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## The Legalities of Stream Interventions: Accretive Changes to New York State's Riparian Doctrine Ahead

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# The Legalities of Stream Interventions: Accretive Changes to New York State's Riparian Doctrine Ahead?\*

D.S. PENSLEY\*\*

*I'm going out to clean the pasture spring;  
I'll only stop to rake the leaves away  
(And wait to watch the water clear, I may):  
I sha'n't be gone long.— You come too.  
—Robert Frost<sup>1</sup>*

I.	INTRODUCTION .....	106
II.	EVOLUTION AND INCIDENTS OF REGULATED RIPARIANISM .....	113
	A. The Shift from Natural Flow to Riparianism ..	113
	B. Incidents of Riparianism.....	118
	C. The Shift to Regulated Riparianism .....	120
III.	TRUE HYPOTHETICALS AND REVISIONIST CERTAINTIES .....	123
	A. Beaver Lodges and Artificial Obstructions .....	123
	B. Highways and Floodways .....	131
	C. Unreasonably Disappearing Streams .....	138
IV.	CONCLUSION .....	142

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1. ROBERT FROST, *The Pasture, in YOU COME TOO: FAVORITE POEMS FOR YOUNG READERS* 14 (Hyde Cox ed., Henry Holt & Co. 1959) (1914).

## I. INTRODUCTION

Stream corridors, which border watercourses, are critical to protecting water and soil quality, fish and wildlife habitats, and recreational opportunities. Allowing cattle free access to streams, planting crops close to banks and shorelines, and building river- or streamside homes and other structures inevitably pollute the water, increase its turbidity and abrasion, and reduce fish and invertebrate populations.<sup>2</sup> Stormwater, melting snow, and even wind carry sediment, nutrients, fertilizer, and toxic substances as surface runoff into streams throughout areas where the purifying, screening, and restraining properties of native vegetation and trees are absent, and the groundwater storage and recharge capabilities of the underlying floodplain are impaired.<sup>3</sup>

Once released from the roots of trees and shrubs, banks slump as streams undercut (degrade) the floodplain, thereby accelerating erosion. In some cases, the erosion causes the stream channel to rise (aggrade) and the stream to become shallow and prone to washouts.<sup>4</sup> Sedimentation fills deep pools and rocky riffles, a streambed pattern which would otherwise provide spawning habitat for fish, shelter for their young, plant-rich cover for mature specimens, and breeding grounds for aquatic insects—which not only constitute food for fish but help streams to flow unobstructed by eating organic matter in turn.<sup>5</sup> Moreover, the

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2. See generally J. David Allan, *Landscapes and Riverscapes: The Influence of Land Use on Stream Ecosystems*, 35 ANN. REV. OF ECOLOGY, EVOLUTION & SYSTEMATICS 257, 262 (2004) (describing the agencies by which specific land use practices affect stream ecosystems).

3. See Memorandum from Dep't of Water, City of Syracuse, Comments and Suggested Revisions [on the] 2005 Revised Zoning Law, Town of Skaneateles (Jan. 31, 2005) (on file with Lee Macbeth, Watershed Control Coordinator, Dep't of Water, City of Syracuse) ("In approving plans, we suggest that any wooded areas left as an undisturbed buffer directly below densely developed areas do not contain ephemeral drainage channels in bare soil that will conduct water and eroded soil particles to the lake. Light canopy tree cover with an understory of grass may be more appropriate as a buffer than dense, light-blocking canopy with little to no vegetative growth on the floor. Sheet flow, where possible, is preferable to channelized flow."). See generally FED. INTERAGENCY STREAM RESTORATION WORKING GROUP, STREAM CORRIDOR RESTORATION: PRINCIPLES, PROCESSES, AND PRACTICES 3-6, -14 to -18, -23 to -25 (rev. ed. 2001) [hereinafter RESTORATION], available at [http://www.nrcs.usda.gov/technical/stream\\_restoration/PDFFILES/ALL-SCRH-08-01.pdf](http://www.nrcs.usda.gov/technical/stream_restoration/PDFFILES/ALL-SCRH-08-01.pdf).

4. JANET THIGPEN & S. TIER CENT. REG'L PLANNING & DEV. BD., STREAM PROCESSES: A GUIDE TO LIVING IN HARMONY WITH STREAMS 19 (2006) [hereinafter STREAM PROCESSES].

5. BUREAU OF WATER RESOURCE MG'T, DIV. OF WATER, N.Y.S. DEP'T OF ENVTL. CONSERVATION, STREAM CORRIDOR MANAGEMENT: A BASIC REFERENCE MANUAL 7-9 (1986) [hereinafter MANAGEMENT].

lack of overhanging vegetation decreases the number of nearby terrestrial insects and raises summer water temperatures, thus stressing fish such as trout.<sup>6</sup> In other cases, the erosion scours and downcuts the channel into a U-shape, a process sometimes exacerbated by human activities like dredging gravel or snagging wood debris.<sup>7</sup> Downstream floods in times of heavy rain then frequently occur, as do low or no basal flows caused by groundwater depletion in times of drought.<sup>8</sup>

Specifically referencing the banks and adjacent land along the entire length of a watercourse, the stream corridor may also be generously defined by the valley walls on both sides of the stream channel.<sup>9</sup> It is the starting point of a hydromorphic transition zone extending from the wet riparian lowlands to the drier uplands (tableland areas). In this way the stream corridor represents the backbone of the watershed ecosystem: embracing all the land that drains into the tributaries and main river of the watershed, plus the range of finely-tuned “ecosystem services” the stream corridor supports, such as biodiversity, flood control, water purity, and aesthetic wealth.<sup>10</sup> Ultimately, watershed management is the land use management of the stream corridor and any human modifications to the water’s flow (stream interventions).

Throughout the past century, American regional planners and legislators have intermittently promoted watersheds to integrate land and water resource management and facilitate public policy organized on hydrologic rather than political lines.<sup>11</sup> Interest in local watershed management, now found in communities around the globe, reflects a change of emphasis from harnessing

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6. See SCOTT CRAVEN ET AL., THE BENEFITS OF WELL-MANAGED STREAM CORRIDORS 3 (1996), available at <http://www.cecommerce.uwex.edu/pdfs/G3404.PDF>; MANAGEMENT, *supra* note 5, at 8–9, 11.

7. See generally LUNA B. LEOPOLD, A VIEW OF THE RIVER 244, 280–81 (1994) (comparing fluvial geomorphology to the state of entropy: the exact consequences of an event are often unpredictable).

8. See N. LeRoy Poff et al., *The Natural Flow Regime: A Paradigm for River Conservation and Restoration*, 47 BIOSCIENCE 769, 773–74 (1997).

9. See VT. AGENCY OF NATURAL RES., VT. STREAM GEOMORPHIC ASSESSMENT app. E, at E2–9 (2007), available at [http://www.anr.state.vt.us/dec/waterq/rivers/docs/assessmenthandbooks/rv\\_apxecorridordef.pdf](http://www.anr.state.vt.us/dec/waterq/rivers/docs/assessmenthandbooks/rv_apxecorridordef.pdf).

10. See Jill S. Baron et al., *Meeting Ecological and Societal Needs for Freshwater*, 12 ECOLOGICAL APPLICATIONS 1247, 1247–48 (2002); Brian D. Richter et al., *Ecologically Sustainable Water Management: Managing River Flows for Ecological Integrity*, 13 ECOLOGICAL APPLICATIONS 206, 208 (2003).

11. See A. Dan Tarlock, *The Potential Role of Local Governments in Watershed Management*, in *New Ground: The Advent of Local Environmental Law* 213, 215–16 (John R. Nolon ed., 2003) [hereinafter Tarlock, *Potential Role*].

rivers with the concrete infrastructure of economic development to managing rivers for natural flow patterns and ecologically sustainable futures.<sup>12</sup> Seen primarily as a means of handling the geographically diffuse issues of habitat conservation and nonpoint pollution control, watershed management in the United States also makes evident the prospective “decentering” of environmental law, that is, a tendency since the 1970s for the deepening engagement of local government in environmental affairs.<sup>13</sup>

Given the impact of stream corridor health upon watercourses and the pressures many riparian lands must bear, a range of restorative and remedial strategies have been developed. The first, given tolerable levels of prior change to the stream corridor, is best described as “no action.” The strategy assumes that over the long term, nature will restore a stream’s dynamic equilibrium, particularly the appropriate shape to the stream course (hydraulics) and the historic cycle to the instream flow (hydrology).<sup>14</sup> Variations on the no-action approach include relocating or moderating development, flood control levees, clear-cut logging, wetland drainage, and other detrimental land uses—because, despite the effort and expense these efforts entail, they “enable do-nothing management of the stream itself.”<sup>15</sup> Less ambitious strategies call for removing obstructions such as upstream jetties and beaver dams, and clearing sediment deposits and debris jams at bridge piers and road culverts, but otherwise letting the system be.<sup>16</sup>

At one extreme from the no-action approach is a major reworking of the stream, which may include dredging or constructing a highly controlled channel (for instance, by piping a stream through an urban area, or by paving or walling a watercourse).<sup>17</sup> At the other extreme are a variety of actions which may be categorized as “natural stream restoration.” These site-specific strategies combat energy excesses, the gravamen of all erosion- and flood-related grief, by the planting of riparian species (commonly willows) at problem sites to decrease the impact of stream energy, and by the placement of rocks or logs in the stream channel to

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12. See SANDRA POSTEL & BRIAN D. RICHTER, *RIVERS FOR LIFE: MANAGING WATER FOR PEOPLE AND NATURE* 1–5 (2003).

13. See Tarlock, *Potential Role*, *supra* note 11, at 219.

14. *STREAM PROCESSES*, *supra* note 4, at 15.

15. E-mail from Janet Thigpen, Flood Mitigation Specialist, S. Tier Cent. Reg'l Planning & Dev. Bd. (October 6, 2006) (on file with author).

16. See *STREAM PROCESSES*, *supra* note 4, at 14–15, 40.

17. Thigpen, *supra* note 15.

dissipate stream energy.<sup>18</sup> Comparable techniques focus on stabilizing streambanks through mounding riprap (large angular rock) and building retaining walls, constructing rock vanes and other habitat (instream) structures to alter flow patterns, and dismantling channelization (including culverts and concrete sectioning) to re-establish meanders based on mathematic principles that foster immunity to rapid adjustment.<sup>19</sup> One strategy that complements any of the above approaches calls for maintaining or establishing a vegetated buffer alongside the watercourse: either a narrow band hugging the stream or a network of wetlands stretching far into the floodplain.<sup>20</sup>

Beyond these spot fixes are wider ecological strategies founded upon the connection between viable stream corridors and sustainable watersheds:

As water flows on its way to the sea, it moves through freshwater systems in three spatial dimensions: longitudinal (upstream-downstream), lateral (channel-floodplain, or wetland-lake margin), and vertical (surface water-groundwater). These dimensions represent functional linkages among ecosystem compartments over time. Bodies of freshwater are ultimately the recipients of materials generated from the landscape, hence they are greatly influenced by terrestrial processes, including human modifications of land.<sup>21</sup>

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18. STREAM PROCESSES, *supra* note 4, at 39.

19. RESTORATION, *supra* note 3, at 8-34, -64, -72 to -73; STREAM PROCESSES, *supra* note 4, at 26-30, 37-38. Although a stream—left to its own devices—will eventually change course, these calculated and calibrated instream structures impose a permanent series of meanders upon it. See Site Visit and Interview with Barry Goodrich, former member of the Town Bd. of Caroline, N.Y. & Darby Kiley, Project Manager, Cayuga Lake Watershed Intermunicipal Org., in Slaterville, N.Y. (Mar. 13, 2006).

20. See RESTORATION, *supra* note 3, at 8-10 to -11, -14. In other words, “Stream management is floodplain management.” Site Visit and Interview with Kevin Olvany, Watershed Program Manager, Watershed Council, in Canandaigua, N.Y. (Mar. 30, 2006).

Expanding upon the concept of the vegetated buffer, best management practices for active farmlands take the form of cover crops (growing cereals on recently-harvested cropland), conservation tillage (minimizing disturbances to the surface soil), and enhanced nutrient management (fertilizing with fifteen percent less nitrogen). See *What Are Tributary Strategies?*, BACKGROUNDER (Chesapeake Bay Program, Annapolis, Md.), Apr. 2004, at 2, available at [http://www.chesapeakebay.net/pubs/trib-strats\\_backgrounder\\_final.pdf](http://www.chesapeakebay.net/pubs/trib-strats_backgrounder_final.pdf). Remedial strategies for urban areas include low-impact development practices (*e.g.*, planting rain gardens and establishing roof gardens, maintaining rain barrels, and disconnecting gutter downspouts from municipal stormwater systems), and erosion and sediment control (*e.g.*, building silt fences where lawns meet city streams). *Id.* at 2-3.

21. Baron, *supra* note 10, at 1249 (citations omitted).

Studies since the 1960s have documented hydrologic and hydraulic responses to altered flow regimes, including the potential for a lowered water table level throughout the watershed, especially but not exclusively due to surface water withdrawals.<sup>22</sup> The scientific community has ceased as a general rule to support conventional instream flow values, which protect up to a specified level of water—typically a single year-round value based on the needs of one fish species—and allocate the rest to the needs of development and other human activity.<sup>23</sup> Instead, many researchers presently advocate a system which, by setting aside a fixed amount of water for urban, industrial, or agricultural use, protects a river's natural character through minimizing deviations from historic flow patterns and thus preserves the natural variability of hydraulic conditions.<sup>24</sup> It may be argued that the traditional study of "river manipulation" at the expense of surrounding lands is yielding to a debate on the proper relationship of water law to land use planning, the outcome of which is foundational to a range of adaptive management schemes.<sup>25</sup>

Against this backdrop, water and soil conservation district personnel and other resource managers are quick to point out the legal issues that arise in conjunction with stream corridor maintenance—issues that only sometimes originate with concerned citizens facing unruly waters, and oftentimes arise with water

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22. See Poff, *supra* note 8, at 773, 775. See generally ROBERT GLENNON, WATER FOLLIES: GROUNDWATER PUMPING AND THE FATE OF AMERICA'S FRESH WATERS 39–44 (2002) (explaining how the terms "groundwater" and "surface water" merely locate water in the hydrologic cycle at any given point in time).

