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**A SHORT COURSE ON WATER LAW
FOR THE EASTERN UNITED STATES**

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INTRODUCTION

Until the past generation, problems in water law have been regarded as exclusively the concern of jurisdictions possessing either arid or saturated lands. The increasing industrialization and urban concentration occurring since 1900 have radically altered this attitude. Nowhere is this more strikingly shown than in the United States. In this country water use rose from 40 billion gallons per day in 1900 to 92 billion in 1930, and 312 billion in 1960. For the entire period, the total readily available fresh water supply has been 515 billion gallons per day. By 1975 it is predicted the United States will be drawing 453 billion of this each day and, in order to safeguard such demands, will require a quantity of water one third more than the total supply. This physical miracle is to be performed through techniques for the conversion of saline and brackish waters, which pose engineering and economic difficulties requiring Herculean solutions. Because these changes are to occur in the eastern United States, which presently has 55 per cent of the nation's population and 65 per cent of its industry; and because this is the area previously regarded as unaffected by water problems, an examination of the pertinent law is in order in this interval between the realization of impending doom and the coming of the anticipated technical salvation.¹

The law in this part of the country is substantially that of the English common law, subject to legislation for administrative resource control enacted at an accelerating rate since the American Civil War. There is, for the novice, in the eastern sector of the United States a surprising quantity of fully worked-out dogma for water

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1. Smith, *Water Desalting Is Being Studied*, N.Y. Times, Oct. 23, 1960, § 3, p. 1, col. 4.

which has existed for some time.² The settlers of the New World, upon finding conditions along the Atlantic seaboard similar to their native England's, applied existing doctrines on the subject of water control. Whether those doctrines were modified depended upon two factors which did not always accompany each other: the similarity of the problems met and the elasticity of the minds of the decision-makers called upon to solve them. From the definition of a natural watercourse through all the other phases of the topic, the American law makers until the present century have sought a conformity between the common law of England and the common necessity of the American day that has been lacking quite often until the opinions were handed down or the statutes enacted. Like judges, legislators have been compelled to balance between a belief in present need and the concepts of an inherited past, with the result that the best of intentions have often resulted in the most disparate results. The consequence for contemporary water resource law is a tension between ancient rules, accepted practice, and future policy, as well as a never-ending conflict as to what precisely constitutes each of these concepts. Such a complex of issues can best be studied in an examination of areas of special controversy in water use, so that some understanding of the real and the legal choices can be had.³

I. THE WATERCOURSE

Even the definition of a watercourse is rendered uncertain by this difference. On one side are the forces of precision in the law who say a natural watercourse is a stream containing water "flowing in a defined channel, with a bed and sides . . . usually discharging itself into some other stream or body of water. . . ."⁴ Within it, the flow of water, though not necessarily incessant,⁵ must flow from some substantial and well-defined source⁶ in some specific direction.⁷ These are

2. 7 Holdsworth, *History of English Law* 338 (1926).

3. See Conservation Foundation, *The Law of Water Allocation in the Eastern United States* (1958), collecting the papers of an October, 1956 symposium of The Conservation Foundation. The definition of eastern United States is that employed by Fischer, *Western Experience and Eastern Appropriation Proposals* which says all land lying east of the first tier of states west of the Mississippi is eastern America. *Id.* at 75.

4. *Luther v. Winnisimmet Co.*, 63 Mass. (9 Cush.) 171, 174 (1851); Angell, *Watercourses* § 4 (7th ed. 1877).

5. *Reynolds v. McArthur*, 27 U.S. (2 Pet.) 417 (1829); *Jackman v. Arlington Mills*, 137 Mass. 277 (1884); *Shields v. Arndt*, 3 N.J. Eq. 234 (Ch. 1842); *Wagner v. Long Island R.R.*, 2 Hun 633, 5 Thomp. & C. 163 (N.Y. Sup. Ct. 1874).

6. *Fitzgerald v. Fortier*, 292 Mass. 268, 198 N.E. 167 (1935); *Wheatley v. Baugh*, 25 Pa. 528 (1855); *Dudden v. Guardians of the Poor of the Clutton Union*, 1 H.&N. 627, 156 Eng. Rep. 1353 (1857).

the tests adopted to easily distinguish a watercourse from vagrant water, accumulating after a rain, or following upon the melting of snow, and flowing across the surface or natural declivities of the ground.⁸

Unfortunately for the sake of legal clarity, however, there exists a body of cases contradictory to these simple rules. Obvious run-off water has been held to be a watercourse where its long continued, if intermittent, existence has worn a well-defined course into the ground so that a channel and banks have been created.⁹ A flow of water with a continuous current, but lacking either bed or banks, has been held to be a natural watercourse.¹⁰ A flow of surface water, appearing only during rainy seasons, running partly over the ground, partly in a channel with bed and banks, and partly through culverts, has been held to be a watercourse.¹¹ And, a course of water, running but a part of the year, and flowing unconfined over the ground level part of its way, has also been held to be a natural watercourse.¹² Even admitting that the defining of a watercourse is a question normally to be settled by a jury, how did these cases meet the test laid down so decisively by the first group of cases?

The answer, of course, lies in the fact that a preordained, rigid rule of law is no more enforceable in this area than in any other part of the Anglo-American legal system. For reasons of justice, the courts in these "exceptional" cases were prepared to find the tests sufficiently met; and the reasons of justice most generally consist of what the court would consider excessive economic hardship in the particular situation. Because of this, when trying to define a legal orbit for the term "natural watercourse," perhaps all that can be said is this: If it comes from a permanent source, or if surface water comes fairly regularly, so that a stream flows over the land, either on a level or in a depression with bed and banks, and it all flows into some other

7. *New Jersey, Ind. & Ill. R.R. v. Tutt*, 168 Ind. 205, 80 N.E. 420 (1907); *Town of Holliston v. Holliston Water Co.*, 306 Mass. 17, 27 N.E.2d 194 (1940); *State ex rel. Olcott v. Hawk*, 105 Ore. 319, 208 Pac. 709 (1922).

8. *Stanchfield v. City of Newton*, 142 Mass. 110, 7 N.E. 703 (1886); *Ashley v. Wolcott*, 65 Mass. (11 Cush.) 192 (1853); *Kunkle v. Borough of Ford City*, 305 Pa. 416, 158 Atl. 159 (1932).

9. *Sawyer v. Shader*, 321 Mass. 725, 75 N.E.2d 647 (1947). See also *Rhoads v. Davidheiser*, 133 Pa. 226, 19 Atl. 400 (1890).

10. *Macomber v. Godfrey*, 108 Mass. 219 (1871).

11. The court refused to upset a master's finding to that effect in *Fitzgerald v. Fortier*, 292 Mass. 268, 198 N.E. 167 (1935); *Kislinski v. Gilboy*, 19 Pa. Super. 453 (1902) (what constitutes a water course being a jury question is a factor that may produce important precedential differences).

12. *Yaskill v. Thibault*, 273 Mass. 266, 173 N.E. 504 (1930). See also *In the Matter of Johnson Creek*, 159 Wash. 629, 294 Pac. 566 (1930).

body of water, then the probability is that it will be held to be a natural watercourse; whereas if it goes no great distance, or is assisted by human contrivance for its initial existence, or is absorbed into the ground over which it runs, then the chances are that no court would hold it a natural watercourse.¹³

II. THE USING OF THE WATERCOURSE

Assuming, however, that all parties agree that the body of water involved is a natural watercourse, what rights in it have persons desiring its use? A basic presumption in the common law of water as it developed after the 17th century was that the only persons with any interest in a flowing stream were owners of land along its banks and that the only problem in law was the manner in which they would divide its use. Anciently it was held that riparian owners were entitled to receive the waters of the stream in their natural state. However, with the rise of the market economy and the coming of industrialization, this rule was generally modified so that a riparian owner now has at best the right to receive the stream's waters in their natural state subject to the reasonable use of the water by other riparian owners and himself.¹⁴ Therefore, no riparian owner is entitled to a stream in its natural condition, unaffected by the presence of man, since every riparian owner may reasonably use the water as it flows by his land, so long as he does not destroy it by diversion or throw it back by obstruction.¹⁵

Reasonable use includes the right to divert a stream so long as it is not totally absorbed during the diversion. Some must be left subsequently for the other riparian owners so that each may have a roughly equal use of the water, no matter how generally beneficial

13. *Thompson v. New Haven Water Co.*, 86 Conn. 597, 86 Atl. 585 (1913); *Peck v. Clark*, 142 Mass. 436, 8 N.E. 335 (1886); *Aetna Mills v. Inhabitants of Brookline*, 127 Mass. 69 (1879); *Macomber v. Godfrey*, 108 Mass. 219 (1871). For a modern definition that throws together vagrant surface waters and watercourses, see Langbein & Wells, *The Water in Rivers and Creeks*, *Water: The Yearbook of Agriculture* 52 (1955). For examples of ambiguous statutory definitions, pointing up the importance of judicial definitions, compare La. Rev. Stat. § 56:1433 (1952) and Mich. Stat. Ann. § 3.531 (1952) with Mass. Ann. Laws c. 21, § 1 (Supp. 1959).

14. Lauer, *The Riparian Right in Property, in Water Resources and the Law* 133 (1958). For the conflict in the 17th century, compare 1 Coke, *First Institute of the Laws of England* 177 (Thomas ed. 1836), with Callis, *Sewers* 78 (1647). See also Woolrych, *Waters* 146 (2d ed. 1851).

15. *Pratt v. Lamson*, 84 Mass. (2 Allen) 275 (1861); *Cary v. Daniels*, 49 Mass. (8 Met.) 466 (1844); *French v. Braintree Mfg. Co.*, 40 Mass. (23 Pick.) 216 (1839); *Carter v. Thurston*, 58 N.H. 104 (1877); *Haupt's Appeal*, 125 Pa. 211, 17 Atl. 436 (1889); I Blackstone, *Commentaries on the Laws of England* 461 n.1, 751-52 (4th ed. Cooley 1899).

the stream's total exhaustion by one user might be. If this test is met the courts have not been much interested in the reasons for diverting a stream.¹⁶ Unless enough water is returned to accord with the unpredictable test of reasonable use, it is equally wrong to draw off water to build an artificial pond,¹⁷ to irrigate a farm,¹⁸ to sink a permanent weir that turned aside the water,¹⁹ to repair a dam with the intention of forcing out a lower mill privilege through water deprivation,²⁰ or for a public officer to divert the water for an avowedly public purpose.²¹ In the last mentioned situation, a stream may be diverted from a public highway only if the diversion will not affect the rights of landowners upon it or if it lies entirely in public ground.²² Otherwise its diversion is a taking which must be compensated, just as a utility or other private entity with eminent domain powers must compensate a landowner for diverting one or more streams of water upon or from his land.²³

However, merely because a diversion is reasonable and beneficial, returning the same amount of water to the ancient stream bed before sending it on to lower riparian owners, does not mean the diverter is home free. If his diversion has caused the stream to be clogged with soil so that the stream below becomes choked and the lower lands are flooded with sand, or his activity has otherwise polluted the stream waters, he is liable for any damage to lower owners which were caused by the same.²⁴ The courts desire as near an equal sharing of water among riparian owners as natural conditions will permit and the judicial decision-makers have ever sought to prevent a monopoly of the water of a stream by a single user. This has been so whether the user would destroy other's uses through evaporation of the water in

16. *Elliot v. Fitchburg R.R.*, 64 Mass. (10 Cush.) 191 (1852); *Newhall v. Ireson*, 62 Mass. (8 Cush.) 595 (1852); Angell, *Watercourses* 10-21 (2d ed. 1833). See Bogart & Landon, *Modern Industry* 179 (2d ed. 1939); Dickinson, *City Region and Regionalism* 99 (1956) (giving economic bases for court regulation).

17. *Newhall v. Ireson*, supra note 16.

18. *Cook v. Hull*, 20 Mass. (3 Pick.) 269 (1825).

19. *Curtis v. Jackson*, 13 Mass. 507 (1816).

20. *Bartlett v. Greenleaf*, 77 Mass. (11 Gray) 98 (1858).

21. *Nealley v. Inhabitants of Bradford*, 145 Mass. 561, 14 N.E. 652 (1888).

22. *Ibid.*

23. *Wells v. New Haven & Northampton Co.*, 151 Mass. 46, 23 N.E. 724 (1890). See Haar, *Land-Use Planning* 495-96 (1959). On eminent domain in relation to water rights, see Cooley, *Constitutional Law* 374 (McLaughlin ed. 1898).

24. *Stowell v. Lincoln*, 77 Mass. (11 Gray) 434 (1858); *Anstee v. Monroe Light & Fuel Co.*, 171 Wis. 291, 177 N.W. 26 (1920); *Mohr v. Gault*, 10 Wis. 513 (1860); *Y.B. Trin.* 13 Henry VII 26B, pl. 4 (1498).

steam turbines, the absorption of the water in irrigation, the pollution of the water with acids, or through other means that work a total destruction of the stream's water resource. Rarely have courts sought to weigh the relative merits of one user over another, looking only toward a nice equalization of riparian benefits; but in this policy they have served indirectly the broader reaches of the public interest in the water resource as a whole.

