Land & Water Law Review

Volume 5 | Issue 2 Article 1

1970

Water Law's Double Environment: How Water Law Doctrines Impede the Attainment of Environmental Enhancement Goals

John C. Ohrenschall

Edward A. Imhoff

LAND AND WATER
LAW REVIEW

VOLUME V 1970 NUMBER 2

In the following article Mr. Ohrenschall and Mr. Imhoff propose that present water law doctrines have and continue to cause certain conflicts and confusion so that those concerned for a quality environment sometimes find themselves at a loss for the necessary footholds and tools needed to gain the desired ends. After examining and demonstrating how these doctrines and institutions create needless limitations, the authors then conclude with certain recommendations that will allow one to have a well-defined orientation and perspective of goals.

WATER LAW'S DOUBLE ENVIRONMENT: HOW WATER LAW DOCTRINES IMPEDE THE ATTAINMENT OF ENVIRONMENTAL ENHANCEMENT GOALS

*John C. Ohrenschall**

*Edgar A. Imhoff***

Learn

> how men fight and lose the battle, and the thing they fight for comes about in spite of their defeat, and when it comes about it turns out to be not what they meant and other men have to fight for what they meant under another name.[1]

* Director, Water Resources Center, University of Maine; B.S., 1956, University of Utah; M.S. (Water Resources), 1966, University of Wisconsin. Mr. Imhoff is a former Chief, Planning Division, Idaho Water Resource Board and is presently Chief, Natural Resources Division, S.E. Wis. Regional Plan. Commission.

** Research Associate in Law, Center for Water Resources Research, Desert Research Institute, University of Nevada System, Reno, Nevada; B.A. 1958, Reed College; L.L.B., 1964, University of Colorado; M.S., 1967, University of Wisconsin; Member of Colorado, Nevada and American Bar Associations. Mr. Ohrenschall is a member of the Air and Water Quality Committee, Section of Natural Resources Law, American Bar Association.

1. Quoted by Jenkins, from Morris, 102 MANCHESTER GUARDIAN WEEKLY, January 3, 1970, p. 16.

I. INTRODUCTION

A. Quest for a Quality Environment or, Environmentalists, All.

1. *Goals.*

A recent Gallup poll of some 1,500 citizens residing in various parts of the United States has revealed that most persons queried were "deeply concerned about abuse of their natural surroundings."[2] The news media are replete with expressions of concern alleging a substantial deterioration of man's environment. In fact, an increasing use of the term "environment" in preference to the traditional term "natural resources," symbolizes an attitudinal shift from thinking of a substance, such as water, as an isolated commodity, to conceiving of that substance as an integral part of the ecological continuum of water-atmosphere-soils-minerals-organisms that is now popularly termed "environment."

In terms of both magnitude and variety, the current focus on alleged enviornmental problems is remarkable. Even a limited sampling of statements of concern would reveal vast differences in style, credibility, and underlying motive. There are many crusaders for the "environment," and the public appetite for relevant messages appears to be insatiable.

We shall address certain questions about this environmental concern in setting the stage for a critical examination of certain features of water law: What is the substance of environmental concern? Why now? Is this measure of alarm justified?

A concern for environment may be classified in accordance with our understanding of the so-called underlying, root "values" held by the person who expresses such concern. We may thus validly find the following "values:" (a) survival, (b) recreation, (c) aesthetic appreciation, and (d)

2. THE GALLUP ORGANIZATION, THE U.S. PUBLIC CONSIDERS ITS ENVIRONMENT (1969).

scientific study.[3] These values are best defined in terms of the following theoretical themes:

(a) *Survival.* Continued existence of the species *Homo Sapiens* in the closed system called "the earth" depends on cessation or at least a limitation of certain present human uses of the environment; the deterioration has been severe—if not catastrophic—and the hour is late.[4]

(b) *Recreation.* Man's playground is not what it used to be; pollution, population over-crowding, and conflicting uses are limiting many out-of-doors recreational activities—especially on lakes and other water bodies.[5]

(c) *Esthetics.* Natural beauty is being destroyed increasingly. Landscapes (both in the macro and the micro sense) which were varied, stable, and attractive are becoming monotonous, unstable, and hideously ugly.[6]

(d) *Scientific Study.* Practical implications aside (and there are many), the subjective process of scientific discovery may well, in itself, be of value. In terms of understanding and appreciating ourselves and our environment, the extinction of a species or the destruction of a biotic community is an irrevocable loss.[7]

In short, as we approach the final quarter of the twentieth century, we discover that there has developed a pervasive, profound concern that "things are not right" with

3. Other organizations and individuals have attempted to isolate and categorize the values underlying concern over the environment. *See,* WATER RESOURCES COUNCIL, U.S. DEP'T. OF INTERIOR, PROCEDURES FOR EVALUATION OF WATER AND RELATED LAND RESOURCES PROJECTS (1969).
4. We find particularly expressive of the survival theme: HAY, IN DEFENSE OF NATURE (1969). *See also* CARSON, THE SILENT SPRING (1962).
5. For further development of this theme, *see* DARLING & MILTON, FUTURE ENVIRONMENTS OF NORTH AMERICA (1966); UNIV. OF CHICAGO, MAN'S ROLE IN CHANGING THE FACE OF THE EARTH (1956).
6. This theme is very commonly developed in agency publications. *See,* REPORT OF THE PRESIDENT'S TASK FORCE ON THE PRESERVATION OF NATURAL BEAUTY (1968); BOWDIN COLLEGE MUSEUM OF ART, AS MAINE GOES (1966).
7. For enabling legislation addressing this theme see WIS. STAT. § 23.27, 1968. State agencies have joined universities and foundations in the fight to preserve the right of scientific study. For an example, see the releases of BOARD FOR THE PRESERVATION OF SCIENTIFIC AREAS, STATE OF WISCONSIN.

the environment. Contrastingly, this is not the concern over possible, or probable, resource scarcity that so markedly characterized the conservation movement at the beginning of the present century.[8] Since the end of World War II, many figures prominent in conservation movements have ceased to be seriously worried over a possible scarcity of basic, natural resources to supply agricultural, commercial, and industrial activities.[9] Today's successful priest of conservation, *i.e.,* he who touches a responsive chord in the public-at-large, appeals generally to one or more of the four value themes cited above.

2. *Basis: Economic Progress or, After the War: More, and Then . . . Less.*

Popular views about resource topics are, often as not, founded on emotion rather than on fact, as demonstrated by Murphy.[10] The present concern over environment, however, is fortified by an impressive battery of facts that can be brought forward from a variety of disciplines.

Certainly, population is burgeoning everywhere. Anyone familiar with neo-Malthusian doctrine or even compound interest rates can well shudder at the thought that the United States population increased 50 per cent in the period 1940-65.[11] Except in a personal sense, it is not reassuring to know that average life expectancy rose eight years during the same period.[12]

In spite of shorter work weeks and earlier retirements, per capita production increased 200 per cent during the period 1940-65.[13] This rise in production was not achieved without the undertaking of certain short-range expediencies. In

8. A classic example is PINCHOT, BREAKING NEW GROUND (1947).
9. Some authorities assert that gluttony with resource commodities may become a problem, *i.e.,* LANDSBERG, FISCHMAN, & FISHER, RESOURCES IN AMERICA'S FUTURE, at 10 (1963): "[M]any industries see the problems of the immediate future as those of glut rather than scarcity."
10. MURPHY, WATER PURITY: A STUDY IN LEGAL CONTROL OF NATURAL RESOURCES, 31, 43 (1961).
11. Revelle, *Population Growth and the Quality of the American Environment,* J. AMER. ACAD. ART & SCIENCE, DAEDALUS 1177 (Fall, 1967). *See also* Lamm, *The Reproductive Revolution,* 56 A.B.A.J. 41 (1970).
12. Serial reports of the U.S. Bureau of the Census.
13. Revelle, *supra* note 11, at 1178.

agriculture, high production was supported by liberal use of pesticides and fertilizers, and by the concentration of animals on small areas of land where they could be fed most efficiently.[14] Gains in manufacturing production were supported by a similar "borrowing" on the environment. For example, a following of the history of waste-loading during the period 1940-65 on any river supporting paper manufacturing in America, discloses the same greatly increased production, the same virtual annihilation of desirable aquatic life, and equivalent injury to recreational pursuits.[15] And the pulp-and-paper industry is by no means a "bogeyman"; trends in food processing, chemical and allied manufacturing, textiles, and many other industrial activities reveal similar patterns.[16]

Following World War II, the American consumer has enjoyed an expansion in real income equivalent in magnitude to the increases in population. The impact of consumer expenditures on the environment has been twofold: (a) in lubricating the production sources of pollution, and (b) in generating litter, liquid wastes, and solid wastes. During the period 1940-65, average per capita refuse production rose from approximately three to four and one-half pounds, per capita per day.[17] Average per capita liquid wastes have about doubled in a similar period. It is common knowledge that many of these wastes such as pesticides and plastics are durable and non-biodegradeable.

