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Protecting Waste Assimilation Streamflows by the Law of Water Allocation, Nuisance, and Public Trust, and by Environmental Statutes

Peter N. Davis
University of Missouri School of Law, DavisPN@missouri.edu

PETER N. DAVIS*

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ABSTRACT

Both federal and state water pollution control statutes require dramatic reductions in waste discharges, but not their total elimination. Those statutes require establishing water quality standards for receiving waters and presume that they will be adequate to assimilate the residual post-treatment wastes. But nothing in those statutes assures that minimum flows for waste assimilation in fact will remain in existence. Neither the common law nor eastern and western diversion permit statutes expressly provide direct means for establishing such minimum flows. Indirect means do exist, however, for establishing minimum protected flows for residual waste assimilation. Those means include establishing minimum flows for fish and wildlife habitat and recreation purposes in some eastern diversion permit states, authorizing appropriations for the same purposes in some western states, and requiring protection of environmental values in those states that recognize the public trust or have enacted environmental protection statutes. Because of the haphazard and inadequate characteristics of those indirect means, states should establish direct regulatory authority for establishing minimum protected streamflows for waste assimilation.

INTRODUCTION

Current primary and secondary waste treatment technologies do not yield completely clean water. "The standard measure for treatment effectiveness is biological oxygen demand (BOD); secondary treatment typically removes 90 percent of the BOD, leaving the remainder to be treated by natural processes in the receiving stream."[1] In addition, waste treatment yields a large load of inorganic compounds which fertilize the

*Isidor Loeb Professor of Law, University of Missouri-Columbia. B.A. 1959, Haverford; LL.B. 1963, S.J.D. 1972, Univ. of Wisconsin. Member of Bars of Wisconsin, District of Columbia, Missouri, U.S. Supreme Court, and U.S. Patent & Trademark Office.

1. COUNCIL ON ENVIRONMENTAL QUALITY, FIRST ANNUAL ENVIRONMENTAL QUALITY REPORT 35 (1970) [hereinafter CEQ 1970 ANNUAL REPORT]; COUNCIL ON ENVIRONMENTAL QUALITY, SEVENTH ANNUAL REPORT 257-58 (1976) [hereinafter CEQ 1976 ANNUAL ENVIRONMENTAL QUALITY REPORT]; NATIONAL WATER COMM'N, WATER POLICIES FOR THE FUTURE 307 (1973); 1 F. GRAD, TREATISE ON ENVIRONMENTAL LAW § 3.01[1][b] (1973).

receiving waters and induce growth of aquatic vegetation.[2] Those residual wastes and compounds, and the by-products of the growth and death cycle of aquatic vegetation, are assimilated by the receiving waters.[3] To enable the natural processes of assimilation to take place without depleting too much oxygen from the water, a minimum quantity of flow must be left in the stream.[4] The quantity needed for assimilation depends on the waste discharge load.

Diversion of water for irrigation, manufacturing, and public water supply can reduce the flow available to an amount less than the minimum required for natural waste assimilative processes. Unless the volume and concentration of treated and untreated waste discharges can be reduced or the streamflow increased, the wastes will overwhelm the assimilative processes of the stream. That process will result in insufficient or zero oxygen levels in the water, fish kills and odors.[5] An appropriate balance between streamflow and waste discharges is essential to a healthy stream.

Water Pollution Control Statutes

The federal Clean Water Act regulates waste discharges from "point sources"[6] into "waters of the United States."[7] The latter term has been interpreted to encompass virtually any free-flowing watercourse, and is not limited to waters subject to the federal navigation power.[8] State water pollution control statutes generally regulate waste discharges into the same universe of watercourses, and many, in addition, regulate discharges into groundwater.[9]

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2. CEQ 1970 ANNUAL REPORT, *supra* note 1, at 36, 40-41; NATIONAL WATER COMM'N, *supra* note 1, at 64-65, 307.

3. A. KNEESE & B. BOWER, MANAGING WATER QUALITY: ECONOMICS, TECHNOLOGY, INSTITUTIONS 16-17 (1968); CEQ 1970 ANNUAL REPORT, *supra* note 1, at 35; Beck & Goplerud, *Water Pollution and Water Quality: Legal Controls*, in 3 WATERS & WATER RIGHTS § 202.3 (R. Clark 2d ed. 1984 & Supp. 1985).

4. A. KNEESE & B. BOWER, *supra* note 3, at 19-27; CEQ 1970 ANNUAL REPORT, *supra* note 1, at 40-41; Beck & Goplerud, *supra* note 3, at 7-8; F. GRAD, *supra* note 1, § 3.01[1][b].

5. BOUGHEY, MAN AND THE ENVIRONMENT 345-49 (1971); A. KNEESE & B. BOWER, *supra* note 3, at 19-27; Edmondson, *Fresh Water Pollution*, in ENVIRONMENT: RESOURCES, POLLUTION & SOCIETY 252-57 (W. Murdock ed. 1971); CEQ 1970 ANNUAL REPORT, *supra* note 1, at 30-31, 40-41; Beck & Goplerud, *supra* note 3, at 7-8; GRAD, *supra* note 1, § 3.01[1][b].

6. Clean Water Act §§ 502(12), (14), 33 U.S.C. §§ 1362(12), (14) (1982); United States v. Earth Sciences, Inc., 599 F.2d 368, 373 (10th Cir. 1979). *See generally*, Beck & Goplerud, *supra* note 3, at 88-92; S. NOVICK, D. STEVER & M. MELLON, LAW OF ENVIRONMENTAL PROTECTION 12-49 to -50 (1987).

7. Clean Water Act § 502(7), 33 U.S.C. § 1362(7) (1982).

8. United States v. Riverside Bayview Homes, Inc., 474 U.S. 121 (1985); United States v. Ashland Oil & Transp. Co., 504 F.2d 1317 (6th Cir. 1974); P.F.Z. Properties, Inc. v. Train, 393 F.Supp. 1370 (D.D.C. 1975). *See generally*, Beck & Goplerud, *supra* note 3, at 71-82; S. NOVICK, D. STEVER & M. MELLON, *supra* note 6, at 12-48 to -49.

9. The state water pollution control statutes exist in all 50 states and are too numerous to cite in this portion of the article.

Federal and state statutory regulation of waste discharges is grounded on a system of discharge permits, national treatment performance standards, and water quality standards for receiving waters. The Clean Water Act emphasizes the technological approach rather than the water quality approach to regulation. Hence, waste dischargers are expected to accomplish mandated waste reductions based on technological ability rather than to achieve or maintain predetermined water quality characteristics in receiving waters.[10]

Under both federal and state water pollution control statutes, waste dischargers are required to obtain discharge permits.[11] Individualized effluent limitations are imposed by each waste discharge permit.[12]Those effluent limitations must reflect achievement of the "best practicable control technology currently available" mandated for 1977,[13] and progress toward "best available technology economically achievable" mandated for 1989.[14] At a minimum, all waste dischargers must treat their wastes at least to the levels specified by the national performance standards.[15] Individualized effluent limitations may reflect those uniform minimums, or may incorporate more stringent treatment requirements based on peculiarities of the permittee's waste effluent, more stringent state treatment policies and requirements, or the characteristics of the receiving waters.[16]

Role of Water Quality Standards

In the late 1960s, states were required to establish water quality standards for receiving waters.[17] Today, they are required to update them periodically.[18] Those standards reflect designations made by the states for

10. *See generally,* Beck & Goplerud, *supra* note 3, at 231-33; 2 S. NOVICK, D. STEVER & M. MELLON, *supra* note 6, at 12-10 to -11, 12-18 to -19.

11. Clean Water Act §§ 301(a); 402(a); 33 U.S.C. §§ 1311(a), 1342(a) (1982). *See generally,* Beck & Goplerud, *supra* note 3, at 134-39; S. NOVICK, D. STEVER & M. MELLON, *supra* note 6, at 12-59 to -63.

12. Clean Water Act §§ 301(b), (e), 304(b), 33 U.S.C. §§ 1311(b), (e), 1314(b) (1982).

13. Clean Water Act § 301(b)(1), 33 U.S.C. § 1311(b)(1) (1982). *See generally,* Beck & Goplerud, *supra* note 3, at 92-105; S. NOVICK, D. STEVER & M. MELLON, *supra* note 6, at 12-68 to -76.

14. Clean Water Act § 301(b)(2), 33 U.S.C. § 1311(b)(2) (1982), as amended in 1987 by P.L. No. 100-04, § 301(c)-(d), 101 Stat. 29 (1987). *See generally,* Beck & Goplerud, *supra* note 3, at 105-06; S. NOVICK, D. STEVER & M. MELLON, *supra* note 6, at 12-76 to -92.

15. Clean Water Act §§ 304(e), 306, 33 U.S.C. §§ 1314(e), 1316 (1982). *See generally,* Beck & Goplerud, *supra* note 3, at 106; S. NOVICK, D. STEVER & M. MELLON, *supra* note 6, at 12-96 to -100.

16. Clean Water Act § 302, 33 U.S.C. § 1312 (1982). *See generally,* Beck & Goplerud, *supra* note 3, at 233.

17. Clean Water Act § 303, 33 U.S.C. § 1313 (1982). *See generally,* Beck & Goplerud, *supra* note 3, at 183-94; S. NOVICK, D. STEVER & M. MELLON, *supra* note 6, at 12-103 to -110.

18. Clean Water Act § 303(e) (amended by P.L. No. 97-117, § 24, 95 Stat. 1632 (1981), 33 U.S.C. §§ 1313(e), 1313(a) (1982).

use of various reaches of watercourses, such as aquatic habitat, public water supply, water contact sports, industrial water supply, or waste assimilation. They also reflect, subject to federal minimum standards, the appropriate characteristics of water for those uses. The water quality standards are used as benchmarks for measuring the effectiveness of water pollution control regulation. Whenever the effluent limitations in a discharge permit prove to be insufficient for achieving the applicable water quality standard along a reach of a river, the treatment requirements in that permit can be tightened.[19]

The water quality standards and the effluent limitations in each permit presume a minimum flow for waste assimilation in the receiving watercourse. If that minimum flow is encroached upon by diversions, the water quality standards will become unachievable because the assimilative capacity of the watercourse will be reduced below the presumed amount. Such diversions threaten the integrity of the water pollution control program and may cause a degradation in water quality for instream and downstream water users.

Legislation Does Not Protect Assimilative Flows

The federal Clean Water Act does not provide any mechanism for protecting minimum streamflows for waste assimilation capacity. This is true even though the fundamental regulatory philosophy expects that such minimum flows will exist and will be maintained. State water pollution control statutes also do not provide such protection. Furthermore, there are no federal or state regulations establishing or protecting minimum assimilative flows.

This article examines various ways in which federal and state water pollution and water use control agencies, individual waste dischargers, and water users might protect minimum flows for waste assimilation. It also examines the rights of water users to protect their water supplies from interfering waste discharges. The legal interrelationship between water uses and wastes discharges is governed by federal and state water pollution control statutes, state water diversion permit statutes, the common law of nuisance, the public trust doctrine, and environmental protection statutes. That interrelationship also is affected by the differing water allocation laws of the eastern and western states.

LAW OF WATER ALLOCATION

The law of water allocation affects the relationship between water uses and waste discharges. The systems of water allocation in the United States are divided into two great groups. The eastern states adopted the riparian

19. Clean Water Act § 302, 33 U.S.C. § 1312 (1982).

doctrine in the first half of the nineteenth century. Today, about half of them have enacted diversion permit statutes to supplant riparian rights. By contrast, the western states adopted the prior appropriation system by case decision in the second half of the nineteenth century. Today, they enforce the prior appropriation system through diversion permit statutes. Both the eastern doctrine of riparian rights and the western doctrine of prior appropriation emphasize water quantity allocation, but also address water quality rights.

Eastern States

Riparian Rights

In most of the thirty-one eastern states, the right to use water is governed by the riparian doctrine. The American "reasonable use" version was first formulated in 1827 in the landmark decision of *Tyler v. Wilkinson*.[20] It spread rapidly throughout the eastern states,[21] to some western states,[22]

20. 24 F.Cas. 472 (C.C.D.R.I. 1827) (No. 14,312).

While the English cases cited by Circuit Justice Story in *Tyler* contain some small elements of the riparian doctrine, such as Wright v. Howard, 1 Sim. & St. 190, 57 Eng. Rep. 76 (1823), the principal influences appear to be the cited early American cases. The New York cases appear to have been particularly influential: Palmer v. Mulligan, 3 Cai. R. 308 (N.Y. Sup. Ct. 1805); Platt v. Johnson, 15 Johns. 213 (N.Y. Sup. Ct. 1818); Merritt v. Brinkerhoff, 17 Johns. 306 (N.Y. Sup. Ct. 1820). On the pre-*Tyler* English cases, see Lauer, *The Common Law Background of the Riparian Doctrine*, 28 MO. L. REV. 60 (1963); Murphy, *English Water Law Doctrines Before 1400*, 1 AM. J. LEGAL HIST. 103 (1957).

On the historical origins of the riparian doctrine generally, and the controversy between the proponents of a common law origin and a civil law origin, see Davis, *The Right to Use Water in the Eastern States*, in 7 WATERS AND WATER RIGHTS 27, 28-35 (R. Clark ed. 1976, Supp. 1978); Maass & Zobel, *Anglo-American Water Law: Who Appropriated the Riparian Doctrine?*, 10 PUB. POLICY 109 (1961) (Yearbook of Grad. Sch. Pub. Admin., Harv. Univ.); Wiel, *Waters: American Law and French Authority*, 33 HARV. L. REV. 133 (1919); Wiel, *Origin and Comparative Development of the Law of Watercourses in the Common Law and in the Civil Law*, 6 CALIF. L. REV. 245 (1918); S. WIEL, WATER RIGHTS IN THE WESTERN STATES 30-36 (3d ed. 1911).

21. *Tyler* and the riparian doctrine were described the very next year in the extremely influential writings of Chancellor James Kent and Joseph Angell. 3 J. KENT, COMMENTARIES 353-55 (1st ed. 1828); J. ANGELL, A TREATISE ON THE LAW OF WATERCOURSES (2d ed. 1832). Early American riparian rights cases include: Stein v. Burden, 29 Ala. 127 (1856); Evans v. Merriweather, 4 Ill. (3 Scam.) 492 (1842); Dilling v. Murray, 6 Ind. 324 (1855); Blanchard v. Baker, 8 Me. 253 (1832); Elliott v. Fitchburg R.R. Co., 64 Mass. (10 Cush.) 191 (1852); Hayes v. Waldron, 44 N.H. 580 (1863); Crooker v. Bragg, 10 Wend. 260 (N.Y. 1833); Howell v. M'Coy, 3 Rawle 256 (Pa. 1832).

In the eastern United States, Louisiana, a civil law state, was the only holdout. Its water allocation law was based on its version of the Code Napoleon. *See* La. Civil Code of 1808, art. 8, at 128 (copying Code Napoleon of 1804, art. 644); Martin v. Jett, 12 La. 501 (1838), which adopted a natural flow servitude. *See generally*, M. BORTON & H. ELLIS, SOME LEGAL ASPECTS OF WATER USE IN LOUISIANA (La. St. Univ. Agric. Expt. Sta. Bull. No. 537, June 1960); F. TRELEASE & G. GOULD, CASES AND MATERIALS ON WATER LAW 311-13 (4th ed. 1986).

22. Ferrea v. Knipe, 28 Cal. 341 (1865); Lux v. Haggin, 69 Cal. 255, 4 P. 919 (1884). 10 P. 674 (1886); Sturr v. Beck, 6 Dak. Terr. 71, 50 N.W. 486 (1888), *aff'd*, 133 U.S. 541 (1890); Vansickle v. Haines, 7 Nev. 249 (1872); Haas v. Choussard, 17 Tex. 588 (1856). *See generally*, 1 W. HUTCHINS, WATER RIGHTS LAWS IN THE NINETEEN WESTERN STATES 180-81, 186-92 (1971).

Abolition of the riparian doctrine in some of those western states and limitation of riparian rights in others is discussed in *id.* at 200-25.

and throughout the English-speaking world.[23] Until 25 years ago, it dominated the eastern states. Only since then have some eastern state supplanted the riparian doctrine with statutory permit systems.[24]

The riparian doctrine grants to persons whose lands abut watercourses (riparians) two contradictory rights: (1) a right to receive the natural flow of the stream in both quantity and quality, and (2) a right to make reasonable uses of the water in the stream.[25] Reasonable uses include domestic and livestock water supply, irrigation, manufacturing, and hydropower.[26] No riparian can take all the water, but must share it with other riparians; each is entitled only to his reasonable share.[27] A riparian's reasonable share is that which is reasonable and fair in light of the water uses made by other riparians, their effects on each other, the locations of uses and diversions, and streamflow characteristics.[28]

Water claimed under the riparian doctrine can be used only on riparian land.[29] Some jurisdictions declare nonriparian diversions actionable *per*

23. *Tyler* was described in England by C. GALE & T. WHATLEY, EASEMENTS 131-32, 331-38 (1st ed. 1839), and Acton v. Blundell, 12 M. & W. 324, 350, 152 Eng. Rep. 1223, 1233 (Ex. 1843) (dictum). The riparian doctrine was adopted in England by Wood v. Waud, 3 Ex. 748, 154 Eng. Rep. 1047 (1849), and Embrey v. Owen, 6 Ex. 353, 155 Eng. Rep. 579 (1851). It spread to the British Empire by Miner v. Gilmour, 12 Moore 131, 14 Eng. Rep. 861 (Low. Can. 1858); and Lord v. Commissioners for the City of Sydney, 12 Moore 473, 14 Eng. Rep. 991 (N.S.W. 1859).