23. See Nicole Silk et al., *Turning Instream Flow Water Rights Upside Down*, 7 RIVERS 298, 299–301 (2000).

24. See, e.g., *id.* at 303. Five interacting components (the master variable) attest to the complexity of the natural flow regime: magnitude of discharge (volume per unit of time), frequency of occurrence, duration (relative to a particular flow event or a composite value of events), timing (predictability expressed formally or informally), and flashiness (the rate of flow changes). Poff, *supra* note 8, at 770–71.

25. Compare COMM. ON OPPORTUNITIES IN THE HYDROLOGIC SCI., WATER SCI. & TECH. BD., NAT'L RESEARCH COUNCIL, OPPORTUNITIES IN THE HYDROLOGIC SCIENCES 40–42 (1991) (commenting that the definitive early work of American hydrology concentrated on the physics of the hydrologic cycle and ignored human land and water use), with Craig Anthony Arnold, *Integrating Water Controls and Land Use Controls: New Ideas and Old Obstacles*, in WET GROWTH: SHOULD WATER LAW CONTROL LAND USE? 1, 7–33 (Craig Anthony Arnold ed., 2005) [hereinafter WET GROWTH] (defining the nascent wet growth concept as "the interrelationship of water resources and land use [that] is one of the hottest topics in land use today"). European policies towards open space and water are similarly changing. See Stewart J. Clarke et al., *Linking Form and Function: Towards an Eco-Hydromorphic Approach to Sustainable River Restoration*, 13 AQUATIC CONSERVATION: MARINE & FRESHWATER ECOSYSTEMS 439, 447 (2003).

practitioners' own uncertainty as to the proper scope of their official or volunteer responsibilities. The overarching question is: Who owns the stream? The question is more easily tackled when broken into a cascade of inquiries: Who has the right to use the waters of the stream? Who is responsible for maintaining the stream? Who owns the stream bed when it surfaces, and the land alongside when it is subsumed? And finally, who is liable for damages wrought by upstream or downstream floods caused by stream interventions or by land owners' failures to remedy natural in-stream hazards?

Beginning in the late 1950s, legislative incursions throughout the eastern United States have modified the common law regime of riparian rights to create regulated riparianism.<sup>26</sup> At first glance, the case law existing parallel to the statutes provides answers to the above questions premised on the basic idea that water rights are an incident of land ownership along a watercourse and subject only to the liability rule of reasonable use. But a view of freshwaters within a landscape or systems context raises still finer-grained concerns such as allowing stream access to non-commercial organizations for conducting observatory and reparative stream walks; limiting the availability of groundwater to subdivision developers; ensuring that private property owners foster stream health through appropriate vegetative buffers; tying concerns of water quality to those of water quantity and water control; and upholding local regulations that promote reductions in water usage, efficiencies in conveying and storing water, and shifts from wasteful to higher-value uses. Although riparian doctrine (as ostensibly established) may not appear relevant to these modern-day issues, an examination of contemporary and historic New York State judicial opinions, if grounded in some familiarity with the situations that riparians (waterfront landowners) face, very much eases tackling the watershed-scale ramifications of adaptive management in general and the injuries of stream interventions in specific.

As one property scholar reminds us, "Far from being a modern invention of goal-oriented judges, change is the unchanging chronicle of water jurisprudence. . . . New needs have always gen-

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26. See Patricia K. Flood & Kenneth R. Wright, *Summary of Water Rights Law in the 31 Eastern States*, in WATER RIGHTS OF THE EASTERN UNITED STATES 105, 106 (Kenneth R. Wright ed., 1998) [hereinafter WATER RIGHTS].

erated new doctrines and, thereby, new property rights.”<sup>27</sup> It is widely accepted that the agricultural and usufructory water law doctrine of natural flow morphed into the riparian doctrine of reasonable use in service to the needs of a burgeoning industrial economy.<sup>28</sup> The shift to the comprehensive regulation of these rights was equally subtle, resulting from “incremental changes in earlier systems rather than a conscious design to revolutionize the system of water rights. . . . [T]he realization that something truly new in water law had emerged did not occur for another several decades.”<sup>29</sup> The task of this Article, then, is to determine whether New York’s riparian doctrine is obsolete in the face of regulated riparianism or whether, should the statutory regime lack the capacity and flexibility to take a holistic approach, common law doctrine has the wherewithal to grow and face the ecological challenges of the new century.

Part I summarizes the evolution of New York’s riparian doctrine and sketches its version of regulated riparianism. Part II analyzes more recent case law to offer a quasi-doctrinal, quasi-revisionist perspective on the changing nature of “the law at the water’s edge.”<sup>30</sup> To provide an instrument for practice, this part is framed by the two sets of questions posed above and is focused by the observations of water resource professionals and volunteers throughout New York, specifically the counties of Broome, Chemung, Chenango, Dutchess, Onondaga, Ontario, Rockland,

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27. Joseph L. Sax, *The Constitution, Property Rights and the Future of Water Law*, 61 U. COLO. L. REV. 257, 268–69 (1990); cf. JOSHUA GETZLER, A HISTORY OF WATER RIGHTS AT COMMON LAW 226–32 (2004) (associating a “new riparian theory re-emphasizing natural rights” with the English decision of *Mason v. Hill*, 110 Eng. Rep. 692 (K.B. 1833), which extinguished the more recent doctrine of prior appropriation, characterized by possessive intent).

28. See THEODORE STEINBERG, NATURE INCORPORATED: INDUSTRIALIZATION AND THE WATERS OF NEW ENGLAND 140–44 (1991); see also Carol M. Rose, *Energy and Efficiency in the Realignment of Common-Law Water Rights*, 19 J. LEGAL STUD. 261, 266 (1990) (concluding, “[T]he most important uses of water presented the features of a common pool, in which the total value to riparians was increased by allowing some modicum of damage from each riparian’s use so long as the bulk of the river flow was retained for all.”). At least one New York decision, however, relied upon the long-superseded English doctrine of “ancient watercourses” (ancient use doctrine) to hold a landowner liable for filling in a spring and its channel, where the waters once flowed to plaintiff’s property. See *Bell v. Townsend*, 26 N.Y. Weekly Digest 395, 396 (Sup. Ct. Gen. Term 4th Dep’t 1887).

29. WATER LAWS COMM., AM. SOC’Y OF CIV. ENG’RS, REGULATED RIPARIAN MODEL WATER CODE, at viii (Joseph W. Dellapena ed., 2004) [hereinafter WATER CODE].

30. The phrase borrows from the title of Robert W. Adler’s article, *The Law at the Water’s Edge: Limits to “Ownership” of Aquatic Ecosystems*, in WET GROWTH, *supra* note 25, at 201.

Schuyler, Steuben, Tioga, Tompkins, and Ulster.<sup>31</sup> Stepping beyond fact-bound litigation set in morphologic locations, the Article concludes by offering a fresh spin on the instrumentalist role of an evolving riparianism.

## II. EVOLUTION AND INCIDENTS OF REGULATED RIPARIANISM

### A. The Shift from Natural Flow to Riparianism

Prior to the nineteenth century, the Anglo-American common law of watercourses clung to an unequivocal principle: *aqua currit et debet currere, ut currere solebat*—literally, water flows and ought to flow, as it has customarily flowed, “so that all through whose land it runs may enjoy the privilege of using it.”<sup>32</sup> English jurisprudence initially held that “[r]unning water is not in its nature private property”<sup>33</sup> and early American water law cases echoed the premise of the inherent good of natural flow.<sup>34</sup> The use of water constituted a usufructory property interest, *i.e.*, a limited

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31. Rationale for this Article’s deliberate narrow focus is best articulated by a former town supervisor of Denning, a little-changing hamlet in the Catskills: “Local communities are better capable of taking care of their water themselves. They know their water, they know their aquifers, they know their streams.” Telephone Interview with Clay Brooks, former town supervisor of Denning, N.Y. (Nov. 28, 2005). It is useful to think of water law as a legal regime ineluctably shaped by the physical reality of a bounded place.

32. JOSEPH K. ANGELL, A TREATISE ON THE LAW OF WATERCOURSES § 93 (5th ed. 1854). Good reason exists to turn to a Latin maxim for this common law principle, considering its roots in Roman jurisprudence and its civil law progeny. See EUGENE F. WARE, ROMAN WATER LAW § 39 (1905) (translating from the Pandects of Justinian (Pomponius): “Many may take away water from a river, but in such manner only that their neighbors are not injured, or, if the stream is not large, those on the other side.”); see also Richard C. Ausness, *Water Use Permits in a Riparian State: Problems and Proposals*, 66 Ky. L.J. 191, 196 nn.31 & 32 and accompanying text (1977) (supporting the respective theses that riparian doctrine developed from the French civil law or the English common law). See generally Samuel C. Wiel, *Running Water*, 22 HARV. L. REV. 190, 190–99 (1908–09) (elaborating on the place of running water—along with the air, the sea, and the wild animals—within the “negative community” of things the Justinian Institutes viewed as common by nature until reduced to the control of any one person); Samuel C. Wiel, *Waters: American Law and French Authority*, 33 HARV. L. REV. 133, 134 (1919–20) (“Things French in 1804 were welcome in America. England was an enemy but recently fought off, while France was a friend who had given aid, and in the following period when most of the American law was beginning to be made, French authorities were sympathetically used in America.”).

33. *Williams v. Morland*, 107 Eng. Rep. 620, 622 (K.B. 1824).

34. See, e.g., *Arnold v. Foot*, 12 Wend. 330, 331–32 (N.Y. 1834) (quoting Judge Joseph Story: “The natural stream, existing by the bounty of Providence for the benefit of the land through which it flows, is an incident annexed to the land itself.” (citation omitted)).

right of enjoyment—not ownership—which ensured that the water of a stream or river would reach the next landowner downstream, and so on. One frequently-referenced New York decision expressed the understanding as follows: “Water, when reduced to possession, is property, and it may be bought and sold and have a market value, but it must be in actual possession, subject to control and management. Running water in natural streams is not property and never was.”<sup>35</sup> That being said, the limited right of use was as strong as any other property interest; the riparian need not have previously enjoyed her waters to defend them against would-be appropriators.<sup>36</sup>

With industrial activity on the rise, New York’s judiciary anticipated that the entrepreneurial use of the valuable fluid resource would unavoidably decrease the amount of water available for fellow riparians, but should nevertheless be allowed.<sup>37</sup> Where conflict over a thirty-foot-high dam arose among some twenty mills on the Matthias Kill, for instance, one early opinion proclaimed that the owners of the lower mills “must participate in the benefits of the stream, to a reasonable extent, although the . . . profits [of the owners of the upper mill] may be thereby lessened. . . .”<sup>38</sup> Despite opportunity at this time to eliminate riparians’ transaction costs in bargaining one-on-one (or suing) for permission to appropriate water upstream, judges did not initially embrace the concept of reasonable use wholesale, but rather limited consumption to natural (primary) needs.<sup>39</sup> Therefore, the state courts approved “ordinary” domestic uses for water such as

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35. *City of Syracuse v. Stacey*, 62 N.E. 354, 355, 356 (N.Y. 1901) (holding that riparian claimants, grantees of “water power rights,” were not entitled to an award equivalent to the monetary value of their reservoir when the city condemned their right to divert water from Lake Skaneateles).

36. *See, e.g., Gray v. Vill. of Fort Plain*, 94 N.Y.S. 698, 699–700 (App. Div. 3d Dep’t 1905) (affirming an award of \$450 and an injunction where plaintiff potentially lost ten horsepower from falls on his land due to an upstream diversion). *But see Maylender v. Fulton County Elec. & Gas Co.*, 227 N.Y.S. 209, 215 (Sup. Ct. Fulton County 1928) (dismissing an amended complaint for failure to state a claim because “there is no allegation anywhere that plaintiff has ever used the waters of this creek or that he ever intends to do so”).

37. *See Clinton v. Myers*, 46 N.Y. 511, 517 (1871); *see also* T.E. Lauer, *Reflections on Riparianism*, 35 Mo. L. REV. 1, 8 n.24 and accompanying text (1970) (discussing the landmark decision of *Tyler v. Wilkinson*, 24 F. Cas. 472 (C.C.D.R.I. 1827) (No. 14,312) (Story, J.)).

38. *Merritt v. Brinkerhoff*, 17 Johns. 306, 321 (N.Y. 1820) (having earlier reasoned, “this rule requires of [the owners of the upper mill] no more than to conform to the principle upon which their right is founded”).

39. *See* A. Dan Tarlock, *Discovering the Virtues of Riparianism*, 9 VA. ENVTL. L.J. 249, 251 (1990).

drinking, bathing, washing, keeping fish or fowl, and watering cattle, even when the natural flow of water available to downstream users was diminished, yet scrutinized the more conspicuous and “extraordinary” use of water for irrigation or machinery with an eye towards commensurability with local uses and proportionality to stream size and strength.<sup>40</sup>

*Clinton v. Myers*, decided in 1871, involved a plaintiff who—in seeking to secure water power during dry seasons—not only deepened the outlet of a lake and barred it with a trunk and gate mechanism, but also built a dam approximately three-and-a-half miles downstream at the site of his cotton combing operation.<sup>41</sup> Taking its lead from an 1859 decision by the Supreme Judicial Court of Massachusetts, New York’s highest judiciary held that the dam, and the factory it served, were proper only insofar as “[t]he machinery [is] such as the power of the stream, in its ordinary stages, is adequate to propel.”<sup>42</sup> Aided by neither measurements nor calculations, the court quite curiously explained that damming and then discharging waters during times of drought was an activity per se equivalent to ordinary stream flows and hence allowed, but storing and then discharging the surplus from ordinary stream flows (the purpose of the trunk and gate mechanism) resulted in an “unusual quantity” inundating downstream users and was disallowed.<sup>43</sup>

Almost imperceptibly, reasonable use elided into beneficial use, that “public interest promoted by the erection of mills and manufactories,” and provided state judges a forgiving standard for passing on the legality of the newer technologies and the newer harms they inflicted on neighbors.<sup>44</sup> As the nineteenth century

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40. See, e.g., *Pierson v. Speyer*, 70 N.E. 799 (N.Y. 1904); *Strobel v. Kerr Salt Co.*, 58 N.E. 142 (N.Y. 1900); see also *Hammond v. Fuller*, 1 Paige Ch. 196 (N.Y. Ch. 1828) (ordering defendants to lower their dam and pay damages if backflow caused Paradox Creek to exceed its natural level where intersecting a neighbor’s lot).

