NOTES

Arizona Water Law: The Problem of Instream Appropriation for Environmental Use by Private Appropriators

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Contemporary society shows considerable concern for preservation of the natural environment.[1] While this concern extends to all components of the natural environment, it is clear, particularly in the arid west, that water is a significant element in any program to protect environmental quality. Whether the purpose of environmental protection is recreation, aesthetic enjoyment, or wildlife habitat maintenance, water management is a major factor in the calculus of preservation.[2]

In Arizona, the relationship of water management to the preservation of the natural environment is apparent. While the conventional wisdom concerning Arizona suggests that the state owes it grandeur and uniqueness to the absence of water, a great deal of Arizona's environmental beauty is riparian. This riparian environment, due to the escalating pressure of a burgeoning population with its increasing demands for water, is rapidly being abused and destroyed.[3]

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1. *See* Robie, *Some Reflections on Environmental Considerations in Water Rights Administration*, 2 ECOLOGY L.Q. 695, 695 (1972); Comment, *Federal Protection of Instream Values*, 57 NEB. L. REV. 368, 368 (1978).

2. "Calculus of preservation" is the process whereby elements essential to the maintenance of the natural environment are first identified and then sought to be preserved.

3. Evidence of this destruction of riparian habitat is seen when one examines existing streamside ecosystems in southern Arizona. For example, the Gila, San Pedro, Santa Cruz, Salt, Verde, and Agua Fria rivers once supported abundant riparian ecosystems. Damming, diversion, channelization, and unregulated groundwater pumping along the rivers, however, have resulted in the virtual disappearance of much of their former natural habitat. The same process is now going on along many of the remaining streams and creeks which are tributary to the above named rivers. *See, e.g.*, Steven W. Carothers, *Importance, Preservation, and Management of Riparian Habitats:*

Recently, efforts have been made to preserve Arizona's environment.[4] The success of such enterprises, however, is inextricably linked to the maintenance of a minimal instream[5] flow of water sufficient to support the riparian ecosystem.[6] At present, however, Arizona law does not appear to recognize instream appropriation.[7] Consequently, the fate of a number of unique riparian areas, particularly significant because of their environmental importance, is uncertain.

The focus of this Note is on the status of Arizona water law with respect to private efforts to appropriate minimum instream flow for environmental uses—that is, for aesthetic, wildlife, nonconsumptive recreational, and scientific-educational purposes. Initially, a brief background of the doctrine of prior appropriation, the law in Arizona governing use of all public surface water, will be provided.[8] Included will be a discussion of changes in the law of prior appropriation that bear on the question of environmental protection. Next, this Note will examine whether the use of water for environmental purposes constitutes a beneficial use, whether Arizona law recognizes instream appropriation, and whether a private party may make an instream appropriation. A discussion of the change in use and "lock-up"

An Overview, in IMPORTANCE, PRESERVATION AND MANAGEMENT OF RIPARIAN HABITAT: A SYMPOSIUM (U.S. Forest Service, General Technical Report RM-43 (1977)).

4. One organization seeking to preserve riparian areas is The Nature Conservancy [TNC]. TNC is a nation-wide, private, non-profit organization devoted solely to the acquisition and preservation of ecologically significant lands. Incorporated in 1951, TNC has acquired some 1800 projects throughout the country. *See* 9 SMITHSONIAN 77-84 (1978).

5. The term minimal instream flow incorporates two concepts: Instream flow and minimum flow. For purposes of this Note the two terms are used interchangeably, as the underlying concept of both terms is identical—environmental preservation. Minimum flow as used in this Note means that flow of water in a watercourse or minimum level in a lake or pond required to protect the fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, and water quality therein. *See* Avondale Irrigation Dist. v. North Idaho Properties, Inc., 99 Idaho 30, 32, 577 P.2d 9, 12 (1978). When so defined and used, minimum flow often refers to an administrative standard which may be used to determine whether or not to issue further permits to appropriate. Depending on the use sought to be made of the water, instream flow may entail an appropriation of more water than minimum flow.

6. Riparian means land adjacent to a stream or watercourse. Kapp v. Hansen, 79 S.D. 279, 288, 111 N.W.2d 333, 338 (1961). Ecosystem means an ecological or environmental community considered as an interrelated unit or whole.

7. *See* discussion text & notes 84-116, 123 *infra*.

8. Arizona has constitutionally repudiated riparian rights and adopted the "Colorado Doctrine." Article 17, § 1 of the Arizona Constitution states: "The common law doctrine of riparian water rights shall not obtain or be of any force or effect in the state." Arizona, moreover, statutorily recognizes public ownership only of surface waters or waters in a definite underground channel. ARIZ. REV. STAT. ANN. § 45-101(A) (1956) provides:

> The waters of all sources, flowing in streams, canyons, ravines, or other natural channels, or in definite underground channels, whether perennial or intermittent, flood, waste or surplus, and of lakes, ponds and springs on the surface, belong to the public and are subject to appropriation and beneficial use as provided in this chapter.

Percolating groundwater, on the other hand, does not belong to the public. Rather, groundwater is treated as privately owned and subject only to the limits of reasonable use. For a discussion of Arizona law with respect to percolating ground water, see Bristor v. Cheatham, 75 Ariz. 227, 255 P.2d 173 (1953). For a discussion of reasonable use, see discussion text & notes 17-20 *infra*.

problems which instream appropriation would create will follow. Finally, proposals for change in Arizona law with respect to the question of private instream appropriation for environmental purposes will be presented.

THE DOCTRINE OF PRIOR APPROPRIATION

Rights to the appropriation and use of water in the United States are based on two different water rights doctrines: Riparian rights[9] and prior appropriation.[10] Riparian rights are those which a riparian proprietor has to use a stream of water which bounds or crosses his property.[11] Riparian rights are fortuitous, being predicated upon ownership of land adjacent to a watercourse.[12]

Although riparian rights are generally referred to as property rights,[13] riparian owners do not own that water which abuts their property. Rather, riparian rights are usufructuary only.[14] The right to the use of water in a natural stream is common to all riparian owners.[15] Therefore, a riparian owner's right to divert, capture, and use water adjacent to his property is a qualified right.[16]

9. *See, e.g.*, Indianapolis Water Co. v. American Strawboard Co., 53 F. 970, 974 (D. Ind. 1893); Turner v. James Canal Co., 155 Cal. 82, 87, 99 P. 520, 522 (1909); Anaheim Union Water Co. v. Fuller, 150 Cal. 327, 329, 88 P. 978, 979 (1907). *See also* WATERS AND WATER RIGHTS § 16, at 66-71 (R. Clark ed. 1967).

10. *See, e.g.*, Irwin v. Phillips, 5 Cal. 140, 146 (1855); Colorado River Water Conservation Dist. v. Rocky Mountain Power Co., 158 Colo. 331, 335, 406 P.2d 798, 799-800 (1965); Reynolds v. Miranda, 83 N.M. 443, 444. 493 P.2d 409, 410 (1972). *See also* WATERS AND WATER RIGHTS, *supra* note 9, § 18.2(B), at 79-82. For Arizona cases, see Parker v. McIntyre, 47 Ariz. 484, 490-92, 56 P.2d 1337, 1340 (1936); Fourzan v. Curtis, 43 Ariz. 140, 142-47, 29 P.2d 722, 723-25 (1934).

11. Brasher v. Gibson, 2 Ariz. App. 507, 510, 410 P.2d 120, 132 (1966) (Cameron, J., dissenting); Thompson v. Enz, 379 Mich. 667, 677, 154 N.W.2d 473, 478 (1967); Kapp v. Hansen, 79 S.D. 279, 288, 111 N.W.2d 333, 338 (1961).

12. Riparian rights are fortuitous in that title to land adjacent to a watercourse gives the owner of such land a riparian right to use the water. *See* Turner v. James Canal Co., 155 Cal. 82, 87, 99 P. 520, 522 (1909); Bach v. Sarich, 74 Wash. 2d 575, 579, 445 P.2d 648, 651 (1968). In contrast, appropriative rights may attach to land not adjacent to a watercourse. *See* Coffin v. Left Hand Ditch Co., 6 Colo. 443, 449 (1882). In fact, under the law of prior appropriation, water may be used in a different watershed than that from which the water is diverted. *Id.* The reason for the distinction between riparian and prior appropriation law becomes evident when one considers the general climatic and hydrological differences between riparian states and those states using prior appropriation. The availability of water in western prior appropriation States is limited. In order to maximize use of water, those seeking to utilize water must be allowed to do so whether their land is appurtenant to a watercourse or not. *Id.* For a discussion of the historical development of prior appropriation law, see F. Trelease, *Federal-State Relations in Water Law*, in NATIONAL WATER COMMISSION LEGAL STUDY NO. 5 (1971).

13. Wernberg v. State, 516 P.2d 1911, 1944 (Alas. 1973); Thurston v. Portsmouth, 205 Va. 909, 912, 140 S.E.2d 678, 680 (1965).

14. Federal Power Comm'n v. Niagara Mohawk Power Corp., 347 U.S. 239, 246-47 (1954); Sweet v. City of Syracuse, 129 N.Y. 316, 335, 27 N.E. 1081, 1084 (1891).

15. Head v. Amoskeag Mfg. Co., 113 U.S. 9, 23 (1885); Griffin v. National Light & Thorium Co., 79 S.C. 351, 356, 60 S.E. 702, 703 (1908); Roberts v. Martin, 72 W. Va. 92, 95, 77 S.E. 535, 536 (1913).

16. *See* Stratton v. Mt. Hermon Boys' School, 216 Mass. 83, 88-89, 103 N.E. 87, 89 (1913); City of Durham v. Eno Cotton Mills, 141 N.C. 615, 624, 54 S.E. 453, 456 (1906); Baker v. Ellis, 292 P.2d 1037, 1039 (Okla. 1956).

