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THE EVOLUTION OF RIPARIANISM IN THE UNITED STATES

JOSEPH W. DELLAPENNA*

I. INTRODUCTION

Water allocation in the United States generally is governed by state law rather than federal law.¹ Because of their vastly differing experiences regarding water, different parts of the United States have developed different approaches to property rights relating to the use of water.² In states located largely to the east of Kansas City, water was readily available at little or no cost.³ Despite occasional water quality issues caused by human activities, shortages were rare and short-lived. Riparian rights, which treat water as a form of common property, evolved in this relatively low-conflict setting.⁴ When riparian rights proved ill-adapted to settings where water was in chronic short supply, traditional riparian rights were abandoned in favor of other models of water law.⁵ Thus, in states to the west of Kansas City, people considered

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1. *New Jersey v. Delaware*, 552 U.S. 597 (2008) (applying state-law created riparian rights in an interstate regulatory dispute); *Colorado v. New Mexico*, 467 U.S. 310 (1984) (recognizing the controlling importance of the state law of prior appropriation in an interstate water allocation dispute). *But see Arizona v. San Carlos Apache Tribe*, 463 U.S. 545 (1983) (applying federal reserved water rights instead of state-law appropriative rights in favor of American Indians).

2. See Joseph W. Dellapenna, *Global Climate Disruption and Water Law Reform*, 15 WIDENER L. REV. 409, 413 (2010) [hereinafter Dellapenna, *Global Climate Disruption*]; Bernhard Grossfeld, *Geography and Law*, 82 MICH. L. REV. 1510, 1514 (1984). See generally DONALD WORSTER, *RIVERS OF EMPIRE: WATER, ARIDITY, AND THE GROWTH OF THE AMERICAN WEST* (1985); Gregory J. Hobbs, Jr., *The Role of Climate in Shaping Western Water Institutions*, 7 U. DENV. WATER L. REV. 1 (2003).

3. Dellapenna, *Global Climate Disruption*, *supra* note 2, at 413.

4. *Id.* at 413.

5. *Id.* at 413–14.

water to be scarce, or at least misplaced.⁶ There, the right to use water came to be treated as a sort of private property under the doctrine of appropriative rights.⁷ Yet when demand began to outstrip supply east of Kansas City, states substituted a form of community or public property that has come to be called regulated riparianism for traditional riparian rights.⁸

Under common property systems like riparian rights, co-owners are left to their individual judgments to decide whether, when, and how to use the resource.⁹ Collective decision-making, operating through courts, only becomes involved when one use directly interferes with another, with such disputes being decided according to the reasonableness of the competing uses.¹⁰ Under appropriative rights, the right to use water is carefully defined in terms of the location, duration, amount, and priority of use.¹¹ Water rights are administered by a state agency for the sole purpose of enforcing the previously defined property rights.¹² While this system in many respects functions like a private property system, it lacks at least one major feature of private property: appropriative rights are, as a practical matter, largely not transferrable separately from the land for which, or to a different use than the use for which, the water was originally appropriated.¹³ Under regulated riparianism, water is

6. *Id.* For the classic statement of this notion, see *United States v. Gerlach Live Stock Co.*, 339 U.S. 725, 728–29 (1950).

7. Dellapenna, *Global Climate Disruption*, *supra* note 2, at 414. See generally Robert E. Beck & Owen L. Anderson, *Introduction and Background to Prior Appropriation*, in 1 *WATERS AND WATER RIGHTS* § 11.01 (Robert E. Beck & Amy K. Kelley eds., 3d ed. 2010).

8. *City of Waterbury v. Town of Washington*, 800 A.2d 1102, 1149 n.44 (Conn. 2002) (applying the term “regulated riparian” to Connecticut’s water allocation law). See generally Joseph W. Dellapenna, *Regulated Riparianism*, in 1 *WATERS AND WATER RIGHTS*, *supra* note 7, § 9.01 [hereinafter Dellapenna, *Regulated Riparianism*].

9. See Joseph W. Dellapenna, *The Right to Consume Water Under “Pure” Riparian Rights*, in 1 *WATERS AND WATER RIGHTS*, *supra* note 7, §§ 7.02–.03(e) [hereinafter Dellapenna, *The Right to Consume Water*].

10. See, e.g., *Harris v. Brooks*, 283 S.W.2d 129, 130, 133–35 (Ark. 1955) (deciding whether the plaintiff, a boat-livery owner, could enjoin the defendant, a farmer, from pumping water from a lake to irrigate his rice field).

11. See, e.g., *Neb. Game & Parks Comm’n v. 25 Corp.*, 463 N.W.2d 591, 597–602 (Neb. 1990) (exploring the nature and extent of appropriative rights).

12. See, e.g., *State ex rel. Cary v. Cochran*, 292 N.W. 239, 244 (Neb. 1940) (“It is the duty of the state under our irrigation code to administer the waters of streams and rivers to prevent waste, to protect prior appropriators against subsequent appropriators, and to enforce all adjudicated water rights in accordance with their terms.”).

13. See Joseph W. Dellapenna, *The Importance of Getting Names Right: The Myth of Markets for Water*, 25 *WM. & MARY ENVTL. L. & POL’Y REV.* 317, 347–51 (2000) [hereinafter Dellapenna, *The Importance of Getting Names Right*]; Janet C. Neuman, *Beneficial Use*,

allocated and reallocated by a collective decision-making process, most commonly by time-limited licenses issued by a state agency on the basis of the reasonableness of the proposed use.¹⁴ Disputes between competing licensees may be resolved by the state agency or by a court, with the goal to enforce license terms and conditions.¹⁵

With this brief introduction, we can turn to examining the origin and evolution of riparian rights in the United States. As the very names used to describe the three different property systems suggest, traditional riparian rights are closely linked to, and in some places are already in the process of evolving into, regulated riparianism; whereas appropriative rights are based on fundamentally different premises and have gone off in a different direction from the riparian tradition. Thus, this Article will say little about appropriative rights, but will discuss at some length regulated riparianism as well as traditional riparian rights.

II. THE ORIGIN OF RIPARIAN RIGHTS

The basic concept of riparian rights is that an owner of land abutting a body of water has the right to have the water continue to flow across or stand on the land,¹⁶ subject to the equal rights of each owner to make proper use of the water.¹⁷ Today, this is generally acknowledged as the common law of water rights, but there is considerable controversy regarding how this came about. It is commonplace to state that the doctrine of riparian rights originated in England and was brought to America by the English colonists.¹⁸ Even Justice Oliver Wendell

Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use, 28 ENVTL. L. 919, 961 (1998).

14. Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03(a).

15. *See generally id.* § 9.03(c)–(d) (providing examples of disputes resolved by various courts and approaches to water transfers).

16. Rights in flowing (stream) water are now generally the same as rights in standing (lake) water. *See* Joseph W. Dellapenna, *Introduction to Riparian Rights*, in 1 WATERS AND WATER RIGHTS, *supra* note 7, § 6.02(b) [hereinafter Dellapenna, *Introduction to Riparian Rights*].

17. Dellapenna, *The Right to Consume Water*, *supra* note 9, at § 7.02. *See generally id.* §§ 7.02–.03(e) (discussing the development of the right to use water and the resolution of conflicts among users).

18. *See, e.g.,* State v. Superior Ct., 93 Cal. Rptr. 2d 276, 280 n.4 (2000); DANIEL W. BROMLEY, *ECONOMIC INTERESTS AND INSTITUTIONS: THE CONCEPTUAL FOUNDATIONS OF PUBLIC POLICY* 29 (1989); Robert W. Adler & Michele Straube, *Watersheds and the Integration of U.S. Water Law and Policy: Bridging the Great Divides*, 25 WM. & MARY ENVTL. L. & POL'Y REV. 1, 1 (2000); Bernhard Grossfeld & Edward J. Eberle, *Patterns of Order in Comparative Law: Discovering and Decoding Invisible Powers*, 38 TEX. INT'L L.J.

Holmes seems to have held this view, although it is not entirely clear whether he was thinking of long-standing English common law or of the English common law as of the late nineteenth century.¹⁹ The truth of the matter is somewhat different.

A. *English Antecedents?*²⁰

In fact, the law of England was very different from riparian rights until well into the nineteenth century, long after American independence.²¹ Early English cases explained water rights as grounded in “ancient possession” (that is, in long-standing enjoyment of the benefits of the stream akin to prescription or ancient custom, or from royal grant).²² William Blackstone concluded that prior possession of the water, however brief, gave a superior right against one who had never before been in possession, basing his supposed right on the now generally rejected theory that one who came to a nuisance had no cause of action.²³ Although Blackstone apparently was followed in England briefly,²⁴ the English common law may well have had roots in what became riparian theory but without any developed theory of riparian rights.²⁵ At the extreme, English law might be said to have oscillated back and forth between an emphasis on the rights of landowners to

291, 299 (2003).

19. See *Boquillas Land & Cattle Co. v. Curtis*, 213 U.S. 339, 345–46 (1909) (“[The Howell Code, adopting the common law as the law of New Mexico,] is far from meaning that patentees of a ranch on the San Pedro are to have the same rights as owners of an estate on the Thames.”).

20. Much of the text in Parts II.A–B has been adapted from Joseph W. Dellapenna, *United States: The Allocation of Surface Waters*, in *THE EVOLUTION OF THE LAW AND POLITICS OF WATER 189–204* (Joseph W. Dellapenna & Joyeeta Gupta eds., 2008).

21. See JOSHUA GETZLER, *A HISTORY OF WATER RIGHTS AT COMMON LAW* 282–83 (2004).

22. See *id.* at 117–40; Carol M. Rose, *Energy and Efficiency in the Realignment of Common-Law Water Rights*, 19 J. LEGAL STUD. 261, 267–73 (1990); Samuel C. Wiel, *Waters: American Law and French Authority*, 33 HARV. L. REV. 133, 141–45 (1919) [hereinafter *Wiel, French Authority*].

23. 2 WILLIAM BLACKSTONE, *COMMENTARIES* 402–03 (photo. reprint 1979) (1766); see also GETZLER, *supra* note 21, at 187–92; T.E. Lauer, *The Common Law Background of the Riparian Doctrine*, 28 MO. L. REV. 60, 96–99 (1963). Carol Rose saw Blackstone’s approach as a sharp break from the established tradition rather than as building upon it. See Rose, *supra* note 22, at 274–77. For the modern approach to “coming to the nuisance,” see RESTATEMENT (SECOND) OF TORTS § 840D (1979).

24. GETZLER, *supra* note 21, at 207, 220.

25. See *id.* at 44–45.

water flowing over or standing on their land and temporal priority,²⁶ but this merely serves to demonstrate that there was no settled law of water allocation in England until fairly late. The first English precedent that fully enunciated the doctrine of riparian rights did not come until 1833²⁷ and relied heavily on the already decided American cases.²⁸

The uncertainty about the nature and extent of water rights in England should not be a surprise. William Holdsworth, a major historian of the common law, pointed out that before the middle of the nineteenth century, the common law generally confused claims of natural right and claims of easement because of the use of the assize of nuisance (and later, actions on the case) to provide a remedy for both types of right.²⁹ The confusion, which focused controversies on specific uses rather than on the abstract source of the right, will perhaps prevent us from ever determining definitely which view of the early common law of water rights actually represents the understanding of those early courts; but it seems too much to conclude that there was a developed or coherent theory of riparian rights brought over from England by the colonists. Instead, the earliest such developed, albeit not entirely coherent, expression of what we would now term “riparian rights” comes from the report of a jury instruction in New Jersey given in 1795.

B. James Kinsey and the American Origin of Riparian Rights

Merritt v. Parker arose from a dispute over millraces and millponds in southwestern New Jersey. Parker built a milldam across Rancocas Creek as early as 1780 and operated a sawmill from the resulting head of water.³⁰ The millpond overflowed onto Merritt’s land.³¹ In May 1793, with Merritt constructing his own millworks, the state legislature

26. *Id.* at 193. See generally Anthony Scott & Georgina Coustalin, *The Evolution of Water Rights*, 35 NAT. RESOURCES J. 821, 850–98 (1995). The Scott and Coustalin study must be used carefully; it suffers from the sort of anachronistic reading of early materials that we shall see characterizes Samuel Wiel’s purported history, particularly because the authors seem intent on reading their scheme of analysis into the records of past litigation over water even when it does not fit. See *infra* text accompanying notes 51–63.

27. See *Mason v. Hill*, (1833) 110 Eng. Rep. 692 (K.B.) 696–701; 5 B. & Ad. 1.

28. See GETZLER, *supra* note 21, at 282–83; Rose, *supra* note 22, at 276–77; Samuel C. Wiel, *Origin and Comparative Development of the Law of Watercourses in the Common Law and in the Civil Law*, 6 CALIF. L. REV. 245, 245 (1918) [hereinafter Wiel, *Origin*]; Wiel, *French Authority*, *supra* note 22, at 145–47.

29. W.S. HOLDSWORTH, A HISTORY OF ENGLISH LAW 328–29 (1926).

30. *Merritt v. Parker*, 1 N.J.L. 460, 462–64 (1795).