41. *Clinton v. Myers*, 46 N.Y. 511, 511–12 (1871). Plaintiff’s landholdings were the entire lakeshore and the lake’s outlet and the factory site downstream; defendant’s farm and sawmill straddled the stream between the lake outlet and the factory. *Id.* at 512.

42. *Id.* at 518 (citing *Gould v. Boston Duck Co.*, 79 Mass. 442, 452–53 (1859)).

43. See *id.* at 518–19.

44. See, e.g., *Prentice v. Geiger*, 74 N.Y. 341, 345 (1878) (upholding defendant’s right to operate a steam mill, which—unlike its predecessor sawmill—operated in periods of both high and low water and filled plaintiff’s downstream pond with sawdust and other refuse that caught against the dam and sank); *Storm King Paper Co. v. Firth Carpet Co.*, 172 N.Y.S. 33, 36 (App. Div. 2d Dep’t 1918) (upholding defendant’s right to wash wool in Moodna Creek despite allegations of microscopic fibers clogging the filters of plaintiff’s mill).

progressed, the concept of property changed "from a static agrarian conception entitling an owner to undisturbed enjoyment, to a dynamic, instrumental, and more abstract view . . . that emphasized the newly paramount virtues of productive use and enjoyment."<sup>45</sup> By the century's end, the property regime of natural flow (entitlement as a right) had given way to the liability regime of beneficial use (damages as a remedy paid by the highest-valued user, realistically, the one with the deepest pockets).<sup>46</sup>

At the same time, even if the substantial preservation of the "natural size, flow and purity" of watercourses in the Empire State became an improbable bromide, courts paradoxically insisted upon naturalness as an outer limit of familiarity or custom, and so moderated the pace of change in water use. In *Strobel v. Kerr Salt Company*, for example, the court viewed the diversion from Oatka Creek of 150 gallons of water per minute, ten hours a day, as something "new and peculiar, for it involves its utter destruction as water. . . . The loss is not incidental by diminution through the process of using the water, as in most cases presented to the courts, but is absolute by means of dissipation through the atmosphere."<sup>47</sup> As part of the salt mining and refining process, defendant channeled stream water over two deep deposits of rock salt, piped the resulting brine to the surface and into boilers and pans, then haphazardly scattered the scaly salt and lime by-product over the ground.<sup>48</sup> The court's pique at this "new and extraordinary method of using the water, hitherto unknown in the state," equaled its dismay at the saltiness of the modified stream, for it was undisputed that "at times . . . cattle will not drink it

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45. MORTON J. HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW, 1780-1860*, at 31 (1992); see also *Clinton*, 46 N.Y. at 515 (observing, yet claiming to give the observation no weight: Plaintiffs "factory is of great value, which will be much impaired, if not wholly destroyed, by not enjoying the right to control and use the water in the manner claimed by him in this action").

46. See Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV 1089, 1106-11, 1115-24 (1972).

47. *Strobel v. Kerr Salt Co.*, 58 N.E. 142, 145 (N.Y. 1900); cf. *Maylender v. Fulton County Gas & Elec. Co.*, 227 N.Y.S. 209, 215 (Sup. Ct. Fulton County 1928) (dismissing an amended complaint for failure to state a claim by explaining in part, "there are no allegations in the pleading that [defendant's] dam, works and reservoir were not built in conformity with the fall of the land upon which the structures were erected, or that they are not adapted to the size, character and flow of the stream").

48. See *Strobel v. Kerr Salt Co.*, 49 N.Y.S. 1144, 1144 (N.Y. App. Div. 4th Dep't 1897), *rev'd*, 58 N.E. 142 (N.Y. 1900).

unless forced to by necessity, fish are destroyed in great numbers, vegetation is killed and machinery rusted.”<sup>49</sup>

Continuing the theme of requisite naturalness, a small subset of these older riparian cases engage not so much with the question of watercourse diversions, but with other kinds of disturbances to natural flows.<sup>50</sup> In *Pollett v. Long*, the Court of Appeals found defendant liable for negligently constructing and maintaining a mill dam.<sup>51</sup> An autumn storm caused an Erie County stream to rise and tear out defendant’s structure, following which such a large volume of water was discharged that the next two dams downstream also breached.<sup>52</sup> The judge scornfully dismissed defendant’s argument that the swollen waters “had before broken the middle dam and thereby increased the volume and power of mischief” because the weak dam (an artificial instream obstruction), and not the natural force of the freshet, represented the initial domino for the damaging series of events.<sup>53</sup>

Similar reasoning is evident in *Spink v. Corning*, where a low-land defendant obstructed the creek that drained her neighbor’s upland parcel and flooded his crops thereby.<sup>54</sup> Complicating the adjudication, the parties’ predecessors in interest had four decades earlier “agreed upon a plan of cleaning out, deepening, and straightening the channel of this natural watercourse . . . a distance of more than a mile,” which they implemented by removing the loose rock of the streambed with pickaxes, crowbars, and dynamite.<sup>55</sup> The intermediate court distinguished the improved natural watercourse from a “wholly . . . artificial ditch or channel,” which defendant would have been permitted to obstruct, much

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49. See *Strobel*, 58 N.E. at 147. But see *Pierson v. Speyer*, 70 N.E. 799, 799 (N.Y. 1904) (finding reasonable the construction of a reservoir “for both ornamental and domestic purposes” despite a decline in water flow to downstream rose growers due to evaporation).

50. See, e.g., *Pollett v. Long*, 56 N.Y. 200 (1874) (a dam which breached and swept out two dams downstream); *Waffle v. N.Y. Cent. R.R.*, 53 N.Y. 11 (1873) (ditches which collected surface water from lands above plaintiff’s riparian property and sawmill); *Olney v. Culluloo Park Co.*, 169 N.Y.S. 843 (App. Div. 2d Dep’t 1918) (a watercourse which was filled in and rerouted through an underground pipe); *Spink v. Corning*, 70 N.Y.S. 143 (App. Div. 4th Dep’t 1901) (loose rock which was placed on a streambed).

51. *Pollett*, 56 N.Y. at 206–08.

52. *Id.* at 204.

53. See *id.* at 207.

54. See *Spink*, 70 N.Y.S. at 143.

55. See *id.* at 145.

like revoking a license for access.<sup>56</sup> Admittedly, these earlier courts' understanding of naturalness may at times have differed from that of water managers in the twenty-first century, but their jurisprudential emphasis is still valid today.<sup>57</sup>

## B. Incidents of Riparianism

At least one commentator has confidently declared, "Riparianism is reasonable use."<sup>58</sup> Perhaps, but the term "riparian rights" is broader yet: traditionally described as "a bundle of legal rights concerning the relation of the owner of the bank of a stream to various features of the stream."<sup>59</sup> Rights complementary to reasonable use that help comprise the riparian bundle include the right to access the water, to build a wharf or pier out into the water, to take possession of accretions (alluvium), and to enjoy the exclusive use of the bed of non-navigable streams and other "private" waters.<sup>60</sup> A lower court framed the doctrine by generalizing

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56. See *id.* at 146; see also *Olney*, 169 N.Y.S. at 845 (determining that a stream, filled in for a portion of its length and routed underground, "was still a watercourse although flowing through a pipe. . . . [A]ny obstruction thereto by the defendant, the effect of which was to back the water onto plaintiff's land, violated plaintiff's right based on the doctrine '*Aqua currit . . .*'").

57. Compare *Waffle v. N.Y. Cent. R.R.*, 53 N.Y. 11, 13 (1873) (holding that "defendant had an absolute right to drain the surface water upon its land into the stream which was its natural outlet through ditches constructed upon its own land" despite increased stream magnitude and flashiness), with Telephone Interview with Rick Oestrike, Chair, Fishkill Creek Citizens' Comm. (Nov. 21, 2005) (describing the "erosive slug of drainpipes" which collect stormwater and other runoff from impermeable surfaces and propel the water with great volume and velocity into existing watercourses, exacerbating erosion and turbidity).

58. Lauer, *supra* note 37, at 3.

59. Joseph W. Dellapenna, *Introduction to Riparian Rights*, in 1 *WATERS AND WATER RIGHTS* § 6.01 (Robert E. Beck ed., 1991 ed., 2001 repl. vol.) [hereinafter Dellapenna, *Introduction*]; see also *Niagara Mohawk Power Corp. v. Cutter*, 492 N.Y.S.2d 137, 139 (App. Div. 3d Dep't 1985), *aff'd*, 492 N.E.2d 398 (N.Y. 1985) ("The riparian right is natural and inherent, and a part of the estate of each riparian owner."). Riparian rights attach neither to artificial waterbodies nor to diffuse surface waters. Ausness, *supra* note 32, at 197; cf. *Cook v. McClure*, 58 N.Y. 437, 440–41 (1874) (holding that the boundary of an artificial pond is fixed, therefore an appurtenant property owner is not entitled to the land left dry when the pond recedes).

60. Dellapenna, *Introduction*, *supra* note 59, § 6.01(a). The "non-navigability" referred to here is a statement of law, not a question of fact. English common law regarded all freshwater rivers as non-navigable, and consequently fixed title to the bed of saltwater (tidal) streams in the sovereign and title to the bed of freshwater streams in the riparian owners. The particulars of title to the underwater bed were irrelevant to the public right of passage and transportation; riparian owners could legally bar public access only when the stream was too narrow or too shallow to be navigable-in-fact. See *Fulton Light, Heat & Power Co. v. New York*, 94 N.E. 199, 202 (N.Y. 1911). Adjudicating ownership of the bed of the Oswego River, which is in parts navigable-

that "riparian rights connote the right and profit to the owner of the upland arising from its connection with the water such as the easement of passage and use."<sup>61</sup> The conservatory prohibition against non-riparian use thus footnotes the reasonable use requirement: The water of a stream may be used upon riparian land (or that portion of the riparian tract found in the watershed), but not elsewhere.<sup>62</sup>

The common law understanding that only the owners of property bordering a watercourse enjoy riparian rights is rooted in the appurtenancy requirement. Namely, for land to be defined as riparian it must be contiguous to, and have actual contact with, the water.<sup>63</sup> A property owner whose land is separated from the water by another's parcel, regardless how slender, enjoys no riparian rights.<sup>64</sup> Because rivers and their myriad cousins are among

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in-fact but is not navigable-at-law, one New York appellate judge clarified, "I know of no exceptions in this state to the common-law rule of riparian ownership of the beds of freshwater streams, where not constituting boundary lines, other than the two rivers [i.e., the Hudson and Mohawk Rivers, which beds were excepted in grants made to early settlers by the Dutch government]." *Id.* at 202-03. *See generally* *People v. Waite*, 425 N.Y.S.2d 462, 463 (N.Y. County Ct. St. Lawrence County 1979) (qualifying, "The ownership of a stream bed does not of itself impart to the riparian owner an exclusive right to the waters flowing over the bed. . . . [H]is use thereof cannot be inconsistent with a like reasonable use of the water by owners above and below him."); John A. Humbach, *Public Rights in the Navigable Streams of New York*, 6 PACE ENVTL. L. REV. 461, 487-513 (1989) (exhaustively reviewing case law on the ownership of streambeds).

61. *Allen v. Potter*, 316 N.Y.S.2d 790, 793 (Sup. Ct. Special Term Yates County 1970).

62. *See, e.g., Strobel v. Kerr Salt Co.*, 58 N.E. 142, 145 (N.Y. 1900) ("The diversion is as complete as if the water had been pumped over the hills bordering the Oatka valley and turned into another creek . . ."); *Samuels v. Armstrong*, 93 N.Y.S. 24, 27 (Sup. Ct. Trial Term Delaware County 1905) (enjoining the riparian defendant from diverting the Tremperskill to make ice for sale to residents of a nearby village). *But see* *United Paper Bd. Co. v. Iroquois Pulp & Paper Co.*, 123 N.E. 200, 203 (N.Y. 1919) (holding that riparian rights are severable and may be granted to a party not the owner of the streambank). *See generally* Ausness, *supra* note 32, 203-04 (describing the watershed limitation across jurisdictions). *Contra* Lauer, *supra* note 37, at 6-7 n.14 (debunking the conservatory claims of the secondary literature by uncovering: "Eastern states favoring the watershed limitation: 0; Eastern states opposing it: 1.").

63. *Cf. Kyser v. N.Y. Cent. R.R.*, 271 N.Y.S. 182, 186 (Sup. Ct. Onondaga County 1934) (noting that the right to use a stream's waters is incidental to the ownership of its bank and therefore part of the riparian estate).

64. *See* James N. Christman, *Riparian Doctrine*, in *WATER RIGHTS*, *supra* note 26, at 21-22. Two formal and sometimes opposing tests address the situation where a large tract touches the water in only one small place. The unity-of-title test would treat the entire tract as riparian so long as it were owned by a single entity. In contrast, the source-of-title test would treat the tract as riparian only insofar it has been historically riparian; once it has been subdivided from the land touching the water, even if later reunited under one owner, it never regains riparian status. *Id.*; *see also*

the most dynamic of all topographic features, and upstream interventions are exceedingly common, the categorical approach of appurtenancy makes it difficult for courts and landowners to distribute responsibilities fairly and consistently—particularly when a stream drifts or surges (erodes) from a recorded boundary survey, neighboring riparians lay competing claims to a newly-emerged island, a watercourse is channelized and relocated as part of a flood control project, the present high- or low-water mark or wetland boundary differs from historical patterns, or new waterbodies are established when a river is dammed or disappear when a dam is removed.<sup>65</sup> Although riparian disputes typically question the accuracy of surveys of the beds and banks of streams and lakes and rely for resolution on tools as varied as surveyed meander lines (roughly paralleling the water body), metered stream flow measurements, photogrammetry (the scaled interpretation of aerial photographs), and tree ring analyses,<sup>66</sup> these factual inquiries must ultimately serve the legal concepts of ownership and obligation.<sup>67</sup>

### C. The Shift to Regulated Riparianism

At its essence, regulated riparianism departs from common law riparian doctrine in the former's insistence that, a few exceptions aside, water may be withdrawn and used from an identified surface supply or underground source upon issuance of a permit by the state within which the withdrawal takes place.<sup>68</sup> Water practitioners ascribe the shift to regulated riparianism in the eastern United States to increasingly frequent and severe water shortages caused by recurring droughts, heightened demand for water, significant water pollution, and measurable global climate

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14 WARREN'S WEED NEW YORK REAL PROPERTY § 151.06[2] (2006) (claiming that New York State follows the source-of-title test and citing *Durham v. Ingrassia*, 431 N.Y.S.2d 917 (Sup. Ct. Nassau County 1980)).