The primary checks on the exercise of riparian rights are the doctrines of equality of right and reasonable use. Each riparian owner has a right to make a reasonable use of the waters of a stream, subject to the equal right of all other riparian owners to make a reasonable use.[17] The purpose of the doctrines of equality of right and reasonable use is to secure for each riparian owner an equal claim to that water which benefits all riparian holdings.[18] In theory, the rule of reasonable use as it relates to riparian claims holds that each riparian owner may use the water to any degree and for any purpose, so long as he leaves the natural flow of the water unobstructed and undiminished.[19] Riparian owners share the common right to have their watercourse substantially preserved in its natural size and flow, and to have protection against material diversion.[20]

In contrast to riparian rights, prior appropriation is not predicated on ownership of riparian land. Instead, it refers to the acquisition of water rights through the capture and application of water, whether or not the appropriator owns riparian lands or land within the watershed from which he appropriates.[21] Unlike riparian rights which are limited by the rule of reasonable use, prior appropriation rights are absolute or exclusive to the extent of each appropriation.[22] According to the doctrine of prior appropriation, the party that first diverts and applies water to a beneficial use has a prior right to that water and may use the full amount appropriated, even if to do so leaves no water for subsequent appropriators.[23] This aspect of prior appropriation law has often been characterized as "first in time, first in right."[24]

Prior appropriation also is distinguishable from the doctrine of riparian rights insofar as prior appropriation rights are considered to be property rights.[25] Prior appropriation rights, therefore, unlike riparian rights, are vested with the usual incidents of property rights in general,

17. United States v. Willow River Power Co., 324 U.S. 499, 504-05 (1944); Griffin v. National Light & Thorium Co., 79 S.C. 351, 356, 60 S.E. 702, 703 (1908).

18. *See* Meng v. Coffey, 67 Neb. 500, 505, 93 N.W. 713, 714 (1903); Baker v. Ellis, 292 P.2d 1037, 1039 (Okla. 1956).

19. Mason v. Whitney, 193 Mass. 152, 158, 78 N.E. 881, 884 (1906); Smith v. Town of Morgantown, 187 N.C. 801, 802, 123 S.E. 88, 89 (1924); City of Durham v. Eno Cotton Mills, 141 N.C. 615, 624, 54 S.E. 453, 456 (1906).

20. *See* People v. Hulbert, 131 Mich. 156, 164, 91 N.W. 211, 215 (1902); Smith v. Town of Morgantown, 187 N.C. 801, 802, 123 S.E. 88, 89 (1924).

21. Coffin v. Left Hand Ditch Co., 6 Colo. 443, 449 (1882).

22. McClellan v. Jantzen, 26 Ariz. App. 223, 225, 547 P.2d 494, 496 (1976).

23. Coffin v. Left Hand Ditch Co., 6 Colo. 443, 447-49 (1882); Keller v. Magic Water Co., 92 Idaho 276, 284, 441 P.2d 725, 733 (1968).

24. Reagle v. Square S Land and Cattle Co., 133 Colo. 392, 394, 296 P.2d 235, 236 (1956); Application of Boyer, 73 Idaho 152, 161, 248 P.2d 540, 545 (1952).

25. *See* Coffin v. Left Hand Ditch Co., 6 Colo. 443, 446 (1882); Olson v. Bedke, 97 Idaho 825, 830, 555 P.2d 156, 161 (1976); King v. White, 499 P.2d 585, 588 (Wyo. 1972).

including the right of sale and transfer.[26] Nevertheless, an appropriative right does not entail ownership of the corpus of water, rather it gives a claim only to its use.[27]

Although prior appropriation rights are absolute or exclusive to the extent of the appropriation, the right to take water by prior appropriation is limited by the rule of beneficial use.[28] Beneficial use is the basis, measure, and limit of each water right,[29] and a prior appropriator cannot rightfully deprive other appropriators of a beneficial use of water when he is unable to beneficially use such water himself.[30]

The doctrine of prior appropriation rests on three basic principles. First, the basis of the right to water is beneficial use.[31] This distinguishes prior appropriation from riparian law wherein the basis of right is ownership in riparian lands and reasonable use.[32] Second, to appropriate water the appropriator must establish dominion over a specific quantity of water [hereinafter referred to as capture and application], which is measured by beneficial use.[33] Third, priority of use,[34] not

26. Wyoming v. Colorado, 298 U.S. 573, 584 (1936); with respect to transfer, *see* ARIZ. REV. STAT. ANN. § 45-172 (Supp. 1978).

27. Rock Creek Ditch & Flume Co. v. Miller, 93 Mont. 248, 258, 17 P.2d 1074, 1076 (1933).

28. *In re* Drainage Area of Bear River, 12 Utah 2d 1, 7, 361 P.2d 407, 411 (1961).

29. *Id.* at 7, 361 P.2d at 411; ARIZ. REV. STAT. ANN. § 45-101(B) (1956).

30. *In re* Drainage Area of Bear River, 12 Utah 2d 1, 7, 361 P.2d 407, 411 (1961).

31. In Arizona, beneficial use is "the basis, measure and limit to the use of water." ARIZ. REV. STAT. ANN. § 45-101(B)(1956). For further discussion, see text & notes 33, 62-83 *infra*.

32. See discussion text & notes 17-20 *supra*.

33. Attempts to define "beneficial use" are something akin to attempts to define "justice" or "reasonable." While all three terms are commonly used, they are not specifically defined. Rather, it would appear as though the terms are kept purposefully vague. Evidence that the term "beneficial use" is kept purposefully broad or general is found in COLO. REV. STAT. § 37-92-103(4) (1973) which defines beneficial use as

> the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made and, *without limiting the generality of the foregoing*, includes the impoundment of water for recreational purposes, including fishery or wildlife.

Id. (emphasis added). To state that the term "beneficial use" is kept purposefully broad or general does not imply a criticism. On the contrary, as evidenced in State Dep't of Parks v. Idaho Dep't of Water Admin., 96 Idaho 440, 443, 530 P.2d 924, 927-28 (1974), the broadness of the term may in fact be interpreted in such a way as to recognize other than the stated beneficial purposes. In that case, the Idaho Supreme Court upheld state instream appropriation for recreational and aesthetic purposes by noting that the generic term "beneficial use" had never been judicially or statutorily defined. *Id.* at 443, 444, 530 P.2d at 927, 928. Thus, it had never been interpreted so as to exclude instream appropriation for those purposes. *Id.*

If the term "beneficial use" lacks definitional precision, perhaps the concept can be examined by analyzing what uses have been held to be nonbeneficial. The following have been held to be nonbeneficial uses: Winter flooding to create an icecap to promote moisture retention, Blaine County Inv. Co. v. Mays, 49 Idaho 766, 773, 291 P. 1055, 1057 (1930); use of thirty second-feet of water to carry off debris during the irrigation season, which would be equivalent to water sufficient for 1,600 acres of irrigation, *In re* Water Rights of Deschutes River & Its Tributaries, 134 Ore. 623, 665, 286 P. 563, 577 (1930); flooding land during winter months in an area with a great need of water for the sole purpose of exterminating gophers, Tulare Irrigation Dist. v. Lindsay-Strathmore Irrigation Dist., 3 Cal. 2d 489, 567, 45 P.2d 972, 997 (1935).

34. *See* discussion text & note 24 *supra*. In Irwin v. Phillips, 5 Cal. 140 (1855), an early case in the area of prior appropriation, the California Supreme Court resolved a dispute between water users by holding for the earlier appropriator. In that case, which involved disputes between miners over use of water, the court stated:

equality of right as in riparian law,[35] is the basis of allocation of water between competing appropriators when there is not enough water to satisfy all demands.

The doctrine of prior appropriation evolved during, and is reflective of, an age of economic orientation toward extractive industries:[36] Agriculture, cattle raising, mining, and lumbering. For years these industries tended to dictate the public policies of Western States.[37] Consequently, preferences in the allocation of water rights are indicative of the preferred position of the extractive industries.[38] Extractive industry uses of water are primarily intake and consumptive,[39] as opposed to instream or flow.[40] As a consequence of extractive industry influence on the development and content of water law, the thrust of appropriative law has been to favor intake or consumptive uses. For example,

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> [H]owever much the policy of the State . . . has conferred the privilege to work the mines, it has equally conferred the right to divert streams from their natural channels, and as these two rights stand upon an equal footing, when they conflict, they must be decided by the fact of priority.

Id. at 147.

35. See text & notes 17-20 *supra*.

36. *See* Mann, *The Political Implications of Migration to the Arid Lands of the United States*, 9 NAT. RESOURCES J. 212, 217 (1969). *See also* Robie, *Modernizing State Water Rights Laws: Some Suggestions for New Directions*, 1974 UTAH L. REV. 760, 777; Ohrenschall & Imhoff, *Water Law's Double Environment: How Water Law Doctrines Impede the Attainment of Environmental Enchancement Goals*, 5 LAND AND WATER L. REV. 259, 271-72 (1970).

37. The law of prior appropriation is observed almost exclusively in the arid states of the Western United States. As administered in Arizona and eight other Western States, prior appropriation is based on the "Colorado Doctrine," which recognizes no other rights in public waters except appropriative rights. States which follow the "Colorado Doctrine" are Alaska, ALASKA STAT. § 46.15.030 (1966); Arizona, ARIZ. REV. STAT. ANN. § 45-101 (1956); Colorado, COLO. REV. STAT. § 37-82-101 (1973) (*see also* Cascade Town Co. v. Empire Water & Power Co., 181 F. 1011, 1014 (D. Colo. 1910)); Montana, MONT. REV. CODES ANN. § 89-880 (Supp. 1977); Nevada, NEV. REV. STAT. § 533.030 (1969) (*see also* Walsh v. Wallace, 26 Nev. 229, 327, 67 P. 914, 917 (1920)); New Mexico, N.M. STAT. ANN. § 72-1-1 (1978); Utah, UTAH CODE ANN. § 73-3-1 (1953); and Wyoming, WYO. STAT. § 41-3-101 (1977). The doctrine was first enunciated in Coffin v. Left Hand Ditch Co., 6 Colo. 443, 446-47 (1882).

38. Mann, *supra* note 36, at 217. To suggest that extractive industries exerted considerable influence on the drafting of state water codes is not to imply that the resultant laws were ill-suited for the arid West. *See* Snow v. Abalos, 18 N.M. 681, 693, 140 P. 1044, 1048 (1914). On the contrary, the doctrine of beneficial use is purposefully designed to maximize use of a limited resource. The point to be made is that the commingling of extractive industry emphasis on consumptive use as the only measure of beneficial use and the climatic reality of the Western States resulted in the passage of water laws that are resistant to notions of instream use or use of water for environmental purposes. This point is clearly evident when one examines Arizona's statutory ranking of beneficial uses. *See* ARIZ. REV. STAT. ANN. § 45-147(B)(1956); text & note 60 *infra*.