In pursuit of this policy, the courts have permitted every riparian owner to take equal advantage of stream flow in the operation of mills so long as the rights of others in the same stream are not infringed. This means that the natural hydraulic lift of the stream must be passed along to lower riparian owners, diminished only by its reasonable use as it passes mill after mill, with the understanding that the use of the water at each privilege may vary greatly.²⁵ The definition of "natural flow" as set by the courts has been "the flow of the river at the height which is usual in times of ordinary water, when the current is not increased by a freshet, or by recent uncommonly heavy rains."²⁶ With this as the standard, it becomes possible to retain water for a reserve, so long as a quantity is regularly let down in such amount as to ultimately equalize the stream's flow to its "normal" capacity.²⁷

In fact, it has been a concern for full economic utilization of stream resources that has moved the courts to many of their decisions, so that any "just and reasonable" use will be protected according to the size and capacity of the stream.²⁸ This does not include the right to keep the water back for storage only, or for preserving whatever aesthetic values the appearance of the stream might have, since the interest of the court lies in the stream's active use rather than in protection of an absolute property interest. Though it may be a precarious right the courts protect in requiring water to be let down in a condition, unheated, unpolluted, and as near to its natural current as reasonable use will allow, nevertheless, the decisions have acted to protect it. To let a stream run to waste, even in the presence of rip service to absolute title, is an action repugnant to the mythos of American courts.²⁹

25. *Gould v. Boston Duck Co.*, 79 Mass. (13 Gray) 442 (1859); *Thurber v. Martin*, 68 Mass. (2 Gray) 394 (1854). This rule is applicable in both the presence and absence of mill acts.

26. *Nemasket Mills v. City of Taunton*, 166 Mass. 540, 544, 44 N.E. 609 (1896).

27. *Corse v. Dexter*, 202 Mass. 31, 88 N.E. 332 (1909). See *Hazard Powder Co. v. Somersville Mfg. Co.*, 78 Conn. 171, 61 Atl. 519 (1905).

28. *Wamesit Power Co. v. Sterling Mills*, 158 Mass. 435, 33 N.E. 503 (1893).

29. *Sturtevant v. Ford*, 280 Mass. 303, 182 N.E. 560 (1932); *Inhabitants of Lynnfield v. Inhabitants of Peabody*, 219 Mass. 435, 33 N.E. 503 (1893); *Bardwell v. Ames*, 39 Mass. (22 Pick.) 333 (1839); *Miller v. Eastern Ry. & Lumber Co.*, 84 Wash. 31, 146 Pac. 171 (1915); *Bogart & Landon*, op. cit. supra note 16, at

For this reason, courts have frowned upon obstructions not specifically authorized by such legislative policies as the Mill Acts or by administrative successors of these statutes, managed by the different state public service commissions. A temporary obstruction, so that a stream's drainage power might be increased, can be a reasonable use, whatever damage ensues, so long as all is done by the obstructor to keep the damage minimal.³⁰ However, any permanent or temporary obstructions done without a purpose to work a common riparian benefit are not permissible, if any damage to upper or lower riparian owners will ensue.³¹ This does not mean that a builder of roads or bridges must preserve the stream as nature made it. For economy, he may narrow or deepen it, cover it with culverts, or, if necessary, divert it, for his only duty to a non-navigable stream is to see that it drains as well as it ever did and injures no one in any new course selected for it in any present or future property value.³² In the presence of permanent obstructions the courts have been known to offer the obstructor a choice: remove the barrier and let the stream flow naturally, or supply the stream with its natural flow of water from some other source.³³ It is, in short, not any public interest that is to be directly served. It is instead the property interests of lower riparians.

This is made most clear where a stream is owned by one or more persons in its entirety. If one owner has title to the land adjoining a stream throughout its entire length, he is free to divide its use within his discretion among any number of lessees who will pay him accordingly. And if he sells his interest in the stream his grantees each take

179 (discusses the thorough economic usage of American streams); Graves, *Uniform State Action* 147-48 (1934) (early water resource regulation); McDougal & Haber, *Property, Wealth, Land* 1014 (1948); 5 Pomeroy, *Equity Jurisprudence* § 1975, at 4483 (4th ed. 1919).

30. *R. Dunkel, Inc. v. V. Barletta Co.*, 302 Mass. 7, 18 N.E.2d 377 (1938).

31. *Lawrence v. Inhabitants of Fairhaven*, 71 Mass. (5 Gray) 110 (1855); *Blood v. Nashua & Lowell R.R.*, 68 Mass. (2 Gray) 137 (1854); *Trustees of the Village of Newburgh*, 2 Johns. Ch. R. 161 (N.Y. 1816); cf. *Dickinson v. City of Worcester*, 89 Mass. (7 Allen) 19 (1863); 5 Pomeroy, *op. cit. supra* note 29, § 1976. See also, *Hotchkiss, Minerals of Might* 177 (1945), which sees stream obstruction as the physical basis for adequate development, thus showing economic need at variance with legal necessity.

32. *Rowe v. The Granite Bridge Corp.*, 38 Mass. (21 Pick.) 344 (1838); and for its effect on future value, see *Stimson v. Inhabitants of Brookline*, 197 Mass. 568, 83 N.E. 893 (1908).

33. *Hittinger Fruit Co. v. City of Cambridge*, 218 Mass. 220, 105 N.E. 868 (1914); cf. *Colburn v. Richards*, 13 Mass. 420 (1816). Natural flow will be determined by past records; and, if they are not available, the court will select the figure most likely to serve as the guarantor of justice on the basis of the available evidence.

a separate proportion of the waters of the stream and do not stand on the same footing as persons who derive their interests from owners who never held an exclusive right in the entire stream. Likewise, where owners on a stream agree among themselves to build up a head of water so that each may enjoy it during certain hours, the courts will enforce the agreement.³⁴

For the sake of the parties to such agreements, particularly those physically subordinate to upper riparian owners, these contracts had best be quite specific, since the courts will interpret them against a background of general water law.³⁵ Since there is no right to an intermittent flow of water, an upper proprietor may run his mill day and night so that no head of water for lower privileges can build up.³⁶ There is also no right to depend upon an upper riparian owner for any dam constructed by him, since he has no duty to maintain it for benefit of lower proprietors. Nor, if he does maintain it, has he an obligation to keep it in any particular condition to which lower owners may have grown accustomed.³⁷ It is, in fact, self-evident that location must determine who gets the water first; and the lower owners cannot complain if an upper owner gets full use of the water, or if, in getting that use, the water necessarily does not reach the lower owner until need for it has passed.³⁸ These matters, like others, depend upon the location of the particular interest on the stream. If a stream naturally silts up, a lower riparian owner cannot complain when it no longer flows to his land.³⁹ This is entirely different from having his ground inundated by some upper user who has removed the natural means whereby stream volume had been retarded previously,⁴⁰ or losing the water because some public user has drawn the water away for consumption without compensating him for his loss.⁴¹

34. *Crittenden v. Field*, 74 Mass. (8 Gray) 621 (1857); cf. *Binney v. Phoenix Cotton Mfg. Co.*, 128 Mass. 496 (1880); *King v. King*, 7 Mass. 496 (1811). See also, *Morris*, *Studies in the History of American Law* 244 (1930), which cites an early case implying the necessity of agreement.

35. *Phoenix Cotton Mfg. Co. v. Hazen*, 118 Mass. 350 (1875).

36. *Mason v. Whitney*, 193 Mass. 152, 78 N.E. 881 (1906).

37. *Weare v. Chase*, 93 Me. 264, 44 Atl. 900 (1899); *Taft v. Bridgeton Worsted Co.*, 237 Mass. 385, 130 N.E. 48 (1921). See *Ware v. Allen*, 140 Mass. 513, 5 N.E. 629 (1886).

38. *Hinckley v. Nickerson*, 117 Mass. 213 (1875); cf. *Inhabitants of Brookline v. Mackintosh*, 133 Mass. 215 (1882).

39. *Duncan v. Bancroft*, 110 Mass. 267 (1872).

40. *Grant v. Kuglar*, 81 Ga. 637, 8 S.E. 878 (1889); *Mears v. Dole*, 135 Mass. 508 (1833).

41. *Nealley v. Inhabitants of Bradford*, 145 Mass. 561, 14 N.E. 652 (1888); 5 *Pomeroy*, op. cit. supra note 29, § 1977. This is the rule even though some businesses of riparians would be aided thereby. 27 R.C.L. Waters § 35 (1920).

While a single owner of a stream is unconfined in his activities at common law, a user on a stream owned by several people must act so as not to destroy its value to the others.⁴² For this reason a lower riparian owner, even though the water be now flowing over his ground, cannot turn it onto another's land without incurring liability to the upper owners, since they have a right of continuous drainage in that watercourse which would be lost once it was closed; and no drainage onto another's property, even with permission, constitutes a sufficient substitute, since permission may be retracted.⁴³ It is true that a superfluity or a deficiency of water might force extreme measures for a brief time; and if they are necessary, reasonable, and beneficial, there will be no liability for any damages to those who might have foreseen their occurrence.⁴⁴

Courts have been reluctant to put any limitation upon the use of water in streams for various industrial purposes. Unless a grantor of a mill privilege, for instance, has put a strict limitation upon uses to which the mill site may be put, the courts will imply none, since the tendency is to read the grant as merely determining the amount of power conveyed rather than as a limitation upon its use. The use will be limited only by the nature of the stream and the functions to which it can be put.⁴⁵ To preserve that usefulness a riparian owner is empowered to keep the stream cleansed; and he may go upon the land of others to see that it is clear and to clear it if it is not, for he cannot be made to depend upon the activity of others who might have no interest in keeping the stream clean.⁴⁶ He has the right to have the water come to him clear of matter dangerous in his use of it and he may cleanse it to get that result, being liable to no one in his use of the water, unless he has injured them or they have an interest in his activities.⁴⁷

These rules, of course, are those as worked out by the courts in their job of creating case precedents for the making of the common law. Before modern public policy they must take a subordinate posi-

42. *Hapgood v. Brown*, 102 Mass. 451 (1869). This applies even more to injunctions, *Westbrook Mfg. Co. v. Warren*, 77 Me. 437, 1 Atl. 246 (1885).

43. *Hastings v. Livermore*, 81 Mass. (15 Gray) 10 (1860).

44. *Sumner v. Foster*, 24 Mass. (7 Pick.) 32 (1828).

45. *Tourtellot v. Phelps*, 70 Mass. (4 Gray) 370 (1855).

46. *Prescott v. Williams*, 46 Mass. (5 Met.) 429 (1843).

47. *Soule v. Russell*, 54 Mass. (13 Met.) 436 (1847); *Prescott v. Williams*, *supra* note 46; 27 R.C.L. *Waters* § 12 (1920), which says riparian rights "must yield to the demands of public commercial necessities." At common law the writ of *reparare facias* was the one brought when a servient tenement failed to keep in repair such riparian appurtenances as the river bank, 1 *Public Works in Medieval Law* 310-11 (Flower ed. 1915).

tion. The law has come a long way from the time when it was sufficient to find that a man who owned both banks, and hence the bed of a stream, was free to do with that stretch much as he willed.⁴⁸ Today the state, or the federal government where the state is subsidiary, may change the rule of reasonable use and "authorize the appropriation of the flowing waters for such purposes as it may deem to be in the public interest."⁴⁹ The modern state is tied inextricably to no doctrine, and may cut itself loose at any time when new considerations of public policy, based (as were those in the past) upon the economic knowledge of the day, are brought forward and are found to be in conformity with constitutional property rights.

III. THE PURITY OF THE WATERCOURSE

In the absence of statute, the courts have generally refused to set up priorities of water use, although at one time or another certain industrial users have been given a preferred status and domestic users have always had special consideration.

It is inevitable, if water in a stream is used, that it be roiled and slightly corrupted by earth and waste; but unless this corruption is sufficient to materially injure another user of the stream, it is permissible at common law.⁵⁰ There is a duty not to corrupt a stream so that others are deprived of a reasonable use of it; and that duty includes filtering out poisons before draining one's refuse into the waters of the stream.⁵¹ To fail to do so is as bad as if one were to turn privy water into a small stream incapable of carrying the burden, thereby flooding a whole area with stinking, infected water.⁵²

The courts recognize that streams have a certain limited capacity to purify themselves which is destroyed by the dumping of chemicals or other wastes in overlarge quantities.⁵³ There is no right in any riparian owner to pollute a stream and what will be permitted him in a thinly settled community will be denied in one thickly populated. There is, instead, an opposite right to receive the water undefiled so that it may be used and not to receive it so full of acids and metal scourings that it eats up hides washed in it or disintegrates machinery which it is used to move.⁵⁴ Nor is it important what the size of the

48. *Mayo v. Quimby*, 3 Dane Abr. 4 (1799).

49. *Amory v. Commonwealth*, 321 Mass. 240, 246, 72 N.E.2d 549, 554 (1947).

50. *Canfield v. Andrew*, 54 Vt. 1 (1882).

51. *MacNamara v. Taft*, 196 Mass. 597, 83 N.E. 310 (1907).

52. *Jackman v. Arlington Mills*, 137 Mass. 277 (1884).

53. *Dwight Printing Co. v. City of Boston*, 122 Mass. 583 (1877).