31. *Id.* at 462.

enacted a private bill to confirm Parker's right to maintain his dam.³² Merritt thereafter completed a trench to divert water from Parker's millpond where it flooded onto Merritt's land to operate his own sawmill, returning the water to Rancocas Creek by way of a "rivulet" across Parker's land below Parker's mill.³³ Parker then built a dam across the rivulet, flooding out Merritt's sawmill.³⁴ Merritt sued Parker for interfering with Merritt's use of the water. Parker set up as a defense a right to resist Merritt's unnatural increase of the flow of the rivulet.³⁵ Chief Justice James Kinsey of New Jersey's Supreme Court agreed. In the course of his analysis, he provided an apparently straightforward statement of the natural flow theory of riparian rights in his instructions to the jury:

In general, it may be observed, when a man purchases a piece of land, through which a natural water-course flows, he has a right to make use of it in its natural state, but not to stop or divert it to the prejudice of another. *Aqua currit, et debet currere*, is the language of the law. The water flows in its natural channel, and ought always to be permitted to run there, so that all, through whose land it pursues its natural course, may continue to enjoy the privilege of using it for their own purposes. It cannot legally be diverted from its course without the consent of all who have an interest in it. If it should be turned into another channel, or stopped, and this illegal step should be persisted in, I should think a jury right in giving almost any valuation which the party thus injured should think proper to affix to it. This principle lies at the bottom of all the cases which I have met with, and *it is perfectly reasonable in itself*, and at the same time so firmly settled as a doctrine of the law, that it should never be abandoned or departed from.³⁶

Chief Justice Kinsey's analysis contained enough vague references to "[those] who have an interest" in the water to enable an argument that he actually did not endorse a claim of a natural right to the natural flow.³⁷ Reinforcing the appearance of a natural flow theory, however,

32. *Id.* at 464.

33. *Id.* at 462.

34. *Id.*

35. *Id.*

36. *Id.* at 463 (emphasis added).

37. *See id.*

was Kinsey's assertion that it was irrelevant that neither Merritt's diversion of the water nor his increasing of the return-flow in the rivulet did any actual damage to Parker.³⁸ Kinsey even stated that Parker had enough water left in his pond to meet the needs for his mill and that the increase of water flowing in the rivulet would be actionable even if it were proven to be a benefit to the land.³⁹ On the other hand, Kinsey also observed that Merritt was interfering with a dam that Parker had had "in his possession" for "several years," and that Merritt was appropriating to himself the benefits of Parker's labor in building the dam.⁴⁰ This begins to sound like Blackstone's notion of priority of use. Kinsey, however, further confused the issue by noting that Merritt had unreasonably diverted water and had unreasonably increased the flow in the rivulet.⁴¹ In fact, all three theories are succinctly asserted in the short penultimate paragraph of the instruction:

It is unreasonable, and the doctrine cannot be countenanced, that when one has erected a dam, and at a considerable expense has appropriated water to his own use, another person by cutting a canal shall be permitted to diminish his supply, and avail himself of the labor and work of the original owner, without defraying any portion of the expense that had been incurred, or undertaking to assist in keeping these works in repair. It would be equally unreasonable that one man should have a right to turn more water over the land of his neighbor than would naturally go in that direction; and so far as regards the right, it is altogether immaterial whether it may be productive of benefit or injury. No one has a right to compel another to have his property improved in a particular manner; it is as illegal to force him to receive a benefit as to submit to an injury.⁴²

Despite Kinsey's confusion of what today are recognized as several distinct theories, one must recall that none of these doctrines existed in 1795. For Kinsey, these references to prior use, appropriation, and perhaps even to reasonableness, were merely descriptive terms that he used to justify his ultimate conclusion that a landowner has a legal right

38. *Id.* at 465.

39. *Id.* at 464. Perhaps the real injury to Parker was Merritt's opening of a competing mill. A later court recognized this possibility expressly. *Bliss v. Kennedy*, 43 Ill. 67, 72 (1867).

40. *Merritt*, 1 N.J.L. at 463, 465.

41. *Id.* at 465-66.

42. *Id.*

against interference in the natural flow of water across her land—or at least against unreasonable interference with the natural flow.⁴³ Notably lacking from Kinsey’s jury instructions was any reference to prior authority. What he said in this regard—“This principle lies at the bottom of all the cases which I have met with, and it is perfectly reasonable in itself, and at the same time so firmly settled as a doctrine of the law, that it should never be abandoned or departed from”⁴⁴—tells us nothing about what those authorities were, and no one thus far has found any such earlier cases.

Despite his apparent confusions, his jury instructions set the pattern for other courts. At least six decisions in the thirty years after *Merritt* largely followed Kinsey’s approach—albeit without direct reference to that decision.⁴⁵ On the other hand, Joseph Angell, in his highly influential treatise on water law (the first in the English language), was content merely to paraphrase Kinsey, citing *Merritt* in a footnote.⁴⁶ No less an authority than Samuel Wiel (whom we shall meet in a moment) identified Angell’s work as the source of Justice Joseph Story’s opinion in *Tyler v. Wilkinson*,⁴⁷ an opinion that Wiel and others have identified as the landmark source of riparian rights theory in England and America.⁴⁸

C. *The Debate over French Influence on Riparian Rights*

Despite the fairly clear line tracing the origin of riparian rights back to *Merritt v. Parker*, there actually is considerable controversy over the true origin of riparian rights. This controversy arises from the debate over the need to replace riparian rights with something, a debate that

43. *See id.*

44. *Id.* at 463.

45. *Ingraham v. Hutchinson*, 2 Conn. 584, 590–92 (1818); *Weston v. Alden*, 8 Mass. (8 Tyng) 136, 136–37 (1811); *Reid v. Gifford*, 1 Hopk. Ch. 416, 419–20 (N.Y. Ch. 1825); *Merritt v. Brinkerhoff*, 17 Johns. 306, 320, 323 (N.Y. Sup. Ct. 1820); *Platt v. Johnson & Root*, 15 Johns. 213, 217–18 (N.Y. Sup. Ct. 1818); *Palmer v. Mulligan*, 3 Cai. 307, 313–14, 320–21 (N.Y. Sup. Ct. 1805). Two other courts echoed Chief Justice Kinsey’s comment about the need to protect the expense and labor of the first user: *Cook v. Hull*, 20 Mass. (3 Pick.) 269, 271 (1826); and *Colburn v. Richards*, 13 Mass. (13 Tyng) 420, 422 (1816).

46. JOSEPH K. ANGELL, A TREATISE ON THE COMMON LAW, IN RELATION TO WATER-COURSES 5 (1824).

47. 24 F. Cas. 472 (D.R.I. 1827) (No. 14,312). Justice Story admitted in the *Tyler* opinion that he valued Angell’s work. *Id.* at 473.

48. Wiel, *French Authority*, *supra* note 22, at 145–47; *see also* A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES § 3:7 (2009); John Harrison, *The Constitution of Economic Liberty*, 45 SAN DIEGO L. REV. 709, 713 n.10 (2008).

was reaching a critical stage at the turn from the nineteenth to the twentieth century in the states west of Kansas City;⁴⁹ the debate is now passing into a similar critical stage in states to the east of Kansas City.⁵⁰ So long as the question of reforming or replacing riparian rights continues to be debated, the debate over the source of the riparian rights doctrine will continue to be important. In this context, Samuel Wiel, one of the leading authorities on water law in the early years of the twentieth century, developed an elaborate argument that the doctrine of riparian rights was imported into the United States from the *Code Napoléon* by James Kent and Joseph Story.⁵¹

Kent and Story were preeminent early-nineteenth century jurists, scholars, and teachers of the law, with Kent serving many years as Chancellor of New York and Story serving longer as Associate Justice of the Supreme Court than anyone until Justice William O. Douglas surpassed his tenure in 1974. About fifty years after Wiel's writings, Arthur Maass and Hiller Zobel presented a new interpretation of the historical data, concluding that riparian doctrine had firm roots in English and American common law and that its modern forms are a natural evolution of that common law.⁵² All three—Maass, Wiel, and Zobel—were attempting to defend riparian rights against others who sought to abolish those rights. For Wiel, this entailed arguing that because riparian rights were derived from Roman law, they were vested property rights under Spanish–Mexican law before California became part of the United States.⁵³ In the particular political context of the East, without a basis for referring to Roman law, Wiel's California-based

49. See Joseph W. Dellapenna, *Dual Systems*, in WATERS AND WATER RIGHTS, *supra* note 7, § 8.02(a)–(c) [hereinafter Dellapenna, *Dual Systems*] (describing the progression of the California, Colorado, and Oregon Doctrines, respectively).

50. See Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03.

51. See generally 1 SAMUEL C. WIEL, WATERS AND WATER RIGHTS IN THE WESTERN STATES §§ 1–8, 684–699 (3d ed. 1911) [hereinafter WIEL, WATERS AND WATER RIGHTS]; Wiel, *French Authority*, *supra* note 22, at 145–47; Wiel, *Origin*, *supra* note 28, at 247–53, 342–44; Samuel C. Wiel, *Running Water*, 22 HARV. L. REV. 190, 198–205 (1909); C.E. Busby, *American Water Rights Law: A Brief Synopsis of Its Origin and Some of Its Broad Trends with Special Reference to the Beneficial Use of Water Resources*, 5 S.C. L.Q. 106, 113–16 (1952).

52. Arthur Maass & Hiller B. Zobel, *Anglo-American Water Law: Who Appropriated the Riparian Doctrine?*, 10 PUB. POL'Y 109, 109 (1960); see also Lauer, *supra* note 23, at 63–72; Earl F. Murphy, *English Water Law Doctrines Before 1400*, 1 AM. J. LEGAL HIST. 103, 103–04 (1957).

53. The following discussion of Wiel relies on various works. See WIEL, WATERS AND WATER RIGHTS, *supra* note 51, §§ 1–8, 684–699; Wiel, *French Authority*, *supra* note 22, at 145–47; Wiel, *Origin*, *supra* note 28, at 247–53, 342–44; Wiel, *Running Water*, *supra* note 51, 198–205.

appeal to supposed Roman-law roots of riparian rights was antithetical to the continued survival of those rights.

Wiel had no trouble in showing that Roman law considered the air, sea, seashore, and running water to be incapable of ownership except for limited usufructuary rights,⁵⁴ and that the theory had been incorporated into the Napoleonic Code of 1804.⁵⁵ To support his claim that no such rights were found in the pre-nineteenth century common law, Wiel placed his principal reliance on the fact that not until 1833 did English courts reject priority of use in favor of the common right of all riparian owners to the use of the flowing water and that English courts did so under the strong influence of American precedents.⁵⁶

Tracing French influence on Kent's discussion of water law is fairly easy.⁵⁷ No one, however, has shown direct evidence of French influence on Justice Story's landmark opinion in *Tyler v. Wilkinson*. All Wiel

54. Two court decisions have adopted the same reading of the sources of the riparian rights. *Portage Cnty. Bd. of Comm'rs v. City of Akron*, 846 N.E.2d 478, 490, 499 (2006); *Vernon Irrigation Co. v. City of Los Angeles*, 39 P. 762, 769 (1895). Earl Murphy agreed that Roman law was the source of these notions in the common law, but he traced their introduction back to Bracton in the thirteenth century. See Murphy, *supra* note 52, at 103–09; see also GETZLER, *supra* note 21, at 66–67; Lauer, *supra* note 23, at 65–72.

55. The CODE CIVIL [C. CIV.] arts. 644–45 (Fr.) (John H. Crabb trans., 1995) provides as follows:

Article 644—One whose property borders running water, other than that which is declared a dependency of the public domain by Article 538 in the Title *Differentiation of Property*, may use it on its passage for the irrigation of his properties.

One whose heritage is crossed by such waters may also use it during the interval while it is running through, but with the responsibility of returning it, upon leaving his lands, to its ordinary course.

Article 645—If a dispute arises among owners to whom such waters may be useful, the courts, in deciding, should reconcile the interest of agriculture with the respect due to ownership; and, in all cases, particular and local rules on waters and use of waters should be observed.

Id.; see also A.N. Yiannopoulos, *Common, Public, and Private Things in Louisiana: Civilian Tradition and Modern Practice*, 21 LA. L. REV. 697, 698 n.9 (1960–1961). Not everyone agrees that this was the correct understanding of Roman law of water allocation in ancient times. See Scott & Coustalin, *supra* note 26, at 833–37 (arguing that Roman law was actually based on the protection of uses ranked according to temporal priority rather than the principle of common ownership). This is an example of their anachronistic reading of historical materials to fit their theory.

56. See Wiel, *Origin*, *supra* note 28, at 248–49.

57. See generally 3 JAMES KENT, COMMENTARIES ON AMERICAN LAW 344–62 (1828); Busby, *supra* note 51; Wiel, *French Authority*, *supra* note 22, at 134–39; Wiel, *Origin*, *supra* note 28, at 247–52.

could rely on was evidence of the general influence of French law in an Anglophobic America in the first half of the nineteenth century.⁵⁸

Wiel was not unaware of *Merritt v. Parker*. He sought to dismiss the case, first by asserting that it was atypical of contemporaneous decisions in other states,⁵⁹ and second by observing that the “antecedents of the New Jersey expression do not appear.”⁶⁰ Wiel did assert that other sources suggested French and other antecedents, but he made no attempt to demonstrate how the further authorities he discussed (particularly French law adopted after *Merritt v. Parker* was decided—to which Wiel gave his most extended attention) could have related to *Merritt*. *Merritt*, in fact, was far too typical of both English and American decisions of the time in at least one important aspect: The early opinions contained no clear or coherent theory of rights to use water, but instead an amalgam of concerns from which one can trace the natural flow theory, the reasonable use theory, and the prior appropriation theory, not to mention prescriptive rights.⁶¹ Yet, the major emphasis in *Merritt*, at least, seemed to be on a natural flow concept of riparian rights⁶²—a decade before adoption of the Napoleonic Code that Wiel saw as the source of riparian rights in the common law and a full three decades before Justice Story’s widely-hailed opinion in *Tyler v. Wilkinson*. Wiel did acknowledge that Story drew from the work of Joseph Angell in *Tyler*,⁶³ but he ignored that

58. See Wiel, *Origin*, *supra* note 28, at 251; Roscoe Pound, *The Influence of French Law in America*, 3 ILL. L. REV. 354, 355, 360–61 & n.29 (1909).