39. Intake uses are those which actually remove water from its source. Insofar as state law requires actual physical diversion of water, *see* Reynolds v. Miranda, 83 N.M. 443, 445, 493 P.2d 409, 411 (1972), it also requires that use of water be intake. Intake uses include water for domestic, agricultural, and industrial purposes.

Consumptive use is use of water in a manner that makes it unavailable for use by others because of absorption, evaporation, transpiration, or incorporation in a manufactured product. *See* Jarvis v. State Land Dep't, 113 Ariz. 230, 232, 550 P.2d 227, 229 (1976); Basin Elec. Power Coop. v. State Bd. of Control, 578 P.2d 557, 567-68 (Wyo. 1978).

40. Instream or flow use is that use of water which does not entail diversion or intake use. *See* State Dep't of Parks v. Idaho Dep't of Water Admin., 96 Idaho 440, 444, 530 P.2d 924, 927-28 (1974). Flow uses include water for estuaries, navigation, and some fish, wildlife, and recreational uses.

until quite recently, most appropriative states required physical diversion of water from a watercourse in order to effect an appropriation.[41]

The impact of a physical diversion requirement on efforts to recognize instream appropriation is evident. If physical diversion is required in order to appropriate water, then instream appropriation would fail to satisfy this requirement. Before instream or minimum flow will be recognized as a legitimate appropriation of water, attitudes supportive or reflective of intake or consumptive uses must change.[42]

Statutes are being changed, however, to recognize instream or minimum flow as beneficial uses.[43] These changes are due, in part, to demographic changes in the arid West.[44] Particularly in Arizona, the rapid growth of urban populations has given rise to markedly different attitudes toward water and other natural resources.[45]

Demographic change, and the attitudinal changes associated with it, coupled with an increased concern for preservation of the natural environment, have contributed to numerous statutory attempts to preserve the environment.[46] Evidence of such concern is seen at both the

41. In Walsh v. Wallace, 26 Nev. 299, 67 P. 914 (1902) the court stated:

> [T]o constitute a valid appropriation of water, within the meaning of that term as understood by the decisions of this court and the laws of this state, and, as we believe, by the decisions of the courts and laws of other states in the arid region, there must be an actual diversion of the same, with intent to apply it to a beneficial use, followed by an application to such use within a reasonable time.

Id. at 327, 67 P. at 917. This rule was followed in 1972 in the case of Reynolds v. Miranda, 83 N.M. 443, 445, 493 P.2d 409, 411 (1972).

42. For a discussion of changing attitudes toward environmental protection as manifested by a recognition that instream or minimum flow constitutes beneficial use, see Tarlock, "New" Public Western Water Rights: Appropriation For Instream Flow Maintenance (1978) (unpublished manuscript). Tarlock is a professor of law at Indiana University, specializing in natural resources, land use, and administrative law.

43. See text & notes 53-55, 108-15 *infra* for a discussion of Colorado, Idaho, and Washington statutes that recognize the environmental importance of and authorize state appropriation for minimum flow. *See also* Note, *In-Stream Appropriation for Recreation and Scenic Beauty*, 12 IDAHO L. REV. 263 (1976); Note, *The Impact of Defining "Beneficial Use" Upon Nebraska Appropriation Law*, 57 NEB. L. REV. 199, 203-05 (1978).

44. *See* Mann, *supra* note 36, at 220. *See also* Salisbury, *Coming to the Bottom of the Water Barrel*, Christian Science Monitor, Feb. 28, 1979, at 13, col. 1.

45. Mann, *supra* note 36, at 220. These new settlers, according to Mann,

> find their livelihoods in industrial, professional, or commercial activities rather than resource based enterprises. Their attitudes with regard to the resources are markedly different, therefore, than those whose income is dependent upon extraction of minerals or tilling the soil. The city dweller is looking for amenities, which include both comfort and recreation as a complement to the routine of his daily occupation. Enhanced opportunities for recreation and diversion may take precedence over the desires of some to utilize the resources of a given area in such a way as to destroy their recreational values.

Id. at 220-21.

46. According to the first annual report of the Council on Environmental Quality, "The recent upsurge of public concern over environmental questions reflects a belated recognition that man has been too cavalier in his relations with nature. Unless we arrest the depredations that have been inflicted so carelessly on our natural systems . . . we face the prospect of ecological disaster." COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL QUALITY: THE FIRST ANNUAL REPORT at v (1970). See also Comment, *supra* note 1, at 381-92 for a discussion of federal efforts to protect the environment. With respect to state laws which seek to protect minimum flow

federal and state levels.[47] On the federal level, efforts to protect the environment are evident in the National Environmental Protection Act,[48] the Fish and Wildlife Coordination Act,[49] the Endangered Species Act,[50] and the Wild and Scenic Rivers Act.[51] The latter is a particularly important piece of legislation, designed specifically to preserve certain natural instream values.[52] On the state level, a number of states have enacted legislation which, to a limited extent, protects riparian environments and seeks to ensure a minimum flow necessary for maintenance of such riparian areas. Washington,[53] Id-

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necessary for preservation of the natural environment, see discussion text & notes 56-58, 113-20 *infra*.

47. The conclusions of a recent federal study are illustrative of this concern for protection of riparian environments. U.S. DEP'T OF THE INTERIOR, CENTRAL VALLEY WATER RESOURCE STUDY 43 (1970). According to the study, which supports appropriation of water for recreational and environmental purposes:

> Use of water for recreation, fishery and wildlife as a consideration in water resource development prior to World War II was unheard of, for all practical purposes. These uses were incidental. They could be accommodated as long as their use did not interfere with attainment of the basic objective of water resource development for irrigation water supplies.

Id. *See also* the statement of purpose in the Federal Wild and Scenic Rivers Act, 16 U.S.C. §§ 1271-1287 (1976); note 58 *infra*.

On the state level, evidence of concern for protection of riparian environment is found in those statutes designed specifically to protect minimum flow. *See* discussion at text & notes 53-55, 108-15 *infra*.

48. 42 U.S.C. §§ 4321, 4331-4335, 4341-4347 (1976). The purpose of the Act, according to President Nixon, is "to assure that the Federal Government, in the design, construction, management, operation, and maintenance of its facilities, shall provide leadership on the nationwide effort to protect and enhance the quality of our air, water, and land resources." Exec. Ord. No. 11,572, 38 Fed. Reg. 34,793 (1973). *See also* Comment, *supra* note 1, at 381. If for nothing else, federal activity to protect instream values serves the useful purpose of confronting the states with federal stimulus or pressure to protect instream values as well as pledging the resources (principally financial) to deal with what is becoming a national problem and concern.

49. 16 U.S.C. §§ 661-666c (1976). The Fish and Wildlife Coordination Act is a prime example of federal efforts to protect instream values. The stated purpose of the Act is to "provide that wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs." *Id.* § 661.

50. 16 U.S.C. §§ 1531-1543 (1976). This Act authorized the federal government to act to protect instream values, albeit on a limited scale. In passing the Act, Congress expressly recognized that certain wildlife and plant species in danger of extinction were "of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people." *Id.* § 1531(a)(3). A stated purpose of the Act was to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." *Id.* § 1531(b).

51. 16 U.S.C. §§ 1271-1287 (1976). This Act represents congressional efforts to provide directly for the preservation of natural instream values. The purpose of the Act is to preserve the free-flowing values of certain rivers by prohibiting further appropriation and use of their waters:

> It is hereby declared to be the policy of the United States, that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.

Id. § 1271.

52. *See* note 51 *supra*.

53. 1969 Wash. Laws 2790 (codified at WASH. REV. CODE § 90.22.010 (Supp. 1978)). This section provides:

> The department of water resources may establish minimum water flows or levels for streams, lakes or other public waters for the purposes of protecting fish, game, birds or other wildlife resources, or recreational or aesthetic values of said public waters whenever it appears to be in the public interest to establish the same. In addition, the depart-

aho,[54] and Colorado,[55] for example, have passed new statutes or have modified existing statutes so as to allow the state to appropriate minimum flows required to protect the natural environment.

While Arizona has been reluctant to pursue energetically environmental preservation,[56] minor alterations protective of the environment have been made in the state water code. In 1941, for example, the legislature amended title 45, section 141(A) of the Arizona Revised Statutes by adding "wildlife, including fish," to the list of uses for which there could be an appropriation of unappropriated water.[57] In 1962, the legislature added "recreation" to the same section as a "permitted use" for which appropriation could be made.[58] Also in 1962, the legislature recognized the right to apply for a permit to appropriate water

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ment of water resources shall, when requested by the department of fisheries or the game commission to protect fish, game or other wildlife resources under the jurisdiction of the requesting state agency, or by the water pollution control commission to preserve water quality, establish such minimum flows or levels as are required to protect the resource or preserve the water quality described in the request.

54. 1978 Idaho Sess. Laws 891 (codified at IDAHO CODE § 42-1501 (Supp. 1978)). This section provides:

> The legislature of the state of Idaho hereby declares that the public health, safety and welfare require that the streams of this state and their environments be protected against loss of water supply to preserve the minimum stream flows required for the protection of fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, transportation and navigation values, and water quality. The preservation of the water of the streams of this state for such purposes when made pursuant to this act is necessary and desirable for all the inhabitants of this state, is in the public interest and is hereby declared to be a beneficial use of such water.

55. 1973 Colo. Sess. Laws 1521 (codified at COLO. REV. STAT. § 37-92-103(4) (1973)). "Beneficial use" is defined to include minimum flow required for preservation of the natural environment. *See id.* Section 37-92-103(4) states in part:

> [F]or the benefit and enjoyment of present and future generations, "beneficial use" shall also include the appropriation by the state of Colorado in the manner prescribed by law of such minimum flows between specific points or levels for and on natural streams and lakes as are required to preserve the natural environment to a reasonable degree.

