

Michigan Journal of Environmental & Administrative Law

Volume 5 | Issue 1

2015

Water, Water, Everywhere: Surface Water Liability

Jill M. Fraley

Washington and Lee University School of Law, fraleyj@wlu.edu

Follow this and additional works at: <https://repository.law.umich.edu/mjeal>



Part of the [Environmental Law Commons](#), [Land Use Law Commons](#), [Public Law and Legal Theory Commons](#), and the [Water Law Commons](#)

Recommended Citation

Jill M. Fraley, *Water, Water, Everywhere: Surface Water Liability*, 5 MICH. J. ENVTL. & ADMIN. L. 73 (2015). Available at: <https://repository.law.umich.edu/mjeal/vol5/iss1/2>

<https://doi.org/10.36640/mjeal.5.1.water>

This Article is brought to you for free and open access by the Journals at University of Michigan Law School Scholarship Repository. It has been accepted for inclusion in Michigan Journal of Environmental & Administrative Law by an authorized editor of University of Michigan Law School Scholarship Repository. For more information, please contact mlaw.repository@umich.edu.

WATER, WATER, EVERYWHERE: SURFACE WATER LIABILITY

*Jill M. Fraley**

By 2030 the U.S. will lose around \$520 billion annually from its gross domestic product due to flooding. New risks resulting from climate change arise not only from swelling rivers and lakes, but also from stormwater runoff. According to the World Bank, coastal cities risk flooding more from their poor management of surface water than they do from rising sea levels.

Surface water liability governs when a landowner is responsible for diverting the flow of water to a neighboring parcel of land. Steep increases in urban flooding will make surface water an enormous source of litigation in the coming decades. But surface water jurisprudence is ill equipped for this influx. The law of surface waters remains cumbersome, antiquated, and confusing. Furthermore, the doctrine itself has exacerbated the problem by privileging land development over maintaining natural landscapes, thereby eliminating what would have been carbon sequestration devices, as well as natural buffers against storm surges, sea level rise, and flooding.

This Article critiques surface water liability rules through original research into the agricultural science that supported these legal doctrines. By establishing how the current legal doctrines emerged from science now known to be highly flawed, this Article demonstrates the need to break with past doctrines and engage in a genuine rethinking of how to manage surface water liability in the twenty-first century. Finally, this Article proposes a new liability rule that would manage landowner expectations while avoiding the pro-development bias currently entrenched in the jurisprudence.

TABLE OF CONTENTS

INTRODUCTION	74
I. THE AGRICULTURAL SCIENCE BEHIND SURFACE WATER JURISPRUDENCE	77
A. <i>British Attitudes Toward Land Management</i>	78
1. Fear and Loathing, or How British Landowners Felt About Wetlands	79
2. A Swamp Would Be a Marvelous Field: The Agricultural Science that Affirmed Drainage	79

* Associate Professor of Law and Director of the Center for Law & History, Washington and Lee University School of Law. The author greatly appreciates the comments and insights of Al Brophy, Jon Caulder, Niamh Connolly, John Eller, Petr Koblovsky, Jed Purdy, Desmond Ryan, Yvonne Scannell, and Rachael Walsh. I also appreciate the support and funding of the U.S. Fulbright program; I drafted this Article while a Fulbright Scholar in residence at Trinity College, Dublin.

3.	For Country and King: Drainage as Politics, Economics, and Religion	82
4.	How Landowners and the State Responded to the Science and Cultural Forces	85
B.	<i>Colonization and Exporting Land Improvement Philosophies</i>	87
1.	Land Improvement and Land Claiming During Colonization	87
2.	British Colonists and Land Improvement in Early North America	89
C.	<i>American Adoption of the British Improvement Philosophy</i> . .	91
II.	LIABILITY FOR SURFACE WATER	92
A.	<i>Defining Surface Waters and Watercourses</i>	92
B.	<i>The Common Enemy Doctrine</i>	93
C.	<i>The Civil Law Rule</i>	97
D.	<i>The Reasonableness Rule</i>	98
E.	<i>Special Rules for Special Geography</i>	99
1.	Raising the Landscape and the Natural Flow Rule .	99
2.	Adopting Both Traditional Surface Water Doctrines, Depending on Whether the Landscape Is Urban or Rural	103
III.	NAVIGATING SURFACE WATER LIABILITY IN THE TWENTY-FIRST CENTURY	104
A.	<i>Complex Litigation and Complications from Pro- Development Influences</i>	105
B.	<i>Applying Current Rules Reinforces Pro-Development, Pro- Drainage Ideology and Advances the Trajectory of a Changing Climate</i>	107
1.	Reasonableness	109
2.	Good Husbandry	110
3.	Social Utility	112
4.	Benefits and Burdens for Injunctions	113
5.	Split Rules for Urban/Rural Landscapes	114
C.	<i>Re-Thinking Surface Water Liability in the Twenty-First Century</i>	114
	CONCLUSION	116

INTRODUCTION

In March of 2015, *Scientific American* estimated that the number of people worldwide who will be affected by flooding from rainfall each year will

rise to 54 million per year by 2030.¹ Researchers at the World Resources Institute estimate that flooding currently costs around \$96 billion in gross domestic product worldwide; in 2030, that number rises to \$520 billion per year.²

The problem is not just extreme rain or snowfall. The rapid expansion of urban areas, combined with extreme precipitation, doubles flood risks.³ These new risks arise not from swelling rivers and lakes, but from stormwater runoff. Urban construction, including changes to elevations of lots, paving, and building prevent natural absorption of water and channel it into lower-lying areas.

Because flooding is the most frequent natural catastrophe,⁴ the topics of flooding and sea level rise have dominated discussions about water and climate change. Surface water, on the other hand, has been neglected. We have ranked these concerns entirely backwards.

The World Bank, which has cited urban flood risk management as a major future concern, specifically cautions against thinking in terms of sea level rise. The World Bank instead warns that more coastal cities risk flooding from poor management of surface water than from rising sea levels.⁵

Meanwhile, legal scholars have failed to engage the jurisprudence of surface water liability, which governs when a landowner is responsible for increasing the flow of water to a neighboring parcel of land.⁶ Generally, landowners increase the flow on a neighboring parcel either inadvertently,

1. Evan Lehmann & ClimateWire, *Extreme Rain May Flood 54 Million People by 2030*, SCI. AM. (Mar. 5, 2015), <http://www.scientificamerican.com/article/extreme-rain-may-flood-54-million-people-by-2030/>.

2. *Id.*

3. *Id.*

4. The World Bank, *Development Dialogue: Urban Flood Risk Management*, STRIKING POVERTY, <http://strikingpoverty.worldbank.org/conversations/development-dialogue-urban-flood-risk-management> (last visited Aug. 28, 2015).

5. *Id.*

6. Only a few articles directly focus on liability for surface water and each dates to several decades ago. *See generally* Donald V. Dobbins, *Surface Water Drainage*, 36 NOTRE DAME L. REV. 518 (1960–1961); Charles E. Bridges, *The Application of Surface Water Rules in Urban Areas*, 42 MO. L. REV. 76 (1977).

Most commentary mentions surface water liability in passing while addressing other related issues such as ground water pollution or ground water rights. *See, e.g.*, Wendy B. Davis, *Reasonable Use Has Become the Common Enemy: An Overview of the Standards Applied to Diffused Surface Waters and the Resulting Depletion of Aquifers*, 9 ALB. L. ENVTL. OUTLOOK 1 (2004) (arguing for changes in surface water rules to support robust aquifers, while only briefly mentioning the liability-related surface water rules).

More recently, a few student notes and comments have appeared that similarly gloss over surface water liability. *See, e.g.*, Darin L. Whitmer, Note, *Common Enemy or Unilateral Threat: Why Jurisdictions Need to Become Reasonable in Regards to Diffuse Surface Waters*, 41 CREIGHTON L. REV. 423 (2008).

through construction, or intentionally in an effort to protect their own land from flooding. Multiplying the scale of future urban flooding by damages and business losses means that surface water liability shows all the signs of being an enormous source of litigation in the coming decades.

Surface water jurisprudence is badly situated for this influx of cases. In the vast majority of jurisdictions, the law of surface waters remains cumbersome and antiquated. Perhaps worse, it is simply confusing to attorneys, clients, and courts.

Surface water cases form an endless mire of both torts and property law.⁷ Surface water liability relies on causes of action from nuisance to intentional tort to negligence to trespass.⁸ Defenses also come from both fields of law and include acts of god⁹ and easements. As the Indiana Supreme Court has observed, while the basic rules of surface water “are grounded upon real property concepts[,] [t]he modifications engrafted upon them resulted from the use of tort law concepts[.]”¹⁰ Inevitably, courts struggle with this fuzziness.

This Article critiques the surface water liability rules incorporated across most jurisdictions in the United States through original research into the agricultural science that supported these legal doctrines. By demonstrating how the legal doctrines emerged from agricultural science that we now know is not only highly flawed, but also detrimental to the common well-being, this Article demonstrates the need to break with past doctrines and engage in a genuine rethinking of how to manage surface water liability in the twenty-first century.

This Article proceeds in three parts. Part I introduces original research into the agricultural science that supported the surface water liability rules

Those writers who have discussed surface water liability, student or not, tend to focus on a single jurisdiction. *See, e.g.*, Nathan W.B. Smith, *Drainage Easements: Caught in the Mire of Alabama Common Law*, 33 CUMB. L. REV. 659 (2002–2003) (discussing surface water in the context of drainage easements within Alabama); Gregory C. Sisk, Comment, *Toward a Unified Reasonable Use Approach to Water Drainage in Washington*, 59 WASH. L. REV. 61 (1983–1984) (discussing surface water rules in the state of Washington); Seth P. Hayes, Note, *In re Flood Litigation: When it Rains, the Lawsuits Pour*, 108 W. VA. L. REV. 171 (2005–2006) (considering surface water rules, among other approaches to flood litigation, within West Virginia).

7. As the California Supreme Court explained, “much of the confusion in [surface water] law regarding rules and theories is caused by a failure to ascertain whether water doctrine arises under property or tort law.” *Keys v. Romley*, 412 P.2d 529, 536 (Cal. 1966).

8. *See* *Kueffer v. Brown*, 879 S.W.2d 658, 661–65 (Mo. Ct. App. 1994).

9. *See generally* Jill M. Fraley, *Humans Can Predict and Affect What Once Were “Acts of God”*, N.Y. TIMES (Nov. 18, 2013), <http://www.nytimes.com/roomfordebate/2013/11/18/natural-disasters-or-acts-of-god/humans-can-predict-and-affect-what-once-were-acts-of-god> (discussing the “Acts of God” defense).

10. *Argyelan v. Haviland*, 435 N.E.2d 973, 975–76 (Ind. 1982).

adopted across the United States. This part contextualizes the evolution of land improvement and drainage philosophy in the United States by grounding it in the agricultural science of the time.

Part II presents the basics of the surface water liability doctrine, explaining how surface waters are defined, how multiple causes of action are used to pursue surface water damages, and how the major rules for surface water have evolved. This part will pay particular attention to how doctrines evolved to support land management strategies of drainage and improvement.

Finally, Part III will assess the current state of surface water rules and examine how judicial applications of these doctrines continue to incorporate the original foundations in eighteenth century agricultural science. The Article further investigates the impact of these doctrines on land development, concluding that modern surface water liability expresses multiple preferences for development over non-development of land. This continued preference for development contributes to climate change by supporting the destruction of natural carbon sequestration devices, and it increases the vulnerability of populations to the effects of climate change by reducing natural landscapes that provide buffers against storms and mitigate effects of both sea level rise and flooding. The Article concludes by calling for a reexamination of surface water liability within legislatures and suggesting a new approach that would be more consistent with modern theories of tort and property liability, as well as more sustainable.

I. THE AGRICULTURAL SCIENCE BEHIND SURFACE WATER JURISPRUDENCE

*[T]here is no other Remedy but making a Water-Furrow in the adjacent Field to carry it off . . . [Y]our neighbor will hardly refuse to let you . . . unless he be over scrupulous about those two Words mine and thine, which have been the bone of Contention betwixt all Mankind ever since the Golden Age*¹¹

North American surface water rules evolved in the context of a specific land and development philosophy, one supported by the agricultural science of the eighteenth century. Our surface water rules have deep roots in the British¹² experience with their own low-lying countryside and in the British

11. ALEXANDER BLACKWELL, A NEW METHOD OF IMPROVING COLD, WET, AND BARREN LANDS 10 (n.p., 1741).

12. This Article discusses ideologies of land management that were present in England and Wales prior to the Acts of Union with Scotland in 1707, as well as those present in England, Scotland and Wales (and the colonies) after 1707. Given that the primary focus of this Article is the policies as they were incorporated within the North American colonies

colonization process in North America. The following sections provide some context by illuminating social and political pressures for drainage, political support for such projects, and, most importantly, the agricultural science that supported the British attitude toward drainage.

I have chosen to constrain and manage the task of engaging with the historical mindset¹³ by elaborating a narrow history of land drainage philosophy that converges neatly with the case study of surface water liability. Additionally, I have incorporated small portions of primary sources throughout that allow the reader to directly experience the flavor of contemporaneous writings.

A. *British Attitudes Toward Land Management*

British attitudes toward wetlands might be described as a bit of superstition, a bit of science, and a smattering of politics. In the following subsections I explain how attitudes towards wetlands emerged from a long history of both rational and irrational fears about swamps—from legends of ghosts and witches to the dangers of navigating a bog on foot. Additionally, wetlands provided little to no economic return, adding frustration to fear. Culturally, one might say that the British were predestined to loathe wetlands. Building on this foundation, I explain how the agricultural science of the era neatly proposed an answer to this loathing: drain the wetlands, creating new flat land for planting. As technologies for drainage expanded and labor costs decreased with population pressure, drainage became more widely available. As availability increased, so did pressure on landowners from multiple sources: economic, political, and religious. In the third subsection I explain how these forces worked together to push drainage on landowners. Finally, in the last subsection I discuss the responses of the landowning British to these pressures.

after 1707, for ease of reference I have adopted the term “British” rather than alternating between “English,” “Welsh,” and “British.”