3. *Awareness of Enviornmental Deterioration.*

Until recent years the "more of everything" philosophy which has run amok in American popular thought has not extended, generally, to protection of the environment. That it does so now in 1970 is indicative of a vastly intensified

14. *See* FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, WATER QUALITY CONTROL AND MANAGEMENT, SNAKE RIVER BASIN, 36 (1968).
15. The Wisconsin experience is reviewed in MURPHY, *supra* note 10.
16. Abundant documentation of the devastating effect of food processing wastes on water quality is provided in COMPTROLLER GENERAL OF THE U.S., REPORT TO THE CONGRESS ON EXAMINATION OF THE CONSTRUCTION GRANT PROGRAM FOR ABATING, CONTROLLING AND PREVENTING WATER POLLUTION (1969).
17. U.S. PUBLIC HEALTH SERVICE, SOLID WASTE HANDLING IN METROPOLITAN AREAS, 118 (1964).

public awareness of the extent of scientifically-documented environmental deterioration that has occurred in the last 25 to 30 years. A scientific count[18] of water-bodies that have "died," or become noticeably "ill," during this period includes most of the major water-bodies in the United States, such as Lake Erie, the Hudson River, and San Francisco Bay.[19] Elsewhere, throughout the United States, evidence of a rapid deterioration of environmental assets has become painfully evident.[20]

Given the rapid pace of environmental decay, greatly intensified demand, and the public awareness of both, a critical appraisal of possible constraints to solution of this problem appears to be in order.[21] For example, and considering only one aspect of the ecological continuum, certain traditional aspects of water law seem especially to burden appropriate responses to the crisis on environment.

B. Thesis or, Whereof Means and Ends.

Popular, as well as scientific, thinking currently conspicuous in the United States concedes that as a mere physical matter this nation does possess the technology to consummate the quest for a quality environment.[22] A less unified consensus of opinion qualifies this concession to technocracy

18. We have reviewed the Federal Water Pollution Control Administration and state agency reports on the majority of the 50 states.
19. Search of the literature and reflection on our own professional experience background (in ten states) reveal that *only* Lake Superior and certain "wild and scenic" rivers, such as the Salmon River of Idaho, are free from water quality problems.
20. Documentation of examples of painful local problems include: closing of clam flats, FEDERAL WATER POLLUTION CONTROL ADMINISTRATION, PROCEEDINGS OF CONFERENCE ON POLLUTION OF THE NAVIGABLE WATER OF THE PENOBSCOT RIVER AND UPPER PENOBSCOT BAY, BELFAST, MAINE, 36 (1967); closing of bathing beaches, ERNEST, EFFECTS OF STORM WATER ON BATHING BEACHES IN SEPARATE AND COMBINED SEWER AREAS (Central States Water Pollution Control. Assoc., 1965); pollution effects on wildlife, NORTH DAKOTA WATER RESOURCES RESEARCH INST., CONFERENCE PROCEEDINGS ON WATER RESOURCE PROBLEMS OF THE SOURIS-RED RAINY RIVER BASINS 42-50 (1967); and "complete treatment," Bukro & Jones, *Save Our Lake,* The Chicago Tribune, 1967 (Series).
21. Revelle, *supra* note 11. Current information on consumer-demand trends can be found in several monthly publications; *e.g.*, U.S. DEPT. OF COMMERCE, SURVEY OF CURRENT BUSINESS; U.S. GOVT. PRINT. OFFICE, ECONOMIC INDICATORS.
22. *See generally,* MCGAUHEY, ENGINEERING MANAGEMENT OF WATER QUALITY (1968); Nolan, *The Inexhaustible Resource of Technology,* in PERSPECTIVES ON CONSERVATION 49-66 (Jarrett ed. 1958); Reitze, *Wastes, Water and Wishful Thinking: The Battle of Lake Erie,* 20 W. RES. L. REV. 5, 67 (1968); Editorial, *More Than Pollution,* The Wall Street Journal, Jan. 23,

by stating that matters of sheer economics may necessarily modify the attainment of a quality environment.[23] Equally current is the growing, articulated feeling that laws and institutional arrangements concerning the entire ecological continuum impede, rather than enhance, this quest.[24] The net attitudinal result throughout the community of citizens concerned for the environment appears to be that if only a functional triumvirate could be welded of those disciplines concerned with at least: 1) physical and biological sciences, 2) economics, and 3) law, planning and related social sciences; then as a minimum achievement the quest for a quality environment could be oriented to the extent of defining concrete goals with specific, associated planning horizons.[25]

However, not even the happy condition of planning orientation exists at the present time. Society has agreed, in general, for some time that a quality environment should rank very high among national priorities,[26] but it may be posited that society continues a debate in an atmosphere of cross-purposes.[27] As a philosophical matter, it might be conjectured that no matter what type of professional consensus

---

1970, p. 6; *but cf., Special Report, The Ravaged Environment,* NEWSWEEK, Jan. 26, 1970, pp.30, 32.

Technology must of course be implemented by fiscal resources. *See* Reitze, *Pollution Control: Why Has It Failed?,* 55 A.B.A.J. 923, 924 (1969).

23. *See,* HERFINDAHL & KNEESE, QUALITY OF THE ENVIRONMENT (1965); Reitze, *supra* note 22, at 924-25. *Compare* GALBRAITH, THE NEW INDUSTRIAL STATE (1967).

24. DALL, LEGAL ASPECTS OF PENNSYLVANIA WATER RESOURCES PLANNING 2 (Penn. State Univ. Institute for Research on Land and Water Resources, Information Rep. No. 51, 1967); THOMAS, THE CONSERVATION OF GROUND WATER (1951). An opposite school of thought posits that laws and institutional arrangements serve not only as static constraints but also as dynamic planning tools to achieve any given societal policy goal. *E.g.,* BEUSCHER, CHANGING LAW TO MAKE THE RESULTS OF LEGAL-ECONOMIC RESEARCH EFFECTIVE (Iowa State Univ. College of Law Agricultural Law Center Monograph No. 1, 1959).

25. *See* Bower, *Some Physical, Technological, and Economic Characteristics of Water and Water Resources Systems: Implications for Administration,* 3 NATURAL RESOURCES J. 215 (1963); Murtha, *Research and Water Resources Planning,* 93 J. WATERWAYS & HARBORS DIV., A.S.C.E. 195 (1967); FEDERAL COUNCIL FOR SCIENCE AND TECHNOLOGY, COMMITTEE ON WATER RESOURCES RESEARCH, A TEN-YEAR PROGRAM OF FEDERAL WATER RESOURCES RESEARCH (1966).

26. State of the Union Address by President Richard M. Nixon, January 22, 1970.

27. *See generally,* Revelle, *supra* note 11, for illustrations of agency conflicts. The general atmosphere of confusion and conflict over environmental goals is well-illustrated in NEW ENGLAND COUNCIL OF WATER CENTER DIRECTORS, PROCEEDINGS OF A CONFERENCE ON ECOLOGICAL CONSIDERATION IN WATER RESOURCES PLANNING, (Univ. Rhode Island Water Research Center, Febr., 1970).

obtains as to environmental goals, internal conflicts will appear along the path of the environmental quest. Some environmental goals, for example, may be equally valid from an objective point of view yet may also be mutually exclusive. To cite only one case, the construction of a dam in a pristine canyon may create an artificial lake and associated water-based recreation for one segment of the population, yet impair aesthetic values for another segment of the population.[28]

The premise of this article is that the confusion and the conflicts among the concerned citizenry for a quality environment are due in part to existing and evolved institutional arrangements as they may affect or influence the ecological continuum. However, since so many legal doctrines of the Anglo-Saxon world hinge upon flexible standards such as "reasonable" or "beneficial," our premise does not intend to condemn the institutional arrangements *per sese* as morally "bad." Rather, the argument will be that society's interpretations, particularly those of the judiciary, of its institutional arrangements need revamping or updating in the light of modern needs. The further premise is that once the institutional arrangements are so enlightened, environmental goals will become better defined.

C. Task.

We propose in this article, in perhaps typical, academic style, to dissect one aspect of the ecological continuum, water. We will then examine certain institutional arrangements of the United States, particularly water-law doctrines, and attempt a demonstration, or at least an essay, of the manner in which these institutions burden the attainment of environmental quality. We will conclude with certain recommendations that for us point the way toward a well-defined orientation and perspective of goals.

28. Perhaps the situation of Glen Canyon Dam on the Colorado River at Page, Arizona, and the resulting impoundment of Lake Powell extending into Southeastern Utah, may stand as the classic example in this country. *See,* Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956), *as amended,* 43 U.S.C. § 620 (1964). *Cf.* THE SIXTH ANNUAL REPORT ON THE STATUS OF THE COLORADO RIVER PROJECT AND PARTICIPATING PROJECTS, S. Doc. No. 7, 88th Cong., 1st Sess. (1963).
For additional examples, *see,* Buescher, *Wisconsin's Law of Water Use,* 30 WIS. BAR BULL. 49-50 (1958).

II. AMERICAN WATER LAW DOCTRINES: SCHEMA.

We do not propose in this portion of the article to add yet another essay to the literature on the origins, development, and characteristics of water law doctrines as existing in the United States.[29] Rather, we wish to discuss these doctrines in broad-brush form in order to create a background for the more detailed discussion that will follow in Part III of this article. In so doing, we acknowledge in advance any errors of commission, to the extent of portraying generalizations that may necessarily betray important exceptions or qualifications; or any errors of omission.