65. See Kenneth R. Wright, *Water Rights Engineering*, in WATER RIGHTS, *supra* note 26, at 80–81.

66. See *id.* at 81.

67. See generally Olivia S. Choe, *Appurtenancy Reconceptualized: Managing Water in an Era of Scarcity*, 113 YALE L.J. 1909, 1929–37 (2004) (hypothesizing that the success of the appurtenancy doctrine was limited relative to the reasonable use doctrine).

68. See WATER CODE, *supra* note 29, § 6R-1-01; see also A. Dan Tarlock, *Reconnecting Property Rights to Watersheds*, 25 WM. & MARY ENVTL. L. & POL'Y REV. 69, 90–91 (2000) [hereinafter Tarlock, *Property Rights*] ("Regulated riparianism has three general purposes: (1) to collect information about use, (2) to subject large ground and surface withdrawals to a permit system, and (3) to address the environmental and other impacts of trans-watershed diversions.").

change.<sup>69</sup> Inadequacies of the common law regime became increasingly apparent in the face of allocation problems; the social, economic, and technological difficulties of a proportionate reduction (as opposed to a prioritized reduction) in all water uses during times of shortage; and the cumulative impact of a large number of individually reasonable uses.<sup>70</sup>

With a focus on efficiency, conservation, and equity, the permitting system that is the hallmark of regulated riparianism grows out of states' police power to protect public health, safety, and welfare.<sup>71</sup> Like pure riparianism, regulated riparianism is guided by a notion of reasonable use, alternately denoted "beneficial," "reasonable-beneficial," or "equitable."<sup>72</sup> Contrasting with the *ex post* role of the judiciary within the common law, the responsible agency within a regulated riparian system determines *ex ante* the reasonableness of a proposed water use through state-wide or regional permitting requirements.<sup>73</sup> But permitting requirements can cover only so many concerns, as the Regulated Riparian Model Water Code acknowledges (with a self-conscious prolixity disproportionate to the substance conveyed):

Today, the main threats to the availability of water in eastern States, both as to quantity and as to quality, are not pollution or withdrawal, but the physical and ecological transformation by human intervention of water sources and the lands on or in which the sources are found. Dams not only "withdraw" water, but also disrupt temperature and nutrient patterns on which rivers depend for their ecological diversity—as does the "straightening" of a river. Repeated withdrawals of water from water sources both deplete the quantity of water remaining and alter the waste assimilative and other natural aspects of the water source, often to the detriment of potential users—human and non-human. Sediments from farms suffocate many small

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69. See Joseph W. Dellapenna, *Regulated Riparianism*, in 1 *WATERS AND WATER RIGHTS*, *supra* note 59, § 9.01 [hereinafter Dellapenna, *Riparianism*].

70. See, e.g., Joseph W. Dellapenna, *Adapting Riparian Rights to the Twenty-First Century*, 106 W. VA. L. REV. 539, 559–65 (2004) [hereinafter Dellapenna, *Twenty-First Century*]; George William Sherk, *Eastern Water Law: Trends in State Legislation*, 9 VA. ENVTL. L.J. 287, 288–91 (1990).

71. See WATER CODE, *supra* note 29, at ix, §§ 1R-1-01 to -12; see also Sherk, *supra* note 70, at 293–94 (identifying eight legislative trends in the early movement towards regulated riparianism).

72. See WATER CODE, *supra* note 29, at viii.

73. See *id.* at § 6R-2-01 and commentary. See generally Dellapenna, *Riparianism*, *supra* note 69, § 9.03(a)(3) (illustrating the range of use preferences within regulated riparian systems).

forms of aquatic life. Vacationers who cut down trees to improve the view from summer homes may erode stream banks or lakeshores. . . . The Regulated Riparian Model Code addresses only direct use of the water. . . . [I]t does not address directly human activities other than direct uses that, often unintentionally, despoil the waters of the State.<sup>74</sup>

The admission surprises all the more, keeping in mind that the comprehensive model legislation advocates such progressive elements as water use fees, alternative dispute resolution, and state-wide data collection.<sup>75</sup>

Although the date commonly given for New York's adoption of regulated riparianism is a middle-of-the-pack 1979 (with Iowa leading in 1957 and Alabama closing in 1993),<sup>76</sup> general consensus is that "its state level regulated riparianism management program, with respect to water allocation and withdrawal, is limited compared to the more comprehensive regimes seen in Delaware, New Jersey, and Maryland."<sup>77</sup> The Water Resources Law (Article 15 of the New York State Environmental Conservation Law) privileges a multitude of unregulated uses by requiring private entities and public corporations to obtain a permit from the New York State Department of Environmental Conservation (DEC) only when acquiring, conserving, developing, using, or distributing water for a public water supply or irrigation.<sup>78</sup> In granting, denying, or conditioning a permit, the agency must determine, *inter alia*, whether public necessity justifies the proposed project and whether the applicant (1) has considered other extant or future sources of supply, (2) has planned to protect the watershed during

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74. WATER CODE, *supra* note 29, at ix. Similarly, one overview of water management programs throughout the mid-Atlantic states focuses on five "evolving themes and issues," all of which relate to withdrawing and consuming water, or to sharing waters trans-watershed or interstate. See R. Timothy Weston, *Evolving Issues in Eastern Water Law: Evolving Water Resource Issues in the Mid-Atlantic Region* 32-36 (Sept. 2005) (unpublished manuscript presented to the American Bar Association, Section of Environment, Energy, and Resources, at the 13th Section Fall Meeting).

75. See Dellapenna, *Twenty-First Century*, *supra* note 70, at 587-90.

76. See, e.g., WATER CODE, *supra* note 29, at vii-ix.

77. Weston, *supra* note 74, at 11. See generally Nicholas A. Robinson, *New York*, in 6 WATERS AND WATER RIGHTS 537, pts. I-III (Robert E. Beck ed., 1991 ed., 2005 repl. vol.) (surveying the statutory and common law framework for utilizing and protecting water resources across New York State).

78. See N.Y. ENVTL. CONSERV. LAW § 15-1501(1) (McKinney 2007).

construction, and (3) has implemented a water conservation program.<sup>79</sup>

Furthermore, New York State prohibits altering a stream (or small ponds found within its course) without a permit from DEC.<sup>80</sup> The statute assumes these alterations are reasonable and lawful, provided no harm occurs to other individuals who may have a private interest in these waters.<sup>81</sup> Harm is defined as “[i]nterference with a present use of the water by the complaining party or an interference with the complaining party’s present enjoyment of riparian land occurring prior to suit,” or “[a] decrease in the market value of the complaining party’s interest in riparian land occurring prior to suit.”<sup>82</sup> Despite the importance of stream corridor health and restoration, evidently the Water Resources Law neither provides incentive to determine the reason behind the ostensible interference or to evaluate whether a party’s failure to ameliorate a known and harmful condition might qualify as an interference, nor does it identify any overarching ecological or economic policy the statute was enacted to serve. The stock forms appended to the statute—Complaint to Enjoin Obstruction of Stream, Prayer for Relief from Stream Diversion, Answer of Prescriptive Right to Use Stream, and Petition for Determination of Rights in Return of Sewage Effluent—presume conflicts of water supply, use, and diversion to the exclusion of issues of land use, natural stream corridor maintenance, and adaptive watershed management.<sup>83</sup>

### III. TRUE HYPOTHETICALS AND REVISIONIST CERTAINTIES

#### A. Beaver Lodges and Artificial Obstructions

Beavers are a frequent problem for riparians and water resource managers, who receive landowners’ many calls of inquiry

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79. *Id.* § 15-1503(1), (2); *see also* 6 N.Y. COMP. CODES R. & REGS., tit. 6, § 601 (2007) (outlining the permit application and project signoff procedures).

80. N.Y. ENVTL. CONSERV. LAW § 15-1503(1); 6 N.Y. COMP. CODES R. & REGS., tit. 6, §§ 608.1 to .5 (2007). The statutory permit considerations give little by the way of public guidance or assurances: “The department shall ascertain the probable effect on the health, safety and welfare of the people of the state, and the effect on the natural resources of the state likely to result from the proposed project or work.” N.Y. ENVTL. CONSERV. LAW § 15-0503(2)(a).

81. *See* N.Y. ENVTL. CONSERV. LAW § 15-0701(1).

82. *Id.* § 15-0701(2)(a)–(b).

83. *See id.*

and complaint.<sup>84</sup> Not only can beavers contaminate the water they frequent, but their lodges and dams regularly cause water-courses to back up and overflow properties upstream.<sup>85</sup> In 1990, for illustration, titleholders to twenty-seven acres in Saratoga County were unsuccessful in their attempts (as invitees) to trap the beavers that had “set up housekeeping” on their neighbors’ land and had flooded their own tract and well. Hoping perhaps that a judge could wield a beaver drain tube more skillfully than they, the injured property owners took their neighbors to court.<sup>86</sup> The Appellate Division ruled, however, that “[o]wners of rural land have no affirmative duty to remedy conditions of a purely natural origin upon their property, in this instance the work of wildlife, even though such conditions may cause inconvenience or even damage to the property or neighbors.”<sup>87</sup>

The implications of the holding are as unambiguous as the holding itself: Riparians are not obliged to clear natural obstructions from their streams, which may take the form of leaves, log-jams, or sedimentation, even when flooding and damage ensues.<sup>88</sup> Conversely, these landowners need not confer benefit on other riparians by maintaining artificial obstructions such as a dam that—if preserved from gradual decay due to inattention and neg-

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84. Telephone Interview with Erin Heard, Outreach Coordinator, Ctr. for Integrated Watershed Studies, Upper Susquehanna Coalition (Sept. 29, 2005).

85. See generally N.Y.S. Dep’t of Env’tl. Conservation, Beaver Damage Control Techniques Manual, <http://www.dec.ny.gov/animals/6992.html> (last visited Jan. 24, 2008) (presenting a natural history of beavers in the Empire State and tips on dealing with their presence on private property).

86. *Frank v. Garrison*, 584 N.Y.S.2d 217, 218 (App. Div. 3d Dep’t 1992).

87. *Id.*; cf. *Cooper v. Sharon Springs Cent. Sch. Dist.*, 777 N.Y.S.2d 564, 565–66 (App. Div. 3d Dep’t 2004) (finding triable issues of fact in allegations that much of the debris and sediment removed from a limestone cavern, which formerly served as a natural storm drain for the local watershed, resulted from defendant’s negligent failure to mitigate erosion at his jobsite).

88. See *Garrison*, 584 N.Y.S.2d at 218. Regardless whether they are themselves riparians, municipalities are similarly not responsible for preventing floods. See *O’Donnell v. City of Syracuse*, 76 N.E. 738, 740 (N.Y. 1906) (applying the general rule where a municipality utilized Onondaga Creek as an open trunk sewer); cf. *City of Schenectady v. Furman*, 15 N.Y.S. 724, 727–28 (Sup. Ct. Gen. Term 3d Dep’t 1891) (determining that even were a municipality to have properly established a “natural and normal grade” for Mill Creek, it did not have the right to excavate defendant riparian’s streambanks and trees). Absent negligence, these smaller subdivisions of government are also not liable for any flood-related damages. Cf. *Office Park Corp. v. County of Onondaga*, 409 N.Y.S.2d 854, 857–59 (App. Div. 4th Dep’t 1978) (holding a municipality liable for failure to follow “sound engineering practice” by jumping the order of improvements made to sections of Lev Creek).

lect—would keep a lake's level constant.<sup>89</sup> Resonating with the early riparian cases addressing stream disturbances, the natural/artificial distinction undergirds the following graphic representation of the common law scheme:

Obstructions & Restorations (natural)	Interventions (artificial)
1. no duty to ameliorate even where damage ensues ( <i>e.g.</i> , beaver case)	2. no duty to maintain even where benefit conferred ( <i>e.g.</i> , lake level case)
3. [to be proposed by author]	4. duty to ensure that neither fails nor causes problems—otherwise liability ( <i>e.g.</i> , three dam case)

The resolution of conflicts involving accretion (deposition) piggybacks on the familiar distinction between natural and artificial obstructions, but necessitates a reinterpretation of the controlling jurisprudence to comport with contemporary perspectives on the morphology of New York State's watercourses. Most rivers—even models flowing in perfectly uniform soil—form S-curve meanders, which manifest the processes of erosion and deposition.<sup>90</sup> Where moving most quickly (generally along the outside bends), the current picks up particles of sand, silt, sediment, gravel, and organic matter, drops them where the water slows (generally at deeper pools or near the inside bends), and in this gradual fashion shapes the river channel.<sup>91</sup> Riparianism dictates that the affected landowners divide the naturally-deposited alluvium proportionate to

89. See *Lake Claire Homeowners Ass'n, Inc. v. Rosenberg*, 626 N.Y.S.2d 540, 540 (App. Div. 2d Dep't 1995). But cf. *Hammond v. Antwerp Light & Power Co.*, 230 N.Y.S. 621, 630–31 (Sup. Ct. Lewis County 1928) (searching for a prescriptive easement that would allow defendants to draw impounded waters, thus restoring a lake to its natural level while harming the littoral owners).

