NOTES

TROUBLED WATERS: EXPANSION OF THE MICHIGAN PUBLIC TRUST DOCTRINE IN AN ERA OF INCREASING POLLUTION

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INTRODUCTION

Michigan's waters are in danger. Widespread pollution of Michigan's drinking water first sparked national headlines due to the ongoing Flint water crisis.[1] That crisis arose when lead levels in the drinking water of the city of Flint increased to hazardous levels after Flint switched its water supply from Detroit to the Flint River.[2] The long-term effects of the Flint water crisis on the residents of Flint are still uncertain, and legal action regarding the decision to switch to the Flint River water and slow governmental response to the crisis are still pending.[3] Unfortunately, a new threat to Michigan's water bodies has recently captured state and national headlines, leading to more fear for Michigan residents. Unlike the Flint water crisis, the affected area of these pollutants is not linked to one city: the contamination sites litter the State of Michigan.[4]

Michigan residents have been transfixed by the emerging per- and polyfluoroalkyl substances (PFAS) crisis, as statewide testing of water resources revealed hazardous PFAS levels in contamination sites across the

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1. *Flint Water Crisis Fast Facts*, CNN, https://www.cnn.com/2016/03/04/us/flint-water-crisis-fast-facts/index.html (last updated July 2, 2019, 2:29 PM).

2. *Id.*; *see also* Dominic Adams, *Closing the Valve on History: Flint Cuts Water Flow from Detroit After Nearly 50 Years*, MLIVE (Apr. 25, 2014), https://www.mlive.com/news/flint/2014/04/closing_the_valve_on_history_f.html. The switch was intended to last during the construction of a pipeline from Lake Huron to Flint that was expected to lower water costs and alleviate some of Flint's financial problems. *Id.*

3. *See* FLINT WATER CLASS ACTION, http://www.flintwaterclassaction.com/ (last visited Mar. 3, 2019); Lawrence Hurley, *U.S. Supreme Court Allows Flint Water Contamination Lawsuits*, REUTERS, (Mar. 19, 2018, 9:57 AM), https://www.reuters.com/article/us-usa-court-water/u-s-supreme-court-allows-flint-water-contamination-lawsuits-idUSKBN1GV1RB.

4. Garret Ellison, *All Known PFAS Sites in Michigan*, MLIVE (July 10, 2018, 2:22 PM), https://expo.mlive.com/news/erry-2018/07/00699c24a57658/michigan_pfas_sites.html; *see also PFAS Sites Being Investigated*, MICHIGAN.GOV, https://www.michigan.gov/pfasresponse/0,9038,7-365-86511—-,00.html (last visited Mar. 18, 2019).

Upper and Lower Peninsulas of Michigan.[5] PFAS refers to a group of man-made chemicals that have been linked to serious health problems in humans and animals, which can accumulate in the body from tainted water or from eating affected animals.[6] PFAS have been used in manufacturing since the 1940s and in firefighting foam used by military branches and fire departments.[7] The PFAS contamination has been widely publicized due to the discovery of unsafe PFAS dumping practices of manufacturer Wolverine World Wide in Kent County. Due to unsafe dumping practices of tannery waste, PFAS spread to many drinking wells near one of Wolverine World Wide's tanneries.[8]

Due to this most recent water crisis, and the looming threat of potential future water crises from under-researched chemicals used in manufacturing across the state, Michigan citizens deserve satisfactory governmental responses to toxic pollution facing many water bodies in Michigan. The role of the state government in this crisis must necessarily be larger than any federal role. Although Congress broadly declared, "it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited"[9] in the Clean Water Act, federal action is not sufficient to solve state water crises like the PFAS crisis because of the limited nature of federal regulatory authority.[10] In addition, although Michigan has its own environmental legislation (including the Natural Resources and Environmental Protection Act) and a Department of Environmental Quality[11] to regulate pollution in Michigan, the lackluster response from the State to the Flint water crisis has not instilled confidence in

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5. Paula Gardner & Garret Ellison, *Michigan's Next Water Crisis is PFAS - and You May Already Be Affected*, MLIVE (July 10, 2018), https://www.mlive.com/news/page/michigans_water_crisis_pfas.html.