In general, two distinct doctrines of water law concerning private use rights or allocation of supplies have developed in the United States, riparianism and appropriation.[30]

Riparianism, or the so-called "common-law" doctrine, bases the right of use as incidental to an ownership interest in land contiguous to or underlying the source of supply. This doctrine is generally prevalent in the humid eastern third of the United States. Generally, use or non-use of water is immaterial to the existence of the water right. In addition, and generally, the water may be used only on the riparian land, and the right may not be exercised elsewhere. It is to be noted that conveyance or subdivision of the riparian land has complex effects upon the associated water right.

As concerns private users, the riparian doctrine has two branches: the natural flow rule and the reasonable use rule. The former holds that with the traditional exceptions of minor domestic uses or stock watering, no user may impair or lessen the flow of the stream or other source of supply to

29. *See generally,* WATERS AND WATER RIGHTS (3 vol. Clark ed. 1967) [hereinafter cited as WATERS AND WATER RIGHTS]; HUTCHINS, SELECTED PROBLEMS IN THE LAW OF WATER RIGHTS IN THE WEST (1942); MARTZ, CASES ON NATURAL RESOURCES, 19-466 (1951); Martz, *Water for Mushrooming Populations,* 62 W. VA. L. REV. 1 (1959); SAX, WATER LAW, PLANNING AND POLICY: CASES AND MATERIALS (1968); Trelease, *A Model State Water Code for River Basin Development,* 22 LAW & CONTEMP. PROB. 301 (1957); TRELEASE, BLOOMENTHAL, & GERAUD, CASES AND MATERIALS ON NATURAL RESOURCES, 1-357 (1965).

30. For an excellent, concisely readable summary of these two doctrines, *see,* GARRITY & NITZSCHKE, WATER LAW ATLAS (1967). See also, note 42, *infra.*

the disadvantage of any other riparian. Rather, all users are entitled to have the stream flow "as it was wont to do in the state of nature." Theoretically, this would mean, of course, that under the riparian natural flow rule, no major consumptive use could exist. The resultingly more prevalent riparian rule, reasonable use, holds that each riparian may make a "reasonable" use of water, "reasonableness" being relative to the type and place of use as well as to the needs and uses of other riparians. One important corollary of this rule is the corrolative aspect of "co-sharing" so characteristic of many riparian jurisdictions. It is to be noted that the concept of "reasonableness" perhaps has been the basic standard in the development of the case law in our Anglo-Saxon system of jurisprudence, thus furnishing a clear indication as to why the judiciary has played such an important role in the development of the riparian doctrine. Presently, however, an increasing number of riparian jurisdictions are, by statute, authorizing administrative agencies to regulate by permit or otherwise the consumptive use of water.

Appropriation, or the so-called "statutory" doctrine, bases the water right upon beneficial use.[31] This doctrine is generally prevalent in the arid or semi-arid western two-thirds of the United States. Ownership of land interests is generally immaterial to the acquisition or exercise of the use right. Thus, in contrast to the situation obtaining under the riparian doctrine, the water right is not an incidental to land ownership. Rather, the right is merely one of use, and not one of ownership of water as a discrete physical entity. Hence, appropriative rights can be lost through non-use.

Appropriation doctrine, in theory, sets no limitations on the place of use. Hence, and again in theory, the right need not be exercised even in the watershed of origin.

As between competing appropriators from the same source of supply, priority of appropriation, in theory, determines the superior right(s) in times of shortage. It is

31. *E.g.*, NEV. REV. STAT § 533.035 (1967): "Beneficial use shall be the basis, the measure and the limit of the right to the use of the water."

this characteristic of the doctrine that often gives it the label "prior appropriation."

Early in the development of the appropriation doctrine, perfection of the water right consisted merely of taking the water and, within a "reasonable" period of time, applying it to beneficial use, with whatever manifestations of physical conduct deemed necessary to evince the salutary intent.[32] Later, most jurisdictions found it desirable and expedient to place the acquisition of water rights under a system of centralized, administrative control; and to proscribe by statute a permit structure as a regimen to the appropriative right.[33] Hence the synonym, "statutory" doctrine.

So far this over-view discussion of American water-law doctrines has been in the tacit context of surface water in natural surface watercourses. Generally, ground-water doctrines in the United States follow in analogous fashion the surface-water doctrines, with certain refinements upon riparianism.[34]

In reality, neither of the two basic water-law doctrines in the United States exists in the "pure, theoretical" form. Nor does one exist unaffected by the influence of the other.[35] For merely one example, riparianism in practice may tend to favor older, more established uses,[36] whereas appropriation in action may possess characteristics of co-sharing and of limiting the place of use to certain proximities to the source of supply.[37]

Common to both doctrines, in practice, is the principle of preferences. Theoretically, and especially under the appropriation doctrine, a preference is the legal authority to

32. Low v. Rizor, 25 Ore. 551, 37 P. 82 (1894).
33. Wyoming is exemplary of the permit system; *see* Wyoming Hereford Ranch v. Hammond Packing Company., 33 Wyo. 14, 236 P. 764 (1925). *See also*, COUNCIL OF STATE GOVERNMENTS, STATE ADMINISTRATION OF WATER RESOURCES (1957).
34. *See generally*, MCGUINESS, WATER LAW WITH SPECIAL REFERENCE TO GROUND WATER (U.S. Geological Survey Circular No. 117, 1951).
35. *E.g.*, Beuscher, *Appropriation Water Law Elements in Riparian Doctrine States*, 10 BUFFALO L. REV. 448 (1961).
36. *Sax*, WATER LAW—CASES AND COMMENTARY 9 (1965).
37. *E.g.*, California Watershed Protection Law, CAL. WATER CODE § 11460 (West 1964); NEV. REV. STAT. § 533.075 (1967) (voluntary rotation in use of water). *See also* HENNEN, HUMBOLDT RIVER WATER DISTRIBUTION, PART I—PROBLEMS (1964).

displace for a superior beneficial use a right to water already appropriated or claimed for an inferior beneficial use.[38] Preferences operate only in times of scarcity but irrespective of established priorities. Generally in appropriation jurisdictions, preferences have been ranked either by constitution, statute, or exercise of administrative discretion in the following order: first, domestic or municipal; second, irrigation or agricultural; third, industrial; and fourth, if at all, recreational. Preferences for domestic or municipal uses also generally have superiority under riparianism, and in these jurisdictions, courts may well tacitly rely on this principle in determining the "reasonableness" of competing uses.[39]

So far we have discussed water law doctrines with reference to allocation of supplies. It is of interest to mention briefly the subject of water quality doctrines. These doctrines, traditionally and in the state courts, have followed at least two basic threads. Under riparianism, pollution arguably was an unreasonable use; under appropriation, pollution was, as a matter of physical and perhaps economic waste, a non-beneficial use. Superimposed upon the corresponding judicial remedies, the states have generally enacted various statutory schemes to provide criminal or civil sanctions against pollutive uses.[40] As to the development of at least the case law of pollution abatement, the particular system of substantive water law appears immaterial, and a recent body of knowledge has accumulated on the subject of the inter-relationships between questions of water supply and those of water quality.[41]

Public[42] water rights, as contrasted with private rights,

38. 1 WATERS AND WATER RIGHTS, supra note 29 at §§ 22.7, 54.2.
39. *See* BEUSCHER, WATER RIGHTS 95-129, 347-48 (1967); 1 WATERS AND WATER RIGHTS, *supra* note 27, at §§ 54.3(B)(C).
40. *See generally,* Gindler, *Water Pollution and Quality Controls,* in 3 WATERS AND WATER RIGHTS ch. 13-14 (Clark ed. 1967); SAX, *supra* note 36, at 292-93. NEV. REV. STAT. ch. 445 (1967).
Discussion of the federal pollution abatement scheme is beyond the scope of this article. *Cf.* DEGLER & BLOOM, FEDERAL POLLUTION CONTROL PROGRAMS: WATER, AIR, AND SOLID WASTES (1969); Gindler, *supra* note 40, at ch. 15.
41. Hanks, *Law of Water in New Jersey,* 22 RUTGERS L. REV. 621, 688 (1968); MCGAUHEY, *supra* note 22; Warne, *The Water Crisis Is Present,* 9 NATURAL RESOURCES J. 53 (1969).
42. We regard as artificial the traditional dichotomy between "private" and "public" water rights. The delimits are extremely relative as to that

are based upon *need*.[43] This concept will be discussed further in Part III of this article.

III. SPECIFIC ASPECTS OF WATER LAW DOCTRINES

As indicated earlier, we do not propose to condemn water law doctrines *in toto* or *per sese*. Rather, and again, our contention is that the institutional interpretations, particularly those of the judiciary, of these doctrines are presently unsuitable for the new decade and the twentieth century. Furthermore, and at least in the abstract, the mere setting of a goal of enhancement of environmental quality will not necessarily conflict with water law doctrines; however, the method chosen for attainment of the goal may so conflict.[44]

As there are two basic water law doctrines in the United States concerning private rights, so there are, we assert perhaps deductively, two basic tenets to which we hold in the course of our discussion: First, the standard of "beneficial use," so critical to the appropriation doctrine of water rights, originated and developed in, and correspondingly became infected with, a socio-psychological (as well as an ethical) milieu of *environmental exploitation* by private interests, aided and abetted by public representatives.[45] We do not

---

sector of the population known as "public." Hence, the concept of "public" rights in water has practical meaning only relative to a given level of government, since public needs can be expressed in an orderly fashion only through government or allied institutional arrangements. *Cf.* BEUSCHER, *supra* note 39, at 65-81.