24. *See infra* text accompanying notes 46-54.

25. Both aspects traditionally have been recited as part of the formulation of rights of riparians, and stem from the landmark case announcing the riparian doctrine. Tyler v. Wilkinson, 24 F.Cas. 472 (C.C.D.R.I. 1827) (No. 14,312). Cases emphasizing the natural flow aspect include: Moore v. California Oregon Power Co., 22 Cal.2d 725, 140 P.2d 798 (1943); McCord v. Big Brothers Movement, Inc., 120 N.J. Eq. 446, 185 A.1480 (1936). Cases emphasizing the reasonable use aspect include: Harris v. Brooks, 225 Ark. 436, 283 S.W.2d 129 (1955); Evans v. Merriweather, 4 Ill. (3 Scam.) 492 (1842); Bollinger v. Henry, 375 S.W.2d 161 (Mo. 1964).

On the riparian doctrine generally, see Butler, *Allocating Consumptive Water Rights in a Riparian Jurisdiction: Defining the Relationship Between Public and Private Interests*, 47 U. PITT. L. REV. 95, 125-37 (1985); Hutchins, *Background and Modern Developments in State Water-Rights Law*, in 1 WATERS AND WATER RIGHTS 57, 66-71 (R. Clark ed. 1967 Supp., 1978); Davis, *The Right to Use Water in the Eastern States*, in 7 WATERS AND WATER RIGHTS 27, 36-70 (R. Clark ed. 1976, Supp. 1978); Davis, *Eastern Water Diversion Permit Statutes: Precedents for Missouri?*, 47 Mo. L. Rev. 429, 432-39 (1982); Lauer, *Reflections on Riparianism*, 35 Mo. L. Rev. 1, 3-15 (1970).

26. Tyler v. Wilkinson, 24 F.Cas. 472 (C.C.D.R.I. 1827) (No. 14,312); Moore v. California Oregon Power Co., 22 Cal.2d 725, 140 P.2d 798 (1943); Prather v. Hoberg, 24 Cal.2d 549, 150 P.2d 405 (1944); Harris v. Brooks, 225 Ark. 436, 283 S.W.2d 129 (1955); Bollinger v. Henry, 375 S.W.2d 161 (Mo. 1964); Hazeltine v. Case, 46 Wis. 391, 1 N.W. 66 (1879).

27. Harris v. Brooks, 225 Ark. 436, 283 S.W.2d 129 (1955); Collens v. New Canaan Water Co., 155 Conn. 477, 234 A.2d 825 (1967); Bollinger v. Henry, 375 S.W.2d 161 (Mo. 1964).

28. Harris v. Brooks, 225 Ark. 436, 283 S.W.2d 129 (1955); Evans v. Merriweather, 4 Ill. (3 Scam.) 492 (1842); Townsend v. Bell, 167 N.Y. 462, 60 N.E. 757 (1901).

29. Two definitions of riparian land have evolved. One group of states limits use of water to that abutting land which has never been severed from the frontage throughout its chain-of-title history. Once nonabutting land has been severed, it can never regain riparian status by later being acquired and merged with the frontage tract. That is the "source of title" rule. Anaheim Union Water Co. v. Fuller, 150 Cal. 327, 88 P. 978 (1907); Watkins Land Co. v. Clements, 98 Tex. 578, 86 S.W. 733 (1905); Yearsley v. Cater, 149 Wash. 285, 270 P. 804 (1928).

The other group of states allows use of water on all tracts abutting or contiguous to an abutting tract, regardless of the chain-of-title history or time of acquisition. That is the "unity of title" rule. Clark v. Allaman, 71 Kan. 206, 80 P. 571 (1905); Jones v. Conn, 39 Ore. 30, 64 P. 855 (1901).

se even in the absence of physical interference.[30] Other jurisdictions make nonriparian diversion actionable only if injury occurs.[31] Still others permit transfer of riparian rights to nonriparian land.[32] Such nonriparians' rights are derivative of the grantor riparians' rights.[33]

Water Quality Protection

The riparian doctrine recognizes that use of water necessarily implies a reduction in quality. One court stated it this way:

> So the natural right . . . to have the water descend to [a riparian] in its pure state, fit to be used for the various purposes to which he may have occasion to apply it, must yield to the equal right in those who happen to be above him. Their use of the stream for mill purposes, for irrigation, watering cattle, and the manifold purposes for which they may lawfully use it, will tend to render the water more or less impure. Cultivating and fertilizing the lands bordering on the stream, and in which are its sources, their occupation by farm-houses and other erections, will unavoidably cause impurities to be carried into the stream. As the lands are subdivided and their occupation and use become multifarious, these causes will be rendered more operative, and their effects more perceptible. The water may thus be rendered unfit for many uses for which it had before been suitable; but so far as that condition results only from reasonable use of the stream in accordance with the common right, the lower riparian proprietor has no remedy.[34]

Interestingly, only one eastern state appears to have considered the riparian land question, and it adopted the "unity of title" rule. Consolidated Water Supply Co. v. State Hosp. for Criminal Insane, 66 Pa. Super. 610 (1917).

One eastern state has held that the contiguous tract cannot be riparian if it is located an unreasonable distance from the watercourse. Sparks Mfg. Co. v. Town of Newton, 57 N.J. Eq. 367, 41 A. 385 (1898), *rev'd on other grounds*, 60 N.J. Eq. 399, 45 A. 596 (1900). *See also* McCartney v. Londonderry & Lough Swilly Ry. 301 (1904 A.C.); Attwood v. Llay Main Collieries, 1 ch. 444 (1926). Those cases imply approval of the "unity of title" rule.

See generally, Butler, *supra* note 25, at 108-25; Farnham, *The Permissible Extent of Riparian Land*, 7 LAND & WATER L. REV. 31 (1972); Davis, *supra* note 25, at 614-11; Lauer, *supra* note 25, at 5-7; Davis, *Australian and American Water Allocation Systems Compared*, 9 B.C. INDUS. & COMM. L. REV. 647, 680-87 (1968).

30. Anaheim Union Water Co. v. Fuller, 150 Cal. 327, 88 P. 978 (1907). *See generally*, Butler, *supra* note 25, at 144-51.

31. Gehlen v. Knorr, 101 Iowa 700, 70 N.W. 757 (1897); Stratton v. Mt. Hermon Boys' School, 216 Mass. 83, 103 N.E. 87 (1913).

32. Pyle v. Gilbert, 245 Ga. 403, 265 S.E.2d 584 (1980); Gillis v. Chase, 67 N.H. 161, 31 A. 18 (1892); Lawrie v. Silsby, 76 Vt. 240, 56 A. 1106 (1904); Thurston v. City of Portsmouth, 205 Va. 909, 140 S.E.2d 678 (1965). *See generally*, Butler, *supra* note 25, at 139-44.

33. Smith v. Stanolind Oil & Gas Co., 197 Okla. 499, 172 P.2d 1002 (1946); State v. Apfelbacher, 167 Wis. 233, 167 N.W. 244 (1918).

34. Merrifield v. City of Worcester, 110 Mass. 216, 219 (1872). *Accord*, Tennessee Coal, Iron & R.R. Co. v. Hamilton, 100 Ala. 252, 14 So. 167 (1893); Lockwood v. Lawrence, 77 Me. 297 (1885); Parker v. American Woolen Co., 195 Mass. 591, 81 N.E. 468 (1907); Snow v. Parsons, 28 Vt. 459 (1856); see generally, Davis, *Theories of Water Pollution Litigation*, 1971 WIS. L. REV. 738, 745-50 [hereinafter *Water Pollution Litigation*].

This right has been interpreted as encompassing an affirmative right to discharge wastes to a reasonable extent.[35] An unreasonable waste discharge is one which causes an appreciable or substantial injury to other riparians, not merely slight inconveniences or occasional annoyances.[36] Factors to be considered in determining the reasonableness of a waste discharge include the nature of the respective uses, locations, and nature of discharges of the respective parties, the size and flow characteristics of the stream, the effect of the discharges on the water uses of the parties, the availablity and expense of alternative water supplies, the availability and expenses of abating the discharges, and the like.[37] A few cases, however, literally impose the natural flow obligation by forbidding any diminution in quality.[38]

Similar to diversion rights, the riparian right to discharge wastes is, of course, limited to riparians; nonriparians have no inherent right to discharge wastes.[39] Because they usually own abutting lands at the points of discharge, municipalities are considered riparians even though the wastes are collected from throughout the community.[40] No cases have discussed whether a riparian's right to discharge wastes can be transferred to a nonriparian. Cases permitting transfer of diversion rights, however, would suggest that a transfer of discharge rights ought to be valid in those jurisdictions.

The reasonable use formulation of the riparian doctrine requires a balancing between the interests of water users. Balancing also is required

35. Parker v. American Woolen Co., 195 Mass. 591, 81 N.E. 468 (1907). *See generally,* Davis, *Water Pollution Litigation, supra* note 34, at 745-49, 805.

36. Tennessee Coal, Iron & R.R. Co. v. Hamilton, 100 Ala. 252, 14 So. 167 (1893); Tetherington v. Donk Bros. Coal & Coke Co., 232 Ill. 522, 83 N.E. 1048 (1908); Muncie Pulp Co. v. Koontz, 33 Ind. App. 532, 70 N.E. 999 (1904); Townsend v. Bell, 167 N.Y. 462, 60 N.E. 757 (1901); Snow v. Parsons, 28 Vt. 459 (1856).

37. Red River Roller Mills v. Wright, 30 Minn. 249, 15 N.W. 167 (1883); Hayes v. Waldron, 44 N.H. 580 (1863); Townsend v. Bell, 167 N.Y. 462, 60 N.E. 757 (1901). *See generally, Water Pollution Litigation, supra* note 34, at 747-48.

38. City of Richmond v. Test, 18 Ind. App. 482, 48 N.E. 610 (1887); H. B. Bowling Coal Co. v. Ruffuer, 117 Tenn. 180, 100 S.W. 116 (1906).

39. Harvey Realty Co. v. Borough of Wallingford, 111 Conn. 352, 150 A. 60 (1930); Stanton v. St. Joseph's College, 254 A.2d 597 (Me. 1969); Sterling Iron & Zinc Co. v. Sparks Mfg. Co., 55 N.J. Eq. 824, 38 A. 426 (1897); McKinney v. Deneen, 231 N.C. 540, 58 S.E.2d 107 (1950).

40. Kraver v. Smith, 164 Ky. 674, 177 S.W. 286 (1915); City of Cape Girardeau v. Hunze, 314 Mo. 438, 284 S.W. 471 (1926); Simmons v. City of Paterson, 58 N.J. Eq. 1, 42 A. 749 (N.J. Ch. 1899), *rev'd on other grounds,* 60 N.J. Eq. 385, 45 A. 995 (1900); Clinard v. Town of Kernersville, 215 N.C. 745, 3 S.E.2d 267 (1939); Johnson v. Kraft-Phenix Cheese Corp., 19 Tenn. App. 648, 94 S.W.2d 54 (1935). These cases hold only that the municipality is a riparian at the point of discharge and do not address the question whether discharge of wastes collected from nonriparian land is a nonriparian activity. However, one municipal water supply diversion case reasoned in the opposite direction, that since discharge of wastes is a riparian activity, diversion of water to nonriparian land in the city also should be regarded as a riparian activity. City of Canton v. Shock, 66 Ohio St. 19, 63 N.E. 600 (1902). No other diversion case has adopted that reasoning.

between water users and waste dischargers. That means that water users cannot insist upon a prohibition of discharges,[41] and that dischargers cannot contaminate a watercourse so much so as to render it unusable by other riparians.[42] Because of the riparian land restriction, only riparian water users can enforce their rights against dischargers; nonriparian users cannot.[43]

Protection of Assimilative Capacity

There is no case law addressing the issue of whether a riparian waste discharger can enjoin riparian diversions which interfere with the assimilative capacity of a watercourse. However, there are a few riparian recreational use cases which have established minimum flows or lake levels that could not be interfered with by diversions.[44] By analogy, minimum flows for waste assimilation also might be protected judicially. There are two ways to analyse the question. First, riparians have a right to discharge and to take advantage of that assimilative capacity. Hence, an interfering diversion could be considered unreasonable. Second, a waste discharge could be considered a form of consumption which preempts the entire flow of the watercourse. Under the latter view, the discharging riparian would be using an unreasonably large proportion of the flow. Both of those views have found limited judicial favor with respect to water users in prior appropriation states.[45]

The ultimate test, I believe, ought to be based on the riparian com-

41. Stamford Extract Mfg. Co. v. Stamford Rolling Mills Co., 101 Conn. 310, 125 A. 623 (1924); Helfrich v. Catonsville Water Co., 74 Md. 269, 22 A. 72 (1891); Red Roller Mills v. Wright, 30 Minn. 249, 14 N.W. 167 (1883); Borough of Westville v. Whitney Home Builders, Inc., 40 N.J. Super. 62, 122 A.2d 233 (N.J. Sup. Ct. App. Div. 1956); McDonough v. Russell-Miller Milling Co., 38 N.D. 465, 165 N.W. 504 (1917); Barakis v. American Cyanamid Co., 161 F.Supp. 25 (N.D. Tex. 1958); Panther Coal Co. v. Looney, 185 Va. 758, 40 S.E.2d 298 (1946); McEvoy v. Taylor, 56 Wash. 357, 105 P. 851 (1909).

42. McLaughlin v. City of Hope, 107 Ark. 442, 155 S.W. 910 (1913); Muncie Pulp Co. v. Koontz, 33 Ind. App. 532, 70 N.E. 999 (1904); Ferguson v. Firmenich Mfg. Co., 77 Iowa 576, 42 N.W. 448 (1889); Merrifield v. City of Worcester, 110 Mass. 216 (1872); Parker v. American Woolen Co., 195 Mass. 591, 81 N.E. 468 (1907); Monroe Carp Pond Co. v. River Raisin Paper Co., 240 Mich. 279, 215 N.W. 325 (1927); Cook v. Town of Mebane, 191 N.C. 1, 131 S.E. 407 (1926); Duncan v. Union Buffalo Mills Co., 110 S.C. 302, 96 S.E. 522 (1917); American Cyanamid Co. v. Sparto, 267 F.2d 425 (5th Cir. 1959-Tex.); Packwood v. Mendota Coal & Coke Co., 84 Wash. 47, 146 P. 163 (1915); Thropp v. Harpers Ferry Paper Co., 142 F. 690 (4th Cir. 1902-Vt.).

43. Kennebunk, Kennebunkport & Wells Water Dist. v. Maine Turnpike Authority, 145 Me. 35, 71 A.2d 520 (1950). In this case, a nonriparian grantee of riparian diversionary rights was held to have no enforceable riparian water quality right.

44. Collens v. New Canaan Water Co., 155 Conn. 477, 234 A.2d 825 (1967); Harris v. Brooks, 225 Ark. 436, 283 S.W.2d 129 (1955). *See generally*, Davis, *The Riparian Right of Streamflow Protection in the Eastern States*, 36 ARK. L. REV. 48 (1983).

45. Compare Conrad v. Arrowhead Hot Springs Hotel Co., 103 Cal. 399, 37 P. 386 (1894), with Suffolk Gold Mining & Milling Co. v. San Miguel Consol. Mining & Milling Co., 9 Colo. App. 407, 48 P. 828 (1897).

parative reasonableness test. The issue ought to be whether the waste discharge unreasonably interferes with the right of other riparians to use or divert their reasonable shares. To the extent that a waste discharge does not unreasonably interfere with other uses of the water, waste assimilative capacity required by riparian waste dischargers ought to be protected from unreasonable diversions.