6. *Basic Information on PFAS*, U.S. ENVTL. PROT. AGENCY, https://www.epa.gov/pfas/basic-information-pfas (last visited Mar. 18, 2019).

7. *Id.*

8. Amy Biolchini, *What to Know About Toxic Wolverine Dump Sites and Drinking Water*, MLIVE (Oct. 17, 2017),
https://www.mlive.com/news/grand-rapids/2017/10/wolverines_toxic_legacy.html.

9. Clean Water Act § 101(a)(3), 33 U.S.C. § 1251(a)(3) (2018).

10. First, the waters that are subject to federal regulation are uncertain. The Clean Water Act defines "navigable waters," over which the federal government has regulatory authority, as "waters of the United States." 33 U.S.C. § 1362(7) (2018). However, Congress declined to define "waters of the United States" in the Clean Water Act. Therefore, it has fallen to two executive agencies, the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency to define "waters of the United States" for their regulatory purposes. *See* 33 C.F.R. § 328.3 (2018). Further limits on federal regulatory authority over PFAS is discussed *infra*, Part III.A.

11. As of the writing of this Note, the department's name was the Department of Environmental Quality (DEQ). Michigan Governor Gretchen Whitmer recently issued an executive order to reorganize the DEQ and rename it the Department of Environment, Great Lakes and Energy (EGLE). MICH. GOVERNOR GRETCHEN WHITMER, EXECUTIVE ORDER NO. 2019-06, https://www.michigan.gov/whitmer/0,9309,7-387-90499_90705-490039—,00.html (last visited Mar. 18, 2019). This order was effective on April 22, 2019. *Id.* All references to the DEQ should be understood as references to the new department, EGLE.

the ability of legislative and administrative actors to solve water crises in Michigan.

An expansion of the public trust doctrine in Michigan would be a valuable tool to counter the PFAS crisis and future pollution crises in Michigan's waters. Currently, Michigan employs a relatively narrow application of the public trust doctrine.[12] The most recent Michigan Supreme Court ruling did expand the doctrine, as the court ruled there that Michigan residents have a right to walk along the shores of the Great Lakes in Michigan up to the ordinary mean high-tide line, indicating at least that the court may be willing to further expand the doctrine.[13] The expanded right to walk along the shores, however, was carefully limited by the court: it did not extend to non-navigable waters in Michigan, and perhaps not even to other navigable waters in Michigan, as it only expressly applied to the Great Lakes.[14] An extension of that right to other waters in Michigan would allow Michigan residents to enjoy more of the beauty of Michigan's waters, but the right to walk along the shore is not pressing like the need to protect public trust waters from pollution. The Supreme Court of Michigan described the public rights in the Great Lakes as including rights to "fishing, hunting, and boating for commerce or pleasure."[15] Elevated levels of PFAS have already impacted the ability of Michigan residents at least to fish or hunt near contaminated water bodies.[16] If the public trust doctrine's purpose in Michigan was expanded to protect public trust waters from toxic pollutants, Michigan residents could use the courts to hasten State responses to future pollution crises.

Michigan's waters are uniquely vast and invaluable for Michigan's economic success. The State of Michigan's largest borders consist of four of the five Great Lakes.[17] In fact, the official state motto of Michigan is "Si Quaeris Peninsulam Amoenam Circumspice," which translated means, "If you

12. *See* Robin Kundis Craig, *A Comparative Guide to the Eastern Public Trust Doctrines: Classifications of States, Property Rights, and State Summaries*, 16 PA. ST. ENVTL. L. REV. 1, 70–71 (2007).

13. Glass v. Goeckel, 703 N.W.2d 58, 73 (Mich. 2005).

14. *Id.*

15. *Id.* at 65.