Yet we acknowledge that the dichotomy is rooted in the law as well as in resource management policy in general, and is most likely here to stay for quite some time. *See generally*, 1 WATERS AND WATER RIGHTS, *supra* note 29, at ch. 3; REIS, CONNECTICUT WATER LAW: JUDICIAL ALLOCATION OF WATER RESOURCES, pt. II, (1967).

43. GARRITY & NITZSCHKE, *supra* note 30, at 4. *See generally* 2 WATERS AND WATER RIGHTS, *supra* note 29; SAX, *supra* note 29, at 5-217.

44. Letter from Mr. Costa Pereos, third-year law student, University of Colorado, Boulder, Colorado to the authors, Jan. 15, 1970.

45. Personal conversation of co-author John C. Ohrenschall with Dr. Harold E. Thomas, Research Hydrologist, U.S. Geological Survey, Menlo Park, California, March 19, 1969. *See also*, 1 WATERS AND WATER RIGHTS, *supra* note 29, at §§ 15.1, 18.2(A); Dall, *supra* note 24; Trelease, *Policies for Water Law: Property Rights, Economic Forces and Public Regulation*, 5 NATURAL RESOURCES J. 1, 39 (1965) (stating, however, that "private enterprise and the market cannot be relied upon to always produce optimum results"); DAVIAU, MAINE'S LIFE BLOOD (1958); Lugar, *Water Rights Law and Management in West Virginia—Future Needs and Alternatives* 38 (Univ. of W. Virginia Public Affairs Series No. 4, 1967) (initially, development of resources for private interest believed good for the public interest; Scott, *Water Policy Evolution in Wisconsin: Protection of the Public Trust*, 54A WIS. ACAD. TRANSACTIONS 143, 145 (1965) (state legis-

dispute seriously the necessity of such a stage of exploitation to the socio-economic development of the American West in the aura of the Frontier and its Pioneers.[46] We contend, however, that even the West, as part of an American Society now mature and affluent, generally endowed with amenities, but on the verge of environmental crisis, has outgrown the stage of environmental exploitation. True, even in an affluent society, necessities must continue to be furnished, and hence traditionally recognized consumptive uses of water, such as for agriculture or irrigation, and for industrial uses, will continue to be "beneficial." But the relative importance of these traditional uses, of necessity, will be relegated in the new milieu of *environmental enhancement*. Correspondingly, the substantive content of the "beneficial use" standard will, and should, receive new interpretation and clarification in order to facilitate uses of water, even those that are non-consumptive or in-place, compatible with a quality environment. For example, we envisage a river basin in the West that formerly supported domestic, municipal, industrial, and agricultural uses, as now supporting both the former uses as well as uses for water-based recreation, fishing, and aesthetics.

Our second basic tenet is that the standard of "reasonable use," the hallmark of riparianism in practice, creates flexibility at the expense of instilling insecurity or imprecise definition of the water right.[47] Consequently, it seems to us, comprehensive environmental planning in riparian jurisdictions becomes impracticable. Although the judicial application of the reasonable-use standard may do justice to at least one of the parties in the particular law suit, the judicial determination is after-the-fact or too late, *i.e.*, after the harm may have already been done by virtue of the commence-

---

lation encouraging private, economic development but producing negative, ecological results); Waite, *Public Rights in Maine Waters*, ME. L. REV. 161, 178 (1965) (public encouragement of private, economic development may ignore public rights).

46. *See* 1 WATERS AND WATER RIGHTS, *supra* note 29, at § 18.2(A) ("federal policy in the expansion period [of the latter half of the Nineteenth Century]") (citing 1 WIEL, WATER RIGHTS IN THE WESTERN STATES (3d ed. 1911).

47. DALL, *supra* note 24, at 13; Trelease, *Legal Contributions to Water Resources Development* (paper delivered at the Water Resources Research Institute, Univ. of Conn., Oct. 19, 1966); Trelease, *supra* note 29, at 307.

ment of environmentally destructive, consumptive uses.[48] Public control may be necessary from the time of inception of water use.[49]

A. Beneficial Use.

We believe that the concept of beneficial use, the touchstone of the appropriation doctrine, and as interpreted to date, is deficient in that it seeks to prevent physical waste of water of one order at the expense of promoting environmental waste of more serious orders.[50]

The beneficial use concept has been fundamental to western water jurisprudence.[51] Nearly all the western states, by constitutional or statutory provision, hinge the acquisition of the water right upon this concept.[52] Physical waste of water is the antithesis of beneficial use.[53] Thus,

48. Trelease, *supra* note 47; Trelease, *supra* note 29, at 317.
49. Trelease, *supra* note 29, at 317.
50. Even in jurisdictions such as Nevada that presently follow the appropriation doctrine as to "all sources of water supply" (NEV. REV. STAT. § 533.025 (1967)), the beneficial use standard is circumscribed by the concept of reasonableness, NEV. REV. STAT. § 533.070(1) (1967): "The quantity of water . . . which may hereafter be appropriated . . . shall be limited to such water as shall reasonably be required for the beneficial use to be served." Other wholly or mixed appropriation jurisdictions fuse the "reasonable" and "beneficial use" standards. *E.g.*, California, South Dakota, and Texas (*see* 1 WATERS AND WATER RIGHTS, *supra* note 29, § 19.2, at 86 (citing Albaugh v. Mt. Shasta Power Corp., 9 Cal.2d 751, 73 P.2d 217 (1937); S. D. CODE § 61.0102(6) (Supp. 1960); TEX. REV CIV. STAT., art. 7476 (1965).

    Conversely, some wholly or mixed riparian jurisdictions distinguish, as at common law, "natural" or "ordinary" (*e.g.*, domestic or household) uses of water from "artificial" or "extraordinary" uses (*e.g.*, business purposes or trade). *E.g.*, Connecticut (Dimmock v. City of New London, 245 A.2d 569 (1968); California and Texas (1 WATERS AND WATER RIGHTS, *supra* note 29, § 19.1, at 83-84 (citing Prather v. Hobert, 24 Cal. 2d 549, 150 P.2d 405 (1944)); HUTCHINS, THE TEXAS LAW OF WATER RIGHTS 369-75 (1961). Since "natural" uses involve necessity, and the content of "necessity" depends upon the application of the "beneficial use" standard, these relationships inject the concept of beneficial use into riparianism. *See*, 1 WATERS AND WATER RIGHTS, *supra* note 29, § 19.1, at 84. Further, a non-beneficial use may be unreasonable and, a beneficial "natural" use might reasonably take the entire source of supply. *Id.* *See also* notes 53-56, *infra* and accompanying text. In California, all water rights, including any riparian rights, are restricted to "reasonable and beneficial" uses. *See* CAL. CONST., art XIV, § 3. The preceding discussion should be distinguished from the two branches of riparianism, the natural flow rule and the reasonable use rule.
51. 1 WATERS AND WATER RIGHTS, *supra* note 29, § 19.2, at 85.
52. Constitution, *e.g.*, COLO. CONST., art XVI, § 6; IDAHO CONST., art. XV, §§ 1, 3; WYO. CONST., art. VIII, § 3. Statute, *e.g.*, NEV. REV. STAT. § 533.-035 (1967); N. D. CENT. CODE § 61-01-02 (1956); ORE. REV. STAT. § 540.-610 (1964). *See generally* 1 WATERS AND WATER RIGHTS, *supra* note 29, § 19.2, at 86.
53. *See* Finney County Water Users' Ass'n v. Graham Witch Co., 1 F.2d 650 (D. Colo. 1924).

> [B]eneficial use refers to the quantity of water diverted . . . , not to its availability in the source of supply. Thus, if one can make reasonable beneficial use of all unappropriated waters in a stream, he can lawfully appropriate the entire quantity.[54]

This reference of the beneficial use concept to quantity diverted, and not to available supply, when coupled with the corollary principle of priority, poses for use a most serious obstacle in appropriation jurisdictions to the attainment of environmental enhancement goals.

If the particular goal to be achieved requires that there be a minimum flow or amount of water in the source of supply, an appropriation jurisdiction may desire to implement a plan of appropriation of this minimum flow or amount for public use. Thus, if a collection of private citizens (conceptually and at the same time a segment of the public) desire the "use" of a body of water for aesthetic[55] purposes, how is this use to be implemented absent some scheme of condemnation and compensation to senior, established appropriators?[56]

A related, conceptual problem in the context of the "quantity diverted-available supply" paradox is that traditionally the very purpose of an appropriation of water has been "to take that which was before public property and re-

54. 1 WATERS AND WATER RIGHTS, *supra* note 29, § 19.2, at 86 (citing Albaugh v. Mt. Shasta Power Corp., 9 Cal.2d 751, 73 P.2d 217 (1937)).