Eastern Diversion Permit Statutes

Fourteen of the thirty-one eastern states have enacted diversion permit statutes [eastern permit states].[46] With one exception, Mississippi,[47] the eastern permit states have eschewed the prior appropriation doctrine.[48] Allocation is based on ad hoc determinations of the public interest.[49] In practice, the eastern permit states have had enough water available to satisfy all permit applicants, and have not had to face the difficult question of deciding who will and who will not be granted a permit.[50]

Eight of the 14 eastern permit states are empowered by statute to establish minimum protected streamflows; they prohibit diversion of those protected minimum flows.[51] The usual policy purpose recited for estab-

46. *See generally,* Sherk, *Eastern Water Law,* 1 NAT. RES. & ENV'T 7 (1986); Ausness, *Water Rights Legislation in the East: A Program for Reform,* 24 WM. & MARY L. REV. 547 (1983); Davis, *Eastern Water Diversion Permit Statutes: Precedents for Missouri?,* 47 Mo. L. Rev. 429 (1982) [hereinafter *Eastern Water Diversion Permit Statutes*]; Ausness, *Water Use Permits in a Riparian State: Problems and Proposals,* 66 KY. L.J. 191 (1977-78).

47. MISS. CODE ANN. §§ 51-3-1 to -53 (1973 & 1987 Cumm. Supp.).

48. ARK. STAT. ANN. §§ 15-22-201 to -504 (1987); DEL. CODE ANN. tit. 7, §§ 6001-6060 (1983 Repl.); FLA. STAT. ANN. §§ 373.106-.191 (1987); GA. CODE ANN. §§ 17-502, 17-510.1 (1978, Supp. 1987); IND. CODE ANN. §§ 13-2-1-1 to -2-29-2 (Burns 1987 Repl.); IOWA CODE §§ 455A.1-.40 (1971 & 1987 Cumm. Supp.); KY. REV. STAT. §§ 151.100-.990 (1978, Supp. 1987); MD. NAT. RES. CODE ANN. §§ 8-101 to -407 (1983 Repl. & 1987 Cumm. Supp.); MINN. STAT. ANN. §§ 105.37-.81 (West 1987 & 1988 Cumm. Supp.); N.J. STAT. ANN. §§ 58:1A-2 to -17 (1982); N.Y. ENVT'L CONSERV. LAW §§ 15-0503 to -2723 (McKinney 1984 & 1988 Cumm. Supp.); N.C. GEN. STAT. §§ 143-215.11 to .61 (1987); WIS. STAT. ANN. § 30.18 (West 1973 & 1987 Cumm. Supp.)

49. *Eastern Water Diversion Permit Statutes, supra* note 46, at 450-53.

50. *Id.* at 453.

51. ARK. STAT. ANN. § 21-1306A(1) (1987); DEL. CODE ANN. tit. 7, § 6029(1)-(2) (by implication) (1983 Repl.)); FLA. STAT. ANN. §§ 373.042, -.223(3) (1987); IOWA CODE ANN. §§ 455A.1, .18, .22, .24 (1971 & 1987 Cumm Supp.); MINN. STAT. ANN. § 105.417 (1987); MISS. CODE ANN. §§ 51-3-3(i) to (j), -7(3) to (4) (1987). N.J. STAT. ANN. § 58:1A-3 (1982); WIS. STAT. ANN. § 31.34 (West 1973). *See generally* DAVIS, *supra* note 25, at 459-60; Sherk, *supra* note 46, at 55.

Some of those statutes provide a formula for calculating the minimum protected flow. Arkansas requires maintenance of flow sufficient to protect the rights of lower riparians and to protect dependent fish and wildlife. ARK. CODE ANN. § 15-22-210(1). Delaware requires maintenance of the average minimum flow for lowest seven consecutive days within the lowest flow year of record. DEL. CODE ANN. tit. 7, § 6029(1)-(2). Mississippi requires maintenance of the average minimum daily flow during each of the five lowest years during the preceding twenty years. MISS. CODE ANN. § 51-3-3(i). Wisconsin requires maintenance of 25% of natural low flow. WIS. STAT. ANN. § 31.34. By regulation, Iowa requires maintenance of the flow which is equal to or exceeded at least 84% of the time between Apr. and Sept. in years representative of normal conditions. Hines, *A Decade of Experience under the Iowa Water Permit System—Part I,* 7 NAT. RES. J. 499, 541-42 (1967).

lishing minimum streamflows is to protect fish and wildlife habitat and recreational uses of watercourses.[52] Only the Georgia statute recites protection of waste assimilative capacity as a purpose.[53] Presumably, the eastern permit states could establish minimum protected flows under existing statutory authority adequate to protect waste assimilative capacity because fish and wildlife habitat and recreation potential would be affected by reduced water quality.

The remaining 16 eastern common law states have no statutory regulation of diversions whatsoever. Hence, those states have no statutory authority for protecting the waste assimilative capacities of their receiving waters, although their water pollution control statutes presume adequate waste assimilative capacity exists and will be maintained.

Western States

Prior Appropriation

The seventeen western states and Alaska follow the prior appropriation doctrine in allocating water between users. The doctrine was recognized first in 1855 in the landmark case of *Irwin v. Phillips*.[54] It spread rapidly throughout many of the new western states,[55] although a few western states did not replace the riparian doctrine with prior appropriation until the first half of the twentieth century.[56]

The prior appropriation doctrine provides that users are entitled to take their full appropriations of water in historic chronological order of first use until the water supply is exhausted. In times of shortage, the latest appropriators will be cut off in inverse historic order until demand equals supply. That chronological allocation is described by the maxim "first in

52. ARK. CODE ANN. § 15-22-201 (1987); DEL. CODE ANN. tit. 7, § 6001(a)(4), (c)(3) (1983 Repl.); FLA. STAT. ANN. § 373.016(2) (1987); MINN. ANN. STAT. § 105.38(1) (West 1987).

53. GA. CODE § 17-502 (1978, Supp. 1987).

54. 5 Cal. 140 (1855). Various origins of the prior appropriation doctrine have been suggested, including mining customs, Spanish and Mexican influences, Mormon agricultural practices, and American Indian customs. *See generally*, A. DUNBAR, FORGING NEW RIGHTS IN WESTERN WATERS (1983); 1 HUTCHINS, WATER RIGHTS LAWS OF THE NINETEEN WESTERN STATES 159-65 (U.S. Dep't Agric. Misc. Pub. No. 1206, 1971) [hereinafter NINETEEN WESTERN STATES]; Hutchins, *Background and Modern Developments in State Water-Rights Law*, in 1 WATERS & WATER RIGHTS 57, 74-78 (R. Clark ed. 1967 & Supp. 1978) [hereinafter *Background*].

55. Early prior appropriation cases include: Noland v. Coon, 1 Alaska 36 (1890); Clough v. Wing, 2 Ariz. 371, 17 P. 453 (1888); Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882); Thorp v. Woolman, 1 Mont. 168 (1870); Lobdell v. Simpson, 2 Nev. 274 (1866); United States v. Rio Grande Dam & Irrigation Co., 9 N.M. 292, 51 P. 674 (1898), *rev'd on other grounds*, 174 U.S. 690 (1899). *See generally*, NINETEEN WESTERN STATES, *supra* note 54, at 159-75.

56. California Oregon Power Co. v. Beaver Portland Cement Co., 295 U.S. 142 (1935); State *ex rel.* Emery v. Knapp, 167 Kan. 546, 207 P.2d 440 (1949); Knight v. Grimes, 8 S.D. 517, 127 N.W.2d 708 (1964). *See generally*, NINETEEN WESTERN STATES, *supra* note 54, at 192-99.

time, first in right."[57] Appropriators are entitled to that definite quantity of water which they first took and used. A diversion from the watercourse[58] and application of a specific quantity of water[59] to a "beneficial use"[60] with due diligence[61] are conditions precedent to the appropriative right, which dates from the date of the claim to the water.[62] Water can be used on any land, riparian or nonriparian.[63] In this century, the prior appropriation systems in all western states have been administered under statutory permit systems.[64]

Water Quality Protection

Prior appropriation waste discharge cases hold that a senior appropriator cannot expect to retain natural quality of flow, but must expect some deterioration in quality by the activities of upstream junior appropriators. However, he is entitled to be free from unreasonable interference with

57. Irwin v. Phillips, 5 Cal. 140 (1855); Trade Dollar Consol. Mining Co. v. Fraser, 148 F. 585 (9th Cir. 1906) (applying Idaho law); Gunnison-Fayette Canal Co. v. Gunnison Irrigation Co., 22 Utah 2d 45, 448 P.2d 707 (1968); Rocky Ford Irrigation Co. v. Kents Lake Reservoir Co., 104 Utah 202, 135 P.2d 108 (1943).

On the prior appropriation doctrine, see generally, Clark, *The Colorado Doctrine: Surface-Water Rights by Appropriation Only*, in 5 WATERS & WATER RIGHTS 39, 66-149 (R. Clark ed. 1972 & Supp. 1978).

58. A diversion must involve either a man-made withdrawal of water from the stream or an impoundment of its flow. Lamont v. Riverside Irrigation Dist., 179 Colo. 134, 498 P.2d 1150 (1972); Walsh v. Wallace, 26 Nev. 299, 67 P. 914 (1902); State *ex rel.* Reynolds v. Miranda, 83 N.M. 445, 493 P.2d 409 (1972); Warner Valley Stock Co. v. Lynch, 215 Ore. 523, 336 P.2d 884 (1959); Crawford v. Lehi Irrigation Co., 10 Utah 2d 165, 350 P.2d 147 (1960); Hardy v. Beaver County Irrigation Co., 65 Utah 28, 234 P. 524 (1924).

59. Huffine v. Miller, 74 Mont. 50, 237 P. 1103 (1925); Crawford v. Lehi Irrigation Co., 10 Utah 2d 165, 350 P.2d 147 (1960); Sowards v. Meagher, 37 Utah 212, 108 P. 1112 (1910); Reno v. Richards, 32 Idaho 1, 178 P. 81 (1918).

60. Crawford v. Lehi Irrigation Co., 10 Utah 2d 165, 350 P.2d 147 (1960). A beneficial use traditionally has been defined as an economic use. Empire Water & Power Co. v. Cascade Town Co., 205 F. 123 (8th Cir. 1913) (applying Colo. law). Cases have held that diversions which do not enure to the exclusive benefit of the diverter cannot be beneficial uses. Lake Shore Duck Club v. Lake View Duck Club, 50 Utah 76, 166 P. 309 (1917). Beneficial uses include irrigation: Vineyard Land & Stock Co. v. Twin Falls Oakley Land & Water Co., 245 F. 30 (D. Nev. 1917); Santa Cruz Reservoir Co. v. Rameriz, 16 Ariz. 64, 141 P. 120 (1914); State *ex rel.* Silve v. District Court, 105 Mont. 106, 69 P.2d 972 (1937); stock watering: Ward v. Kidd, 87 Idaho 216, 392 P.2d 183 (1964); First State Bank v. McNew, 33 N.M. 414, 269 P. 56 (1928); mining: Fitzpatrick v. Montgomery, 20 Mont. 181, 50 P. 416 (1897); domestic uses: Silver Peak Mines v. Valcalda, 79 F. 886 (D. Nev. 1897); and industrial uses: Parker v. McIntyre, 47 Ariz. 484, 56 P.2d 1337 (1936).

61. City & County of Denver v. Northern Colo. Water Conserv. Dist., 130 Colo. 375, 276 P.2d 992 (1954); Crawford v. Lehi Irrigation Co., 10 Utah 2d 165, 350 P.2d 147 (1960).

62. City & County of Denver v. Northern Colo. Water Conserv. Dist., 130 Colo. 375, 276 P.2d 992 (1954); *In re* Humboldt River System, 77 Nev. 244, 362 P.2d 265 (1961); McGarry v. Thompson, 114 Utah 442, 201 P.2d 288 (1948).

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

64. *See generally*, Clark, *supra* note 57, at 99-107; NINETEEN WESTERN STATES, *supra* note 54, at 298-301; *Background*, *supra* note 54, at 94-124. See *infra* notes 68 & 70 and accompanying text for a discussion of prior appropriation permit systems.

the fair enjoyment of his prior appropriative right by material deterioration of water quality.[65]

Jurisdictions disagree whether a downstream junior appropriator must accept degraded water quality resulting from a senior appropriator's use. A California court held that the junior user takes the water as he finds it, both in quantity and quality; pollution resulting from a senior user's lawful use is considered part of his use.[66] By contrast, a Colorado court held that by rendering the watercourse unfit for diversionary uses by a junior user, a polluting senior user had unlawfully appropriated the entire flow of the watercourse. The senior user had not only appropriated the water he diverted, but also the entire flow left in the stream by rendering it unfit for their use.[67] Courts in most western states have not determined the water quality rights of junior appropriators.

The right to discharge wastes in prior appropriation cases is acknowledged in terms of water quality degradation stemming from water diversion and use. No court has considered whether there is an independent nondiversionary right to discharge wastes into a watercourse within the prior appropriation system. Traditional prior appropriation theory ought not to acknowledge such a right, since the conditions precedent to the appropriative right are not satisfied.

Statutory Prior Appropriation Permit Statutes

Beginning in the 1890s, the western states began enacting diversion permit statutes. They continued to recognize the case law principles of prior appropriation,[68] but required an application for a permit as a prerequisite for a valid appropriation.[69] Today all 17 western states, Alaska, and Mississippi (an eastern state) have prior appropriation permit statutes in force.[70]

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65. Dripps v. Allison's Mines Co., 45 Cal.App. 95, 187 P. 448 (1919); Farmers' Highline Canal & Reservoir Co. v. City of Golden, 129 Colo. 575, 272 P.2d 629 (1954); Ravndal v. Northfork Placers, 60 Idaho 305, 91 P.2d 368 (1939); Drake v. Smith, 54 Wash.2d 57, 337 P.2d 1059 (1959). *See generally,* NINETEEN WESTERN STATES, *supra* note 54, at 448-54.

66. Conrad v. Arrowhead Hot Springs Hotel Co., 103 Cal. 399, 37 P. 386 (1894).

67. Suffolk Gold Mining & Milling Co. v. San Miguel Consol. Mining & Milling Co., 9 Colo. App. 407, 48 P. 828 (1897).

68. Wyoming Hereford Ranch v. Hammond Packing Co., 33 Wyo. 14, 236 P. 764 (1925).

69. Parker v. McIntyre, 47 Ariz. 484, 56 P.2d 1337 (1936); Meridian, Ltd. v. City & County of San Francisco, 13 Cal. 2d 424, 91 P.2d 105 (1939); Enterprise Irrigation Dist. v. Tri-State Land Co., 92 Neb. 121, 138 N.W. 171 (1912); Harkey v. Smith, 31 N.M. 521, 247 P. 550 (1926); Staub v. Jensen, 180 Ore. 682, 178 P.2d 931 (1947); Hanson v. Salt Lake City, 115 Utah 404, 205 P.2d 255 (1949); Wyoming Hereford Ranch v. Hammond Packing Co., 33 Wyo. 14, 236 P. 764 (1925).

70. ALASKA STAT. §§ 46.15.010 to .180 (1984); ARIZ. REV. STAT. ANN. §§ 45-141 to -276 (1987); CAL. WATER CODE §§ 1200 to 2900 (West 1971 & Supp. 1988); COLO. REV. STAT. §§ 37-92-101 to -602 (1973 & 1985 Cumm. Supp.); IDAHO CODE §§ 42-201 to -352 (1987); KAN. STAT. ANN. §§ 82a-701 to -731 (1984); MISS. CODE ANN. §§ 51-3-1 to -53 (1987); MONT. CODE ANN. §§ 85-2-

Protection of Assimilative Capacity

The diversion and beneficial use prerequisites make it difficult, if not impossible, to preserve minimum flows for recreational purposes by filing for an appropriation. Water can be appropriated only by making a diversion and applying it to a beneficial use. Generally, an appropriation must involve either a diversion of water from the stream or impoundment of its flow by a dam.[71] Since instream uses involve neither, appropriations for instream uses, such as fish habitat, cannot be made under traditional law.[72] Traditional prior appropriation law does not permit recognition of an appropriative right for instream uses regardless of economic value. For example, no appropriation occurs when natural overflow is relied on for irrigation,[73] or when a marsh fed by natural river flow is used for commercial duck hunting[74] or for fish and wildlife habitat.[75] Hence, there is no basis under traditional theory for appropriating flow for protection of waste assimilative capacity.

Some western states have amended their prior appropriation statutes in ways which confer a greater ability on state agencies to protect waste assimilative capacity. These include the traditional authority to deny a permit if it would be contrary to the "public interest," recent declarations that waste assimilation is a public purpose and that fish habitat protection and recreation are beneficial uses, and authority for the state agency to make appropriations for fish habitat and recreation.