16. *See PFAS in Michigan Fish*, MICHIGAN.GOV, https://www.michigan.gov/som/0,4669,7-192-45414_45929_83470_83473-463860—,00.html (last visited Mar. 18, 2019); *see also* Ryan Stanton, *PFAS in Huron River Raises Question for Ann Arbor Deer Cull*, MLIVE (Nov. 23, 2018), https://www.mlive.com/news/ann-arbor/2018/11/pfas_in_huron_river_raises_que.html#incart_river_index (Michigan issued a "do not eat" advisory for all fish in the Huron River); Garret Ellison, *Michigan Warns of PFAS Levels in Deer Around Air Force Base*, MLIVE (Oct. 19, 2018), https://www.mlive.com/news/2018/10/oscoda_pfas_deer_advisory.html (Michigan issued a "do not eat" advisory for deer within a five mile radius of a PFAS-contaminated wetland in Oscoda Township).

17. *Great Lakes Map*, DEP'T ENVTL. QUALITY, https://www.michigan.gov/deq/0,4561,7-135-3313_3677-15926—,00.html (last visited Mar. 18, 2019).

seek a pleasant peninsula, look about you,"[18] referencing the two peninsulas that make up the State of Michigan. In total, the coastline of the Great Lakes in Michigan is approximately 3,200 miles.[19] In addition to the longest amount of Great Lakes shoreline in the United States, Michigan also has a multitude of inland lakes and rivers.[20] The amount of water in Michigan gives Michigan residents great access to water-based activities, and the attachment of Michigan residents to those activities and Michigan's waters makes the contamination by toxic chemicals all the more devastating. Recreational boating alone brings billions of dollars to Michigan's economy, and if the ability of Michigan residents to boat is affected by pollution, it could cause significant financial hardship.[21]

This Note argues that the public trust doctrine in Michigan should be expanded to recognize a duty under the public trust to protect Michigan's waters from pollution of toxic chemicals. Part I of this Note will provide an overview of the origins of the public trust doctrine and the history of the public trust doctrine of Michigan. Part II will discuss the background of the PFAS pollution crisis. Part III will examine the federal and state environmental regulatory systems and discuss why the existence of these systems does not eliminate the need for an expansion of the public trust doctrine. Part IV will argue that the purpose of the public trust doctrine in Michigan should be expanded to include elimination of pollution in public trust waters to allow residents with a mechanism to alleviate the effects of the PFAS crisis and to protect those waters from future water crises.

PART I

A. Origins of the Public Trust Doctrine

The public trust doctrine originated in Roman Law, and can be traced to the reign of Emperor Justinian in the seventh century A.D.[22] The Institutes of Justinian state, "by natural law, common to all are these: the air, running water, the sea, and therefore the seashores."[23] Scholars believe that this was the origin

18. *State Motto*, MICHIGAN.GOV, https://www.michigan.gov/som/0,4669,7-192-29938_30245-2606—,00.html (last visited Mar. 3, 2019).

19. *Michigan's Great Lakes*, PURE MICH., https://www.michigan.org/michigan-s-great-lakes (last visited Mar. 3, 2019).

20. *Michigan Water Facts*, MICH. ST. U., https://www.canr.msu.edu/news/michigan_water_facts (last visited Mar. 18, 2019).

21. *Rec Boating Wields a Hefty Economic Clout in the Great Lakes*, GREAT LAKES COMMISSION (July 11, 2007), https://www.glc.org/rec-boating-wields-a-hefty-economic-clout-in-the-great-lakes/.

22. William D. Araiza, *Democracy, Distrust, and the Public Trust: Process-Based Constitutional Theory, the Public Trust Doctrine, and the Search for a Substantive Environmental Value*, 45 UCLA L. REV. 385, 395 (1997).

23. J. INST. 2.1.1 (J.A.C. Thomas trans., 1975). Some commentators do not agree with this characterization of Roman law. Professor James Huffman noted that this quotation in the Institutes of Justinian is followed by the caveat, "whilst he abstains from damaging farms, monuments,