56. For a legislator's assessment of Arizona attitudes with respect to environmental protection or preservation, see text of a speech delivered by Clare Dunn, Arizona state legislator from District 13, before the Arizona Wildlife Federation, printed in the Vermillion Flycatcher, September, 1978. In the course of her presentation, Dunn stated:

> [T]he word "environment" carries a negative connotation in the Legislature equaled only by the Equal Rights Amendment or Common Cause. I have sat through more than one committee meeting where the word was struck from proposed legislation. For example, in working on a bill dealing with pesticides control last year, some members of the Agriculture Committee were horrified to discover a phrase calling "for the protection of the public and the environment." The public was allowed to stay in the legislation but the environment had to go—after all, it is such a vague term, how could its protection possibly be enforced.

Id. at 7, 8. *See also* the text of a speech delivered by Governor Bruce Babbitt to the Governor's Commission on Arizona Environment, in Flagstaff, August 15, 1979. In the course of his address, Governor Babbitt said, "[T]he plain fact is that we have not been good stewards. We have not taken good care of the land, we have not protected the ecological values, we have not insisted upon quality development." *Id.*

57. 1941 Ariz. Sess. Laws 179 (currently codified at ARIZ. REV. STAT. ANN. § 45-141(A) (Supp. 1978)). ARIZ. REV. STAT. ANN. § 45-141(A) now reads: "Any person or the state of Arizona or a political subdivision thereof may appropriate unappropriated water for domestic, municipal, irrigation, stock watering, water power, recreation, wildlife, including fish, [and] mining use. . . ."

58. 1962 Ariz. Sess. Laws 265.

for "recreation or wildlife, including fish"[59] and assigned a relative value to water used for "recreation and wildlife, including fish."[60] Finally, the legislature allowed for the transfer of water rights to the state "for use for recreation and wildlife purposes (including fish)."[61] Even though Arizona law has been amended in recent years so as to recognize recreational and wildlife uses of water as beneficial, additional statutory amendment is required before legal objection to instream appropriation for environmental use, particularly by private appropriators, is overcome.

BENEFICIAL USE, INSTREAM APPROPRIATION, PRIVATE APPROPRIATION

The problems of protecting riparian environments in Arizona by statutorily recognizing instream appropriation are evident when one examines existing state law governing appropriation. The first problem is whether existing law recognizes environmental preservation as a beneficial use. Assuming that protection of riparian environments is a beneficial use, a second problem is whether environmental purposes could be served through utilization of instream flow without actual diversion of water. Finally, if environmental protection is a beneficial use that may be secured through instream flow, the issue becomes whether private parties as well as state agencies may file for permits to so appropriate. These are the issues to be addressed in this section.

Beneficial Use

The term "beneficial use" refers both to a qualitative and to a quantitative measure of water.[62] Qualitatively, the term "beneficial use" is used to determine whether the object for which water is to be appropriated is legally recognized or acceptable. Title 45, section 141 of the Arizona Revised Statutes, identifies eight purposes for which water may be appropriated: Domestic, municipal, irrigation, stock wa-

59. 1962 Ariz. Sess. Laws 267 (codified at ARIZ. REV. STAT. ANN. § 45-142(B)(6) (Supp. 1978)) provides: "The application also shall set forth: . . . If for recreation or wildlife, including fish, the location and the character of the area to be used and the specific purposes for which such area shall be used."

60. 1962 Ariz. Sess. Laws 267 (codified at ARIZ. REV. STAT. ANN. § 45-147(B) (1962)) *quoted at* note 77 *infra*.

61. 1962 Ariz. Sess. Laws 268 (codified at ARIZ. REV. STAT. ANN. § 45-172(A) (1962)) provides:

> A water right may be severed from the land to which it is appurtenant or from the site of its use if for other than irrigation purposes and with the consent and approval of the owner of such right may be transferred for use for irrigation or agricultural lands or for municipal, stock watering, power and mining purposes and to the state or its political subdivisions for use for recreation and wildlife purposes (including fish), without losing priority theretofore established. . . .

62. For a discussion of the ambiguity which surrounds the term "beneficial use," see text & note 33 *supra*.

tering, water power, recreation, wildlife, and mining uses.[63]

Beneficial use also has a quantitative component. In title 45, section 101(B) of the Arizona Revised Statutes, beneficial use is said to be the "measure and limit to the use of water."[64] In Colorado, beneficial use is the use of "that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purposes for which the appropriation is lawfully made."[65] An appropriation of water must, therefore, be limited not only to a preferred, recognized, or beneficial purpose or object, but also to that amount or quantity of water that is reasonable and appropriate for the purpose for which the appropriation has been allowed.

Looking first at beneficial use as a measure of quality, beneficial use in Arizona now includes recreation and wildlife uses.[66] Sections 141, 142, 147, and 172 of title 45 of the Arizona Revised Statutes recognize recreation and wildlife uses, including fish, as legitimate ends or purposes supportive of appropriative claims.[67] With respect, then, to the question of instream appropriation, it would appear that as long as uses of water for environmental purposes can be subsumed under the recreational or wildlife uses already recognized, the problem of qualitatively recognizing use of water for environmental purposes is overcome.[68] Having satisfied the quality aspect of beneficial use, the quantity aspect must now be analyzed.

The problem of quantity as it relates to instream appropriation has received little if any attention. Conceptually, analyzing instream use of

63. *See* note 57 *supra*. Arizona is rather unique in statutorily defining beneficial use in such specific terms. Many states do not so rank beneficial uses, preferring instead to define beneficial use in only general terms. *See generally* WATERS AND WATER RIGHTS, *supra* note 9, § 19.3(C)(D) at 89-90. *See also* COLO. REV. STAT. § 37-92-103(4)(1973); discussion text & note 33 *supra*.

64. ARIZ. REV. STAT. ANN. § 45-101(B) (1956).

65. COLO. REV. STAT. § 37-92-103(4) (1973).

66. ARIZ. REV. STAT. ANN. § 45-141(A) (Supp. 1978), *quoted at* note 57 *supra*.

67. For a discussion of those statutory changes that recognize recreation and wildlife as beneficial uses, see McClellan v. Jantzen, 26 Ariz. App. 223, 225, 547 P.2d 494, 496 (1976). For a discussion of the case, see text & notes 98-107 *infra*.

68. Unfortunately, it is far easier to presume that "recreation" and "wildlife" uses include environmental uses than to demonstrate the same. An examination of legislative history with respect to both the 1941 addition of "wildlife, including fish" and the 1962 addition of "recreation" reveals nothing as to legislative intent or interpretation. Insofar as recreational uses include those activities which depend on or at least utilize riparian environments (bird watching, hunting, fishing, and camping, for example), it is plausible to argue that "recreation" uses must entail preservation of riparian habitats. Similarly, "wildlife, including fish" uses may also be interpreted to include preservation of riparian habitats. Particularly if the recognition of wildlife uses as a beneficial use was intended to include preservation of wildlife habitat, then arguably environmental uses may be subsumed under the heading "wildlife."

It is possible, however, to define environmental uses so as to bring the term outside the scope of recreational or wildlife use. If, for example, "environmental" is defined to mean "aesthetic," it would seem that such usage would probably not constitute recreational or wildlife use. To avoid this problem, the definition of environmental use adopted by this Note will center on those uses that arguably may be interpreted as recreational or wildlife uses.

water in an appropriative context is difficult. Theoretically, instream use of water seems better adapted for riparian jurisdictions because such a use by a riparian owner would be a reasonable use, not affecting the equal rights of other riparian owners.[69] In contrast, the water ethic in prior-appropriation jurisdictions is one of capture and application.[70] Consequently, the underlying presumptions supportive of prior-appropriation law favor use of water apart from the water course. Also, the history of prior-appropriation law indicates an orientation of the law in favor of extractive and consumptive uses.[71] Instream use clearly runs counter to this orientation.

It may be due to such conceptual difficulty that those states that have sought to recognize and protect riparian environments have sought to do so via state laws upholding minimum flow. Rather than seeking to explain or justify such instream use in the context of appropriation law, states that have recognized minimum flow as beneficial use have done so via legislative fiat. Minimum flow as legislative fact is simply an expeditious way to arrive at a particular result without having to explain or justify it. Minimum flow, in other words, is an administrative standard that sets the limits for appropriation from a particular body of water, thereby avoiding the conceptual problems of capture and application.

With respect to instream appropriation by private appropriators, the problem of quantity is difficult to resolve. When a state sets aside a minimum flow in order to guarantee preservation of the natural environment by legislative fiat, the setting aside is both a qualitative and quantitative beneficial use of water. When a private appropriator seeks to do the same, he clearly meets the quality requirement.[72] How does he demonstrate, however, that the quantity he seeks to appropriate is reasonable and appropriate to accomplish the lawful purpose for which the appropriation is made?[73]

In light of *McClellan v. Jantzen*,[74] in which the Arizona Court of Appeals, in dicta, recognized *in situ* uses of water,[75] it would appear that the problem of quantity is not a speculative issue but one that must be solved in the real world of permit applications and water adjudication. A minimal requirement for private instream appropriation, there-

69. *See* discussion text & notes 17-20 *supra*.
70. *See* text & notes 36-41 *supra*.
71. *Id.*
72. *See* text & notes 33, 66-68 *supra*.
73. *See* note 57, 63-65 *supra*.
74. 26 Ariz. App. 223, 547 P.2d 494 (1976).
75. *Id.* at 225, 547 P.2d at 496.

fore, would be to show that the amount of water to be appropriated is necessary to maintain the riparian habitat sought to be preserved.

Associated with the problem of whether beneficial use for recreation and wildlife includes instream appropriation, is the problem of relative use.[76] Title 45, section 147 of the Arizona Revised Statutes ranks, in order of importance, those beneficial uses identified in section 141.[77] On the bottom of the list is recreation and wildlife. With respect to the hierarchy of relative values, the question to be asked is how flexible is such ordering of values. Must, for example, recreational or wildlife use be subordinated to a "higher" use every time there are conflicting applications for insufficient appropriated water? The probable conclusion is that, in Arizona at least, recreational and wildlife uses must always defer to other beneficial uses with a higher relative use ranking. In a situation where the choice between water uses is clear cut, water directly necessary for human life and health versus use of the water for recreation, for example, there is little problem as to which permit application should be upheld.[78] Where the choice is less clear, however, the decision is more difficult. Which beneficial use should be issued a permit, for example, when the conflict is between a marginal mining enterprise with limited economic or social utility and a recreational use designed to benefit a large number of users? When the correct choice is not clearly evident, the application of an inflexible standard like the one found in title 45, section 147 of the Arizona Revised Statutes, may well result in a failure to realize the greatest good of the greatest number.[79]

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76. See discussion text & notes 77-79 *infra*.

