Id.* § 307.9.
113. 1989 Ark. Acts 408 (codified at ARK. CODE. ANN. § 15-22-215 (Supp. 1989)).
114. Rules, *supra* note 34, § 304.14 (intrabasin); *id.* § 305.18 (interbasin).

occur. The purpose of this advance allocation procedure is to allow for immediate implementation of allocations when shortages arise.[115] It is likely that the Commission would only make advance determinations, if at all, in those areas designated in the Arkansas Water Plan as critical surface water areas—and only then if proposals for interbasin transfer are also approved for these areas.

115. *Id.*

The allocation system can best be illustrated, schematically, as follows:

I. Uses Under 325,900 Gallons Per Water Year
- diffused surface water
- water previously captured
- water in exclusive ownership
- water from tailwater recovery
- non-consumptive use
- diversion from intermittent streams
- water captured under permit

} usable without allocation

II. Domestic and Municipal-Domestic

III. Minimum Streamflow
- interstate compacts
- navigation
- fish and wildlife
- water quality
- aquifer recharge

} reserved uses prior to allocation

IV. Federal Water Rights

V. Riparian (registered)
- agriculture
- industry
- hydropower
- recreation

VI. Riparian (non-registered, but previously used) ?

VII. Nonriparian Intrabasin
- agriculture
- industry
- hydropower
- recreation

VIII. Nonriparian Interbasin Transfer
- agriculture
- industry
- hydropower
- recreation

IX. Interstate
- agriculture
- industry
- hydropower
- recreation

X. Riparian (non-registered, not previously used)

3. Water Usable Without Allocation

Another interesting aspect of the allocation system is the Commission's effort to exclude certain categories of use from the allocation rules altogether. The rules contain a list of "water useable without allocation."[116] These include:

> (a) Diversions by any persons of less than 325,900 gallons (1 acre-foot) of water in any water year. (b) Water captured by tailwater recovery systems. (c) Water diverted from lakes, ponds, reservoirs or springs in the exclusive ownership of one person. (d) Water previously captured whether transmitted by ditch, channel or pipe. (e) Water diverted from intermittent streams. (f) Diffused surface water. (g) Water captured by instream pit reservoirs, dams constructed pursuant to a lawful permit, or low water weirs and water stored in federal impoundments. (h) Non-consumptive usage.[117]

One of these exclusions is drawn, in part, from the legislation which exempts from registration water diversions from natural lakes or ponds in the exclusive ownership of one person.[118] Thus, it would be difficult, if not impossible, for the Commission to make allocations to these users because they are not required to be registered. The rules permit usage without an allocation "from lakes, ponds, reservoirs or springs in the exclusive ownership of one person."[119] The registration exemption in the statute extends only to *natural* lakes or ponds and does not mention reservoirs or springs.[120] It is not clear how man-made lakes or ponds fit, although some of these uses would, presumably, be included in other categories usable without allocation; for example, water captured in dams, water previously captured, or diffused surface water.

"Water captured by instream pit reservoirs, dams constructed pursuant to a lawful permit, or low water weirs and water stored on federal impoundments" presents an interesting amalgamation of types of water usable without allocation.[121] Diversions from these forms of capture could,

116. *Id.* § 307.2.
117. *Id.*
118. ARK. CODE ANN. § 15-22-215(a) (Supp. 1989).
119. Rules, *supra* note 34, § 307.2(c).
120. ARK. CODE ANN. § 15-22-215(a) (Supp. 1989).
121. Rules, *supra* note 34, § 307.2(g).

presumably, result in conflicts between riparians users. It would appear that these rules would reward some riparians at the expense of others. However, this "exclusion" from the allocation procedures must be read in light of the dam construction permit legislation.[122] This legislation requires a permit to impound water for any purpose.[123] One of the conditions required before a dam permit can be issued is that it not affect downstream riparians or certain instream flow requirements.[124]

Dams constructed under the permit statute must be constructed to impound only "surplus" surface water. In addition they must provide for discharge each day of a quantity to be fixed by the Commission which will preserve "from time to time, below the dam, the flow of any stream involved at a rate designed to protect the rights of any lower riparian owner, and the fish and wildlife dependent thereon."[125] Dams must also be constructed so as to impound water only on land owned or occupied by the applicant.[126] Permits are not required for a dam which impounds less than fifty acre feet of water or is of a height less than twenty-five feet.[127] The legislation also excludes dams "the height of which is at or below the ordinary high water mark on the stream."[128] Further, the original legislation gave an exclusive right to the person constructing the dam to take water from the reservoir created, subject to the obligation to discharge water as specified in the permit.[129]

The rules also allow water stored in federal impoundments to be used without allocation.[130] This exclusion is consistent with the 1957 legislation which granted a right to acquire absolute "title to and use for any purpose" of water stored in any federal impoundment.[131] Certain conditions are

122. ARK. CODE ANN. §§ 15-22-210 to 214 (1987 & Supp. 1989).
123. ARK. CODE ANN. § 15-22-210 (Supp. 1989).
124. ARK. CODE ANN. § 15-22-210(1) (Supp. 1989).
125. *Id.*
126. ARK. CODE ANN. § 15-22-210(3) (Supp. 1989).
127. ARK. CODE ANN. § 15-22-214(a) (Supp. 1989) (as amended by 1989 Ark. Acts. 685).
128. ARK. CODE ANN. § 15-22-214(b) (Supp. 1989).
129. ARK. CODE ANN. § 15-22-216 (1987).
130. Rules, *supra* note 34, § 307.2(g).
131. ARK. CODE ANN. § 15-22-218(a) (1987).

specified but, for the most part, notice to the Commission of any contract with the federal government is the only real requirement.[132] The legislation recognizes the lesser position of the state by granting the right "to the full extent that the State of Arkansas can grant that right."[133] Federal impoundments, it seems, can be the subject of state regulation only to the extent that the federal government would yield to state authority.[134] Furthermore, while the federal government has left allocation of water to state law, it applies only after federal needs have been preserved.[135]

The rules, however, go beyond permitted dams and federal impoundments and grant a superior position to those taking water from streams where the water is captured by "instream pit reservoirs" and "low water weirs."[136] These types of water capture can be constructed without a permit for dam construction. Although the rules for allocation allow use of such water without allocation, these uses could be construed as an interference with other riparian owners' rights to receive an equitable share of the water in a given stream. In a recent chancery court case involving a low water weir, the court ordered the person who had constructed the weir to either lower it or cut through it to allow a reasonable share of the water to move downstream. The Commission declined to exert authority in that case under allocation rules similar to the present ones.[137]

Another interesting exclusion from the allocation rules is the taking of water from "intermittent streams."[138] "Intermittent streams" are defined in the rules as those "whose flow is seasonal in nature and does not flow continuously."[139] Perhaps, the logic of excluding these streams from the allocation rules entirely is that they may not even be considered "water-

132. ARK. CODE ANN. § 15-22-218(b) (1987).

133. ARK. CODE ANN. § 15-22-218(a) (1987).

134. *See infra* notes 234-49 and accompanying text.

135. *See* Trelease, *supra* note 105.