54. *Collins Mfg. Co. v. Wickwire Spencer Steel Co.*, 14 F.2d 871 (D. Mass. 1926); *Bumbarger v. Walker*, 393 Pa. 143, 142 A.2d 171 (1958) (applying the same rule to the effects of mine waste dumped into a ditch that pollutes a farm spring); *Lepper v. Wisconsin Sugar Co.*, 146 Wis. 494, 128 N.W. 54 (1910).

user hurt by the pollution bears in relation to the polluter.⁵⁵ A farm wife with a few cows is entitled to get stream water they can drink even if a mill worth a thousand times her cows' value lies above her farm.⁵⁶

It is true that in earlier days other standards were briefly attempted. Certain favored industries, such as sawmills, were permitted to dump refuse in the water, since the courts believed they could not run at all if other rules were to be followed.⁵⁷ Other stream users, such as municipalities, were allowed to convert open streams into open sewers with court sanction, on the justification that any other course of action would destroy the rising urban-industrial complexes.⁵⁸ But these were situations which neither nature nor the law could indefinitely tolerate. With the arrival of more factories and heavier urban populations, pollution began to reach such an intolerable state that the courts soon restored the old rule that required users of water to return it to the stream in a substantially unpolluted and cooled condition.⁵⁹

The courts have refused to put specifically any higher value on either agricultural, manufacturing, or commercial uses, whatever they may have done to incidentally further one at the expense of the other in specific cases. Circumstances may change so that what was once a valuable land use is not so now in relation to the water resource; and, consequently, the courts have refused the palm of preference to either irrigation, or factories, or water companies, or other users.⁶⁰ Because of this refusal to make functional distinctions, the ordinary standards of negligence, particularly in cases of well poisoning, are often applied, so that proof of reasonable care, scope of risk, and limit of damages must often be heard.

Where a livery stable's well is filled with an escape of poisonous gas from a neighboring mill and the horses die after drinking it, the

55. *Parker v. American Woolen Co.*, 195 Mass. 591, 81 N.E. 468 (1907).

56. The illustration of the cows is from *MacNamara v. Taft*, 196 Mass. 597, 83 N.E. 310 (1907).

57. *Red River Roller Mills v. Wright*, 30 Minn. 249, 15 N.W. 167 (1883); *Palmer v. Mulligan*, 3 Caines 307 (N.Y. 1805); *Jacobs v. Allard*, 42 Vt. 303 (1869); *Jones & Powell's Case*, Palm. 536, 81 Eng. Rep. 1208 (K.B. 1664).

58. *City of Valparaiso v. Hagen*, 153 Ind. 337, 54 N.E. 1062 (1899); *City of Richmond v. Test*, 18 Ind. App. 482, 48 N.E. 610 (1897).

59. *Winchell v. City of Waukesha*, 110 Wis. 101, 85 N.W. 668 (1901); *Aldred's Case*, 9 Co. Rep. 57b, 77 Eng. Rep. 816 (K.B. 1611). See *Lewis v. Stein*, 16 Ala. 214 (1849); *Para Rubber Shoe Co. v. City of Boston*, 139 Mass. 155, 29 N.E. 544 (1885).

60. For an excellent policy discussion on agricultural versus industrial uses, see *Newcomb v. Smith*, 2 Pin. 131 (Wis. 1849). See also, *Bent v. Wheeler*, 3 Dane Abr. 16 (1800); *Cummings v. Barrett*, 64 Mass. (10 Cush.) 186 (1852).

owner must prove that they died from the mill's poisons before a recovery against the mill will be allowed.⁶¹ One whose well is polluted with gasoline must show that the harm could come only from the oil storage tanks of his particular defendant and he cannot make his case by showing repairs on the defendant's premises after the alleged pollution.⁶² A dredge owner, drawing up garbage from the harbor bottom, is responsible for the value of all lobsters poisoned in nearby cars if he does nothing to prevent pollution.⁶³ In each of these cases, the standard tests in negligence matters must be met and the situations are not treated as differing in any way from hit-and-run accidents.⁶⁴

The weapon of injunctive relief, in comparison, is particularly useful in the field of water law. Where the statutes have not come to the aid of the common law and where certain uses cannot be abated as nuisances, a person would be without an effective remedy in the midst of a superabundance of causes of action, if it were not for the equitable forms of relief. Only equity can grant, in many particulars, that final relief from injury which is what persons injured in their property rights desire. Illustrations by example are perhaps the best way of revealing this.

One stream user may enjoin another from washing sheep skins in the stream and polluting it with arsenic, since it is this sort of continuing nuisance over which legal remedies have slight control.⁶⁵ Nor will an injunction be denied a private person suffering a present injury merely because some state agency has power to stop the particular use of the water or has authorized the waste disposal methods in use.⁶⁶ A town that dumps its sewage into a mill pond will be enjoined from doing it further and under the mandatory provisions of the decree will be compelled to clear the watercourse of refuse it has

61. *Sherman v. Fall River Iron Works Co.*, 87 Mass. (5 Allen) 213 (1862).

62. *Gauvieu v. Gulf Refining Co.*, 288 Mass. 54, 192 N.E. 220 (1934); *Enders v. Sinclair Refining Co.*, 220 Wis. 254, 263 N.W. 568 (1936).

63. *Smith v. Bay State Dredging & Contracting Co.*, 272 Mass. 183, 172 N.E. 67 (1930). See also *Kuehn v. City of Milwaukee*, 92 Wis. 263, 65 N.W. 1030 (1896).

64. As codified by Mass. Ann. Laws c. 92, § 17 and c. 111, §§ 5, 17 (1954), the states have increasingly concerned themselves with state control over all sources of water pollution, with administrative effort being made to regulate the situation.

65. *Harris v. Mackintosh*, 133 Mass. 228 (1882). See also *Greene v. Nunne-macher*, 36 Wis. 50 (1874).

66. *Hasslinger v. Village of Hartland*, 234 Wis. 201, 290 N.W.2d 647 (1940) (abatement of nuisance); *Briggson v. City of Viroqua*, 264 Wis. 47, 58 N.W. 2d 546 (1953) (applying the same rule in the presence of eminent domain powers in local boards by permitting an equity action for a prohibitory injunction).

deposited.⁶⁷ Naturally, general rules apply here too; and no injunction or other equitable relief will issue where the courts feel the legal remedy to be adequate, especially where that legal remedy is the payment provision of some eminent domain action by an authorized power.⁶⁸ Even where an injunction would have been proper otherwise, it will not be granted where a water user has rested on his rights, knowing that he had them, knowing that he was hurt if he did not enforce them, and, yet, still failing to do so.⁶⁹ But, aside from these difficulties, equity remains a useful remedy, since it is adaptable and binding, capable of being modeled to fit the needs of the parties, and perpetual in its effect.⁷⁰ It is as flexible in its nature as any order of a judicial tribunal can be and when combined with a master's hearing comes as close to the effectiveness of the administrative process as any court can come.⁷¹

The courts have created a special category in water law cases for the problem of a supply of pure drinking water for domestic consumption. Here, the courts have often gone to comparative extremes to protect the purity of a water supply. Despite their ancient rights, for example, the Massachusetts public can be excluded from a great pond used for supplying a municipality with drinking water; and the court will not hear whether or not the would-be users would pollute the water by their activity.⁷² Once a stream was taken as a water

67. *Middlesex Co. v. City of Lowell*, 149 Mass. 509, 21 N.E. 372 (1889).

68. *Pomeroy*, op. cit. supra note 29, which considers in detail the equitable remedy vis-a-vis water.

69. *Fay v. Proprietors of the Salem & Danvers Aqueduct*, 91 Mass. (9 Allen) 577 (1865).

70. *Inhabitants of Plymouth v. Russell Mills*, 89 Mass. (7 Allen) 438 (1863).

71. *Bemis v. Upham*, 30 Mass. (12 Pick.) 169 (1832).

72. *Sprague v. Minon*, 195 Mass. 581, 81 N.E. 284 (1907). The control of great pond waters lies in the Commonwealth under the Ordinances of 1641 and 1647, applying to all lakes over 10 acres in extent not privately owned prior to 1647, *Hittinger v. Eames*, 121 Mass. 539 (1877). Having this control, the Commonwealth may dispose of the waters without compensation to riparians on streams rising therein and may grant licenses in their use to private parties, *Dodge v. Inhabitants of Rockport*, 199 Mass. 274, 85 N.E. 172 (1908). The public is normally protected in its rights in the waters for fishing, fowling, boating, swimming, ice-skating, or any domestic, agricultural, or manufacturing purpose for which the water can be used, *Potter v. Howe*, 141 Mass. 357, 6 N.E. 233 (1886). The practical effect depends upon access and on this the early legislation is silent since, at that time, the littoral lands were wild. Consequently, in the absence of wild land, or a state-owned access point, or a privately dedicated ingress-egress, or a commercially operated amusement, the public can be, and is, excluded by littoral owners, *Slater v. Gunn*, 170 Mass. 509, 49 N.E. 1017 (1898). Even ice-cutters cannot take ice from over-flow waters, so strictly preserved are the rights of littoral owners, *Paine v. Woods*, 108 Mass. 160 (1871). Great pond waters have been compared to tide waters and navigable streams, in which

supply under public authority, even in jurisdictions that permitted prescriptive pollution rights, such powers were thereby lost and became subject to condemnation.⁷³

But the courts have also been places of last resort for economic appeals that have struck harshly at beliefs in the priority of the public health. Public authorities have been forbidden to order the owners of reservoirs for industrial water supply to fill them up in order to protect the public health.⁷⁴ The courts have refused to prohibit a continuing polluter from pouring arsenic into a public water supply, even in violation of a statute, because the business doing it was respectable and the damage slight, since the water was filtered through earth before use.⁷⁵ The courts have found an industrial user beyond the terms of a statute forbidding pouring waste into the tributary of a water supply, because his overflow waste ran into a swamp from which the town's pond drew its source for the town's drinking water,⁷⁶ and the courts have refused to enjoin the corruption of a city's water supply by drainage from a piggery, because the mayor of the complaining town was not the proper party to bring the action.⁷⁷

It is plain, therefore, that in the matter of water purity, even in relation to water for human consumption, the courts do not dispense an even justice. They forbid in one case what they permit in another; and on the same facts one jurisdiction finds a way of reaching conduct

the public has the paramount interest but access to which may be cut off by adjoining landowners, *Attorney General v. Jamaica Pond Aqueduct Corp.*, 133 Mass. 361 (1882). Only by special grant of the legislature (most unlikely today) can there be created in the waters themselves any exclusive interest in private persons. Some have regarded the great ponds as surprising exceptions, but actually they are similar to the *commons sans nombre* of the Jacobean period that saw their creation.

73. *Martin v. Gleason*, 139 Mass. 183, 29 N.E. 664 (1855). In fact, 27 R.C.L. Waters § 136 (1920) says, "[I]n no case can a prescriptive right of pollution be acquired which is superior to the right of a state to exercise its police power."

74. *Watuppa Reservoir Co. v. Mackenzie*, 132 Mass. 71 (1882). See also *Douglass v. State*, 4 Wis. 403 (1855). For an early statute on this problem, see "An Act relative to mill ponds," II Mich. Terr. Laws 1828, at 690 (1874 ed.).

75. *Inhabitants of Brookline v. Mackintosh*, 133 Mass. 215 (1882). For a "red in tooth and claw" case, see *Danaher v. City of Brooklyn*, 4 Civ. Proc. R. 286 (1883), aff'd, 51 Hun 563, 4 N.Y. Supp. 312 (1889), aff'd, 119 N.Y. 241, 23 N.E. 745 (1890).

76. *Selectmen of Rockport v. Elwell*, 219 Mass. 287, 106 N.E. 994 (1914); *Green v. Ashland Water Co.*, 101 Wis. 258, 77 N.W. 722 (1898).

77. *Mayor of Cambridge v. Dean*, 300 Mass. 174, 14 N.E.2d 163 (1938). For other grim examples of judicial preoccupation with technicalities, see *Buckingham v. Plymouth Water Co.*, 142 Pa. 221, 21 Atl. 824 (1891); *Commonwealth v. Towanda Water Works*, 22 Weekly Notes of Cases 429 (Pa. 1888).

that another is unable to conceive of as prohibitable.⁷⁸ Perhaps, because of the exigencies of pleading, this is inevitable in judicial proceedings; but if this is so, it means that for these reasons and for the reason that judicial remedies are always exclusively related to the solution of single, litigated cases lawyers need not be surprised that the judicial-orientation in water law has been replaced by another view that looks primarily to the administrative agency. This is nowhere more apparent than in the case of water pollution matters where the protection of the public health requires summary relief.

THE EFFECT OF NAVIGABILITY

Indirectly related to the problem of pollution is the matter of stream navigability. In fact the early pollution legislation was largely designed to keep open waters upon which early communities were dependent for communication and trade. Only the solution of these gross problems have freed the law makers for consideration of such a comparatively subtle issue as the bio-oxygen demand of wastes upon water. Yet, divorced from this aspect of navigability, are larger issues to which substantial differences in interpretation have attached.