13. Admittedly, grasping the historical context can be a challenge for the modern mind. Professor Sax has eloquently explained the contrast between the modern environmental mindset and the one that predominated as late as 1962 by his dating. See Joseph L. Sax, *Ownership, Property, and Sustainability*, 31 UTAH ENVTL. L. REV. 1, 1–3 (2011). Such frustrations, however, cannot daunt us, particularly if we accept, as Professors Nash and Stern have persuasively argued, that psychological framing sharply impacts how we think about property and make decisions about property rules. Jonathan Remy Nash & Stephanie M. Stern, *Property Frames*, 87 WASH. U. L. REV. 449, 452–54 (2010).

1. Fear and Loathing, or How British Landowners Felt About Wetlands

*[H]eath, a place of tombs, Waste, desolate, where Ruin dreary dwells.*¹⁴

The landowning British¹⁵ long despised their marshes, fens, and swamps. Such lands were “utterly a waste.”¹⁶ The very existence of such drowned acres created “a nuisance” for their owners.¹⁷

But the sentiment went beyond economic frustration to outright fear. Daniel Defoe described such marshy areas as “dangerous Places to Man and Beast that many have been swallowed up in them.”¹⁸ Land that could not be drained resembled the diseased body—it was “incurable.”¹⁹ Artful descriptions tell us that such land was “miry ground, where the water stands, and there is no way to cleanse it[.]”²⁰ Fears of wetlands and what resided within them became an enduring feature of British literature that would be captured even centuries later in such classics as *The Hound of the Baskervilles*.²¹

Motivated by both their fears of the swamps and their frustrations with lands that were economically nonproductive, British farmers saw the situation in rather simple terms: the best thing to do with a swamp was to get rid of it if possible.

2. A Swamp Would Be a Marvelous Field: The Agricultural Science that Affirmed Drainage

From a modern perspective, it may be difficult to imagine why British landowners (and later colonists) would so fervently embrace drainage for agricultural purposes. Given the modern understanding of how crucial topsoil is to any agricultural enterprise,²² farmers today would understand how

14. David Mallet, *The Excursion, A Poem in Two Cantons*, in 1 THE WORKS OF DAVID MALLET 65, 78 (n.p., A. Millar & P. Vailant 1759).

15. I specify “the landowning British” because there was a poor, non-landowning population that derived some amount (if not all) of their meager living from the undeveloped areas, including the wetlands. Others have written of the opposition encountered from this population during drainage projects. See, e.g., C.S. ORWIN, THE OPEN FIELDS 19 (2d ed. 1954). For a discussion of the multiple attitudes to improvement and the poor among the British, see generally Laura Brace, *Husbanding the Earth and Hedging out the Poor*, in LAND AND FREEDOM: LAW, PROPERTY RIGHTS, AND THE BRITISH DIASPORA (A.R. Buck, John McLaren & Nancy E. Wright, eds. 2001) (arguing that improvement is a contested concept).

16. 1 JOHN MORDANT, THE COMPLETE STEWARD 74 (n.p., W. Sandby 1761).

17. *Id.* at 70–71.

18. WILLIAM ELLIS, AGRICULTURE IMPROVED 42 (London, 1745).

19. 2 JOHN FLAVEL, THE WHOLE WORKS OF THE REVERED MR. JOHN FLAVEL 173 (n.p., 1754).

20. *Id.*

21. ARTHUR CONAN DOYLE, THE HOUND OF THE BASKERVILLES (P.F. Collier 1902).

22. For a discussion of how topsoil is critical to food security, how certain soils do not support edible plants, etc., see Nicholas A. Fromherz, *The Case for a Global Treaty on Soil*

economically challenging it would be to make former swampland profitable for long enough to offset the costs of drainage. Understanding the British mindset requires knowledge of the evolution of agricultural science.

As of the mid-1600s, British farmers did not know what water, air, soil, or sunlight contributed to make plants grow.²³ They wondered “whether all things are nourished by Vapors, Fumes, Atoms, Effluvia?”²⁴ Just over a hundred years later, in 1757, the musings hardly differed. Writers wondered whether nutrients for plants came from “juices” in the earth or, instead, if they were “furnished by the air, and put into action by the sun.”²⁵ Farmers practiced historic techniques but held little knowledge on the specifics of how and why some plantings succeeded while others failed.

One experiment cited for years in the literature of agriculture and husbandry encouraged British readers to conclude that soil was less important in the success of plantings than other factors. The experiment involved placing a seedling weighing five pounds into a segregated portion of 200 pounds of earth.²⁶ The tree received water and sunlight; no soil or fertilizers were added or removed. After five years, the tree weighed 169 pounds, three ounces; the soil diminished only two ounces.²⁷ The experimenter concluded that “the vegetable nourishment is principally in the air.”²⁸ Soils, for their part, would “imbibe certain qualities from the air.”²⁹ Daniel Carless Webb argued that “enclosing land will in a degree assist vegetation, by preventing the winds from carrying away those fertile juices, which are the chief support of plants;” otherwise “[w]hatever rises from the earth by exhalation [] proceeds . . . [unless] some object detains it.”³⁰ Another camp saw the primary benefits in water, concluding that “[t]he ancients generally entitled the *Earth* to the production of the animals, vegetables, and other bodies, upon and about it[.]”³¹ Throughout the seventeenth and eighteenth

Conservation, Sustainable Farming, and the Preservation of Agrarian Culture, 39 *ECOLOGY L.Q.* 57, 63–68 (2012).

23. SAMUEL HARTLIB, *A DISCOURSE OF HUSBANDRY USED IN BRABANT AND FLANDERS* 38 (2d ed., n.p., 1652) (explaining that farmers “know not what Chalk, Ashes, Dung, Marle, Water, Air, Earth, Sun, etc. do contribute: whether something Essential, or Accidental; Material or Immaterial; Corporal or Spiritual”).

24. *Id.*

25. R. BRADLEY, *A GENERAL TREATISE OF AGRICULTURE, BOTH PHILOSOPHICAL AND PRACTICAL* 13 (n.p., 1757).

26. *Id.* at 13–14.

27. *Id.*

28. *Id.* at 15.

29. *Id.* at 18.

30. DANIEL CARLESS WEBB, *AN ADDRESS TO THE PUBLIC, SETTING FORTH THE BENEFIT ACCRUING TO THE COMMUNITY AT LARGE BY ENCLOSING THE LANDS NOW LAYING WASTE IN GREAT BRITAIN* 6 (n.p., 1795).

31. 1 JOHN MILLS, *A NEW AND COMPLETE SYSTEM OF PRACTICAL HUSBANDRY* 4 (n.p., 1757).

centuries, “the moderns, and among them some of very great name . . . declared in favor of *Water*, as the efficient cause of vegetation.”³² Persuasive writers concluded that “for the nourishment of vegetables, water is almost all in all.”³³ John Mills, for one, wrote, “Mr. Tull is the only person who makes earth the food of plants. The experience of all ages contradicts this opinion”³⁴ Writers wrestled over the benefits of air and water, but few saw importance in soil itself as more than a supporting structure for the roots.

The introduction of fertilizers into the soil—a common practice at the time—did not depend on a belief that the soil fed plants. As one writer observed: “[I]f the earth alone was the food of the plants, it would in all cases produce the same effect.”³⁵ Instead, planters often viewed fertilizers as changing the temperature of the soil rather than injecting any necessary nutrient. Thus, Mills could say, “[I]t is a great folly to dung grounds which require cooling, as it would be to administer poison, to cure a man of a fever.”³⁶ Similarly, the burning of land did not support husbandry by introducing ash or minerals to the soil, but rather by the “heat of the fire warming the Land [which] wastes the Acid, sterile juices, that hinder the fertility of it[.]”³⁷

What then was the purpose of soil? Lord Bacon concluded “the earth doth but keep the plant upright, and save it from over-heat and over-cold.”³⁸ Soils were only problematic when they did not “afford sufficient stability to the plants” or were unable to “retain moisture enough to convey them their necessary food.”³⁹ Thus, for example “[m]eer sand is too easily divested of its moisture and nutritive parts, which, on the other hand, are too closely locked up in clay.”⁴⁰ Managing for temperature, air, and water, then, “[g]rounds . . . as simple Clays, Sands, or Gravels, together may be all good, and all fit to bring forth increase; or all evil and barren, and unfit for profit[.]”⁴¹ The content of the soil mattered as a background: maintaining temperature, conducting air and water, and supporting stability.

32. *Id.*

33. *Id.* (internal quotation marks omitted).

34. *Id.* at 11.

35. *Id.*

36. *Id.* at 35.

37. JOHN MORTIMER, *THE WHOLE ART OF HUSBANDRY, OR THE WAY OF MANAGING AND IMPROVING OF LAND* 65 (n.p., 1707).

38. 1 MILLS, *supra* note 31, at 4 (internal quotation marks omitted).

39. *Id.* at 34.

40. *Id.*

41. GERVASE MARKHAM, *MARKHAM'S FAREWELL TO HUSBANDRY: OR, THE ENRICHING OF ALL SORT OF BARREN AND STERILE GROUNDS IN OUR NATION* 1 (n.p., 1676).

Believing in the science of the day, British landowners were convinced that “[t]he river swamp lands, by proper culture and judicious management, are of inexhaustible fertility.”⁴² The best soils were those “most exposed to the influences of the sun and air,” which suggested drainage as a method of exposing more soil to those proper influences.⁴³ When faced with marshy land, “the remedy is easy, by making proper drains to carry off the superfluous moisture.”⁴⁴ Proponents of drainage argued that “in a short time” with “large and deep *Ditch[es]*” a bog could become “good Ground either for *orchard, Hops, or Pasture.*”⁴⁵ The “chief benefit by this Improvement [would be that] . . . all those Lands that lye wet by reason of Inundation of Water or Land Springs, etc., would be layed dry by Drayning.”⁴⁶ Such lands would then be added to the arable acreage.

Adopting drainage made so much sense to writers of the era that they felt pressured to explain why the marshlands had not been drained previously. Most writers answered by citing the lack of scientific knowledge in earlier eras. As John Smith described in 1798, “Our forefathers, ignorant of the art or advantage of draining, pitched not upon the best, but upon the driest fields. If the plain was too wet to admit the plough they passed by it”⁴⁷ Similarly, Alexander Hewatt, writing in 1779, explained that swamps had been “carefully avoided” because “[h]itherto the planters remained utter strangers to the value and fertility of the lowlands[.]”⁴⁸

3. For Country and King: Drainage as Politics, Economics, and Religion

*Freedom, whose influence is more benign than sunshine and zephyrs, who covers the rugged rock with soil, drains the sickly swamp, and clothes the brown heath in verdure; who dresses the labourer's face with smiles, and makes him behold his increasing family with delight and exaltation.*⁴⁹

42. 1 ALEXANDER HEWATT, AN HISTORICAL ACCOUNT OF THE RISE AND PROGRESS OF THE COLONIES OF SOUTH CAROLINA AND GEORGIA 81 (n.p., 1779).

43. 1 MILLS, *supra* note 31, at 17.

44. *Id.* at 176.

45. WILLIAM LEYBOURN, THE COMPLEAT SURVEYOR, OR, THE WHOLE ART OF SURVEYING OF LAND 132 (5th ed., London, 1722).

46. JOHN SMITH, ENGLAND'S IMPROVEMENT REVIV'D: IN A TREATISE OF ALL MANNER OF HUSBANDRY AND TRADE BY LAND AND SEA 11 (London, Tho. Newcomb 1673).

47. JOHN SMITH, GENERAL VIEW OF THE AGRICULTURE OF THE COUNTY OF ARGYLL 171 (Edinburgh, Mundell & Son 1798).

48. 1 HEWATT, *supra* note 42, at 110.

49. 1 JOHN MOORE, A VIEW OF SOCIETY AND MANNERS IN FRANCE, SWITZERLAND, GERMANY AND ITALY 341 (Philadelphia, Robert Bell, 1783).

[H]ow picturesque the description of the waste from whence arose an Eden.⁵⁰

The improvement of lands “tend[ed] to no less an object than the augmentation of real national wealth.”⁵¹ Draining lands essentially allowed a process of internal colonization, “a new acquisition of territories” within the country by creating new arable acres from previously waterlogged land.⁵² When farmers drained lands that had been under water, they supported the Crown and the national interest by increasing the tax base via increasing the number of arable acres. Additionally, British landowners strongly believed that “an industrious tilling and improving of Lands, [was] a principal means to beget and support a Trade[.]”⁵³ Additional arable acres meant additional crops such as flax and wheat that could augment what we would now call the gross domestic product. When landowners embarked on new cultivations upon the wastelands, those lands could become a “great advantage to the proprietors, besides being an ornament and real use to the country.”⁵⁴

If draining vast sections of land could create more arable acres, then it was possible to claim that rather than having a population problem, “England [was] thinly inhabited.”⁵⁵ Writers speculated that if the “moors, des[er]ts, and commons” were cultivated, then “there could be little doubt of its maintaining two millions of more people than at present[.]”⁵⁶ Increasing the number of arable acres within the country would solve problems of poverty and increasing population, which could at any time become a threat to the ruling powers. Thus, Arthur Young mused, “I know not so melancholy a reflection, as the idea of such waste and uncultivated lands being so common in a kingdom that loudly complains of the want of bread.”⁵⁷ A simple solution presented itself, not only for the landowner, but for the kingdom; new arable lands meant that “bread and beef will be plentiful.”⁵⁸ By 1652, Silvanus Taylor had argued that the undeveloped, marshy waste-

50. Percy Lodge, *A Poem by the Rev. Mr. Moses Brown*, in 1 THE CRITICAL REVIEW, OR, ANNALS OF LITERATURE 167 (Smollett et al. eds., London, 1756).