59. Wiel, *French Authority*, *supra* note 22, at 140–41. *But see* the cases cited *supra* at note 45.

60. Wiel, *French Authority*, *supra* note 22, at 141.

61. See, e.g., *Hughes v. Mung*, 3 H. & McH. 441, 442 (Md. 1796); *King v. Tarlton*, 2 H. & McH. 473, 473, 476 (Md. 1790); *Palmer v. Mulligan*, 3 Cai. 307, 313–14, 320–21 (N.Y. Sup. Ct. 1805); *Carruthers v. Tillman*, 2 N.C. (1 Hayw.) 501, 501 (1797); *Deberry’s Case*, 2 N.C. (1 Hayw.) 248, 248 (1795); *Beissell v. Sholl*, 4 Dall. 211, 211 (Pa. 1800); *Wright v. Cooper*, 1 Tyl. 425, 425–27 (Vt. 1802). The paths taken by respective courts varied wildly:

[T]he British courts floundered for a doctrinal basis to settle the increasingly frequent disputes over waterpower and were unable to settle on either ancient usage or prior occupancy or some combined doctrine. . . . [L]ike the British courts, the Massachusetts courts eventually veered away from the individually defined rights of occupancy, [but] instead adopted the looser, group-oriented correlative-rights/reasonable-use doctrine of the riparian system.

Rose, *supra* note 22, at 277.

62. See *Merritt v. Parker*, 1 N.J.L. 460, 462–65 (1795).

63. Wiel, *Origin*, *supra* note 28, at 248–49.

Angell had relied on *Merritt v. Parker*.⁶⁴ This, in itself, should have been enough to discredit the idea that Story, at least, was relying on the *Code Napoléon* of 1804 as Wiel was arguing—Chief Justice Kinsey had instructed the jury nearly a decade before the *Code Napoléon* was enacted.

In contrast to Wiel, Maass and Zobel stressed the recognition in English law in the seventeenth century of a distinction between easements in land and natural rights in a watercourse—the latter entitling riparian landowners to an uninterrupted flow notwithstanding granted or prescriptive rights in other users.⁶⁵ They found such English decisions even during the period in which Wiel claimed the English courts were following Blackstone’s theory of appropriation.⁶⁶ Wiel, they concluded, had simply misunderstood Blackstone and the English courts’ application of nuisance theory to water disputes, particularly by reading back into these early sources and into Story’s opinion, anachronistic meanings of the words “appropriate” and “riparian.”⁶⁷ In a sense, Maass and Zobel won this debate: Today, American courts, even in appropriative rights states, generally endorse the proposition that riparian rights formed the common law of England.⁶⁸ While Wiel’s theory of a French origin for riparian rights continues to have its supporters, it no longer seems sustainable. Rather, the best view of the question was summed up by Ludwik Teclaff, who concluded that “[m]ost likely, the riparian doctrine *or its ingredients* came to the United States as part and parcel of the common law, and the French influence was merely incidental, helping to give it a more precise legal expression.”⁶⁹

III. THE EVOLUTION OF TRADITIONAL RIPARIAN RIGHTS: ONE DOCTRINE OR TWO?

By the early nineteenth century, the common law had evolved into

64. ANGELL, *supra* note 46, at 5.

65. *See, e.g.*, *Sury v. Pigot*, (1625) 79 Eng. Rep. 1263 (K.B.) 1267–68. Some would trace the presence of these theories all the way back to Bracton in the thirteenth century. *See supra* note 55 and accompanying text.

66. *See, e.g.*, *Wright v. Howard*, (1823) 57 Eng. Rep. 76 (Ch.) 78–79; 1 Sim. & St. 190; *Bealey v. Shaw*, (1805) 102 Eng. Rep. 1266 (K.B.) 1268–69; 6 East 207.

67. *See* Maass & Zobel, *supra* note 52.

68. *See, e.g.*, *State v. Superior Ct.*, 93 Cal. Rptr. 2d 276, 280 (2000).

69. LUDWIK A. TECLAFF, *WATER LAW IN HISTORICAL PERSPECTIVE* 7 (1985) (emphasis added).

something recognizable: the doctrine of riparian rights, namely, that landowners have a right to use water drawn from a body of water that flows or lies on their land that the law will protect, to some extent, from interference by others.⁷⁰ American courts have struggled ever since to give a more precise formulation to this doctrine. In the course of this struggle, the doctrine has evolved considerably from the confused and uncertain notions embodied in the earliest cases. In this Part, I address that evolution.

Chief Justice James Kinsey's jury instructions in *Merritt v. Parker*⁷¹ seemed to embrace the theory that riparian rights protect the right to receive the natural flow of a stream or other body of water. It is by no means clear, however, that such a theory was ever actually applied in the case. For one thing, we do not actually know how the jury decided the case after receiving Kinsey's instructions. More importantly, Kinsey also referred to the reasonableness of the parties' behavior and the fact that the defendant had "appropriated" the water to his needs.⁷² The suggestion that temporal priority might be relevant to litigation over riparian rights rapidly disappeared from the ensuing cases.⁷³ In other respects, Kinsey's apparent confusion in *Merritt*, expressing a "natural flow" theory of riparian rights but then invoking a concept of reasonableness to moderate or replace the natural flow theory, rapidly became, and in some states continues to be, the norm in riparian rights litigation.⁷⁴ Still, the received wisdom is that courts originally applied riparian rights as a rather rigid theory of protecting natural flows—a theory that allowed a riparian landowner to enjoin any water uses that materially altered the quantity or quality of the natural flow without proof of actual injury⁷⁵—and then shifted to a "reasonable use" theory

70. See *supra* notes 16–17 and accompanying text.

71. 1 N.J.L. 460, 463 (1795). The relevant language is quoted *supra* at note 36.

72. *Id.* at 465–66. The relevant language is quoted *supra* at note 42.

73. See Dellapenna, *The Right to Consume Water*, *supra* note 9, § 7.03(d).

74. See, e.g., *Tyler v. Wilkinson*, 24 F. Cas. 472, 473 (D.R.I. 1827) (No. 14,312); *Ulbricht v. Eufaula Water Co.*, 6 So. 78, 79 (Ala. 1889); *Pa. R.R. Co. v. Miller*, 3 A. 780, 781–82 (Pa. 1886); *Clinton v. Myers*, 46 N.Y. 511, 519–20 (1871); *Hendrick v. Cook*, 4 Ga. 241, 256 (1848). For modern examples of the confusion over which doctrine applies, see *In re Flood Litig.*, 607 S.E.2d 863, 870–71, 874–76 & n.11 (W. Va. 2004); *Stewart v. Bridges*, 292 S.E.2d 702, 704 (Ga. 1982); *Alburger v. Phila. Elec. Co.*, 535 A.2d 729, 733–34 (Pa. Commw. Ct. 1988). For English law, see *Embrey v. Owen*, (1851) 155 Eng. Rep. 579 (Exch.) 585; 6 Exch. 353.

75. See *Stratton v. Mt. Hermon Boys' Sch.*, 103 N.E. 87, 89 (Mass. 1913) (suggesting in dictum that, in the context of an improper diversion of water, "[the lower court] would have permitted the recovery of nominal damages in any event, quite apart from the possibility of real injury to the plaintiff").

that balanced competing uses against each other to determine which use was more socially beneficial.⁷⁶ If this is so, this change resulted in the replacement of a theory that seemed to define clear private property rights by a theory of common property rights.⁷⁷

More than forty years ago, biologist Garrett Hardin explained in his famous essay, *The Tragedy of the Commons*,⁷⁸ why a common property system can function only when the common pool resource is available in much greater supply than the demand for the resource and why, when that condition is not met, the common property system either gives way to a private property regime or the resource will be destroyed.⁷⁹ This is

76. See, e.g., TARLOCK, *supra* note 48, § 3:12; Craig Anthony (Tony) Arnold, *Legal Castles in the Sand: The Evolution of Property Law, Culture, and Ecology in Coastal Lands*, 61 SYRACUSE L. REV. 213, 238 (2011); Richard Ausness, *Water Rights, the Public Trust Doctrine, and the Protection of Instream Uses*, 1986 U. ILL. L. REV. 407, 416–18; David N. Cassuto & Rômulo S. R. Sampaio, *Water Law in the United States and Brazil—Climate Change & Two Approaches to Emerging Water Poverty*, 35 WM. & MARY ENVTL. L. & POL'Y REV. 371, 379–80 (2011); Robin Kundis Craig, *A Comparative Guide to the Western States' Public Trust Doctrines: Public Values, Private Rights, and the Evolution Toward an Ecological Public Trust*, 37 ECOLOGY L.Q. 53, 57 (2010); Christine A. Klein, Mary Jane Angelo & Richard Hamann, *Modernizing Water Law: The Example of Florida*, 61 FLA. L. REV. 403, 442–43 (2009); Dan Tarlock, *How Well Can Water Law Adapt to the Potential Stresses of Global Climate Change?*, 14 U. DENV. WATER L. REV. 1, 9–10 (2010).

77. See generally Rose, *supra* note 22. For a brief discussion of the different types of property in water, see *supra* Part I. For a more detailed discussion, see Dellapenna, *The Right to Consume Water*, *supra* note 9, § 6.01(b)(1).

78. Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1243–44, 1248 (1968).

79. *Id.* at 1244, 1248. Hardin explains that “ruin” is inevitable when the rational private party acts according to an unregulated commons:

Adding together the component partial utilities, the rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another. . . . But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.

Id. at 1244.

For further discussion of the tragedy, and discussions of the tragedy in different contexts, see GLENN G. STEVENSON, COMMON PROPERTY ECONOMICS: A GENERAL THEORY AND LAND USE APPLICATIONS 10–31 (1991) (comparing the economics-based open access theory to common property); Ronen Avraham & K.A.D. Camara, *The Tragedy of the Human Commons*, 29 CARDOZO L. REV. 479, 479–85 (2007); Abraham Bell & Gideon Parchomovsky, *Of Property and Antiproperty*, 102 MICH. L. REV. 1, 11, 38–45 (2003) (describing antiproperty theory in the context of the commons); Brigham Daniels, *Emerging Commons and Tragic Institutions*, 37 ENVTL. L. 515, 516–22 (2007); Kirsten H. Engel & Scott

more than a mere theoretical model. The tragedy of the commons has happened, precisely as Hardin predicted, for fish in the sea, national park access, and even national treasuries (to name just a few examples).⁸⁰ Hardin argued that a private property system, in which the costs as well as the benefits of resource management decisions are concentrated on the particular owner who makes the decision, was the only way to avoid the tragedy of the commons.⁸¹ He largely ignored the possibility of community management (public property, if you will) as an alternative possibility to privatizing the “commons.”⁸²

R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 *ECOLOGY L.Q.* 183, 190 (2005) (analogizing Hardin’s herders example to global use of the atmosphere); Christopher L. Lant, J.B. Ruhl & Steven E. Kraft, *The Tragedy of Ecosystem Services*, 58 *BIOSCIENCE* 969, 969–70 (2008); Gary D. Libecap, *Open-Access Losses and Delay in the Assignment of Property Rights*, 50 *ARIZ. L. REV.* 379, 382–83 (2008); James L. Olmsted, *Paradoxical Conservation and the Tragedy of Multiple Commons*, 22 *TUL. ENVTL. L.J.* 103, 104–05 (2008) (recognizing that Hardin’s essay moved the tragedy into the mainstream); and Scott J. Shackelford, *The Tragedy of the Common Heritage of Mankind*, 28 *STAN. ENVTL. L.J.* 109, 114–19 (2009). See generally Amy Sinden, *The Tragedy of the Commons and the Myth of a Private Property Solution*, 78 *U. COLO. L. REV.* 533 (2007); Symposium, *Constructing Cultural Commons*, 95 *CORNELL L. REV.* 657 (2010). “The tragedy . . . refers to the social and economic consequences of allowing individuals free and unlimited access to some form of commons,” and water is an obvious example. Olmsted, *supra*, at 104–05.

80. See generally ALEXANDER GARVIN ET AL., *URBAN PARKS AND OPEN SPACE* (1997); JOSEPH L. SAX, *MOUNTAINS WITHOUT HANDRAILS: REFLECTIONS ON THE NATIONAL PARKS* (1980); Hope M. Babcock, *Grotius, Ocean Fish Ranching, and the Public Trust Doctrine: Ride ‘em Charlie Tuna*, 26 *STAN. ENVTL. L.J.* 3 (2007); Jaye Ellis, *Fisheries Conservation in an Anarchical System: A Comparison of Rational Choice and Constructivist Perspectives*, 3 *J. INT’L L. & INT’L REL.* 1 (2007); Rodney D. Fort & John Baden, *The Federal Treasury as a Common Pool Resource and the Development of a Predatory Bureaucracy*, in *BUREAUCRACY VS. ENVIRONMENT: THE ENVIRONMENTAL COSTS OF BUREAUCRATIC GOVERNANCE* 9 (John Baden & Richard L. Stroup eds., 1981); Gerry J. Nagtzaam, *The International Whaling Commission and the Elusive Great White Whale of Preservationism*, 33 *WM. & MARY ENVTL. L. & POL’Y REV.* 375 (2009); Andrew Serdy, *Accounting for Catch in Internationally Managed Fisheries: What Role for State Responsibility?*, 15 *OCEAN & COASTAL L.J.* 23 (2010); Carl Tobias, *The Tragedy of the Commons: The Case of the Blue Crab*, 19 *S. CAL. INTERDISC. L.J.* 73 (2009); Katrina M. Wyman, *The Property Rights Challenge in Marine Fisheries*, 50 *ARIZ. L. REV.* 511 (2008).