For example, although the civil law declares every stream navigable which can bear river traffic, the common law holds that stream navigable only in that part in which the tide ebbs and flows. Exceptions to the common law existed at an early date so that the king's agents were empowered to keep clear the great rivers in which the bulk of the navigation for internal trade were carried on.⁷⁹ Those American jurisdictions which profess to follow the common law most closely, and whose proximity to the ocean makes this physically feasible, have always added a proviso that boating and rafting are free to the public upon all streams capable of floating them.⁸⁰ Also in these jurisdictions, not every ditch capable of carrying a shallow-draft boat and in which salt water ebbs and flows is navigable. In the absence of a statute, the courts normally require a stream to be usable regularly for some commercial purpose of transportation in the service of trade

78. Compare *Green v. Ashland Water Co.*, 101 Wis. 258, 77 N.W. 722 (1898), with *Stubbs v. City of Rochester*, 226 N.Y. 516, 124 N.E. 137 (1919). Also compare *Howell v. M'Coy*, 3 Rawle 256 (Pa. 1832), with *Jacobs v. Allard*, 42 Vt. 303 (1869).

79. *Murphy*, *English Water Law Doctrines Before 1400*, 1 *Am. J. Legal Hist.* 103, 110 (1957).

80. *Blood v. Nashua & L. R.R.*, 68 Mass. (2 Gray) 137 (1854) (dictum); *Ingraham v. Wilkinson*, 21 Mass. (4 Pick.) 268 (1826) (dictum); *Angell*, *Tide-Waters* 62 (1826), gives the English rule and its American derivatives. *Carson v. Blazer*, 2 Binn. 475 (Pa. 1810), was the first American case to hold fresh water navigable and to refuse title in the river bed of such a great stream as the Susquehanna to riparians.

or agriculture.⁸¹ Since Bracton's time at least, the waters of navigable streams have been public property; and their abuse as avenues of commerce has not been correctable in private suits, but only in public indictments,⁸² although from the time of Glanvil private persons, suffering special injury as a result of this abuse, have had the right to recover their damages in private civil actions from those parties who are the especial provable cause.⁸³

Riverside owners, who can refuse access across their lands to the navigable streams, cannot themselves be deprived of access to the streams, even by the state, unless compensation is paid for this loss of access. Normally, as part of his riparian rights, a riverside owner can build wharves and docks on the flats; but when the flats are overflowed he cannot exclude the public from boating on that part of the river, although he may forbid them the use of his structures in every instance except one of peril to the river users.⁸⁴ The same limitation applies to bridge builders who may sink their piers so long as the navigability of the stream is not thereby destroyed or unreasonably diminished.⁸⁵ This duty, however, is enforceable only by the public prosecutor; and in the 19th century, when railroads dealt roughly with their river competitors, many a bargeman, who was bothered by piers that an indifferent prosecutor refused to do anything about, must have longed to blow the obstruction out of his way as one hardy spirit did.⁸⁶

Problems of stream navigability have sunk into the background of the law. Today it is primarily a question of federal against state jurisdiction, or an assertion of public interest against private riparian interest; and in such instances it serves mainly as a springboard for stream control for purposes unrelated in reality to navigation. The courts may continue to speak of navigation as the operative constitutional factor; and the legislatures may be led thereby to set out navigation as the primary legislative purpose in the underlying policy behind river improvement programs; but today the concern is truly

81. *Commonwealth v. Vincent*, 108 Mass. 441 (1871); *Rowe v. Granite Bridge Corp.*, 38 Mass. (21 Pick.) 344 (1838).

82. *Murphy*, *op. cit.* supra note 79, at 104-05.

83. *Franklin Wharf Co. v. City of Portland*, 67 Me. 46 (1877); *Lawrence v. Inhabitants of Fairhaven*, 71 Mass. (5 Gray) 110 (1855); *Borden v. Vincent*, 41 Mass. (24 Pick.) 301 (1839); *Hatch v. Dwight*, 17 Mass. 289 (1821); *Rex v. Medley*, 6 Car. & P. 292, 172 Eng. Rep. 1246 (K.B. 1834).

84. *Home for Aged Women v. Commonwealth*, 202 Mass. 422, 89 N.E. 124 (1909). In fact, a lease of land in a navigable river lying between high and low water mark by an adjacent riparian is void as contrary to public policy. *Elliott, Contracts* § 782 (1913).

85. See *Southern Ry. v. Weidenbrenner*, 61 Ind. App. 314, 109 N.E. 926 (1915).

86. *Commonwealth v. Tolman*, 149 Mass. 229, 21 N.E. 377 (1889).

over such problems as sedimentation, pollution, flooding, and water shortage. The chief function of the rules of law developed by the courts in relation to navigation, so far as these needs are concerned, lies in the broad assertion of public interest traditionally made in the use of navigable waters. Today the main issue is the extension of the principle of a similar, or stronger, public interest in the entire water resource wherever located.⁸⁷

IRRIGATION

Because of the rights of riparians to receive their water either in its natural condition or subject to other riparians' reasonable uses, and because irrigation can so easily destroy the physical basis of such a right, the courts have refused to find any abstract right of irrigation, with specifically permissible and forbidden techniques. Rather it has been left to the determination of each judge in particular cases to weigh the hardships involved. The only adamant rule is that no one may have the waters of an entire stream for irrigation. Every man may irrigate his fields by dipping water from the brook, or by letting it run through runnels in his ground carried by its natural

87. What has been said concerning streams has an almost equal applicability to lakes and their littoral lands. Ziegler, *Water Use Under Common Law Doctrines*, in *Water Resources and the Law* 51, 52 (1958). Owners of the littoral on non-navigable lakes or private ponds own them as absolutely as they own their banks. *Richards v. Gauffret*, 145 Mass. 486, 14 N.E. 535 (1888); *Luscher v. Reynolds*, 153 Ore. 625, 56 P.2d 1158 (1936). If but a part of the littoral is owned, title runs at descending angles to the center of the lake in favor of the littoral owner. *United States v. Ladley*, 42 F.2d 474 (D. Idaho, 1930). Others will be excluded with all their improvements unless title has changed by operation of adverse possession. *Westhampton Reservoir Recreation Corp. v. Hodder*, 307 Mass. 288, 29 N.E.2d 913 (1940); *Shaffer v. Baylor's Lake Ass'n*, 392 Pa. 493, 141 A.2d 583 (1958). Some states have followed Massachusetts' lead in relation to her great pond ordinances, and have declared all lakes over ten acres in extent affected with a public interest. Compare *Inhabitants of West Roxbury v. Stoddard*, 89 Mass. (7 Allen) 158 (1863), with *Holle v. Drudge*, 190 Ind. 520, 129 N.E. 229 (1920). But navigable lakes are in a radically different category. Compare *Clifton v. Watuppa Reservoir Co.*, 243 Mass. 198, 137 N.E. 362 (1922), with *United States Leather Co. v. City of Lynn*, 293 Mass. 14, 199 N.E. 313 (1935). There, the littoral owner has title to high water mark. *Churchill Co. v. Kingsbury*, 178 Cal. 554, 174 Pac. 329 (1918). But see *Flisrand v. Madson*, 35 S.D. 457, 152 N.W. 796 (1915). Everything therein, including the bottom and any islands, belongs to the state. *Attorney General v. Herrick*, 190 Mass. 307, 76 N.E. 1045 (1906). The littoral owner upon a navigable lake or great pond has all the rights of the general public with the added advantage of easier access. *Los Angeles Athletic Club v. City of Santa Monica*, 63 Cal. App. 2d 795, 147 P.2d 976 (1944); *People's Ice Co. v. Davenport*, 149 Mass. 322, 21 N.E. 385 (1889); *Rowell v. Doyle*, 131 Mass. 474 (1881). However, this superior power remains in the state as the representative of the people.

force;⁸⁸ but industrial jurisdictions have forbidden him to create a reserve for future irrigation purposes where lower mill privileges in active use would be thereby destroyed.⁸⁹

An irrigator may even divert a stream so that he may better use the water on his land, so long as he does not exhaust its supply and returns it, unchoked by earth, to the original bed of the watercourse.⁹⁰ Conversely, an irrigator, using a flow of water running over the surface of the ground to irrigate so unlikely a crop as clay for bricks, cannot be deprived of it by an upper riparian who has diverted it for his own use.⁹¹ A reasonable and beneficial use of water for irrigation purposes, not interfering with another's reasonable and beneficial use of the same water and not harmful to anyone else, will be protected by the courts whatever its economic purpose. This is so whether the court is dealing with land suffering from a deficiency of water or a crop that requires a surplus of water.⁹²

Because the courts have refused to meet the problem of irrigation in a forthright manner, setting forth predictable results upon known fact situations, there has had to be a resort to the legislature. The courts ought not to be held blamable, perhaps, since it has been their purpose to provide justice in individual cases, with the result that contradictory uses have been maintained as equally valid. And, in any event, with the problems of working arid lands looming so large, legislative policy-making would have been a necessity whatever the work of the courts. Nothing makes this clearer than the need in Massachusetts and Wisconsin to enact special acts to make possible the growing of so economically minor (if culturally vital) a crop as cranberries, due to the gross demand for water made by this plant. In the presence of economic demands requiring over-all physical changes in order to carry them through, nothing less than the full power of the legislature is sufficient, for such functions are not within the proper province of the courts.⁹³

88. *Weston v. Alden*, 8 Mass. 135 (1811).

89. *Anthony v. Lapham*, 22 Mass. (5 Pick.) 175 (1827); *Colburn v. Richards*, 13 Mass. 420 (1816). Even in arid states an irrigation company is not justified in withholding water from contractees in order to build a reserve against a possible future shortage. 15 R.C.L. Irrigation § 34 (1917).

90. *Newhall v. Ireson*, 62 Mass. (8 Cush.) 595 (1851); *Mohr v. Gault*, 10 Wis. 455 (1860) (applying similar rules in drainage cases); *Embrey v. Owen*, 6 Welsb., Hurls. & Gord. 353, 86 Rev. Rep. 331 (Ex. 1851); Martz, in *IVa American Law of Property* § 28.56, at 163-64 (1954).

91. *Macomber v. Godfrey*, 108 Mass. 219 (1871).

92. *Weston v. Alden*, 8 Mass. 136 (1811). For statutory language illustrative of this point, see Mass. Ann. Laws c. 253, § 39 (1956).

93. See generally Haber, *Introductory Essay*, in *Water Allocation in the Eastern United States* xxv (1956). This section does not deal with irrigation

THE DAMMING OF THE WATERWAYS

Beginning with the statute of 13 Anne (1714) in the Province of Massachusetts, American legislatures have adopted a public policy encouraging the erection of mills that would develop the water power resources and increase the general prosperity of the entire community. To accomplish this end the legislatures adopted what amounted to a rule of prior appropriation for mills in the use of streams, so that the first mill built might destroy other mill sites by its operation and stand protected under the law. The builder of the first mill on an undeveloped stretch of river might flood mill sites above him and stand off the flowing of his mill privilege from below, so long as his mill was active. This did not mean he could determine the uses of the river below him, but it did mean that he might use the stream in a reasonable manner, considering the "force and magnitude of the current, its height and velocity, the state of improvement in the country in regard to mills and machinery, and the use of water as a propelling power, the general usage of the country in similar cases, and all other circumstances bearing upon the question of fitness and propriety in the use of the water in the particular case."⁹⁴

In building his dam, the mill-owner was not responsible for incidental damage caused by his pond,⁹⁵ but he was not allowed to hold water back unreasonably,⁹⁶ barring some special privilege, or else he would have been liable to any injured lower users. In the same way, a lower mill owner was liable for setting water back upon an existing mill,⁹⁷ though he was not barred from getting a maximum use of the stream by setting the water back to the raceway of the upper mill, so long as he did not affect its current operation.⁹⁸

from high capacity wells. For this common modern technique, see Calabresa, *Water in Rural Areas*, in *Proceedings, Conference on Water Management in Soil Conservation Districts*, U.S. Forest Products Laboratory (1957).

94. *Thurber v. Martin*, 68 Mass. (2 Gray) 394, 396 (1854). The first statute is now incorporated in Mass. Ann. Laws c. 253 (1956). Similar statutes are, "An Act for the support and regulation of Mills," II Mich. Terr. Laws 1824, at 192 (1874 ed.); "An Act for the regulation of Mills and Mill-ponds," III Mich. Terr. Laws 1833, at 1175 (1874 ed.); "An Act in relation to Mills and Mill-dams," Wis. Terr. Laws 1839-40, No. 48; Wis. Rev. Stat. c. 56 (1858). These statutes reflect in their jockeying the deep but conflicting community interest. On analogy of prior appropriation doctrine, see Haar & Gordon, *Legislative Change of Water Law in Massachusetts*, in *Water Allocation in the Eastern United States* 1, 36-37 (1956). On the first developer's powers, see *Barrett v. Parsons*, 64 Mass. (10 Cush.) 367 (1852); *French v. Braintree Mfg. Co.*, 40 Mass. (23 Pick.) 216 (1839).

95. *Duncan v. New England Power Co.*, 250 Mass. 228, 145 N.E. 427 (1924).

96. *Clarke v. French*, 122 Mass. 419 (1877).

97. *Gleason v. Assabet Mfg. Co.*, 101 Mass. 72 (1869).

98. *Brown v. Dean*, 123 Mass. 254 (1877); *Bottomly v. Chism*, 102 Mass. 463 (1869); *Sumner v. Tileston*, 24 Mass. (7 Pick.) 198 (1828).