51. LOUIS-FRANÇOIS-HENRI TURBILLY, MEMOIRE SUR LES DÉFRICHEMENTS 310 (Paris, Chez la Veuve D’Houry 1760).

52. BRADLEY, *supra* note 25, at 3–4.

53. JOHN WORLDIGE, MR. WORLDIGE’S TWO TREATISES viii (London, 1694).

54. 2 DAVID LOCH, ESSAYS ON THE TRADE, COMMERCE, AND MANUFACTURES, AND FISHERIES OF SCOTLAND 193 (Edinburgh, Walter & Thomas Ruddiman 1778).

55. *Philosophical Transactions Continued*, in 2 THE CRITICAL REVIEW, OR, ANNALS OF LITERATURE 127 (Smollett et al. eds., London, 1756).

56. ARCHIBALD GRANT, A DISSERTATION ON THE CHIEF OBSTACLES TO THE IMPROVEMENT OF LAND THROUGHOUT SCOTLAND 26 (n.p., 1760).

57. ARTHUR YOUNG, OBSERVATIONS ON THE PRESENT STATE OF THE WASTE LANDS OF GREAT BRITAIN 38 (London, 1773).

58. *Id.*

lands were in fact a chief cause of “wandering poor” in England.⁵⁹ Therefore, developing new arable lands would limit political unrest and “prove of advantage to the poor in general, by employing them in profitable and healthful exercises.”⁶⁰ Indeed, draining to combat poverty ignited the agricultural fantasies of those who wrote about it: “[W]hat an immense number of *souls* might be kept upon the extra produce which this land is capable of producing, by Draining alone!”⁶¹ There was no reason to leave a salt marsh as it was. While “so many are calling out for bread to eat . . . it surely behoves any man who loves his country” to pursue improvement.⁶² Drainage and improvement fulfilled political, economic, and social obligations of landowners. Writers of pamphlets and books encouraged drainage, citing as their own motivations “Publique-heartednesse and great Zeal for the Common good.”⁶³ Draining in the seventeenth and eighteenth centuries went beyond a popular approach to land management to become a moral obligation of sorts for the betterment of England, the feeding of the poor, and the economic success of the nation.

These socio-political strains of thought intertwined with a religious approach to labor and work ethic. As Laura Brace has written, “[f]or the improvers, the notion of improvement was fundamental to God’s intentions for the earth and for mankind.”⁶⁴ Man failed in his duty where “the broad lines of nature remain[ed] unobliterated.”⁶⁵ Cultivation, along with its many indicators of hard work meant that the British had found favor with God.⁶⁶ Accordingly, drainage and the creation of new arable acres provided even greater evidence of labor and divine favor.

The British colonization efforts reflect these religious and economic themes of drainage and document the export of the British attitudes to new lands. British colonists believed that old countries, long settled by Europeans, had “fewer stagnations of water, no swamps,” and therefore, “[were]

59. SILVANUS TAYLOR, COMMON GOOD: OR THE IMPROVEMENT OF COMMONS, FORESTS, AND CHASES BY INCLOSURE 28 (n.p., 1652).

60. BRADLEY, *supra* note 25, at 4. Notably, some even argued that undrained, unimproved lands were responsible for “producing multitudes of poor, ignorant, lazy and improvident people.” WORLIDGE, *supra* note 53, at 16.

61. HENRY HUTCHINSON, A TREATISE ON THE PRACTICAL DRAINAGE OF LAND 8 (London, Houlston and Stoneman 1844).

62. YOUNG, *supra* note 57, at 54.

63. SAMUEL HARTLIB, A DISCOVERIE FOR DIVISION OR SETTING OUT OF LAND, AS TO THE BEST FORM 2 (London, 1653). The British found improvement of wastelands to be a matter “of public concern,” one that should “claim the attention of every reader.” 2 WILLIAM KENRICK, LONDON REVIEW OF ENGLISH AND FOREIGN LITERATURE 27 (n.p., 1776).

64. Brace, *supra* note 15, at 6.

65. 2 WILLIAM MARSHALL, THE RURAL ECONOMY OF THE WEST OF ENGLAND 2 (n.p., 1796).

66. 2 FLAVEL, *supra* note 19, at 163.

fertile to [that] day to a degree of luxuriance scarce known to new countries.”⁶⁷ Colonists endeavored to establish a “spirit of planting,” which would then “spread[] wider and wider daily.”⁶⁸ Thus, supporters of the colonial projects concluded that “the greatest encouragement possible ought to be given by all the emmets of power and estate in every part of the colon[ies], to the enclosure and improvement of all the open grounds and waste land of the whole country.”⁶⁹ It was of no matter if, at the outset, a colony was a “waste of savage country,” because all of the focus fell on the natural resources and the ability of British colonists to transform the landscape.⁷⁰

4. How Landowners and the State Responded to the Science and Cultural Forces

*Whereas in diverse counties great quantities of waste and barren lands, and lands which were formerly fen or marsh ground, or covered with water, have been of late years improved or drained.*⁷¹

With science, religion, politics, and folk culture all pushing landowners to eliminate wetlands, British agrarians unsurprisingly adopted drainage with fervor as soon as drainage became reasonably technologically and financially feasible. Drainage provided a logical way to expand estates and enhance profits. The only questions were how to do it and how much it would cost. While some drainage happened early, much of it waited for new technologies and lower labor costs.⁷² As time went on, however, the expense of drainage remained significant. As a result, when population pressures rose in the sixteenth and seventeenth centuries, the government explored ways of incentivizing drainage without state expenditures. Rather than making direct investments themselves, monarchs encouraged drainage by

67. 28 SYLVANUS URBAN, *THE GENTLEMAN'S MAGAZINE AND CHRONICLE* 585 (n.p., 1758).

68. 1 W. STRAHAN & T. CADELL, *PRESENT STATE OF HUSBANDRY IN SCOTLAND* 184 (n.p., 1778).

69. DERMOT O'PHEILLY, *THE ANTS: A RHAPSODY* 41 (n.p., 1767).

70. ROBERT DODSLEY, *THE ANNUAL REGISTER, OR A VIEW OF THE HISTORY, POLITICKS, AND LITERATURE FOR THE YEAR 1763*, at 18–19 (n.p., 1764).

71. 18 *THE STATUTES AT LARGE FROM THE 15TH YEAR TO THE 20TH YEAR OF KING GEORGE II* 267 (Danby Pickering ed., n.p., 1765).

72. As soon as the technology was available in the twelfth and thirteenth centuries (setting aside for the moment earlier Roman attempts and failures), the British drained vast lowland areas by employing ditches, canals, and storm barriers. JOHN ABERTH, *AN ENVIRONMENTAL HISTORY OF THE MIDDLE AGES: THE CRUCIBLE OF NATURE* 33 (2013).

making land grants contingent upon undertaking the work.⁷³ Additional incentives included title relief for seven years following the conversion of wetlands to arable land.⁷⁴

Despite the costs, as populations continued to rise, drainage became even more common. One indicator of this trend is the explosion of literature on the topic. By the mid-eighteenth century, instructions for improvement and drainage became its own genre within British publishing. Books explained how to drain lands depending on their type and proximity to the sea or other waterways.⁷⁵ Literature of this period speaks with a religious zeal of the potential of improvement and drainage projects, which could take lands that were filled with standing brackish water, and “[through] industry . . . produce[] comfort and opulence, by forming excellent pasture land out of the swamps and bogs, and even making them capable of producing large crops of corn.”⁷⁶ A sophisticated landowner of the time would surely have employed such techniques.⁷⁷

73. Viola Florence Barnes, *Land Tenure in English Colonial Charters of the Seventeenth Century*, in *ESSAYS IN COLONIAL HISTORY PRESENTED TO CHARLES MCLEAN ANDREWS BY HIS STUDENTS 10–11* (1931).

74. JOSEPH HIGGS, *A GUIDE TO JUSTICES* 306 (n.p., 1742).

75. See, e.g., 1 MORDANT, *supra* note 16, at 70–74.

76. RICHARD BROOKES, *BROOKES’ GENERAL GAZETTER ABRIDGED* (unpaginated) (n.p., 1796).

77. Whether or not such drainage projects were actually profitable, or simply fervently imagined to be so, remains a question. Surely the answer differs depending on the type of wetland drained, the type of soil found beneath, and other measures taken such as the introduction of fertilizers.

Some sources suggest successful endeavors in draining and improvement, although often without detailing the types of landscapes or the acreage. For example, a statute in the year 1765 proclaimed that lands that “have been of late years improved or drained . . . are now of very considerable annual value.” 18 *STATUTES AT LARGE*, *supra* note 71, at 267. More often, the historian finds sources that speculate as to the potential profits that may be garnered, but not evidence of actual accomplishments. For examples of such writings, see HARTLIB, *supra* note 63, at 4 (speculating that lands would increase 1400 times their value within seven years) and YOUNG, *supra* note 57, at 47–48 (providing a four year plan of investments, with growth each year and concluding that “[i]n this method . . . [the land] would make a considerable figure”).

Other evidence, however, suggests that successful drainages were not possible. First, without steam power, the draining of wetlands created a massive operation of manual labor and complicated engineering. See ORWIN, *supra* note 15, at 15–19. The tools of drainage were “plow, spades, scoops, shovels, and forks.” LEYBOURN, *supra* note 45, at 130. Not all contemporaries were convinced about the successful prospects of drainage. John Flavel favored improvement of lands generally, but when it came to those “miry ground[s], where the water stands,” he found that there was “no way to cleanse it, that it can never be made fruitful [and, therefore] [t]he husbandman is fain to let it alone, as an incurable piece of waste and worthless ground.” 2 FLAVEL, *supra* note 19, at 173.

Scholars, for their part, have been more convinced that improvement of the waste lands rarely produced substantial results. Many such lands “only ever turned in relatively low

B. *Colonization and Exporting Land Improvement Philosophies*

1. Land Improvement and Land Claiming During Colonization

Ideas about land improvement served as cornerstones of the British colonization process. Moving hand-in-hand with planting as a primary British colonial strategy and justification for external territorial control, improvement policies and land attitudes traveled widely under British rule. When European powers disagreed about territorial claims,⁷⁸ the British appealed to possession⁷⁹ and, more specifically, to improvement of the land as justification for their claims.⁸⁰ British landowners imposed their system of land control, ownership, and valuation along with their related concept of improvement. British ideas of proper agricultural techniques, which were more entrenched after the evangelical literature of improvement, involved a categorization of certain lands as unproductive, even when those lands may have been agriculturally productive before colonization.⁸¹ The very British idea of straight rows and fenced gardens was crucial to the colonization process. These agricultural techniques created visible changes to the landscape, creating tangible evidence of occupation and investments of labor that could be used to justify territorial claims vis-à-vis other European powers.⁸² Additionally, the narrative of landscape changes allowed British colonists to argue the superiority of a labor investment in land over simple occupation, a

yields,” and as a result scholars have concluded “the assumption that, in general, enclosure of ‘waste land’ transformed large areas of unproductive land to fertile farmland is at best questionable.” TOM WILLIAMSON, *THE TRANSFORMATION OF RURAL ENGLAND: FARMING AND THE LANDSCAPE 1700–1870*, at 19 (2002).

78. By distinguishing British claims vis-à-vis other European powers from claims against native tribes, I do not intend to suggest that agricultural practices were not a part of the British argument against native possession. Indeed, agricultural practices formed a central part of those arguments as well. For an in-depth explanation of how agricultural arguments contributed to dispossession of native lands, see WILCOMB E. WASHBURN, *RED MAN’S LAND/WHITE MAN’S LAW* (1995).

79. For an excellent account of the British reliance on possession—and particularly cultivation and fencing—as justification against competing European territorial claims, see PATRICIA SEED, *CEREMONIES OF POSSESSION IN EUROPE’S CONQUEST OF THE NEW WORLD 1492–1640* (1995).

80. Christopher Tomlins, *In a Wilderness of Tigers: Violence, the Discourse of English Colonizing, and the Refusals of American History*, 4 *THEORETICAL INQUIRIES* L. 451, 481 (2003).

81. Andrew Sluyter, *Colonialism and Landscape in the Americas: Material/Conceptual Transformations and Continuing Consequences*, 91 *ANNALS ASS’N AM. GEOGRAPHERS* 410, 411 (2001).

82. BARBARA ARNEIL, *JOHN LOCKE AND AMERICA: THE DEFENSE OF ENGLISH COLONIALISM* 18 (1996).

strategy that fit their needs both in arguments against native peoples⁸³ and lightly inhabited French lines of forts.⁸⁴

British colonists knew how much labor and inhabitation produced visible and permanent evidence on the landscape. The degree of change from nature aligned with a precise hierarchy of civilization: “The garden is the highest state of cultivation; open fields and common pastures the lowest”⁸⁵ As the *Gentleman’s Magazine and Historical Chronicle* explained in 1758, “Nothing is more certain than that men level forests, drain off waste waters, deepen the shallow currents of great rivers and in process of time give the earth a quite different face to that of countries uninhabited or but lately peopled.”⁸⁶ The colonists believed that the “soil is always rich” when a swamp in North America was “cleared and drained,” becoming “proper for the growth of rice, hemp, and indigo.”⁸⁷ Such descriptions suggest that landscape changes provided the kind of evidence needed to prove long-standing habitation when foreign powers challenged British claims to land.

The British contrasted their own approach to colonization with that of the French. Rather than planning “to plant and settle,” the French instead “erected military forts.”⁸⁸ In the British view, “[w]hen any members of a civilized people leave their native land to settle in a waste, uncultivated country, the natural employment of these emigrants must be agriculture, and a confined sort of a commerce.”⁸⁹

83. The argument followed along these lines against native peoples:

For they account it a very just Cause of War, if any Nation will hinder others to come and possess a Part of their Soil, of which they make no use, but let it lie idle and uncultivated; since every Man has by the Law of Nature a right to such a waste Portion of the Earth, as is necessary for his Subsistence.