81. See Hardin, *supra* note 78, at 1245–48.

82. See *id.* at 1248. For varying discussions of the possibility of community management, see Johan Colding & Carl Folke, *The Taboo System: Lessons About Informal Institutions for Nature Management*, 12 *GEO. INT’L ENVTL. L. REV.* 413 (2000); Dellapenna, *Global Climate Disruption*, *supra* note 2, at 426; Dellapenna, *Introduction to Riparian Rights*, *supra* note 16, § 6.01(b)(1); Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.01; Tine de Moor, *Avoiding Tragedies: A Flemish Common and Its Commoners Under the Pressure of Social and Economic Change During the Eighteenth Century*, 62 *ECON. HIST. REV.* 1 (2009); Gregg W. Kettles, *Formal Versus Informal Allocation of Land in a Commons: The Case of MacArthur Park Sidewalk Vendors*, 16 *S. CAL. INTERDISC. L.J.* 49 (2006); Henry E. Smith, *Governing*

If, like Hardin, one limits legal options to common property and private property, private property seems so superior to common property as a resource management system that one is left wondering how the current riparian-rights common property system came to be substituted for the earlier private property version of riparian rights.⁸³ The supposed earlier version of riparian rights—the natural flow theory—was as clear and certain a system of property as one could imagine: Apart from domestic uses, each riparian owner arguably had an unqualified right to have the water flow down undiminished in quality or quantity and to use that water only as long as no lower riparian's right was affected.⁸⁴ If in the mid- to late-nineteenth century the modern “reasonable use” theory replaced the natural flow theory,⁸⁵ then a private property system was abandoned in favor of a common property system.⁸⁶ That change, if it occurred, demands an explanation. Similarly, explanation is demanded by comparable changes now seemingly underway for diffused surface water and groundwater.⁸⁷

Water: The Semicommons of Fluid Property Rights, 50 ARIZ. L. REV. 445 (2008); and Martin S. Weinstein, *Pieces of the Puzzle: Solutions for Community-Based Fisheries Management from Native Canadians, Japanese Cooperatives, and Common Property Researchers*, 12 GEO. INT'L ENVTL. L. REV. 375 (2000); Carol M. Rose, *Property in All the Wrong Places?*, 114 YALE L.J. 991 (2005) (reviewing MICHAEL F. BROWN, WHO OWNS NATIVE CULTURE? (2003); and KAREN R. MERRILL, PUBLIC LANDS AND POLITICAL MEANING: RANCHERS, THE GOVERNMENT, AND THE PROPERTY BETWEEN THEM (2002)).

Elinor Ostrom won the Nobel Prize in Economics for her work on Hardin's neglect of the public or community property approach to resource management. For examples of Ostrom's work, see ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990); and ELINOR OSTROM ET AL., RULES, GAMES, AND COMMON-POOL RESOURCES (1994).

83. CAROL ROSE, PROPERTY AND PERSUASION: ESSAYS ON THE HISTORY, THEORY, AND RHETORIC OF OWNERSHIP 163–96 (1994); Scott & Coustalin, *supra* note 26, at 860–98. For related, but distinct, examples of what can happen when property rights are dysfunctional, see Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621 (1998); and James M. Buchanan & Yong J. Yoon, *Symmetric Tragedies: Commons and Anticommons*, 43 J.L. & ECON. 1 (2000).

84. See, e.g., *Stratton v. Mt. Hermon Boys' Sch.*, 103 N.E. 87, 89 (Mass. 1913) (dictum).

85. See the authorities collected *supra* at note 76.

86. See Dellapenna, *Global Climate Disruption*, *supra* note 2, at 430.

87. See, e.g., *Keys v. Romley*, 412 P.2d 529, 531–35 (Cal. 1966) (explaining the rules governing diffused surface waters); *Higday v. Nickolaus*, 469 S.W.2d 859, 862, 865–68 (Mo. Ct. App. 1971) (discussing and revising the rules governing groundwater); *State v. Michels Pipeline Constr. Inc.*, 217 N.W.2d 339, 343–45, 350–51 (1974). For arguments for such a transition in a totally different context, see Abraham Bell & Gideon Parchomovsky, *The Evolution of Private and Open Access Property*, 10 THEORETICAL INQUIRIES L. 77, 77–78 (2009); and Stuart Buck, *Replacing Spectrum Auctions with a Spectrum Commons*, 2002 STAN. TECH. L. REV. 2, ¶¶ 20–31.

As will appear shortly, I am one who concludes that the reasonableness standard has always been applied to riparian rights and that, despite occasional dicta to the contrary, no common law court has ever actually applied the natural flow theory of riparian rights.⁸⁸ If I am wrong, the fact that the law of water resources underwent a transition from private property to common property would suggest that, despite the asserted advantages of private property systems, such systems do not work well for ambulatory resources like water.⁸⁹ If I am right, the question becomes, “Why do so many commentators accept the reality of such an apparently wrong-headed change?” Such transitions in history are rare, to say the least, and seem counterproductive at best.⁹⁰

Some legal historians have noted this supposed transition and have attempted to explain it. The largest group, led by Morton Horwitz, not only thought that a transition from natural flow to reasonable use occurred, but regarded the transition as a primary example of nineteenth century American courts devising means to introduce flexible development into a capital-poor and technologically-backward, but resource-rich, America.⁹¹ Eric Freyfogle gave a different twist to the transition, describing the transition as from a judicial focus on “water

88. Dellapenna, *The Right to Consume Water*, *supra* note 9, §§ 7.01(b), .02(c).

89. See Dellapenna, *Global Climate Disruption*, *supra* note 2, at 425–35; Dellapenna, *The Importance of Getting Names Right*, *supra* note 13, at 375–76; Dellapenna, *Introduction to Riparian Rights*, *supra* note 16, § 6.01(b)(1)–(3).

90. *But see* Daniel Fitzpatrick, *Evolution and Chaos in Property Rights Systems: The Third World Tragedy of Contested Access*, 115 YALE L.J. 996, 998–99 (2006) (arguing that “open access” (common property) systems evolve in many different settings even in the face of private property regimes).

91. See MORTON J. HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW, 1780–1860*, at 34–54 (1977); Robert H. Abrams, *Charting the Course of Riparianism: An Instrumentalist Theory of Change*, 35 WAYNE L. REV. 1381, 1391–1400 (1989); Denis J. Brion, *The Common Law of Waterpower in New England*, 5 VT. L. REV. 201, 208–10 (1980); E.P. Krauss, *The Legal Form of Liberalism: A Study of Riparian and Nuisance Law in Nineteenth Century Ohio*, 18 AKRON L. REV. 223, 226, 228–30 (1984); Rose, *supra* note 22, at 277–88; Gary T. Schwartz, *Tort Law and the Economy in Nineteenth-Century America: A Reinterpretation*, 90 YALE L.J. 1717, 1718 (1981); Stephen F. Williams, *Transforming American Law: Doubtful Economics Makes Doubtful History*, 25 UCLA L. REV. 1187, 1197–1200 (1978) (reviewing MORTON J. HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW, 1780–1860* (1977)). For general critiques of Horwitz’s history, see Robert W. Gordon, *Morton Horwitz and His Critics: A Conflict of Narratives*, 37 TULSA L. REV. 915 (2002); James L. Huffman, *American Legal History According to Horwitz: The Rule of Law Yields to Power*, 37 TULSA L. REV. 953 (2002); Nancy Isenberg, *Laissez-Unfaire: Gender and the Political Manipulation of the Common Law in Antebellum America*, 37 TULSA L. REV. 929 (2002); and Jenny B. Wahl, *Twice-Told Tales: An Economist’s Re-Telling of the Transformation of American Law, 1780–1860*, 37 TULSA L. REV. 879 (2002).

rights” to a judicial focus on “water wrongs”⁹²—meaning, a shift from a property rights analysis to a tort analysis.⁹³ Some commentators have seen the transition as reflecting recognition that the economy had evolved into a stage of high transaction costs, displacing an earlier period of low transaction costs.⁹⁴

Apart perhaps from Freyfogle, the several explanations focus on the economics of the situation to justify the transition to common property. Focusing on the economics appears reasonable because the argument in favor of private property (“the tragedy of the commons”) is an argument about economic incentives.⁹⁵ And, it turns out there is some evidence of attention to economics in the judicial opinions that mark the supposed transition.⁹⁶ Justice Joseph Story’s opinion in *Tyler v. Wilkinson*,⁹⁷ which introduced the term “riparian” into American law, appears to be an economically purposive intervention in the developing law with its extended discussion of the need to make valuable uses of water resources⁹⁸ and its presumption of a lost grant from the necessities of encouraging investment.⁹⁹

Direct evidence of such purposive intervention apparently is provided by another decision from 1827, the same year that *Tyler v. Wilkinson* was decided. In *Martin v. Bigelow*,¹⁰⁰ the Vermont Supreme Court found that “our circumstances,” evidently meaning the need to develop the economy, required the rejection of the protection of prior uses. Only later did the Vermont Supreme Court rely on *Tyler v.*

92. Eric T. Freyfogle, *Water Justice*, 1986 U. ILL. L. REV. 481, 499–508.

93. See *Braverman v. Eicher*, 238 N.W.2d 331, 335, 337 (Iowa 1976); *Keys v. Romley*, 412 P.2d 529, 535 (Cal. 1966) (describing the traditional natural servitude theory of diffused surface waters as a rule of property, and the new approach of reasonable use as a rule of tort); Freyfogle, *supra* note 92, at 499–509; Eric T. Freyfogle, *Lux v. Haggin and the Common Law Burdens of Modern Water Law*, 57 U. COLO. L. REV. 485, 489–91, 513–16 (1986).

94. See Thomas W. Merrill, *Trespass, Nuisance, and the Costs of Determining Property Rights*, 14 J. LEGAL STUD. 13, 20–21 (1985); Rose, *supra* note 22, at 285–93; Williams, *supra* note 91, at 1197–99.

95. See *Hardin*, *supra* note 78, at 1244–47.

96. For a strong argument that courts know too little about the effects of their decisions to ever be guided by the supposed social consequences, see Richard A. Epstein, *The Social Consequences of Common Law Rules*, 95 HARV. L. REV. 1717 (1982). Of course, just because courts might be unwise to attempt such interventions does not mean that courts do not attempt them.

97. 24 F. Cas. 472, 473 (D.R.I. 1827) (No. 14,312).

98. *Id.* at 474.

99. *Id.* at 474–76.

100. 2 Aik. 184, 187 (Vt. 1827); see also *Cary v. Daniels*, 49 Mass. (8 Met.) 466, 476–77 (1844) (adopting reasonable use based, in part, on economic grounds).

Wilkinson for the same proposition.¹⁰¹

Yet, upon careful reading, Justice Story's opinion actually throws doubt on whether there ever was a natural flow theory of riparian rights applied in the United States. While courts and scholars often identify Story's opinion as the introduction of the reasonable use theory into American law,¹⁰² others also cite that opinion as the source of the natural flow theory.¹⁰³ The opinion is worth quoting at length to illustrate why it is cited in support of both theories:

Prima facie every proprietor upon each bank of a river is entitled to the land, covered with water, in front of his bank, to the middle of the thread of the stream In virtue of this ownership he has a right to the use of the water flowing over in its natural current, without diminution or obstruction. But, strictly speaking, he has no property in the water itself; but a simple use of it, while it passes along. The consequence of this principle is, that no proprietor has a right to use the water to the prejudice of another. It is wholly immaterial, whether the party be a proprietor above or below, in the course of the river; the right being common to all the proprietors on the river, no one has a right to diminish the quantity which will, according to the natural current, flow to a proprietor below, or to throw it back upon a proprietor above. This is the necessary result of the perfect equality of right among all the proprietors of that, which is common to all. The natural stream, existing by the bounty of Providence for the benefit of the land through which it flows, is an incident annexed, by operation of law, to the land itself. When I speak of this common right, I do not mean to be

101. See *Davis v. Fuller*, 12 Vt. 178, 192 (1840).

102. See, e.g., *Fitzpatrick v. Okanogan Cnty.*, 238 P.3d 1129, 1141 (Wash. 2010); Hope M. Babcock, *Reserved Indian Water Rights in Riparian Jurisdictions: Water, Water Everywhere, Perhaps Some Drops for Us*, 91 CORNELL L. REV. 1203, 1208 n.24 (2006); Cassuto & Sampaio, *supra* note 76, at 379; Marla E. Mansfield, *A Reexamination of the Temporal Dimension in Property and Takings*, 44 TULSA L. REV. 765, 773–74 (2009); Nisha D. Noroian, *Prior Appropriation, Agriculture and the West: Caught in a Bad Romance*, 51 JURIMETRICS J. 181, 191 (2011); Rose, *supra* note 22, at 286–87; Smith, *supra* note 82, at 452.