136. Rules, *supra* note 34, § 307.2(g).

137. Arkansas Lank & Cattle Co. v. Pickens, No. CH-85-74-2(AC), slip. op. (Chicot County Ark. Ch. Ct. July 20, 1985).

138. Rules, *supra* note 34, § 307.2(e).

139. *Id.* § 301.3(u). A notation is added that it is the "intent of the Commission to define [such] streams by a statistical method once sufficient stream flow data is available at the conclusion of the 'Low flow characteristics of Arkansas streams study.' " *Id.*

courses" under the riparian doctrine. As a result, owners of land along these "streams" would not be prohibited from taking water from them under the riparian rights system. In addition, because such streams would contain flow only during seasons in which shortages were unlikely, the allocation procedure would never come into play.

The rules allow unallocated use of diffused surface water, water previously captured, and water captured by tailwater recovery systems.[140] None of these uses would require registration because they do not involve water diverted from streams. Interestingly, the definition of "diffused surface water" in the rules differs from the definition found in the legislation. According to the legislation relating to allocations and dam construction, "diffused surface water" is that "occurring naturally on the surface of the ground other than in natural channels, lakes, or ponds."[141] The rules extend this definition to include water on the surface of the ground "other than in natural *or altered stream* channels, lakes or ponds."[142] Under either definition the clear intent is to exclude water that is not in streams from the allocation rules. In both the legislation and the rules, the definition of "stream" excludes a "depression, swale, or gully, through which diffused water flows."[143] The exclusion of diffused surface water from other allocation rules is consistent with its exemption from registration requirements.[144]

By excluding water previously captured and water captured by tailwater recovery systems from allocation,[145] the rules recognize that diverters should be encouraged to conserve water by arranging for its capture in times when adequate supplies exist and, when possible, by re-using water in those irrigation systems that can accommodate recovery and reuse.

The rules also allow diversions of less than 325,900 gallons (one acre-foot) of water in any water year to be made

140. *Id.* § 301.2(f), (d), (b).

141. ARK. CODE ANN. § 15-22-202(5) (Supp. 1989).

142. Rules, *supra* note 34, § 301.3(m) (emphasis added).

143. ARK. CODE ANN. § 15-22-202(2) (Supp. 1989); Rules, *supra* note 34, § 301.3(jj).

144. Rules, *supra* note 34, § 302.2(c).

145. *Id.* § 307.2(b), (d).

without allocation.[146] This is consistent with the exemption from registration of these diversions.[147] However, the registration legislation contains no such exemption.[148]

4. Procedure for Allocation

The procedure for allocation may be instituted by any person affected by the shortage or by the Commission on its own initiative.[149] The rules outline a detailed notification procedure[150] which complies with the statutory requirement of "notice and hearing."[151] Once it has been established, after proper notice and a hearing, that the allocation is appropriate, the amount to be allocated is expressed as a percentage of available water on a daily basis under varying levels of flow.[152] A stream flow staff gauge may be used at the point of diversion to indicate permissible levels including an indication of the minimum stream flow below which diversions may not continue except for domestic or municipal-domestic use.[153] In cases of emergency the Commission may shorten the time frame for determination of allocation and may modify predetermined allocations for nonriparian transfers to minimize the effects on public health, safety, or welfare.[154]

Agency administered allocation systems for water have the potential of resolving conflicts in a timely and cost-effective manner. However, agency decisionmaking mechanisms must offer requisite constitutional safeguards, such as due process, and ultimately an appeals process is necessary in order to subject agency decisions to judicial review. This right is recognized in the rules where the agency appeals process is incorporated by reference.[155] The allocation legislation specifies that any person affected by rule, regulation, or order may ob-

146. *Id.* § 307.2(a).
147. *Id.* § 302.2(a).
148. ARK. CODE ANN. § 15-22-215(a) (Supp. 1989) exempts from the registration requirements only diversions from natural lakes or ponds in the exclusive ownership of one person.
149. Rules, *supra* note 34, §§ 308.1 to 310.1.
150. *Id.* §§ 308.1 to 309.8.
151. ARK. CODE ANN. § 15-22-217(a) (Supp. 1989).
152. Rules, *supra* note 34, § 311.1.
153. *Id.* § 311.1, .4, .5.
154. *Id.* §§ 311.1, 313.2.
155. *Id.* § 309.8.

tain review in circuit court of the record that was made in the hearing.[156]

D. Reporting of Water Use

In 1969 the legislature established a system for registration of diversions from streams, lakes, or ponds, except those natural lakes or ponds in the exclusive ownership of one person. The registration system requires that specific information be reported on the source of the water, point of diversion, purpose of the use of the water, quantity diverted, location of use, and times of the year when diversion is proposed.[157]

The rules regarding the registration of surface water diversion contain two interesting provisions not specified in the legislation. First, the rules exempt diversions of less than 325,900 gallons (1 acre-foot) of water in any water year.[158] The legislation contains no exemptions other than those for diversions from natural lakes or ponds in the exclusive ownership of one person.[159]

Second, the rules set out a sliding scale for a late registration fee for failure to register by the specified due date. The rules provide for no fee on the first failure to register, $50.00 for the second failure, $250.00 for the third failure, and $500.00 for the fourth and subsequent failures.[160] The rules allow the first and second late registrations in a single year to

156. ARK. CODE ANN. § 15-22-209 (Supp. 1989). The 1989 amendments changed the procedure for appellate review of Commission decisions. Previously, a *de novo* review in chancery court was provided and, presumably, because of the urgency of water disputes, the review was to take precedence over all other proceedings of the court. The amended procedure, under the Arkansas Administrative Procedure Act, provides for review in circuit court and omits all reference to any precedence of such appeals over other matters. This change fails to recognize the urgency of allocation decisions. It is left to the parties involved to urge the court to treat the matter as an emergency with no prior legislative declaration. In allocation decisions quick resolution of the matter will be crucial whereas in other Commission decisions, dam construction permits for example, delay will be less critical.

The legislative change is apparently in reaction to Arkansas Commission on Pollution Control & Ecology v. Land Developers, Inc., 284 Ark. 179, 680 S.W.2d 909 (1984) in which the court found *de novo* review of matters of executive discretion to be unconstitutional.

157. 1969 Ark. Acts 180 (codified at ARK. CODE ANN. § 15-22-215 (Supp. 1989)).

158. Rules, *supra* note 34, § 302.2(a).

159. ARK. CODE ANN. § 15-22-215(a) (Supp. 1989).

160. Rules, *supra* note 34, § 302.7(a).

be considered one late registration for fee purposes.[161] In the third, fourth, and subsequent years *each withdrawal* may be considered a separate late registration for fee purposes.[162] The original legislation did not provide for a penalty for failure to register, and specifically excluded the failure to register a diversion from penalty provisions in the legislation.[163] The provision was amended in 1989 to provide for a late registration fee of up to $500.00 "for *each year* they fail to register."[164] The provision in the rules for each *withdrawal* to be considered a late registration is inconsistent with the 1989 statutory provision.