55. The leading early case dealing with the general question of whether or not an appropriative use might be beneficial of water for aesthetic or scenic purposes was Empire Water & Power Co. RESOURCES BOARD, SNAKE RIVER BASIN OVERVIEW, 30 (1968). The Idaho State Engineer has remarked that as a practical matter, obtaining legal sanction of recreational uses of water (through a state constitutional amendment) could be triggered through his denying some future application from the Federal Bureau of Reclamation or Corps of Engineers for a storage permit (under Idaho law, *cf.*, IDAHO CODE ANN. ch. 2, § 42 (1949)) for a large, multiple-purpose project on the ground that recreational use could not be protected under state law. Personal conversation of co-author Edgar A. Imhoff with Mr. Keith Higginson, Idaho State Engineer, May, 1968.

56. *See* U.S. CONST., amend. XIV, § 1; Berman v. Parker, 348 U.S. 26 (1954). Economists have commented upon the hurdles involved in transferring water rights under the appropriation system due to the "slowness" of necessary legislative action and compensatory payments. *See,* Gray, *Value of Water for Recreation and Other Uses,* in PROCEEDINGS OF THE FOURTH ANNUAL NEW MEXICO WATER CONFERENCE: WATER AND WATER LAW 61 (1959). Co-author Edgar A. Imhoff, during his experience in New Mexico from 1961 to 1963 as State Resources Planner, found the transfer of water rights to recreational, or even to municipal, uses to be a difficult undertaking.

duce it to private ownership."[57] In the early, important case of *Lake Shore Duck Club v. Lake View Duck Club,*[58] the court opined that it was "utterly inconceivable that a valid appropriation of water can be made . . . when the beneficial use of which . . . will belong equally to every human being who seeks to enjoy it."[59] For us, interpretations of this sort must be completely restructured if any environmental quality goal is to be attained for any portion of the public numbering more than one legal entity.[60]

A subsidiary, related problem is that generally the appropriation doctrine has required an actual mechanical diversion of water.[61] We view this problem as relatively minor in that curative legislation would remedy it.

The substantive content of the beneficial use concept, like that of other legal standards, lacks certain specificities as the price for retaining the flexibility traditionally necessary to the process of judicial and administrative interpretation. Economists have long been critical of this deficiency.[62] In the absence of constitutional or statutory declarations of the use of water as beneficial for purposes such as recreation, aesthetics, fish and wildlife use, and low-flow augmentation for water quality considerations, environmental enhancement to those extents may depend solely upon judicial or administrative interpretation.

---

57. Lake Shore Duck Club v. Lake View Duck Club, 50 Utah 76, 166 P. 309, 311 (1917).
    The quoted excerpt is very expressive of the morality or ethic of early American resource law:
    > The modern concept of planning with its resultant policy formulation is set in terms of finding and expressing the *public* interest in a legal system which has for hundreds of years developed a *private* bias in respect to property rights [Emphasis added]. DALL, *supra* note 24.

    Most appropriation states by one means or another reassert the quoted judicial statement. *E.g.*, NEV. REV STAT. §§ 533.025, .030 (1967) (water belongs to the public, subject to appropriation).
58. 50 Utah 76, 166 P. 309 (1917).
59. *Id.* at 77, 166 P. 310.
60. We recognize, of course that members of the public may incorporate, associate, or utilize other forms in order to obtain the status of a legally recognizable entity.
61. *See* Simons v. Inyo Cerro Gordo Mining & Power Co., 48 Cal. App. 524, 192 P. 144 (1920). Stock-watering represents a logical exception. *See generally* Steptoe Livestock Co. v. Gulley, 53 Nev. 163, 295 P. 772 (1931).
62. *Cf.* Ciriacy—Wantrup, *Concepts Used As Economic Criteria for a System of Water Rights,* in THE LAW OF WATER ALLOCATION IN THE EASTERN UNITED STATES 531 (Haber & Bergen ed. 1958).

We have earlier indicated beneficial use to be the antithesis of physical waste of water.[63] Generally, the courts and administrative agencies have, as concerns diversions for appropriative uses, permitted as reasonable *some* physical waste.[64] The problem raised when this waste is attempted to be salvaged, leads us to the next topic.

B. Appurtenance Requirement.

Generally, the appurtenance rule in appropriation law ties the water right to the place of use.[65] Sax has shown that application of this rule involves transverse considerations of such traditional issues as beneficial use (at least insofar as concerns the scope of extent of an appropriative right), place of measurement of the appropriative right (at the point of diversion or at the place of use?), and the general prohibition on physical waste.[66]

If the attainmnt of any particular environmental goal depends upon the reduction of physical waste through the use of salvaged water, the appurtenance rule may burden the attainment of this goal.[67] In the important case of *Salt River Valley Water Users' Ass'n v. Kovacovich,*[68] an appropriator for irrigation use engaged in water-conservation practices such as ditch improvement and lining. He then sought to apply the water thus saved to other lands owned by him, without applying for a permit that would have subjected him to the most junior position (as to the salvaged water) in the priority hierarchy of the permit system as administered. The court held that the doctrine of beneficial use required the conclusion that an "appurtenant" water

63. Finney County Water Users' Ass'n v. Graham Ditch Co., 1 F.2d 650 (D. Colo. 1924).
64. *E.g.*, Tulare Irrigation Dist. v. Lindsay—Strathmore Irrigation Dist., 3 Cal.2d 489, 45 P.2d 972 (1935) (judicial sanction of conveyance losses from earthen diversion ditches of between 40 to 45 per cent); In re Water Rights of Escalante Valley Drainage Area, Utah, 10 Utah 2d 77, 348 P.2d 679 (1960) (physical waste censured but not so as to eliminate or modify vested water rights); *but cf.*, Doherty v. Pratt, 34 Nev. 343, 124 P. 574 (1912) (loss of two-thirds of the supply *held* uneconomical).
65. *See* NEV. REV. STAT. § 533.040 (1967).
66. SAX, *supra* note 29, at 262-84.
67. *See* 1 WATERS AND WATER RIGHTS, *supra* note 27, at § 52.3(D). *See generally,* Clask, *Backgrounds and Trends in Water Salvage Law,* 15 ROCKY MTN. MIN. L. INST. 421 (1969).
68. 3 Ariz. App. 28, 411 P.2d 201 (1966).

right could not be so expanded through water conservation practices.[69] "Certainly any effort by users of water in Arizona tending toward conservation and more economical use of water is to be highly commended. *However, commendable practices do not in themself* [*sic*] *create legal rights . . . .*"[70] [Emphasis ours]

Although the *Kovacovich* case[71] does not represent the weight of authority,[72] the traditional philosophy of our wheel-and-deal, free-enterprise, Anglo-Saxon legal and political system, as partially exemplified by the gratuitous *dictum* to the effect that good conduct does not necessarily make legal rights, militates, in our opinion, against the achievement of any given environmental enhancement goal.

We have touched briefly upon certain aspects of the appurtenance rule in appropriation water law. We now wish to discuss the apurtenance rule in the context of riparianism.

Traditionally in riparian jurisdictions, rights to the use of water arise from an ownership interest in land adjoining or overlying the source of supply. And the place of use is limited to the riparian land. This is so because generally a non-riparian use is *per se* unreasonable.[73] In the absence of a "Great Ponds Ordinance"[74] or its equivalent, or in the absence of legislative or judicial declaration of navigability,[75] it appears to us that the State would have to possess a riparian proprietary interest in order to enhance, through police-power regulation or otherwise, a particular environmental quality goal.

In addition, under riparianism, there are complex and varying rules for determining the effects upon water rights

69. *Id.*
70. *Id.* at 30-31, 411 P.2d 202-03.
71. Salt River Valley Water Users' Ass'n v. Kovacovich, 3 Ariz. App. 28, 411 P.2d 201 (1966).
72. *Cf.* Note, 46 ORE. L. REV. 243 (1967).
73. Reis, *supra* note 42, at 24, 48; SAX, *supra* note 29, at 208.
74. This device:
> has been held to have secured state ownership of ponds covering more than ten acres in Maine, Massachusetts, and New Hampshire; the latter two states, however, have changed the definition so that it applies only to those ponds covering twenty or more acres [footnotes omitted]. 1 WATERS AND WATER RIGHTS, *supra* note 29, § 41.2(C), at 258-259.

75. *Cf.* SAX, *supra* note 29, at 292-98.

of the parceling and conveyancing out of riparian lands.[76] These rules inject uncertainty, for us, into any water management scheme for recreation or environmental quality, short of completely centralized, authoritarian control.

We propose to discuss further and at some length in this portion of our article the riparian standard of "reasonableness"[77] as well as the subject of "navigability" (in the context of riparianism[78]) under the heading "Inexpressibility of Public Rights."[79]

Before turning more generally to other aspects of riparianism, we wish to discuss briefly the principle of preferences. Much more characteristic of appropriation than of riparianism, this principle is based upon the recognition that in times of water scarcity, the standard of beneficial use must be structured in a hierarchy of uses.[80] The principle of preferences recognizes implicitly, as we stated earlier, that even in an affluent society, necessities must continue to be furnished.[81]

C. Principle of Preferences.

We have already sketched the nature and extent of this principle.[82] We do not question the universal, first-ranking of domestic or municipal use. We do feel, however, that recreational or aesthetic uses should be ranked over industrial and agricultural uses. The appropriate method for implementing this desirable environmental enhancement goal is open to debate and discussion.