THOMAS MORE, *UTOPIA: OR THE HAPPY REPUBLIC* 61 (Gilbert Burnet trans., Glasgow, Robert Foulis 1743).

84. For further explanation of why the occupation/labor distinction was important, and for Locke’s role in formulating these arguments for British colonists, see ARNEIL, *supra* note 82, at 18.

85. 1 WILLIAM MARSHALL, *THE RURAL ECONOMY OF YORKSHIRE* 50 (London, T. Cadell 1788).

86. 28 URBAN, *supra* note 67, at 585.

87. 2 JOHN HUDDLESTONE WYNNE, *A GENERAL HISTORY OF THE BRITISH EMPIRE IN AMERICA* 323 (London, Royal-Exchange 1770).

88. *Id.* at 11. In the British view only “barbarous nations . . . abolished improved Agriculture[,]” instead “possessing, without labor or trouble, the vast desarts which their arms had made, and cultivated, very superficially, only a small spot near their habitations.” 1 MILLS, *supra* note 31, at v.

89. 2 WYNNE, *supra* note 87, at 11.

2. British Colonists and Land Improvement in Early North America

Drainage was, however, more than a political tactic in the race to colonize; it was a part of British culture that became imprinted on the new land. British colonists imported to North America the deep history of drainage in Britain, including all of the cultural, political, religious, and folk reasons for embracing drainage. Arthur Young would eventually write, “[M]any emigrants that have gone to America, have, when they got there, cultivated much worse lands than our moors.”⁹⁰

By 1713, for example, patentees in Virginia could settle their lands (thereby vesting their property rights) either by planting three of every fifty acres granted, or alternatively, by clearing and draining three acres of wetlands.⁹¹ Thus, it could be said of Virginia that “[b]efore being planted it consisted of forests, bogs and morasses, which the people in the West Indies called swamps, and such the greatest part of it is at present.”⁹²

On the island of Manhattan, the New York General Assembly found in 1733 that a “[s]wamp has lain undrained, and of no Use to the Governors of this Colony for the Time being, and all along been a Nuisance to the Inhabitants of the City of New York, by the noisom Vapours that arise thereout for want of clearing and draining.”⁹³

Moreover, such areas often produced unpleasant externalities when located in proximity to more developed areas. It requires little imagination to conjure what might have resided in the swampy waters of lower urban areas in an age that preceded indoor plumbing and granted pigs free passage about town.

Writing in 1761, local government officials informed the Lords Commissioners for Trade and Plantation that North Carolina included “several large Swamps or Bogs . . . not being drained which will be the best Lands in the Province when reclaimed.”⁹⁴ Similarly, the area north of the Ohio River was praised by colonists for having “no swamps but such as may be readily drained, and made into arable and meadowland.”⁹⁵

90. YOUNG, *supra* note 57, at 43.

91. EDWARD T. PRICE, *DIVIDING THE LAND: EARLY AMERICAN BEGINNINGS OF OUR PRIVATE PROPERTY MOSAIC* 115 (1995).

92. 44 *THE MODERN PART OF AN UNIVERSAL HISTORY* 46 (London, 1759).

93. *LAWS OF NEW YORK FROM THE YEAR 1691, TO 1751, INCLUSIVE* 215 (James Parker ed., 1752).

94. *The Colony, Its Climate, Soil, Population, Government, Resources, &c., in* 6 *THE COLONIAL RECORDS OF NORTH CAROLINA* 608 (William Laurence Saunders ed., n.p., 1888).

95. 2 *WILLIAM WINTERBOTHAM, AN HISTORICAL, GEOGRAPHICAL, COMMERCIAL AND PHILOSOPHICAL VIEW OF THE AMERICAN UNITED STATES AND OF THE EUROPEAN SETTLEMENTS IN AMERICA AND THE WEST-INDIES* 482 (n.p., 1799).

Some may question why colonists would embark on such drainage projects, citing as counter-evidence the low population and large territorial expanse of North America. There are three potential answers. First, the British agricultural science of the time held that very good soil rested below those swampy waters.⁹⁶ Combined with the idea of drainage as a moral imperative, such “scientific” beliefs would explain the embrace of drainage on the new continent.

Second, relations with native peoples impacted the choice to drain in multiple ways. At the initial point of settlement, North America hardly abounded in empty land—archeological records suggest very substantial native populations. The idea of an empty and untouched North America sounds more in colonial politics than in historical accuracy. Scholars have long cited the “myth of emptiness” as part of the rhetoric of British colonization, which portrayed the Americas as “lack[ing] dense populations and productive land uses.”⁹⁷

Third, for reasons of both security and transportation,⁹⁸ early settlements were concentrated along the coasts and tidal river areas.⁹⁹ Colonization struggled, probably in part because “[a] man not forced to leave his country, would not chose to . . . settle upon the low, flat, marshy sandy coast of the central colonies[.]”¹⁰⁰ The problem was that the “farther back the settlers went, the finer they found the country and climate, and the more fertile the soil; but then, they always lived in the hazard of war.”¹⁰¹ As a result, expansion to the wetlands that surrounded early settlements was more logical and less risky than expanding to areas further afield.

Finally, the areas that would have most lent themselves to cultivation would have been the fields long prepared by natives.¹⁰² Colonists’ initial

96. See 1 HEWATT, *supra* note 42, at 81.

97. Sluyter, *supra* note 81, at 412. For a discussion of colonial sources utilizing the emptiness argument and analysis of their rhetorical strategies see Tomlins, *supra* note 80, at 488.

98. Given the need to carry tools, water, and food to one’s workplace for the day, British lands were traditionally best cultivated near settlements. Thus, “some part of their barest grounds . . . lieth so far from the town where unto it doth belong, that seldome, or never it is manured.” ARTHUR STANDISH, *NEW DIRECTIONS OF EXPERIENCE TO THE COMMONS COMPLAINT BY THE INCOURAGEMENT OF THE KINGS* 7 (n.p., 1653).

99. 1 HERBERT L. OSGOOD, *THE AMERICAN COLONIES IN THE SEVENTEENTH CENTURY* 437 (1904).

100. YOUNG, *supra* note 57, at 25.

101. *Id.* at 12. Over time, of course, colonists would “gradually . . . stretch backward, and occupy such fresh spots of ground as promised them the greatest returns.” 1 HEWATT, *supra* note 42, at 194.

102. Having been claimed from the forests, such cleared and cultivated fields may represent “a capital endowment equivalent to a century of labor.” John Brooke, *Ecology*, in *COMPANION TO COLONIAL AMERICA* 61 (Daniel Vickers ed., 2003).

expansions into the upland tended to be specifically to these native fields.¹⁰³ Such expansions, however, increased the likelihood of conflicts. Scholars have persuasively argued that competition over these prepared lands “lay at the heart of the genocidal warfare with surviving native peoples” throughout the seventeenth century.¹⁰⁴ This may have encouraged colonists to consider draining nearby wetlands as an alternative.

C. *American Adoption of the British Improvement Philosophy*

Once established, the British approach to land valuation and planning continued long beyond the colonial period. By 1791, the New York legislature found itself compelled to pass an Act requiring private landowners “to fill in, and raise the tract of land” known as “The Meadows” because “through the inattention of their owners” the lots had “become deep sunk holes, the receptacles of water in the rainy seasons, and the source of many unwholesome and noxious stenches.”¹⁰⁵ The legislature decided the solution was to raise the lots as much as necessary “to convey into the East River all the water which shall from time to time fall on the said tract of land.”¹⁰⁶

Draining lands and re-routing small streams continued throughout the nineteenth century and beyond, although the activity dwindled with the availability of more easily improved lands. The practices remained strong, though, in 1844 when Henry Hutchinson wrote his treatise explaining the many methods of draining lands and improving soils.¹⁰⁷ Hutchinson was cognizant from the first page that his treatise entered a rather robust genre, explaining “the Author is aware that a great deal has already been written upon the subject by men well qualified to judge the merits and value of draining.”¹⁰⁸

Arising from the philosophy of improvement, the right to drain lands (and therefore to increase the volume of a watercourse) became standard within American property and nuisance law. As *Thompson on Real Property* explains, “As a general rule, the law allows landowners to discharge water into natural waterbodies as a means of draining the land. This right is recognized in the common law as well as in the statutes of many jurisdictions.”¹⁰⁹

103. 1 OSGOOD, *supra* note 99, at 437.

104. Brooke, *supra* note 102.

105. 2 LAWS OF THE STATE OF NEW YORK 447 (Thomas Greenleaf ed., 1792).

106. *Id.*

107. HUTCHINSON, *supra* note 61.

108. *Id.* at 1.

109. 6 THOMPSON ON REAL PROPERTY § 50.20(e) (David A. Thomas ed., 1994). There are few limitations to the right: “Such discharge may occur without liability where 1) the drainage results from the reasonable use of the land, 2) the waters are not diverted into water-

When improvement through drainage was successful, however, the natural consequence was the casting of surface waters onto other lands.¹¹⁰ To foster a culture of land improvement, governments needed liability rules for surface water that fostered development. These rules are the dominant trend in American history concerning surface water. As the next part of this Article will explain, while some jurisdictions adopted outright rules to favor development, others instead modified their rules to adopt exceptions favoring development.

II. LIABILITY FOR SURFACE WATER

Traditionally, courts adopted one of two positions with respect to surface water liability. In their purest formulations, the two approaches—known as the common enemy doctrine and the civil law rule—are nearly opposites.¹¹¹ This part discusses each rule in its basic form and then proceeds to the many exceptions and variations that were adopted in response to modern circumstances. Before addressing these rules, however, it is critical to understand precisely what constitutes surface waters, as distinguished from watercourses.

A. *Defining Surface Waters and Watercourses*

The definition of surface waters is critical because surface waters are not far removed, in geographical terms, from watercourses, and courts have developed distinctive approaches for each. Surface water cases address runoff, from either ordinary or extraordinary precipitation, that moves from one property to another. Such waters move across the surface of the land, as opposed to within the water bodies. Water that moves within the water bodies, even when those overflow their usual bounds, is not surface water.

Because surface waters are defined in opposition to watercourses, it is helpful to consider the definition of a watercourse. One of the more elaborate explanations states, "To constitute a water course, it must appear that the water usually flows in a particular direction; and by a regular channel, having a bed with banks and sides It may sometimes be dry. It need not flow continuously; but it must have a well-defined and substantial exis-

courses which would not have received the water naturally, and 3) the natural capacity of the watercourse is not exceeded." *Id.*

110. Thus, when one party engaged in "cutting ditches on his own land, contiguous to the water course, and making banks, and clearing and cultivating the land" in the occupation and use of his land, he "increased the quantity of water which flowed or run down the water course." *Williams v. Gale*, 3 H. & J. 231, 231 (Md. 1811).

111. Janet Fairchild, Annotation, *Modern Status of Rules Governing Interference With Drainage of Surface Waters*, 93 A.L.R.3d 1193, 1197 (1979).

tence.”¹¹² Surface waters, then, “occur[] on the surface of the land in an unconfined state, such as ‘water from rain, melting snow, springs or seepage, or detached from subsiding floods, that lies or flows on the surface of the earth but does not form a part of a watercourse or lake.’”¹¹³ As Thompson observes, “A notable characteristic of diffused waters is their inability to maintain an identity or existence as a confined waterbody.”¹¹⁴ The definition of surface waters thus derives from defining a natural watercourse to “[b]e something more than a mere surface drainage over the entire face of a tract of land, occasioned by unusual freshets or other extraordinary causes.”¹¹⁵ Both landscape and temporal features clarify the definition: surface waters are more transient and therefore have not created a topographical home for themselves, in contrast with the characteristic bed and banks of a watercourse.

B. *The Common Enemy Doctrine*

As one of the oldest and originally most favored approaches to surface water liability, the common enemy doctrine dates to a line of Massachusetts cases from 1851, 1859, and 1865.¹¹⁶ The common enemy rule is occasionally referred to as the “common law rule,”¹¹⁷ and it “apparently was adopted on the mistaken assumption that it represented the common law of England.”¹¹⁸ Some have speculated that the general idea of water as a common enemy may stem from the British approach to seawater.¹¹⁹ What is clear is that American courts incorporated the British philosophy of land management by choosing liability rules that prioritized development.

112. *Morrison v. Bucksport & Bangor R.R. Co.*, 67 Me. 353, 356 (1877).

113. 6 THOMPSON ON REAL PROPERTY, *supra* note 109, § 50.20(b).

114. *Id.*

115. *Belveal v. H.B.C. Dev. Co.*, 279 S.W.2d 545, 551 (Mo. Ct. App. 1955).

116. *Luther v. Winnisimmet Co.*, 63 Mass. (1 Cush.) 171 (1851); *Flagg v. Worcester*, 79 Mass. (1 Gray) 601 (1859); *Gannon v. Hargadon*, 92 Mass. (1 Allen) 106 (1865).

117. *See Boyd v. Greene County*, 644 S.W.2d 615, 616–17 (Ark. Ct. App. 1983) (applying the common enemy rule under the “common law” designation).

118. 6 THOMPSON ON REAL PROPERTY, *supra* note 109, § 50.20(g) (citing *Walker v. New Mexico*, 165 U.S. 593 (1897)). Notably, THOMPSON ON REAL PROPERTY explains, “English law seems to favor the civil law rule.” *Id.* (citing *Ewart v. Cochrane* (1861) 4 Macq. (HL) 117 (appeal taken from Scot.) (UK)). The Supreme Court of Nebraska nicely summarized the history of the common enemy doctrine, concluding that

[w]hat is known as the common enemy doctrine originated in Massachusetts and is no part of the common-law rule. It has been adopted in some other states, generally with exceptions and modifications. While it is sometimes referred to in our cases as the common-law rule, it actually has no relation thereto.

Nichol v. Yocum, 113 N.W.2d 195, 200 (Neb. 1962).

119. *Bridges*, *supra* note 6, at 78 n.19.