Under the mill acts, a mill owner had the right to flow the land of upper landowners in order to form his mill-pond; and, once a sheriff's jury or a referee or arbitrator had determined the height of his dam, the extent of his flowage, and the assessment of the damages, he had to act in accordance with such findings or forfeit his statutory rights and become liable at common law. However, so strong was the public policy behind the mill acts, that until bound by a specific finding, he might vary both the height of his dam and the extent of his flowage without further liability than an assessment under the statute or, if he chose it himself, an action at common law.⁹⁹ He acquired no title to the land flowed, whose owner retained the right to use it for any purpose until flowed and even after flowage to use the water for any reasonable purpose that did not adversely affect the mill.¹⁰⁰ The owner of the flowed land also retained the use of the water before it reached the mill's pond, so long as that use too did not prevent the pond, and the mill, from fulfilling their proper function.¹⁰¹ The dam had to be built to adequately protect third parties in case of a breakthrough;¹⁰² and, because of another public policy, a fishway had to be left through the dam for the passage of migratory fish accustomed to swim up that stream.¹⁰³ Once the owner of a mill-site had signified that he intended to develop it and had begun to vigorously push on the work, that site was effectively appropriated and could not be flowed by the owner of another site. Once developed, he could defend it at law, until abandoned—and abandoned not merely by non-use, but by the removal of the mill or dam or by some other expression of intent similarly emphatic.¹⁰⁴ Anyone claiming damage from a mill-dam could not remove it by self-help, or resort to any other remedy than that pro-

99. *Clement Mfg. Co. v. Wood*, 162 Mass. 173, 38 N.E. 444 (1894); *Brady v. Blackinton*, 113 Mass. 238 (1873); *Green Bay & Miss. Canal Co. v. Telulah Paper Co.*, 140 Wis. 417, 122 N.W. 1062 (1909).

100. *Storm v. Manchaug Co.*, 95 Mass. (13 Allen) 10 (1866); *Wood v. Edes*, 84 Mass. (2 Allen) 578 (1861).

101. *Paine v. Woods*, 108 Mass. 160 (1871); *Union Falls Power Co. v. Marinette County*, 238 Wis. 134, 298 N.W. 598 (1941).

102. *Gray v. Harris*, 107 Mass. 492 (1871).

103. *Commissioners on Inland Fisheries v. Holyoke Water Power Co.*, 104 Mass. 446 (1870). Another overriding public policy led to the prohibition against the flowing of public land. *Inhabitants of Cheshire v. Adams & Cheshire Reservoir Co.*, 119 Mass. 356 (1876); *Commonwealth v. Stevens*, 27 Mass. (10 Pick.) 247 (1830).

104. *Eddy v. Chase*, 140 Mass. 471, 5 N.E. 306 (1886); *Burnham v. Story*, 85 Mass. (3 Allen) 378 (1862); *Newcomb v. Smith*, 2 Pin. 131 (Wis. 1849); *Luning v. State*, 2 Pin. 215 (Wis. 1849).

vided by statute, even though that should have been admittedly inadequate.¹⁰⁵

The reasoning behind these mill acts was the assurance of the operation of water mills financed out of the capital of the less enterprising riparian landowners. It was in the nature of a forced loan from agriculture for the benefit of a growing industrial structure. To be sure, the legislature sought to protect the expropriated, first by annual payments for the land flowed, and then by giving them the choice between these and a lump sum payment, so that they would not bear the entire burden of the mill-owner's success uncompensated.¹⁰⁶ So strong was the policy in its heyday that a mill owner could flood even the home of an upper owner to form his pond;¹⁰⁷ or form a reserve pond far above his mill so long as it was on the same stream;¹⁰⁸ or build his dam from one shore owned by him to another under his title.¹⁰⁹ Indeed, if he could show the mill pond benefited the upper landowner more than it damaged him he had no need to pay him anything,¹¹⁰ since one owner on a stream owes no particular duty to any other beyond that imposed by statute and the common law rule of equal, reasonable, and beneficial use.¹¹¹

The whole motivating force behind this entire battery of legal precedents lay in the extraction from the waterways of the states the maximum beneficial use for every industrial purpose. A contemporary economic demand produced a reaction in the legislature sufficient to make its realization possible, despite entrenched rules of the common law.¹¹² It was an effort on the part of the 19th century to make

105. *Smith v. Agawam Canal Co.*, 84 Mass. (2 Allen) 355 (1861); *Baird v. Hunter*, 29 Mass. (12 Pick.) 555 (1832).

106. *Eames v. New England Worsted Co.*, 52 Mass. (11 Met.) 570 (1846); *Fowler v. Holbrook*, 34 Mass. (17 Pick.) 188 (1835). Flowing agreements were enforceable only under seal. *Cobb v. Fisher*, 121 Mass. 169 (1876). No mill owner was responsible for flowing damages inflicted by his predecessor in interest. *Holmes v. Drew*, 24 Mass. (7 Pick.) 141 (1828). For an explanation of resource exploitation as a substitute for capital, see Hyams, *Soil & Civilization* 147-48 (1952).

107. *McNally v. Smith*, 94 Mass. (12 Allen) 455 (1866).

108. *Drake v. Hamilton Woolen Co.*, 99 Mass. 574 (1868); *Bates v. Weymouth Iron Co.*, 62 Mass. (8 Cush.) 548 (1851).

109. *Bliss v. Rice*, 34 Mass. (17 Pick.) 23 (1835); *Jewell v. Gardiner*, 12 Mass. 311 (1815).

110. *Avery v. Van Deusen*, 22 Mass. (5 Pick.) 182 (1827).

111. *Inhabitants of Shrewsbury v. Smith*, 66 Mass. (12 Cush.) 177 (1853). The policy of flooding applies only to mill privileges and not to municipal water suppliers to give them power to create reservoirs. *Davenport v. Town of Danvers*, 332 Mass. 580, 126 N.E.2d 530 (1955).

112. *Duncan v. New England Power Co.*, 225 Mass. 155, 113 N.E. 781 (1916); *Fiske v. Framingham Mfg. Co.*, 29 Mass. (12 Pick.) 68 (1831); *Fisher v. Horicon Iron and Mfg. Co.*, 10 Wis. 351 (1860); Hurst, *Law & Conditions Of Freedom In Nineteenth-Century United States* 25, 63 (1956).

private capital serve dual purposes so that industrial enterprise might be financed out of the abundant natural resources of the day rather than through the investment of a short supply of cash. By the beginning of the 20th century such statutes had outlived their usefulness, partly because of a change in the source of energy, partly because of the enormous growth of industry, and partly because their proliferation had produced a profoundly bad effect upon the health of the streams. The consequence has been a reorientation of legislative thinking, although the mill acts have often been allowed to stay upon the books. They have been rendered largely dead letters, however, through the delegation by the legislature of the power to oversee the damming of streams from itself to the state public service commission. Today, persons desiring to build dams must secure a permit to do so from the administrative agency concerned; and in so doing must be prepared to prove the necessity and benefit of the proposed structure. And, because the modern dam that produces electric power is a very different structure from the predecessor that made up a head to turn one wheel, the decision as to whether to grant the permit will involve broad political, economic, and legal issues that make the cases under the old mill acts seem the remnants of a halcyon age.¹¹³ Most river experts today believe that even the modern agencies are too free with their dam permits, with the result that modern rivers are so slowed down that their repurifying powers are destroyed; but there is no doubt that the situation would be far worse under the uncontrolled dam construction favored by the old mill acts. Here as elsewhere prior appropriation and the assertion of individual right have had to be subordinated to the public interest under the management of administrative agencies with a state-wide outlook.

THE WATERSHED AND ITS WATER USE

The orientation of the common law of water is upon the rights of riparian land owners. A strict application of that rule would permit stream water to be used anywhere upon the land of a title-owner of any portion of the stream bank. This however is the rule in only a trifling number of jurisdictions. The overwhelming number make a further distinction which limits the definition of riparian land to that

113. For a typical statute of the modern kind, see Wis. Stat. § 31.06 (3), 31.18 (4) (1957). For the background presenting the reasons for the change from old to new techniques of dam management, see Birge, Report on Water Powers, in First Report of the Wisconsin Conservation Commission 10 (1909). For an example of the modern considerations, see High Dams and Upstream Storage, in Foreword to Proceedings, Second Annual Water Resources Conference, Montana State University Studies in Law (Stone ed. 1957).

portion lying within the watershed of the stream whose waters the riverside owner wants to use.¹¹⁴

Normally, a person owning land upon the banks of a stream has a right to make reasonable use of the water that passes by his land; and he cannot remove that water from its stream's watershed unless the amount removed is too slight to cause any potential damage to the parent stream. The reason for this is plain, since a stream depends upon its watershed for its volume of water. If water is abstracted from one watershed and drained into another stream, a twofold damage may result: while the first stream is deprived of its sources, the second may be overwhelmed by an unwontedly burdensome flow. It is true that every landowner may divert water for a reasonable use; and, if he returns it to the original stream bed or diverts so little that no other riparian owner is hurt, he is not responsible to anyone. But if the current is seriously reduced in one stream, or the volume of another seriously swelled in another watershed, so that actual damage is suffered by those below him, then he is responsible to them for those damages.¹¹⁵

Since, therefore, there is no prohibition against removing water from its watershed so long as the use is reasonable and the water is returned, there is a triteness in the rule that permits a riverside owner to use water anywhere within the single tract that runs to the stream, however many watersheds it might cross. Besides, in most jurisdictions a riparian owner may use stream water on a separate estate under the same limitation, by which he might remove water from the watershed whether it lies within the watershed or not. Only if this diversion threatens a present or future reasonable use of the water by others will the diversion be improper—with the tacitly understood corollary that "reasonable" will be defined only after the persons concerned have litigated it through to a meaning.

The users that are really hit, and properly so, by the watershed rule are those for whom the use of water means its eventual destruction. These are industries that would use it for the manufacture of steam, or to adulterate poisonous chemicals, and whose employment of water means its total obliteration or its return in a condition that is incredibly dangerous to continued stream life unless expensive purification techniques are applied. In the same class are municipal

114. The very slight minority view is set out in *Jones v. Conn*, 39 Ore. 30, 64 Pac. 855 (1901); *Watkins Land Co. v. Clements*, 98 Tex. 578, 86 S.W. 733 (1905). Ziegler, *Water Use Under Common Law Doctrines*, in *Water Resources and the Law* 56-58 (1958), states the majority position, quoting *Farnham, II Water and Water Rights* 1571 (1904).

115. *Sturtevant v. Ford*, 280 Mass. 303, 182 N.E. 560 (1932); *Stratton v. Mt. Hermon Boys' School*, 216 Mass. 83, 103 N.E. 87 (1913).

water suppliers who would deprive a stream of its flow in order to supply an urban area with its needed water. Of course, some of this may be sent back as sewer effluent; but apart from the purity considerations, many municipalities draw their water from one watershed and dump their effluent in another, with serious if different consequences for each. This being so, the very least the law can require is a condemnation of a stream's water resources for these purposes, with the satisfaction of those whose property is expropriated by such uses. The most that can be considered is a water management system that looks to the total uses of a stream in the allocation of stream services.¹¹⁶

This rule represents a limitation upon another "absolute" right normally considered incident to riparian ownership. The ground beneath the water of a non-navigable river or lake belongs to the owners of the adjoining banks, each of whom owns the sub-water land in equal parts with the property of each running to the middle part or thread of the stream, subject to the right of the public to boat and raft upon the surface of the waters. The thread is not to be confused with the channel of the stream, which is the place in which the water flows deepest and steadiest, for the thread lies midway between the points on the banks at which the water rises when it is in its natural and ordinary stage. In consequence, whatever land that is gradually formed in the bed of the stream, whether against the bank or not, will be divided according to the thread of the stream, so that if an island forms itself in the precise center it will be divided between the proprietors of the opposite banks according to the original thread of the watercourse.¹¹⁷

116. For an example of state legislation on watershed regulation through municipal conservation commissions, see Mass. Ann. Laws c. 40, § 8C (Supp. 1959); through municipal water districts, see Mass. Ann. Laws c. 44, § 8 (3-7A) (Supp. 1959). For state regulations of watersheds and subwatersheds through a state water resource commission and a division of water resources in a state department of natural resources, see Mass. Ann. Laws c. 21, §§ 8-15 (Supp. 1959). For an article on varying degrees of state regulation up to the permit system, see Ziegler, *Statutory Regulation of Water Resources*, in *Water Resources and the Law* 91-97 (1958).

117. *State v. Burton*, 106 La. 732, 31 So. 291 (1902); *Harlow v. Fisk*, 66 Mass. (12 Cush.) 302 (1853); *Trustees of Hopkins Academy v. Dickinson*, 63 Mass. (9 Cush.) 544 (1852); *Ingraham v. Wilkinson*, 21 Mass. (4 Pick.) 268 (1826); *Adams v. Frothingham*, 3 Mass. 352 (1807), concerning a statute of 1641 giving to river towns title to the river flats from low water mark or 100 rods from the upland, whichever was shorter, to the channel of the river, thus creating an exception to the general rule; *Branham v. Bledsoe Creek Turnpike Co.*, 69 Tenn. 704 (1878). For a contrary definition confusing thread and channel, see *Buttenuth v. St. Louis Bridge Co.*, 123 Ill. 535, 17 N.E. 439 (1888); for a case compromising definitions, see *Micelli v. Andrus*, 61 Ore. 78, 120 Pac. 737 (1912).