77. ARIZ. REV. STAT. ANN. § 45-147 (1962) reads:

(A) As between two or more pending conflicting applications for the use of water from a given water supply, when the capacity of the supply is not sufficient for all applications, preference shall be given by the department according to the relative values to the public of the proposed use.

(B) The relative values to the public for the purposes of this section shall be:

(1) Domestic and municipal uses. Domestic uses shall include gardens not exceeding one-half acre to each family.

(2) Irrigation and stock watering.

(3) Power and mining uses.

(4) Recreation and wildlife, including fish.

78. *See generally* Trelease, *Preferences to the Use of Water*, 27 ROCKY MTN. L. REV. 133, 138-43 (1955).

79. According to counsel for appellee in the case of Gould v. Maricopa Canal Co., 8 Ariz. 429, 434, 76 P. 598 (remarks of counsel not printed in 76 P.), *appeal dismissed*, 195 U.S. 639 (1904) the purpose of prior appropriation law is that

development of the country is first to be considered, or, as the maxim puts it, "The greatest good of the greatest number." The old doctrine of riparian rights would have been injurious in application, as the water was needed to be carried from the streams for use in mining and irrigating the desert lands. Therefore by application of the principle "the greatest good of the greatest number" the doctrine of allowing the diversion of water for irrigation and other beneficial purposes grew up.

Id.

An obvious solution to the problem of inflexible application of a relative use scale would be to require the Commissioner of the Land Department to evaluate conflicting permit applications so as to determine which use will afford the greatest social utility.[80] A similar approach is followed in California, where the State Water Resources Control Board has statutory authority to review all applications for permits to appropriate.[81] The board's responsibility is to determine which applications "in its judgment will best develop, conserve, and utilize in the public interest the water sought to be appropriated."[82] In furtherance of this end, the board is to consider "the relative benefit to be derived from . . . all beneficial uses of the water concerned."[83]

Having shown that existing law may be construed so as to recognize environmental uses of water as beneficial, the next step is to establish whether such uses could be served without physical diversion of water. If appropriation for instream flow is to warrant issuance of a permit, use of water short of physical capture and application must be recognized as a valid appropriation.

Instream Appropriation

Although the applicable Arizona statute does not categorically require actual physical diversion,[84] the most likely construction of this statute is that in Arizona physical diversion is required for a valid

80. Such a change may have been the reason behind the 1962 amendment of ARIZ. REV. STAT. ANN. § 45-141(C). Prior to its amendment, § 45-141(C) required that wildlife use "be deemed inferior to domestic, municipal, irrigation, stock watering, power and mining uses." Amended § 45-141(C) now reads, "A water right in a stockpond, certified pursuant to article 8 of this chapter, shall be recognized as if such water had been appropriated pursuant to this article." The legislature, in other words, by its amendment of § 45-141(C) may have intended § 45-147, *supra* note 77, to serve only as a guideline rather than a categorical ranking of value.

If, however, the legislative intent behind the amendment of § 45-141(C) was to relax the application of § 45-147, such intent has subsequently been negated by dicta in Jarvis v. State Land Dep't, 106 Ariz. 506, 479 P.2d 169 (1970). In *Jarvis*, a groundwater transfer case, the Arizona Supreme Court, relying upon ARIZ. REV. STAT. ANN. § 45-147, stated that, at least with respect to municipal use, the relative value of uses has been fixed by the legislature. 106 Ariz. at 511, 479 P.2d at 174. "The creation of such a priority," the court added, "clearly evidences a legislative policy that the needs of agriculture give way to the needs of municipalities." *Id.*

For a statute purposefully designed to allow for flexibility, see CAL. WATER CODE §§ 1253, 1255, 1257 (West 1971).

81. CAL. WATER CODE §§ 1253, 1255, 1257 (West 1971). *See* Temescal Water Co. v. Department of Public Works, 44 Cal. 2d 90, 100, 280 P.2d 1, 7 (1955). In that case the court stated that, to carry out its present duty, "the department [of public works] exercises a broad discretion in determining whether the issuance of a permit [to appropriate water] will best serve the public interest." *Id.*

82. CAL. WATER CODE § 1253 (West 1971).

83. *Id.* § 1257.

84. ARIZ. REV. STAT. ANN. § 45-142 (Supp. 1978). Subsection A requires that applications for permits to appropriate shall state:

(4) The location, point of diversion and description of the proposed works by which the water is to be put to beneficial use.

(5) The time within which it is proposed to begin construction of such works and the time required for completion of the construction and the application of the water to the proposed use.

appropriation of water.[85] A number of cases support this thesis.[86] One of the earliest cases to deal with the question of physical diversion for appropriation was *Clough v. Wing*.[87] In that case, the Arizona Supreme Court, relying on a California decision,[88] explained that appropriation "is the intent to take, accompanied by some open, physical demonstration of the intent, and for some valuable use."[89] In 1931, the United States Supreme Court in the case of *Arizona v. California*,[90] stated that to "appropriate water means to take and *divert* a specified quantity thereof and put it to beneficial use in accordance with the laws of the state where such water is found."[91] The Court stated that in Arizona "the perfected vested right to appropriated water flowing within the state cannot be acquired without the performance of physical acts through which the water is and will in fact be diverted to beneficial use."[92]

There are, however, compelling arguments supporting recognition of instream appropriation. First, with the establishment of a permit system[93] there is no longer need for actual physical diversion.[94] Under the permit system filing an application for a permit to appropriate is sufficient to give notice of an intent to appropriate. Assuming that the

85. *See id.* Not all Arizona statutes are as supportive of physical diversion. The identification of beneficial uses contained in title 45, section 141, *supra* note 57, at least impliedly suggests that instream use constitutes a valid appropriation of water. *See* Note, *supra* note 43, at 199-200. The author argues that the recognition of the use of water for recreation and wildlife as beneficial may entail recognition of instream or minimum flow application since both uses may be served by such application of water. *Id.* at 200, 205. This is the argument made, at least with respect to public instream appropriation, in McClellan v. Jantzen, 26 Ariz. App. 223, 225, 547 P.2d 494, 496 (1976). See text & notes 98-107 *infra*.

86. *See, e.g.*, Arizona v. California, 283 U.S. 423, 459 (1931); Maricopa County Mun. Water Conservation Dist. No. 1 v. Southwest Cotton Co., 39 Ariz. 65, 102-03, 4 P.2d 369, 382-83 (1931); Clough v. Wing, 2 Ariz. 371, 382, 17 P. 453, 457 (1888).

87. 2 Ariz. 371, 17 P. 453 (1888).

88. McDonald v. Bear River Co., 13 Cal. 220 (1859).

89. 2 Ariz. at 382, 17 P. at 457.

90. 283 U.S. 423 (1931).

91. *Id.* at 459 (emphasis added).

92. *Id.* Arizona is not unique in requiring physical diversion for appropriation. In New Mexico, the issue of whether "physical efforts of man resulting in visible diversion of water are necessary to the establishment of water rights," was addressed in the case of Reynolds v. Miranda, 83 N.M. 443, 443-44, 493 P.2d 409, 409-10 (1972). The court held that "[m]an-made diversion, together with intent to apply water to beneficial use and actual application of the water to beneficial use, is necessary to claim water rights by appropriation in New Mexico." *Id.* at 448, 493 P.2d at 411.

Prior to 1973, Colorado statutorily required physical diversion to effect a valid appropriation. Before ratification of a new water code in that year, Colorado defined appropriation as "the diversion of a certain portion of the water of the State and the application of the same to a beneficial use." COLO. REV. STAT. § 148-21-3(C) (1963). In 1973 the Colorado legislature drafted a new water code which defines appropriation as "the application of a certain portion of the waters of the state to a beneficial use." 1973 Colo. Sess. Laws 1521 (codified at COLO. REV. STAT. § 37-92-103(3) (1973)). The requirement that water be diverted before it can be appropriated, in other words, has been deleted from the law.

93. Arizona adopted use of the permit system in 1919. Parker v. McIntyre, 47 Ariz. 484, 489-90, 56 P.2d 1337, 1339-40 (1936).

94. *See* Comment, *supra* note 1, at 370. One of the primary purposes for a diversion requirement, the author argues, is that it provides objective physical evidence of an intent to make an appropriation—that is, it serves as constructive notice of appropriation. *Id.* An issuance of a permit gives equally satisfactory evidence of intent. *Id.* at 371.

need to give notice was a reason for requiring physical diversion, the institution of a permit system makes diversion much less important as a means of giving notice.[95]

Second, instream appropriation is arguably necessary in order to secure newly recognized beneficial purposes. Recreational and wildlife uses, for example, depend in many instances on preservation of instream flow. No longer is the sole ethic of water use that of physical diversion for consumptive purposes.[96] Water is now seen to have a beneficial use apart from its ability to power steam generators or irrigate fields. Arguably then, water has beneficial use when it flows naturally to preserve riparian environments.[97]

Third, the Arizona Court of Appeals, in *McClellan v. Jantzen*,[98] has recently indicated a willingness to recognize *in situ* appropriation.[99] In that case the appropriator of water in an artificial lake sought to enjoin the stocking of fish in the lake by the Arizona Game and Fish Department.[100] The issue in the case was whether the stocking of fish in a lake was an appropriation of the water requiring a permit from the State Land Department.[101] The court held it was not.[102] Responding to legislative changes in the state water law with regard to the beneficial uses for which an appropriation could be made,[103] the court reasoned that the addition of "wildlife, including fish," and "recreation" to the purposes for which an appropriation could be made indicated "that the purposes could be enjoyed without a diversion."[104]

On its face, *McClellan* is a strong argument for recognition of instream appropriation or *in situ* uses of water—at least if the appropriation is for fish or recreational purposes.[105] Speaking of such uses, the court stated, "We therefore find that by these amendments the legislature intended to grant a vested right to the *State of Arizona* to subject unappropriated waters exclusively to the use of recreation and fishing."[106] This statement clearly indicates that the state may appropriate

95. *See* Tarlock, *supra* note 42, at 6-8. Tarlock writes that justification of the diversion requirement as a means of providing notice to other potential appropriators "has been eliminated by modern filing systems." *Id.*

96. *See* note 46 *supra*.