"Public Interest" Permit Denials. Minimum flows might be protected by denying permit applications for new appropriations or limiting the

101 to -431 (1987); NEB. REV. STAT. §§ 46-233 to -2,119 (1984 & 1987 Supp.); NEV. REV. STAT. §§ 533.325 to .540 (1986); N.M. STAT. ANN. §§ 72-1-1 to -2 (1985), 72-5-1 to -39 (1985 & 1987 Cumm. Supp.); N.D. CENT. CODE §§ 61-04-01 to -31 (1985); OKLA. STAT. tit. 82, §§ 105.1 to .32 (1988); ORE. REV. STAT. §§ 537.110 to .450 (1985); S.D. CODIFIED LAWS §§ 46-1-1 to -15, 46-2A-1 to -18, 46-5-1 to -49 (1987); TEX. WATER CODE ANN. §§ 11.001 to .186 (Vernon) (1988 Supp.); UTAH CODE ANN. §§ 73-1-1 to -5, -11, 73-3-1 to -29 (1987 Cumm. Supp.); WASH. REV. CODE ANN. §§ 90.03.010 to .030, 90.03-.250 to -.480 (1967 & 1987 Cumm. Supp.); WYO. STAT. ANN. §§ 41-3-101 to -105, -401 to -402 (1987 Cumm. Supp.).

71. *See supra* note 58.

72. Schodde v. Twin Falls Land & Water Co., 224 U.S. 107 (1912); Fullerton v. State Water Resources Control Bd., 90 Cal. App. 3d 590, 153 Cal. Rptr. 518 (1979); California Trout, Inc. v. State Water Resources Control Bd., 90 Cal. App. 3d 816, 153 Cal. Rptr. 672 (1979); Colorado River Conservation Dist. v. Rocky Mountain Power Co., 158 Colo. 331, 406 P.2d 798 (1965); State *ex rel.* Reynolds v. Miranda, 83 N.M. 443, 493 P.2d 409 (1972). *See generally,* Ausness, *Water Rights, The Public Trust Doctrine, and the Protection of Instream Uses,* 1986 U. ILL. L. REV. 407, 420-21; Tarlock, *Recent Developments in the Recognition of Instream Uses in Western Water Law,* 1975 UTAH L. REV. 871, 877-79, 883-84.

73. Warner Valley Stock Co. v. Lynch, 215 Ore. 523, 336 P.2d 884 (1959).

74. Lake Shore Duck Club v. Lake View Duck Club, 50 Utah 76, 166 P. 309 (1917).

75. California Trout, Inc. v. State Water Resources Control Bd., 90 Cal.App.3d 816, 153 Cal. Rptr. 672 (1979); Fullerton v. State Water Resources Control Bd., 90 Cal.App.3d 590, 153 Cal. Rptr. 518 (1979).

sizes of diversions. Some cases suggest that state agencies have authority to deny applications for appropriation permits where the use would not be a beneficial one or would be detrimental to the public welfare because it would do more harm than good.[76] However, courts probably would be very suspicious of a denial of a permit in order to protect an existing instream, and therefore traditionally nonappropriative, use. In one case, however, a court upheld the denial of a permit for a diversion which would lower the level of a recreational lake.[77] Furthermore, some states have limited sizes of diversions in order to preserve minimum flows. Such practices have been upheld for fish habitat protection purposes.[78]

Waste Assimilation a "Public Purpose". A direct method for protecting minimum flow for waste assimilation is to declare protection of water quality a "public purpose." Then, under a statute allowing the state agency to deny or limit a prior appropriation permit in order to protect the public interest, the agency could protect waste assimilation capacity.

In *Shokal v. Dunn*,[79] such a statute[80] was held valid. The agency imposed limits on the size of diversion to and on the quality of effluent from a proposed hydroelectric and fish propagation project in order to assure that receiving stream water quality standards would be complied with. The court held that "public interest" statutes in general were valid, that preserving water quality was in the public interest, and that the size of the appropriation and the quality of the return effluent could be conditioned to preserve the quality of water remaining in the stream.[81]

Only one other state appears to have enacted legislation declaring water quality protection to be a factor in determining whether a proposed diversion is consistent with the public interest. Mississippi, the only eastern

76. Tanner v. Bacon, 103 Utah 494, 136 P.2d 957 (1943); East Bay Muni. Util. Dist. v. Dep't of Public Works, 1 Cal.2d 476, 35 P.2d 1027 (1934) (making a hydropower appropriation subject to future appropriations for irrigation or municipal purposes).

77. *In re* Martha Lake Water Co., 152 Wash. 53, 277 P. 382 (1929).

78. Bank of America v. State Water Resources Control Bd., 42 Cal.App.3d 198, 116 Cal. Rptr. 770 (1974). *See generally,* Tarlock, *Appropriation for Instream Flow Maintenance: A Progress Report on "New" Public Western Water Rights,* 1978 UTAH L. REV. 211, 233-40.

79. 707 P.2d 441 (Idaho 1985).

80. IDAHO CODE § 42-1501 (1987 Cumm. Supp.) provided that it was "in the public interest" 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.

81. Shokal v. Dunn, 707 P.2d 441, 451-52 (Idaho 1985). The court concluded:

> It makes no sense whatsoever for Water Resources to blindly grant permit requests without regard to water quality regulations. Hence, Water Resources should condition the issuance of a permit on a showing by the applicant that a proposed facility will meet the mandatory water quality standards.

Id. at 452.

state to enact a prior appropriation system, specifically authorizes denial of permit applications for protection of water quality. That statute provides that no diversion should be allowed which impairs the effect of water quality standards based on minimum streamflows.[82]

Fish and Recreation a "Beneficial Use". Another method for curing difficulties imposed by the traditional requirements for an actual diversion and a beneficial use is to declare instream fish and wildlife habitat, and recreational uses to be beneficial uses. This has been done in a few states by case decision[83] and in several more states by statute.[84] Those cases and statutes reverse the traditional rule that such uses could not give rise to a valid appropriation. The rule change allows both private landowners and state agencies to make appropriations to preserve streamflows for fish and wildlife habitat and recreational purposes. Presumably, streamflows for waste assimilation could be preserved under the guise of such an appropriation.

Appropriations for Fish and Recreation. Several states have taken a more limited approach. They have enacted statutes empowering state agencies to appropriate unappropriated water for instream uses, such as fish and wildlife habitat preservation and recreation.[85] Other states authorize administrative withdrawal of unappropriated water.[86] Still other states

82. MISS. CODE ANN. § 51-3-7(5) (1987 Cumm. Supp.).

83. Brasher v. Gibson, 2 Ariz.App. 91, 406 P.2d 441 (1965); State *ex rel.* State Game Comm'n v. Red River Valley Co., 51 N.M. 207, 182 P.2d 421 (1945). *See generally,* Ausness, *supra* note 72, at 420.

84. ARIZ. REV. STAT. ANN. § 45-141(A) (1987); CAL. WATER CODE § 1243 (West 1988); COLO. REV. STAT. § 37-92-103(4) (1985 Supp.); MONT. CODE ANN. § 85-2-102(2)(a) (1987); NEV. REV. STAT. § 533.030(2) (1986); N.D. CENT. CODE §§ 61-04-01.1, -02, -06.1 (1985); ORE. REV. STAT. § 537.170(5)(a) (1985); TEX. WATER CODE ANN. § 11.023(7) (Vernon 1988 Supp.); WASH. REV. CODE § 90.54.020(1) (1987 Cumm. Supp.); WYO. STAT. § 41-3-1001 (1987 Cumm. Supp.). *See generally,* Ausness, *supra* note 72, at 420.

85. *See, e.g.,* COLO. REV. STAT. §§ 37-92-102(3), -103 (1985 Supp.); IDAHO CODE §§ 67-4301 to -4312 (1980 & 1987 Cumm. Supp.) (certain specified waters); NEB. REV. STAT. §§ 46-2,107 to -2,119 (1984); WYO. STAT. §§ 41-3-1006 to -1009 (1987 Cumm. Supp.). Such appropriations are valid under statutory authority. Colorado River Water Conservation Dist. v. Colorado Water Conservation Bd., 197 Colo. 469, 594 P.2d 570 (1979); State Dep't of Parks v. Idaho Dep't of Water Admin., 96 Idaho 440, 530 P.2d 924 (1974). These cases do not require a physical diversion for such statutory appropriations. *See generally,* Ausness, *supra* note 72, at 429-30; Tarlock, *supra* note 78, at 241-44.

But does CAL. WATER CODE § 1243 (West 1988), which declares water use for recreation and fish and wildlife habitat to be a beneficial use, require a physical diversion? Water impounded for recreational uses has been declared to be a beneficial use. State *ex rel.* Fish & Game Comm'n v. Red River Valley Co., 51 N.M. 207, 182 P.2d 421 (1945).

One statute forbids new appropriations for maintaining minimum flows, but allows transfer of existing state-owned appropriations to such purposes. UTAH CODE ANN. § 7-3-3(11) (1987 Cumm. Supp.).

Reallocation of unappropriated water is an exercise of the police power. Tarlock, *supra* note 78, at 221.

86. ALASKA STAT. § 46.15.145 (1987) (including for water quality purposes); KAN. STAT. ANN.

authorize denial of permit applications or imposition of flow maintenance conditions where diversion would interfere with fish and wildlife habitat or with recreational opportunities.[87] These statutes do not permit private landowners to make such appropriations.

None of these western statutes specifically identify preservation of waste assimilitive capacity as an enumerated purpose. Hence, minimum flows for waste assimilative capacity would have to be appropriated as an incident to habitat preservation or recreational use protection.

Practical Limitation on Such Appropriations. Allowing an appropriation for instream fish and wildlife habitat or recreational purposes would be of no use on fully appropriated streams. Many western streams are fully appropriated.[88] Where unappropriated flows do exist, such appropriated minimum flows would be junior to most diversions and physically would disappear during water shortages. Thus, under instream flow appropriation authority, the western states would have only a limited ability to protect the assimilative capacities of watercourses. If previously appropriated waters are needed to sustain the minimum protected flows, they would have to be acquired by purchase or condemnation.[89]

OTHER COMMON LAW THEORIES

Besides the law of water allocation, other common law theories are available to protect the waste assimilative capacity of streams. Litigation

§§ 82a-703a to -703b (1984) (to establish minimum streamflow); MISS. CODE ANN. § 51-3-7(2-3) (1987); MONT. CODE ANN. § 85-2-316(1) (1987); N.D. CENT. CODE § 61-04-31 (1985) (coupled with definition of "beneficial use"); WASH. REV. CODE ANN. §§ 90.22.010, 90.54.020(3)(a) (1987 Cumm. Supp.).

California and Oklahoma declare certain rivers to be "free-flowing" and not subject to state authorization of federal, state and local governmental development projects. CAL. PUB. RES. CODE §§ 5093.50-.69 (West 1984 & 1988 Cumm. Supp.); OKLA. STAT. ANN. tit. 82, §§ 1452(a), 1453 (1988); ORE. REV. STAT. §§ 538.110-.300 (1985).

87. ALASKA STAT. § 46.15.080 (1987). CAL WATER CODE § 1243.5 (West 1988); MONT. REV. CODE § 85-2-311(2)(c)(i) (1987); UTAH CODE ANN. § 73-3-8(1) (1987 Cumm. Supp.); WASH. REV. CODE ANN. §§ 90.22.010, 90.54.020(3)(a) (1987 Cumm. Supp.). *See generally,* Ausness, *supra* note 72, at 431-32.

88. Research done as part of the Second National Water Assessment indicates that most western streams are heavily depleted by diversions during dry summer months, and have little or no flows available for instream uses. Bayha, *Instream Flows—The Big Picture,* in 1 AM. FISHERIES SOC'Y INSTREAM FLOW NEEDS 95, 112-18 (1976) (contains maps showing actual streamflow depletions exceeding 70% in dry years throughout most of the West).

Appropriations typically are greater than actual diversions. Hence, most western streams are fully appropriated and have no unappropriated water available for instream use appropriations. Harrison, *Legal Strategies for Implementing Instream Flows under Existing Federal and State Laws—Restoring Minimum Flows to Already Overappropriated Streams,* in 1 INSTREAM FLOW NEEDS, at 290 (1976).

89. Johnson, *Public Trust Protection for Stream Flows and Lake Levels,* 14 U.C. DAVIS L. REV. 233, 263 (1980); Tarlock, *supra* note 78, at 234; Trelease, *The Legal Bases for Instream Flows,* in 2 AM. FISHERIES SOC'Y INSTREAM FLOW NEEDS, 1, 10 (1976); 1 HUTCHINS, WATER RIGHTS LAWS IN THE NINETEEN WESTERN STATES 407-09 (U.S. Dep't Agric. Misc. Pub. No. 1206, 1971).

to protect the assimilative capacity of streams could be based on the theories of private nuisance, public nuisance, or violation of the public trust.

Effect of Statutes on the Common Law

Nonderogation by Statutes

Water pollution control statutes do not affect the applicability of the common law. The Clean Water Act and most state statutes expressly preserve common law rights.[90] Common law rights are independent of statutory regulation because courts have held that the water pollution control statutes do not empower regulatory agencies to adjudicate them.[91] Some courts, however, defer common law actions until completion of administrative proceedings under the doctrine of primary jurisdiction. The states are in conflict whether that doctrine applies to water pollution lawsuits.[92]

Citizen Suits

The Clean Water Act[93] and several state acts[94] expressly provide for

90. Clean Water Act, 33 U.S.C. § 1365(e) (1982); ALA. CODE §§ 22-22-09(r) (1987 Cumm. Supp.), ALASKA STAT. § 46.03.870(c) (1987); CAL. WATER CODE § 13350(j) (West 1988); COLO. REV. STAT. § 25-8-612(3) (1987); FLA. STAT. ANN. § 403.191(a) (1982); GA. CODE ANN. § 12-5-46 (1982); HAW. REV. STAT. § 342-16 (1985); ILL. STAT. ANN. tit. 111 1/2, § 1045(a) (1977); LA. REV. STAT. tit. 30, § 1074(3) (1987 Supp. Pamp.); MASS. GEN. LAWS ANN. ch. 21, § 42 (1987 Cumm.); ch. 214, § 7A (1987 Cumm.); MINN. STAT. ANN. §§ 115.08 (1986), 116B.12 (1987); MO. REV. STAT. § 204.131 (1983); NEV. REV. STAT. § 445.321 (1986); N.M. STAT. § 74-6-13 (1987 Supp.); N.Y. CONSERV. LAW § 17-1101 (McKinney 1984); OHIO REV. CODE § 6111.08 (1986 Supp.); OKLA. STAT. tit. 82, §§ 926.10(D), 932.1(a) (1988 Cumm. Supp.); PA. STAT. ANN. § 691.701 (McKinney 1984); S.C. CODE ANN. § 48-1-240 (1987); S.D. COMP. LAWS ANN. § 34A-2-79 (1986); TEX. WATER CODE tit. 2, § 26.133 (1988 Supp.); UTAH CODE ANN. § 26-11-19 (1984); VT. STAT. ANN. tit. 10, § 1276 (1984); WASH. REV. CODE ANN. § 90.48.910 (1987 Cumm. Supp.); W.VA. CODE § 20-5A-22; WYO. STAT. ANN. § 35-11-901(f) (1987 Cumm. Supp.); State *ex rel.* Dresser Indus., Inc. v. Ruddy, 592 S.W.2d 789 (Mo. 1980); Urie v. Franconia Paper Corp., 107 N.H. 131, 218 A.2d 360 (1966); Kennedy v. Moog, Inc., 48 Misc.2d 107, 264 N.Y.S.2d 606 (1965), *aff'd in part* 26 A.D.2d 768, 271 N.Y.S.2d 928 (1966), *aff'd* 21 N.Y.2d 966, 237 N.E.2d 356, 290 N.Y.S.2d 193 (1968); Biddix v. Henredon Furniture Indus., Inc., 76 N.C. App. 30, 331 S.E.2d 717 (1985); Board of Comm'rs v. Mentor Lagoons, Inc., 6 Ohio Misc. 126, 216 N.E.2d 643 (1965).

91. Curdt v. Missouri Clean Water Comm'n, 586 S.W.2d 58 (Mo. App. 1979).

92. Compare White Lake Imp. Ass'n v. City of Whitehall, 22 Mich. App. 262, 177 N.W.2d 473 (1970); Ellison v. Rayonier, Inc., 156 F.Supp. 214 (W.D. Wash. 1957), *with* Stanton v. Trustees of St. Joseph's College, 233 A.2d 718 (Me. 1967).

93. 33 U.S.C. § 1365 (1982). *See generally,* 2 S. NOVICK, D. STEVER & M. MELLON, LAW OF ENVIRONMENTAL PROTECTION 12-165 to -175 (1987).