As we saw in the history of improvement, there is a long-standing British tradition of treating standing water as an enemy—as something that should be drained. As one writer explained, “when a Fen man has once gotten the water decently out of his own premises, he leaves his neighbor to guard for himself against its consequences.”¹²⁰ British colonists and administrators imported this understanding of water as a common enemy to North America, where it flourished until it was embraced by Massachusetts courts. When the improvement of lands such as swamps and salt marshes was a key goal of society, the common enemy doctrine made a great deal of sense because it supported development. The doctrine continues to be the primary approach to surface water liability in some jurisdictions today.¹²¹

The rule was, according to the last of the three Massachusetts cases, “the plaintiff and defendant, being conterminous proprietors, had each the right to develop, improve and enjoy his own estate; and if, as an incident to the exercise of this right, the estate of the other was injured, he would have no legal remedy for such injury.”¹²² In its purest form, the rule meant that “each landowner [could] deal with [surface water] in such manner as best suits his own convenience. Such sanctioned dealings include[d] walling it out, walling it in and diverting or accelerating its flow by any means whatever.”¹²³ The common enemy doctrine holds that there is “no liability as arising, per se, merely from the obstruction, or diversion, of the natural drainage of surface water.”¹²⁴ As the Maine Supreme Court put it, “any proprietor of land may control the flow of mere surface water over his own premises, according to his own wants and interests, without obligation to any proprietor either above or below.”¹²⁵

Notably, once a court has adopted the common enemy doctrine (or the civil rule alternative), the court applies the chosen rule, no matter what the procedural posture of the case, i.e., whether it is brought in terms of enforcing an easement, a claim for trespass, or a claim of negligence or nuisance. As the Indiana Court of Appeals explained, “The common enemy doctrine may apply regardless of the form of action brought by the plaintiff, that is, regardless of whether the plaintiff asserts his claims as an action for negli-

120. Y.Z., A BRIEF REVIEW OF THE ARGUMENTS FOR AND AGAINST THE INTENDED CANAL, FROM CAMBRIDGE TO THE RIVER STORT 12 (n.p., 1788).

121. Crowel v. Marshall Cnty. Drainage Bd., 971 N.E.2d 638, 649 (Ind. Ct. App. 2012).

122. Gannon v. Hargadon, 92 Mass. 106, 107 (1865).

123. Argyelan v. Haviland, 435 N.E.2d 973, 975 (Ind. 1982); see 6 THOMPSON ON REAL PROPERTY, *supra* note 109, § 50.20(g) (“Under one rule, called the ‘common enemy’ rule, the diffused surface water is considered to be the common enemy, and each landowner is deemed to be entitled to protect himself, regardless of the consequences to others.”).

124. Johnson v. Whitten, 384 A.2d 698, 700 (Me. 1978).

125. Morrison v. Bucksport & Bangor R.R. Co., 67 Me. 353, 355 (1877).

gence, trespass, or nuisance.”¹²⁶ The common enemy doctrine, therefore, remains a unique feature of water law applicable to causes of action arising in various circumstances, so long as the waters in question can accurately be described as surface waters.

There are a number of common exceptions to the doctrine, and several jurisdictions have adopted more than one of these exceptions.¹²⁷ One method of adopting the common enemy approach is to add meliorating language within the traditional rule by making reference to a reasonableness standard. For example, Minnesota notes, “Each possessor [of land] is legally privileged to make a reasonable use of his land, even though the flow of surface waters is altered thereby and causes *some* harm to others.”¹²⁸ The addition of the key qualifier *some* allows the court to incorporate a reasonableness tort standard to soften the traditional rule. Thus, in Minnesota, the landowner “incurs liability only when his harmful interference with the flow of surface water is unreasonable.”¹²⁹ Similarly, California has determined that the particular protective measures adopted by the landowner must be reasonable.¹³⁰

Other jurisdictions have adopted the common enemy rule, but have softened its application with an exception for unnecessary injury. Arkansas courts, for example, have found that the right to expel surface waters is contingent on avoiding “unnecessary injury” to the neighbor.¹³¹ There, the landowner responsible for increased water flow is not responsible “unless injury is unnecessarily inflicted upon another which, by reasonable effort and expense, could be avoided.”¹³²

Courts have also blended the reasonableness qualification with a more general negligence approach for a further variation on the original rule. For example, in Missouri, “surface water may be treated as a common enemy and no liability attaches where the flow of surface water is obstructed, so long as it is done reasonably and not in a reckless or negligent manner.”¹³³ In these jurisdictions, the case law tends to make much more frequent reference to traditional tort standards for determining liability. Negligence in-

126. Kinsel v. Schoen, 934 N.E.2d 133, 139 (Ind. Ct. App. 2010).

127. See Pruitt v. Douglas County, 66 P.3d 1111, 1116 (Wash. Ct. App. 2003).

128. Sachs v. Chiat, 162 N.W.2d 243, 246–47 (Minn. 1968) (emphasis added) (citing Stanley Kinyon & Robert McClure, *Interferences with Surface Waters*, 24 MINN. L. REV. 891, 904 (1940)).

129. *Id.*

130. See Linvill v. Perello, 234 Cal. Rptr. 392, 394–95 (Ct. App. 1987); see also Beckley v. Reclamation Bd., 23 Cal. Rptr. 428, 434 (Ct. App. 1962).

131. Boyd v. Greene County, 644 S.W.2d 615, 617 (Ark. Ct. App. 1983).

132. McCoy v. Bd. of Dirs., 129 S.W. 1097, 1099 (Ark. 1910).

133. Thomas v. Ducat, 769 S.W.2d 819, 820 (Mo. Ct. App. 1989).

roduces a higher burden of proof than would otherwise be included if, for example, the problem of surface water were simply treated as a trespass.

Other jurisdictions have introduced a negligence concept without incorporating a reasonableness criterion. One example of such a rule instead incorporates a “due care” standard: “Under the common enemy doctrine, landowners who alter the flow of surface water are shielded from liability only if they exercise their rights with due care by acting in good faith and avoiding unnecessary damage to the property of others.”¹³⁴

At other times, courts have made it clear that the adoption of the common enemy doctrine does not prevent application of the law of negligence.¹³⁵ Instead, the common enemy doctrine would simply provide one measure of the reasonableness of a landowner’s actions when the jury is determining the standard of ordinary care. Additionally, negligence causes of action are sometimes incorporated by attacking the process of construction—i.e., by alleging that a bridge, levee, etc. was constructed negligently, thereby causing the additional risk of flooding.¹³⁶

The American Law Institute has adopted a similar view, looking for negligent, reckless, or ultra-hazardous conduct to support liability.¹³⁷ Additional rules apply where there is an intentional invasion. In those circumstances, the question is whether the invasion was reasonable.¹³⁸

Similarly, other jurisdictions have incorporated a good faith standard into their variation of the common enemy doctrine. In those jurisdictions, “[a] landowner will not be liable for damages to abutting property caused by the flow of surface water due to improvements to his or her land provided that the improvements were made in good faith to fit the property for some rational use.”¹³⁹

While each of the exceptions or variations discussed thus far apply to the general rule, jurisdictions have also created exceptions that apply only to particular landscape features. For example, the Nebraska Supreme Court declined to apply the rule where the surface water gathered naturally within a depression.¹⁴⁰

Additionally, courts embracing the common enemy doctrine have frequently adopted an exception specific to collecting and releasing surface

134. *Pruitt v. Douglas County*, 66 P.3d 1111, 1114 n.1 (Wash. Ct. App. 2003).

135. *See Linvill*, 234 Cal. Rptr. at 394.

136. *See Abbott v. Kan. City, Saint Joseph & Council Bluffs R.R. Co.*, 83 Mo. 271, 277 (1884) (alleging a cause of “misfeasance, or the construction of said bridge in a negligent and unskillful manner”).

137. RESTATEMENT (SECOND) OF TORTS § 833 (AM. LAW INST. 1979).

138. *Id.*

139. *Gollomp v. Dubbs*, 725 N.Y.S.2d 219, 220 (N.Y. App. Div. 2001).

140. *Romshek v. Osantowski*, 466 N.W.2d 482, 496 (Neb. 1991).

water such that it flows across neighboring lands.¹⁴¹ One court stated, “The neighbor above cannot gather water in great quantities and put it off in a different place, but he is allowed to let it go as it would naturally go, whether it be a spring or the natural rain water that falls on the lot.”¹⁴² Similarly, Indiana has adopted the common enemy rule, but modified the rule to “not allow a landowner to ‘collect or concentrate surface water and cast it, in a body, upon his [or her] neighbor.’”¹⁴³ In a related approach, some courts have also chosen not to favor defendants who “drained onto the other property by artificial means, such as pipes and ditches.”¹⁴⁴

Courts have repeatedly considered whether, if the common enemy doctrine is adopted by a state, it should also extend to urban landscapes. More generally, nuisance law tends to be applied differently in urban and rural landscapes because of the importance of landscape context in determining the reasonableness of a landowner’s actions.¹⁴⁵

C. *The Civil Law Rule*

The civil law rule is nicely summarized in a Louisiana case: “[T]he owner of land may do on his estate whatever he pleases subject to the limitation that he cannot cause his neighbor damage in so doing” Indeed, “the neighbor may be put to some inconvenience,” but not so much as would “actually damage the adjoining property.”¹⁴⁶

It is rare for a civil law rule to continue without modification.¹⁴⁷ Development pressures have allowed “the upper owner to make modifications in the drainage pattern and even to accelerate the flow of water so long as the changes are not substantial or do not unreasonably or negligently cause harm to the lower owner.”¹⁴⁸ As this formulation suggests, courts have altered the rule by the introduction of a reasonableness or negligence standard, similar to the modifications of the common enemy doctrine. A common modern approach is that “[n]atural drainage conditions may be

141. *Belveal v. H.B.C. Dev. Co.*, 279 S.W.2d 545, 552 (Mo. Ct. App. 1955).

142. *McMahon v. Thornton*, 5 Pa. Super. 495, 502 (1897).

143. *Crowel v. Marshall Cnty. Drainage Bd.*, 971 N.E.2d 638, 649 (Ind. Ct. App. 2012).

144. *Gollomp*, 725 N.Y.S.2d at 229; *see also Cottrell v. Hermon*, 566 N.Y.S.2d 740, 742 (App. Div. 1991) (stating that liability does not exist in “the absence of any proof that the defendant utilized pipes, drains or ditches”).

145. *See Alan Romero, Rural Property Law*, 112 W. VA. L. REV. 765, 766–67 (2010) (explaining the general rule for nuisance and variations in its application based on urban and rural landscapes).

146. *Ernst v. H.H. Burstein Enters.*, 379 So. 2d 852, 853 (La. Ct. App. 1980).

147. *Garbarino v. Van Cleave*, 330 P.2d 28, 31 (Or. 1958).

148. 6 THOMPSON ON REAL PROPERTY, *supra* note 109, § 50.20.

altered by an upper proprietor provided the water is not sent down in [a] manner or quantity to do more harm than formerly."¹⁴⁹

Courts have also modified the civil law rule through the addition of a good husbandry exception, which adds a particular inclination toward preferring development (or at least development that is arguably well executed).¹⁵⁰ As the Oregon Supreme Court has explained, this option is now quite popular.¹⁵¹

D. *The Reasonableness Rule*

While some jurisdictions still formulate their approach to surface water liability in terms of the traditional doctrines (albeit often with qualifying language such as "some" or "reasonably"), other jurisdictions have completely replaced the traditional rules with a general rule of reasonableness.¹⁵² The distinction is important. For example, in a civil law rule jurisdiction that has incorporated a reasonableness modification, the civil law rule still includes the idea of an easement on the lower-lying lands created by the natural flow of waters.¹⁵³ Any determination of what is reasonable in terms of new burdens for landowners will assume the preexisting burden of the easement. In contrast, a jurisdiction adopting a general reasonableness rule does not begin by assuming that burden on the lower lands.¹⁵⁴

As summarized in its adoption in New Hampshire, the reasonable use rule states, "[T]he sole ground of qualification of the landowner's right of drainage was the similar rights of others, the extent of the qualification being determined under the rule of reasonable use, and the rights of each landowner being similar"¹⁵⁵ The reasonableness rule may also incorpo-

149. *Hankins v. Borland*, 431 P.2d 1007, 1010 (Colo. 1967).

150. *See generally infra* Subsection III.B.2.

151. *Garbarino*, 330 P.2d at 31.

152. As one court put it, a modern court has to decide whether to "adhere to the 'common enemy' doctrine in respect to surface waters, or abandon it in favor of the 'reasonable use' doctrine, as numerous other jurisdictions have done." *State v. Deetz*, 224 N.W.2d 407, 409 (Wis. 1974).

153. As *Thompson on Real Property* explains, "Although the rule has been modified, the lower landowner is still considered to be burdened with a drainage easement in favor of the upper landowner and must receive the water." 6 THOMPSON ON REAL PROPERTY, *supra* note 109, § 50.20(g).

154. Courts following the general approach simply refuse to recognize the "natural easement" postulated by the civil law rule. For example, the Oklahoma Supreme Court has held that "[a]t common law there exists no easement or servitude in the premises of the lower landowner in favor of the owner of the higher land as to surface water which falls or accumulates by rain or the melting of snow." *Town of Jefferson v. Hicks*, 102 P. 79, 80 (Okla. 1909).

155. *Fairchild*, *supra* note 111, at 1216.

rate a type of negligence standard. For example, in determining the reasonableness of the defendant's actions, a court might ask whether the construction process was carried out with ordinary care.¹⁵⁶

E. *Special Rules for Special Geography*

1. Raising the Landscape and the Natural Flow Rule

Courts may engage the question of liability without reference to either of the two traditional approaches to surface water where one party has embarked upon generally elevating its land to the detriment of a neighbor.¹⁵⁷ In such circumstances, courts may apply rules specific to elevating or grading the landscape.