103. See, e.g., *Wernberg v. State*, 516 P.2d 1191, 1194 n.4 (Alaska 1973); *McBryde Sugar Co. v. Robinson*, 504 P.2d 1330, 1343–44 (Haw. 1973); *Borough of Westville v. Whitney Home Builders, Inc.*, 122 A.2d 233, 240 (N.J. Super. Ct. App. Div. 1956); *Stevens v. Spring Valley Water Works & Supply Co.*, 247 N.Y.S.2d 503, 511 (App. Term 1964); *Franco-Am. Charolaise, Ltd. v. Okla. Water Res. Bd.*, 855 P.2d 568, 574 n.26 (Okla. 1990); see also Kirt Mayland, *Navigating the Murky Waters of Connecticut's Water Allocation Scheme*, 24 QUINNIPIAC L. REV. 685, 700–01 (2006).

understood, as holding the doctrine, that there can be no diminution whatsoever, and no obstruction or impediment whatsoever, by a riparian proprietor, in the use of the water as it flows; for that would be to deny any valuable use of it. There may be, and there must be allowed of that, which is common to all, a reasonable use. The true test of the principle and extent of the use is, whether it is to the injury of the other proprietors or not. There may be a diminution in quantity, or a retardation or acceleration of the natural current indispensable for the general and valuable use of the water, perfectly consistent with existence of the common right. The diminution, retardation, or acceleration, not positively and sensibly injurious by diminishing the value of the common right, is an implied element in the right of using the stream at all. The law here, as in many other cases, acts with a reasonable reference to public convenience and general good, and it is not betrayed into a narrow strictness, subversive of common sense, nor into an extravagant looseness, which would destroy private rights. The maxim is applied, ‘*Sic utere tuo, ut non alienum laedas.*’¹⁰⁴

Did Story’s opinion actually mark a transition from a natural flow theory to a reasonable use theory?

The dispute in *Tyler v. Wilkinson* was similar to *Merritt v. Parker*, involving this time a suit between mill owners over shares in the water of the Pawtucket River.¹⁰⁵ The plaintiffs’ mills depended on a head of water created by a “lower dam” dating from 1718 that had replaced an even older dam.¹⁰⁶ The defendants’ mills drew their water from “Sergeant’s Trench,” a ditch dating from 1714, along with related dams, gates, and flumes, some less than thirty years old at the time of the suit in 1827.¹⁰⁷ The plaintiffs wanted to enlarge their water use with new or

104. *Tyler*, 24 F. Cas. at 474. Compare the language in *Tyler* to Chief Baron James Parke’s statement in *Embrey v. Owen*, (1851) 155 Eng. Rep. 579 (Exch.) 585; 6 Exch. 353:

The right to have the stream to flow in its natural state without diminution or alteration is an incident to the property in the land through which it passes; but flowing water is *publici juris*, not in the sense that it is a *bonum vacans*, to which the first occupant may acquire an exclusive right, but that it is public and common in this sense only, that all may reasonably use it who have a right of access to it, that none can have any property in the water itself, except in the particular portion which he may choose to abstract from the stream and take into his possession . . .

105. *Tyler*, 24 F. Cas. at 473.

106. *Id.*

107. *Id.*

improved mills.¹⁰⁸ The plaintiffs claimed that the mills along Sergeant's Trench were not riparian; therefore those taking water from the trench were only entitled to use "surplus water"—that is, water left over after the riparian owners satisfied their wants.¹⁰⁹ The owners of Sergeant's Trench, on the other hand, claimed that they had appropriated to themselves the full capacity of the trench even if they did not use the water.¹¹⁰ Story rejected both claims in the foregoing paragraph—one of the most quoted passages regarding riparian rights. His extended discussion, however, did not resolve the dispute before him.

The defendants, mill owners along Sergeant's Trench, were not riparians because the trench was not a natural stream; as such, they could have no right to water under Justice Story's theory. Story went on to hold that the defendants were entitled to their customary usage through the trench, both because of an express grant accepted by the plaintiffs¹¹¹ and because of a presumed grant derived from more than twenty years of adverse use preempting any use by the plaintiffs.¹¹² In the course of this discussion, Justice Story, three times, expressly rejected the claim that mere priority of use, neither authorized by grant nor coupled with long-continued adverse use, would in any way affect the rights of riparian owners.¹¹³ Finally, he concluded ambiguously that in the event the water proved inadequate for all the mills, the deficiency "must be borne by all parties, as a common loss, wherever it may fall, according to existing rights."¹¹⁴

In fact, all the early cases expressed both theories described as riparian rights (natural flow and reasonable use).¹¹⁵ So did James Kent's *Commentaries*,¹¹⁶ which Sam Wiel and C.E. Busby thought of as, along

108. *Id.* at 473, 474–77.

109. *Id.* at 473.

110. *See id.* at 475, 477 (addressing arguments that there is a presumption of an "absolute and controlling power" to the water from the trench and that the agreement by the parties addresses a right to water flowing in the trench, not the quantity needed by the mills).

111. *Id.* at 474, 478.

112. *Id.* at 474–76.

113. *Id.* at 474, 475, 477.

114. *Id.* at 478.

115. *See, e.g.*, *Ulbricht v. Eufaula Water Co.*, 6 So. 78, 79 (Ala. 1889); *Pa. R.R. Co. v. Miller*, 3 A. 780, 781–82 (Pa. 1886); *Clinton v. Myers*, 46 N.Y. 511, 519–20 (1871); *Hendrick v. Cook*, 4 Ga. 241, 256 (1848). For the similar confusion in English law, see *Embrey v. Owen*, (1851) 155 Eng. Rep. 579 (Exch.) 585; 6 Exch. 353.

116. *See Kent, supra* note 57, at 356; *see also Palmer v. Mulligan*, 3 Cai. 307, 320–21 (N.Y. Sup. Ct. 1805) (a Kent opinion).

with *Tyler*, the fount of riparian rights theory.¹¹⁷ Only Ted Lauer, Anthony Scott, and Georgina Coustalin have concluded from these mixed expressions that common law riparian rights were based on the reasonableness of the use.¹¹⁸

A belated confirmation of Horwitz's premise, however, might be found in a line of cases upholding the natural flow theory, but only against public entities.¹¹⁹ In these cases, the public entities altered the natural flow by actions ranging from outright diversion of the water to allow the construction of highways to increasing the flow through the draining of sewage through a natural channel—yet, the private riparian owners along the stream were not making consumptive use of the water and therefore could prove little or no pecuniary losses. The courts allowed recovery for the taking of private property but denied an injunction, generally through a balancing of the equities in favor of the public activity.¹²⁰ When a court indicates that it would award damages while refusing an injunction for the interference with the natural flow by public action, the court simply casts the costs of the public action on the entire community, consistent with one of the major premises of takings theory.¹²¹ Yet, even this may be illusory. After all, the plaintiffs asked for injunctions because damages would have been difficult or impossible to prove. When a competing consumptive use is private, it becomes more difficult for a court to deny an injunction through a balancing of the equities,¹²² while to award damages against a private actor itself will frequently be enough to bar the consumptive use in favor of a non-

117. Busby, *supra* note 51, at 113–16; Wiel, *French Authority*, *supra* note 22, at 134–39; Wiel, *Origin*, *supra* note 28, at 247–52.

118. Lauer, *supra* note 23, at 60–61; Scott & Coustalin, *supra* note 26, at 887–98.

119. Snyder v. Callaghan, 284 S.E.2d 241, 247 (W. Va. 1981); Bd. of Transp. v. Terminal Warehouse Corp., 268 S.E.2d 180, 183–85 (N.C. 1980); Dimmock v. City of New London, 245 A.2d 569, 570, 572 (Conn. 1968); Collens v. New Canaan Water Co., 234 A.2d 825, 828, 831 (Conn. 1967); Drainage Dist. No. 1 v. Vill. of Green Valley, 387 N.E.2d 422, 425, 426 (Ill. App. Ct. 1979).

120. See, e.g., *Dimmock*, 245 A.2d at 574 (recognizing that the private plaintiff could sue for damages and allowing the municipal defendant a reasonable time to acquire the plaintiff's water rights through eminent domain); *Terminal Warehouse*, 268 S.E.2d. at 184 (stating that damages is the proper remedy against a public entity).

121. See, e.g., Nollan v. Cal. Coastal Comm'n, 483 U.S. 825, 827–842 (1987). See generally Frank I. Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law*, 80 HARV. L. REV. 1165 (1967); Joseph L. Sax, *Takings and the Police Power*, 74 YALE L.J. 36 (1964).

122. At least some early decisions did not consider the possibility. See, e.g., Clinton v. Myers, 46 N.Y. 511, 521 (1871); Hendrick v. Cook, 4 Ga. 241, 260–65 (1848).

consumptive use (or perhaps even total nonuse).¹²³ In such a case, courts simply fall back on the reasonable use theory and find that there has been no invasion by the preferred consumptive user. When an injunction is denied against a public user through the balancing of the equities even though no damages can be proven, the court has adopted the functional equivalent of the reasonable use rule in this situation as well.

IV. AN ASIDE: THE EMERGENCE OF APPROPRIATIVE RIGHTS¹²⁴

Hardin focused on the likelihood of overexploitation of a common pool resource.¹²⁵ Our experience with riparian rights suggests another feature of common pool resources: If exploitation of a common pool resource requires significant capital investment, the inability of potential investors to keep others from preempting an investor's uses will bring about underinvestment in the resource.¹²⁶ This fear was a major cause of the rejection of riparian rights in the drier western states.¹²⁷ Wendy Wagner has identified another drawback of common property systems: the incentive to hide the failings of the system for fear that the dissemination of such knowledge might provoke the regulation or privatization of the commons.¹²⁸ The suppression of relevant knowledge

123. That this line of argument struck the reporters of the *Restatement (Second) of Torts* as unjust hardly disproves that courts took this approach. RESTATEMENT (SECOND) OF TORTS § 850A app., cmt. 1 (1982). On the unreliability of the *Restatement (Second)* as applied to riparian rights, see Dellapenna, *Introduction to Riparian Rights*, *supra* note 16, § 6.01(c).

124. Part III has been adapted, in large part, from Dellapenna, *Dual Systems*, *supra* note 49, § 8.02(a)–(c).

125. See Hardin, *supra* note 78, 1243–44, 1248.

126. See, e.g., Rowland v. Ramelli, 599 P.2d 656, 666–67 (Cal. 1979) (en banc); RICHARD A. EPSTEIN, *SIMPLE RULES FOR A COMPLEX WORLD* 67–70 (1995); Lee Anne Fennell, *Common Interest Tragedies*, 98 NW. U. L. REV. 907, 910–912 (2004); J.W. Milliman, *Water Law and Private Decision-Making: A Critique*, 2 J.L. & ECON. 41, 47–51 (1959); Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 711–14 (1986) (“No one wishes to invest in something that may be taken away from him tomorrow . . .”). For a serious challenge to this assumption, see Harrison C. Dunning, *State Equitable Apportionment of Western Water Resources*, 66 NEB. L. REV. 76, 84–85 (1987).

127. See, e.g., Coffin v. Left Hand Ditch Co., 6 Colo. 443, 446–47 (1882); see also James N. Corbridge, Jr., *Historical Water Use and the Protection of Vested Rights: A Challenge for Colorado Water Law*, 69 U. COLO. L. REV. 503, 527–29 (1998); Norman K. Johnson & Charles T. DuMars, *A Survey of the Evolution of Western Water Law in Response to Changing Economic and Public Interest Demands*, 29 NAT. RESOURCES J. 347, 351 (1989).

128. Wendy E. Wagner, *Commons Ignorance: The Failure of Environmental Law to Produce Needed Information on Health and the Environment*, 53 DUKE L.J. 1619, 1636–41, 1745 (2004).

could be even more damaging than the risks of deliberate overexploitation or underinvestment.

For the foregoing reasons, traditional riparian rights proved unsuitable to the drier lands west of Kansas City. From the earliest years of “Anglo” (English-speaking American) settlement, the newcomers generally displaced aboriginal and Spanish–Mexican law.¹²⁹ Because of aridity in the West, the new courts there confronted increasing demands to divert water for mining, irrigation, industrial, and municipal uses that could not be resolved satisfactorily even through recourse to the reasonable use theory.¹³⁰ Yet no one seems to have asked whether the land was adapted to the sort of use patterns the European-American settlers were bringing. In particular, no one seems to have challenged the goal of “making the desert bloom.” Experience,

129. The few apparent survivals of Spanish–Mexican law seem actually to have been fictions invented by common law judges. See *City of Los Angeles v. City of San Fernando*, 537 P.2d 1250, 1265–67, 1274–77 (Cal. 1975); *State ex rel. Martinez v. City of Las Vegas*, 89 P.3d 47, 51–52, 55–56 (N.M. 2004). See generally NORRIS HUNDLEY JR., *THE GREAT THIRST: CALIFORNIANS AND WATER, 1770S–1990S* 13–77 (1992); DONALD J. PISANI, *TO RECLAIM A DIVIDED WEST: WATER, LAW, AND PUBLIC POLICY, 1848–1902*, at 38–46 (1992) [hereinafter PISANI, *RECLAIM*]; DANIEL TYLER, *THE MYTHICAL PUEBLO RIGHTS DOCTRINE: WATER ADMINISTRATION IN HISPANIC NEW MEXICO* (1990); Peter L. Reich, *The “Hispanic” Roots of Prior Appropriation in Arizona*, 27 ARIZ. ST. L.J. 649 (1995); Peter L. Reich, *Mission Revival Jurisprudence: State Courts and Hispanic Water Law Since 1850*, 69 WASH. L. REV. 869 (1994); John E. Thorson et al., *Dividing Western Waters: A Century of Adjudicating Rivers and Streams*, 8 U. DENV. WATER L. REV. 355, 394–400 (2005). The Spanish and the Mexicans were just as intent on disregarding aboriginal practices and legal customs as Anglos were intent on displacing Spanish–Mexican Law. See HUNDLEY, *supra*, at 25–26; Kate A. Berry, *Water Use and Cultural Conflict in 19th Century Northwestern New Spain and Mexico*, 40 NAT. RESOURCES J. 759, 761–62 (2000); Guadalupe T. Luna, *Gold, Souls, and Wandering Clerics: California Missions, Native Californians, and LatCrit Theory*, 33 U.C. DAVIS L. REV. 921, 926–28 (2000); C. Luther Propst & Peter W. Culp, *Searching for Cibola: Community-Based Environmental Restoration in the Colorado River Watershed*, 42 ARIZ. L. REV. 259, 261–62 (2000). Even today, when Indian water rights are in issue, courts ignore the customary law of the tribes. See, e.g., *Confederated Tribes of Colville Reservation v. United States*, 964 F.2d 1102, 1102–17 (Fed. Cir. 1992).