of the idea that some resources should not be held only in private hands, but should be accessible to the public.[24] The proto-public trust concept was subsequently co-opted by England in the Middle Ages.[25] English rights to public resources were first enshrined in the Magna Carta and refined and expanded in the English common law prior to the American Revolution.[26] Under the English common law, the public held rights to navigation, fishing, and boating in navigable waterways.[27] In England, the crown as sovereign held the rights in trust for the public, and the crown "could not sell or alienate th[e] public right or interfere with the public uses protected by it."[28] The rights over navigable waters were split: "the title, *jus privatum*, in such lands . . . belong[ed] to the king, as the sovereign; and the dominion thereof, *jus publicum*, [was] vested in him, as the representative of the nation and for the public benefit."[29] The *jus privatum*, or private interests in the land or the legal title, could be alienated by the king to private owners, but the *jus publicum* was to be held by the king in trust for the public, so when the title was conveyed the king continued to hold the *jus publicum* rights in trust for the public.[30]

The Supreme Court of the United States recognized that the title to navigable waters was transferred to the states following independence from Great Britain: "[W]hen the revolution took place, the people of each state became themselves sovereign; and in that character hold the absolute right to all their navigable waters, and the soils under them, for their own common use . . . ."[31] The Court further recognized that title to navigable lands would also transfer to states that were formed out of territories of the United States,

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edifices, etc. which are not in common as the sea is." James L. Huffman, *Protecting the Great Lakes: The Allure and Limitations of the Public Trust Doctrine*, 93 U. DET. MERCY L. REV. 239, 241 (2016) (quoting J. INST. 2.1.1 (Thomas Cooper trans. & ed., 1841)). Huffman contends this language means that Justinian was merely referring to a rule of capture to allow privatization of water resources to those who could use it, and that the public trust doctrine stems from a "'creative judicial misunderstanding' of Roman Law." *Id.* at 242. The majority of authority agrees that the public trust doctrine stems from Roman law and accept the traditional view of the Institutes of Justinian as a proto-public trust doctrine, and it is possible that Professor Huffman's well-known negative view of the public trust doctrine may have affected his characterization of the Institutes of Justinian. *See* Michael C. Blumm, *Public Property and the Democratization of Western Water Law: A Modern View of the Public Trust Doctrine*, 19 ENVTL L. 573, 597 n.108 (1989) (referring to Professor Huffman's reputation as the "Darth Vader of the public trust.").

24. Austin W. Probst, Note, *Go with the Flow: The Public Trust Doctrine and Standing*, 62 WAYNE L. REV. 535, 537 (2017).

25. Richard J. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631, 634 (1986).

26. *Id.* at 635.

27. James Olson, *All Aboard: Navigating the Course for Universal Adoption of the Public Trust Doctrine*, 15 VT. J. ENVTL. L. 361, 368 (2014).

28. *Id.*

29. Shively v. Bowlby, 152 U.S. 1, 11 (1894) (emphasis added).

30. Kenneth K. Kilbert, *The Public Trust Doctrine and the Great Lakes Shores*, 58 CLEV. ST. L. REV. 1, 4 (2010).

31. Martin v. Waddell's Lessee, 41 U.S. 367, 410 (1842).

under the equal footing doctrine.[32] The State's sovereign ownership of the title of submerged land under navigable waters is accompanied by a duty that the State as sovereign safeguard the rights of the public to navigate the waters.[33] The public trust doctrine granted the State power to regulate navigable waters as well as the land underneath them to protect the rights of the public from private encroachment. The Court has also stated that the states determine the scope of their own public trust doctrine: "[T]he contours of th[e] public trust do not depend upon the Constitution. Under accepted principles of federalism, the States retain residual power to determine the scope of the public trust over waters within their borders . . . ."[34]

Although earlier cases laid the groundwork by recognizing sovereign control over navigable lands, the oft-cited 'lodestar' case of the American public trust doctrine is *Illinois Central Railroad v. Illinois*.[35] In that case, the Illinois legislature purported to give the Illinois Central Railroad ownership of a large tract of submerged lands in Lake Michigan so the railroad could fill in the submerged land to construct a new harbor for the city of Chicago, which would be run by the railroad.[36] Four years later, the Illinois legislature repealed the legislation granting the submerged land, and the Illinois Central Railroad filed a lawsuit arguing Illinois could not repudiate the conveyance of land once it granted the land to the railroad.[37]