97. *See* Federal Wild and Scenic Rivers Act, 16 U.S.C. §§ 1271-1287 (1976). This Act is predicated on the belief that wild and scenic rivers serve beneficial ends when left in their natural state. *See* note 51 *supra*.

98. 26 Ariz. App. 223, 547 P.2d 494 (1976).

99. *Id.* at 225, 547 P.2d at 496.

100. *Id.* at 224, 547 P.2d at 495.

101. *Id.*

102. *Id.* at 225, 547 P.2d at 496.

103. *See* ARIZ. REV. STAT. ANN. § 45-141(A) (Supp. 1978), *quoted at* note 57 *supra*.

104. 26 Ariz. App. at 225, 547 P.2d at 496.

105. *See* Note, *supra* note 43, at 199, 200. The author argues that had Nebraska adopted a bill specifically defining types of beneficial uses, such a statute, insofar as it included recreation and fish and wildlife as valid beneficial uses, "at least raises the possibility of instream appropriation of water." *Id.* at 199-200.

106. 26 Ariz. App. at 225, 547 P.2d at 496 (emphasis added).

water for valid *in situ* or instream purposes. Those purposes were identified by the court as recreation and fishing.[107]

A number of states have recently recognized the importance of preserving minimum instream flow.[108] In these states, statutes have been drafted that support instream appropriation for aesthetic, environmental, and recreational purposes.[109] In Colorado, for example, the state legislature in 1973 added the following sentence to the definition of "beneficial use":

> For the benefit and enjoyment of present and future generations, "beneficial use" shall also include the appropriation by the state of Colorado in the manner prescribed by law of such minimum flows between specific points or levels for and on natural streams and lakes as are required to preserve the natural environment to a reasonable degree.[110]

Idaho, in 1978, added a section to its water code which declares minimum stream flow when sought for environmental protection to be a beneficial use.[111] Washington enacted legislation in 1969 which authorizes the department of water resources to "establish minimum water flows or levels for streams, lakes or other public waters for the purposes of protecting fish, game, birds or other wildlife resources, or recreational or aesthetic values."[112]

An unsuccessful attempt was made in Nebraska in 1977 to enact legislation suggested to be supportive of instream appropriation.[113] While the proposed legislation did not specifically include minimum flow or instream appropriation, it did identify uses of water for recreation and fish and wildlife as beneficial.[114] Although the legislation was not passed, an argument, similar to that made in *McClellan*, has been advanced that had it been enacted, the legislation could have been read to allow instream appropriation.[115]

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107. As to the problem of fitting environmental uses into "recreation" or "wildlife," see text & note 68 *supra*.

108. *See* discussion of Colorado, Idaho, and Washington statutes in text & notes 53-55 *supra*.

109. *See id.*

110. 1973 Colo. Sess. Laws 1521 (amending COLO. REV. STAT. § 37-92-103(4) (1973)).

111. 1978 Idaho Sess. Laws 891 (codified at IDAHO CODE § 42-1501 (Supp. 1978)).

112. 1969 Wash. Laws 2790 (codified at WASH. REV. CODE § 90.22.010 (Supp. 1978)).

113. *See* Note, *supra* note 43, at 199.

114. *Id.* The proposed legislation, LEG. BILL 149, 85th Leg., 1st Sess. (1977), read:

> As used in chapter 46, article 2, Reissue Revised Statutes of Nebraska, 1943, and amendments thereto, beneficial use shall mean the use of water for domestic, livestock, municipal, irrigation, manufacturing, power, recreation, fish and wildlife, groundwater recharge and storage, waste assimilation, navigation, and any other purpose having public value.

Id.

115. Note, *supra* note 43, at 199, 200. The author's argument is similar to that of the court in McClellan v. Jantzen, 26 Ariz. App. 223, 547 P.2d 494 (1976), where it was held that appropriations for recreational and wildlife uses can be realized without physical diversion. *Id.* at 225, 547 P.2d at 496. It follows that statutory recognition of such uses as beneficial, ARIZ. REV. STAT. ANN. § 45-141(A) (Supp. 1978), must therefore include recognition of instream use.

Assuming beneficial use entails use of water for environmental purposes and that instream flow is sufficient to constitute a valid appropriation, the issue now is whether a private appropriator may secure a permit to appropriate instream flow for environmental purposes. As indicated, *McClellan* allows *in situ* appropriation for recreation and fishing purposes as long as the state makes the appropriation.[116] Whether a private appropriator should be granted a like opportunity will now be examined.

Private Appropriation

A characteristic of state statutes that authorize instream appropriation or maintenance of minimum flow is the requirement that the appropriator be the state or a subdivision thereof.[117] In Colorado, minimum flow may be appropriated "by the state of Colorado in the manner prescribed by law."[118] In Washington, it is the responsibility of the Department of Water Resources to establish minimum water flows.[119] In Idaho, while "any person, association, municipality, county, state or federal agency" may request that the State Water Resource Board consider the appropriation of a minimum stream flow,[120] it is only the board itself, however, that may submit an application to the director of the board for such appropriation.[121]

While it is not clear whether Arizona statutorily recognizes appropriation of instream or minimum flow,[122] title 45, section 172, of the Arizona Revised Statutes, may reveal how Arizona would respond to the question of instream appropriation for environmental purposes by a private appropriator.[123] In that section the legislature has provided for severance of an existing water right from the land to which it is appurtenant and transfer of the right for use on other lands.[124] While there are no restrictions as to who may be a transferee when water is transferred for irrigation, stock watering, municipal, or mining purposes, if water is to be transferred for use for recreation and wildlife

116. 26 Ariz. App. at 225, 547 P.2d at 496.
117. *See* text & notes 118-21 *infra*.
118. COLO. REV. STAT. § 37-92-103(A) (1973) states that beneficial use "shall also include the appropriation *by the state of Colorado* in the manner prescribed by law of such minimum flows between specific points or levels for and on natural streams and lakes as are required to preserve the natural environment to a reasonable degree." *Id.* (emphasis added).
119. WASH. REV. CODE § 90.22.010 (Supp. 1978), *quoted at* note 53 *supra*.
120. IDAHO CODE § 42-1504 (Supp. 1979).
121. *Id.* § 42-1503.
122. *See* discussion text & notes 84-97 *supra*.
123. ARIZ. REV. STAT. ANN. § 45-172(A) (1962).
124. *Id.* This section, which deals with transfer of water, reads: "A water right may be severed from the land to which it is appurtenant . . . and with the consent and approval of the owner of such right may be transferred . . . to the state or its political subdivisions for use for recreation and wildlife purposes (including fish)."

purposes, the transferee must be "the state or its political subdivision."[125] In other words, while a private individual may be the transferee of water for agricultural or municipal use, only the state or a subdivision thereof may be the transferee for environmental use.[126] Analogizing, then, from this statute to the question of instream appropriation for environmental use by a private appropriator, it would appear that only the state or a subdivision thereof may appropriate water for environmental purposes.

Although it is possible to read the applicable transfer statute[127] to conclude that only the state or a subdivision thereof may appropriate for recreational or wildlife purposes, title 45, section 141, of the Arizona Revised Statutes, which identifies recreation and wildlife as objects for which an appropriation may be made, does not so limit who may file a permit application.[128] That section states: "Any person or the state of Arizona or a political subdivision thereof may appropriate . . . for recreation, wildlife . . . ."[129] On its face, this section supports private appropriation for recreation or wildlife. The question is whether or not, assuming the state recognizes instream appropriation, this section would supersede the implied intent of section 172 to limit appropriation for wildlife and recreation to the state.

A basic premise of the argument that appropriation of minimum flow should be limited to the state is that use of water for recreation or wildlife is beneficial only if such use is for the public.[130] In other words, if the use is beneficial only if the general public benefits, the water may not be appropriated by anyone other than the general public through its only legitimate representative, the state. This line of reasoning was followed by the Supreme Court of Utah in *Lake Shore Duck Club v. Lake View Duck Club*.[131] In that case, the issue was whether an appropriation of water could be made by a private duck club in order to grow foodstuffs which would attract ducks and other fowl to its hunting preserve.[132] Although the preserve was located on public land, the hunting club sought by its appropriation to exclude other hunters from using the land for hunting purposes.[133] The court noted, however, that it was impossible to exclude the public from pub-

125. *Id.*
126. *Id.*
127. *Id.*
128. ARIZ. REV. STAT. ANN. § 45-141(A) (Supp. 1978), *quoted at* note 57 *supra*.
129. *Id.*
130. *See generally* COLO. REV. STAT. § 37-92-103(4) (1973); WASH. REV. CODE § 90.22.010 (Supp. 1978). Both statutes recognize minimum flow as a beneficial use and limit the appropriation of water to an amount that will not decrease the minimum flow.
131. 50 Utah 76, 166 P. 309 (1917).
132. *Id.* at 80, 166 P. at 310.
133. *Id.* at 78, 166 P. at 309.

lic land and from hunting ducks which were also part of the public domain.[134] Therefore, the court concluded that "it is utterly inconceivable that a valid appropriation can be made under the laws of this state, when the beneficial use of which, after the appropriation is made, will belong equally to every human being who seeks to enjoy it."[135] The purpose of appropriation, the court reasoned, is to take that which was once public property and reduce it to private ownership.[136] Therefore, "if the beneficial use for which the appropriation is made cannot, in the nature of things, belong to the appropriator, of what validity is the appropriation?"[137]

In one important respect, the situation with regard to private instream appropriation is the reverse of the *Lake Shore Duck Club* case. In that case, private appropriators wanted to appropriate water for use on the public domain in order to benefit a private purpose.[138] The argument for private instream appropriation, in contrast, is for use of water on private property in order to benefit the public. Therefore, to the degree that a private appropriator uses his appropriation to benefit the public, beneficial ends are served and such appropriation should be allowed.