94. ARIZ. REV. STAT. ANN. § 49-264 (1987); CONN. GEN. STAT. ANN. § 22a-16 (1958); D.C. CODE § 6-939 (1987 Cumm. Supp.); FLA. STAT. ANN. § 403:412 (1982); ILL. STAT. ANN. tit. 111 1/2, § 1045(b) (1977); KY. REV. STAT. § 224.091 (1982) (mandamus against state agency only); LA. REV. STAT. ANN. tit. 30, § 1074 (1987 Supp. Pamp.); MASS. GEN. LAWS ANN. ch. 214, § 7A (1987 Cumm. Supp.); MICH. COMP. LAWS § 691.1202 (1987), MICH. STAT. ANN. § 14.528(202) (1980, Supp. 1987); MINN. STAT. ANN. § 116B.03 (1987); PA. STAT. ANN. tit. 35, §§ 691.601(c), (e) (Supp. 1987); WYO. STAT. ANN. § 35-11-902 (1987 Cumm. Supp.).

citizen lawsuits to enjoin future violations of the respective acts, subject to conditions of 60 days notice and absence of preemptive agency litigation. The Environmental Protection Agency (EPA) or the state agency may intervene with its own enforcement action and thereby bar the citizen suit.[95] Most state water pollution control statutes, however, do not provide for citizen suits. Nonetheless, the federal provision extends to all violations of federal standards in all states, even in those states with unilateral state administration under federally-approved state statutes.[96] Thus, water diverters and users, as citizens, have the same right to enjoin unauthorized waste discharges as do federal and state agencies, subject only to the 60 day notice requirement and possibility of preemptive agency enforcement litigation.

The citizen suit right, however, is not necessarily equivalent to the right to be free from water pollution recognized by the common law. The citizen suit provisions do not create a private right of action for monetary damages;[97] the only remedy is injunctive relief.[98] Although a discharge in compliance with the Clean Water Act will foreclose rights under the citizen suit provision, it nonetheless may be actionable as a nuisance because common law remedies are expressly preserved by the Act.[99]

Nuisance

The nuisance doctrine is one theory under which a water user can seek

95. EPA must intervene with an enforcement lawsuit, not with a mere administrative enforcement proceeding. Friends of the Earth v. Consolidated Rail Corp., 768 F.2d 57 (2d Cir. 1985); Student Public Interest Research Group (SPIRG) v. Fritzsche, Dodge & Olcutt, Inc., 759 F.2d 1131 (3d Cir. 1985). Initiating an investigation also is not sufficient. Proffitt v. Commissioners, Township of Bristol, 754 F.2d 504 (3d Cir. 1985) (EPA compliance order); SPIRG v. Tenneco Polymers, 602 F.Supp. 1394 (D.N.J. 1985) (EPA investigatory proceedings).

96. 33 U.S.C. § 1365(a)(1) (1982); Brewer v. City of Bristol, 577 F.Supp. 519 (E.D. Tenn. 1983) (refusing to apply abstention doctrine).

97. Middlesex County Sewerage Authority v. National Sea Clammers Ass'n, 453 U.S. 1 (1981). Neither the Clean Water Act, 33 U.S.C. § 1251-1376, nor the Refuse Act of 1899, § 13, 33 U.S.C. § 407, nor the state water pollution control acts expressly create private rights to recover damages. Nor is such a right created impliedly. Sierra Club v. U.S. Army Corps of Engineers, 701 F.2d 1011 (2d Cir. 1983). Furthermore, no right to bring a private attorney-general action is created by the Refuse Act of 1899 even though it provides for a bounty. City of Evansville v. Kentucky Liquid Recycling, Inc., 604 F.2d 1008 (7th Cir. 1979); Connecticut Action Now, Inc. v. Roberts Plating Co., 457 F.2d 81 (2d Cir. 1972); Bass Angler Sportsman Soc'y v. United States, 447 F.2d 1304 (5th Cir. 1971).

Violation of a state water pollution control act does not give rise to a private right to recover damages. Several state acts provide that they do not enlarge common law rights. COLO. REV. STAT. § 25-8-611(1) (1987); N.Y. CONSERV. LAW § 17-1103 (McKinney 1984 & 1988 Cumm. Supp.); P.R. LAWS ANN. tit. 24, § 600 (1979); W.VA. CODE § 20-5A-22(a); WYO. STAT. ANN. § 35-11-901(f) (1987 Cumm. Supp.). *Contra*, S.C. CODE ANN. § 48-1-250 (1987), which provides that violations of the act inure to the benefit of damaged persons, but that no presumptions arise from agency determinations of law or findings of fact.

98. Love v. New York State Dep't of Envt'l Conservation, 529 F.Supp. 832 (S.D.N.Y. 1982).

99. State *ex rel.* Dresser Indus., Inc. v. Ruddy, 592 S.W.2d 789 (Mo. 1980) (public nuisance action exists in spite of compliance with state act).

relief from waste discharges which interfere with his use of water. The law of nuisance is subdivided into two catagories, private nuisance and public nuisance. Both give rise to rights enforceable by private individuals. Public nuisance also gives rise to rights enforceable by public officials.

Private Nuisance

A private nuisance is a nontrespassory interference with the use and enjoyment of another's land.[100] As it relates to water pollution, a private nuisance was once described as:

> [S]uch impurities as substantially impair [the water's] value for the ordinary purposes of life, and render it measurably unfit for domestic purposes; or such as causes unwholesome or offensive odors to arise from the water, and thus impairs the comfortable or beneficial enjoyment of property in the vicinity, or such as, while producing no actual sensible effect upon the water, are yet of a character calculated to disgust the senses. . . .[101]

Most private nuisance water pollution lawsuits have involved three types of situations: (1) interference with a place of habitation or work, (2) contamination of water supplies, and (3) destruction of soil fertility.[102] Liability exists if the interference is unreasonable.[103]

The existence of a private nuisance is not the equivalent of a violation of riparian rights, although several courts have intermingled the two doctrines.[104] Instead, the private nuisance doctrine should be considered as a limitation on activities which might otherwise be lawful under the

100. Bowman v. Humphrey, 124 Iowa 744, 100 N.W. 854 (1904); Baltimore v. Warren Mfg. Co., 59 Md. 96 (1882); Trevett v. Prison Ass'n, 98 Va. 332, 36 S.E. 373 (1900).

101. Trevett v. Prison Ass'n, 98 Va. 332, 336, 36 S.E. 373, 374 (1900), *quoting* 1 WOOD, NUISANCES § 427 (3d ed. 1893).

102. Livezey v. Town of Bel Air, 174 Md. 568, 199 A. 838 (1938); Davis, *Theories of Water Pollution Litigation*, 1971 WIS. L. REV. 738, 749-50, 806.

103. Davis, *supra* note 102, at 741. *See* RESTATEMENT (SECOND) OF TORTS § 826(a) (1957); RODGERS, ENVIRONMENTAL LAW 107-12 (1977 & 1984 Supp.); PROSSER, TORTS 405 (2d ed. 1955).

Many courts confuse the riparian right to make reasonable uses of watercourses and to be free from unreasonable diminution of water quality with the right to be free from unreasonable interferences under private nuisance law. *See* Biddix v. Henredon Furniture Indus., Inc., 76 N.C. App. 30, 331 S.E.2d 717, 721 (1985); Alabama Consol. Coal & Iron Co. v. Turner, 145 Ala. 639, 649-50, 39 So. 603, 605 (1905); Davis, *supra* note 102, at 744 n.25. In most situations, the same quantum of unreasonableness probably would trigger liability under both the riparian rights and private nuisance doctrines.

104. *See, e.g.*, Alabama Consol. Coal & Iron Co. v. Turner, 145 Ala., 649-50, 39 So. 605; Peterson v. City of Santa Rosa, 119 Cal. 387, 392, 51 P. 557, 559 (1897); City of Kewanee v. Otley, 204 Ill. 402, 409, 68 N.E. 388, 390-91 (1903); Holsman v. Boiling Spring Bleaching Co., 14 N.J. Eq. 335, 342-43 (Ch. 1862); Middlestadt v. Waupaca Starch & Potato Co., 93 Wis. 1, 4, 66 N.W. 713, 714 (1896); Davis, *supra* note 102, at 743-44.

riparian rights or prior appropriation doctrines.[105] Furthermore, the private nuisance doctrine protects all landowners, not just riparians.[106]

Defenses are available in private nuisance lawsuits which can limit the doctrine's usefulness. One defense is particularly troublesome. The courts, particularly in suits seeking injunctive relief, tend to balance the equities. This "comparative convenience" doctrine allows the court to deny relief when the economic and social benefits of denying relief outweigh the economic and social benefits of granting relief.[107] Although many courts give lip service to rejecting the doctrine, water pollution cases in only a few states have granted relief to small plaintiffs as a result of activities by large defendants,[108] and one of those has been overruled.[109] Many courts in fact, if not in theory, do balance the equities.

There have been no water pollution nuisance cases involving diversion of waste assimilation streamflows.[110] Nuisance cases have focused on activities causing affirmative interferences, not on the withholding of mitigating flows. Whether the courts in the future will acknowledge and give appropriate weight to the public interest in protecting minimum streamflows for waste assimilation is problematical.

Public Nuisance

A public nuisance in the water pollution context is an interference with public health, safety and comfort.[111] Most such public nuisance cases

105. Lawton v. Herrick, 83 Conn. 417, 76 A. 986 (1910); Squaw Island Freight Terminal Co. v. City of Buffalo, 273 N.Y. 119, 7 N.E.2d 10 (1937).

106. Masonite Corp. v. Burnham, 164 Miss. 840, 146 So. 292 (1933).

107. Montgomery Limestone Co. v. Bearden, 256 Ala. 269, 54 So.2d 571 (1951); Wright v. Best, 19 Cal.2d 368, 121 P.2d 702 (1942); City of Lakeland v. State *ex rel.* Harris, 143 Fla. 761, 197 So. 470 (1940); Smith v. City of Sedalia, 244 Mo. 107, 149 S.W. 597 (1912); Pennsylvania Coal Co. v. Sanderson, 113 Pa. 126, 6 A. 453 (1886) (industrial defendants). *Cf.* Boomer v. Atlantic Cement Co., 26 N.Y.2d 219, 257 N.E.2d 870, 309 N.Y.S.2d 312 (1970).

But some states reject the doctrine and hold that the relative economic and social consequences are irrelevant. Platt Bros. & Co. v. City of Waterbury, 72 Conn. 531, 45 A. 154 (1900); Barrington Hills Country Club v. Village of Barrington, 357 Ill. 11, 191 N.E. 239 (1934); Indianapolis Water Co. v. American Strawboard Co., 53 F. 970 (C.C.D. Ind. 1893); Bowman v. Humphrey, 132 Iowa 234, 109 N.W. 714 (1906); Morse v. City of Worcester, 139 Mass. 389, 2 N.E. 694 (1885). *See generally,* Davis, *supra* note 102, at 762-67.

108. Hunter v. Taylor Coal Co., 16 Ky. L.Rptr. 190 (1894); Satren v. Hader Co-op Cheese Factory, 202 Minn. 553, 279 N.W. 361 (1938); Whalen v. Union Bag & Paper Co., 208 N.Y. 1, 101 N.E. 805 (1913); McCune v. Pittsburgh & B. Coal Co., 238 Pa. 83, 85 A. 1102 (1913).

109. Boomer v. Atlantic Cement Co., 26 N.Y.2d 219, 257 N.E.2d 870, 309 N.Y.S.2d 312 (1970).

110. In my 1971 study of water pollution nuisance cases, I found no such cases. *See* Davis, *supra* note 102. I have not examined post-1971 cases.

111. Indianapolis Water Co. v. American Strawboard Co., 53 F. 970, 57 F. 1000 (C.C.D. Ind. 1893); City of Henderson v. Robinson, 152 Ky. 245, 153 S.W. 224 (1913); Sprague v. Dorr, 185 Mass. 10, 69 N.E. 344 (1904); Attorney-General *ex rel.* Township of Wyoming v. City of Grand Rapids, 175 Mich. 503, 141 N.W. 890 (1913); State Bd. of Health v. Ihnken, 72 N.J. Eq. 865, 67 A. 28 (1907); Town of Shelby v. Cleveland Mill & Power Co., 155 N.C. 196, 71 S.E. 218 (1911);

have involved odors in residential areas, contamination of public water supplies, and water quality degradation.[112]

Generally, public nuisance.lawsuits are brought by a public official.[113] A private individual can bring a public nuisance action, however, if he has suffered special damage. In most states, such a plaintiff must have suffered injury which is different in kind and degree from that suffered by the public at large.[114] An example of special damages might be contamination of a domestic water supply while the public suffers only from noxious odors. However, it is not a defense to a private nuisance action that many members of the public or many other property owners have suffered the same kind and degree of damages.[115]

Public Trust Doctrine

Enforcement of the public trust is another common law theory under which a waste discharger can bring suit to protect the assimilative capacity of watercourses. The theory has gained considerable attention in the past two decades, principally as a means to protect instream uses of watercourses by the public.[116]

Not all states recognize the public trust. The states expressly recognizing the public trust mostly have been riparian doctrine states.[117] A few

City of Collinsville v. Brickey, 115 Okla. 264, 242 P. 249 (1925); Pennsylvania R.R. v. Sagamore Coal Co., 281 Pa. 233, 126 A. 386 (1924); Meiners v. Frederick Miller Brewing Co., 78 Wis. 364, 47 N.W. 430 (1890). *See* Davis, *supra* note 102, at 750-51.

112. Davis, *supra* note 102, at 751, 806.

113. Meiners v. Frederick Miller Brewing Co., 78 Wis. 364, 47 N.W. 430 (1890).

114. Bair v. Central & So. Fla. Flood Control Dist., 144 So.2d 818 (Fla. 1962); Smith v. City of Sedalia, 152 Mo. 283, 53 S.W. 907 (1899); Bouquet v. Hackensack Water Co., 90 N.J.L. 203, 101 A. 379 (1917); Columbia River Fishermen's Protective Union v. City of St. Helens, 160 Ore. 654, 87 P.2d 195 (1939).

115. Ozark Poultry Prod., Inc. v. Garman, 251 Ark. 389, 472 S.W.2d 714 (1971); Urie v. Franconia Paper Corp., 107 N.H. 131, 218 A.2d 360 (1966).

116. *See generally,* W. RODGERS, ENVIRONMENTAL LAW 170-86 (3d ed. 1977, Supp. 1984); Ausness, *Water Rights, The Public Trust Doctrine, and the Protection of Instream Uses,* 1986 U. ILL. L. REV. 407 (1986); Walston, *The Public Trust Doctrine in the Water Rights Context: The Wrong Environmental Remedy,* 22 SANTA CLARA L. REV. 63 (1982); Johnson, *Public Trust Protection for Stream Flows and Lake Levels,* 14 U.C. DAVIS L. REV. 233 (1980); Comment, *State Citizen Rights Respecting Greatwater Resource Allocation: From Rome to New Jersey,* 25 RUTGERS L. REV. 571 (1971) [hereinafter *Greatwater Resource Allocation*]; Sax, *The Public Trust in Natural Resources Law: Effective Judicial Intervention,* 68 MICH. L. REV. 471 (1970). *Cf.* Comment, *The Public Trust in Tidal Areas: A Sometime Submerged Traditional Doctrine,* 79 YALE L.J. 762 (1970) [hereinafter *Tidal Areas*].

117. Eastern riparian states acknowledging the existence of the public trust include: Illinois, Louisiana, Maryland, Massachusetts, Michigan, Mississippi, New Jersey, New York, Pennsylvania, Rhode Island, Wisconsin. People *ex rel.* Scott v. Chicago Park Dist., 66 Ill.2d 65, 360 N.E.2d 773 (1976); Gulf Oil Corp. v. State Mineral Bd., 317 So.2d 576 (La. 1975); Wicks v. Howard, 40 Md.App. 135, 388 A.2d 1250 (1978); Kerpelman v. Maryland Bd. of Public Works, 261 Md. 436, 276 A.2d 56 (1971), *cert. denied* 404 U.S. 858 (1971); Sacco v. Department of Public Works, 352 Mass. 670, 227 N.E.2d 478 (1967); Superior Public Rights, Inc. v. State Dep't of Natural Resources, 80 Mich.App. 72, 263 N.W.2d 290 (1978); State v. Kuluvar, 266 Minn. 408, 123 N.W.2d 699 (1963); International Paper Co. v. Mississippi State Highway Dep't, 271 So.2d 395 (Miss. 1972),

states recognize the public trust statutorily.[118] Recently courts in some prior appropriation doctrine states have indicated that the public trust may exist in the west as well.[119] Its common law antecedents[120] and its application to the American states by *Illinois Central R.R. v. Illinois*[121] suggest

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cert. denied 414 U.S. 827 (1973); State Dep't of Environmental Protection v. Jersey Cent. Power & Light Co., 125 N.J. Super. 97, 308 A.2d 671 (1973); Texas Eastern Transmission Corp. v. Wildlife Preserves, Inc., 48 N.J. 261, 225 A.2d 130 (1966); People of the Town of Smithtown v. Poveromo, 71 Misc.2d 524, 336 N.Y.S.2d 764 (Dist. Ct. 1972); New York State Water Resources Bd. v. Liberman, 37 A.D.2d 484, 326 N.Y.S.2d 284 (1971); Thomas v. Sanders, 65 Ohio App.2d 5, 19 Ohio Op.3d 3, 413 N.E.2d 1224 (1979); Payne v. Kassab, 11 Pa. Cmwlth. 14, 312 A.2d 86 (1973), *aff'd* 468 Pa. 226, 361 A.2d 263 (1976); Jackovny v. Powel, 67 R.I. 218, 21 A.2d 554 (1941); Wisconsin's Envtl. Decade, Inc. v. Dep't of Natural Resources, 85 Wis.2d 518, 271 N.W.2d 69 (1978); State v. Public Serv. Comm'n, 275 Wis. 112, 81 N.W.2d 71 (1957).