The purpose behind this set of rules is to guarantee that in cases where the exclusive ownership of the stream is not in a single party, or where the owner of one bank does not own the entire bed of the stream by agreement, the ground below the stream will be equally divided. Whatever the shape of the shore, or however the termini of the limits of an estate facing the stream are located, the division has to be such that the stream, and any land to be formed by accretion in it, should be divided in equal sections between the owners of each bank.¹¹⁸

These rules are quite contrary, of course, to the increasing assertion of a superordinate public interest in the waters of entire watersheds in their every aspect. To own a stream bed would usually mean to have the right to dredge it, or to extract sand and gravel from it, or to mine islands in it, so long as lower or upper riparians were not damaged in their riparian property interest. But now there is an over-all public interest in the prevention of flooding,¹¹⁹ in the preservation of the rate of stream flow and level, and in the protection of water quality, which diminishes the dominion of riparian owners in the bed. It is a development in which further, numerous changes can be expected, pushing the public interest to the very limits permitted by the vested property rights of the federal and state constitutions.¹²⁰

RULES ON WATER IN ARTIFICIAL COURSES

These rules, of necessity, have an effect, however indirect, upon artificial waterways—the canals, the raceways, the ditches, the culverts and pipes—that in an industrial age often carry more water than the natural streams of an area. The three major problems in relation

118. Knight v. Wilder, 56 Mass. (2 Cush.) 199 (1848); Inhabitants of Deerfield v. Arms, 34 Mass. (17 Pick.) 41 (1835); Mayo v. Quimby, 3 Dane Abr. 4 (1799). On the effects of the riparian doctrine, see the comments of Lowe and Smith in Panel Discussion on Model Water Use Act, in Proceedings, Water Law Conference, University of Texas School of Law 90, 94 (1959).

119. This is not to say there is not a law concerning flood waters. These may be diverted freely or thrown back upon another's land. When they are thrown back or diverted or first appear, there is no cause of action so long as the action has not changed the watershed "on a large scale." Flood waters, if coming as an act of nature and flowing in their wonted manner without the intervention of man, may be diverted or obstructed, used or thrown away, as each individual landowner pleases, so long as the water he uses to effect these purposes does not make a major change in the nature of the watershed in which the flood waters appear. *Bainard v. City of Newton*, 154 Mass. 255, 27 N.E. 995 (1891); *Macomber v. Godfrey*, 108 Mass. 219 (1871). On the larger problem of controlling the entire cycle concerned with erosion, flooding and silting, see Foss, *Politics and Grass* 35-36 (1960).

120. See *Pennsylvania Water & Power Resources Bd. v. Green Spring Co.*, 394 Pa. 1, 145 A.2d 178 (1958).

to these artificial courses are the rights persons upon them have in them, the legal possibilities of such courses, and the chance of converting one by operation of law from an artificial to a natural waterway.

A landowner cannot collect a flow of surface water together into a single stream and empty it onto his neighbor's ground, though he can collect it together and discharge it into a natural stream that would ordinarily receive it, even though the volume and acceleration of the water in it is greatly increased.¹²¹ Water can be drawn from beneath the surface through wells and formed into an artificial channel and then poured into a natural stream without liability;¹²² but if an artificial accumulation of water escapes there is an absolute liability for any ensuing damage unless its escape was caused by an act of God.¹²³ Unless a grant or prescriptive right exists, the builder of an artificial channel for carrying off water, whether it be an accumulation of surface or well water or water from some natural source such as a pond, has no right to have it kept open when it crosses the land of another; and when a grant does authorize it, the artificial channel must conform strictly to the terms or else run the risk of being closed.¹²⁴

Once the right to maintain an artificial stream is recognized, either by grant or prescription, the landowner who has the right to flow it with water secures all the rights and responsibilities of the holder of any dominant easement, so that when he conveys the land which is drained by the artificial channel, he conveys the latter as well even though his deed is silent.¹²⁵ When the artificial channel becomes clogged by refuse he has the right to clean it and to put it back in repair.¹²⁶ When he repairs it he cannot burden the surrounding land

121. *Lincoln Park Amusement Co. v. Town of Westport*, 339 Mass. 334, 159 N.E.2d 598 (1959); *Jackman v. Arlington Mills*, 137 Mass. 277 (1884); *Mitchell Realty Co. v. City of West Allis*, 184 Wis. 352, 199 N.W. 390 (1924).

122. *Artz v. Hurley*, 334 Mass. 606, 137 N.E.2d 916 (1956) relating to liability for water escaping from water systems; *Curtis v. Eastern R.R.*, 96 Mass. (14 Allen) 55 (1867).

123. *Golden v. Amory*, 329 Mass. 484, 109 N.E.2d 131 (1952); *Fletcher v. Rylands*, L.R. 1 Ex. 265 (1866).

124. *DiNardo v. Dovidio*, 312 Mass. 398, 45 N.E.2d 269 (1942); *Drew v. Inhabitants of Westfield*, 124 Mass. 461 (1878); *Miller v. Bristol*, 29 Mass. (12 Pick.) 550 (1832). "Acquiescence" in the initial installation of a drainage system bars the future exercise of rights by the acquiescing landowner where land is thereby flooded, *Coughlin v. Bedford Gardens, Inc.*, 332 Mass. 755, 124 N.E.2d 917 (1955) (dicta).

125. *Jasper v. Worcester Spinning & Finishing Co.*, 318 Mass. 752, 64 N.E.2d 89 (1945).

126. *City of Bellevue v. Daly*, 14 Idaho 545, 94 Pac. 1036 (1908); *Babbitt v. Safety Fund Nat. Bank*, 169 Mass. 361, 47 N.E. 1018 (1897); *Prescott v. White*, 38 Mass. (21 Pick.) 341 (1838).

with the refuse he clears out but must carry it off and leave only the unencumbered channel there.¹²⁷ When another blocks his artificial channel with a permanent obstruction or destroys the channel by pulling down its banks, the holder of the dominant tenement may remove the obstruction and replace the banks and recover the cost of replacement and his injury from cessation of his rights from the persons doing this.¹²⁸ All these rights and duties are his because of his initial right to maintain an artificial watercourse.¹²⁹

Where a ditch is dug by common consent as a neighborhood drain and remains open as a watercourse for many years, it will be governed by the same rules that apply to natural streams.¹³⁰ By treating any artificial channel as one made in nature's way, the law will take such treatment as reflecting a common desire to have it formally so treated and will act as though persons owning land on such a course were natural riparians.¹³¹ Otherwise, of course, no one owning land on the banks of a canal would have any more claim to the continued flow of the water than if it were rain falling on his person.¹³²

Not all artificial waterways need depend upon a long duration of time in which to secure the status of natural streams. A ditch or a pipe carrying overflow water from a natural spring is a natural watercourse, for it is not designed to carry away surface drainage but rather a definite stream of water from a permanent source.¹³³ An artificial pond formed from a natural stream will be treated as a natural stream where the thread of the stream is still discernible in the water of the pond.¹³⁴ It makes no difference in the decision of the courts

127. *Prescott v. White*, supra note 126.

128. *Moore Spinning Co. v. Boston Ice Co.*, 210 Mass. 364, 97 N.E. 62 (1912); see *Murphy*, op. cit. supra note 79, at 115.

129. *Riverdale Park Co. v. Westcott*, 74 Md. 311, 22 Atl. 270 (1891).

130. *Stimson v. Inhabitants of Brookline*, 197 Mass. 568, 83 N.E. 893 (1908); *Freeman v. Weeks*, 45 Mich. 335, 7 N.W. 904 (1881); *Case v. Hoffman*, 100 Wis. 314, 72 N.W. 390 (1897), judgment vacated 74 N.W. 220 (1898), affirmed in part, reversed in part 75 N.W. 945 (1898).

131. *City of Reading v. Althouse*, 93 Pa. 400 (1880); *Weatherby v. Meiklejohn*, 56 Wis. 73, 13 N.W. 697 (1882); *Holker v. Poritt*, L.R. 8 Ex. 107 (1873); *Nuthall v. Bracewell*, L.R. 2 Ex. 1 (1866); *Suteliffe v. Booth*, 32 L.J.Q.B. (n.s.) 136, 139 Rev. R. 744 (1863); *Magor v. Chadwick*, 11 Ad. & E. 571, 113 Eng. Rep. 532 (K.B. 1840).

132. *Holyoke Water Power Co. v. Whiting & Co.*, 276 Mass. 528, 177 N.E. 568 (1931).

133. See 9 R.C.L. *Drains and Sewers* § 2 (1915) dealing with drains which do not carry water from natural sources.

134. *De Witt v. Bissell*, 77 Conn. 530, 60 Atl. 113 (1905); *Phinney v. Watts*, 75 Mass. (9 Gray) 269 (1857); *Village of Pewaukee v. Savoy*, 103 Wis. 271, 79 N.W. 436 (1899).

whether a stream has been a tidal stream or not.¹³⁵ If artificial in origin and not justified as the outlet of a spring or the result of an obstructed natural stream, it will be treated as a natural stream if permitted to exist for over twenty years.¹³⁶ Beyond these rules the courts have made few inquiries, apparently satisfying themselves with the idea that they have adequately solved the problems raised by the existence of artificial watercourses. Naturally, they are subject to the general rules so far referred to; and, in addition, the law relating to them is likewise affected by the nature of modern industrial demands. Since nothing less than total control is sufficient, much of the old law relating to a sharing of a surplus quantity among several owners is now irrelevant. In the presence of contemporary ownership techniques relating to the water resource, the problems of the past simply do not exist.

GROUND WATER

Up to this point all the discussion in this paper has centered upon the problem of water appearing upon the top of the ground, either as streams, artificial courses, or vagrant surface water. There is, however, an equally important aspect to water both in a physical and a legal sense: that water exists below the level of the earth. Here the law reflects the technical knowledge of the distant past which divided water below ground into springs, underground rivers, and percolating water. It is a system that knows nothing of aquifers, of connate waters, of below-surface pressures, or of the accumulating knowledge of hydrology gained over the past century. Fortunately, the legal system is not impervious to an absorption of this new knowledge, but it must be done in classical terms, so that water bursting from an aquifer under natural pressure is a "flowing well" or "spring"; water seeping from saturated ground is also a "spring"; and all other underground water, apart from the extremely rare stygian streams, is denominated "percolating."¹³⁷

The consequence has been that the rules concerning ground water actually constitute something of a game of toss in the law. A private landowner is as much the owner of all percolating waters flowing

135. *Dodge v. Inhabitants of Rockport*, 199 Mass. 274, 85 N.E. 172 (1908).

136. *McGowen v. Carr*, 272 Mass. 573, 172 N.E. 787 (1920).

137. For the ancient knowledge, see Vitruvius, *The Ten Books of Architecture*, Bk. VIII (Morgan transl. 1914). Vitruvius probably wrote about the time of the Principate of Octavius Augustus and was rediscovered by Renaissance writers. For medieval notions, see Murphy, *op. cit. supra* note 79, at 107-09. For a modern view explaining the reconciliation between legal terms and modern knowledge, see Piper & Thomas, *Hydrology and Water Law: What Is Their Future Common Ground?*, in *Water Resources and the Law* at 9 (1958).

under his lands as he is of the earth or stones or minerals therein.¹³⁸ In drawing them up he may be indifferent to what other landowner's water supply he thereby cuts off; he may pipe the water off and sell it to consumers; and, if he wastes it so that his land and the land of others about the water supply are lowered in value, it is no responsibility of his in the law.¹³⁹ He is, in short, absolute master of its disposal; and no other private landowner, however adversely affected, may say him nay.¹⁴⁰ The same absolute rights pertain to a river that sinks below the surface of the ground. It ceases to be a watercourse and no one, except the one in whose land it has disappeared, retains any interest in this water until it passes from beneath his title to another's who will have then the same absolute dominion over it.¹⁴¹

There have been exceptions, however, to this rule. If the user is a municipality, or a private person acting under a public power of eminent domain, under orders to compensate for water taken, then percolating waters, even when drawn upon their own lands, must be paid for to all who can prove deprivation. In the case of springs the rule is somewhat different, for there either a private user or a purveyor of water for public use may call upon the spring's entire resources without hindrance, whatever the effect upon those who may previously have relied upon those waters in which the spring has its origin. It is in the definition of "spring" that the limitation comes, since in the case of a public user, who has been ordered by authority to secure a public water supply and compensate for it, the courts will strictly delimit the scope of the meaning of "spring." Of course, under the absolute dominion rule, even the user of the spring is not secure, since adjoining landowners may cut off the flow of water to the spring and thus dry it up. It is a dog-eat-dog kind of law that would have delighted the heart of Herbert Spencer.¹⁴²

138. *Wilson v. City of New Bedford*, 108 Mass. 261 (1871).

139. *Davis v. Spaulding*, 157 Mass. 431, 32 N.E. 650 (1892).

140. For an interesting viewpoint, see Walker, *Theories of Ownership and Control of Oil and Gas Compared With Those of Ground Water*, in *Proceedings, Water Law Conference, University of Texas School of Law*, 121-33 (1956).