A large number of cases arise over the elevation of land, particularly within urban areas. Jurisdictions following the common enemy doctrine are split over whether the elevation of land should result in liability for surface water runoff.¹⁵⁸ Notably, courts are not only divided on whether an exception should be made for elevated land, but also whether the exception should apply equally in all types of landscapes (ranging from urban to rural to agricultural).¹⁵⁹

Before examining how the two traditional rules may apply to the elevation of land, it should be noted that not all courts adopt rules specific to these circumstances. Some courts address these cases within the context of the general approach to surface waters within their jurisdiction.¹⁶⁰ If the common enemy rule were applied strictly, there would be no liability for elevating one's parcel entirely.¹⁶¹ On the other hand, if the civil law rule were applied, it is reasonably clear that the party elevating his or her land would likely be causing damage to the neighbor and therefore would be liable for those damages, provided they rose above mere inconvenience.¹⁶²

156. See *Jones v. Boeing Co.*, 153 N.W.2d 897, 904 (N.D. 1967) (examining the conduct of the architect-engineer for ordinary care).

157. See *Allen v. Morris Bldg. Co.*, 103 N.W.2d 491, 493 (Mich. 1960) (applying general rules of intentional torts without relying on a surface water rule).

158. Martin J. McMahon, Annotation, *Liability for Diversion of Surface Water by Raising Surface Level of Land*, 88 A.L.R.4TH 891, 897-901 (1991).

159. *Id.*

160. See *Ernst v. H.H. Burstein Enters.*, 379 So. 2d 852, 853 (La. Ct. App. 1980) (applying the general statute, a civil law rule approach, which "provides the owner of land may do on his estate whatever he pleases subject to the limitation that he cannot cause his neighbor damage in so doing").

161. *Johnson v. Goodview Homes-1, Inc.*, 167 N.E.2d 132 (Ohio Ct. C.P. Summit County 1960).

162. See 6 THOMPSON ON REAL PROPERTY, *supra* note 109, § 50.20(h). The lower owner was obligated to receive water from the upper owner and the upper owner, in turn, was obligated to neither increase the volume nor alter the flow of the water. While this rule was

Rather than applying one of the two traditional rules, some courts consider the act of raising the land to the detriment of a neighbor to be an intentional tort. In *Allen v. Morris Building Co.*, the Michigan Supreme Court explained, "Plaintiffs were not required to prove defendants were negligent or that their grading operations were in violation of city ordinance or other law."¹⁶³ What mattered to the court was "the invasion of [plaintiffs'] property rights . . . due to defendant's intentional or positive and continuous tort."¹⁶⁴ The defendants' conduct constituted an intentional tort because they "wilfully graded and built downspouts in the mentioned fashion" and such actions damaged the plaintiff.¹⁶⁵

Perhaps most commonly, courts have addressed the elevation of a parcel by applying a rule of natural flow. The natural flow rule requires that the lower parcel submit to the flow of water such as it naturally progresses through the landscape.¹⁶⁶ Alternatively stated, "the owner of land is entitled to have surface water flow naturally over the land of the lower land owner, and the lower owner cannot prevent escape of water from the higher land onto his land."¹⁶⁷ The justifications for the rule seem to fall at the conjunction of a natural law approach and a "buyer beware" theory. As the New York Court of Appeals explained in 1881, the primary considerations were of the "order of nature," which should not be subject to "unreasonable interruption."¹⁶⁸ Courts reasoned that due to the natural order of things, the lower-lying parcel must accept the runoff of surface waters. Notably, this meant that the plaintiff had no right of self-help either.¹⁶⁹ The higher-lying landowner had an affirmative right to divert waters "on the land of another only through depressions, draws, or other drainways as they were wont to flow in the state of nature."¹⁷⁰

less likely to cause harm to the lower owner, it greatly limited what one could do with the land.

163. *Allen v. Morris Bldg. Co.*, 103 N.W.2d 491, 493 (Mich. 1960).

164. *Id.* (citing *McCullagh v. Goodyear Tire & Rubber Co.*, 69 N.W.2d 731, 735 (Mich. 1955)).

165. *Id.*

166. *McMahon v. Thornton*, 5 Pa. Super. 495, 502 (1897). Notably, Illinois has preferred the natural flow approach to surface water generally (not just in the context of the elevation of land, as many other jurisdictions have applied the rule). ROBERT BECK, KEITH HARRINGTON, WILLIAM P. HARDY & TIMOTHY FEATHER, *ASSESSMENT OF ILLINOIS WATER QUANTITY LAW* app. A., at A27-28 (1996).

167. *Biberman v. Funkhouser*, 58 A.2d 668, 671 (Md. 1948).

168. *Barkley v. Wilcox*, 86 N.Y. 140, 147 (1881).

169. *Pickerill v. Louisville*, 100 S.W. 873, 876 (Ky. 1907).

170. *Nickerson Township v. Adams*, 173 N.W.2d 387, 390 (Neb. 1970); see *Nichol v. Yocum*, 113 N.W.2d 195, 201 (Neb. 1962) ("This court has recognized the right of an upper proprietor to drain surface waters through a well-defined natural course, whether the course be ditch, swale, or drain in its primitive condition, and that such flow cannot be arrested or

The natural flow rule does not precisely align with either traditional approach to surface water liability. The natural flow approach roughly coordinates with the civil law rule, although the natural flow rule goes further in establishing the rights of the higher-elevated landowner by establishing something along the lines of an easement for the passage of water.¹⁷¹ Indeed, at times courts have conceived of the natural flow approach as an easement—one created by the natural flow of waters meeting the criteria for an easement by prescription.¹⁷² Thus, the natural flow of waters is often described using the vocabulary of easements: “The owner of the lower, or *servient*, estate must receive surface water from the upper, or *dominant*, estate, in its natural flow.”¹⁷³ These terms, *servient* and *dominant* estates, describe the quintessential features of an easement in property law.

Most notably, the easement must “be acquired by an uninterrupted enjoyment”¹⁷⁴ for the statutory period provided within that jurisdiction—generally fifteen to twenty years. Because of this requirement, when the natural flow rule is adopted as an easement, such easements will correspond to the historically normal height of the water. Flooding beyond that level may still constitute a nuisance.¹⁷⁵

With respect to the common enemy doctrine, there is no priority for either the higher-lying or lower-lying parcel or the natural flow of waters. Under the strictest formulation of the common enemy doctrine, a landowner could repel surface waters and discharge them onto a neighboring parcel no matter the consequences to the neighbor.¹⁷⁶ For a lower elevated

interfered with to the injury of neighboring proprietors.”). There are, of course, limits to the natural flow rule as well: “[T]he upper owner has no right to increase materially the quantity or volume of water discharged on the lower landowner.” *Biberman*, 58 A.2d at 671.

171. Some courts have explicitly connected the civil law rule with the establishment of an easement based on the natural flow of water. South Dakota, for example, describes the civil law rule, which it has adopted for rural surface water drainage, as creating “an easement under which the dominant, or upper property owner may reasonably discharge surface water over the servient estate through natural watercourses.” *Hendrickson v. Wagners, Inc.*, 598 N.W.2d 507, 510 (S.D. 1999) (quoting *Knodel v. Kassel Township*, 581 N.W.2d 504, 507 (S.D. 1998)).

172. Easements may arise based on natural flows of water, but it is important to note that they can also be created through the continued use of an artificially created watercourse. “It is generally recognized that drainage rights in the nature of prescriptive easements may accrue in artificial channels if they are enjoyed by an upper proprietor for the statutory period of limitation.” *Minton v. Steakley*, 466 S.W.2d 441, 444 (Mo. Ct. App. 1971) (citing 6A AMERICAN LAW OF PROPERTY § 28.63, at 190 (A.J. Casner ed., 1954)).

173. *Rynestad v. Clemetson*, 133 N.W.2d 559, 563 (N.D. 1965) (emphasis added).

174. JOSEPH KINNICUT ANGELL, A TREATISE ON THE COMMON LAW IN RELATION TO WATER-COURSES 70 (Boston, Wells & Lilly 1824).

175. *Id.* at 70–71.

176. *Roberts v. Hocker*, 610 S.W.2d 321, 326 (Mo. Ct. App. 1980).

landowner, this would mean that the common enemy doctrine directly contradicted the natural flow rule: the lower parcel would not be obligated to accept waters from above and could, without regard for the consequences, prevent the water from entering the parcel.

One version of the natural flow rule adopts a negligence approach to determine whether one property owner exposed “others to an unreasonable risk of harm.”¹⁷⁷ In Tennessee, for example, the plaintiff can only succeed under the natural flow rule by showing “not only that the defendant was guilty of negligence but that such negligence was one of the proximate causes of the injuries complained of.”¹⁷⁸

Whether a court follows the general surface water rule or adopts a rule specific to parcels elevated through improvements, the court may also choose to vary the rule depending on whether the landscape context is urban or rural. Where courts have adopted the rule of natural flow to address parcel elevation, courts may choose not to apply the rule in the urban context. As the Pennsylvania Superior Court explained in 1897, “[w]hen you come to small lots in a city, laid out as this is, then the rule changes, and the party below is not bound to submit to that flow of water. He may dam it up.”¹⁷⁹

Similarly, the Missouri Court of Appeals explained that the general rule was that “[t]he owner of a city lot is not, indeed, obliged to keep his ground at its natural or former level, and may turn back upon an adjoining lot water the natural inclination of which would be to run down upon his own lot.”¹⁸⁰ The court was concerned with mediating the parties’ needs in the context of fostering local development. Thus, the court explained, “The necessity of building is great, but no greater than the carrying on of many trades which tend to interfere with the comfort of those in whose vicinity they are carried on.”¹⁸¹ Thus, outside of urban centers, a lower landowner may protect himself from surface water by building a levee if doing so is a practical method of protecting against surface water, and if by constructing a levee, the lower proprietor acts in good faith and without negligence.¹⁸²

In Illinois, where the natural flow rule is particularly important because it is applied to surface water cases more generally, there are multiple adaptations to provide for urban and rural contexts. Within rural lands, Illinois softens the rule for the enterprising farmer who protects his land from sur-

177. *Brown v. City of Kingsport*, 711 S.W.2d 607, 608 (Tenn. Ct. App. 1986).

178. *Id.*

179. *McMahon v. Thornton*, 5 Pa. Super. 495, 496 (1897).

180. *Freudenstein v. Heine*, 6 Mo. App. 287, 290–91 (1878).

181. *Id.*

182. *Timmons v. Clayton*, 259 S.W.2d 501, 503 (Ark. 1953).

face waters, adopting a “good husbandry” exception, thereby permitting an upper landowner to interfere with natural drainage provided that the interference was incidental to the reasonable development of the land for agricultural purposes.”¹⁸³ This preference for economically beneficial development within agriculture has expanded to more urban contexts as well.¹⁸⁴

2. Adopting Both Traditional Surface Water Doctrines, Depending on Whether the Landscape Is Urban or Rural

To add to the confusion in dealing with surface waters, some courts have chosen to adopt both the traditional common enemy doctrine and the civil law rule, applying one for urban areas and the other for rural areas.

Ohio courts, for example, have utilized both rules, applying the common enemy doctrine to urban areas and the civil rule to rural areas.¹⁸⁵ To promote development within the city, courts have found it advisable to protect the investment of the owner who has chosen to divert the natural flow of water to protect his business.¹⁸⁶ Indeed, one Ohio judge went so far as to observe that “the plaintiff here could have taken the matter in his own hands, and could have cast said water back upon the defendant’s land, and if he did so in a reasonable manner, the defendant company could not complain, or hold the plaintiff liable therefor.”¹⁸⁷

Similarly, Kansas, which initially applied the common enemy doctrine, partially switched to the civil law rule. As the Kansas Supreme Court explained, “The act of 1911 . . . abolishing the common-law rule and substituting therefor the rule of the civil law with respect to surface waters *applies only* to lands used for agricultural purposes and highways lying wholly outside the limits of any incorporated city.”¹⁸⁸

In 1904, the Alabama Supreme Court refused to apply the previously adopted civil law rule in a new case, finding instead that “[t]he rule adopted in this State from the civil law, which in general makes land legally subservient to the natural flowage of surface water, does not apply under the artificial conditions created by the building of cities and the improvement of city lots.”¹⁸⁹ As the court explained in 1974, “this court early took the

183. BECK, *supra* note 166.

184. *Id.*

185. Johnson v. Goodview Homes-1, Inc., 167 N.E.2d 132, 135–36 (Ohio Ct. C.P. Summit County 1960).

186. *Id.*

187. *Id.*

188. Liston v. Scott, 194 P. 642, 643 (Kan. 1921) (emphasis added).

189. Hall v. Rising, 37 So. 586, 587 (Ala. 1904).

position that the civil law rule should not apply in cities, but instead adopted the ‘common enemy’ doctrine for incorporated areas.”¹⁹⁰

One reason for adopting different rules for urban and rural landscapes arises from the difficulty of determining the original natural flow. The problem is that “at least with respect to urban property where conditions are constantly changing,” it can be “generally difficult or even impossible to establish how surface water flowed ‘when untouched and undirected by the hand of man.’”¹⁹¹ Given how very different some urban landscapes are compared to their pre-urban existence (compare, for example, marshy Manhattan island and the current 5th Avenue), there is some merit to this explanation.

Other courts have considered and explicitly rejected maintaining distinct approaches to urban and rural lands. In Tennessee, for example, the Supreme Court explained, “We are unable to see any difference in principle between the reciprocal rights and duties of adjacent urban proprietors and those of adjacent rural proprietors.”¹⁹²

III. NAVIGATING SURFACE WATER LIABILITY IN THE TWENTY-FIRST CENTURY

This final part addresses the need for reform. This need stems, to a large extent, from the tangle of rules that have evolved over the last century. Section III.A explains how, as a result of the proliferation of exceptions to the standard rules and the contextual adaptations of the rules, surface water liability has become rather difficult to navigate. This is problematic not only in terms of the complexity of the case law, which hampers public understanding of the rules, but also because liability has become unpredictable.