Annual reports of groundwater use were not required until 1985. Modifications that year included provisions for the reporting of groundwater withdrawals, except from individual household wells exclusively for domestic use. The 1985 Act also exempted smaller wells based on their inside diameter.[165] In 1987 this portion of the legislation was amended to exempt smaller wells based upon potential flow rate (less than 50,000 gallons) instead of upon the inside diameter of the well.[166]

The Commission has developed separate "Rules for Ground Water Reporting" which were published with the Arkansas Water Plan.[167] The report on groundwater use must include information on the number and size of wells, crops and acreage irrigated, and the legal description of lands irrigated (which may be depicted by the use of appropriate maps). In addition, if the use is not for irrigation, then the name and location of the user, the use, and quantity used must be reported.[168] Penalty provisions for late registration, up to $500.00 for each year, apply as in the case of the surface water.[169] The rules apply the same sliding scale for failure to

161. *Id.* § 302.7(c).

162. Rules, *supra* note 34, § 302.7.

163. 1969 Ark. Acts 180.

164. ARK. CODE ANN. § 15-22-215(e) (Supp. 1989) (as amended by 1989 Ark. Acts 408) (emphasis added).

165. 1985 Ark. Acts 1051.

166. 1987 Ark. Acts 460.

167. Rules for Ground Water Use Reporting B-1 to B-5, *reprinted in* Arkansas Water Plan, *supra* note 4.

168. ARK. CODE ANN. § 15-22-302 (Supp. 1989).

169. *Id.* (as amended by 1989 Ark. Acts 408).

register as is applied to surface water diversions.[170]

The groundwater reporting rules contain a special provision related to "critical groundwater areas." The Commission must notify any person who reports withdrawals in these areas that the well is in a critical area and that continued withdrawals could lower the water table to a point where pumping would become "uneconomical, cause injurious subsidence of the soil, degrade the water quality so that it is no longer usable, and permanently affect the ability of the aquifer to recharge."[171]

The significance of water use reporting lies in the necessity of providing the agency with critically important information on water use in the state. The Commission is charged with the duty to make various determinations concerning water supply and demand.[172] For example, the Commission is to determine the water needs of agriculture, "taking into account the decreasing groundwater tables and the resulting future needs for surface water to augment groundwater supplies . . . ."[173] The only means by which the Commission can fulfill this, and related duties, is to have a system in place for determining the nature and extent of water use in the state.

E. Minimum Stream Flows

A special problem arises as a state moves away from a riparian rights system toward an administrative system. Specifically, this problem concerns the relative values of minimum instream flow for water quality, fish and wildlife, recreational uses, navigation, and other federal uses. Considering the public interest in instream water use is particularly important when a mechanism is designed to facilitate water transfers to nonriparian uses.

The 1985 legislation specifically provided that the Soil and Water Conservation Commission is to "establish minimum stream flows."[174] In making determinations of whether

170. The penalty scale appears in the surface water rules but refers to late registration of groundwater withdrawals a well as surface water diversions. Rules, *supra* note 34, §§ 302.7(b), (c), (d).

171. Rules for Ground Water Reporting, *supra* note 167, § II D.

172. ARK. CODE ANN. § 15-22-301 (1987).

173. ARK. CODE ANN. § 15-22-301(7) (1987).

174. ARK. CODE ANN. § 15-22-301(4) (1987).

excess surface water is available to be transferred to nonriparians the Commission is to consider "[m]aintenance of instream flows for fish and wildlife, water quality, and aquifer recharge requirements . . . ."[175] In 1989 legislation the Commission was given the specific mandate to "establish and enforce" minimum stream flows for the protection of instream water needs.[176] In doing so the Commission is to notify the Arkansas Game and Fish Commission, the Arkansas Pollution Control and Ecology Commission and "any other interested state boards and commissions" prior to the establishment of minimum stream flows.[177] Both the Game and Fish Commission and the Pollution Control and Ecology Commission must file written comments.[178] The agency is to follow procedures for rulemaking, including notice and public hearings.[179]

The 1989 legislation adds "navigation" and "interstate compacts" to the list of instream uses considered part of the definition of "minimum stream flow." Although this amendment changes the definition section of the allocation statute, the addition must be intended to apply to all areas of water policy.[180]

The Arkansas Water Plan indicates that instream flow requirements must be established on a site specific flow basis.[181] Because of differences between streams in different ecoregions of the state, the plan indicates that a "given procedure or percentage" is not applicable to determining minimum stream flows on all streams. In addition, the plan recognizes the need to reserve some of the streamflow "to maintain fish and wildlife habitat, water quality standards, and aesthetic qualities of the streams."[182]

The designated levels come from recommendations of

175. ARK. CODE ANN. § 15-22-304(b)(4) (1987).

176. 1989 Ark. Act 469 (codified at ARK. CODE ANN. § 15-22-222 (Supp. 1989)).

177. *Id.*

178. *Id.*

179. 1989 Ark. Acts 469, § 5.

180. 1989 Ark. Acts 469 (codified at ARK. CODE ANN. § 15-22-202 (Supp. 1989)). The Arkansas Water Plan also refers to hydropower generation as a nonconsumptive instream use. Arkansas Water Plan, *supra* note 4, at 22.

181. Arkansas Water Plan, *supra* note 4, at 22.

182. *Id.*

agency staff from the Department of Parks and Tourism, Game and Fish Commission, and the Department of Pollution Control and Ecology.[183] These agencies were particularly concerned that the Arkansas Water Plan should recognize and protect instream uses before withdrawals for offstream uses could occur.[184] The Commission adopted the recommended levels to determine whether excess surface water exists for purposes of nonriparian transfers.

The allocation rules classify instream uses ("minimum streamflow") as a reserved use, along with domestic and municipal-domestic uses and federal water rights, prior to allocations for other uses and needs.[185] This would appear to meet the objectives of the concerned agencies to protect those minimum levels before any allocation occurs. However, the utilization rules make no effort to develop specific minimum instream flow levels. These will apparently be developed on a case by case, site specific, basis as indicated in the Arkansas Water Plan.

In determining acceptable minimum stream flow, two issues must be resolved. First, who determines the minimum stream flow? Second, what guidelines are to be used in calculating minimum stream flow?

The 1989 amendment addresses the question of who is to determine minimum stream flow by defining "minimum streamflow" to include all five uses, and by specifying that the Commission "shall establish and enforce minimum stream flows for the protection of instream water needs." The Commission is to notify the other interested agencies and is to follow usual rulemaking procedures providing for public notice and comment.[186]

Many states have minimum stream flow legislation. Goals for minimum stream flow statutes include protecting es-

183. In determining fish and wildlife instream requirements 60% of mean monthly flow for November through March; 70% of mean monthly flow for April through June; and, 50% of mean monthly flow for July through October, was used as the criterion before interbasin transfer would be permitted. *Id.* at 22-25. In addition, specific navigation flow requirements were recognized for the Arkansas, White, and Red rivers. *Id.* at 25.

184. *See* Position Paper Concerning the Arkansas Water Plan (Sept. 15, 1987).