90. JAMES A. SIMPSON, *RIVER AND LAKE BOUNDARIES: SURVEYING WATER BOUNDARIES—A MANUAL* 157–58, 160 (1994).

91. One watershed activist describes the phenomenon: "A stream is like a snake. You can hold it by the tail and by its head, but it will keep on wanting to wriggle. Historically, a stream meanders. Even if you put a road across a valley, and stationary culverts to steer the stream, its energy will keep wanting to dissipate." Telephone Interview with Al Evans, Chair, Concerned Citizens for Catatunk Creek (Nov. 11, 2005). See generally Rick Oestrike, *A Short Tutorial on River Types* (undated) (unpublished manuscript, on file with author) (depending on slope and substrate, different sections of a river may experience different combinations of erosion and deposition).

the original extent of their respective water frontage.<sup>92</sup> Deposition in one place on the watercourse, however, often implies erosion in another.<sup>93</sup> Where instead erosion has occurred, the riparians proportionately suffer the loss of the now-submerged land.<sup>94</sup>

*In re City of Buffalo* reveals that the common law treatment of accretion and erosion assumes that these processes are “slow and gradual,” if not “imperceptibl[e],” and originate with “the natural action of the elements.”<sup>95</sup> In fact, “progress cannot be always measured even though results may be discerned from time to time.”<sup>96</sup> The New York Court of Appeals reasoned in this case that the need of the owner of the newly-accreted land for certainty in tenure trumps the claims of upstream (or former) riparians as well as the streambed’s owner.<sup>97</sup> The upstream riparian’s failure to halt the ongoing erosion advises against future recovery in the form of reclamation—and then only where the land had been washed

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92. See, e.g., *Ludington v. Marsden*, 586 N.Y.S.2d 165, 169 (App. Div. 4th Dep’t 1992) (specifying that the litigated properties are ambulatory vis-à-vis the water: described in their individual titles as extending to the shore of the watercourse, either its high water line or mean high water mark, or to the center of its bed, and not as extending a certain lineal distance or to a specified monument or property line).

93. Site Visit and Interview with Mary Brophy, Env’tl. Specialist, N.Y.S. Dep’t of Transp., Lance Lockwood, Manager, Chenango County Soil and Water Conservation Dist. & Audrey Stone, homeowner, in Plymouth, N.Y. (Mar. 14, 2006). The symmetry in hydrological systems is apparent in Audrey Stone’s DEC permit application to move 165 cubic yards of freshly-accreted gravel from the far side of Canasawacta Creek to the severely eroded bank dangerously close to her home and septic and fuel tanks. Mrs. Stone has lived on the water for some three decades. She lost almost thirty feet of her back yard—and narrowly missed losing her dog and a recreational vehicle—in the past eight years. (The permit was finally approved, but the work could not be financed.) Moreover, partly due to the reconstruction of the next bridge upstream and changes made to the angle, length, and materials of its abutment, and partly due to a nearby esker, the bridge immediately downstream of the Stone property (close to the intersection of Route 23 and Moon Hill Road) has developed scour problems and is on the New York State Department of Transportation’s flood-watch list. *Id.*

94. See, e.g., *Trs. of Southampton v. Buoninfante*, 756 N.Y.S.2d 629, 631 (App. Div. 2d Dep’t 2003).

95. *In re City of Buffalo*, 99 N.E. 850, 852 (N.Y. 1912).

96. *Id.* at 852. The case is cited with approval by the more recent *Town of Oyster Bay v. Commander Oil Corp.*, 759 N.E.2d 1233, 1237 (N.Y. 2001) (holding that a company may dredge a harbor to preserve access to its storage terminal, much as it legally could had the state’s underwater bed accreted onto the company’s own privately-held riparian lands).

97. See *Buffalo*, 99 N.E. at 852; cf. *In re Town of Hempstead*, 239 N.E.2d 722, 724–25 (N.Y. 1968) (establishing that a municipality, which condemned shoreline property, holds the right of accretion even though the original owners maintained title to the ocean-submerged land).

away or so thoroughly submerged for such a length of time that reestablishing its "identity," should the waters recede, would be impossible.<sup>98</sup>

The basic approach to accretion and erosion moreover dictates that "[t]his is not the rule where the loss of the land occurs by avulsion, defined as the sudden or violent action of the elements, the effect and extent of which is perceptible while it is in progress. In such cases the boundaries do not change."<sup>99</sup> Analogous to the riparian's lack of obligation to clear natural obstructions from streams, the case law generally indicates there is no obligation to maintain earlier ownership patterns when predictable or natural changes affect the stream corridor.<sup>100</sup> Unforeseeable or artificial changes in water speed, scale, stability, or source, however, summon a different set of legal consequences entirely.<sup>101</sup>

The problem with applying the rules of riparianism therefore lies not so much with doctrinal inconsistency, but rather with the near-impossibility of finding a New York watercourse that is anything but a manmade artifact.<sup>102</sup> Indeed, the contours of riparian tenure should remain constant throughout the Empire State—because after centuries of human activity, all hydraulic and hydrologic changes are in some sense artificial, no matter how gradually or suddenly they become apparent, and regardless of the particu-

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98. See *Buffalo*, 99 N.E. at 852–53; see also *State v. Bishop*, 359 N.Y.S.2d 817, 819–820 (App. Div. 2d Dep't 1974) (equating gradualness *per se* with naturalness and prohibiting reclamation where the high-water mark of Moriches Bay shifted upward over twenty-two years: "Whether the erosion of defendant's parcel was caused by the slow, unassisted workings of natural elements, or by human action affecting the tides, such as dredging or the digging of mosquito ditches, is irrelevant."). But see *In re Hutchinson River Parkway Ext'n*, 14 N.Y.S.2d 692, 693–95 (Sup. Ct. Bronx County 1939) (denying explicitly the legal distinction between natural and artificial causes of deposition and accretion to nevertheless award damages where the erection of floodgates by a municipality caused Westchester Creek to submerge private riparian property over forty years).

99. *Buffalo*, 99 N.E. at 852.

100. Cf. *Halsey v. McCormick*, 18 N.Y. 147, 149 (1858) (preserving original lot lines where Six Mile Creek, now channelized, abruptly changed course).

101. See, e.g., *In re City of New York*, 176 N.E. 171, 172 (N.Y. 1931).

102. Cf. *Olney v. Culluloo Park Co.*, 169 N.Y.S. 843, 847 (App. Div. 2d Dep't 1918) (Putnam, J., concurring) (attaching riparian rights to a modified watercourse displaying the essential features of naturalness: source, outlet, and channel); *Spink v. Corning*, 70 N.Y.S. 143, 147 (App. Div. 4th Dep't 1901) (prohibiting obstructions to a watercourse despite earlier modifications to it). But see Letter from Rick Oestrike, Chair, Fishkill Creek Citizens' Comm., to the author (Aug. 30, 2006) (on file with author) ("You are approaching this issue as either purely natural or purely artificial when I view the situation as a spectrum. This spectrum ranges from 100% natural to 100% artificial with most streams somewhere in the middle.").

lar form they may take.<sup>103</sup> For instance, the settlement of the Southern Tier began in earnest in the 1800s, the lining of its lowlands with draintiles in the 1850s, and the clearcutting of its hill-sides in the late 1800s.<sup>104</sup> As another example, no fewer than sixteen dams straddle one sixteen-mile stretch of Fishkill Creek in Dutchess County.<sup>105</sup> Consequently, local residents' sense of place is colored by concerns of dam failure (e.g., flooding homes),<sup>106</sup> the dangers of their removal (e.g., disturbing contaminated sediment, losing lakeshore lots, uncovering abandoned cribbing, and impairing recreation),<sup>107</sup> and their ongoing negative effects (e.g., depositing sediment and obstructing fish migration).<sup>108</sup>

Near the author's former home in the Finger Lakes, a crossing of Six Mile Creek for cows and tractors exacerbates its fast flow and high bedload (a condition of much sediment resting loosely on the underwater bed), which characteristics arise from the combination of a natural thirty-foot drop in three thousand feet of shoreline and the site's historic function as a gravel quarry for local dairies.<sup>109</sup> Problems at the site are manifold: approximately fifteen years ago, a storm took out the Route 79 bridge immediately downstream of the crossing (as well as twenty feet of

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103. See *supra* notes 2–8 and accompanying text.

104. Telephone Interview with Al Evans, *supra* note 91; see also Site Visit and Interview with Brophy, Lockwood & Stone, *supra* note 93 (Lockwood noting: "We need to do a better job of siting people. Fifty, sixty years ago we put people directly in the floodplain because we didn't know any better.").

105. Telephone Interview with David Foord, Dir., Env'tl. Mgmt. Council of Dutchess County (Nov. 18, 2005).

106. See generally Jesse Sayles, Stream Barrier Inventory and Characterization: Methodology and Training Manual 1, 2–3, 5 (Dec. 2005) (draft manuscript, on file with the Hudson River Estuary Program, N.Y.S. Dep't of Env'tl. Conservation) (training laypeople to find and document dams, culverts, and other barriers to smaller streams, and in this fashion inventorying a surprising forty-nine dams and thirty-four culverts in the Fishkill Creek Subwatershed).

107. See generally Jim Pizzuto, *Effects of Dam Removal on River Form and Process*, 52 *BIOSCIENCE* 683, 683–88 (2002) (describing upstream and downstream changes to river channels and banks when dams are removed, including the immediate danger when sediment fill is washed away). For an analysis of the disastrous 1973 removal of the Fort Edward Dam on the Hudson River, see FRIENDS OF THE EARTH, AM. RIVERS & TROUT UNLIMITED, *DAM REMOVAL SUCCESS STORIES: RESTORING RIVERS THROUGH SELECTIVE REMOVAL OF DAMS THAT DON'T MAKE SENSE* app. A, at 1–4 (Dec. 1999), available at <http://www.foe.org/res/pubs/pdf/successstories.pdf>.

108. See generally N. Leroy Poff & David D. Hart, *How Dams Vary and Why It Matters for the Emerging Science of Dam Removal*, 52 *BIOSCIENCE* 659, 659–60 (2002) (exploring dam-related impairments of watersheds on the local and landscape levels).

109. Site Visit and Interview with Goodrich & Kiley, *supra* note 19.

road on either side of it),<sup>110</sup> and turbidity measures (cloudiness) commonly approach one thousand NTUs (nephelometric turbidity units) and may run over five thousand NTUs in a runoff event.<sup>111</sup> In contrast, nine turbidity monitors on the southern end of Cayuga Lake, the source of the Town of Ithaca's drinking water, averaged approximately five NTUs in 2004 and spiked no more than 182 NTUs.<sup>112</sup> For a final illustration, the topography of the steep Catskills north of New York City has traditionally encouraged placing homes, fields, and roads in close proximity to the local streams, which similarly suffer from the lack of choice in location but unsuccessfully compete for space in the narrow valley troughs.<sup>113</sup>

To speak of any one of these watercourses and its changing morphology as natural, which current case law recommends, places conflicts over accretion and erosion (as natural obstructions) squarely in cell 1 of the proposed matrix.<sup>114</sup> The absence of a duty to ameliorate a natural obstruction, even where damage ensues, would preclude riparians' access to the courts in nearly all such cases and force others to settle for a compromised bundle of property rights. Imagine a waterfront subdivision featuring thirty-foot-wide paved roads and four-thousand-square-foot ranch homes replete with concrete walks and driveways and the occasional patio or in-ground pool. The development could conceivably funnel sufficient runoff and storm drain effluence over several years' time to erode a portion of a downstream hobby farm, which soil may become a sandbar blocking the boathouse of a riparian even further downstream.<sup>115</sup> Under governing case law, the last-in-line river rat possesses an assailable claim to the extra acreage

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110. *Id.* See generally MILONE & MACBROOM, INC., FLOOD MITIGATION NEEDS ASSESSMENT: SIX MILE CREEK, TOMPKINS COUNTY, NEW YORK, ES-5, 3-9 to -11 (Oct. 2003), available at [http://www.cayugalake.org/sixmilecreek/Milone\\_MacBroom\\_report.pdf](http://www.cayugalake.org/sixmilecreek/Milone_MacBroom_report.pdf) (prioritizing restoration of the watercourse from Creamery Road to Six Hundred Road in light of significant problems due to excessive energy, a disconnected floodplain, and repeated landslides).

111. E-mail from Roxy Johnson, Watershed Coordinator, Lab Dir., City of Ithaca Water Treatment Plant (Dec. 7, 2006) (on file with author). The City of Ithaca draws its drinking water from Six Mile Creek. *Id.*

112. See UPSTATE FRESHWATER INSTITUTE, CAYUGA LAKE WATER QUALITY MONITORING, RELATED TO THE LSC FACILITY: 2004, at 11 (Mar. 30, 2005), available at <http://www.utilities.cornell.edu/doc/CayugaLake04.pdf>.

113. Telephone Interview with Brooks, *supra* note 31.

114. See graphic representation, *supra* p. 125.

115. These facts resemble those of *Sweet v. New York*, 451 N.Y.S.2d 565, 567-68 (Ct. Cl. 1982), which relates the tale of a diversionary channel, a faulty dam, a nearby riparian's loss of six acres to erosion, extensive silt and gravel deposition approxi-

as against the eroded-from upstream agriculturalist, but must dig her canoes out of the muck and portage them to the main current at her own expense. Similarly, the agriculturist has no certain legal recourse against the residential developer who set the process in motion by laying an expanse of impervious surface over a water-storing floodplain that had once recharged the stream gently and only when its basal flow required.<sup>116</sup>

This Article instead contends that these kinds of conflicts would fit comfortably in cell 4 of the proposed matrix: duty to ensure that an intervention does not fail. "Not fail" so conceived might necessitate designing a project according to wet growth principles,<sup>117</sup> relocating a project to eliminate its likely harmful effects, or abandoning a project altogether. In sum, the doctrinal move would permit litigation and the award of monetary damages (calculated as to present value), or equitable remedies (perhaps restorative), for the affected riparians within a reasonable statute of limitations period. Although judges are bound by procedural and compensatory constitutional protections against takings of private property without just compensation,<sup>118</sup> some scholars and activists argue these protections "apply only to a narrow set of actions; most changes in property and water law are not considered takings."<sup>119</sup> Under the right circumstances, New York courts

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mately four miles downstream at the site of a dude ranch and golf resort, and the spoiling of guests' water skiing.

116. Cf. Lynda L. Butler, *The Pathology of Property Norms: Living Within Nature's Boundaries*, 73 S. CAL. L. REV. 927, 951 (2000) ("Until landowners become responsible in a cumulative, temporal, and spatial sense for the impact of their land uses on the health of a watershed, land development and water use will continue to increase virtually without restraint."). But see *Trs. of Southampton v. Heilner*, 375 N.Y.S.2d 761, 773 (Sup. Ct. Special Term Suffolk County 1975) (entertaining the argument that heightening tides by opening a formerly landlocked waterbody to the Atlantic Ocean should result in compensable damages).

117. That is, integrating "concerns about water quality and the availability of water supply into the density, form, pattern, and location of land development." Arnold, *supra* note 25, at 8.