130. For brief analyses of how geography shapes water law in different states, see LUDWIK A. TECLAFF, *THE RIVER BASIN IN HISTORY AND LAW* 81–83 (1967); DONALD J. PISANI, *FROM THE FAMILY FARM TO AGRIBUSINESS: THE IRRIGATION CRUSADE IN CALIFORNIA AND THE WEST, 1850–1931*, at 1–2, 37–39 (1984) [hereinafter PISANI, *FROM THE FAMILY FARM TO AGRIBUSINESS*]; WORSTER, *supra* note 2, at 3; Gordon Morris Bakken, *The Influence of the West on the Development of Law*, 24 J.W. 66, 66–67 (1985); Robert G. Dunbar, *The Adaptability of Water Law to the Aridity of the West*, 24 J.W. 57, 57–58 (1985); Grossfeld, *supra* note 2 at 1514; and Tom I. Romero, II, *Uncertain Waters and Contested Lands: Excavating the Layers of Colorado’s Legal Past*, 73 U. COLO. L. REV. 521, 532–44 (2002).

however, has now taught us that “drought follows the plow.”¹³¹ Only recently have major actors in western water management begun to question whether there is a need for basic rethinking regarding the appropriative rights regime.¹³²

The initial development of appropriative rights was not based on such sophisticated theories of water law or management. That would come only later. Large-scale Anglo settlement reached California before the other states west of Kansas City, except Oregon and Texas, and the peculiarities of settlement in California compelled people there to confront problems of allocating water to consumptive uses long before people in Oregon and Texas.¹³³ Anglo settlement in Oregon and Texas at first was predominantly in humid areas where riparian rights worked well.¹³⁴ The Anglo settlement pattern in California was radically different. The discovery of gold at Sutter’s Mill, California, less than six months before the Treaty of Guadalupe Hidalgo came into effect and transferred vast western tracts (including California) from Mexico to the United States, set off a massive gold rush that raised California’s non-aboriginal population from a few thousand to over 100,000 in less than a year, and to several hundred thousand within five years.¹³⁵ These people settled mostly in the mountains where the gold was, with little concern for the agricultural potential of the land.¹³⁶ This sudden peopling of

131. Michael H. Glantz, *Introduction to DROUGHT FOLLOWS THE PLOW: CULTIVATING MARGINAL AREAS* 1, 1–4 (Michael H. Glantz ed., 1994).

132. See COMM. W. WATER MGMT. ET AL., *WATER TRANSFERS IN THE WEST: EFFICIENCY, EQUITY, AND THE ENVIRONMENT* 1–2 (1992); Eric L. Garner & Janice L. Weis, *Water Management Options for the Future*, in *THE NATURAL RESOURCES LAW MANUAL* 330, 330–34, 339–40 (Richard J. Fink ed., 1995); Kara Gillon, *Watershed Down?: The Ups and Downs of Watershed Management in the Southwest*, 5 *U. DENV. WATER L. REV.* 395, 395–98 (2002); Helen Ingram, *Lessons Learned and Recommendations for Coping with Future Scarcity*, 39 *NAT. RESOURCES J.* 179, 182–84 (1999); Lora A. Lucero, *Water and the Disconnects in Growth Management*, 31 *URB. LAW.* 871, 874–75 (1999); Charles Wilkinson, *Western Water: The Ethical and Spiritual Questions*, 1 *SEATTLE J. SOC. JUST.* 367, 368 (2002).

133. See HUNDLEY, *supra* note 129, at 63–82; PISANI, *RECLAIM*, *supra* note 129, at 14–26. I discuss the evolution of water rights in California in some detail in Dellapenna, *Dual Systems*, *supra* note 49, § 8.02(a), and the evolution of water rights in Oregon and Texas (as well as several other states) in Dellapenna, *supra*, § 8.02(c).

134. HUNDLEY, *supra* note 129, at 63–82; PISANI, *RECLAIM*, *supra* note 129, at 14–26.

135. See ROBERT F. HEIZER & ALAN J. ALMQUIST, *THE OTHER CALIFORNIANS: PREJUDICE AND DISCRIMINATION UNDER SPAIN, MEXICO, AND THE UNITED STATES TO 1920*, at 143–44 (1971); James J. Rawls, *A Golden State: An Introduction*, in *A GOLDEN STATE: MINING AND ECONOMIC DEVELOPMENT IN GOLD RUSH CALIFORNIA* 1, 9 (James J. Rawls & Richard J. Orsi eds., 1999)

136. See HUNDLEY, *supra* note 129, at 67; PISANI, *RECLAIM*, *supra* note 129, 11–18; Lucien Shaw, *The Development of the Law of Waters in the West*, 10 *CALIF. L. REV.* 443, 443–

California occurred without an organized government in place.¹³⁷

Whatever law might have been established among the Spanish-founded missions, presidios, and pueblos was virtually swept away and ignored by the mass of would-be miners.¹³⁸ Yet, the settlers did not consider themselves to be without law. To a greater extent than is often appreciated, the Anglo settlers brought with them and used the only law with which they were familiar: the common law as found in the eastern United States.¹³⁹ Regarding the two most centrally material factors in their lives (land and water), however, the settlers were unable to use that law. Under the law brought from the eastern United States, the land belonged to the government and the waters went with the land.¹⁴⁰ The “forty-niners” were unable to acquire title to the land without the establishment of regular government and comprehensive surveys, but they were unwilling to wait for that process to occur. The newcomers simply sought out the gold as trespassers and took what land and water they needed.¹⁴¹

44 (1922).

137. PISANI, RECLAIM, *supra* note 129, at 12–14; *see also* CHARLES HOWARD SHINN, MINING CAMPS: A STUDY IN AMERICAN FRONTIER GOVERNMENT 105–64 (1884); L. Ward Bannister, *The Question of Federal Disposition of State Waters in the Priority States*, 28 HARV. L. REV. 270, 272–73 (1915); Shaw, *supra* note 136, at 446.

138. Statutes in several states, including California, sought to preserve Spanish–Mexican irrigation law, but such rights were always subordinated to the needs of miners. *See, e.g.*, GORDON MORRIS BAKKEN, THE DEVELOPMENT OF LAW ON THE ROCKY MOUNTAIN FRONTIER: CIVIL LAW AND SOCIETY, 1850–1912, at 33–36 (1983); BETTY EAKLE DOBKINS, THE SPANISH ELEMENT IN TEXAS WATER LAW 136–39 (1959); HOWARD ROBERTS LAMAR, THE FAR SOUTHWEST, 1846–1912: A TERRITORIAL HISTORY 91–92 (1966) (recognizing that California law may have been shaped to meet the needs of the Anglos); PISANI, FROM THE FAMILY FARM TO AGRIBUSINESS, *supra* note 130, at 33–34; PISANI, RECLAIM, *supra* note 129, at 38–44 (noting that California and Colorado were states where Spanish and Mexican influences on water rights failed to survive); Hobbs, *supra* note 2, at 6–14 (outlining the water practices of the Puebloans, Hopi, and early Spanish explorers); Wells A. Hutchins, *The Community Acequia: Its Origin and Development*, 31 SW. HIST. Q. 261, 261–63 (1928).

139. *See* PISANI, RECLAIM, *supra* note 129, at 14; JOHN PHILLIP REID, LAW FOR THE ELEPHANT: PROPERTY AND SOCIAL BEHAVIOR ON THE OVERLAND TRAIL (1980) (rebutting the perception that the pioneers were lawless and pointing to the large role that the law and lawyers played in the pioneers’ lives); SHINN, *supra* note 137, at 120–31; Mark T. Kanazawa, *Efficiency in Western Water Law: The Development of the California Doctrine, 1850–1911*, 27 J. LEGAL STUD. 159, 162–65 (1998); Edwin W. Young, *The Adoption of the Common Law in California*, 4 AM. J. LEGAL HIST. 355, 361–62 (1960).

140. *See* United States v. Gear, 44 U.S. (3 How.) 120, 133 (1845); United States v. Gratiot, 39 U.S. (14 Pet.) 526, 538 (1840). Both of these cases held that lead in the ground went with the land. *Gear*, 44 U.S. at 133; *Gratiot*, 39 U.S. at 538. However, the Court’s analysis equally applies to other resources, including water.

141. Moore v. Smaw, 17 Cal. 199, 210–11, 222–26 (1861).

The results of this culture of just taking what you needed helped to give Americans a national mythology based on stories that were all too true: violent disputes, blood feuds, and sudden death. The miners quickly sought to bring order to their lives through “vigilance committees,” applying vigilante law based on the most elementary notion of justice: the first to grab it owns it, or, as it would be put more eloquently by lawyers and judges, “first in time, first in right.”¹⁴² Once the miners went beyond panning for gold and undertook placer mining, there emerged large mining companies that needed a great deal of water, often at a considerable removal from where the water was naturally located.¹⁴³ This process was well established on the ground before effective formal governments could be created. Those first governments could do little more than ratify the “customs of miners,” as was done in the first California Practice Act:

In actions respecting “mining claims,” proof shall be admitted of the customs usages or regulations established and in force at the bar, or diggings, embracing such claim; and such customs, usages or regulations, when not in conflict with the Constitution and laws of this State, shall govern the decision of the action.¹⁴⁴

Justice Stephen Field, at one time Chief Justice of California, later would sum up the matter for the United States Supreme Court: “[T]he miners . . . were emphatically the law-makers, as respects mining, upon

142. See, e.g., *Fort Vannoy Irrig. Dist. v. Water Res. Comm’n*, 188 P.3d 277, 283–84 (Or. 2008) (en banc). See generally HUNDLEY, *supra* note 129, at 67–73; PISANI, RECLAIM, *supra* note 129, at 14–31; Terry L. Anderson & P.J. Hill, *The Evolution of Property Rights: A Study of the American West*, 18 J.L. & ECON. 163, 168–69, 176–79 (1975); Kanazawa, *supra* note 136, at 165–68; John Umbeck, *The California Gold Rush: A Study of Emerging Property Rights*, 14 EXPLORATIONS ECON. HIST. 197, 202–06, 215–18 (1977). David Schorr has challenged the prevalent view that the mining camps were the source of appropriative rights, ignoring the inability to apply riparian rights in a context where nearly everyone was a trespasser. See David B. Schorr, *Appropriation as Agrarianism: Distributive Justice in the Creation of Property Rights*, 32 ECOLOGY L.Q. 3, 11–33 (2005); David B. Schorr, *The First Water Privatization Debate: Colorado Water Corporations in the Gilded Age*, 33 ECOLOGY L.Q. 313, 319–33 (2006).

143. Donald Pisani has documented the rather considerable support that small mining operators gave to the riparian tradition in opposition to the increasing concentration of water in the hands of large, capital-intensive mining companies. PISANI, RECLAIM, *supra* note 129, at 23–26.

144. Act of April 29, 1851, as amended by Act of May 18, 1854, ch. 5, 1854 Cal. Stat. 16, § 621; see also HUNDLEY, *supra* note 129, at 73–74.

the public lands in the State.”¹⁴⁵ The result is a certain irony because “a legal system that arose from the relatively lawless mining camps of the Wild West would come to be viewed as though it had been handed down directly from God.”¹⁴⁶ The customs of the California miners were then carried across the West as the less successful miners chased the succeeding mineral rushes in what would become other states.¹⁴⁷

By 1882, courts in western states were giving more sophisticated rationales for adopting appropriative rights.¹⁴⁸ If a court had embraced the natural flow theory of riparian rights, that would have foreclosed mining or irrigation on non-riparian lands in favor of the water flowing virtually unused and unusable (except perhaps for the last riparian before the water flows into the sea) across riparian land.¹⁴⁹ The reasonable use theory, on the other hand, was too uncertain a basis for promoting investment (private or public) in the expensive works necessary for the diversion and use of water.¹⁵⁰ As a result, the states most heavily dependent on mining and irrigated agriculture made two fundamental changes in their water law. First, they utterly rejected riparian rights for consumptive uses. Second, they subordinated non-consumptive uses (to which riparian rights still applied) to consumptive uses. This came to be known as the “Colorado doctrine,” named after the state whose courts first adopted these changes.¹⁵¹ Western states in which other livelihoods were significant received riparian rights partially

145. *Jennison v. Kirk*, 98 U.S. 453, 457 (1878).