185. Rules, *supra* note 34, § 307.3.

186. 1989 Ark. Acts 469, § 5.

tablished rights and uses from adverse affects of water diversion, achieving optimal distribution of surplus waters, meeting minimum standards in state water-use plans, and preserving the quantity and quality of fresh water.[187] The approaches used to achieve these goals vary.

Some eastern states have relied upon the historic flow of a particular stream when establishing the minimum flow for that stream. For example, in North Carolina the concept of a minimum flow rate is reflected in legislation related to litigation involving disruptions of the flow of a stream. The legislation requires that a flow rate be used which is the "minimum average flow for a period of seven consecutive days that have an average recurrence of once in 10 years." This rate is to be used unless a party introduces a calculation that more closely approximates the actual flow rate.[188] Virginia refers to an "average flow of the stream" as the amount that must be maintained in the stream. A riparian landowner is authorized to capture and store amounts above the average flow rate. This may be computed from actual measurements or from the most accurate information available.[189]

A number of riparian states have abandoned historic flow as a base. These states have directed that minimum flow levels be fixed after considering the range of stream flow variations, the present and future uses, the practical utility of the stream for domestic use, the ecological and recreational goals, and the other factors which protect and preserve the rights of riparians.[190] Michigan's statute for impounding and releasing surplus waters is illustrative of the various factors taken into consideration in obtaining "optimal flow." The Water Resources Commission determines the best utilization and conservation of surplus waters. In making the determination of "optimal flow" the Commission considers the range of stream flow variance, the present and possible future uses of any riparian owners, the stream's waste assimilation capacity, its practical utility for domestic use, recreation, fish and wildlife habitat, municipal and industrial water supply, commercial

187. *See* 7 R. CLARK, WATERS AND WATER RIGHTS 88 (1976).
188. N.C. GEN. STAT. § 143-215.48(a) (1989).
189. VA. CODE ANN. § 62.1-106 (1987).
190. 7 R. CLARK, *supra* note 187, at 88.

and recreational navigation, public and private utilities, water storage purposes, and any other factors the commission feels necessary to protect and preserve the rights of the riparian owners on the stream.[191]

Other riparian states have adopted allocation permit systems in order to maximize surface water preservation. Under these statutes, allocation permits are issued only after minimum flow is preserved. For example, Iowa's definition of minimum flow considers historic flows and adds that the minimum flow should prevent any withdrawals that would be harmful to the public interest.[192] Iowa's method of determining minimum flow allows the agency flexibility in its determination of minimum flow standards.

In the West, where permit systems of water appropriation are established by statute, most states have provisions denying a permit if the appropriation is against the public interest.[193] Minimum flow statutes in some of these states have provided for the state itself to act as an "appropriator" in order to provide the citizens of the state the beneficial use of the water for various public purposes. The three traditional requirements of an appropriation are an intent to appropriate, a beneficial use of the water, and an actual diversion.[194] Minimum flow statutes where the state is an appropriator have satisfied both the intent and the beneficial use requirements. However, state courts are split as to whether an actual diversion is required for a proper appropriation.[195] Both Colorado and Washington have eliminated the actual diversion requirement and have allowed the state to appropriate water to preserve the natural environment.[196] Montana has followed a similar pattern and has enacted a statute that specifically al-

191. MICH. COMP. LAWS § 281.305 (West 1989).

192. IOWA CODE ANN. § 455A.1 (West 1971).

193. *See* Comment, *Maintenance of Minimum Instream Flow in South Dakota*, 23 S.D.L. REV. 181, 188 (1978).

194. Tarlock, *Recent Developments in the Recognition of Instream Uses in Western Water Law*, 1975 UTAH L. REV. 871, 877 (1975).

195. *See, e.g.*, State v. Miranda, 83 N.M. 433, 493 P.2d 409 (1972) (denied appropriation because of no actual diversion); State Dep't of Parks v. Idaho, 96 Idaho 440, 530 P.2d 924 (1974) (allowed appropriation for fish and wildlife maintenance).

196. COLO. REV. STAT. ANN § 37-92-102(3) (Supp. 1989); WASH. REV. CODE ANN. § 90.54.030(3) (Supp. 1989).

lows the state to reserve water for minimum flow.[197]

The National Water Commission has recommended two minimums of streamflow: (a) Flows which should be preserved under average conditions (desirable flows); *and* (b) flows which must be preserved under all conditions (essential flows).[198] This characterization of flows closely reflects the approach courts have taken in determining "reasonableness" in water use. Courts have used a "minimum flow" concept to mediate conflicts between in-place and consumptive users which is similar to the "desirable flow" concept. A desirable flow would be a level that could be invaded, and shared, in times of shortage. Courts have also recognized a level that cannot be invaded which is similar to the "essential flow" concept. Courts have been especially inclined to recognize this level where the state's policy is clear regarding the necessity of maintaining some minimum flow level at all times.

The Arkansas approach of allowing the Commission to establish minimum stream flows to protect instream needs is in line with approaches used in both the traditionally riparian states and the western appropriation doctrine states. The Commission's mandate to reserve these flows before making allocations during shortages recognizes the public interest in the specified instream uses. The Commission's approach of determining minimum stream flows on a case by case site specific flow basis is reasonable in light of the significant differences among Arkansas streams.

F. Interstate Transfers

A major drought in Arkansas occurred in 1980 just as a federal study was released which identified Arkansas as a potential source of water for transfer to the High Plains area. Concerns over the possibility of this type of transfer led to the creation of the Water Code Study Commission.[199] That Commission's report and subsequent proposals for water law revision in the Arkansas legislature contained provisions related

197. MONT. CODE ANN. § 85-2-316 (1989).

198. National Water Commission, Water Policies for the Future 290-91 (1973).

199. Looney, *Modification of Arkansas Water Law: Issues and Alternatives*, 38 ARK. L. REV. 221, 251-52 (1984).

to interstate transfers.[200]

The 1985 legislation includes a procedure by which out-of-state transfers can be accomplished.[201] This legislation, based on a similar statute in New Mexico,[202] sets out a procedure for determining whether interstate transfers will be permitted. This procedure is separate from that designed for nonriparian transport of water within the state. The Soil and Water Conservation Commission must research any interstate request and recommend to the General Assembly whether the transfer would be in the public interest.[203] The Commission is to take into account six factors in making this determination:

> (1) The supply of water available in the State of Arkansas;
> (2) The present and future water demands of water users in this state;
> (3) Whether there are water shortages within the state;
> (4) Whether the water that is the subject of the proposed transfer could feasibly be transported to alleviate water shortages within this state;
> (5) The supply and sources of water available to the applicant in the state where the applicant intends to use the water; and
> (6) The demands placed upon the applicant's supply in the state where the applicant intends to use the water.[204]

The General Assembly must then approve the transfer and it must be finalized by interstate compact under statutory provisions. These provisions permit negotiations with representatives of adjoining states related to the protection and use of interstate waters.[205] This requirement appears to imply that only interstate streams could be subject to any out-of-state transfers under this approval process.