One state found the origin of the public trust in the free navigation clause of the Northwest Ordinance of 1787, art. IV, 1 Stat. 52 (1789). Muench v. Public Serv. Comm'n, 261 Wis. 492, 53 N.W.2d 514, 55 N.W.2d 40 (1952). *Cf.* Elder v. Delcour, 364 Mo. 835, 269 S.W.2d 17 (1954).

118. ME. REV. STAT. ANN. tit. 38, § 435 (1987 & Supp. Pampl.); MICH. COMP. L. ANN. § 691.1202 (1987), MICH. STAT. ANN. § 14.528(202) (1980 & 1987 Supp.); PA. CONST. art. I, § 27; TENN. CODE ANN. § 69-3-102(a) (1987).

119. Western prior appropriation states are: California, Idaho, Montana, North Dakota, Utah, Washington. National Audubon Soc'y v. Superior Court, 33 Cal.3d 419, 189 Cal. Rptr. 346, 658 P.2d 709 (1983), *cert. denied* 464 U.S. 977 (1983); City of Berkeley v. Superior Court, 26 Cal.3d 515, 162 Cal. Rptr. 327, 606 P.2d 362 (1980); Marks v. Whitney, 6 Cal.3d 251, 491 P.2d 374 (1971); Colberg, Inc. v. State *ex rel.* Dep't of Public Works, 67 Cal.2d 408, 62 Cal. Rptr. 401, 432 P.2d 3 (1967); Bohn v. Albertson, 107 Cal.App.2d 738, 238 P.2d 128 (1951); Kootenai Environmental Alliance, Inc. v. Panhandle Yacht Club, Inc., 671 P.2d 1085 (Idaho 1983); Northern Pac. Ry. v. Hirzel, 2 Idaho 438, 161 P. 854 (1916); Montana Coalition for Stream Access, Inc. v. Curran, 682 P.2d 163 (Mont. 1983); North Dakota State Water Comm'n v. Board of Managers, Cavalier County Water Resource Dist., 332 N.W.2d 254 (N.D. 1983); United Plainsman Ass'n v. North Dakota State Water Conservation Comm'n, 247 N.W.2d 457 (N.D. 1976); J.J.N.P. Co. v. State *ex rel.* Div'n of Wildlife Resources, 655 P.2d 1133 (Utah 1982); Wilbour v. Gallagher, 77 Wash.2d 306, 462 P.2d 232 (1969), *cert. denied* 400 U.S. 878 (1970).

120. The public trust originally was an obligation of the English Crown to protect the public rights of navigation and fishery. Illinois Central R.R. v. Illinois, 146 U.S. 387, 436, 457 (1892); Martin v. Waddell's Lessee, 41 U.S. (16 Pet.) 367, 410 (1842) (bed title case). The thirteen original states succeeded to the public trust obligation after the Revolution. In turn, it passed to the new states as they were admitted to the Union. *Illinois Central*, 146 U.S. at 456, quoting Martin v. Waddell's Lessee, 41 U.S. at 410.

Accord, Arnold v. Mundy, 6 N.J.L. 1, 13-14, 78, 92-94 (Sup. Ct. 1821); National Audubon Soc'y v. Superior Court, 33 Cal.3d 419, 189 Cal. Rptr. 346, 658 P.2d 709, 718 (1983), *cert. denied* 464 U.S. 977 (1983); Neptune City v. Borough of Avon-by-the-Sea, 61 N.J. 296, 294 A.2d 47, 51-53 (1972); People of the Town of Smithtown v. Poveromo, 71 Misc.2d 524, 336 N.Y.S.2d 764, 769-72 (Dist. Ct. 1972) (citing *Martin*); Thomas v. Sanders, 65 Ohio App.2d 5, 19 Ohio Op.3d 3, 413 N.E.2d 1224 (1979); City of Milwaukee v. State, 193 Wis. 423, 214 N.W. 820, 828-29 (1927). The commentators agree. Ausness, *supra* note 116, at 409-12; Sax, *supra* note 116, at 475-77; Comment, *Greatwater Resource Allocation*, *supra* note 116, at 576-643; Comment, *Tidal Areas*, *supra* note 116, at 763-72. *See also*, Stone, *Public Rights in Water Uses and Private Rights in Land Adjacent to Water*, in 1 WATERS AND WATER RIGHTS 177, 180-82, 190-202 (R. Clark ed. 1967, Cumm. Supp. 1978); Davis, *State Ownership of Beds of Inland Waters—A Summary and Reexamination*, 57 NEB. L. REV. 665, 666-68 (1978).

121. 146 U.S. 387 (1892). That landmark decision held (1) that the beds of navigable waters are held by the state in trust for the public, (2) that the states have an obligation, as trustees, to preserve navigable waters for use by the public, and (3) that the state cannot abdicate that obligation by conveyance of the bed of a navigable water to private interests in derogation of the interests of the public. *Id.* at 452-53, 455, 456.

strongly that the public trust doctrine ought to exist in and be recognized by all common law states. States recognizing the trust have extended it to all waters navigable under state law,[122] not just those navigable under federal law.[123]

The public trust doctrine imposes an obligation on the states, as trustees, to preserve navigable waters for use by the public.[124] At a minimum, a state may not affirmatively act in derogation of the trust. For example, the doctrine prohibits the state from filling a bed or draining a marsh for non-water resource uses.[125] Additionally, it empowers a state to regulate obstructions to navigation[126] and to protect the public rights of navigation

122. Hayes v. State, 254 Ark. 680, 496 S.W.2d 372 (1973); Thomas v. Sanders, 65 Ohio App.2d 5, 19 Ohio Op.3d 3, 413 N.E.2d 1224 (1979); Muench v. Public Serv. Comm'n, 261 Wis. 492, 53 N.W.2d 514, 55 N.W.2d 40 (1952).

Many states have adopted a navigability definition for public rights purposes similar to the federal commercial navigability definition. *E.g.*, People v. Emmert, 198 Colo. 137, 597 P.2d 1025 (1979); Baker v. State *ex rel.* Jones, 87 So.2d 497 (Fla. 1956); Lakeside Park Co. v. Forsmark, 396 Pa. 389, 153 A.2d 486 (1959).

Other states have enlarged the definition of navigable waters to those waters capable of floating sawlogs, railroad ties and recreational boats. People *ex rel.* Baker v. Mack, 19 Cal.App.3d 1040, 97 Cal. Rptr. 448 (1971); Southern Idaho Fish & Game Ass'n v. Picabo Livestock, Inc., 96 Idaho 360, 528 P.2d 1295 (1974); Kelly *ex rel.* MacMullen v. Hallden, 51 Mich.App. 176, 214 N.W.2d 856 (1974); Elder v. Delcour, 364 Mo. 835, 269 S.W.2d 17 (1954); State v. Red River Valley Co., 51 N.M. 207, 182 P.2d 421 (1945); People v. Kraemer, 7 Misc.2d 373, 164 N.Y.S.2d 423 (Pol. Ct. 1957); Curry v. Hill, 460 P.2d 933 (Okla. 1969); Luscher v. Reynolds, 153 Ore. 625, 56 P.2d 1158 (1936); Hillebrand v. Knapp, 65 S.D. 414, 274 N.W. 821 (1937); Day v. Armstrong, 362 P.2d 137 (Wyo. 1971).

On state definitions of navigability, *see generally*, Ausness, *supra* note 116, at 433-34; Stone, *supra* note 120, at 214-17; Johnson & Austin, *Recreational Rights and Titles to Beds on Western Lakes and Streams*, 7 NAT. RES. J. 1, 33-52 (1967). *Cf.* P. Davis, *State Ownership of Beds of Inland Waters—A Summary and Reexamination*, 57 NEB. L. REV. 665, 674-76 nn.50-51, 680-81 nn.68-71, 699-700 n.152 (1978).

123. Under *Illinois Central*, the public trust extended to waters navigable under federal law at the time the state was admitted to the Union. Illinois Central R.R. v. Illinois, 146 U.S. 387, 435-36 (1892). *Accord*, Utah v. United States, 403 U.S. 9, 10 (1971); United States v. Oregon, 295 U.S. 1, 14 (1935); United States v. Utah, 283 U.S. 64, 75 (1931).

124. Illinois Central R.R. v. Illinois, 146 U.S. 387, 453 (1892). *Accord*, National Audubon Soc'y v. Superior Court, 33 Cal.3d 419, 189 Cal. Rptr. 346, 658 P.2d 709, 719 (1983), *cert. denied* 464 U.S. 977 (1983); Kootenai Environmental Alliance, Inc. v. Panhandle Yacht Club, Inc., 671 P.2d 1085 (Idaho 1983); People *ex rel.* Scott v. Chicago Park Dist., 66 Ill.2d 65, 360 N.E.2d 773, 777-78 (1976); Wicks v. Howard, 40 Md.App. 135, 388 A.2d 1250 (1978); Sacco v. Department of Public Works, 352 Mass. 670, 227 N.E.2d 478, 479 (1967); People *ex rel.* MacMullan v. Babcock, 38 Mich. App. 336, 196 N.W.2d 489, 497 (1972); Arnold v. Mundy, 6 N.J.L. 1, 71 (Sup. Ct. 1821); New York State Water Resources Bd. v. Liberman, 37 A.D.2d 484, 326 N.Y.S.2d 284, 288 (1971); United Plainsman Ass'n v. North Dakota State Water Conservation Comm'n, 247 N.W.2d 457, 461 (N.D. 1976); Muench v. Public Serv. Comm'n, 261 Wis. 492, 53 N.W.2d 514, 517-18 (1952).

125. City of Berkeley v. Superior Court, 26 Cal.3d 515, 162 Cal. Rptr. 327, 606 P.2d 362 (1980); Sacco v. Dep't of Public Works, 352 Mass. 670, 227 N.E.2d 478 (1967); *In re* Crawford County Levee & Drainage Dist., 182 Wis. 404, 196 N.W. 874 (1924); Priewe v. Wisconsin State Land & Imp. Co., 93 Wis. 534, 67 N.W. 918 (1896).

126. People *ex rel.* Scott v. Chicago Park Dist., 66 Ill.2d 65, 360 N.E.2d 773 (1976); People *ex rel.* MacMullan v. Babcock, 38 Mich. App. 336, 196 N.W.2d 489 (1972); New York State Water Resources Bd. v. Liberman, 37 A.D.2d 484, 326 N.Y.S.2d 284 (1971); Thomas v. Sanders, 65 Ohio App.2d 5, 19 Ohio Op.3d 3, 413 N.E.2d 1224 (1979); Town of Ashwaubenon v. Public Serv. Comm'n, 22 Wis. 2d 38, 125 N.W.2d 647 (1963), 126 N.W.2d 567 (1964).

recreation and fishing.[127] It also requires the state to identify impacts upon public trust waters as part of a planning process.[128] Finally, some courts go beyond merely prohibiting the state from acting in derogation of trust purposes and require the state affirmatively to regulate state navigable waters for the benefit of the public's right to use those waters.[129]

The public trust doctrine forbids the state from ignoring its obligation to protect the waters and streambeds which constitute the corpus of the trust.[130] The state may not abdicate its obligation by conveyance of the trust corpus to private interests.[131] While the state cannot destroy or allow destruction of the trust corpus,[132] it may select among various water-related trust purposes.[133]

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127. Bohn v. Albertson, 107 Cal.App.2d 738, 238 P.2d 128 (1951); Procter v. Wells, 103 Mass. 216 (1869); Nelson v. De Long, 213 Minn. 425, 7 N.W.2d 342 (1942); Montana Coalition for Stream Access, Inc. v. Curran, 682 P.2d 163 (Mont. 1983); Matthews v. Bay Head Imp. Ass'n, 95 N.J. 306, 471 A.2d 355 (1984); North Dakota State Water Comm'n v. Board of Managers, Cavalier County Water Resource Dist., 332 N.W.2d 254 (N.D. 1983); Jackovny v. Powel, 67 R.I. 218, 21 A.2d 554 (1941); J.J.N.P. Co. v. State *ex rel.* Div'n of Wildlife Resources, 655 P.2d 1133 (Utah 1982); Muench v. Public Serv. Comm'n, 261 Wis. 492, 53 N.W.2d 514, *aff'd* 55 N.W.2d 40 (1952).

128. United Plainsmen Ass'n v. North Dakota State Water Conservation Comm'n, 247 N.W.2d 457 (N.D. 1976).

129. Muench v. Public Serv. Comm'n, 261 Wis. 492, 53 N.W.2d 514, *aff'd* 55 N.W.2d 40 (1952).

130. Kootenai Environmental Alliance, Inc. v. Panhandle Yacht Club, Inc., 671 P.2d 1085 (Idaho 1983); Newburyport Redevelopment Authority v. Commonwealth, 9 Mass.App. 206, 401 N.E.2d 118 (1980) (dictum); United Plainsman Ass'n v. North Dakota State Water Conservation Comm'n, 247 N.W.2d 457, 461 (N.D. 1976); Muench v. Public Serv. Comm'n, 261 Wis. 492, 53 N.W.2d 514, *aff'd* 55 N.W.2d 40 (1952).

131. Illinois Central R.R. v. Illinois, 146 U.S. 387, 453, 455, 456 (1892), *quoting* Arnold v. Mundy, 6 N.J.L. 1, 78 (1821). *Accord,* National Audubon Soc'y v. Superior Court, 33 Cal.3d 419, 189 Cal. Rptr. 346, 658 P.2d 709, 721-23 (1983), *cert. denied* 464 U.S. 977 (1983); People *ex rel.* Scott v. Chicago Park Dist., 66 Ill.2d 65, 360 N.E.2d 773, 778-81 (1976); Sacco v. Dep't of Public Works, 352 Mass. 670, 227 N.E.2d 478, 479-80 (1967) (dictum); Neptune City v. Borough of Avon-by-the-Sea, 61 N.J. 296, 294 A.2d 47, 53-55 (1972); People of the Town of Smithtown v. Poveromo, 71 Misc.2d 524, 336 N.Y.S.2d 764, 774 (Dist. Ct. 1972); Illinois Steel Co. v. Bilot, 109 Wis. 418, 84 N.W. 855, 857, 85 N.W. 402 (1901).

132. People *ex rel.* MacMullan v. Babcock, 38 Mich. App. 336, 196 N.W.2d 489 (1972); *In re* Crawford County Levee & Drainage Dist., 182 Wis. 404, 196 N.W. 874 (1924).

The public trust may be exercised only to further trust purposes and not for other public purposes unrelated to water. City of Berkeley v. Superior Court, 26 Cal.3d 515, 162 Cal. Rptr. 327, 606 P.2d 362 (1980); Kootenai Environmental Alliance, Inc. v. Panhandle Yacht Club, Inc., 671 P.2d 1085 (Idaho 1983); Gulf Oil Corp. v. State Mineral Bd., 317 So.2d 576 (La. 1975); Sacco v. Dep't of Public Works, 352 Mass. 670, 227 N.E.2d 478 (1967); International Paper Co. v. Mississippi State Highway Dep't, 271 So.2d 395 (Miss. 1972), *cert. denied* 414 U.S. 827 (1973); Texas Eastern Transmission Corp. v. Wildlife Preserves, Inc., 48 N.J. 261, 225 A.2d 130 (1966); State v. Public Service Comm'n, 275 Wis. 112, 81 N.W.2d 71 (1957).

133. Colberg, Inc. v. State, 67 Cal.2d 408, 62 Cal. Rptr. 401, 432 P.2d 3 (1967); State v. Public Serv. Comm'n, 275 Wis. 112, 81 N.W.2d 71 (1956); Town of Ashwaubenon v. Public Serv. Comm'n, 22 Wis.2d 38, 125 N.W.2d 647 (1963).

However, courts in some states permit balancing between water-related public trust interests and other public interests. Superior Public Rights, Inc. v. State Dep't of Natural Resources, 80 Mich. App. 72, 263 N.W.2d 290 (1978). Such balancing includes an obligation to mitigate adverse effects. Payne v. Kassab, 11 Pa. Cmwlth. 14, 312 A.2d 86 (1973), *aff'd* 468 Pa. 226, 361 A.2d 263 (1976). Although cast as a public nuisance action, Rodgers argues that Payne functionally adopts public trust concepts. RODGERS, ENVIRONMENTAL LAW 177 (1977 & 1984 Supp.).