118. See U.S. CONST. amend. V; N.Y. CONST. art. I, § 7(a).

119. Barton H. Thompson, Jr., *Takings and Water Rights*, in *WATER LAW: TRENDS, POLICIES, AND PRACTICE* 43, 50 (Kathleen Marion Carr & James D. Crammond eds., 1995). But see Tarlock, *Potential Role*, *supra* note 11, at 228-31 (noting two contradictory trends in takings law as applied to biologically sensitive lands: (1) state property rights legislation and compensation, and (2) state regulation mixed with compensated and uncompensated land acquisition, the latter including substitute compensation such as transferable development rights). The possibility of a taking in this context concerns judicial takings, or the idea that a state court decision may benefit the public and deprive a property owner of value without just compensation. See generally W. David Sarratt, *Judicial Takings and the Course Pursued*, 90 VA. L. REV. 1487, 1497-1512 (2004) (tracing the uneven history of the judicial takings doctrine and ar-

would thus be properly charged with responding to the deepening scientific knowledge and evolving societal needs around riparian lands.<sup>120</sup>

## B. Highways and Floodways

The previous section distinguished between natural obstructions to watercourses and interventions that are the byproducts of human activities purporting to do something other than alter the hydrology of a watershed. This section instead focuses on direct stream interventions that attempt to mediate a watercourse (to control floods or overflow by bringing a stream back or close to its natural state) or to remediate it (to calm the flow by removing or softening past interventions). It begins by contending that an evolving riparianism should classify natural stream restoration efforts as a positive duty: To foster stream corridor health through locale-appropriate best management practices and water or land interventions.<sup>121</sup> The duty would constitute a facet of the standard maxim of nuisance liability, *sic utere tuo ut alienum non*

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guing that takings protections should constrain judges as well as executives and legislators).

120. State law does not create property rights, but with the passage of time might foster certain expectations and understandings of ownership, as might the custom and practice of a given community. See *Skip Kirchdorfer, Inc. v. United States*, 6 F.3d 1573, 1581 (Fed. Cir. 1993) (citing *United States v. Arredondo*, 31 U.S. (6 Pet.) 691, 715 (1832): "The court not only may, but are [sic] bound to notice and respect general customs and usage as the law of the land, *equally* with the written law, and when clearly proved, they will control the general law . . .") (emphasis added); *Kim v. City of New York*, 681 N.E.2d 312, 315 (N.Y. 1997), cert. denied, 522 U.S. 809 (1997) (finding no taking where (1) both the common law and the city charter obliged a private landowner to provide lateral support for an adjacent public roadway and (2) a filed map reflected a property's legal grade prior to conveyance to plaintiff: "It would be an illogical and incomplete inquiry [into the background restrictions on land ownership, which existence might suggest against a compensable taking, see *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1029 (1992)] if the courts were to look exclusively to common-law principles to identify the preexisting rules of State property law, while ignoring statutory law in force when the owner acquired title.") (citations omitted). But see *Gazza v. New York State Dep't of Envtl. Conservation*, 679 N.E.2d 1035, 1039 (N.Y. 1997), cert. denied 522 U.S. 813 (1997) (finding no taking where setback requirements were in effect at the time of claimant's purchase because "a promulgated regulation forms part of the title to property as a preexisting rule of State law. While the remaining interests may still be freely transferred by the landowner, a purchaser's title is necessarily limited to and by those property interests alone.") (emphasis added).

121. In other words, "Stream management is floodplain management." Site Visit and Interview with Olvany, *supra* note 20.

*laedas*, or to use one's property without injuring the property of another,<sup>122</sup> and occupy cell 3 of the proposed matrix:

<b>Obstructions &amp; Restorations</b> (natural)	<b>Interventions</b> (artificial)
1. no duty to ameliorate . . .	2. no duty to keep in existence . . .
3. duty to foster stream corridor health through locale-appropriate best management practices and water or land interventions—otherwise nuisance liability might ensue	4. duty to ensure does not fail . . .

When limning the contours of the proposed restoration duty, it is helpful to remember at the outset that “stream self-help” does not qualify as a best management practice though it may be uppermost in the minds of rural riparians. “Our creek is filling in and spreading out,” laments a homeowner along Canasawacta Creek. “No one is maintaining it. They [the New York State Department of Transportation] used to take a bulldozer and clean it out every year. Now they don’t and our stream needs fixing.”<sup>123</sup> The driving force behind the Upper Susquehanna Coalition also observes good-naturedly, “Stream walks! That’s so mid-Hudson Valley. Here people just want to take out their big equipment and bulldoze the stream. Remove the gravel and deepen the channel.”<sup>124</sup> Similarly, Schuyler County Soil and Water Conservation District personnel report:

We have a situation [on Chequaga Creek, a tributary to Jackson Creek] where the highway superintendent is blaming the landowner, saying, “You should have cleaned your stream. If you had, it would not have blocked the bridge to flood the neighbor.” But generally, people want to get into their streams, they want to bulldoze the heck out of them. It’s our long-term project to have them be gentle with the geomorphology, but they see gravel bars as bad, although we know that they shift.

122. See, e.g., *Musumeci v. New York*, 351 N.Y.S.2d 211, 215 n.3 (App. Div. 4th Dept. 1974).

123. Interview with Christina Franklin, homeowner, in Plymouth, N.Y. (Mar. 14, 2006).

124. Telephone Interview with James Curatolo, Watershed Coordinator, Upper Susquehanna Coalition (Sept. 28, 2005).

In fact, the gravel situation has gotten worse. The highway people claim they can buy cheaper [than dredging stream channels], but it is a resource right in front of them and they want to get at it. It makes them mad they can't get at it. Contractors will even mine for gravel, but they say they are doing it to deal with emergency flooding.<sup>125</sup>

On the contrary, dredging stream channels and removing obstructive point bars (sediment temporarily stored on the inside edge of bends) ameliorate only the most immediate of flood dangers and only for a short while. Not only might a stream's energy pull more gravel from the streambed or bank to replace the dredged material, but a "hungry" current will incise its channel to cause faster flows and additional undercutting, erosion, and potential liabilities downstream.<sup>126</sup>

Another contentious riparian issue in New York State today concerns diffuse surface waters that flow onto an adjacent property, or flow into a watercourse which then floods an adjacent property. Like the doctrine of accretion and erosion, New York's common law of diffuse surface waters exemplifies modern judicial respect for the natural/artificial distinction as a baseline for analysis and supports the positive duty to foster stream corridor health.<sup>127</sup> Specifically, "[a] riparian owner may not cause water to discharge into a natural stream in such quantity as to exceed its

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125. Telephone Interview with Elaine Dalrymple, Project Manager, Schuyler County Soil and Water Conservation Dist. (Nov. 15, 2005).

126. See generally NAT'L WATER AND CLIMATE CTR., STREAM VISUAL ASSESSMENT PROTOCOL 1 (1998), available at <http://www.nrcs.usda.gov/technical/ECS/aquatic/svapfnl.pdf> ("A stream is a complex ecosystem in which several biological, physical, and chemical processes interact. Changes in any one characteristic or process have cascading effects throughout the system and result in changes to many aspects of the system.").

127. See generally Peter N. Davis, *Drainage*, in 5 WATERS AND WATER RIGHTS § 59.02(b), (b)(2)–(4), (b)(7) (Robert E. Beck ed., 1991 ed., 1998 repl. vol.) (presenting the three rules of diffuse surface waters at common law: the common enemy rule (water as a scourge), the civil law rule-natural flow (drainage to follow its natural direction), and the comparative reasonable use rule (drainage not to interfere with neighbors' use of their land)). *Barkley v. Wilcox*, 86 N.Y. 140 (1881), first expressed New York's law in this area; admittedly, its approach to the common enemy rule (now modified) ultimately emphasized a natural understanding of a different kind: "But those laws [*i.e.*, the legality of intercepting surface waters before they join a watercourse and preventing underground waters from supplying a neighbor's spring] are to be construed in connection with social laws, and the laws of property. The interference in these cases with natural laws, is justified, because the general law of society is, that the owner of land has full dominion over what is above, upon or below the surface, and the owner in doing the acts supposed, is exercising merely a legal right." *Id.* at 147.

natural capacity. . . . However, as long as the natural capacity of the stream is not exceeded, a riparian owner may increase the quantity of water placed into such stream."<sup>128</sup> A landowner may thus grade his parcel regardless of impact on surface water flows provided (1) the improvements are made in good faith to meet the most naturally suitable use of the land and (2) water is not directed onto other properties via artificial means such as "pipes, drains, channels, or ditches."<sup>129</sup>

Some courts are predisposed towards a formal approach to these two elements. In *Long v. Sage Estate Homeowners Association, Inc.*, defendant's new berm funneled sheeting stormwater into an existing swale that ran downslope and onto plaintiff's property.<sup>130</sup> The intermediate court intuited that the earthmoving led to an artificial and hence impermissible collection of water, this although the swale was a natural feature of the landscape and hence the directing berm arguably constituted a good faith improvement sufficiently appropriate to the local topography to insulate defendant from liability.<sup>131</sup> Following true Romanticism, today's Empire State courts have adopted "natural" as shorthand for bona fides: good faith, appropriateness, a right. (But when determining naturalness becomes an intuitive rather than a critical enterprise, the resulting judicial pronouncement may indeed be romantic!)

The law of diffuse surface waters technically does not belong to the ad hoc patchwork that is riparianism: its case law concerns direct overflow onto neighboring properties rather than into a watercourse and thence to affect riparian holdings.<sup>132</sup> When unable

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128. *Stanklus v. County of Montgomery*, 448 N.Y.S.2d 536, 537 (App. Div. 3d Dep't 1982).

129. *See, e.g., Hoffman v. Appleman*, 501 N.Y.S.2d 898, 900 (App. Div. 2d Dep't 1986); *Grosso v. Long Island Lighting Co.*, 424 N.Y.S.2d 979, 981 (Dist. Ct. 4th Dist. Nassau County 1980). *See also Seifert v. Sound Beach Property Owners Ass'n*, 303 N.Y.S.2d 85, 89 (Sup. Ct. Special Term Suffolk County 1969) (finding actionable negligence where defendants should have reasonably anticipated the need to control the surface waters that flowed onto plaintiffs' land upon removal of a sand dune and opening of a formerly impassable roadway).

130. *Long v. Sage Estate Homeowners Ass'n, Inc.*, 792 N.Y.S.2d 219, 221 (App. Div. 3d Dep't 2005).

131. *See id.* *But see Archambault v. Knost*, 518 N.Y.S.2d 243, 244 (App. Div. 3d Dep't 1987) (finding for defendants who filled in a natural catch basin shared by the neighborhood and partially blocked a historic drainage ditch to the rear of their property, despite the fact that one defendant explained he had "soaked up the water for the people up the street for 30 years and he figured if he filled his property, the people up the street could take care of their own water problems.").

132. *See, e.g., Goodale v. Tuttle*, 29 N.Y. 459, 464, 467 (1864).

to seep into the ground, however, storm runoff and other surface waters become sheeting flows or channelized rivulets that end up in streams, rivers, and lakes to contribute to pollution and loss of water quality, erosion and flooding, and sedimentation and diminished aquatic life.<sup>133</sup> It is not too hard to envision a concerned riparian requesting—under threat of suit—her upstream (or downstream) counterpart to remove the pavement, storm drain, or catchment that has accelerated or enlarged their common watercourse with measurable damage to her property or her enjoyment of the river or stream.<sup>134</sup> Truly, “individual action can be stewardship; it also can be litigation.”<sup>135</sup>

Specifically, the pipes, drains, channels, or ditches disallowed under the law of diffuse surface waters are close functional relations to structural stream interventions such as concrete sectioning, culverts, and bridge abutments, and also to habitual stream interventions such as cleaning, fording, dredging, and cropping. Within an expanding riparianism, two possibilities for complaint arise. The aggrieved riparian could argue according to cell 4 of the proposed matrix that her neighbor’s structure or practice is an intervention now failing. Any of these interventions, however, may represent misguided attempts to mediate (or at least negotiate) the watercourse, and defendant could argue that its utility to him outweighs its damage to another riparian and to overall stream health. Alternatively, defendant could argue with some seriousness that the complainant (1) cannot convince the intervention is problematic, (2) must prove the existence of the intervention in the first place, or (3) should invest in this form of stream control, too.

Faced with the likelihood of such a response, or faced with a situation in which the upstream riparian has changed the stream’s hydrology and hydraulics through habitual practices and not construction projects, plaintiff would do well to frame her com-

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133. See N.Y.S. DEPT OF ENVTL. CONSERVATION & N.Y.S. DEPT OF STATE, *STORMWATER MANAGEMENT GUIDANCE MANUAL FOR LOCAL OFFICIALS: CONSTRUCTION AND POST-CONSTRUCTION STORMWATER RUNOFF MANAGEMENT 1-3* (2004), available at <http://www.dec.ny.gov/chemical/9007.html> (click individual chapter titles under “Related Links”).

134. Cf. *Musumeci v. New York*, 351 N.Y.S.2d 211, 215–16 (App. Div. 4th Dept. 1974) (holding the state liable for utilizing drainage ditches, a culvert, and a concrete arch beneath a highway to collect diffuse surface waters and discharge them into Waterhouse Creek, which flooded plaintiffs’ land).

135. Interview with Deb Grantham, Ass’t Dir., Nat. Res. and Env’t, Cornell Univ. Coop. Ex’t, in Ithaca, N.Y. (Nov. 15, 2005).

plaint within cell 3. Bounded where applicable by the dictates of municipal immunity, statutes of limitation, and foreseeability, she could remind the court that historic and contemporary riparianism have honored a naturalism broader than the pre-industrial doctrine of natural flow: in consumption limited to primary needs, in disallowed extraordinary methods of using water, and in the approval-by-acceptance given to natural obstructions, natural morphological changes, and natural carrying capacity. A positive duty to remediate streams by imitating natural patterns merely evolves past undertakings of the common law into a more knowledgeable and sensitive age.<sup>136</sup>

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136. One can push the assertion of a knowledgeable and sensitive age only so far. Support, however, may be found in the changes made by Skaneateles to its zoning law. (The rural-and-resort town is situated on the northern tip of Lake Skaneateles in the Finger Lakes region.)