The effort at careful drafting of the statute was based on

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200. *Id.* at 252.
201. 1985 Ark. Acts 1051 (codified at ARK. CODE ANN. § 15-22-303 (1987)).
202. N.M. STAT. ANN. § 72-12B-1 (Supp. 1985).
203. ARK. CODE ANN. § 15-22-303(b) (1987).
204. ARK. CODE ANN. § 15-22-303(c) (1987).
205. ARK. CODE ANN. § 15-22-303(d) (1987).

suggestions made in *Sporhase v. Nebraska*.[206] In *Sporhase* the Supreme Court suggested that while a state could not prohibit interstate transfers of water outright, it might show a need for conservation and preservation of its own water resources which would allow it to impose restrictions on interstate transfer. The particular language of *Sporhase* seemed to suggest that severe water shortages would create this need for conservation and the validity of restrictions would be judged by the measures the state had taken to deal with overall shortage situations. In the absence of a demonstrated need for conservation, any discrimination against interstate transfers would likely be an invalid burden on interstate commerce. Economic interests, standing alone, could not serve as the basis for restrictions on interstate transfers.[207]

The Arkansas legislation reflects an effort to fit within the permissible limits of *Sporhase* while, at the same time, imposing some limitations on the transfer of water from the state. The New Mexico statute, from which the Arkansas legislation is derived, has been the subject of litigation between the City of El Paso and the State of New Mexico. In those cases the district court's decisions raise questions about the validity of such legislation, at least in its application.[208]

III. POSSIBLE LEGAL CHALLENGES TO THE ARKANSAS MODIFICATIONS

Legislative modification of the riparian rights system in Arkansas may eventually present legal challenges because the modifications involve institutions which may be viewed as permanent and not subject to change. However, in the majority of states where legislative modification of water law has occurred, challenges on this basis have been unsuccessful. Most states have been able to impose reasonable regulation and controls over water use, even if the regulatory program involves replacing common law doctrines with legislatively sanctioned administrative systems. The principle was clearly stated by

206. 458 U.S. 941 (1982).

207. *Id.* at 956-57.

208. City of El Paso v. Reynolds, 563 F. Supp. 379 (D.N.M. 1983); City of El Paso v. Reynolds, 597 F. Supp. 694 (D.N.M. (1984). The implication of these decisions for the Arkansas situation is discussed in Section III. B.

the Ninth Circuit in *California-Oregon Power Co. v. Beaver Portland Cement Co.*[209] "It has long been generally recognized that the establishment of an administrative system for the regulation and determination of water rights . . . is a legitimate exercise of the police power of the state."[210]

A. Unused Common Law Water Rights

The riparian water right is generally regarded as a "vested and valuable property right" which, according to the Arkansas Supreme Court, "no more may be destroyed or impaired than any other part of a freehold."[211] As such, these vested rights must be given protection under constitutional safeguards. However, the overwhelming majority of courts which have considered the issue have indicated that the vested rights which must be given protection can be limited to those being exercised by a prescribed date. Unexercised common law rights may be abolished to the extent that state permission becomes a necessary condition for initiation of non-exempted uses after that date.[212]

The Arkansas legislation does not go this far. A riparian landowner can still implement new uses at any time. No advance approval of a state agency is necessary. The only restriction imposed is the requirement of registration of the diversion with the Soil and Water Conservation Commission.[213] Under the Commission rules, a late registration fee is imposed for failure to register annually.[214] The effect of a failure to register is the loss of the right to an allocation during times of shortage if an allocation procedure is implemented.[215] This constraint on vested rights of a riparian is not likely to be viewed as an unconstitutional burden on the exercise of the property right. In one Kansas case where this issue was

209. 73 F.2d 555 (9th Cir. 1934), *aff'd*, 295 U.S. 142 (1935).

210. *Id.* at 567.

211. Harris v. Brooks, 225 Ark. 436, 444 n.3, 283 S.W.2d 129, 134 n.3 (1955) (quoting Meriwether Sand & Gravel v. State, 181 Ark. 216, 226-27, 26 S.W.2d 57, 61 (1930)).

212. The most direct precedent for these conclusions is the federal and state decisions which have specifically upheld statutory actions in other states. Many of the most important of these are reviewed in Ausness, *supra* note 8, at 240-252.

213. ARK. CODE ANN. § 15-22-215 (Supp. 1989).

214. Rules, *supra* note 34, § 302.7.

215. ARK. CODE ANN. § 15-22-215(d) (Supp. 1989).

raised, the court found that a requirement to "affirmatively apply" in order to preserve the right was a valid exercise of the state's regulatory authority.[216]

The other aspect of the Arkansas program which might be challenged by holders of unused riparian rights deals with the agency's authorization to approve nonriparian transfers. The authorizing legislation recognizes that before nonriparian transfers can be approved, protection has to be afforded to "[e]xisting riparian rights as of June 28, 1985 . . . ."[217] The agency has, in the surface water utilization rules, changed this recognition to "riparian and non-riparian usage reported for the 1989 water year . . . ."[218] This administrative refinement explicitly excludes non-registered riparian rights from recognition. This could be considered the legislative intent if the language of the legislation, "existing riparian rights," is construed in a restrictive sense—to have meant rights exercised as of the effective date. However, if the intent was to protect both exercised and unexercised rights, the agency rules appear to ignore the latter. The language is likely to be of little concern, however, because it is used in the context of determining whether "excess surface water" exists that could be available for transport to nonriparians. Apparently in cases of allocation during shortages, a riparian owner could implement a new use, register the diversion, and automatically move into a higher priority than any nonriparian uses.[219] The unregistered riparian user is entitled to no allocation during times of shortage[220] in spite of the retention of legislative language in the registration statute which suggests that nonriparian uses are not "to supersede, subordinate, or otherwise take priority or precedence over a riparian right . . . ."[221]

In spite of these interpretation problems the Arkansas measures are relatively minor restrictions on the holders of unused riparian rights. Therefore, they should withstand any constitutional challenge.

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216. State *ex rel.* Emery v. Knapp, 167 Kan. 546, 207 P.2d 440 (1949).
217. ARK. CODE ANN. § 15-22-304(b)(1) (1987).
218. Rules, *supra* note 34, § 301.3(r).
219. *Id.* § 307.4(b).
220. *Id.* § 307.9.
221. ARK. CODE ANN. § 15-22-215(d) (Supp. 1989).

B. Constitutionality of Export Restrictions

As indicated earlier, the 1985 legislation provides a procedure for approval of interstate transfer of water.[222] This procedure differs in a number of significant respects from the procedures established for in-state nonriparian transfers.[223] The validity of separate procedures must be judged by the standards outlined in *Sporhase v. Nebraska*.[224] An indication of the likely result of this analysis is provided in the evaluation of similar New Mexico legislation in the second of the cases which involved the City of El Paso and the State of New Mexico. Following *Sporhase*, the State of New Mexico enacted legislation which purported to allow interstate transfers in some circumstances. The language, essentially identical to the 1985 Arkansas legislation, included the same six factors to be considered in determining whether a transfer is in the public interest.[225]

The New Mexico legislation was analyzed in *City of El Paso v. Reynolds*[226] (*El Paso II*). This case arose from New Mexico's concern with water being transferred to the Texas city from groundwater wells in New Mexico. The court found the legislation to be facially constitutional. The court applied the *Sporhase* analysis and refused to find the conservation and public welfare provisions to be facially discriminatory.[227] The six factors specified for evaluation of interstate transfers were not required for in-state uses but the court found all six to serve legitimate purposes.[228] However, the court compared the decisions to be made in approving interstate transfers with the statutory provisions related to in-state uses, and it found the discrimination unjustified in application.