As to the issue of whether private instream appropriation will benefit the public, it must be conceded that certain private *in situ* uses may not contribute to the public welfare. For example, it is possible to imagine an individual appropriating the entire flow of a stream simply because he enjoys the sight and sound of running water. Issuance of permits for private instream appropriation need not embrace such uses, however. Avoidance of wasteful or nonbeneficial instream appropriation could easily be accomplished by establishing a rigid set of requirements for issuance of such permits. The Land Department could be charged with the responsibility, for example, of determining whether or not the permit application is meritorious, whether it will serve the ends of recreation or wildlife, and whether such use will benefit land to which the public will have access.

An argument against private appropriation for environmental uses may be extrapolated from the language of the Arizona Court of Appeals in *McClellan*.[139] In that case, the court, after briefly discussing the legislative history of Arizona statutes governing appropriation, stated that amendments to the applicable statutes were intended to

134. *Id.* at 81, 166 P. at 310.
135. *Id.*
136. *Id.* at 81, 166 P. at 311.
137. *Id.*, 166 P. at 310.
138. *Id.*
139. 26 Ariz. App. 223, 547 P.2d 494 (1976).

grant to the state a vested right to use unappropriated waters exclusively for recreation and fishing.[140] The implication is that only the state may appropriate *in situ* waters for recreation and fishing. Such a conclusion, in light of the actual legislative history, is incorrect.

Prior to 1941, the applicable statute identified only six uses for which water could be appropriated: Domestic, municipal, irrigation, stock watering, water power, and mining.[141] According to that statute, "any person" could appropriate unappropriated water for such identified purposes.[142] In 1941, the legislature amended that statute by adding "wildlife, including fish" to the list of uses for which "any person" could appropriate.[143] Granted, whether or not "environmental uses" is subsumed under "wildlife, including fish" depends in large measure on how the terms are defined.[144] It is quite plausible, however, to define the terms in such a way as to incorporate environmental use in "wildlife, including fish" uses.[145] Assuming such definition is valid, the applicable statute, following the 1941 amendment, allowed "any person" to appropriate water for environmental purposes.[146]

Thus, it is entirely possible to construe existing statutes so as to allow private instream appropriation. To do so, however, would not defeat all statutory problems. Unless present statutes are amended so as to recognize instream use for environmental preservation as beneficial, it may be argued that such use constitutes abandonment, thereby resulting in loss of existing rights. This problem of change in use and the associated problem of "lock-up" will now be explored.

THE PROBLEMS OF CHANGE IN USE AND LOCK-UP

Unless Arizona law is amended so as to recognize instream appropriation for environmental preservation as a beneficial use there will be little incentive to change the use of appropriated water in order to protect riparian areas. In fact, under present statutes, as long as environmental preservation is not recognized as a beneficial use, there is considerable disincentive to change existing uses of appropriated water so as to benefit instream, environmental purposes. This disincentive is

140. *Id.* at 225, 547 P.2d at 496.
141. *See* ARIZ. REV. STAT. ANN. § 45-141(A) (1956).
142. *Id.*
143. 1941 Ariz. Sess. Laws 179.
144. *See* note 68 *supra*.
145. *Id.*
146. It was not until 1962 that the legislature added "recreation" to the list of uses for which appropriation could be allowed. 1962 Ariz. Sess. Laws 265 (codified at ARIZ. REV. STAT. ANN. § 45-141(A) (Supp. 1978)). At that time, however, the applicable statute was also amended to allow "the state of Arizona or a political subdivision thereof," to appropriate unappropriated water. Conceivably, these additions to the statute could be read jointly. That is, it could be said that the legislature intended that only the state or a subdivision could appropriate for recreational uses.

primarily attributable to the applicable statute governing abandonment.[147] According to the statute, if an "owner of a right to the use of water ceases or fails to use the water appropriated for five successive years, the right to the use shall cease, and the water shall revert to the public and shall again be subject to appropriation."[148] Hypothetically, the problem of abandonment as a disincentive to use of water for environmental purposes may be illustrated as follows.

Suppose appropriator A, a farmer, has an appropriation from a stream of ten acre feet of water per year to be used for irrigation. He consumptively uses five acre feet, the remainder being lost to evaporation or return flow. Now suppose that he retires from farming but retains his land, holding it for speculative purposes. Since his appropriated water is not used for irrigation, A decides or is persuaded to allow his appropriation to be used for instream, environmental purposes. According to the applicable statute, if A were to change the use of his water and allow it to be used in this fashion for five successive years, he may be deemed to have abandoned his appropriative rights.[149] Were this to happen, A would lose a valuable right and, assuming he had intended to convey his property with the water right appurtenant, the value of his land would probably decrease. Granted, if the legislative intent behind the abandonment statute is to prevent waste of water by penalizing nonuse or wasteful use, its application to instream use for environmental purposes comports with the legislative intent as long as instream use of water for environmental purposes is viewed as wasteful. Attitudes toward the environment, however, are changing[150] and instream use of water for environmental purposes is increasingly being accepted as beneficial. Nonetheless, as long as applicable statutes are construed against recognizing such use as beneficial and thus threaten abandonment or forfeiture if appropriated water is used for such ends, there will continue to be a disincentive to change the use of water from a presently recognized use to instream use for environmental protection.

Probably the most satisfactory method to deal with the problem of abandonment or forfeiture following change of use for environmental preservation would be to amend existing statutes so as to recognize such use as beneficial. Were this done, appropriator A in our hypothetical could change his use without fear of forfeiture or abandonment.

Not all problems, however, would be eliminated. Given that

147. ARIZ. REV. STAT. ANN. § 45-101(C) (1956).
148. *Id.*
149. *Id.* This would be the result assuming existing Arizona law does not recognize instream or minimum flow for environmental protection as a beneficial use.
150. *See* discussion text & notes 46-55 *supra.*

change of use from irrigation to instream use for environmental purposes results in less water being actually consumed,[151] it follows that in our hypothetical there will be more water available for subsequent appropriators. This increased amount of water, characterized as return flow,[152] may be appropriated by subsequent users. Assuming these junior or subsequent appropriators are downstream from appropriator A, the fact that they appropriate more water will not diminish the flow available to A. Nevertheless, according to the applicable statute,[153] the fact that they have filed for and been issued permits to appropriate A's increased return flow means that A may not in the future again change his use or transfer his water if to do so would adversely affect other vested or existing rights.[154] In other words, subsequent appropriators, by appropriating the return flow from A's instream use, have "locked-up" A's appropriation or at least that much of it constituting return flow. Any future change in A's use that would adversely affect these subsequent appropriators would be disallowed.

The lock-up problem is not the same as the change-in-use problem. The latter, it will be recalled, is a problem as long as Arizona law does not recognize environmental preservation as beneficial. Lock-up will continue to be a problem even if existing statutes are changed so as to allow appropriation for instream uses. Any time there is change of use so as to apply appropriated water for instream flow and such change of use results in increased return flow, there will be a potential that the lock-up problem will develop. Obviously, if a private appro-

151. *See* discussion text & notes 152 *infra*.

152. "Return flow" refers to that amount of water which is not consumed by an appropriator but returns instead either to the water source from which the water was diverted or to another natural watercourse. For example, assume irrigator A has an appropriation of ten acre feet of water from water source X, which he uses for flood irrigation of his land. Assume that, of his ten acre feet of water, 30% or three acre feet is not consumed by his irrigation but returns through drainage and runoff to the water source. If the irrigator does not recapture this return flow before it enters the water course, it becomes subject to appropriation by subsequent appropriators. If a subsequent appropriator puts this return flow to beneficial use, the initial irrigator in our example may not change his water use in such a way as to deny the subsequent appropriator the use of return flow. *See* Jones v. Warmsprings Irrigation Dist., 162 Ore. 186, 199, 91 P.2d 542, 546 (1939); East Bench Irrigation Co. v. Deseret Irrigation Co., 2 Utah 2d 120, —, 271 P.2d 449, 453-57 (1954); Lassen v. Seely, 120 Utah 679, —, 238 P.2d 418, 421 (1951); Bower v. Big Horn Canal Ass'n, 77 Wyo. 80, —, 307 P.2d 593, 602 (1957).

153. *See* ARIZ. REV. STAT. ANN. § 45-172(2) (Supp. 1978). The general rule that transfer cannot work harm to other users is set out in this statute as follows: "Vested or existing rights to the use of water shall not be affected, infringed upon nor interfered with, and in no event shall the water diverted or used after the transfer of such rights exceed the vested rights existing at the time of such severance and transfer." *Id.*

154. *See id.* For case law on the question of limits on transfer or change in point of use that is injurious to other vested rights, see Farmers Highline Canal & Reservoir Co. v. City of Golden, 129 Colo. 575, 580, 272 P.2d 629, 632 (1954) (action by a municipality to change the point of diversion of certain water rights and the manner of use from irrigation of farm lands to municipal uses); Basin Electric Power Coop. v. State Bd. of Control, 578 P.2d 557, 566 (Wyo. 1978) (petition for change of use and place of use of water within a closed basin from irrigation use to reservoir storage).

priator could guarantee that he would never seek to change his instream appropriation or transfer the water to lands not then appurtenant, then lock-up is not a problem. On the other hand, with respect to attempts by conservation organizations to persuade landowners to hold their land in a natural state, the lock-up problem may well dissuade private landowners from changing use of their water so as to benefit the environment. Particularly if a private appropriator wants to keep his future water use options open, the possible lock-up of his water may convince him to seek some other alternative.