Until 1996, hedges were permitted on residential lots in the area between the house and the lake if they were shorter than six feet. *See* TOWN OF SKANEATELES, N.Y., CODE § 148-11(G)(1) (1996). In response to complaints the law was amended to read: "No fence, hedge, berm, or wall, except retaining walls parallel to the lake line and seawalls, shall be permitted within one hundred feet of the lake line. No fence, hedge, berm or wall exceeding four feet in height shall be permitted in the lake yard." *See id.* § 148-11(G)(1) (1998). While addressing blocked views, this language prohibited the very thing promoted through educational programs for lakefront property owners: planting vegetation near the shoreline to anchor the soil and prevent bank sloughing. *See* E-mail from Lee Macbeth, Watershed Control Coordinator, Dep't of Water, City of Syracuse, to author (undated) (on file with PACE ENVIRONMENTAL LAW REVIEW).

At some point residents pointed out this tension to the town, which in 2000 changed the zoning law to permit hedges within one hundred feet of the lake line, albeit ones shorter than four feet with a fifty percent visual penetration. *See id.* § 148-11(G)(1) (2000). The municipal government of Skaneateles, however, still refused to decrease the fifteen percent impervious surface coverage allowed for lots outside the Watershed Overlay District despite pressure from Syracuse, which relies on unfiltered lake water for its drinking water supply. *See* Telephone Interview with Lee Macbeth, *supra* (Mar. 7, 2006).

Similarly, municipalities served by a single aquifer often utilize their zoning law to ramp up from wellhead protection to watershed protection. *See, e.g.,* CROTON-ON-HUDSON, N.Y., CODE § 223-17 (1989), available at <http://village.croton-on-hudson.ny.us/Home> (click "Village Code" then enter the section number in the "Search Request" form). More creatively yet, the lakeside community of Gorham has established a "timber harvesting district" within which all loggers must incorporate certain best management practices into their work: securing a slope of less than fifteen percent for haul roads and skid trails, promptly removing any logging slash and debris from stream channels, and maintaining a "no harvest zone" within fifteen feet of all streambanks. *See* GORHAM, N.Y., CODE § 31.32(F). Compare SOUTH BRISTOL, N.Y., CODE § 106-6(F) (proposing that the Code Enforcement Officer supply logging permit applicants with information about best management practices), and N.Y.S. DEP'T OF ENVTL. CONSERVATION, SAMPLE LOCAL LAW FOR STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL art. 1, §§ 1.1 to .9 & art. 2, § 3.1 (Mar. 2006), available at [http://www.dec.ny.gov/docs/water\\_pdf/localaw06.pdf](http://www.dec.ny.gov/docs/water_pdf/localaw06.pdf) (presenting model regulations

If the decisionmaker not only acknowledges this precedent, but also accepts the scientific and policy assumptions shoring the concept of a positive duty, the intervening riparian cannot successfully counter, "I am not directing waters into the stream which would not have reached it otherwise; my good faith interference with the stream should be judged solely by its limited effects in one particular spot and is *de facto* appropriate to the local landscape."<sup>137</sup> Likewise, the non-riparian defendant landowner cannot claim that his activities, such as logging or building, do not affect the distant watercourse.<sup>138</sup> In rebuttal, the aggrieved riparian may emphasize awareness of at least the most basic watershed best management practices in communities throughout New York State.<sup>139</sup>

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for stormwater management, construction controls, and site design to minimize hydrologic response to development), with N.Y.S. DEPT OF ENVTL. CONSERVATION, TIMBER HARVESTING GUIDELINES, available at [http://www.dec.ny.gov/docs/water\\_pdf/swdmchapter5.pdf](http://www.dec.ny.gov/docs/water_pdf/swdmchapter5.pdf) (suggesting ways to handle the problems of soil erosion, siltation, and general ugliness that arise during logging jobs), and CTR. FOR WATERSHED PROTECTION, NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL 5-1-9, available at <http://www.dec.state.ny.us/website/dow/toolbox/swmanual/chapter5.pdf> (recommending certain stormwater treatments and pretreatments that reduce runoff from construction zones).

137. Cf. Faith R. Kearns et al., *A Method for the Use of Landscape Metrics in Freshwater Research and Management*, 20 LANDSCAPE ECOLOGY 113, 113–15, 121–24 (2005) (advising the use of shape- and extent-based (pattern) over percentage-based (composition) metrics in watershed studies to measure the impact of landscape-scale land use on water quality, especially within progressively urban watersheds).

138. See Allan, *supra* note 2, at 258, 263–67 ("[R]iverine landscapes increasingly are viewed as 'riverscapes' . . . . Hundreds of studies document statistical associations between land use and measures of stream condition using multisite comparisons and empirical models, and collectively these studies provide strong evidence of the importance of surrounding landscape and human activities to a stream's ecological integrity."); Clarke, *supra* note 25, at 442–46 (endorsing an "eco-hydromorphic approach to sustainable river restoration" which is sensitive to a breadth of spatial and temporal scales: from catchment area to individual pool-riffle sequences and from geological time to seasonal changes).

139. The earlier depiction of a belief in stream "self-help" among rural New York riparians makes any claim for widespread knowledge of basic watershed protection suspect. Nevertheless, as the existence of the many educational publications cited in this Article attest, this is a half-full/half-empty sort of issue. As further support, FINGER LAKES LANDSCAPES: LANDSCAPING FOR WATER QUALITY IN THE FINGER LAKES REGION (2006), an outreach effort of the Cornell University Cooperative Extension of Onondaga County, is now in its second printing. One watershed educator takes stock: "Of the ten-to-fifteen percent [of the general population residing on a lake or watercourse or otherwise having a potentially direct impact on a floodplain in the Finger Lakes], there is an overall sense of importance to protect the lakes and perhaps some knowledge of general themes. When it comes to specific practices—then it gets sketchy. The real education takes place when I see an individual problem and work with the landowner or builder to fix it." Site Visit and Interview with Olvany, *supra* note 20. His "personal pet peeve" is hay bales. Many builders think that placing a

### C. Unreasonably Disappearing Streams

Because unreasonably disappearing streams connect to the proposed matrix as a sort of intervention (cell 4), it would be an oversight not to examine how New York's riparianism has gradually embraced a conjunctive approach by equating groundwater pumping with surface water diversions that diminish instream flows.<sup>140</sup> The initial absence of an integrated perspective is neither unique to the state nor traceable to one particular factor:

Blame for the failure of the courts to recognize many of these developments [particularly the discovery that groundwater does not run in channels like diffuse surface water, but rather fills the interstices of its substrate] may lie partly with the technical experts who hesitate (because of a fear that such presentation will not 'get over' with the court) to present ground water situations in the light of the latest knowledge available regarding them, and partly with the courts themselves, who, for their knowledge of a very complicated technical subject, rely too greatly upon legal decisions written by men who, though well grounded in the law, are not familiar with the fundamental principles of ground water hydrology. Thus a vicious circle exists . . . .<sup>141</sup>

Complicating the matter, one Rockland County public health engineer reports "the science [for understanding groundwater] has been somewhat sketchy" due to the highly individualized geologic features of each and every community.<sup>142</sup> That being said,

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hay bale in the path of effluence from a jobsite will force the water to pool and heavier sediments to precipitate before the water seeps through the organic fibers and continues downslope. Actually, the water noses around the fibers and increases the sediment load headed towards the lake or watercourse. The bales should instead be opened and the hay spread like mulch over the disturbed soil. *See id.*

140. *See generally* Peter N. Davis, *Wells and Streams: Relationship at Law*, 37 Mo. L. REV. 189, 204–34, apps. I & II (1972) (providing a fine-grained analysis of groundwater cases throughout the riparian states and calling for the widespread adoption of correlative rights, which treat groundwater as a usufructory resource available for private use only as balanced against the equities of conflicting users).

141. Samuel C. Wiel, *Law and Science: Their Cooperation in Groundwater Cases*, 13 S. CAL. L. REV. 377, 378 (1940) (quoting California civil engineer Donald M. Baker) (citation omitted); *see also* Tarlock, *Property Rights*, *supra* note 68, at 86–87 (identifying problems with the separate allocative regime for groundwater under riparianism).

142. Telephone Interview with Catherine Quinn, Sr. Public Health Eng'r, Env'tl. Health Div., Health Dep't, Rockland County (Nov. 23, 2005). Given that Rockland County supplies over two-thirds of its drinking water from groundwater, she advocates mapping the Ramapo-Mahwah Aquifer (which as a point of interest is characterized by Triassic sandstone, a highly productive rock that "holds much water and yields much water"). *See id.*

groundwater doctrine simultaneously represents a substantial chapter in the history of the state's riparianism and a plausible road map for its ongoing contribution to "a new narrative of owning," one which will "promote land health and at the same time respect the individual, encourage enterprise, and allow for private rights in land."<sup>143</sup>

By conceptually isolating "percolation or underground currents" from a "spring or open, running stream," early decisions seamlessly followed the English rule of the absolute ownership of groundwater upon a landowner's capture of it, even when a neighbor claimed a related decrease in his water supply.<sup>144</sup> In 1888, the New York Court of Appeals flatly dismissed the conjunctive approach: "No stream or water-course ran from the [defendant's] spring. The source from which it came, and the flow of its waste or surplus, were alike under-ground, concealed, and matters of speculation and uncertainty. . . . [N]one of the rules relating to water-courses, and their diversion apply."<sup>145</sup> Yet four years later, an intermediate court managed to rely on this unequivocal precedent to find contractors of the City of Brooklyn liable for reducing the level of James Brook, which fed plaintiff's pond.<sup>146</sup> Calling the case "a very simple action, and based upon well-defined principles of law," the judge implicitly accepted the conjunctive approach: although the municipality had the right to lay a conduit across or

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Responding to Ms. Quinn, it is fair to state that the basic parameters of ground-water-surface water interaction are by now understood. If the level of a watercourse is lower than the water table (*i.e.*, the water level of the local aquifer), the stream gains water from the aquifer; if the stream level is lower than that of the water table, the stream loses water to the aquifer. Sooner or later equilibrium is reached. GLENNON, *supra* note 22, at 42–43. Because well withdrawals typically exceed the rate at which groundwater flows towards the well, the falling water table forms a drain vortex (cone of depression) centered on the well casing. *Id.* at 42. The vortex expands in pace with the withdrawals until it reaches a river or stream—the base flows of which may already be compromised due to a lowered water table elsewhere in the watershed or to upstream diversions of surface supply—and captures those waters directly. See *id.* at 46–47.

143. ERIC T. FREYFOGLE, *BOUNDED PEOPLE, BOUNDLESS LANDS: ENVISIONING A NEW LAND ETHIC* 109, 111 (1998).

144. See, *e.g.*, *Village of Delhi v. Youmans*, 45 N.Y. 362, 363 (1871); see also *Ellis v. Duncan*, 21 Barb. 230, 233–34 (Sup. Ct. Gen. Term N.Y. County 1855) ("To award compensation for, or prevent the infliction of such injuries, would seriously arrest the march of improvement, and often so seriously impair the use of property as to render it of little or no value.").

145. *Bloodgood v. Ayres*, 15 N.E. 433, 434 (N.Y. 1888). By this time, in contrast, the reasonable use doctrine as applied to rivers and streams was a tenet of New York's riparianism. See *supra* notes 37–46 and accompanying text.

146. *Covert v. Valentine*, 21 N.Y.S. 219, 221 (N.Y. Sup. Ct. Gen. Term 2d Dep't 1892).

through its own land, and to consume any amount of subterranean water, riparian doctrine still prohibited "interfer[ing] with some stream or pond above ground."<sup>147</sup> Put another way, if the effects of diverting groundwater were unknowable and unpredictable, the court deemed it unfair for liability to attach to its use—but by the same token, liability would accompany each incremental notch of familiarity and foreseeability, here achieved through the visible changes to surface waters.<sup>148</sup>

The doctrine continued to move rapidly, if stepwise. In *Smith v. City of Brooklyn*, decided in 1897, an intermediate court found that "the whole spring level of the surrounding country has been lowered, and running streams and ponds dried up . . . . It needed no occult power to foresee that the construction of these water works would drain a large part of the territory contiguous thereto. . . ."<sup>149</sup> Perhaps motivated by the egregious municipal intent, the *Smith* court made a doctrinal leap by discovering inconsistency in a rule that gives the right to use a stream and the right to destroy that very same stream to competing persons.<sup>150</sup> In another municipal pumping case four years later, the state's highest court seized upon the "wells and pumps of such pervasive and potential reach that from their base the defendant can tap the water stored in the plaintiff's land, and in all the region thereabout, and lead it to his own land, and by merchandising it prevent its return . . . ."<sup>151</sup> Discounting the value of an urban water supply relative to plaintiff's celery and watercress crop, it too applied riparian doctrine and the artificial/natural distinction to groundwater by affirming the lower finding of New York City's trespass beyond the boundaries of its two-acre Spring Creek Pumping Station.<sup>152</sup>

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147. See *id.* at 219–20.

148. Harkening back to Mr. Baker's observation, see *supra* note 141 and accompanying text, it is worth noting that the court believed it equally plausible that groundwater would run in channels or exist freeform; still, the notion of "subterranean water having no definite channel" was certainly mysterious, perhaps exceptional. See *Covert*, 21 N.Y.S. at 220.

149. *Smith v. City of Brooklyn*, 46 N.Y.S. 141, 144 (*App. Div. 2d Dep't* 1897).

150. See *id.* at 147 (ordering a new trial).

151. *Forbell v. City of New York*, 58 N.E. 644, 646 (N.Y. 1900). See also *Hathorn v. Dr. Strong's Saratoga Springs Sanitarium*, 106 N.Y.S. 553, 555 (Sup. Ct. Special Term Saratoga County 1907) (viewing the decisions in *Forbell* and *Smith* as relying upon the proposition that using artificial means to attract or divert percolating waters from another's property represents an unreasonable acquisition of those waters).