Generally in appropriation jurisdictions, the hierarchy of preferences is set by constitution or statute. In some states, the ranking is left to the exercise of administrative discretion.[83] Statutory or constitutional rankings have the

76. *See* BEUSCHER, *supra* note 39, at 174-203.
77. *See generally* REIS, *supra* note 42, at 18-35.
78. *See generally* REIS, *supra* note 42, at Part Two; *see also* Scott, *supra* note 45, at 157-58, 163-64, 172-84.
79. *See* p. 281 *infra.*
80. *Cf.* HIRSCHLEIFER, DE HAVEN, & MILLIMAN, WATER SUPPLY: ECONOMICS, TECHNOLOGY, AND POLICY 78 (1963).
81. *See* p. 278 *supra.*
82. *Supra* notes 36-37 and accompanying text.
83. *E.g.*, NEV. REV. STAT. §§ 533.370, 534.120 (1967).

advantages of furnishing security, in the sense of protecting long-established uses (*e.g.,* agricultural), and of furnishing relative ease of administration. On the other hand, these institutional forms possess the disadvantages of imposing rigidity and inflexibility to the end of furthering economic waste. [84] In addition, the principle of preferences presents the issues of whether and how compensation should be made for displaced uses.[85]

We feel meritorious the example of the State of Washington.[86] There, when the principle of preferences must come into operation, the courts may determine, on a case-by-case basis, the hierarchy of use and implement it upon the ordering of the payment of compensation. We are of the opinion that this judicial arrangement reconciles the ultimately conflicting societal needs for security, flexibility, and ease of administration in the implementation of the principle of preferences. This is so because under our present form of government and political philosophy, all water-law interpretations rest ultimately with the courts so long as those decisions conform to expressed, constitutionally valid legislative intent.

D. The "Reasonableness" Standard.

Somewhat more than half the riparian jurisdictions in the United States follow the doctrine of reasonable use.[87] As we indicated earlier, a corollary of this doctrine is its correlative aspect of a "share the wealth system."[88] Dall has posited the correlative aspect as "the fundamental characteristic" of riparianism, with conflicts to be resolved by judicial decesion.[89]

---

84. Ciriacy—Wantrup, *Some Economic Issues in Water Rights,* 37 J. FARM ECON. 875, 879-82 (1955).
85. *Id.* at 880-81; SAX, *supra* note 36, at 160-61.
86. WASH. REV. CODE § 90.04.030 (1964) (cited in Ciriacy—Wantrup, *supra* note 81, at 881, 885).
87. GARRITY & NITZSCHKE, WATER LAW ATLAS 10-11 (1967).
88. *See* p. 268 *supra. Cf.* GARRITY & NITZSCHKE, *supra* note 84, at 10.
89. DALL, *Legal Aspects of Pennsylvania Water Resources Planning,* PROCEEDINGS OF THE WATER RESOURCES LAW COLLOQUIUM 13 (Penn. State Univ. Institute for Research on Land and Water Resources, Information Rep. No. 51, 1967).

Although criticism exists of riparian case law for the lack of its clear resolution of the standard of reasonable use, we feel that the flexibility inherent in any judicially-applied standard, coupled with the aspect of co-sharing, yield certain advantages that would facilitate environmental enhancement goals.[90] For example, the facility of riparianism under reasonable-use principles to accommodate new uses seems of value. We recognize the corresponding disadvantage of relative insecurity of the riparian water right.[91] We can only suggest that a balanced police power-condemnation management plan may approach a reconciliation of the needs generally in riparianism for security, flexibility, and sharing.[92]

Here we wish merely to comment upon aspects of reasonable use as judicially interpreted.

First, non-riparian use of water, at least in a different watershed, has been generally interpreted as unreasonable.[93] If the method of achieving a particular environmental enhancement goal were to depend upon a non-riparian use, we would desire to see a change of judicial interpretation of the "reasonableness" standard.[94]

Second, the right of every riparian owner is subject to the right of every other riparian owner under the doctrine of reasonable use and the correlative aspect of co-sharing. Thus, if the state or some other governmental entity were to become a riparian owner and formulate a plan for environmental enhancement, the problem arises whether the use of the water for this plan would be reasonable in terms of the other riparian uses. If the other riparians are benefited by the environmental enhancement plan, this collective benefit might be a

90. *E.g.*, Trelease, *A Model State Water Code for River Basin Development*, 22 LAW & CONTEMP. PROB. 301, 314 (1957).

91. *See also* note 4 *supra* and accompanying text. Another disadvantage is the dichotomy between public water courses and private water courses. *See* note 39 *supra* and acompanying text; *cf.* REIS, *supra* note 42, at 17.

92. *Cf.* Sax, *Takings and the Police Power*, 74 YALE L. J. 36 (1964); Trelease, *supra* note 90.

93. Rancho Santa Margarita v. Vail, 11 Cal.2d 501, 81 P.2d 533 (1938).

94. *See generally*, Lauer, *The Riparian Right as Property*, in WATER RESOURCES AND THE LAW, 131 (1958).

factor bearing upon the reasonableness of the environmental use.[95]

If the evironmental use should be deemed unreasonable (*e.g.*, as non-riparian), governmental implementation of an environmental enhancement plan might find recourse to a condemnation scheme. Under riparian law, compensation is granted for the displacement of existing uses of the water and of the inchoate potential for use that inheres in riparian land by virtue of its proximity to the source of supply.[96] One problem in such a condemnation scheme would be the valuation of these various rights. Another problem would be to determine whether the condemning authority is to acquire only the right to use so much of the water required by the particular project for the environmental enhancement goal, or to acquire all water rights from each downstream property affected by the project.[97] Finally, if riparian owners are benefited through land-value increases as a result of the environmental enhancement project, the question arises whether the condemnor or other governmental entity should or may properly assess these benefits against the riparians.

E. Inexpressibility of Public Rights.

In spite of our earlier censure[98] of the use of the distinction between "private" and "public" water rights, we wish now to discuss certain aspects of traditionally-regarded public water rights that for us impede the attainment of environmental quality goals.

1. *Appropriation Doctrine as Administered.*

In the administration of the appropriation doctrine through the generally prevalent "statutory permit" systems, adequate criteria or norms appear to be lacking to such constantly applied standards as "public interest" or "public welfare." These standards generally are determinative of the acquisition, administration, and management of water

95. Letter from Mr. Costa Pereos, third-year law student, University of Colorado, Boulder, Colorado, to the authors, Jan. 15, 1970.
96. SAX, WATER LAW PLANNING AND POLICY—CASES AND MATERIALS 201 (1968).
97. *Id.* at 205-6.
98. *Supra* note 42.

rights in appropriation jurisdictions.[99] Clark has indicated that generally in the permit jurisdictions, the State Engineer or equivalent administrative agency determines the substantive content of the "public interest" or "public welfare" standard with no more aids to guide him than "memory, technical skill and some economics and political sensitivity."[100] Perhaps these attributes, though certainly commendable in any public office as important as that of water administrator in an appropriation doctrine state, are not sufficient for the coming, truly difficult areas of decision (*e.g.,* balancing of a traditional, consumptive uses *versus* certain recreational, aesthetic, and wild-life values). "For the wise use of natural resources is only incidentally a matter of engineering and technology."[101]

This is not to suggest internecine struggles among resource professionals. Judicial review exists generally to oversee the administration of western water laws.[102] Meritorious is the experience of some states that have vested the administrative control over water in a board of several officials rather than in a single personage such as a State Engineer, or in regional or local management districts.[103] We can say only that in order to meet whatever environmental goals a state may formulate, new interpretations, with perhaps correspondingly new or modified institutional structures, will be necessary of such traditional standards as "public interest" or "public welfare."[104]

2. *Riparian Navigability.*

It is evident that the non-riparian public exerts many non-ownership demands upon water that may involve no consumptive withdrawals. Yet these non-riparians are protect-

99. *E.g.,* Clark, *New Mexico Water Law Since 1955,* 2 NATURAL RESOURCES J. 484 (1962).
100. *Id.* at 560.
101. *Id.* at 561.
102. *E.g.,* NEV. REV. STAT. §§ 533.450, .455 (1967).
103. *E.g.,* Oregon State Water Resources Board, ORE. REV. STAT. §§ 536.210, *et. seq.* (1967); water organizations in California, ROGERS & NICHOLS, WATER FOR CALIFORNIA, pt. III (1967).
104. *Cf.* Fox & Craine, *Organizational Arrangements for Water Development,* 2 NATURAL RESOURCES J. 1 (1962); Wengert, *Resource Development and the Public Interest: A Challenge for Research,* 1 NATURAL RESOURCES J. 207 (1961).

ed only in "public" waters, which traditionally are limited to "navigable" waters.[105] Generally, navigable waters receive a restrictive definition that limits these non-riparian uses to only the largest streams.[106] Implementation of public access is also a perennial problem.[107]

Wisconsin represents a noteworthy exception to the concept of restrictive definitions of navigability: "The Wisconsin court leads the country in (1) the liberality of its test for navigability and (2) the extensive character of the public rights which adhere once water has been found to be navigable."[108] Wisconsin has expanded the conventional test of navigability from notions of commercial transport to include such concepts as pleasure boating and enjoyment of scenic beauty. Indeed, it may be posited that Wisconsin is among the leaders of those who are concerned with environmental protection and enhancement. Other states are re-examining their concepts of navigability.[109]

3. *Intra-Public Conflicts and Public-Private Conflicts.*

We have earlier indicated the conflicts that may arise when various segments of "the public" exert conflicting demands. We will proceed to cite a few examples of these conflicts, not to condemn the respective goals so demanded, but to underline the need for new or modified institutional arrangements[110] to resolve these conflicts.