The fact that Arkansas establishes separate procedures for approval of interstate transfers and intrastate nonriparian transfers raises the question of constitutionality of the whole legislative scheme—at least in its application—just as was true

222. ARK. CODE ANN. § 15-22-303 (1987).
223. ARK. CODE ANN. § 15-22-304 (1987).
224. 458 U.S. 941 (1982).
225. N.M. STAT. ANN. § 72-12B-1 (Supp. 1989).
226. 597 F. Supp. 694 (D. N.M. 1984).
227. *Id.* at 700-01.
228. *Id.* at 702-03.

in *El Paso II*. In *El Paso II* the court found the state's failure to focus on conservation and public interest, when evaluating in-state transfers, posed a constitutional defect. This was because these factors were only required in the evaluation of interstate transfers, not for in-state transfers. The Arkansas legislation does not require evaluation of the identical six factors in the provisions for interstate and in-state uses, however, it does detail comparable considerations that must be taken into account before the Commission can approve a nonriparian transfer. For example, the interstate transfer must be evaluated with consideration to "the present and future water demands of water users in this state."[229] Furthermore, one of the factors used to determine whether excess surface water is available for nonriparian transfers is the "[f]uture water needs of the basin of origin."[230] These requirements seem to demand considerations similar to those required for interstate transfers.

Nevertheless, one major difference exists in the two approval processes. In-state transfers only require agency approval. Interstate transfers must be approved by both the agency and the General Assembly and, then, effectuated by interstate compact.[231] This immediately suggests the possibility of insurmountable barriers to interstate transfer that might invalidate the application of the Act, as was the situation in *El Paso II*.

On the other hand, it can be argued that the court in *El Paso II* took an overly restrictive view of *Sporhase*. The *El Paso II* court focused on a comparison between the burden on interstate commerce and the non-economic local benefits. Under the court's analysis, a state may prefer its own citizens to the extent that protecting its economic interests is only incidental to protection of the general public welfare.[232] Trelease calls this "errant nonsense" and adds:

> The picture of the state engineer considering an export application, wondering how much water he can save for the economic future of the state, and pussyfooting around

229. ARK. CODE ANN. § 15-22-303(c)(2) (1987).
230. ARK. CODE ANN. § 15-22-304(b)(5) (1987).
231. ARK. CODE ANN. § 15-22-303(b), (d) (1987).
232. 597 F. Supp. 694, 700-01 (D. N.M. 1984).

> with factors that he hopes will justify holding back a little water, is ridiculous. The entire purpose of the process is to exercise sovereignty over the state's resources for the benefit of the state—the very purpose for which it is a state. Water is territory as much as land; it is part of the resource base of the state. . . It is fatuous to say that it is not "legitimate" for a state to choose the beneficiaries of grants of resources under its control.[233]

C. Federal vs. State Control of Water

The federal government has historically deferred to the states in their development of separate water laws to control the allocation of water. This deference has been expressed in most federal legislative programs involving water since *United States v. Rio Grande Dam and Irrigation Co.*[234] In *Rio Grande Dam*, the Supreme Court recognized that states could adopt their own allocation systems, subject only to the limitation that in the state's exercise of that authority, the navigable capacity of the stream could not be obstructed.[235] In addition, the Court noted that a federal reserved right existed for the beneficial use of federal property.[236] Furthermore, the Court recognized the state's ability to adopt its own systems for water allocation. However, it also extended the federal government's right to protect navigable capacity, even with regard to water in nonnavigable streams, if the navigable capacity in the lower reaches of rivers is impaired by state action. This constitutional authority of Congress was restated more recently in *California v. United States*.[237]

However, with respect to the actual exercise of this federal authority, Congress has consistently included statements indicating deference to state authority. For example, in the Flood Control Act of 1944, an amendment was included which provided:

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233. Trelease, *Interstate Use of Water—"Sporhase v. El Paso, Pike & Vermejo."* 22 LAND & WATER L. REV. 315, 332 (1987).

234. 174 U.S. 690 (1899).

235. *Id.* at 703.

236. *Id.* The doctrine was more clearly set out in Winters v. United States, 207 U.S. 564 (1908) and, more recently, in United States v. New Mexico, 438 U.S. 696 (1978).

237. 438 U.S. 645, 667 n.21, 672 n.25 (1978)

> The use for navigation, in connection with the operation and maintenance of such works herein authorized for construction, of waters arising in States lying wholly or partly west of the ninety-eighth meridian shall be only such use as does not conflict with any beneficial consumptive use, present or future, in States lying wholly or partly west of the ninety-eighth meridian of such waters for domestic, municipal, stock water, irrigation, mining, or industrial purposes.[238]

This language has appeared in subsequent legislation involving flood control and navigation projects. For example, the Arkansas River & Tributaries Project, authorized in 1946, included this amendment by reference, with the added proviso that navigation was to be interpreted to include hydropower uses of the project. Similar language appeared in the Water Supply Act of 1958.[239] The O'Mahoney-Milliken amendment was added to the Clean Water Act of 1977 along similar lines:

> It is the policy of Congress that the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired by this chapter. It is the further policy of Congress that nothing in this chapter shall be construed to supersede or abrogate rights to quantities of water which have been established by any State . . . .[240]

The overall effect of such legislation is congressional recognition of the states' authority in water allocation matters.

However, the existence of the stated policy cannot be construed to mean that federal regulatory controls do not exist or that federal water development activities have no effect on state allocation procedures. In fact, federal water use controls generally do not seek to deny water rights of prospective users, but rather impose conditions which must be met before any such rights existing under state law can be exercised. Examples of the substantial effect federal authorities may have on state administered water allocation programs include the permit programs of the Corps of Engineers, the Federal Regulatory Commission and the authority of the Environmental

238. Flood Control Act of 1944, 58 Stat. 887 (1944) (codified at 33 U.S.C. § 701-1(b) (1988)) (the O'Mahoney-Milliken amendment).

239. 43 U.S.C. 390b (1988).

240. 33 U.S.C. § 1251(g) (1988).

Protection Agency with regard to water quality and drinking water safety.

The Arkansas legislative changes in the riparian rights system recognize the potential for conflict in this area by explicitly referring to "federal water rights." Navigation and water quality are mentioned as instream uses that must be reserved before allocation during shortages.[241] "Federal water rights" are included as a catch-all category when given "reserved" status[242] and rights to take water from federal impoundments are designated as uses that can occur without any state interference.[243] It is unclear whether the congressional efforts to defer to state allocation systems or the State's effort to recognize federal uses is to control.