Clearly, the state, as public trustee, has standing to enforce the public trust.[134] It is not so clear whether members of the public, as beneficiaries of the trust, can do so. Some courts have held that members of the public can sue the state if it regulates water uses in derogation of the public trust or abdicates its trust obligations.[135] In some states, a member of the public can enforce public trust rights directly against a violator.[136] In other states, however, a private individual cannot enforce the trust.[137]

Protection of Assimilative Capacity

In theory, the public trust doctrine ought to be available to protect both a minimum protected flow for waste assimilative capacity and ambient water quality. Two cases have addressed that question tangentially.

In *Hazen v. Perkins*,[138] the public trust doctrine was asserted in an attempt to declare unlawful a dam spillway gate designed to raise the water level of a natural lake in order to create a millpond. The court held that the lake was boatable and, therefore, was subject to the public trust, and that the state as public trustee had no power to authorize private persons to raise the level of the lake.[139] Treating the operation of the dam spillway gate as a public nuisance, the court ruled that private plaintiffs must show special damage. It refused to grant injunctive relief because plaintiffs could not distinguish damage to the shoreline caused by natural lake level variation and by artificial variation resulting from defendant's operation of the dam spillway gate.[140]

A public trust cause of action was recognized recently in *National Audubon Society v. Superior Court*,[141] where plaintiffs were seeking to enjoin water diversions in order to protect wildlife habitat. The interception of streams feeding Mono Lake in California and diversion of their

134. Maryland v. Amerada Hess, 350 F.Supp. 1060 (D. Md. 1972); Kerpelman v. Maryland Bd. of Public Works, 261 Md. 436, 276 A.2d 56 (1971), *cert. denied* 404 U.S. 858 (1971); State Dep't of Envt'l Protection v. Jersey Cent. Power & Light Co., 125 N.J. Super. 97, 308 A.2d 671 (1973); State v. Bishop, 75 Misc.2d 787, 348 N.Y.S.2d 999 (N.Y. Sup. Ct. 1973); Wilbour v. Gallagher, 77 Wash.2d 306, 462 P.2d 232 (1969), *cert. denied* 400 U.S. 878 (1970); State v. Deetz, 66 Wis.2d 201, 224 N.W.2d 407 (1974).

135. Marks v. Whitney, 6 Cal.3d 251, 98 Cal. Rptr. 790, 491 P.2d 374 (1971); Wisconsin's Envt'l Decade, Inc. v. Dep't of Natural Resources, 85 Wis.2d 518, 271 N.W.2d 69 (1978); Muench v. Public Serv. Comm'n, 261 Wis. 492, 53 N.W.2d 514, 55 N.W.2d 40 (1952). *See* Gould v. Greylock Reservation Comm'n, 350 Mass. 410, 215 N.E.2d 114 (1966).

136. MICH. COMP. L. ANN. § 691.1202 (1987), MICH. STAT. ANN. § 14.528(202) (1980 & 1987 Supp.).

137. Kerpelman v. Maryland Bd. of Public Works, 261 Md. 436, 276 A.2d 56 (1971), *cert. denied* 404 U.S. 858 (1971).

138. 92 Vt. 414, 105 A. 249 (1918).

139. *Id.*, 105 A. at 251.

140. *Id.*, 105 A. at 251-52.

141. 33 Cal. 3d 419, 189 Cal. Rptr. 346, 658 P.2d 709 (1983) (no decision on the merits), *cert. denied* 464 U.S. 977 (1983).

waters to Los Angeles for public water supply caused a substantial reduction in the lake level and surface area, threatening disruption of a gull rookery. Plaintiffs brought suit to restore the scenic and ecological values of the lake, asserting that the diversion, authorized by a state prior appropriation permit, violated the public trust obligations of the state.[142] After reviewing the origins of the public trust doctrine,[143] the court reconfirmed its prior recognition of the doctrine,[144] but held that the public trust did not have a superior status to water diversion rights established under prior appropriation law.[145] Instead, the court ruled that the state must balance instream needs under the public trust doctrine with the need for water diversions.[146] It held that prior appropriation diversion rights had been granted to Los Angeles without consideration of instream needs and that the impact of the diversion on Mono Lake must be reconsidered by some responsible agency.[147]

Hazen and *National Audubon* are examples of the applicability of the public trust doctrine in protecting lake levels. By analogy, the doctrine ought to apply also to protect minimum flows, since flows and levels are hydraulically interrelated. Nonetheless, the public trust doctrine has never been asserted as an independent basis for water quality regulation or for protecting the assimilative capacity of a watercourse.[148]

Relation to Water Diversion Rights

The public trust doctrine suggests that its exercise ought to preempt any private diversion rights. Because the public trust originated as a sovereign obligation to protect the public rights of navigation and fishery, the trust obligations antedate and preempt later created diversion rights.[149] Hence, the states ought not to be able to create private water rights free of possible exercise of the public trust.[150]

Mono Lake Case. The California Supreme Court has misinterpreted the relationship between the public trust doctrine and water diversion rights. *National Audubon,*[151] just discussed, expressly required the integration of the previously separate prior appropriation and public trust

142. *Id.*, 189 Cal. Rptr. 348-49, 658 P.2d at 711-12.
143. *Id.*, 189 Cal. Rptr. at 355-57, 658 P.2d at 718-20.
144. *Id.*, 189 Cal. Rptr. at 357-61, 658 P.2d at 720-24.
145. *Id.*, 189 Cal. Rptr. at 363-64, 658 P.2d at 726-27.
146. *Id.*, 189 Cal. Rptr. at 364-65, 658 P.2d at 727-28.
147. *Id.*, 189 Cal. Rptr. at 365-66, 658 P.2d at 728-29.
148. *But cf.* People v. Gold Run Dredging & Mining Co., 66 Cal. 138, 4 P. 1152 (1884) (siltation from hydraulic mining enjoined).
149. *See supra* note 121.
150. Except in *National Audubon.*
151. National Audubon Soc'y v. Superior Court, 33 Cal. 3d 419, 189 Cal. Rptr. 346, 658 P.2d 709 (1983) (no decision on the merits), *cert. denied* 464 U.S. 977 (1983).

doctrines.[152] The prior appropriation permit system was held to be one component of a statutory system for allocating water for the relative benefit of all water uses.[153] Hence, according to the court, a decision to allow diversion of a substantial portion of a watercourse to the detriment of instream wildlife habitat uses might not be in derogation of the state's public trust obligations, provided the interests of the trust are considered and balanced.[154] The effect of *National Audubon* is to abandon the core concepts of the public trust doctrine that all private water rights are junior and subordinate to the public trust, and that the state is forbidden to abdicate its obligations as public trustee in favor of those junior private water rights.

Regulatory cases. Regulatory permit cases relying on the police power alone have held that refusal to grant dam and wetland fill permits in order to preserve natural flow for habitat and recreation purposes cannot be challenged successfully by the disappointed applicant.[155] Those cases apparently presume that the granting of a diversion or dam permit is a privilege, so that permit denial on public policy grounds does not constitute a taking.[156] There can be no taking when a state-owned dominant

152. *Id.*, 189 Cal. Rptr. at 369, 658 P.2d at 732.

153. *Id.*, 189 Cal. Rptr. at 364-65, 658 P.2d at 727-28.

154. *Id.*, 189 Cal. Rptr.

155. Claridge v. New Hampshire Wetlands Bd., 125 N.H. 745, 485 A.2d 287 (1984); Application of Hemco, 129 Vt. 517, 283 A.2d 246 (1971) (hydro dam permit application). *Cf.* Zabel v. Tabb, 430 F.2d 199 (5th Cir. 1970) (swamp filling permit application); Namekagon Hydro Co. v. Federal Power Comm'n, 216 F.2d 509 (7th Cir. 1954) (hydro dam permit application).

Another case held compensation need not be paid because there was no diminution in value of a swamp because a fill permit had been denied. Just v. Marinette County, 56 Wis.2d 7, 201 N.W.2d 761 (1972). But that approach has not been followed in most open space and floodplain zoning cases, which grant compensation when the market value of the regulated land has been reduced too much. *E.g.*, Morris County Land Imp. Co. v. Township of Parsippany-Troy Hills, 40 N.J. 539, 193 A.2d 232 (1963). Compensation need not be paid when some reasonable portion of former market value is retained after the regulation is imposed. *E.g.*, Maple Leaf Inv., Inc. v. State Dep't of Ecology, 88 Wash.2d 726, 565 P.2d 1162 (1977). For an extensive analysis of the "taking" issue in open space and floodplain zoning cases, see KUSLER, REGULATION OF FLOOD HAZARD AREAS, ch. 4 (1971). Recently, the U.S. Supreme Court required payment of temporary taking damages where an overrestrictive floodplain regulation is imposed for a short period of time. First English Evangelical Lutheran Church v. Los Angeles County, 107 S.Ct. 2378 (1987).

156. *But see* Florida Rock Indus., Inc. v. United States, 791 F.2d 893 (Fed. Cir. 1986), *cert. denied* 107 S.Ct. 926 (1987), *affirming in part* 8 Ct.Cl. 160 (1985), where an owner of a swamp was denied a Clean Water Act § 404 (33 U.S.C. § 1344) (1982) wetlands permit for surface mining in a swamp. The court held that if the owner were prevented from making any viable economic use of the swamp, the permit denial would constitute a compensable regulatory taking. It rejected the federal agency's contention that the permit can be denied without compensation in order to promote the public's right to continued enjoyment of the environmental and aesthetic values inherent in the unaltered wetland. It rejected also the contention that the public's right was a servitude on private title. For the proposition that the navigation servitude is no longer available to excuse uncompensated regulatory takings, the court relied on Kaiser Aetna v. United States, 444 U.S. 164 (1979), although in the latter case may instead be characterized either as involving a taking of the right to exclude the public from privately-owned abutting shoreland rather than as a regulatory taking, or as involving nonnavigable waters to which the navigation servitude does not apply. *See* Kaiser Aetna, 444 U.S. at 178-80.

right is exercised in derogation of a private subordinate right.[157] Since private streambed titles and water use rights are subordinate to the public trust,[158] it is appropriate that denial of a permit on public trust grounds should not constitute a taking.

STATUTORY REMEDIES

State legislation in recent years has created two potential non-common law remedies for protecting waste assimilation streamflows. One requires formal analysis of environmental effects before beginning state and local government projects or issuing permits for private projects. The other establishes substantive environmental rights in the public.

Environmental Policy Statutes

Many states have enacted legislation paralleling the National Environmental Policy Act of 1970 (NEPA).[159] Those state acts[160] generally are identical to NEPA or are very similar.[161] As a result, state courts have tended to rely on the federal courts' interpretation of NEPA.[162]

Recently, the United States Supreme Court approved of and used the same "denial of all economic use" test in finding a temporary taking by a ban on reconstruction of structures in a floodplain. First English Evangelical Lutheran Church v. Los Angeles County, 107 S.Ct. 2378 (1987).

If denial of all economic use of a wetland is a regulatory taking under the navigation servitude, then it may be also under the public trust. *Florida Rock* could be interpreted as rejecting the notion that public use rights protected by the public trust doctrine can justify permit denial without compensation as a servitude on private title. Such an interpretation would run counter to the teachings of the cases cited in *supra* note 155, which expressly allow dam and wetland permit denials to preserve natural waters and swamps.

157. By analogy to the law of easements.

158. Because the public trust doctrine was imposed from the beginning of sovereignty in the colonies, private water rights and streambed titles necessarily were created later and were subject to the inalienable public trust obligation of the sovereign. On the historical origins of the public trust doctrine, see *supra* note 120 and Illinois Central R.R. v. Illinois, 146 U.S. 387, 435-36, 456-57.

159. 42 U.S.C. § 4321-4370 (1982). *See generally,* 1 S. NOVICK, D. STEVER & M. MELLON, LAW OF ENVIRONMENTAL PROTECTION, ch.9 (1987); D. MANDELKER, NEPA LAW AND LITIGATION (1984 & 1986 Supp.); W. RODGERS, ENVIRONMENTAL LAW (1977).

160. CAL. PUB. RES. CODE §§ 21000-174 (West 1986); CONN. GEN. STAT. §§ 22a-1 to -1h (West 1984); HAW. REV. STAT. § 343-18 (1985); IND. CODE ANN. §§ 13-1-10-1 to -8 (Burns 1987); MD. NAT. RES. CODE ANN. §§ 1-301 to -305 (1983); MASS. GEN. LAWS ANN., ch.30, §§ 61-62H (West 1979); MINN. STAT. ANN. §§ 116D.01-.07 (West 1987); MONT. CODE ANN. §§ 75-1-101 to -105, -201 (1987); N.Y. ENVT'L CONSERV. LAW §§ 8-0101 to -0117 (McKinney 1984); N.C. GEN. STAT. § 113A-1 to -10 (1983); S.D. CODIFIED LAWS ANN. §§ 34A-9-1 to -12 (1986); VA. CODE ANN. §§ 10.17-107 to -112 (1985); WASH. REV. CODE ANN. §§ 43.21C.010-.910 (1983); WIS. STAT. ANN. § 1.11 (West 1986).

See generally, D. MANDELKER, *supra* note 159, ch.12; W. RODGERS, *supra* note 159, at 809-22.

161. D. MANDELKER, *supra* note 159, at 12-3; W. RODGERS, *supra* note 159, at 811.

162. D. MANDELKER, *supra* note 159, at 12-2.

Some state courts have expressly looked to federal interpretations of NEPA for guidance. Friends of Mammoth v. Board of Supervisors of Mono County, 8 Cal.3d 247, 104 Cal. Rptr. 761, 502 P.2d 1049, 1057-59 (1972); Eastlake Community Council v. Roanoke Assn, Inc., 82 Wash.2d 475, 513 P.2d 36 (1974); Wisconsin's Envt'l Decade, Inc. v. Public Serv. Comm'n, 69 Wis.2d 1, 230 N.W.2d 243 (1975).

State environmental policy acts require the state government (and often local governments) to prepare an Environmental Impact Report (EIR) before it makes a decision on a state project or any major state action.[163] Major state actions include *inter alia* state projects and licensing of private or municipal projects[164] which may have significant environmental effects.[165] Water resources projects and projects discharging wastes are subject to the EIR preparation requirement.[166]

The EIR must include analyses of specified issues, typically including:

(1) the environmental impact of the proposed action;
(2) any adverse environmental effects which cannot be avoided should the proposal be implemented;
(3) alternatives to the proposed action;
(4) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and
(5) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.[167]

163. State acts: Friends of Mammoth v. Mono County, 8 Cal.3d 247, 502 P.2d 1049, 104 Cal. Rptr. 761 (1972); Eastlake Community Council v. Roanoke Assn, Inc., 82 Wash.2d 475, 513 P.2d 36 (1974). *See generally,* D. MANDELKER, *supra* note 159, at § 12:10; W. RODGERS, *supra* note 159, at 811-16.

NEPA: Calvert Cliffs' Coordinating Comm'n v. Atomic Energy Comm'n, 449 F.2d 1109 (D.C. Cir. 1971). On the "timing" issue, *see generally,* D. MANDELKER, *supra* note 159, at 8-26 to -39; W. RODGERS, *supra* note 159, at 767-74.

164. State acts: Friends of Mammoth v. Mono County, 8 Cal.3d 247, 104 Cal. Rptr. 761, 502 P.2d 1049 (1972); Sisley v. San Juan County, 89 Wash.2d 78, 569 P.2d 712 (1977).

NEPA: Major federal actions are those which involve substantial time, resources or expenditure for planning, involve controversy or significant environmental consequences, or involve projects of significant size, scope or investment. Hanly v. Kleindienst II, 471 F.2d 823 (2d Cir. 1972), *cert. denied,* 412 U.S. 908 (1973); Natural Resources Defense Council, Inc. v. Grant, 341 F.Supp. 356 (E.D.N.C. 1972). *See* CEQ Guidelines, 40 C.F.R. § 1508.27 (1987). *See generally,* S. NOVICK, D. STEVER & M. MELLON, *supra* note 159, at 9-12 to -14; D. MANDELKER, *supra* note 159, at 8-79 to -82; W. RODGERS, *supra* note 159, at 750-61.

165. State acts: No Oil, Inc. v. City of Los Angeles, 13 Cal.3d 68, 118 Cal. Rptr. 34, 529 P.2d 66 (1975); Manchester Environmental Coalition v. Stockton, 184 Conn. 51, 441 A.2d 68 (1981); Secretary of Envt'l Affairs v. Massachusetts Port Auth., 366 Mass. 755, 323 N.E.2d 329 (1975); HOMES v. New York State Urban Dev. Corp., 69 A.D.2d 222, 418 N.Y.S.2d 827 (1979); Marino Property Co. v. Port of Seattle, 88 Wash.2d 822, 567 P.2d 1125 (1977); Wisconsin's Envt'l Decade, Inc. v. Public Serv. Comm'n, 79 Wis.2d 409, 256 N.W.2d 149 (1977). On the state act threshold for "significance," which appears to be lower than under NEPA, *see* D. MANDELKER, *supra* note 159, at 12-14.