146. Reed D. Benson, *A Few Ironies of Western Water Law*, 6 WYO. L. REV. 331, 333 (2006).

147. For analysis of how each western state ended up with its current form of water law, see Dellapenna, *Dual Systems*, *supra* note 49, § 8.02-.02(c).

148. *See, e.g.*, *Coffin v. Left Hand Ditch Co.*, 6 Colo. 443, 446 (1882) (discussing why riparian rights would not be suitable to the drier states); *Drake v. Earhart*, 23 P. 541, 542 (Idaho 1890) (same); *Farm Inv. Co. v. Carpenter*, 61 P. 258, 264–65 (Wyo. 1900) (same).

149. *See, e.g.*, *United States v. Rio Grande Dam & Irrig. Co.*, 51 P. 674, 677–78 (N.M. 1898); *Reno Smelting, Milling & Reduction Works v. Stevenson*, 21 P. 317, 318–19 (Nev. 1889); *Stowell v. Johnson*, 26 P. 290, 291 (Utah 1891); CLESSON S. KINNEY, *A TREATISE ON THE LAW OF IRRIGATION* 152–55, 158, 186–87 (1894).

150. *See, e.g.*, *Coffin*, 6 Colo. at 446; *Drake*, 23 P. at 542; *Farm Inv. Co.*, 61 P. at 260. The classic description of the shortcomings of riparian rights is found in Mason Gaffney, *Economic Aspects of Water Resources Policy*, 28 AM. J. ECON. & SOC. 131, 131–34 (1969); *see also* Nirav K. Desai, *Up a Creek: An Introduction to the Commission's Final Report Discussion of Uncertainty in California Water Rights Law*, 36 MCGEORGE L. REV. 29, 33 (2005); Romero, *supra* note 129, at 534–41; Barton H. Thompson, Jr., *Uncertainty and Markets in Water Resources*, 36 MCGEORGE L. REV. 117, 130 (2005). For a challenge to this conclusion, *see* PISANI, *RECLAIM*, *supra* note 129, at 26–29.

151. *See* Dellapenna, *Dual Systems*, *supra* note 49, § 8.02(b).

or wholly into their law—but those states struggled thereafter to limit or eliminate those rights.¹⁵² The struggle ensured that such riparian rights as recognized in western states developed important differences from riparian rights in the eastern states.¹⁵³ Riparian rights continue to have considerable importance in California, Texas, and Washington, leading to attempts to delimit riparian rights administratively.¹⁵⁴ Riparian rights could also be valuable property rights in other dual system states, although in states like Oregon, with no application by a jurist or an administrator for decades, riparian rights are vestigial at best.¹⁵⁵

V. THE EVOLUTION OF RIPARIAN RIGHTS

Courts continued to struggle with the meaning and application of riparian rights throughout the nineteenth and twentieth centuries. Actual decisions, though, remained few and far between (either because there usually was enough water for all demands—at least if one ignored the need to maintain ecological flows—or because the outcome of litigation was simply too unpredictable under the reasonable use theory to justify the expense of litigation). In part because of the rarity of precedents, courts continued to mingle natural flow language with reasonable use language, without any apparent awareness of the contradiction.¹⁵⁶ Yet, when courts had to make a choice, they invariably chose the reasonable use theory—without, however, developing a clear set of criteria to determine which uses would be preferred when, as was nearly always the case, the multiple uses before the court were all reasonable in the abstract.¹⁵⁷

The reasonable use theory from the beginning allowed a great deal

152. *See id.* §§ 8.02(a), .02(c), .03.

153. *See id.* § 8.04.

154. For cases in which the courts acknowledged an administrative agency's ability to delimit riparian rights, see *Rowland v. Ramelli*, 599 P.2d 656, 659 (Cal. 1979) (en banc); *In re Brazos III Segment*, 746 S.W.2d 207, 211 (Tex. 1988); *In re Upper Guadalupe Segment*, 642 S.W.2d 438, 446 (Tex. 1982); *State v. Abbott*, 694 P.2d 1071, 1074–75, 1077 (Wash. 1985) (en banc).

155. *See, e.g., Teel Irrig. Dist. v. Water Res. Dep't*, 898 P.2d 1344, 1347 (Or. Ct. App. 1995) (“Water rights in Oregon are based on appropriation for a beneficial use.”).

156. *See, e.g., Harris v. Brooks*, 283 S.W.2d 129, 133–34 (Ark. 1955) (discussing Arkansas precedents embracing both the natural flow theory and the reasonable use theory); *White v. Pa. R.R. Co.*, 47 A.2d 200, 202–04 (Pa. 1946) (applying the natural flow theory to water drainage); *Alburger v. Phila. Elec. Co.*, 535 A.2d 729, 733–34 (Pa. Commw. Ct. 1988) (applying a reasonableness theory to water drainage).

157. *See, e.g., Harris*, 283 S.W.2d at 133–34.

of discretion in the court to decide which use was to be preferred. The Minnesota Supreme Court early on sought to develop more specific criteria and came up with the following:

3. The law does not lay down any fixed rules for determining what is a reasonable use of the water of a stream by a riparian owner. What constitutes a reasonable use is not a question of law, but of fact, to be determined . . . from all the circumstances of the case. . . .

4. In determining what is a reasonable use, regard must be had to the subject-matter of the use; the occasion and manner of its application; the object, extent, necessity, and duration of the use; the nature and size of the stream; the kind of business to which it is subservient; the importance and necessity of the use claimed by one party, and the extent of the injury to the other party; the state of improvement of the country in regard to mills and machinery, and the use of water as a propelling power; the general and established usages of the country in similar cases; and all the other and ever-varying circumstances of each particular case bearing upon the questions of the fitness and propriety of the use of the water under consideration.

5. Evidence of uniform and general custom in like cases is competent, although, of course, not conclusive, upon the question of whether a use is a reasonable one. Usage . . . is some proof of what is considered a reasonable and proper use of that which is a common right, because it affords evidence of the tacit consent of all parties interested to the general convenience or necessity of such use. . . . [M]uch would depend on the character and size of the stream and the uses to which it is adapted. . . .

6. To these rules we think we may properly add another, viz.: Whenever it appears that any use of a stream by one riparian owner interferes with the reasonable use of the stream by a lower riparian owner, . . . [whether] by the interruption, diversion, obstruction, or pollution of the water, the burden of proof is upon the former to show that his use is reasonable, and the greater the injury is to the lower owner the greater necessity for such use must the upper owner show in order to establish its reasonableness. The reasonableness of such use must determine the right, and this must depend in a great degree upon the extent of the detriment to the riparian proprietors below.¹⁵⁸

158. *Red River Roller Mills v. Wright*, 15 N.W. 167, 168–69 (Minn. 1883) (internal

Courts hardly made any progress beyond these vague criteria for at least a century. A half-century later, the best the *Restatement of Torts* could add was its explanation that

[t]he determination in a particular case of the unreasonableness of a particular use is not and should not be an unreasoned, intuitive conclusion on the part of a court or jury. It is rather an evaluating of the conflicting interests of each of the contestants before the court in accordance with the standards of society, and a weighing of those, one against the other. The law accords equal protection to the interests of all the riparian proprietors in the use of water, and seeks to promote the greatest beneficial use of the water, and seeks to promote the greatest beneficial use by each with a minimum of harm to others. But when one riparian proprietor's use of the water harmfully invades another's interest in its use, there is an incompatibility of interest between the two parties to a greater or lesser extent depending on the extent of the invasion, and there is immediately a question whether such a use is legally permissible. It is axiomatic in the law that individuals in society must put up with a reasonable amount of annoyance and inconvenience resulting from the otherwise lawful activities of their neighbors in the use of their land. Hence it is only when one riparian proprietor's use of the water is unreasonable that another who is harmed by it can complain, even though the harm is intentional. Substantial intentional harm to another cannot be justified as reasonable unless the legal merit or utility of the activity which produces it outweighs the legal seriousness or gravity of the harm.¹⁵⁹

With demand for water continuing to rise in states following riparian rights—a demand that rose explosively with the recognition of ecological demand for water in the 1970s—states had to confront the shortcomings of traditional riparian rights. Legislatures, as we shall see, chose to replace riparian rights with regulated riparianism.¹⁶⁰ Courts,

citations omitted). See generally Dellapenna, *The Right to Consume Water*, *supra* note 9, §§ 7.02(d)–.03(e).

159. RESTATEMENT OF TORTS § 852 cmt. c (1939).

160. See generally Dellapenna, *Regulated Riparianism*, *supra* note 8, Introduction to § 9.03 (“More or less comprehensive regulated riparian statutes are [now] found in 18 of the 31 states east of Kansas City.”).

unable to take such an extreme step, sought ways to improve the working of riparian rights. Thus came the application of something like the already-noted natural flow theory against governmental entities.¹⁶¹ At about the same time, the American Law Institute undertook a review of its summary of riparian rights in the *Restatement (Second) of Torts*.¹⁶² Frank Trelease, then Dean of the University of Wyoming School of Law and the leading water law expert of the time (but who had devoted his entire career to extolling the virtues of appropriative rights),¹⁶³ served as Associate Reporter on the review.

Trelease sought to introduce as much of appropriative rights as possible into traditional riparian rights, in other words to move riparian rights from its traditional common property approach toward a more private property approach to water allocation and use.¹⁶⁴ To do so, he sought to introduce at least ten specific changes into the *Restatement's* version of riparian rights.¹⁶⁵ The two primary changes he sought to establish were to introduce a temporal priority into the balancing process of determining reasonableness¹⁶⁶ and a broadening of the relationship between uses on riparian land and uses on non-riparian land.¹⁶⁷ Temporal priority, in fact, has never played much, if any, role in the application of riparian rights¹⁶⁸ and one cannot find a court that has followed this or almost any other aspect of the *Restatement (Second)*'s approach to riparian rights.¹⁶⁹ The Georgia Supreme Court has taken up

161. See *supra* note 119 and accompanying text.

162. RESTATEMENT (SECOND) OF TORTS ch. 41 (1979).

163. See, e.g., Frank J. Trelease, *The Model Water Code, the Wise Administrator and the Goddam Bureaucrat*, 14 NAT. RESOURCES J. 207 (1974); Frank J. Trelease, *New Water Legislation: Drafting for Development, Efficient Allocation and Environmental Protection*, 12 LAND & WATER L. REV. 385 (1977); Frank J. Trelease, *Policies for Water Law: Property Rights, Economic Forces and Public Regulation*, 5 NAT. RESOURCES J. 1 (1965).

164. RESTATEMENT (SECOND) OF TORTS, intro. note to ch. 41 & app. to 850A (1982).

165. See Dellapenna, *Introduction to Riparian Rights*, *supra* note 16, § 6.01(c).

166. RESTATEMENT (SECOND) OF TORTS § 850A(h), cmt. k & app.

167. *Id.* §§ 855–857, app.

168. Dellapenna, *The Right to Consume Water*, *supra* note 9, § 7.03(d).

169. Thus far, courts in 18 reported cases have referred to the *Restatement (Second)* regarding riparian rights; nearly all were general references that did not play a major role in the decision. *New Jersey v. Delaware*, 552 U.S. 597, 612–13 (2008); *Virginia v. Maryland*, 540 U.S. 56, 82 (2003) (Stevens, J., dissenting); *Lopardo v. Fleming Cos.*, 97 F.3d 921, 929 (7th Cir. 1996); *Okaw Drainage Dist. v. Nat'l Distillers & Chem. Corp.*, 882 F.2d 1241, 1246 (7th Cir. 1989); *Harthman v. Texaco Inc.*, 846 F. Supp. 1243, 1254 (D.V.I. 1993); *Ace Equip. Sales, Inc. v. Buccino*, 848 A.2d 474, 479 (Conn. App. Ct. 2004) (relying on the *Restatement (Second)* in its decision), *rev'd*, 869 A.2d 626, 630–31, 634–37 (Conn. 2005) (relying on caselaw and common law rule); *Pyle v. Gilbert*, 265 S.E.2d 584, 589 (Ga. 1980); *In re Water Use Permit*

at least part of the *Restatement (Second)*'s reordering of the relationship between riparian and non-riparian uses, recognizing the right of a non-riparian user who has purchased or leased the right to use water from a riparian owner.¹⁷⁰ But, to what extent this would have lasting import in Georgia is far from clear because the state has now adopted a regulated riparian system for its larger water users.¹⁷¹

VI. THE REPLACEMENT OF TRADITIONAL RIPARIAN RIGHTS BY REGULATED RIPARIANISM

The various transformations of riparian doctrine have resulted from a complex interplay between climate, stages of economic development, and inherited legal theory.¹⁷² This process was illustrated dramatically in the rejection or modification of riparian rights in western states in favor of temporal priority based on when water was appropriated (first in time, first in right).¹⁷³ The process of modifying or abandoning traditional riparian rights continues today, with many eastern states abandoning classic riparian rights in favor of a new permit system that is based on riparian, rather than appropriative, principles.¹⁷⁴ With the demand for water for various uses continuing to increase in the East, even as population growth has stabilized or, in some areas, gone into

Applications, 9 P.3d 409, 449, 472 n.64, 473 (Haw. 2000); *Alderson v. Fatlan*, 898 N.E.2d 595, 600, 601 n.4 (Ill. 2008); *Colwell Sys., Inc. v. Henson*, 452 N.E.2d 889, 892 (Ill. App. Ct. 1983); *Mich. Citizens for Water Conserv. v. Nestlé Waters N. Am., Inc.*, 709 N.W.2d 174, 194, 195, 196, 200 & n.39, 201, 203–04 nn.44–48, 205, 207 (Mich. Ct. App. 2005); *Lake Mille Lacs Inv., Inc. v. Payne*, 401 N.W.2d 387, 389 (Minn. Ct. App. 1987); *Koch v. Aupperle*, 737 N.W.2d 869, 879 n.30 (Neb. 2007); *Baumler v. Town of Newstead*, 668 N.Y.S.2d 814, 816 (N.Y. App. Div. 1998); *Pendergrast v. Aiken*, 236 S.E.2d 787, 796–97 (N.C. 1977); *Franco-Am. Charolaise, Ltd. v. Okla. Water Res. Bd.*, 855 P.2d 568, 574 nn.25 & 27, 575 n.40 (Okla. 1990); *Alburger v. Phila. Elec. Co.*, 535 A.2d 729, 737 & nn.1 & 4, 738 (Pa. Commw. Ct. 1988) (Doyle, J., dissenting). Only in *Pyle v. Gilbert* did the court rely on the *Restatement (Second)* to change the law of riparian rights.