141. *Macomber v. Godfrey*, 108 Mass. 219 (1871). Streams retaining their identity below ground, clearly ascertainable to be such, especially when later emerging as rivers on the surface, will, however, be treated in the same manner as surface natural water courses. The problem is one of proof. See Martz, *Cases on Natural Resources* 376 (1951); cf. *Branson, Instructions to Juries* § 1470 (2d ed. 1925).

142. On limits imposed by adjoining landowners on a spring user, *Greenleaf v. Francis*, 35 Mass. (18 Pick.) 117 (1836); on the power of the spring user, *Proprietors of Mills on Monatiquot River v. Braintree Water Supply Co.*, 149 Mass. 478, 21 N.E. 761 (1889); *Chase v. Cram*, 39 R.I. 83, 97 Atl. 481 (1916); on limiting the meaning of "spring," *Town of Holliston v. Holliston Water Co.*,

On the other hand, although one owes no responsibility to others for diminishing the amount of percolating waters in the ground, one is liable for increasing the quantity to the damage of other proprietors. To store an accumulation of water on one's own ground that later percolates away, or to cut away nature's barriers so that sea water percolates generally through seaside lands, or to cause an artificial pressure to force water to percolate more rapidly through the soil, is to be liable if any damage from flooding or waterlogging ensues. Common tort rules apply in such cases and the courts have found little difficulty in holding the perpetrators responsible. Perhaps it is because the damage has been so much more plainly apparent in a waterlogged field than in one gradually being drained of the moisture in it.¹⁴³

These rules on below-surface waters have been profoundly influenced by the rules developed to deal with vagrant surface waters as a brief consideration for comparative purposes will show. Where nature drains one piece of land onto another, the owner of the lower piece may change its grade by filling it in and then throwing the water back, even if the other land be a public highway.¹⁴⁴ And it does not end there. The other owner may then do the same to his land and return the water.¹⁴⁵ There are, however, certain limits upon the players under the rules of the game. One landowner cannot accumulate surface water on his land and discharge it upon his neighbor through an artificial channel,¹⁴⁶ nor may he drain it into a natural watercourse or cesspool that cannot contain it.¹⁴⁷ A landowner cannot use an elab-

306 Mass. 17, 27 N.E.2d 194 (1940); on compensation obligations, *Hittinger Fruit Co. v. City of Cambridge*, 218 Mass. 220, 105 N.E. 868 (1914); *Gloucester Water Supply Co. v. City of Gloucester*, 179 Mass. 365, 60 N.E. 977 (1901); *Hollingsworth & Vose Co. v. Foxborough Water Supply Dist.*, 165 Mass. 186, 42 N.E. 574 (1896). See also, *Huber v. Merkel*, 117 Wis. 355, 94 N.W. 354 (1903); 27 R.C.L. Waters § 91 (1920).

143. *Mears v. Dole*, 135 Mass. 508 (1883); *Harper*, Torts § 156 (1933). But see, *Moore v. Berlin Mills Co.*, 74 N.H. 305, 67 Atl. 578 (1907).

144. *Gannon v. Hargadon*, 92 Mass. (10 Allen) 106 (1865) (on throwing off vagrant surface water); *Harrison v. Poli-New England Theatres, Inc.*, 304 Mass. 123, 23 N.E.2d 99 (1939) (even though the recipient is a public highway).

145. *Deyo v. Athol Housing Authority*, 335 Mass. 459, 140 N.E.2d 393 (1957); *Fulton v. Town of Belmont*, 333 Mass. 64, 127 N.E.2d 569 (1955) (on throwing the vagrant water back, especially if it is a public highway rejecting surface water in order to keep roads safe for travel); *Smith v. Faxon*, 156 Mass. 589, 31 N.E. 687 (1892) (dictum).

146. *Maddock v. City of Springfield*, 281 Mass. 103, 183 N.E. 148 (1932) (dictum); *Belcastro v. Norris*, 261 Mass. 174, 158 N.E. 535 (1927) (on concentrating a stream).

147. *Stanchfield v. City of Newton*, 142 Mass. 110, 7 N.E. 703 (1886) (on overloading natural or artificial drainage areas).

orate system of drains to keep his land dry when the discharge upon his neighbor is in a concentrated stream of water,¹⁴⁸ nor may he use his land as a dumping ground for ice and snow collected elsewhere.¹⁴⁹ The rights of the discharger, nevertheless, are rather extensive. He may erect any manner of buildings whatever their effect on the drainage of surrounding land.¹⁵⁰ He may farm his land even though the soil is carried off by erosion onto his neighbor's, so long as he works it in a customary manner.¹⁵¹ He may fill in his land even if it be a swamp and the water raised by his action floods his neighbors, for he is the master of his own land.¹⁵² He is never liable for any damages caused by the natural flow of surface water off his land;¹⁵³ and where it comes upon his land through an artificial channel, he may bar it by a wall or grading or carry it off by ditches.¹⁵⁴

In short, like the water below the surface, the whole problem has been given a solution that amounts to organized anarchy. In heavily settled communities, with mobile populations, this must lead to a whole series of impossible situations that could be solved better under a more rational system. In part this is done now through local zoning, platting regulations, development codes, building systems, and planning authorities, through state administrative control over high-capacity wells, domestic wells and sewage systems, and other fragmentary limitations. But these do not handle the entire problem and because of the atomized nature of the units concerned probably will not do so in anything like the near future. Here the ancient rules are likely to remain in force for some time yet.

REMEDIES

Once the substantive rules have been laid out, the problem that then arises is the means of their enforcement. The law provides three methods: by prescriptive right, through condemnation under eminent domain, and through suits at law and in equity for the repelling of attacks upon a property interest in water. Beyond these private forms of relief, of course, exist the remedies of the state for protection of the public interest. All comprise the total of the means of imple-

148. *Manning v. Woodlawn Cemetery Corp.*, 249 Mass. 281, 144 N.E. 99 (1924) (on prohibition of an elaborate system that overburdens adjoining land).

149. *McDonnell v. Cambridge R.R.*, 151 Mass. 159, 23 N.E. 841 (1890) (on prohibition of using land as a dump for snow and ice).

150. *Bates v. Smith*, 100 Mass. 181 (1868).

151. *Middlesex Co. v. McCue*, 149 Mass. 103, 21 N.E. 230 (1889).

152. *Dickinson v. City of Worcester*, 89 Mass. (7 Allen) 19 (1863) (dictum).

153. *Morrill v. Hurley*, 120 Mass. 99 (1876).

154. *White v. Chapin*, 94 Mass. (12 Allen) 516 (1866); *Morse v. Copeland*, 68 Mass. (2 Gray) 302 (1854).

mentation of the basic policies of the law; and, since the policies are not consistent, there is a certain deficiency in their administration. That the deficiency is not greater is due to the requirements of the economy that periodically assert the realities over the legalities of the physical situation.

Because of the transient nature of water it is difficult to acquire prescriptive rights in it. It is not enough to erect structures on one's own land and use the water to even its full capacity as it flows past: one must instead erect a dam and thus reduce the water to a more complete kind of possession in order to assure one's use of it. It must be a use inconsistent with, and therefore adverse to, the rights of others who may have an interest in the stream, such as by a diversion or a raising of the water to an unreasonable height. The measurement of the right to water in a stream is by the height of the dam and not the quantity of flowage; and the amount of water to which a prescriptive right can be taken will depend upon what proportion it bears to the total volume.¹⁵⁵ The main purport of all the rules relating to prescription is that the taking be open, notorious, and as complete as possible; that the taking not be authorized by an agreement, and that the taking be hostile to the interests of the true owner.¹⁵⁶ They are the standard requirements, varied only by the problem of possessing water.

Every overflowing of land, not done under the mill acts, is a prescriptive taking of that land if done for over twenty years, since it is open, notorious, and plainly adverse to the interest of the title owner.¹⁵⁷ The title holder must constantly guard himself against

155. *New England Mica Co. v. Waltham Factories, Inc.*, 301 Mass. 56, 16 N.E.2d 87 (1938); *Tinker v. Bessel*, 213 Mass. 74, 99 N.E. 946 (1912); *Pratt v. Lamson*, 84 Mass. (2 Allen) 275 (1861); *Gould v. Boston Duck Co.*, 79 Mass. (13 Gray) 442 (1859) (dictum); *Cary v. Daniels*, 49 Mass. (8 Met.) 466 (1844). Along with the right to the water goes the right of access. *Churchill v. Harris*, 257 Mass. 499, 154 N.E. 87 (1926). It is, of course, a "right" in water use rather than in the water itself in which a prescriptive right arises. 27 R.C.L. Waters § 195 (1921). Prescription may always arise in the land over which the water flows. II Blackstone, *Commentaries on the Laws of England*, 648 & n. 1 (4th ed. Cooley 1899).

156. *Boliver Mfg. Co. v. Neponset Mfg. Co.*, 33 Mass. (16 Pick.) 241 (1834); *Strickler v. Todd*, 25 Pa. (10 S. & R.) 63 (1823); *Charnley v. Shawano Water Power & River Improvement Co.*, 109 Wis. 563, 85 N.W. 507 (1901); see *Lund v. City of New Bedford*, 121 Mass. 286 (1876) (dictum).

157. *Barker v. Kennard*, 226 Mass. 586, 116 N.E. 391 (1917); *Williams v. Nelson*, 40 Mass. (23 Pick.) 141 (1839). However, there is no prescriptive taking of a pond where only a few fishermen are excluded, *Hittinger v. Eames*, 121 Mass. 539 (1877). A mere occasional use is not enough. *Carville v. Commonwealth*, 192 Mass. 570, 78 N.E. 735 (1906). Where prescriptive rights by statute run against the state, the state in turn may re-assert its title by prescrip-

prescription, just as the holder of prescriptive rights must guard against a counter-prescription. Even where an agreement exists between parties a prescription may still arise, although it is harder to establish acts clearly derogatory to the other's interests.¹⁵⁸ Once obtained, a prescription becomes an absolute dominion, so that it need not be used for anyone's advantage and may lie unused, although, if there is any intention of abandonment in such disuse, a prescriptive easement will be lost.¹⁵⁹ It is, in short, a complete protection to assert a prescriptive power to act; but, given the importance of economic interest likely to be left unasserted for a period of twenty years in the face of active challenge, prescription has not been, and is not likely to be, of the same significance as other legal remedies.

Of greater importance is the operation of the power of eminent domain. Whether the title to property is taken by the state or by a private party acting under state authority, compensation rules are the same. The private owner whose property is taken cannot refuse to go along with the taking, and he must be satisfied with the money he receives for his property. His otherwise inalienable rights are in this instance subject to a higher purpose, or at least to a purpose so considered by the law.

A riverside owner, though entitled to the flow of a stream, may be deprived of it by the power of eminent domain, and he is entitled to receive as compensation the loss in market value at a normal sale that his land has suffered due to the loss of the water rights attached to it. It is not the value of the land to the buyer or the seller that is important, though the business profits the seller has made from its use may be shown to prove its value. It is the general market value which the land has that is considered.¹⁶⁰ Once the compensation has been fixed, either in a lump sum or in the annual payments alternatively allowed under the mill acts, it will be judged to include everything,

tion through taking by an uninterrupted public use. *Attorney General v. Ellis*, 198 Mass. 91, 84 N.E. 430 (1908). Normally, though, no public use can create a prescriptive easement by *jus spatiandi*. In *re Ellenborough*, [1956] Ch. 131; *Attorney General v. Antrobus*, [1905] 2 Ch. 188.

158. *MacLeod v. Davis*, 290 Mass. 335, 195 N.E. 315 (1935).

159. *Chandler v. Jamaica Pond Aqueduct Co.*, 125 Mass. 544 (1878); *Brace v. Yale*, 99 Mass. 488 (1868) (on disuse and abandonment). For an extreme example of prescriptive right in apparent conflict with the doctrine of voluntary benefits, see *Whittenton Mfg. Co. v. Staples*, 164 Mass. 319, 41 N.E. 441 (1895).

160. See *Amory v. Commonwealth*, 321 Mass. 240, 72 N.E.2d 549 (1947) (on value); *Moulton v. Newburyport Water Co.*, 137 Mass. 163 (1884) (on value). Sometimes when property taken has little value except to the taker, the court will consider this peculiar value in setting damages, see *Cobb v. Massachusetts Chemical Co.*, 179 Mass. 423, 60 N.E. 790 (1901).

serving as a bar to further recovery if definite in its terms.¹⁶¹ Even though only a part of the land is taken, compensation must be paid for all of it if the part not taken suffers a loss in value from the taking, and a taker of property under eminent domain is limited to that which is necessary for its public purpose.¹⁶² The net of what is compensable is cast very wide indeed. Although a landowner can ordinarily do with percolating water what he pleases, a water supplier with powers of eminent domain must compensate for the taking; although if no harm has been suffered by any taking, that is if other users would get the same amount of water despite conjoint public use of stream or percolating waters, no, or only nominal, compensation would be allowed.¹⁶³ Private property cannot be taken for a private use, naturally; but what constitutes a public use is so broadly conceived that whatever benefits a section of the community is a public use irrespective of who gets the profits or how much the profits are. If the legislature has seen fit to imbue a purpose with a public character and give it the right to condemn private property for its effectuation, the courts in the field of water law have not been prone to interfere.¹⁶⁴

161. On the limitations implied as a consequence of the award, see *Pajak v. Chicopee Mfg. Corp.*, 246 Mass. 439, 141 N.E. 112 (1923); *Boston & Maine R.R. v. Hunt*, 210 Mass. 128, 96 N.E. 140 (1911); *Hatch v. Dwight*, 17 Mass. 289 (1821).