Section III.B tackles a more important reason why surface law needs reform. Current rules foster drainage and the destruction of wetlands, which contributes to climate change in multiple ways. Additionally, the destruction of wetlands exacerbates climate change related issues, such as storm surges and sea level rise. It is relatively easy to see how deeply the British approach to land management influenced the common enemy rule and how the common enemy rule fosters drainage. Other modern variations on that rule, however, are not necessarily any less problematic in terms of climate change. This section examines many of the modern rules and their

190. *Mountain Brook v. Beatty*, 295 So. 2d 388, 392 (Ala. 1974).

191. *Houston v. Renault, Inc.*, 431 S.W.2d 322, 325 (Tex. 1968).

192. *Garland v. Aurin*, 53 S.W. 940, 941 (Tenn. 1899). In another related variation, California has adopted the same rule for both urban and rural lands. However, courts have also said that the rule must be tailored to the particular landscape context within each case. *Keys v. Romley*, 412 P.2d 529, 535–36 (Cal. 1966).

impacts on land management practices. This section argues that surface water rules carry with them a long history of a particular view of land—one deeply influenced by the British approach to land management, which emerged from contemporaneous agricultural science. Rather than re-examining our rules in light of changing scientific knowledge, we have allowed the weight of precedent to keep even scientifically outdated rules in place.

Finally, Section III.C proposes a new rule: a single rule of landscape-specific reasonableness. Such a rule would support the reasonable expectations of the landowner with respect to development, but could also advance the public good through maximizing sustainability when the most benefit can be gained at the least cost. Such a landscape-specific rule would favor development within areas that are already highly developed, while disfavoring development in landscapes that remain closer to their natural state. The point of such a rule would be to maximize economic opportunities where there are relatively few gains to be had from the landscape for climate health, but then maximize climate health where there are significant potential gains to be had from maintaining an entirely or largely undeveloped landscape. While acknowledging that surface water liability rules are not, of course, our only route to protecting wetlands or to managing land use, I argue that the case law implicates large-scale social issues that deserve thoughtful attention—attention that has often been paid in other property and tort contexts.

A. *Complex Litigation and Complications from Pro-Development Influences*

As a result of the proliferation of exceptions to the standard rules, and the contextual adaptations of the rules, there is a great deal of complexity to litigating a surface water liability case. Liability is, simply put, rather unpredictable. As the Indiana Supreme Court explained, the two original doctrines

[a]re harsh but have the common virtue of predictability. Under them, landowners know where they stand. They know what they may do and what they may not do without incurring severe risks. If at times the doctrines work to one's disadvantage, there are other times when he reaps its benefits.¹⁹³

The doctrine of reasonable use is quite the opposite of the two original doctrines. "Its advantage is flexibility. Its disadvantage, obviously[,] is its

193. *Argyelan v. Haviland*, 435 N.E.2d 973, 975 (Ind. 1982).

unpredictability.”¹⁹⁴ Dobbins has argued that this unpredictability is a fatal flaw despite the “theoretical superiority” of the rule. Dobbins argued that the rule leaves citizens risking “a law suit each time such an improvement is constructed”; as a result “a prudent man might well be required to seek a declaratory judgment.”¹⁹⁵

Of course, some approaches are much more practically workable and predictable than others. Oklahoma’s rule, for example, is sufficiently abstract as to offer ample opportunities for unpredictability:

This court has long given its approval to the “Common Enemy Doctrine” in a modified and restricted sense. In cases approving same we have said that each proprietor may divert the water, cast it back or pass it along to the next proprietor, provided he can do so without injury to such adjoining proprietor. However, in all such cases we have laid down the rule that no one is permitted to sacrifice his neighbor’s property in order to protect his own.¹⁹⁶

Additionally, it is important to note that many of the complexities of this line of jurisprudence result from courts adopting specific pro-development policies. Arkansas’ rule separates city property from agricultural areas. Acknowledging the need to build within cities, the Arkansas rule grants the owner a wide berth to fill, elevate, drain, and generally prevent surface water from gathering on his land, even if that means preventing water from flowing onto his land. The Arkansas Supreme Court has embraced such a lenient rule in cities because “[a] contrary rule would operate against the advancement and progress of cities and towns and to their injury, and would be against public policy.”¹⁹⁷

Similarly, the West Virginia Supreme Court concluded that alterations to the two traditional rules of surface water liability arose inevitably in response to modern social conditions. The court found that

[b]oth the civil and the common law rules, even as modified, are too inflexible to meet the demands of an urban society. The development of land for commercial, industrial, and housing complexes requires alteration of the property. If this is to occur, an owner must be able to take reasonable steps to develop property without being subjected to suit.¹⁹⁸

194. *Id.* at 976.

195. Donald V. Dobbins, *Surface Water Drainage*, 36 NOTRE DAME L. REV. 518, 526 (1961).

196. *Gregory v. Bogdanoff*, 307 P.2d 841, 843 (Okla. 1957).

197. *Levy v. Nash*, 112 S.W. 173, 174 (Ark. 1908).

198. *Morris Assocs. v. Priddy*, 383 S.E.2d 770, 773 (W. Va. 1989).

Thus, not only did the court conclude that the two original doctrines had morphed to suit the modern need for development (which the court assumed to be a positive thing), but the court additionally found that even these modifications of the traditional rules were not sufficient to “meet the demands” of modern development.

The New Jersey Supreme Court has been more cautious in simply adopting pro-development policies, although for fairness reasons rather than because of environmental concerns. The court acknowledged “society has a great interest that land shall be developed for the greater good.”¹⁹⁹ On the other hand, the court concluded, “no reason suggests itself why, in justice, the economic costs incident to the expulsion of surface waters in the transformation of the rural or semi-rural areas of our State into urban or suburban communities should be borne in every case by adjoining landowners.”²⁰⁰ Notably, the court begins its musings with the assumption that a pro-development policy is in the best interests of everyone involved—the question is simply who should bear the costs.²⁰¹

B. *Applying Current Rules Reinforces Pro-Development, Pro-Drainage Ideology and Advances the Trajectory of a Changing Climate*

Does surface water liability—the liability of one landowner for waters flowing onto the land of a neighbor—contribute to climate change? Upon hearing this question, legal scholars likely think first of nuisance. Creative litigators have employed nuisance when seeking to hold corporations liable for their roles in climate change, a move that might (if slowly) influence future climate change. Few if any such cases have succeeded to any degree. What, then, of the evidence for the opposite conclusion, that nuisance law (and, more specifically here, surface water liability) exacerbates climate change?

To answer that question, we must pause to look more closely at the environmental consequences of drainage, in terms of both sustainability and climate change. Wetlands provide substantial environmental services,²⁰²

199. *Armstrong v. Francis Corp.*, 120 A.2d 4, 10 (N.J. 1956).

200. *Id.*

201. *Id.*

202. See James Salzman, *Creating Markets for Ecosystem Services: Notes from the Field*, 80 N.Y.U. L. REV. 870, 872 (2005) (discussing the general approach of quantifying the many services that natural areas provide to humans and, specifically, discussing the service that wetlands provide in terms of water retention and purification); J.B. Ruhl, *Making Nuisance Ecological*, 58 CASE W. RES. L. REV. 753, 757 (2008) (describing the many ecological services provided by wetlands, particularly those that are relevant in the context of climate change).

such as fostering unique habitats and biodiversity,²⁰³ and providing a natural filtration system for water.²⁰⁴ In terms of climate change, however, wetlands play a very specific role. First, the destruction of wetlands contributes to climate change through substantial releases of stored carbon.²⁰⁵ Second, the destruction of the natural habitat eliminates the wetland as a natural device for carbon sequestration.²⁰⁶ Draining and clearing wetlands deals a double blow: it releases a backlog of stored carbon dating back centuries, and it destroys future capacity for carbon sequestration.²⁰⁷

Simultaneously, drainage deals another blow on the climate front. Intact wetlands offer substantial mitigation benefits to nearby communities confronting the impacts of climate change. Wetlands protect coastal communities from storm surges and also mitigate both the effects of flooding and of sea level rise.²⁰⁸ Destroying wetlands exacerbates the painful symptoms of climate change, particularly for coastal communities.²⁰⁹

For much the same reasons, drainage is not a very sustainable pattern for land use; destroying wetlands carries important long-term effects on the environment, particularly an environment already suffering from climate change.

203. See Paul Stanton Kibel, *Climate Adaptation Policy at the Continental Level: Natural Resources in North America and Europe*, 27 PACE ENVTL. L. REV. 473, 493–95 (2010) (discussing the potential threats to threatened wetland wildlife and habitats due to sea level rise).

204. See EPA Guidelines for Specification of Disposal Sites for Dredged or Fill Material, 40 C.F.R. § 230.41(b) (describing wetlands as providing natural filtration services); U.S. ENVTL. PROT. AGENCY, OFFICE OF WATER, EPA 843-F-06-004, ECONOMIC BENEFITS OF WETLANDS (May 2006), <http://water.epa.gov/type/wetlands/outreach/upload/EconomicBenefits.pdf> (discussing the many economic services wetlands provide to communities); Barton H. Thompson, *Markets for Nature*, 25 WM. & MARY ENVTL. L. & POLY REV. 261, 295 (2000) (discussing the multiple ways riparian lands promote water quality).

205. For further discussion of wetlands and carbon sequestration and release, see Nicholas A. Fromherz, *The Case for a Global Treaty on Soil Conservation, Sustainable Farming, and the Preservation of Agrarian Culture*, 39 ECOLOGY L.Q. 57, 71 (2012).

206. *Id.* at 70–71 & n.74.

207. For further discussion of wetlands and carbon sequestration and release, see *id.* at 70–71.

208. See Denis J. Brion, *The Unresolved Structure of Property Rights in the Virginia Shore*, 24 WM. & MARY L. REV. 727, 729 (1983) (describing the benefits of tidal marshes for nearby areas including buffering against storms and absorbing floodwaters both from surges/sea level rise and upland rains); Noah D. Hall, *Interstate Water Compacts and Climate Change Adaptation*, 5 ENVTL. & ENERGY L. & POLY J. 237, 248 (2010) (citing the destruction of wetlands as “accelerating harms” of climate change).

209. Notably, Doug Kysar and Thomas McGarity have pointed out that the National Environmental Policy Act may not deal very effectively with addressing these attributes of wetlands in a cost-benefit analysis. Douglas A. Kysar & Thomas O. McGarity, *Did NEPA Drown New Orleans? The Levees, the Blame Game, and the Hazards of Hindsight*, 56 DUKE L.J. 179, 230–31 (2006).

It is relatively easy to see how deeply the British approach to land management influenced the common enemy rule and how the common enemy rule fosters drainage. That said, however, the common enemy approach continues in full force in only a limited number of jurisdictions. Therefore, to consider the impact of modern surface water liability cases on climate change, this section focuses on the land management impacts of the reasonableness rule, which many jurisdictions have embraced to replace the common enemy and civil law rules. It also looks at some of the most common exceptions to those rules.

1. Reasonableness

In recent years, a reasonableness approach has thrived and often replaced the common enemy doctrine. In some cases, courts have adopted the reasonableness approach precisely because the court concluded that this method of determining surface water liability was “the one most likely to promote the optimum development and enjoyment of land.”²¹⁰

Even when not adopted explicitly to promote development, courts may find that the reasonableness approach naturally favors development through the doctrine’s flexible, fact-specific approach. When it comes to parsing reasonableness, some courts simply state the rule, elaborating no specific factors but rather simply stating, “[W]hat is reasonable in such cases depends upon the special facts of each particular case.”²¹¹ Other courts elaborate a list of factors, including “the amount of harm caused, the foreseeability of the harm on the part of the possessor making the alteration in the flow, the purpose or motive with which he acted, and others.”²¹²

Many of the factors considered when examining reasonableness provide immediate preference to the priorities of greater development and landscape change. For example, Minnesota favors additional development that conforms to existing patterns in the area. The Supreme Court of Minnesota has said, “Any determination of whether a possessor has made a reasonable use of his land requires a consideration of the normal use and development of land in the immediate area or locality.”²¹³ Minnesota courts adopt this approach because “[c]ommon experience and knowledge have demonstrated that in order to prepare urban property for its customary use and enjoy-

210. Heins Implement Co. v. Mo. Highway & Transp. Comm’n, 859 S.W.2d 681, 691 (Mo. 1993).

211. Hopkins v. Taylor, 151 N.W. 194, 194 (Minn. 1915).

212. Sachs v. Chiat, 162 N.W.2d 243, 246–47 (Minn. 1968).

213. *Id.*

ment, it is frequently necessary to level, raise, lower, or otherwise alter the ground surface.”²¹⁴

Another court has said, “The rule requires the application of a balancing test whereby the benefit to the dominant estate is balanced against the harm done to the servient estate.”²¹⁵ In such cases, it is often easier to quantify the benefits of development versus the benefits of leaving land in an undeveloped state. It is also often likely that the benefits to a developed parcel are economically far greater than the detriments to a non-developed, neighboring parcel, which may be a wetland.

One of the oft-praised virtues of the reasonableness approach is its flexibility in addressing individual situations. This same flexibility, however, is an invitation to consider many development-related factors such as the cost of investments and the social goods created by the use of developed lands in terms of additional revenues, products, and so forth. Often the standard is described very broadly, requiring “a consideration of all the relevant circumstances, including such factors as the amount of harm caused, the foreseeability of the harm which results, the purpose or motive with which the possessor acted, and all other relevant matter.”²¹⁶ Such approaches are often explicitly combined with a pro-development ethic.²¹⁷

2. Good Husbandry

The good husbandry exception (applied in civil rule and common law rule jurisdictions) also favors development. More specifically, the good husbandry exception favors drainage,²¹⁸ falling precisely in line with the traditional British ideology of land improvement. Indeed, courts have found that the good husbandry rule developed “because agriculture required the draining of marshy land.”²¹⁹ Under the good husbandry rule, the owner of the upper land may accelerate the flow of surface water by such drainage system “as may be required by good husbandry, without liability for damages to the owner of the lower lands if the water is not diverted from its natural chan-

214. *Id.*

215. *Dovin v. Winfield Township*, 517 N.E.2d 1119, 1125 (Ill. Ct. App. 1987), *overruled on other grounds by Gerill v. Jack L. Hargrove Bldrs.*, 538 N.E.2d 530 (Ill. 1989).