An unusual complicating factor is added when considering the potential for use of water from the Arkansas River.[244] Under the federal legislation authorizing the Arkansas River and Tributaries Project, part of which was the McClellan-Kerr Waterway, the language of the O'Mahoney-Milliken amendment quoted above recognizes that navigation uses are subordinated to state consumptive uses of water "in States lying wholly or partly west of the ninety-eighth meridian."[245] Arkansas does not lie wholly or partly west of the ninety-eighth meridian so, presumably, this subordination does not apply to uses of water from the Arkansas River in this State. Further, under the Federal Power Act[246] language appearing to protect state water laws which is similar to that reviewed above,[247] has been held to be ineffective because it conflicts with the supremacy and commerce clauses of the United States Constitution.[248]

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241. ARK. CODE ANN. § 15-22-202(10) (Supp. 1989).

242. Rules, *supra* note 34, § 307.7.

243. ARK. CODE ANN. § 15-22-218(a) (1987).

244. This water has recently been found to be suitable for drinking water purposes. Moore, Determination of the Suitability of Arkansas River Water for Municipal, Industrial and Agricultural Use, Misc. Pub. 67 (Jan. 1989).

245. 33 U.S.C. § 701-1(b) (1988).

246. 16 U.S.C. §§ 791-828 (1988).

247. 16 U.S.C. § 821 (1988) provides:

> Nothing contained in this chapter shall be construed as affecting or intending to affect or in any way to interfere with the laws of the respective States relating to the control, appropriation, use or distribution of water used in irrigation, or for municipal or other uses, or any vested right acquired therein.

248. *See, e.g.*, First Iowa Hydro-Electric Cooperative v. Federal Power Comm'n,

IV. GROUNDWATER REGULATION

Clearly, the series of legislative changes in Arkansas water law, starting in 1957, indicate movement away from the riparian rights system with regard to surface water. The provisions for nonriparian transfer and agency allocation during shortage suggest that the legislature has committed to an administrative system of surface water utilization. Yet, with the exception of the reporting requirements, none of the legislative focus has been upon Arkansas's most serious water problem—that of groundwater depletion.

A. Arkansas Groundwater Legislation

The 1985 Act required the Commission to define critical water areas and to delineate areas now critical or which will be critical within the next thirty years.[249] The Commission did this in the Arkansas Water Plan by identifying critical groundwater areas as those in which the "quantity of groundwater is rapidly becoming depleted or the quality is being degraded."[250] The areas identified include the alluvial aquifer in Lonoke, Prairie, Craighead, Poinsett, Drew, and Ashley counties. In addition, irrigation withdrawals in the Memphis sand aquifer have caused areas of Poinsett and Cross counties to be considered critical, as have industrial and public water supply withdrawals from the Sparta Sand aquifer in Union and Columbia counties. Quality problems in Lee and Phillips counties and migration of saltwater in Lincoln, Desha, Monroe, Chicot, Miller, and Lafayette counties have created critical situations in these areas as well.[251]

Projections to the year 2030 indicate that groundwater depletion will be an increasingly serious problem in these areas unless a sustained yield pumping strategy can be implemented along with a conversion from groundwater to surface water use. The steps toward conversion to surface water are in place with the movement away from the riparian rights sys-

328 U.S. 152 (1946); Comment, *Hydroelectric Power, the Federal Power Act, and State Water Laws: Is Federal Preemption Water Over the Dam?*, 17 U.C. DAVIS. L.REV. 1179 (1984).

249. ARK. CODE ANN. § 15-22-301 (1987).

250. Arkansas Water Plan, *supra* note 4, at 31.

251. *Id.*

tem and the specific authorization of nonriparian transfers. In addition, the Arkansas Water Resources Development Act of 1981 authorizes the Commission to issue bonds for the development of water resources for domestic, agricultural, industrial, and other essential purposes.[252] This Act was specifically designed to provide financial assistance for projects which would make surface water available in areas dependent on groundwater.

However, the conversion to surface water will not occur rapidly. Projects for interbasin transfer will be costly and take time to develop.[253] Even nonriparian transfers of an intrabasin nature will require financial resources beyond that of many individuals who might benefit from such transfers. For this reason, continued emphasis must be placed on groundwater pumping strategies that may serve to achieve some level of reduction in the depletion rates. This likely means that additional regulatory authority will be necessary to effectively address these problems. Such authority was proposed in the Water Code Study Commission proposals in the 1983 legislative session but was deleted after objections from the agricultural community and well-drillers.[254] Groundwater legislation has been subsequently introduced, but not voted upon, in more recent legislative sessions. No consensus has been apparent as to how to best provide enhanced regulatory authority.

B. Future Groundwater Regulation

Any future efforts at groundwater regulation should be based on three basic premises. First, any regulatory program should be applicable only in critical areas. Second, conversion to surface water and conservation of water should be encouraged. Third, existing uses should be protected to the greatest possible extent. As indicated earlier, the first two of these premises are reflected in existing authority of the Commission: defining critical groundwater areas and assisting with financing of projects to encourage conversion to surface

252. ARK. CODE ANN. §§ 15-22-601 to 622 (1987).

253. For example, a proposed project in Southeast Arkansas is projected to cost $24 million. Arkansas Democrat (Feb. 13, 1990), at 7B, col.1.

254. Looney, *supra* note 199, at 247.

water use. If any new regulatory authority involving groundwater is to be delegated to the Commission, these basic premises are both politically and economically sensible.

1. Regulation in Critical Areas

a. *Geographical Coverage*

A fundamental aspect of groundwater legislation is that its principal regulatory measures should not apply statewide but should be restricted geographically to those areas having identified groundwater management problems. Implementing regulatory provisions in such areas would require that they first be designated as "critical areas" by the Commission according to procedures already in place.[255] The Arkansas Water Plan has identified those critical areas designated to date.[256]

b. *Nature of Controls*

Under most legislative schemes for groundwater regulation the primary effect of designating a critical area is to implement a special management program which includes regulation of new groundwater uses in the area. The principal control provision is the requirement that certain groundwater uses within designated areas must have an authorizing permit from an agency such as the Soil and Water Conservation Commission. However, this requirement would not necessarily apply to all users within a designated area. Certain uses may be automatically permitted or exempted from the requirements.

One category of exemptions that should be considered includes uses in existence on the date an area is designated, intended uses where wells are under construction, or any use in existence within a specified time—for example two years prior to the date of area designation (a "grandfather" clause). Existing uses are already required to be reported to the Commission and are acknowledged by issuance of a certificate of

255. Arkansas Water Plan, *supra* note 4, at 31. *See* ARK. CODE ANN. § 15-22-301(9) (1987).

256. *Id.*

groundwater right.[257] If additional groundwater legislation follows, these rights could be automatically recognized but limited to the extent of their beneficial use. This, theoretically, would give the Commission authority to review existing uses to some extent. Full utilization of this provision has the potential to overcome the weakness in a management program which exempts existing uses from regulation entirely. Because existing uses may constitute the principal source of groundwater problems in a given area, some control over such uses appears essential for effective groundwater management.