First (and more generally), most appropriation jurisdictions assert public ownership of all waters, subject to the acquisition of rights for beneficial use therein.[111] These assertions base one of the most distinguishing theoretical

105. Trelease, *Legal Contributions to Water Resources Development* (paper delivered to Water Resources Research Institute, Univ. of Conn., Oct. 19, 1966).
106. Delogu, *How the State Enlarges the Public Water Use Rights*, in PROCEEDINGS OF WATER RIGHTS LAW CONFERENCE 40 (New England Council of Water Center Directors, Univ. of Mass., 1966).
107. *E.g.*, *Gun Lake Canal Battle Nearing End*, 5 MICH. RIPARIAN 6 (1969).
108. Buescher, *Wisconsin's Law of Water Use*, 30 WIS. BAR BULL. 46 (1958).
109. *E.g.*, 1 WATERS AND WATER RIGHTS § 41.3(B), at 262 n. 95 (Clark ed. 1967) (Minnesota, citing State v. Korrer, 127 Minn. 60, 148 N.W. 617 (1914), finding waters "navigable" if susceptible to any "appreciable public use"); Delogu, *supra* note 106 (Maine).
110. *Cf.* Fox and Craine, *supra* note 104, for an introduction to the literature.
111. *E.g.*, WATERS AND WATER RIGHTS, *supra* note 29.

characteristics of the appropriation doctrine, *viz.*: the place of beneficial use need have no proximity to the source of supply.[112] Concern has been expressed that this characteristic of the appropriation doctrine, if implemented to a logical conclusion, could so modify the water cycle of a source area as to upset ecological balances.[113] Protection of source areas in certain states does exist through so-called "area of origin" laws or other similar devices, but for different motives.[114]

Second, in the North Santa Clara Valley of California, the Santa Clara County Flood Control and Water Conservation District (hereafter the District) had been legislatively created to store floodwaters for eventual disposal through ground percolation or irrigation sales.[115] The District had been created largely by farming interests, but a new type of land owner came into prominence during the 1950's.[116] The latter could never understand why the District employees would empty reservoirs during the heat of a California summer when he desired to fish, boat, water-ski, or merely enjoy water-associated aesthetics. As a result of local dissatisfaction with the District's failure to provide environmental enhancement objectives, local citizens went to other water retailers, recreation planning was assumed by other local governmental entities, and the District form was changed through amalgamation of various agencies.[117]

As a third example, in Michigan the legislature has found it desirable to enact drain laws to facilitate agricultural development.[118] As is typical of the evolution of uncodified legislation, these laws have become complicated and contradictory such that now they are not fully understood, as will be admitted by the administrative agency (the Drain Commissioner) designated to implement these laws:[119] "The result

112. SAX, WATER LAW: CASES AND COMMENTARY 10 (1965).
113. *E.g.*, personal conversation of co-author John C. Ohrenschall with Mr. Victor R. Hill, Registered Professional Engineer, Carson City, Nevada, on February 24, 1970.
114. *See generally* SAX, *supra* note 96, at 71-77.
115. CAL. GEN. STAT. ANN. ch. 1405, act 7335 (Deering 1951).
116. Imhoff, A Discussion of the Alleged Mismanagement of Water Resources in the North Santa Clara Valley, *California* (unpublished paper, 1956).
117. *Id.*
118. Mich. Drain Code of 1956, MICH. REV. STAT. ANN. §§ 11.1001, *et. seq.* (1968).
119. *3,000 Minnesota [sic] Lakes Are Lost*, 5 MICH. RIPARIAN 13 (1969).

is an oft-occurring squabble between people vs [sic] people, and people vs [*sic*] government, which clutters-up court calendars and *fattens the purses of the legal profession.*" [Emphasis ours].[120] Publicity of the sort above quoted illustrates the conflicts existing even among those *concerned* for a quality environment.[121] In recognition of the fact that draining one area may mean flooding of another, thus upsetting ecological balances, informed lay opinion in Michigan has recommended one of two different courses of action: (a) revision and codification of the drain laws or (b) abolition of the presently-structured administrative agency.[122]

In Maine, as a fourth example, Flood's Pond had been an excellent trout fishery from time immemorial.[123] Recently, these waters were literally appropriated by and for a municipal and industrial water supply. No riparian proprietors existed with sufficiently recognizable property interests to justify a comprehensive condemnation or management scheme that would preserve some the aquatic values of Flood's Pond. The net result was the *de facto* imposition of a preference for municipal and industrial uses over recreational and aquatic values. We do not decry the use or need of water for municipal or industrial purposes. Certainly these are necessary to society as we find it. We regret, however, the heedless destruction of one set of public needs for the sake of a different set.

4. *Standing.*

An extensive body of literature already exists on the standing-to-sue problem that traditionally, as a procedural obstacle, has impeded the concerned citizen who would turn to the courts to remedy environmental problems, but who lacks a sufficiently recognizable property interest in the controversy.[124] We merely wish to observe that the "standing"

120. *Id.*
121. *See* notes 24, 26, 27 *supra* and accompanying text.
122. *Supra* note 116.
123. Personal conversation between the co-authors at Boston, Massachusetts, Nov. 4, 1969.
124. *E.g.*, Morgan, *Standing to Sue and Conservation Values*, 38 U. COLO. L. REV. 391 (1966); Sax, *Public Rights in Public Resources: The Citizen's Role in Conservation and Development*, in IV CONTEMPORARY DEVELOP-

requirement can pose a hindrance to the achievement of environmental enhancement.[125]

5. *Interstate Problems.*

So far our article has concentrated upon state water laws. We have intentionally ignored the entire complex of federal-state relations as being beyond the scope of our article. We do wish, however, to touch upon one aspect of this complex in order to furnish an indication of the magnitude of the problems.

When an interstate stream is the subject of any state or local environmental enhancement plan, the federal government, in the course of its own programs of regulation or water distribution, may ignore the state or local plan.[126] Thus, ultimately, it appears to us that in order to guarantee its feasibility, any state or local plan for enhancement of the environment would require approval by Congress when interstate waters are involved. Some examples of questions that might be propounded in the context of these problems are: (a) Would the Doctrine of Equitable Apportionment[127] be applicable to the implementation of a state plan?

(b) Would the Commerce Clause[128] permit the Congress to "regulate out" a state environmental enhancement plan

MENTS IN WATER LAW 136 (Univ. of Texas Water Resources Symposium No. 4, Johnson & Lewis ed. 1970). *Cf.* Scenic Hudson Preservation Conference v. Federal Power Comm'n, 354 F.2d 608 (2d Cir. 1965), *cert. denied, sub. nom.* Consolidated Edison Co. v. Scenic Hudson Preservation Conference, 384 U.S. 941 (1966).

125. Noteworthy is the fact that at least as to the traditional, consumptive uses, the individual water user or claimant has been largely supplanted by the large, publicly-organized agency or district that resembles a public utility. *See* SAX, *supra* note 96, at 6. *Cf.* HUTCHINS, SELBY, & VOELKER, IRRIGATION-ENTERPRISE ORGANIZATIONS (U.S. Dep't. of Agriculture Circular No. 934, Oct. 1953).

126. *Cf.* Morton, *Federal-State Relations in the Field of Water Rights*, in FEDERAL WATER RIGHTS LEGISLATION 51 (Comm. on Interior and Insular Affairs Print No. 19, 86th Cong., 2d Sess., 1960).

See also Nevada ex rel. Shamberger v. United States, 165 F. Supp. 600 (D. Nev. 1958), *aff'd other grounds*, 279 F.2d 699 (9th Cir. 1960). In this case, the federal district court held in effect that until Congress took definite action to clarify federal-state relations in Western waters, the State of Nevada could not implement its own water policy in relation to uses or plans of the federal government. *Id.* at 609 (discussed in SAX, *supra* note 96, at 114-15). In addition, the federal government has asserted, without receiving a conclusive disposition from the United States Supreme Court, that it owns all the unappropriated, non-navigable water in the Western states. *See* Nebraska v. Wyoming, 325 U.S. 589 (1945).

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

128. U. S. CONST., art. I, § 8, cl. 3.

when a navigable stream is involved, irrespective of the doctrine of equitable apportionment?[129]

(c) Could interstate compacts be used to strengthen and implement state or local environmental plans?[130]

IV. CONCLUSION AND RECOMMENDATIONS: THE ULTIMATE DILEMMA?

We have examined one facet of the ecological continuum, water. We have discussed in broad-brush form how certain pertinent institutional arrangements, particularly water-law doctrines, burden the attainment in the United States of evironmental enhancement goals. Our premises have been that water-law doctrines, as interpreted, have caused a certain degree of confusion and conflicts among those concerned for a quality environment, such that well-defined orientation and perspectives of environmental quality enhancement goals are lacking.