162. See *Jenks v. Mayor & Mun. Council of Taunton*, 227 Mass. 293, 116 N.E. 550 (1917) (on requirement that a statute be precise); *Stevens v. City of Worcester*, 219 Mass. 128, 106 N.E. 587 (1914) (on requirement of taking to conform strictly thereto); *Kourke v. Central Mass. Elec. Co.*, 177 Mass. 46, 58 N.E. 470 (1900) (on liability for partial taking); *Framingham Water Co. v. Old Colony R.R.*, 176 Mass. 404, 57 N.E. 680 (1900) (on liability for partial taking). For an excellent general discussion, see *Covey, Access Control* (1960) (comparing police power and eminent domain); *Heaney, Valuation of Property* (1960).

163. *Bailey v. Inhabitants of Woburn*, 126 Mass. 416 (1879); *Dwight Printing Co. v. City of Boston*, 122 Mass. 583 (1877). On compensable rights in great ponds, see *Gardner Water Co. v. Inhabitants of Gardner*, 185 Mass. 190, 69 N.E. 1051 (1904); *Watuppa Reservoir Co. v. City of Fall River*, 147 Mass. 548, 18 N.E. 465 (1888). Under the mill acts, an arbitrator may give an annual award for annual damages actually suffered, with the fee owner entitled to the use of the land whenever it is free of water. *Smith v. Langewald*, 140 Mass. 205, 4 N.E. 571 (1885); *Fitch v. Taft*, 126 Mass. 503 (1879); *Bates v. Ray*, 102 Mass. 458 (1869). These cases underscore the primitive industrial conditions underlying these acts. When such a pond is itself taken by eminent domain, evidence will not be heard of replacement costs for a new power source, but only proof of the pond's present value, *Phillips v. County of Middlesex*, 127 Mass. 262 (1879), although when a mill pond is made by diversion, the owner of riparian land upon the diverted stream may show its capabilities and uses as they were with the stream's natural flow before diversion, *Fosgate v. Inhabitants of Hudson*, 173 Mass. 225, 69 N.E. 809 (1901).

Where the land flowed benefits from the flowing, the amount of the benefit is deductible from the amount of the damage, while conversely, if the land deteriorates from the flowing, compensation for damage to the fee must be added under the old mill acts. Under them the amount of the damage depends upon the constancy or frequency of the flowing and the utility of the land when free of water.¹⁶⁵ These rules, like those mentioned in other instances, are related to the general rules of eminent domain; but there exists a special willingness on the part of the courts in water law cases to find a public interest which has been lacking in the past in other areas of the law. This has always been the great hurdle. Once that is successfully negotiated, it is axiomatic that great and small alike are subjectible to the power of eminent domain which takes precedence over all other property rights, since it is the right of the whole people, expressed by their governing authority, to use the resources of the state for what is deemed the benefit of the community.

Somewhat related to this class of cases are those which come before the courts upon an argument of the parties for a division of water. It cannot be said that the courts have shown much imagination in solving the problems brought before them in this way. Where mill sites were sold upon a canal, with a promise of a specific power supply to each, the court compelled the provision of the power supply promised, even though the amount of water available was less than existed when the agreement was made. The court said that another pond could be provided and water secured from other sources than the one first planned for; and the court could not see where it differed from any ordinary suit upon a contract.¹⁶⁶ Nor did the court face the problem any more clearly in a case where a railroad ran its track across the reservoirs of a tidal mill supplying power to several plants. Here it ducked out on the grounds that the tidal mill had lost only two of its twenty power sites, and so refused to arbitrate the rights of two utilities, both specifically authorized by the legislature.¹⁶⁷ As for

164. *Boston & Roxbury Mill Corp. v. Newman*, 29 Mass. (12 Pick.) 467 (1832); *Watson v. Inhabitants of Needham*, 161 Mass. 404, 37 N.E. 204 (1894); *Mumpower v. City of Bristol*, 90 Va. 151, 17 S.E. 853 (1893) (minority view on condemnation for mill purposes through prior appropriation without statutory authorization).

165. *Standish v. Washburn*, 38 Mass. (21 Pick.) 237 (1838); *Palmer Co. v. Ferrill*, 34 Mass. (17 Pick.) 58 (1835); *Wolcott Woolen Mfg. Co. v. Upham*, 22 Mass. (5 Pick.) 292 (1827). No mill privilege resulting from eminent domain is immune from a superior assertion of eminent domain. *Kelliher v. Miller*, 97 Mass. 71 (1867); cf. *Chapman v. Newmarket Mfg. Co.*, 74 N.H. 424, 68 Atl. 868 (1908).

166. *Wamesit Power Co. v. Sterling Mills*, 158 Mass. 435, 33 N.E. 503 (1893).

167. *Boston Water Power Co. v. Boston & Worcester R.R.*, 33 Mass. (16 Pick.) 512 (1835).

common owners of a stream, the court has divided their interests on the analogy of two lords' rights to a single villein, which is ingenious if not sufficient to the needs expressed.¹⁶⁸ Other attempts have been tried, such as the appointment of commissioners to hear the facts and make recommendations, or the use of a master for the same purpose; but generally in these cases the court has simply fallen back on some reasonable division of the quantity of water available, which has usually meant an arbitrary partition based on the court's understanding of the facts. Perhaps, given the state of the problem and putting aside the fancifulness of some of the water law, this has been the best that could be done.¹⁶⁹

There is an even more complex background to the remedies of the landholder unjustly invaded by another. At early common law a variety of remedies gradually grew up. Originally, the sole one was probably a writ of right in the court of the chief lord of the manor, to which was added the assize of nuisance and the assize of freehold, as well as the right of novel disseisin and specialized writs from the chancery office.¹⁷⁰ Gradually, as the court systems developed, certain remedies languished and others came to the fore. The steady deterioration of the manorial courts meant doom for the writ of right, while the other primitive remedies were eventually ousted by the developing suits in trespass, trespass on the case, and tortious nuisance, because the latter permitted an adjudication through the newer institution of jury trial. The independent growth of the equity powers in the chancellor also provided the remedy by prohibitory injunction and recovery of the thing lost through the action of specific performance. By the time of the American Revolution, each of these latter remedies had secured a firm hold in the colonial law, capable of survival into the present.¹⁷¹

Today, any flooding of another's land not authorized by statute is a trespass for which the injured landowner may sue in damages and may enjoin if it is a trespass continuous in nature. The recovery for wrongful damages through a general recovery in tort is also available. The general tort remedy seems to be popular even where there has

168. *Bliss v. Rice*, 34 Mass. (16 Pick.) 23 (1835).

169. *Proprietors of Mills on Charles River v. Proprietors of Mills on Mill Creek and Neponsit River*, 24 Mass. (7 Pick.) 207 (1828).

170. *Murphy*, *English Water Law Doctrines Before 1400*, 1 *Am. J. Legal Hist.* 103, 106-18 (1957). By the 19th century the writ of right was triable before the grand assize at nisi prius and not before a jury even if both parties agreed. 2 *Tidd*, *Practice* 805 (2d Amer. ed. 1828).

171. The survival of archaisms may have been too complete. Compare *Mayo v. Quimby*, 3 *Dane Abr.* 4 (1799), with *Miller v. Darby*, 336 Mass. 243, 143 *N.E.2d* 816 (1957) (barring damages because of the exclusive request of equitable relief).

been the equivalent of an initial wrongful entry instead of a mere deprivation, so that the courts satisfy themselves with the use of the phrase "recovery in tort" rather than attempting to insist upon recovery under a pure trespass doctrine. Thus, if a factory is flooded by a dam that is too high,¹⁷² or if the full force of a stream's current is injuriously thrown against the other bank because of silt eroding from an earth dump,¹⁷³ or if the surface water is collected so near the boundary that it flows upon neighbors' land, the remedy lies in tort.¹⁷⁴ Presumably, if the strict pleading of common law were still in vogue, these would be considered illustrations of trespass on the case; but the decline of the rigid pleading rules renders the general description of cases sounding in tort a satisfactory one. Sometimes modern cases rebut the presumption that contemporary pleading is simple. For instance, it has been said that a suit brought upon the theory of wrongful trespass is not demurrable for statutory justification, for the reason that demurrers, going only to errors on the face of the pleadings, make it necessary to set up claims of statutory authority by way of plea or answer.¹⁷⁵ Even so, however, the pleading problems today in water law are simpler by far than those with which our legal ancestors wrestled.

The damages that are secured in tort suits cover losses of a permanent nature that have reduced the market value of the land, or cover injuries of a temporary nature which, though reparable, have diminished this market value. Where something like an ice crop is lost, the owner of the crop recovers its market value, after proof that, but for the wrongful acts, he had every likelihood of successfully retrieving the entire crop or some part of it.¹⁷⁶ To what extent similar interests that are incorporeal hereditaments, whether called *profits à prendre*, *commons sans nombre*, easements, liberties, or what-have-you in legal parlance, are similarly protected from wrongful harms under water law doctrines is difficult to say; but, logically, where their origin, operation and effect are the same, there is no reason for the result to be different.¹⁷⁷

172. *Bemis v. Clark*, 28 Mass. (11 Pick.) 452 (1831).

173. *Nass v. Town of Duxbury*, 327 Mass. 396, 99 N.E.2d 54 (1951).

174. *Siciliano v. Barbuto*, 265 Mass. 390, 164 N.E. 467 (1928). See also *Dean v. Colt*, 99 Mass. 480 (1868); *Thompson v. Moore*, 84 Mass. (2 Allen) 350 (1861).

175. *Davenport v. Town of Danvers*, 332 Mass. 580, 126 N.E.2d 530 (1955).

176. *Belkus v. City of Brockton*, 282 Mass. 285, 184 N.E. 812 (1933); *Handforth v. Maynard*, 154 Mass. 414, 28 N.E. 348 (1891); *Branson*, op. cit. supra note 141, § 1474 (1). Compare *A. Da Prato Co. v. City of Boston*, 334 Mass. 186, 134 N.E.2d 438 (1956), with *Bond Pharmacy, Inc. v. City of Cambridge*, 338 Mass. 488, 156 N.E.2d 34 (1959); *Ewing v. City of Louisville*, 140 Ky. 726, 131 S.W. 1016 (1910); *Hargreaves v. Kimberly*, 26 W.Va. 787 (1885).

How successful the choice of remedies available proves, or how adequate the recovery permitted, are both the result of a long slow process in legal-historical development. The modern claimant has been freed of many limitations put upon him by requirements of previous ages; and the legislatures and courts have attempted, though often hampered by a great fund of ancient learning, to keep the parallel lines of law and need reasonably close to each other. Doubtless the administrative system that is urged as a replacement for the judicial process by some might be a great improvement upon the latter, which only careful examination upon what have been dogmatic statements can prove.¹⁷⁸ Still, harried as we may be by the current and prospective water problems our material pace of change forces upon us, and anxious as we may be to find rational solutions, a strong suspicion cannot help but arise that the determining authority of the future will not escape completely the course of the past eight hundred years in this legal area. Reform, however ruthless, is rarely that complete.

SUMMARY

This, then, comprises the law relating to water in that part of the United States with the heaviest population and industrial concentration—or that part of it which has a traditional origin modified by decisions and some legislation. Apart from it there exists an ever-increasing body of law, partly statutory and partly administrative, that has not been covered in this paper. The importance of this latter body of law can be expected to increase greatly, particularly if the water increase needed by the American economy should be provided by government expenditures. In such a case, the water would be a gratuity allowed by the federal government, with the power in the government to set the conditions for its allocation free from the constitutional limitations that apply to some of the water presently provided by nature. And as to those constitutional limitations, which in the case of water law have always been less stringent than in many other instances, the altering public attitudes as to public interest concepts can be expected to put an ever closer check on the right of the individual to use a vital resource merely for his personal aggrandizement.

177. *Davenport v. Town of Danvers*, 336 Mass. 106, 142 N.E.2d 753 (1957); *Talbot v. Whipple*, 73 Mass. (7 Gray) 122 (1856). This clearly applies in an action for emblements. *Chicago, R.T. & P. Ry. v. Johnson*, 25 Okla. 760, 107 Pac. 662 (1910).

178. Hutchins, *General Survey of Types of Procedures in the Western States*, in *Proceedings, Water Law Conference*, University of Texas School of Law 56 (1956). See *Murphy, Water Purity Ch. 6* (1961) (comparison of judicial and administrative methods and their differing functions).

This is not to say that the role of the private individual's needs in the law are to be entirely swallowed up in the rising social necessity. It does mean, however, that the same rules that applied to a community with abundant resources, a short supply of capital, and a small population cannot be expected to always have equal validity when these conditions radically change. When the physical circumstances upon which a society builds its economic structure are altered by the operation of that economy, the law which orders that society must necessarily reflect the differences. Our legal system relating to water, and to other flow resources which make up our life cycle, is in process of making that reflective change. In part this paper reveals that; in part it shows the resistance to it; and in part it indicates those sectors in which change at law is irrelevant. Anything beyond this is the work of volumes.