170. *Pyle*, 265 S.E.2d at 588–89.

171. GA. CODE ANN. § 12-5-31(a), (c), (e)–(g), (k)–(n) (2006 & Supp. 2011); see also Joseph W. Dellapenna, *The Law of Water Allocation in the Southeastern States at the Opening of the Twenty-First Century*, 25 U. ARK. LITTLE ROCK L. REV. 9, 65–73 (2002).

172. HORWITZ, *supra* note 91, at 34–54 (discussing economic development); Abrams, *supra* note 91, at 1388–1400 (discussing inherited legal theory, climate, and economic development).

173. See Dellapenna, *Dual Systems*, *supra* note 49, § 8.04.

174. See Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03(a)(5). The only attempt to introduce appropriative rights into an eastern state (Mississippi) utterly failed. See Dellapenna, *Dual Systems*, *supra* note 49, § 8.05–.05(b).

decline, recurring water shortages have become more frequent.¹⁷⁵ The pressures for change will only accelerate under the impact of global climate change.¹⁷⁶ As a result, users of water increasingly find their need for water to be in conflict with the needs of other, formerly-compatible users; there simply is not enough water to satisfy all needs in the eastern states any longer. In this setting, the shortcomings of traditional riparian rights come to the fore, particularly their inability to prevent a tragedy of the commons.¹⁷⁷

Today, about half of the states that were once committed to traditional riparian rights have now enacted new regulatory systems that have come to be called “regulated riparianism.”¹⁷⁸ There even is a model law for such statutes: *The Regulated Riparian Model Water Code* of the American Society of Civil Engineers.¹⁷⁹ The name “regulated riparianism”¹⁸⁰ emphasizes both that the administrative permit process

175. See, e.g., SUSAN J. MARKS, AQUA SHOCK: THE WATER CRISIS IN AMERICA 1–5 (2009) (stating that water shortages are becoming more frequent in the East). On population change patterns across the United States, see *Population Change and Distribution 1990 to 2000*, NATIONALATLAS.GOV (Jan. 26, 2011), http://nationalatlas.gov/articles/people/a_popchange.html#five.

176. See Dellapenna, *Global Climate Disruption*, *supra* note 2, at 409–11.

177. Hardin, *supra* note 78. See discussion *supra* text accompanying notes 78–87, 125–28.

178. Because some states have adopted a regulated riparian system through incremental statutory change rather than a single, dramatic enactment, the list of adopting states is not entirely settled. As of 2011, my own compilation includes Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Hawaii, Iowa, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, North Carolina, Virginia, and Wisconsin. In several of these states, the regulatory system has not been implemented or has only been partially implemented. See Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03.

179. AM. SOC’Y OF CIVIL ENG’RS, ASCE/EWRI std. 40-03, REGULATED RIPARIAN MODEL WATER CODE (2003) [hereinafter MODEL CODE]. The *Model Code* includes exhaustive references to comparable provisions of actual regulated riparian statutes.

180. I devised the name “regulated riparianism” some twenty years ago. Joseph W. Dellapenna, *Owning Surface Water in the Eastern United States*, 6 E. MINERAL. L. FOUND. § 1.03(3) (1985). This name has now gained general acceptance. See, e.g., *City of Waterbury v. Town of Washington*, 800 A.2d 1102, 1155–57 (Conn. 2002); Babcock, *supra* note 102, at 1206–08, 1217–19, 1234, 1238; Mayland, *supra* note 103, at 687, 690, 696, 720; D.S. Pensley, *The Legalities of Stream Interventions: Accretive Changes to New York State’s Riparian Doctrine Ahead?*, 25 PACE ENVTL. L. REV. 105, 111–23, 145 (2008); Smith, *supra* note 82, at 454, 472, 474; see also *In re Water Use Permit Applications*, 9 P.3d 409, 460 (Haw. 2000) (referring to the *Regulated Riparian Model Water Code* for guidance in interpreting the Hawaii permit statute). The term has even entered into wider public discourse. See, e.g., Leah J. Knowlton, *When the Tap Runs Dry, the Dockets May Flow*, DAILY REP. (Fulton Cnty., Ga.), June 16, 2008, at 18; Charles A. Nichols, Editorial, *Can W. Va. Conserve Resources Under Its Nose?*, SUNDAY GAZETTE-MAIL (Charleston, W. Va.), Mar. 14, 2004, at 1D.

proceeds essentially on riparian principles, and that the new system is a regulation of, rather than a taking of, riparian rights.¹⁸¹ In these states, the basic concepts of riparian rights remain in place, but the concepts are managed through an elaborate administrative system that serves not only to protect the public interest but also to determine the rights of individual users among themselves.¹⁸² In short, these states have moved from a common property system to a public property system in which the uses of water are managed at the state or local level by a governmental agency with varying degrees of community involvement.¹⁸³

I have written extensively elsewhere about the characteristics and functioning of regulated riparian systems and will therefore only briefly summarize those features here.¹⁸⁴ Basically, the system authorizes the use of water only through time-limited permits from the state within which the withdrawal occurs.¹⁸⁵ The permits determine water rights, not the riparian nature of the use,¹⁸⁶ yet, the new laws remain within the riparian tradition because the criterion of decision is a “reasonable use” of the water.¹⁸⁷ Temporal priority has only a strictly limited role in the permit process, setting these laws apart from appropriative rights.¹⁸⁸ Because the reasonableness of a use is determined before it begins rather than only when the use is challenged in court, water users are able to know that for the duration of the permit their use will be held to be reasonable and thus can gauge whether their investments can be profitable as well as enabling investors about the proper scale of the investment.¹⁸⁹ Upon expiration of a permit, the continued

181. See Dellapenna, *Regulated Riparianism*, *supra* note 8, §§ 9.01, .04(a)–(b).

182. See Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.01.

183. See Dellapenna, *Introduction to Riparian Rights*, *supra* note 16, § 6.01(b)–(b)(1).

184. See generally Dellapenna, *Regulated Riparianism*, *supra* note 8, at § 9.01.

185. MODEL CODE, *supra* note 179, § 6R-1-01; Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03(a)–.03(a)(4). The duration of permits range from three to twenty years. Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03(b)(4). The *Regulated Riparian Model Water Code* sets the duration of its permits at twenty years. MODEL CODE, *supra*, § 7R-1-02.

186. MODEL CODE, *supra* note 179, § 2R-1-02; Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03(a).

187. MODEL CODE, *supra* note 179, §§ 2R-1-01, 2R-2-20, 6R-3-01, 6R-3-02; Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03(a), .03(b)(1). Some jurisdictions would substitute the terms “beneficial,” “reasonable-beneficial,” or “equitable” for “reasonable.”

188. MODEL CODE, *supra* note 179, §§ 6R-1-03, 6R-3-02; Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03(b)(3).

189. See MODEL CODE, *supra* note 179, §§ 6R-2-01 to 6R-2-08, 6R-3-02, 6R-3-05; Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03(a)(5)(A), .03(b)(1)–.03(b)(3).

reasonableness of the use is reexamined, introducing a desirable flexibility into the development, use, and protection of water resources.¹⁹⁰ Regulated riparian statutes also include numerous provisions for the protection of the public interest.¹⁹¹

Some commentators have expressed concern that if the duration is too short it will discourage investment in water-use facilities, but this does not seem to have been a problem in practice even in the states with the shortest durations.¹⁹² Administering agencies have been, if anything, too sensitive to the fears of large institutional investors in water. Administering agencies seldom flatly refuse to renew a permit,¹⁹³ although new and more stringent conditions are sometimes attached at the time of renewal. Agencies in fact work with major water users in crafting responses to water emergencies and contrary to the expressed intent of the regulated riparian statutes, they have not made their own expert determinations regarding the matter.¹⁹⁴ In practice, these agencies often fail to exercise their managerial powers sufficiently rather than too aggressively.¹⁹⁵ The cost of imposing an elaborate administrative system is substantial,¹⁹⁶ which raises issues about the wisdom of creating the administrative machinery if it is not going to be implemented effectively, or in some states, at all. Some states have reacted to these concerns by limiting their regulated riparian system to certain water basins or other areas of the state where the competition for water is most intense and therefore the need for administrative

190. While some regulated riparian statutes allow for market transfers of permits, there is no reason to think such markets will function more effectively than they have under a private property system such as appropriative rights. MODEL CODE, *supra* note 179, §§ 1R-1-07, 7R-2-01 to 7R-2-04, 7R-3-05, 9R-1-01, 9R-1-02; Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03(d). *See generally* Dellapenna, *The Importance of Getting Names Right*, *supra* note 13.

191. MODEL CODE, *supra* note 179, §§ 1R-1-01, 3R-1-01 to 3R-2-05, 4R-2-01 to 4R-3-05, 7R-3-01 to 7R-3-07; Dellapenna, *Regulated Riparianism*, *supra* note 8, §§ 9.03(a)(3), 9.05-.05(d).

192. Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.03(a)(4).

193. *See, e.g.*, Alexander Lane, *N.J. Too Generous with Water, Critics Say State Permits for Big Users Rose Last Year*, STAR-LEDGER (Newark, N.J.), Sept. 28, 2003, at 21 (reporting increases in authorized water withdrawals during a major drought).

194. *See, e.g., id.*; Tom Avril, *There Are No Limits on Biggest Water Users*, PHILA. INQUIRER, Mar. 11, 2002, at A1; Natalie Garcia, *R.I. Overuses Its Water Supply in Summer, Report Finds*, PROVIDENCE J., Apr. 30, 2008, at B2.

195. *See, e.g.*, Lane, *supra* note 193 (“Water enforcement needs to get to the point where [the state] is able to say no . . . [a]nd they haven’t been able to do that.”). *But see id.* (“Some are criticizing [the state] for producing permits too slowly.”).

196. Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.05(a)(5)(C).

oversight is greatest.¹⁹⁷ It will be interesting to observe how these systems evolve in the future.

VII. CONCLUSION

More likely than not, before long, little will be left of riparian rights as known in the nineteenth and much of the twentieth century except perhaps for vestiges in the few geographic pockets where supplies of usable water continue to exceed local demand, for exempted smaller users, and for disputes over non-consumptive issues.¹⁹⁸ Even steps such as the 2008 amendment to Ohio's constitution that enshrines the reasonable use rule for the water of a lake or watercourse as a property right of riparian landowners¹⁹⁹ may not prevent the eventual abandonment of traditional riparian rights in that state given the reality of water uses now and in the likely future. After all, already, no state truly relies on only "pure" riparian rights. All states have some regulatory statutes that deal with at least certain limited aspects of water quantity issues—regulating public water systems and perhaps certain other kinds of water use.²⁰⁰ Federal law, however, requires every state's regulations on water quality issues to be consistent with federal standards.²⁰¹ Lawyers and jurists will continue to adapt traditional

197. *Id.* § 9.03(a)(1).

198. Abrams, *supra* note 91, at 1383; *see also* Leslie M. MacRae, *Water, Water Everywhere, But Much Less Than You Think*, 11 PENN ST. ENVTL. L. REV. 189, 193–94 (2003).

199. OHIO CONST. art. 1, § 19b(D).

200. Dellapenna, *Global Climate Disruption*, *supra* note 2, §§ 438–445. *See generally* Dellapenna, *Regulated Riparianism*, *supra* note 8, § 9.02–.02(d).

201. Section 303(a)(1) of the Clean Water Act provides as follows:

In order to carry out the purpose of this Act, any water quality standard applicable to interstate waters which was adopted by any State and submitted to, and approved by, or is awaiting approval by, the Administrator pursuant to this Act as in effect immediately prior to the date of enactment of the Federal Water Pollution Control Act Amendments of 1972, shall remain in effect unless the Administrator determined that such standard is not consistent with the applicable requirements of this Act as in effect immediately prior to the date of enactment of the Federal Water Pollution Control Act Amendments of 1972. If the Administrator makes such a determination he shall, within three months after the date of enactment of the Federal Water Pollution Control Act Amendments of 1972, notify the State and specify the changes needed to meet such requirements. If such changes are not adopted by the State within ninety days after the date of such notification, the Administrator shall promulgate such changes in accordance with subsection (b) of this section.

riparian theory to modern needs. It seems highly likely that this trend will continue.

33 U.S.C. § 1313(a)(1) (2006); *see also* Jeffrey M. Gaba, *Federal Supervision of State Water Quality Standards Under the Clean Water Act*, 36 VAND. L. REV. 1167, 1168, 1171–72 & n.20 (1983) (describing the reach of section 303 of the Clean Water Act and the need for states to adhere to federal water-quality standards).