216. *Armstrong v. Francis Corp.*, 120 A.2d 4, 10 (N.J. 1956).

217. *Id.* (“It is, of course, true that society has a great interest that land shall be developed for the greater good. It is therefore properly a consideration in these cases whether the utility of the possessor’s use of his land outweighs the gravity of the harm which results from his alteration of the flow of surface waters.”).

218. The rule is often stated in terms of the landowner’s need to “make such drains, for agricultural purposes, on his own land, as may be required by good husbandry.” *Peck v. Herrington*, 109 Ill. 611, 619 (1884).

219. *Shulte v. Flowers*, 983 N.E.2d. 1124, 1129 (Ill. App. Ct. 2013).

nels.”²²⁰ The justification given is simply that to “drain [the] land of surface water for agricultural purposes” is necessarily “an act of good husbandry” and therefore the party should have the right to make such improvements without liability.²²¹ Courts have therefore ruled in favor of an “undoubted right” to “drain lagoons,” even when the neighboring property suffers adverse consequences.²²² Courts have found such acts to be “in the interest of good husbandry, and in the good-faith improvement and tillage of [a] farm.”²²³ Drainage of land is simply “the proper improvement of the surface of the ground.”²²⁴ Or, as the North Carolina Supreme Court explained, “in the interest of health and good husbandry better drainage is to be encouraged.”²²⁵ The justification for this approach is identical to the original justification for the common law rule: “surface water is a common enemy” and should be drained “in the interest of good husbandry.”²²⁶

Additionally, while there are limits to this pro-drainage approach, liability exists only where the conduct of the defendant is negligent²²⁷ or even “reckless” or “needless,” creating a rather high standard for relief.²²⁸ Often courts state the rule rather strongly in favor of the right of drainage. For example, the Mississippi Supreme Court observed:

[T]he upper owner may reasonably drain his surface waters into the natural watercourse, in good husbandry, and this right may be exercised by him without any qualification or limit; and if he thereby increase the flow of the stream beyond its capacity, which results in flooding and damaging the lower owner, such damage will be *damnum absque injuria*; damage without legal injury, for which no right of action will lie.²²⁹

220. Garbarino v. Van Cleave, 330 P.2d 28, 31 (Or. 1958).

221. Dudley Special Rd. Dist. v. Harrison, 517 S.W.2d 170, 180 (Mo. 1974) (quoting Young v. Moore, 36 S.W.2d 740, 744 (Tex. Crim. App. 1951)).

222. Stuthman v. Hull Trust, 447 N.W.2d 23, 27 (Neb. 1989) (quoting Todd v. York County, 100 N.W. 299, 305 (Neb. 1904)).

223. Gregory v. Bush, 31 N.W. 90, 93 (Mich. 1887).

224. Gene B. Glick Co. v. Marion Constr. Corp., 331 N.E.2d 26, 31 (Ind. Ct. App. 1975).

225. Briscoe v. Parker, 58 S.E. 443, 444 (N.C. 1907).

226. Erickson v. Tyler, 186 N.W.2d 123, 126 (Neb. 1971).

227. Todd, 100 N.W. at 300. Alternatively, some courts formulate the limit as “unreasonable inconvenience.” Levene v. Salem, 229 P.2d 255, 260 (Or. 1951).

228. Dudley Special Rd. Dist. v. Harrison, 517 S.W.2d 170, 180 (Mo. 1974) (quoting Young v. Moore, 36 S.W.2d 740, 744 (Tex. Crim. App. 1951)).

229. Bd. of Drainage Comm’rs v. Bd. of Drainage Comm’rs, 95 So. 75, 79 (Miss. 1922).

Because the damage is caused by a reasonable use, although “perhaps somewhat enlarged in the interests of agriculture and the improvement of lands,” the injured landowner “must submit to any resulting inconvenience.”²³⁰

The good husbandry rule is somewhat impervious to other judicial grappling with the complexities of surface water liability because the rule often exists within statutes. Nebraska, for example, has maintained the good husbandry rule for drainage via statute.²³¹ Similarly, Illinois enacted the good husbandry rule within its Drainage Code.²³²

The impact of the good husbandry rule has expanded significantly as courts have taken it beyond the agricultural context. Some courts have concluded that “[a]lthough the good husbandry exception developed to promote agriculture . . . the general principle applies to urban and suburban settings.”²³³ The exception would then apply “regardless of whether it was caused by diversion from another watershed, the installation of septic tanks, the grading and paving of streets, or the construction of houses, basements and appurtenances”; the determination would simply turn upon whether the activities were “consistent with the policy of reasonableness of use which led initially to the good-husbandry exception.”²³⁴

3. Social Utility

Social utility refers not simply to the usefulness of the landscape alteration to the defendant, but rather more generally to the overall social utility of the defendant’s activities.²³⁵ As a result, social utility goes beyond balancing the interests of the two parties to considering the utility of the defendant’s conduct for society as a whole.²³⁶

In surface water cases, social utility is determined through multiple approaches and mechanisms. Social utility forms a significant part of any reasonableness analysis, but “a fact finder must still determine the reasonableness of an actor’s conduct in relation to the plaintiff, even if the

230. Gilfillan v. Schmidt, 66 N.W. 126, 129 (Minn. 1896).

231. NEB. REV. STAT. § 31-201 (2010).

232. See ILL. DRAINAGE CODE § 2-1 (2015).

233. Bollweg v. Richard Marker Assocs., 818 N.E.2d 873, 885 (Ill. App. Ct. 2004).

234. Templeton v. Huss, 311 N.E.2d 141, 146 (Ill. 1974).

235. As the court explains in *Page Motor Co. v. Baker*, the question is not merely the “relative advantage to the actor and disadvantage to the adjoining landowners,” but also the “social utility” of the activity. 438 A.2d 739, 741 (Conn. 1980).

236. Of course, considering social utility as a part of determining liability does not necessarily mean that socially useful actions will not require compensation. The question becomes whether “the gravity of the harm may be found to be so significant that it requires compensation regardless of the utility of the conduct of the defendant.” *Pendergrast v. Aiken*, 236 S.E.2d 787, 797 (N.C. 1977).

conduct has social utility.”²³⁷ Alternatively, social utility may enter into the court’s analysis through the basic mechanisms of the law of nuisance, which may require consideration of the social utility of the defendant’s conduct.²³⁸ Additionally, variations on both the common enemy and civil law approaches may include considerations of social utility. For example, under California’s modified civil law approach, courts must weigh the social utility of the defendant’s conduct against the burden imposed on the neighboring landowner.²³⁹

Naturally, land improvement and development tend to establish monetarily quantifiable social goods such as new businesses, or more arable acres of land. As a result, when courts decide issues of liability by calculating the social utility of competing land uses, they inevitably end up favoring the development imperatives of the day. The rationale is simply that “society has an interest in developing land for general welfare.”²⁴⁰ For example, courts have not hesitated to find that “today’s mass home building projects . . . are assuredly in the social good.”²⁴¹ Such calculations inevitably reveal the temporal relativity of social utility as a benchmark, introducing a constantly moving, pro-development target into property rights jurisprudence.

4. Benefits and Burdens for Injunctions

As surface water questions sit uncomfortably at the intersection of property, tort, and water law, at times the procedural posture of a case will involve a request for injunctive relief. While the rules vary to some degree, in general, injunction requests tend to involve some type of “balancing [of] the equities,” where the court will weigh whether the “hardship to be suffered by the [enjoined party is] . . . disproportionate to the . . . benefit to be gained by the injured party.”²⁴² Like the reasonableness rule, and for the same reasons, this approach favors development imperatives: the economics of development can be more easily proven and are more likely to weigh in favor of the developing landowner.

237. *Crest Chevrolet-Oldsmobile-Cadillac, Inc. v. Willemsen*, 384 N.W.2d 692, 698 (Wis. 1986).

238. See RESTATEMENT (SECOND) OF TORTS § 826 (AM. LAW INST. 1979) (requiring consideration of whether “the gravity of the harm outweighs the utility of the actor’s conduct”).

239. *Sheffett v. County of Los Angeles*, 84 Cal. Rptr. 11, 17 (Ct. App. 1970).

240. *State v. Deetz*, 224 N.W.2d 407, 414 (Wis. 1974).

241. *Armstrong v. Francis Corp.*, 120 A.2d 4, 10 (N.J. 1956).

242. *Hendrickson v. Wagners, Inc.*, 598 N.W.2d 507, 511 (S.D. 1999) (citing *Knodel v. Kassel Township*, 581 N.W.2d 504, 507 (S.D. 1998)).

5. Split Rules for Urban/Rural Landscapes

As we have seen, where courts have decided to split rules for urban and rural landscapes, those choices have often been made explicitly to rationalize more development within urban areas. Additional exceptions have been developed where agribusiness was extensive enough to suggest additional exceptions to rural rules.

C. Re-Thinking Surface Water Liability in the Twenty-First Century

Surface water rules carry with them a long history of a particular view of land—one deeply influenced by the British approach to land management, which emerged from contemporaneous agricultural science. Rather than being re-examined in light of changing times and changing scientific knowledge, existing doctrines continued unchecked. Now, with our knowledge that drainage generally does not profitably yield arable land, development generally means building businesses, roads, and homes, not planting new fields. Yet, those very different activities are still governed by rules that originated in the context of sixteenth and seventeenth century agricultural science. At this point, there is an extensive body of cases that either explicitly or implicitly impose a pro-development bias—and particularly one that encourages drainage—in the process of determining surface water liability. That bias supports drainage and the destruction of natural wetlands by reducing, if not eliminating, potential liability for ditching, draining, and diverting until the land is dry.

The pro-development bias carries with it important implications in the wetlands context, including the release of stored carbon, the destruction of natural carbon sequestration devices, and the destruction of wetlands that otherwise could buffer against storms and mitigate the effects of flooding and sea level rise. Most importantly, as surface water events become more frequent through the occurrence of more “super storms,” negative climate change impacts will continue to worsen if the development bias remains unchallenged. The natural landscapes that offer us some protection (wetlands, salt marshes, and so forth) will be subject to development as usual. And as more and more lands are developed, climate change itself is likely to accelerate as a result of the release of carbon and the destruction of natural carbon sequestration devices, as well as the increase in fossil fuels associated with the construction of new buildings and new roads.

I hope considering the origins of surface water liability rules and their role in fostering drainage and development will prompt serious reevaluation of these rules. Given the long history of jurisprudence in this area, reconsideration of the policies supporting the rules of surface water liability will

likely require statutory changes. Historically, statutes have tended to entrench in law rather than challenge the existing jurisprudence. Thus, statutory reform could provide an opportunity for a thorough reexamination of the politics and policies that support the current rules of surface water liability. Constituents and legislators could also then consider the climate change implications of these rules.

This Article provides one option for future legislation. While the many landscape-specific exceptions have complicated the field and likely made community understanding of the rules difficult, a single rule of landscape-specific reasonableness offers important advantages. Such a rule would support the reasonable expectations of the landowner with respect to development, but could also advance the public good through maximizing sustainability when the most benefit can be gained at the least cost. The landscape-specific rule I propose would favor development within areas that were already highly developed, while disfavoring development in landscapes that remain closer to their natural state.

The point of such a rule would be to maximize economics where there were relatively few gains to be had from the landscape for climate health, but then maximize climate health where there were significant potential impacts to an entirely or largely undeveloped landscape. In already highly developed landscapes, such as where a tiny quarter acre of wetlands struggles between a McDonald's and a Wendy's, protecting the natural landscape would yield fewer environmental benefits. Not being connected to a larger network of wetlands, such a parcel would not likely yield significant benefits in terms of mitigating flooding or sea level rise. Such a parcel would likely suffer from nearby pollutants and would not offer a healthy and robust ecosystem. Separated from other wetlands, it would not offer the same diversity of plant and animal life. For those reasons, it would not perform as effectively as a carbon sequestration device. While there would, of course, be environmental consequences to draining such a parcel, those consequences would be small when compared to draining a larger and healthier wetland. In a more highly developed neighborhood, the landowner's expectations in terms of his right to develop and potential economic return are significant. A rule that is more open to development in these circumstances honors the landowner's expectations with relatively little loss to the public good.

In contrast, destruction of a larger, more robust wetland with a healthier ecosystem would harm the public significantly, both in terms of carbon sequestration and in terms of mitigating the effects of climate change. As for the landowner's expectations, reasonably, he should not anticipate as much freedom to develop such a parcel. A rule that disfavors development

in this circumstance does little damage to the landowner but maintains significant public goods.

Surface water liability rules are not, of course, our only route to protecting wetlands or to managing land use. There are a variety of avenues for both goals. Any particular surface water liability case will involve adjudicating only the rights of the parties to the case. As we have seen, however, the rules we apply in such cases impact land use more broadly. This is particularly evident in how the courts treat drainage. As is always the case in property and tort law, such adjudications also implicate large-scale social issues that deserve thoughtful attention—attention that has often been paid in other property and tort contexts.²⁴³

CONCLUSION

An increased risk of flooding associated with climate change and urban development will substantially increase the relevance of surface water rules and expand the number of pending cases at any given time. If our vision of the relationship between humans and land has changed, we may have arrived at a critical juncture for changing the rules of surface water. Currently, our surface water liability rules reflect a continuing influence of British surface water drainage policy, which evolved from discredited eighteenth century agricultural science. These rules encourage development, thereby accelerating climate change and increasing its impact by further enabling the destruction of protective natural landscapes.

243. One of the classical examples is Calabresi & Melamed's investigation of nuisance law and pollution. While a nuisance suit involves a liability and remedy determination for two parties, it also implicates much larger questions about how society chooses to manage the problem of pollution through property and/or tort concepts. Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972).