NEPA requires "significance" as a prerequisite for EIS preparation. Hanly v. Kleindienst II, 471 F.2d 823 (2d Cir. 1972), *cert. denied,* 412 U.S. 908 (1973). *See generally,* S. NOVICK, D. STEVER & M. MELLON, *supra* note 159, at 9-14 to -16; D. MANDELKER, *supra* note 159, at 8-82 to -84. W. RODGERS, *supra* note 159, at 750-61.

166. State acts: Envt'l Defense Fund, Inc. v. Coastside County Water Dist., 27 Cal.App.3d 695, 104 Cal. Rptr. 197 (1972).

NEPA: *See* Anderson, *The National Environmental Policy Act,* in FEDERAL ENVIRONMENTAL LAW 238, 343 (E. Dolgin & T. Guilbert, eds., 1974).

167. State acts: CAL. PUB. RES. CODE §§ 21002.1, 21100 (West 1986); CONN. GEN. STAT. ANN. § 22a-1b (West 1987); IND. CODE ANN. § 13-1-10-3 (Burns 1987); MD. NAT. RES. CODE ANN. § 1-

The EIR must contain reasonably adequate discussions of these and other relevant environmental issues.[168] No final agency decision can be made before the EIR is prepared and considered.[169] The EIR can be the basis for project or licensing denial.[170]

The state environmental policy acts, like NEPA, are enforceable by any person who has an "interest" in the agency decision. Such persons are users who would be affected by the project and can show an injury in fact.[171] The environmental effect might have economic impact[172] or the affected person might be unable to enjoy or use the area where the project is to be located should it proceed.[173] Unlike NEPA, however, some state statutes also grant standing to any citizen claiming harm to the environment.[174]

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304 (1983); MASS. GEN. LAWS ANN., ch.30, § 62B (West 1979); MINN. STAT. ANN. § 116D.04(2a) (West 1987); MONT. CODE ANN. § 75-1-201(1)(b) (1987); N.Y. ENVT'L CONSERV. LAW § 8-0109(2) (McKinney 1984); N.C. GEN. STAT. § 113A-4(2) (1983); P.R. LAWS ANN. tit. 12, § 1124(c); S.D. CODIFIED LAWS § 34A-9-7 (1986); VA. CODE § 10.17.108 (1985); WASH. REV. CODE ANN. § 43.21C.030(c); WIS. STAT. ANN. § 1.11(2)(c) (West 1986). *See generally,* W. RODGERS, *supra* note 159, at 817-18 (1983).

NEPA: § 102(C); 42 U.S.C. § 4332(C) (1982).

168. State acts: Life of the Land v. Ariyoshi, 59 Haw. 156, 577 P.2d 1116 (1978); No Power Line, Inc. v. Minnesota Envt'l Quality Council, 262 N.W.2d 312 (Minn. 1977); Warren County v. North Carolina, 528 F.Supp. 276 (E.D.N.C. 1981); Wisconsin's Envtl. Decade, Inc. v. Public Serv. Comm'n, 98 Wis.2d 682, 298 N.W.2d 205 (1980).

NEPA: Sierra Club v. U.S. Army Corps of Eng., 701 F.2d 1011 (2d Cir. 1983). *See generally,* D. MANDELKER, *supra* note 159, ch.10.

169. State acts: Burger v. County of Mendocino, 45 Cal.App.3d 322, 119 Cal. Rptr. 568 (1975); Friends of Mammoth v. Mono County, 8 Cal.3d 247, 104 Cal. Rptr. 761, 502 P.2d 1049 (1972); Leschi Improve Coun. v. Washington State Highway Comm'n, 84 Wash.2d 271, 525 P.2d 774 (1974).

NEPA: Life of the Land v. Brinegar, 485 F.2d 460 (9th Cir. 1973).

170. State acts: Polygon Corp. v. City of Seattle, 90 Wash.2d 59, 578 P.2d 1309 (1978).

NEPA: Zabel v. Tabb, 430 F.2d 199 (5th Cir. 1970), *cert. denied* 401 U.S. 910 (1971). *Cf.* Udall v. Federal Power Comm'n, 387 U.S. 428 (1967).

171. State acts: Orange County v. North Carolina Dep't of Transportation, 46 N.C.App. 350, 265 S.E.2d 890 (1980); Coughlin v. Seattle School Dist. No. 1, 27 Wash.App. 888, 621 P.2d 183 (1980).

NEPA: Sierra Club v. Morton, 405 U.S. 727 (1972); United States v. Students Challenging Regulatory Agency Procedures, 412 U.S. 669, SCRAP I (1973); Coalition for the Env't v. Volpe, 504 F.2d 156 (8th Cir. 1974). *See generally,* S. NOVICK, D. STEVER & M. MELLON, *supra* note 159, at 9-35 to -36; D. MANDELKER, *supra* note 159, 4-09.

172. State acts: Bliek v. Town of Webster, 104 Misc.2d 852, 429 N.Y.S.2d 811 (N.Y. Sup. Ct. 1980).

NEPA: Environmental injury must be shown in addition to economic injury. National Helium Corp. v. Morton I, 455 F.2d 650 (10th Cir. 1971). Mere economic injury alone does not confer standing. Benton County Sav. & Loan Ass'n v. Federal Home Loan Bank Bd., 450 F.Supp. 884 (W.D. Ark. 1978); Churchill Truck Lines, Inc. v. United States, 533 F.2d 411 (8th Cir. 1976).

173. State acts: Bozung v. Local Agency Formation Comm'n of Ventura City, 13 Cal.3d 263, 118 Cal. Rptr. 249, 529 P.2d 1017 (1975); Glen Head-Glenwood Landing Civic Council v. Town of Oyster Bay, 109 Misc.2d 376, 438 N.Y.S.2d 715 (Sup. Ct. 1981); Save a Valuable Environment v. City of Bothell, 89 Wash.2d 862, 576 P.2d 401 (1978); Wisconsin's Envtl. Decade, Inc. v. Public Serv. Comm'n, 69 Wis.2d 1, 230 N.W.2d 243 (1975).

NEPA: Sierra Club v. Morton, 405 U.S. 727 (1972); United States v. SCRAP I, 412 U.S. 669 (1973).

174. *See* Manchester Envt'l Coalition v. Stockton, 184 Conn. 51, 441 A.2d 68 (1981); City of Boston v. Massachusetts Port Auth., 364 Mass. 639, 308 N.E.2d 488 (1974).

Two interpretative difficulties are presented. First, NEPA has been held not to mandate any final particular agency decisions favorable to environmental values.[175] Many state courts appear to be interpreting the state acts similarly,[176] but some are requiring state agencies to balance environmental values against other decision-making factors and even to incorporate feasible mitigation measures into project designs.[177] Second, NEPA has been interpreted as grafting on to agency legislative mandates a requirement to consider all relevant environmental issues.[178] The state courts now are struggling with the same issue. Most state courts considering the issue have held similarly to the federal courts' position on NEPA.[179]

The comprehensive scope of environmental analysis required by these acts raises the question whether they can be used to require state agencies to preserve minimum streamflows for waste assimilation in designing and licensing projects. The answer is not clear. Only one court has considered whether water quality and pollution issues must be considered under a state environmental policy act in determining whether to issue a water diversion permit. That court held that the act requires such consideration. In *Stempel v. Department of Water Resources*,[180] the state agency considered a prior appropriation application for diversion of lake water to a subdivision. Although numerous objections about pollution from return water were raised during hearings on the application, the agency granted the application without considering potential water pollution problems. It argued that the statutory requirement that there be no detriment to public welfare[181] did not require it to examine potential pollution resulting from the proposed project. The court held that subsequently enacted legislation rendered the agency's position nonmeritorious. Because of enactment of the state environmental policy act, which required preparation and consideration of an EIR, potential pollution problems did have

175. Strycker's Bay Neighborhood Council v. Karlen, 444 U.S. 223 (1980); Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc., 435 U.S. 519 (1978); Kleppe v. Sierra Club, 427 U.S. 390 (1976). *See generally*, MANDELKER, *supra* note 159, at 10-24 to -30.

176. Coon Creek Watershed Dist. v. State Envt'l Quality Bd., 315 N.W.2d 604 (Minn. 1982); Save Our Rural Environment v. Snohomish County, 99 Wash.2d 363, 662 P.2d 816 (1983).

177. CAL. PUB. RES. CODE § 21081(c) (West 1986), construed in Laurel Hills Homeowners Ass'n v. City Council of City of Los Angeles, 83 Cal.App.3d 515, 147 Cal. Rptr. 842 (1978); N.Y. ENVT'L CONSERV. LAW § 8-0109(8) (McKinney 1984), construed in Town of Henrietta v. Dep't of Envt'l. Conserv., 76 A.D.2d 215, 430 N.Y.S.2d 440 (1980) (dictum).

178. Calvert Cliffs' Coordinating Comm'n v. Atomic Energy Comm'n, 449 F.2d 1109 (D.C. Cir. 1971).

179. *See* San Francisco Ecology Ctr. v. City & County of San Francisco, 48 Cal.App.3d 584, 122 Cal. Rptr. 100 (1975); Eastlake Community Council v. Roanoke Ass'n, Inc., 82 Wash.2d 475, 513 P.2d 36 (1974).

180. 82 Wash. 2d 109, 508 P.2d 166 (1973).

181. WASH. REV. CODE ANN. § 90.03.290 (1962).

to be examined.[182] Also, enactment of state water resource policy legislation required protection of the natural environment, retention of lakes and ponds "substantially in their natural condition," and use of all available and reasonable methods of waste treatment.[183] The court remanded the case for agency evaluation of potential pollution problems in drainage from the subdivision.[184]

Stempel suggests strongly that other states should follow the federal lead in requiring comprehensive analysis of water quality and pollution issues, as well as other environmental issues, in making decisions about water diversions. Such analysis, however, even though in a public forum, does not create legal protection of minimum streamflows for waste assimilation if the state agencies can ignore adverse analyses and proceed with the project or licensing. While experience with NEPA suggests that the nature of decisionmaking becomes more environmentally sensitive when Environmental Impact Statements (EIS) are discussed in public,[185] the federal act creates no basis for challenging final federal agency decisions, however unsound environmentally, once the EIS process is completed adequately.[186] If the state environmental policy acts are interpreted as creating no substantive environmental mandate as well, members of the public will have no basis for judicially challenging environmentally unsound final state agency decisions. In those states which require their agencies to provide for mitigation of adverse environmental effects, however, such failure may be remedied judicially.

Environmental Rights Statutes

A few states have enacted statutes conferring upon citizens a right to enforce substantive environmental rights.[187] These statutes have been held to create private rights of action against polluters and others who damage

182. State Environmental Policy Act of 1971, WASH. REV. CODE ANN. § 43.21C.030(c) (1983).

183. Water Resources Act of 1971, WASH. REV. CODE ANN. § 90.54.020(3) (Supp. 1987).

184. Stempel v. Dep't of Water Resources, 82 Wash.2d 109, 508 P.2d 166 (1973).

185. Jones v. District of Columbia Redevelopment Land Agency, 499 F.2d 502 (D.C. Cir. 1974). *See* D. MANDELKER, *supra* note 159, ch.11; S. TAYLOR, MAKING BUREAUCRACIES THINK: THE ENVIRONMENTAL IMPACT STRATEGY OF ADMINISTRATIVE REFORM (1984); Liroff, *NEPA—Where Have We Been and Where Are We Going?*, 46 J. AM. PLANNING ASS'N 154 (1980); Caldwell, *Is NEPA Inherently Self-Defeating?*, 9 ENVT'L L. REP. 50001 (1979).

186. *See supra* note 175.

187. Such statutes include: CONN. GEN. STAT. § 22a-14 to -20 (West 1987); FLA. STAT. ANN. § 403.412 (West 1979); IND. CODE ANN. § 13-6-1-1 (Burns 1987); MASS. GEN. LAWS ANN. ch. 214, § 7A (West 1979); MICH. COMP. L. ANN. § 691.1202 (1987), MICH. STAT. ANN. § 14.528(202) (West 1980 & 1987 Supp.); MINN. STAT. §§ 116B.01 to 116B.13 (1987); S.D. CODIFIED LAWS ANN. § 34A-10-1 (1986). *See also* FLA. CONST. art. II, § 7; PA. CONST. art. I, § 27; Edye v. State, 393 Mich. 453, 225 N.W.2d 1 (1975). *See generally* Gionfriddo, Sealing Pandora's Box; Judicial Doctrines Restricting Public Trust Citizen Environmental Suits, 13 BOSTON COLLEGE ENVT'L AFF. L. REV. 439 (1986).

the environment,[188] and against state agencies to compel them to enforce environmental statutes and regulations.[189] Some courts have held that such statutes also require states to enforce substantive policies enhancing environmental values.[190] Such environmental rights statutes are applicable to the protection of minimum flows for waste assimilation, because encroachment on such minimum flows would have adverse effects on water quality.

CONCLUSION

The right of water users to be free from unreasonable degradation of water quality is more clearly developed than the right of the state to preserve minimum streamflows for waste assimilation. Water users are entitled to be free from private nuisances and to enjoin public nuisances if they have suffered special damage. Riparians in the eastern states are entitled to discharge wastes to a reasonable extent, subject to the right of other riparians to be free from unreasonable interferences with the quality of water they use. Appropriators in the western states also are entitled to be free from unreasonable interferences with water quality. In some states, water users, as members of the public, may enforce the public trust, but the courts have not addressed the extent to which the public trust entitles users of public waters to adequate water quality. Finally, all citizens have a right to enforce water pollution control statutes against violators in those states which have citizen suit provisions, in those few states with environmental rights statutes, and everywhere under the federal Clean Water Act.

The states have some ability to regulate the relationship between water users and waste dischargers. They can tailor the effluent limitations in waste discharge permits to ensure appropriate water quality in the receiving waters. Neither the federal nor the state water pollution control statutes, however, empower the regulatory agencies to establish and preserve minimum flows for assimilation of those residual wastes. The eastern states with diversion permit statutes generally have authority to establish minimum protected flows for fish habitat and recreational purposes; those statutes probably can be used to protect waste assimilation flows as well. The remaining eastern states have no statutory basis for protecting flows and must rely on the meager protections of the common law.

188. State, *ex rel.* Powderly v. Erickson, 285 N.W.2d 84 (Minn. 1979).

189. Florida Wildlife Federation v. Dep't of Envt'l Regulation, 390 So.2d 64 (Fla. 1980); Committee for Sensible Land Use v. Garfield Township, 124 Mich.App. 559, 335 N.W.2d 216 (1983).

190. Ray v. Mason County Drainage Comm'rs, 393 Mich. 294, 224 N.W.2d 883 (1975); *In re* Highway U.S. 24 in Bloomfield Tp., Oakland City, 392 Mich. 159, 220 N.W.2d 416 (1974); People for Environmental Enlightenment & Responsibility, Inc. (PEER) v. Minnesota Environmental Quality Council, 266 N.W.2d 858 (Minn. 1978).

Some western states have enacted statutes giving state agencies authority to appropriate or withdraw unappropriated water for various public purposes. Those statutes may be exercised to protect assimilative capacity. They apply only to unappropriated water, however, so the state's flow appropriation would be junior to existing appropriations. Furthermore, on many streams there is no unappropriated water available.

There are common law means to protect assimilative flows. All states can obtain injunctions requiring abatement of public nuisances, such as water pollution posing a public health or safety threat. As public trustee, states may be able to regulate waste discharges and to establish minimum protected flows for protecting the useability of public waters. Furthermore, in states with environmental rights statutes, private citizens may be able to bring lawsuits to obtain similar relief. If *National Audubon* is accepted as good law, however, the exercise of state authority to balance water diversion needs against instream flow needs could not be challenged successfully on public trust grounds, unless the balance struck were egregious.

Environmental policy acts may deter the states from constructing projects or issuing permits for private projects which may adversely affect the integrity of waste assimilative streamflows. Although environmental impact reporting requirements may not impose any ultimate substantive impediment to environmentally unsound projects, the public disclosure and discussion requirements often alter the dimensions of public debate and accountability. Furthermore, a few of the state acts place an affirmative obligation on the state to balance environmental values with other factors and to employ mitigation measures. In those states, judicial intervention can go beyond requiring adequate environmental analysis to enforcing that substantive mandate.

From this summary, we can see that legal protection for the preservation of water flows for waste assimilation contemplated by the water quality standards established under water pollution control statutes is haphazard at best. To remedy this deficiency, most states need to enact statutory authority for establishing minimum streamflows for waste assimilative purposes. That could be done by incorporating that authority either into state water quality control statutes or into water diversion permit statutes.