Another group of special uses may need to be exempted from regulation, even if not in existence at the time of area designation. This group might include the use or supplying of groundwater for human consumption or domestic purposes, for livestock watering purposes, or for any single industrial or commercial purpose in an amount not exceeding a set volume, for example fifty thousand gallons a day. This would be partially consistent with existing exemptions from the registration requirements.[258]

Although it is desirable that municipal use above the 50,000 gallons per day limitation be given a high priority within a state groundwater management program, exemption of such withdrawals does not appear justifiable. Exemption of domestic wells at individual households and other minor uses is a standard feature of groundwater control which can be justified on the basis that the impact of such uses is inconsequential. However, municipal withdrawals can be substantial where large numbers of domestic and other water users are served from a single system. Effective management of the resource such that overdrafting of supplies and minimization of conflicts between users requires that all large withdrawals be subject to state control.

One aspect of including a grandfather clause that would be the basis of potential management problems is the determination of the magnitude of the pumpage rights encompassed. Typically such legislation recognizes and preserves existing uses "to the extent of the daily withdrawal of groundwater on

257. Rules for Ground Water Use Reporting, *supra* note 167; ARK. CODE ANN. § 15-22-302 (1987).

258. Rules for Ground Water Use Reporting, *supra* note 167, § II.B.

the date such area is declared a groundwater management area or on any date within two years prior to such date."[259] By establishing maximum daily use as the measure of existing rights, a potential regulatory loophole is created whereby total pumpage from an aquifer may be increased substantially without state approval if average pumping rates are not specifically controlled.

c. *Conditions*

Groundwater legislation may provide that use be made subject to conditions such as restrictions on duration, limitations on administrative review, and restrictions on transfer from the original applicant to a new water user. The agency can be authorized to impose conditions and limitations in the use, approve the use for less water than requested, or reject the application. The basic legislative criteria to guide the agency's decisions with regard to a proposed well should be that new uses be limited by the requirement of beneficial use and that undue interference with existing wells will not be allowed. If duration is not specified, the assumption arises that a groundwater right, so established, is granted in perpetuity. Furthermore, provisions concerning review procedures should be made for reviewing and modifying of uses to reflect changed conditions affecting the desirability of a given water use in relation to the public interest. Specific provisions for the transfer of groundwater rights among private parties should also be considered. Even if the transfer of rights is not expressly prohibited, an obstacle to market reallocation of available supplies among competing uses will exist unless such authority is expressly recognized.

2. Impact of Controls on Common Law Groundwater Rights

Groundwater legislation constitutes a significant modification of traditional groundwater rights existing under the common law. In the case of uses covered by a grandfather provision, private rights are subjected to the limitation of beneficial use. The significance of this restriction will depend in

259. *See, e.g.*, Ground Water Act of 1973, VA. CODE ANN. § 62.1-44.93(a)(1) (1987).

large part on the interpretation of the provision and the aggressiveness with which the provision is administered.

The greatest impact of groundwater management legislation occurs in the case of property owners not covered by the grandfather provision nor coming within the exemptions. Within this category, initiation of a groundwater use cannot be accomplished without authority from the state, and applications for rights may be subjected to conditions or denied under prescribed conditions. Therefore, such legislation establishes a mechanism through which unexercised water rights can be restricted or totally abolished and this may raise political questions concerning the feasibility of the regulatory program.

V. CONCLUSION

Many states have modified their water allocation law or are currently considering modifications in response to existing or anticipated water-supply problems. This is particularly true of those states which initially gave acceptance to the riparian doctrine as the basic mechanism for allocation of water from streams. This doctrine, which functions well when there is an abundance of water, has been rejected or modified by some of the states in an attempt to better manage water resources after scarcities have been perceived. As Trelease comments:

> Riparian law seems to be based upon an unspoken premise that if rights to use are restricted to those persons who have access to the water through ownership of the banks, and if those persons restrict their demands on the water to reasonable uses, there is enough for all. In such a situation there is little need of precise laws and institutions for water allocation, other than a mechanism for settling the few disputes that do arise. But today we have come to realize that there is not enough water to permit the free exercise of all man's wants.[260]

Water supply shortages have not been a pervasive problem in Arkansas. Water is a relatively abundant resource in the State. For example, total water withdrawals in the State

260. Trelease, *Policies for Water Law: Property Rights, Economic Forces and Public Regulation*, 5 NAT. RESOURCES J. 1, 7 (1965).

for all purposes except nonconsumptive use for hydroelectric power generation, averaged 4,760 million gallons per day, of which slightly over eighty percent consisted of groundwater withdrawals.[261] This usage may be placed in perspective by noting that an estimated 280 billion gallons of surface water flows through the state's rivers each day.[262] While such comparisons do not assure the lack of water supply problems, Arkansas's total water availability would not appear to be a significant concern in the foreseeable future.

Despite this overall abundance of water, the law applicable to streams has undergone considerable expansion in recent years. These additions create or extend state water management activities in a variety of areas, including policy, planning, and regulation. These statutory enactments impose additional constraints on water use and, in the case of surface water, establish an administrative allocation program. But these changes have not modified the traditional common law system of allocation where groundwater is involved; the basic institutional mechanism for groundwater allocation continues to be the riparian doctrine.

Part of the reason for the expansion of law regarding water use, in spite of the apparent abundance of water, is that consideration of average water availability is misleading. Comparing average water use across the state with average streamflow indicates neither the existence nor the extent of water-supply problems. Average streamflow encompasses time periods of both flood and drought, making it an unreliable measure of readily available supply. Also, considerable disparity exists between geographic patterns of water supply and population distribution. These variations in water availability over time and by geographic location have combined to produce significant local and regional water shortages during droughts within a general setting of water abundance. Impending regional water-supply shortages during unusually dry periods have resulted in plans for major water-supply development projects that, in turn, have given rise to questions concerning the adequacy of the existing institutional structure for allocating water among competing interests.

261. Arkansas Water Plan, *supra* note 4, at 22.
262. *Id.* at 11.

Any consideration of the adequacy of Arkansas's existing water allocation law and administrative programs or the evaluation of performance to be expected from modifications of the law, is predicated on the identification of a set of objectives. While the explicit selection of appropriate objectives is usually controversial, it is an important element in the analysis of any water allocation system. The objectives which appear to be the most appropriate include the following:

(1) The water allocation system should facilitate application of water to its highest and best use.
(2) Adequate consideration should be given to all aspects of the public interest in determining the highest and best use.
(3) There should be adequate integration of water-use decisions with other resource management decisions.
(4) There should exist efficient mechanisms for conflict resolution concerning competing water uses, including interagency and interstate conflicts.[263]

The objectives listed above represent some of the factors which need to be considered in analyzing a water allocation system. Other relevant objectives may be based on physical conditions and the values of the people in the state. Furthermore, for any particular water policy, interaction among the objectives must be considered. Some objectives are complementary, or even instrumental, to the achievement of others. However, conflicts between objectives can occur. Resolution of such conflicts must be achieved through compromise based on consideration of the relative importance of each objective.

These objectives represent some of the goals which a governmental body may attempt to achieve through its water-rights and administrative system. Other objectives, however, may be relevant depending upon local conditions. The relative weight attached to each of these objectives is an issue which will eventually be decided in the political arena.

263. W. Cox, L. Shabman, S. Batie & J. Looney, *supra* note 49, at 1-2.