152. See *Forbell*, 58 N.E. at 646. The court's characterization of the use of the water as commercial and distant sounds in the conservatory prohibition against non-riparian use, but the opinion belies this interpretation by suggesting the city could instead take the overlying land through eminent domain. See *id.*

Despite these legal developments, the two-step between hydrology and His or Her Honor remains an untutored dance.<sup>153</sup> In a case decided forty years ago, *Stevens v. Spring Valley Water Works and Supply Company*, a longtime resident of Rockland County alleged that a clean and year-round stream (witnessed as flowing at the same depth of four-to-six inches in 1892) ran dry after private water supplier Spring Valley Water Works (now United Water New York) tied a new well, situated approximately one thousand feet from plaintiff's property, to its distribution system.<sup>154</sup> At trial, a battle of the experts ensued. A sanitary engineer opined that the lowering of the water table in the stream's catchment area caused the watercourse to disappear, and a groundwater geologist testified that the well drew its water from below an impenetrable layer, a source distinct from the percolating groundwater above the overburden that once fed the now-defunct stream.<sup>155</sup> Upholding the jury's return of damages for the plaintiff and by-and-large ignoring the competing causalities presented, the appellate court extended the rule of reasonable use to the conflict at bar because the stream's "destruction was complete, as its source of life was cut off."<sup>156</sup> One could read the decision, like the court suggests, as though the plaintiff had a property interest in the existence of the stream itself—and not merely a

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153. A line of reservoir heightening cases ran contemporaneously to the groundwater pumping cases, likewise prompting creativity among New York judges. In *Pixley v. Clark*, defendants sought to escape liability because it was not evident how constructing an embankment along a watercourse, upstream of their dam, saturated plaintiffs' adjacent property. See 35 N.Y. 520, 530 (1866). The chief judge responded: "The defendant, then, is as much answerable for it as one would be who choked another to death, though it should be proved that science was utterly unable to declare how life should entirely leave the body by mere pressure upon the throat for a couple of minutes." *Id.* He then shied from "the mysteries that attend the circulation of subterranean water" to ground the ruling for plaintiffs in the traditional, but arguably inapposite, prohibition against interfering with surface streams. *Id.* at 530–31. Cutting the other way, the New York Court of Claims in *Flanigan v. New York* similarly refused to address the plausibility of plaintiffs' hypothesis, namely that construction of the Champlain Canal lowered the regional water table and depleted her wells thereby. See 183 N.Y.S. 934, 935 (Ct. Cl. 1920). Rather, the court fell back on a unique doctrinal mix of the absolute ownership of groundwater and *sic utere* to deny her claim for damages. See *id.* at 938, 939.

154. *Stevens v. Spring Valley Water Works & Supply Co.*, 247 N.Y.S.2d 503, 504, 505 (App. Div. 2d Dep't 1964).

155. See *id.* at 505–06, 506–07.

156. See *id.* at 510–11 (quoting *Smith v. City of Brooklyn*, 46 N.Y.S. 141, 146 (App. Div. 2d Dep't 1897)).

liability-bounded usufruct in the molecules of water already flowing past his door.<sup>157</sup>

Fast forward to 2002, when employees of the Rockland County Environmental Health Division were compelled to suspend their assignment to collect water quality samples at stream-tributary nodes upon discovering that the Mahwah River had disappeared, as had Cherry Brook along Pascack Road.<sup>158</sup> The disturbing phenomenon only confirmed a most dramatic occurrence in 1981: the level of the Ramapo River dropped significantly during a pump test of ten wells newly-drilled by United Water New York.<sup>159</sup> Based on the modern precedent of *Stevens v. Spring Valley Water Works* and the increasingly ardent quest to understand local ground-to-surface hydrologic connections,<sup>160</sup> it is not inconceivable that a private and non-statutory cause of action lies for riparians along similarly depleted watercourses assuming (1) measurable damages for diminished use and enjoyment or real estate value and (2) an identifiable agent and precipitating event.<sup>161</sup>

#### IV. CONCLUSION

State statutory permitting requirements for water usage, which purportedly supersede common law riparian doctrine, fail to address a major concern pertaining to the quality and quantity of water supplies throughout the eastern United States: how to maintain and restore stream corridor health in light of ongoing

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157. *See id.* at 510.

158. Telephone Interview with Quinn, *supra* note 142.

159. *See id.* The Bureau of Water Resources at DEC recommended conditioning the company's permit: should the flow of surface water dip below eight million gallons per day, the groundwater pumping would be drastically reduced or stopped altogether. *Id.*

160. *See, e.g.*, Letter from Shannon Martin LaFrance, Dutchess County Legislator (17th Dist., Fishkill, N.Y.) and Mary M. Swartz, Dutchess County Legislator (12th Dist., East Fishkill, N.Y.) to Chairman Brad Kendall and Legislators, Dutchess County Legislature, N.Y. (Oct. 6, 2005) (on file with author) (calling for, *inter alia*, updates to reports that identify groundwater availability and analyze build-out and safe well yield for different land uses, and assessments of the utility of input/output studies for the Wappingers Creek, Ten Mile River, and Fishkill Creek Watersheds). The Dutchess County Legislature is currently funding the Groundwater Supply Tracking Project to identify "early warning signs of aquifer stress from drought conditions and development." *See* Water and Wastewater Authority, Dutchess County, NY Online: Mission Statement, <http://www.dutchessny.gov/CountyGov/Departments/WaterandWaste/WRIndex.htm> (last visited January 24, 2008).

161. *Cf. Hathorn v. Dr. Strong's Saratoga Springs Sanitarium*, 106 N.Y.S. 553, 559 (Sup. Ct. Saratoga County 1907) (declining to award plaintiffs more than nominal damages because defendants represented only one set of pumpers among many, and latecomers at that).

development pressures and the iterative effects of past abuses. It is the premise of this Article that the colorful cases of historic and modern riparianism are crucial to fostering locale-appropriate best management practices as well as water and land interventions through their rejection of artificiality and concurrent sympathy towards adaptive watershed management. Specifically, these tendencies encourage development that is proportionate to natural stream size and strength and congruent with presently-accepted forms of water consumption, presume temporariness regarding manmade changes to watercourses and (more fundamentally) regarding manmade watercourses, favor gradual hydraulic shifts, disallow conveyances and pathways for water not the original streambed, and prohibit the use of strong wells and pumps that bring overmuch groundwater to the surface. Against the long history of agricultural and industrial settlement in New York State, which has irrevocably changed the state's fluvial geomorphology, a realistic return to the natural state of dynamic equilibrium requires nothing less than calculating an imitation of erstwhile stream flows, and then funding, engineering, and implementing their restoration.

Seen this way, the answer to the overarching theoretical question of who owns the stream becomes the answer to the blessedly practical question of who holds title to the riparian lands and what she expects as an owner. By all accounts, the agrarian property regime marked by natural flow had succumbed around the turn of the nineteenth century to the march of progress and the liability regime of beneficial use. We now see a return to a property regime, but one—to paraphrase *Smith v. City of Brooklyn* from the nineteenth century and *Stevens v. Spring Valley Water Works* from the twentieth—that generates an interest in the existence of the stream itself, measured in large part by a healthy and dependable base flow year-round. New and more subtle grounds for complaint are emerging. As one hypothetical, if a stream moves away from a recorded shoreline boundary due to an opposite riparian's annual dredging, the owner of the eroded parcel should be afforded opportunity to litigate for return of the shoreline acreage (resurvey) and prompt rehabilitation of the obstruction (either retrofit or removal, here understood as cessation of the destructive habitual practice).<sup>162</sup>

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162. The scenario raises the possibility that were plaintiff to prevail and the upstream riparian's property subdivided to restore the equivalent of the eroded land, plaintiff might acquire title to parcels on both sides of the watercourse. Under New

This Article proposes a variety of additional grounds for riparian suit, such as enjoining the clearing of an obstructive point bar, forcing the redesign of a poorly located stormwater conduit, or seeking damages for the drying up of a beautiful river. Considering that the “wall of environmental law enacted in the 1970s remains . . . tremendously valuable at slowing disaster, but [is] ultimately not enough without additional systemic changes,”<sup>163</sup> small-time litigation within the ambit of the common law represents a populist, place-by-place, and potentially equitable tool to convert the rights of one landowner to riparian health into the duties of another to act or to forebear in effecting changes to a watercourse.<sup>164</sup> As the evolution of New York’s groundwater doctrine illustrates, courts’ incremental approach justifiably infuses “what the law is” with “what the law ought to be” when faced with an increasing number of land use conflicts around related issues; the judiciary is educated, in the best of cases, by deepening scientific understanding of geologic and ecologic phenomena.<sup>165</sup>

Indeed, riparianism is best known for its historically instrumentalist character in meeting the paired societal demands for resource allocation and wealth distribution:

The judicial elimination of the natural flow doctrine’s veto power over development, a traditional privilege of the landed

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York’s source-of-title test, the intervening neighbor could then, unbelievably, lose all his accustomed riparian rights depending on the configuration of his original parcel. See discussion, *supra* note 64.

163. Peter M. Lavigne, *The Movement for American Ecosystem Restoration and Interactive Environmental Decisionmaking: Quagmire, Diversion, or Our Last, Best Hope?*, 17 TUL. ENVTL. L.J. 1, 7 (2003). See generally MICHAEL SHELLINGER & TED NORDHAUS, *THE DEATH OF ENVIRONMENTALISM: GLOBAL WARMING POLITICS IN A POST-ENVIRONMENTAL WORLD* 8–10 (2004), available at [http://www.thebreakthrough.org/images/Death\\_of\\_Environmentalism.pdf](http://www.thebreakthrough.org/images/Death_of_Environmentalism.pdf) (attributing to the powerful legislation that birthed the modern environmental movement in the United States a narrow confidence in policy proposals for technological remedies which is ineffective against mainstream ideology).

164. See DeWitt John, *Civic Environmentalism*, in ENVIRONMENTAL GOVERNANCE RECONSIDERED 219, 222, 226 (Robert F. Durant et al. eds., 2004). But see Eric T. Freyfogle, *Eight Principles for Property Rights in the Anti-Sprawl Age*, 23 WM. & MARY ENVTL. L. & POL’Y REV. 777, 784–85 (1999) (“[P]eople acting separately simply lack the powers and options that communities possess, and lack too the time and knowledge to understand many [environmental and land use] problems [that] can be understood and described only on a scale well above the individual land parcel.”).

165. See generally Fred P. Bosselman & A. Dan Tarlock, *The Influence of Ecological Science on American Law: An Introduction*, 69 CHI.-KENT L. REV. 847, 849–71 (1994) (tracing the influence of ecological studies on environmental law and policy: from the Progressive Era’s emphasis on empiricism and physical context to the current non-equilibrium paradigm).

gentry, greatly benefited a growing entrepreneurial middle class. Access to water power was no longer confined to the rich who could harness the stream and return it unchanged all within the boundaries of their land . . . . Water power was now available at a competitive price to all who could afford a small tract suited for a mill seat.”<sup>166</sup>

This classic interpretation of wholesome entrepreneurship, carried out at the fall of a river or on a robust yet thinly-settled stream, meshes remarkably well with pragmatic instrumentalism, which became recognizable as a homegrown American legal theory soon after reasonable use became firmly entrenched in New York’s riparianism.<sup>167</sup> Ensuring the effectiveness of legal action despite the certain need for trial and error in times of rapid change, “the theory is pragmatic in its emphasis on the primacy of context in arriving at law’s ends and means, stressing time, place, circumstance, and particular wants and interests rather than ideology, abstract theory, principle, and an *a priori* normative view of the ‘nature of things.’”<sup>168</sup> Because social reality served as the defining paradigm, and was sufficiently cushioned by hydrological innocence, water law stayed malleable. Either courts ensured that the flow of a watercourse remained natural or the needs associated with the use of the watercourse counted as natural—but no judge had ever sought to ensure the abstract and ideological fulfillment of natural needs through natural flows!

Paradoxically, that is precisely the goal of the current holistic view of watersheds and the land and water resources they embrace. Whereas it is false to say that regulated riparianism has supplanted riparianism, it is true to say that alongside regulated riparianism, the common law doctrine is in the process of supplanting itself, creatively and accretively, and potentially enriching the statutory realm thereby.<sup>169</sup> While instrumentalist and

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166. Robert H. Abrams, *Charting the Course of Riparianism: An Instrumentalist Theory of Change*, 35 WAYNE L. REV. 1381, 1394 (1989); cf. Jedediah Purdy, *The American Transformation of Waste Doctrine: A Pluralist Interpretation*, 91 CORNELL L. REV. 653, 675–96 (2006) (explaining how contemporaneous economic doctrine and political culture factored into the repudiation of the English doctrine of waste by the courts of the early Republic).

167. See Robert S. Summers, *Pragmatic Instrumentalism in Twentieth Century American Legal Thought—A Synthesis and Critique of Our Dominant General Theory about Law and Its Use*, 66 CORNELL L. REV. 861, 862–63 (1981).

168. *Id.* at 864.

169. See David Schoenbrod, *Protecting the Environment in the Spirit of the Common Law*, in THE COMMON LAW AND THE ENVIRONMENT: RETHINKING THE STATUTORY BASIS FOR MODERN ENVIRONMENTAL LAW 3, 5, 20 (Roger E. Meiners & Andrew P.

needs-based yet, the doctrine is well on its way to a full-fledged prescriptive and ecological destination, but one no longer allocative or distributive. Rooted firmly in precedent, today's riparianism is capable of weighing time, place, circumstance, and above all, a normative view of the "things of nature."

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Morriss eds., 2000) [hereinafter COMMON LAW AND ENVIRONMENT]. See generally Jack Beatson, *Has the Common Law a Future?*, 56 CAMBRIDGE L.J. 291, 313 (1997) (suggesting that "studying the common law will eventually be like shining an ever brighter light on an ever shrinking object" if attorneys do not animate statutory questions with the interpretative principles of the common law); Alexandra B. Klass, *Common Law and Federalism in the Age of the Regulatory State*, 92 IOWA L. REV. 545, 580 (2007) (concluding, in the face of the "new federalism" and reduced Congressional ability to regulate broadly on environmental issues, "Efforts to make renewed use of state common law augmented by statutory policy and data that has been created over the past thirty years can be justified not only to increase environmental protection, but also to bring a new coherence to environmental law which has always been a function of both statutes and common law."). Such calls for a moderated return to the common law must be differentiated from those voices that ostensibly promote the common law as a more defensible alternative to environmental protection than the regulatory state, but truthfully would delight in a market-dominated system which lacks all limits to private or public action save those secured by purchase. See, e.g., Robert C. Paehlke et al., *Burning Rivers, Common Law, and Institutional Choice for Water Quality*, in COMMON LAW AND ENVIRONMENT, *supra*, at 54, 79.