Basically, our position is that of interpretations of such standards as "beneficial use," "reasonableness," "public interest," and "public welfare," rampant throughout water-law doctrines in the United States, need revamping and updating to meet contemporary and future needs for recreation, aesthetics, and other environmental goals. Once these interpretations are modernized, environmental enhancement goals should become better-defined for the planner as well as for the decision-makers in our society.

We recommend the following:

A. Beneficial use should be interpreted so as to refer to, or at least be oriented toward, the availability of water in the source of supply, in contradistinction to the quantity of

129. For a discussion of navigability under federal concepts, *see generally* Morreale, *Federal Power in Western Waters: The Navigation Power and the Rule of No Compensation*, 3 NATURAL RESOURCES J. 1 (1963); SAX, *supra* note 96, at 291-98.

130. U. S. CONST. art. I, § 10, cl. 3. Of future interest will be the progress of the bi-state agency from California and Nevada known as the Tahoe Regional Planning Agency (see the Tahoe Regional Planning Compact, Pub. L. No. 91-148, ratified Dec. 18, 1969). This areawide agency possesses planning and enforcement powers to exercise water quality and other environmental controls in the Lake Tahoe Basin.

water diverted from that source of supply. At least three implications follow immediately from this recommendation:

(1) Water laws will require restructuring to harmonize with scientific concepts of the hydrologic cycle,[131] and

(2) the appropriation doctrine will require acceptance of concepts of involuntary co-sharing.[132] Hence, under the appropriation doctrine, interpretations of priority or vested rights that militate against any possible sharing of an appropriation of water among more than one user, should be restructured, even if a scheme of condemnation or other compensated regulation is necessary. We are certainly aware of the constitutional problems involved, particularly those of justifying "public use" or "public purpose."[133] Finally,

(3) beneficial use must be allowed to insure to non-traditional forms of private ownership as well as to additional or modified forms of "public" ownership.

B. Uniform recognition should be given, preferably through constitutional provision, that uses are beneficial of water for recreation, aesthetics or scenic values, fish and wildlife enhancement, and the like.[134]

C. Preferences should be uniformly established for a ranking of recreational and aesthetic uses over all others, save domestic and, possibly, municipal if interpreted so as to exclude industrial.[135]

D. Any interpretation of the appropriation doctrine requiring an actual mechanical diversion should be abolished.

131. *See* 1 WATERS AND WATER RIGHTS, *supra* note 109, at § 3, for an introduction to the literature on this subject.

132. Forms of voluntary co-sharing are already common. *E.g.*, NEV. REV. STAT. § 533.075 (1967) (rotation). *See generally*, TRELEASE, BLOOMENTHAL & GERAUD, CASES AND MATERIALS ON NATURAL RESOURCES 152-53 (1965).

A form of *de facto*, enforced co-sharing exists in Nevada. *See* HENNEN, HUMBOLDT RIVER WATER DISTRIBUTION, PART I - PROBLEMS 14 (1964) (practice of the State Engineer to administer separately tributary priorities from mainstream priorities on the Humboldt River system).

133. *See* Berman v. Parker, 348 U.S. 26 (1954); 2 NICHOLS, EMINENT DOMAIN §§ 7.1, .2 (3d ed. Sackman rev. 1963); Kauper, *Basic Principles of Eminent Domain*, 35 MICH. S.B.J. 10, 14-15 (Oct. 1956).

134. *Cf.* Carter, *Conservation Law I: Seeking a Breakthrough in the Courts*, 166 SCIENCE 1487, 1491 (Dec. 19, 1969) (citing the recent adoption by the New York electorate of a "conservation bill of rights" to amend the state constitution, and U.S. CONST. amend. IX as a substantive base for environmental rights).

135. *See* notes 82-86 *supra* and accompanying text.

E. The appurtenance rule under the appropriation doctrine should be interpreted so as to encourage the reduction of physical waste through the salvaging of water.

F. We believe, in general, that the "reasonableness" standard, particularly characteristic of riparianism in action, but also found in the appropriation doctrine, is salutary. This is so because "reasonableness" encourages co-sharing albeit at the expense of instilling insecurity of the water right. But the advantage of co-sharing in accommodating new uses, particularly novel uses that are coming to be related to enhancement of environmental quality, motivates us to recommend that the "reasonableness" standard in both water-law doctrines should be strengthened as much as constitutionally permissible. As indicated earlier, the flexibility of reasonable use should be tempered and strengthened by forms of public control from the inception of water use.[136]

G. Non-riparian use of water, in and of itself, should not defeat the use as being unreasonable, but should be merely one factor to be considered in the judicial or administrative determination of the reasonableness of the use.

H. The conveyancing rules should be harmonized and unified as to the determination of the effects of parceling riparian tracts upon the associated water rights.

I. Interpretations or definitions of riparian navigability should be uniformly liberalized to follow the Wisconsin example. Alternatively, use might be expanded of the "trust" device in order to facilitate "public" rights in water.[137]

J. We have written at length on the topic of inexpressibility of public rights. We feel that the appropriation doctrine, for example, as administered, although reasonably satisfactory, is deserving of improvement in the interpretation of standards such as "public interest" or "public welfare." New institutional arrangements, as opposed to the

136. *Supra* notes 44-46 and accompanying text.
137. *See* SAX, *supra* note 96, at 93, 294-95.

traditional, solitary administrative figure of a state engineer or his equivalent, should be forthcoming.[138]

K. Although the archaic "standing" requirement has already received considerable erosion, it should be abolished so as not to defeat a concerned citizen with an environmental complaint. New institutional arrangements may be necessary to harmonize or accommodate the abolition of the procedural, standing device that historically has protected court calendars from undue congestion.

L. Interstate problems will need to be solved to achieve comprehensive, long-range planning at all levels of government. In order that states or local governmental units may better plan and implement environmental enhancement goals, we repeat the popular admonition that Congress clarify federal-state water-rights relations.[139]

Reducing confusion and conflicts among concerned environmentalists as to goals to be pursued might be considered simply a function or task of multidisciplinary research.[140] Or, as we have attempted to indicate in this article, it might be a function of institutional innovation within the traditional constraints of our socio-economic society. But other voices in society speak more urgently.

If environmental law should follow the pattern of traditional tort litigation (and, for example, this would be facilitated by the adoption of merely one of the above recommendations, *viz.*: abolition of the "standing" requirement), we will undoubtedly witness the *ad infinitum* multiplication of damage or injunction suits, complete with "an army of pollution chasers, hot for those contingent fees [that will not] . . . do the environment any good."[141] This traditional de-

138. *Supra* notes 96-101 and accompanying text.

139. *E.g.*, S. Doc. No. 2530, 90th Cong., 1st Sess. (1967) (representative of the series of bills that have been introduced to clarify federal-state water relations. *See generally Hearings on S. Doc. No. 1275, Before the Sub-Comm. on Irrigation and Reclamation of the Senate Comm. on Interior and Insular Affairs*, 88th Cong., 2d Sess. (1964).

140. *Cf.* Renne & Fulcher, *Legal Research in Water Resources*, 4 LAND & WATER L. REV. 145 (1969).

141. Ways, *How to Think about the Environment*, FORTUNE MAGAZINE, Feb. 1970, at 165. *See also*, Main, *Conservationists at the Barricades*, FORTUNE MAGAZINE, Feb. 1970, at 151.

velopment would certainly ignore "the need for new legal forms more relevant to the problems of our own time."[142]

If enhancing environmental quality is viewed additionally as a population problem,[143] we will encounter a disquieting dilemma:

> [A]verting the threat of environment disaster is not so much a technical or political problem as it is a social and psychological problem.
>
> And this poses the most distrubing question of all. For it means a basic solution to the environment problem might be achieved in two ways. Either the broad social and psychological change will somehow occur as a voluntary phenomenon which democratic government might influence but not control. Or government might attempt to force a solution without waiting for the social and psychological change, sacrificing cherished traditions of personal freedom for the sake of survival.[144]

Ultimately, and we express this more as a matter of socio-ethical concern rather than as a legalistic-institutional conclusion, in order to solve the spectrum of environmental problems affecting the ecological continuum, of which water is only a part, society will have to choose between adoption of "an authoritarian cure *versus* [retention of] a democratic disease."

---

142. Ways, *supra* note 141.

143. *See* Squier, *Defuse the Bomb*, 48 REED COLLEGE BULL. 4 (Nov. 1969): "[D]efusing the population bomb" requires massive changes in what society may deem as acceptable life styles and social behavior. . . . Fundamental reorganizations of society is necessary, and necessary now."

144. Editorial, *More Than Pollution*, The Wall Street Journal, Jan. 23, 1970, at 6; *cf.* Address by Congressman Paul N. McCloskey, Jr. (Calif.) to Conference on Law and Environment, in Warrenton, Va., Sep. 11-12, 1969, (sponsored by the Conservation Foundation, Washington, D.C., and the Conservation and Research Foundation, New London, Conn.):

> I think perhaps the true enemy of preservation of our environment is our own system of government, and by that I mean that the local government which is entirely depedent upon the property tax and the increase of its payroll structure is the true enemy of conservation today. It may be that we must revise the entire structure of the United States as to taxes, that conservation can never be accomplished so long as a local government . . . must as a means of its financial survival get new tax base, new development, new payrolls into its boundaries. (cited in CONSERVATION FOUNDATION LETTER, Sept. 30, 1969, at 8.)