The lock-up problem may be one reason why appropriation of minimum flow is reserved for the state or a political subdivision thereof. Land owned by the state is often less subject to change in use or ownership than land owned privately. Consequently, when the state secures an instream or minimum flow appropriation, it is less likely to alter such use than would a private appropriator. In other words, as long as the land remains in state ownership, minimum flow will be observed, thus reducing the problem of lock-up. Nevertheless, since groups such as The Nature Conservancy[155] often purchase lands for later sale to a state agency for inclusion into a state forest or park, or are not inclined to alter the use of the water, the lock-up problems affecting them is minimal. Perhaps the lock-up problem could be avoided by statutorily requiring either a good faith commitment from the appropriator that such instream appropriation will continue for a given period of time or by refusing to issue permits to appropriate the return flow from such instream uses.[156]

PROPOSALS FOR STATUTORY CHANGE IN ARIZONA

Arizona water law may be amended in a number of ways so as to allow private appropriation of instream flow for environmental protection. Professor Robert Emmet Clark has included statutes supportive of private instream appropriation in his proposed new Arizona water code.[157] For example, assuming that instream or minimum flow is a prerequisite for environmental protection, Clark's code defines "diversion" as "the taking of surface waters for any purpose and by any means, mechanical or otherwise, from the channel or water body in

155. See note 4 *supra*.

156. Subsequent appropriators could use the waters provided by the return flow; they simply would be on notice that their supply of water could be terminated or reduced at any time. If, however, permit applications for instream appropriation required that the water be used for instream purposes for a given period of time, such a requirement could minimize the chances of sudden changes in use.

157. Clark, *A Proposed Water Code or Statute: Arizona Water Resources Management Act of 1977*, 19 ARIZ. L. REV. 719 (1978). Clark's proposal, as stated in his acknowledgement, "reflects past experience found in existing law, recent improvements in technology, conditions of rapid urbanization and the need for environmental protection." *Id.* at 722.

which they occur or the beneficial use of surface waters *in the channel* or water body in which they occur."[158] Clark's comment to this definition is also important. He states: "The definition is not limited to a taking by mechanical means. Consequently, stock watering and the use of water by fish and wildlife may be diversions."[159] In other words, similar to Colorado and Idaho statutes which allow instream appropriation,[160] Clark's proposed code would recognize instream flow without physical diversion as a valid method of appropriation.[161]

Short of adopting an entirely new water code, the same result could be secured via statutory amendment. Arizona could, for example, adopt the Idaho,[162] Colorado,[163] or Washington[164] approaches and recognize appropriation of minimum flow as a means of protecting environmental and aesthetic qualities or riparian environments. Although the Idaho, Colorado, and Washington statutes permit instream appropriation or protection of minimum flow,[165] none allows private appropriation of instream flow for environmental purposes.[166]

The first change that could be made in existing statutes is for the legislature to preface the existing code with a new section of "definitions" wherein "appropriation" is defined so as not to require physical diversion.[167] Short of the adoption of a new section, existing sections which apply to appropriation could be amended to allow for appropriation without diversion.[168]

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158. *Id.* § 1.3(10), at 749-50 (emphasis added). With respect to the question of private appropriation of instream flow, Clark's proposed code is unclear as to whether such private appropriation would be upheld. Although § 1.3(10) states that instream appropriation is a "diversion" of water, *id.* at 750, it is not clear whether both public and private appropriators may avail themselves of this method of appropriation. In other words, similar to the problem in *McClellan* with respect to public and private *in situ* uses of water, *see* text & notes 99-107 *supra*, Clark's code does not specifically indicate whether private appropriators would be allowed to appropriate instream flow for environmental uses.

159. Clark, *supra* note 157, at 750.

160. COLO. REV. STAT. § 37-92-103(4) (1973), *quoted at* note 55 *supra*; IDAHO CODE § 42-1501 (1978), *quoted at* note 54 *supra*.

161. Clark's definition and comment, by themselves, would be sufficient to give legal justification to instream appropriation. Recognition of minimum flow and authorization to appropriate instream or minimum flow is also found, however, in Clark, *supra* note 157, at § 1.3, ¶ (16), at 751, § 1.6C, ¶ 3, at 774, § 2.1E, at 789.

162. *See* note 54 *supra*.

163. *See* note 55 *supra*.

164. *See* note 53 *supra*.

165. *See* text & notes 118-21 *supra*.

166. *See* notes 53, 118 *supra*. Colorado restricts appropriation of minimum flow to the state. COLO. REV. STAT. § 37-92-103(4) (1973). Washington vests responsibility of establishing minimum flows with the department of water resources. WASH. REV. CODE § 90.22.010 (Supp. 1978). Idaho, in restricting appropriation of minimum flow to the state, places this responsibility upon the Idaho Water Resource Board. IDAHO CODE § 42-1503 (Supp. 1979).

167. This is the Colorado approach. COLO. REV. STAT. § 37-92-103(2) (1973). *See* discussion text & note 92 *supra*.

168. For example, ARIZ. REV. STAT. ANN. § 45-141(B) (Supp. 1978), could be amended so as to indicate that the construction of physical means of diversion is not, in every situation, a requirement for valid appropriation of water. Similarly, ARIZ. REV. STAT. ANN. § 45-142(A), (B) (Supp.

A second needed change in Arizona water law bearing on the question of private appropriation for environmental uses concerns the ranking of relative uses.[169] Beneficial uses are ranked by statute in the following descending order of importance: Domestic and municipal use, irrigation and stock watering, power and mining, recreation, and wildlife.[170] In 1970, the Arizona Supreme Court in resolving a dispute among municipal and agricultural water users stated: "The creation of such a priority clearly evidences a legislative policy that the needs of agriculture give way to the needs of municipalities."[171] The case suggests that the resolution of conflicting permit applications should always favor the higher ranking use. Thus, since recreation and wildlife uses are on the bottom of the scale of values, an application for the environmental use will probably be defeated, in all cases involving a dispute between a permit application for environmental use and any other recognized beneficial use.[172]

Assuming the relative use scale[173] represents a general sense of which beneficial uses are of greater value (economically and socially), the usefulness of the statute would not be lost were a less categorical application instituted. Moreover, if the intent of the statute is to maximize social utility, it may well be that in certain circumstances greater social benefit would be served by issuing the permit for environmental uses rather than, for example, mining or agriculture.[174]

A third needed change in existing statutes, if instream appropria-

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1978), could be amended so as to indicate that application for a permit to appropriate need not, in every situation, include information concerning the point of diversion.

169. See text & notes 77-83 *supra*.

170. ARIZ. REV. STAT. ANN. § 45-147(B) (Supp. 1978), *quoted at* note 77 *supra*.

171. Jarvis v. State Land Dep't, 106 Ariz. 506, 511, 479 P.2d 169, 169 (1970). The court's comment as to the intended application of the ranking in title 45, section 147, is only dictum.

172. Such an absolute application of the statute need not be made in every case. Legislative amendments in the applicable statute indicate that the ranking is to serve more as a general guideline than a categorical ranking. *See* discussion of legislative changes in ARIZ. REV. STAT. ANN. § 45-141(C) in note 80 *supra*.

173. ARIZ. REV. STAT. ANN. § 45-147(B) (Supp. 1978).

174. Analogously, the RESTATEMENT (SECOND) OF TORTS (1966), regarding the determination of reasonableness of use of riparian waters, illuminates the issue of social utility and the need for flexibility in the application of ARIZ. REV. STAT. ANN. § 45-147(B). Section 850(A) of the *Restatement* reads:

> The determination of the reasonableness of a use of water depends upon a consideration of the interests of the riparian proprietor making the use, of any riparian proprietor harmed by it and of society as a whole. Factors that affect the determination include the following: a) the purpose of the use, b) the suitability of the use to the watercourse or lake, c) the economic value of the use, d) the social value of the use, e) the extent and amount of the harm it causes, f) the practicality of avoiding the harm by adjusting the use or method of use of one proprietor or the other, g) the practicality of adjusting the quantity of water used by each proprietor, h) the protection of existing values of water uses, land, investments and enterprises, and i) the justice of requiring the user causing harm to bear the loss.

Section 850(A) suggests that to determine the reasonableness of riparian use a number of factors must be considered. Among these factors is "the social value of the use." All else being equal, or nearly so, it is conceivable that application of the *Restatement* rationale to ARIZ. REV.

tion by private or public appropriators is to be effectively instituted, is addition of a provision allowing for change of water use.[175] Change of use involves using appropriated water for a different purpose, but without severing it from the land to which it is appurtenant.[176] As previously discussed, under existing statutes a change of use of appropriated water to instream flow for environmental purposes would probably be seen as an abandonment or forfeiture.[177] Were existing statutes amended, however, so as to recognize private appropriation of instream flow, then the problem of abandonment or forfeiture would be avoided. Under existing statutes, a change of use from one beneficial use to another does not constitute abandonment.[178] If appropriation of instream flow for environmental use is recognized as beneficial, then a change of use from agricultural use to instream use for environmental purposes, for example, would not constitute abandonment.

CONCLUSION

The thesis of this Note is that private appropriation of instream flow for environmental purposes is a beneficial use and should be so recognized. Whereas amendments in existing state water law and dicta in a recent case impliedly support recognition of instream flow for environmental purposes as beneficial, such use of water lacks specific statutory authorization. In addition, the question of private instream appropriation for environmental purposes is unresolved. Due to the confusion concerning such private appropriation, and the compelling arguments supportive of its recognition, it is concluded that existing statutes should be amended so as to specifically recognize private instream appropriation for environmental purposes.

STAT. ANN. § 45-147 could result in issuance of a permit for a proposed environmental use that serves a greater social value than, for example, a marginal agricultural use.

The *Restatement* rationale is illuminating on the point of social value or utility because of its recognition that values other than economic may be associated with certain uses of water. While it does not define what "social value" consists of, § 850(A)(d) at least demonstrates that reasonableness of water use is determined by including in the calculus of benefit more variables than a single economic factor.

175. We are not speaking here of transfer of water from one location to another, though change of use may entail transfer. Rather, the focus is on an appropriator who seeks to change his use of appropriated water while continuing to use the water on the same lands the water was appropriated for. Transfer may be affected without a change of use. Transfer of water rights is the subject of ARIZ. REV. STAT. ANN. § 45-172 (Supp. 1978).

176. *Id.*

177. See discussion text & notes 147-50 *supra*.

178. *See* ARIZ. REV. STAT. ANN. §§ 45-101(c) (1962), 45-172 (Supp. 1978). Abandonment occurs, according to § 45-101(C), due to non-use for five successive years. Transfer of water, § 45-172, may be made without changing priority.