The Court began its reasoning by acknowledging that the public trust doctrine had already been applied in the United States to coastal submerged lands:

> It is the settled law of this country that the ownership of and dominion and sovereignty over lands covered by tide waters, within the limits of the several States, belong to the respective States within which they are found, with the consequent right to use or dispose of any portion thereof, when that can be done without substantial impairment of the interest of the public in the waters . . . .[38]

The Court then examined the issue of whether the public trust doctrine could apply to the Great Lakes, as Lake Michigan's submerged lands were at issue.[39] The Great Lakes consist of five lakes, largely within the United States, which are significant due to their unusually large size for freshwater lakes that allows a large amount of commercial activity between states and with Canada.[40] The

32. *See* United States v. Holt State Bank, 270 U.S. 49 (1926).

33. Kilbert, *supra* note 30, at 4.

34. PPL Mont., LLC v. Montana, 565 U.S. 576, 604 (2012).

35. Ill. Cent. R.R. Co. v. Illinois, 146 U.S. 387 (1892).

36. *Id.* at 440.

37. *Id.* at 448.

38. *Id.* at 435.

39. *Id.*

40. *See* Jeff Desjardins, *If the Great Lakes Region Were a Country, It Would Have the Third Largest Economy in the World*, BUS. INSIDER (Aug. 20, 2017, 7:05 AM), https://www.businessinsider.com/great-lakes-region-economy-infographic-2017-8. The Great

Court analogized the Great Lakes to oceans due to the similarity between the Great Lakes and seas and concluded that the public trust doctrine does apply to the Great Lakes.[41]

After holding that the public trust doctrine applied to the Great Lakes, the Court had to determine whether the Illinois Legislature was authorized to sell the submerged lands of Lake Michigan to a private developer, even for the ostensibly public purpose of constructing a new harbor.[42] The Court reasoned that because the Illinois Legislature held the submerged lands under the public trust doctrine, it could not alienate the lands without considering the public interest in the submerged lands.[43] The Court noted that although states are able to sell certain parcels of public trust land for the construction of "wharves, docks and piers," because those structures actually enable commerce over navigable waters, the State of Illinois could not "substantially impair the public interest in the lands and waters"[44] and granting an entire harbor to a private owner would substantially impair the public interest. Instead, Illinois was required "to preserve such waters for the use of the public."[45] Additionally, courts have characterized this decision as acknowledging that "states cannot divest themselves of their trust obligations by alienating public lands,"[46] demonstrating the permanent obligation of the state with regard to public trust lands to consider public trust rights of the public before they act in ways that affect public trust resources.

B. History of the Public Trust Doctrine in Michigan

1. Early History of the Public Trust Doctrine in Michigan

The State of Michigan was formed out of part of the Northwest Territory formally created by the Northwest Ordinance in 1787.[47] When Michigan gained statehood in 1837, it took the title for submerged lands under navigable waters from the federal government, due to the equal footing doctrine.[48] The Supreme Court of Michigan first held that the public trust doctrine applied to the Great Lakes in 1896 in *People v. Silberwood*,[49] where the court concluded the public

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Lakes touch eight states in total: Michigan, Minnesota, Wisconsin, Illinois, Indiana, Ohio, New York, and Pennsylvania. *Great Lakes Map*, DEP'T OF ENVTL. QUALITY, https://www.michigan.gov/deq/0,4561,7-135-3313_3677-15926—,00.html (last visited Mar. 18, 2019).

41. *Ill. Cent. R.R. Co.*, 146 U.S. at 435.

42. *Id.* at 438–39.

43. *Id.* at 455.

44. *Id.* at 452.

45. *Id.* at 453.

46. Kelsey Breck, Note, *Closing the Regulatory Gap in Michigan's Public Trust Doctrine: Saving Michigan Millions with Statutory Reform*, 46 U. MICH. J.L. REFORM 267, 272 (2012).

47. *The Development of Michigan's Boundaries*, MICH. ST. U., http://geo.msu.edu/extra/geogmich/treaties.html (last visited Mar. 3, 2019).

48. *See* Pollard v. Hagan, 44 U.S. 212, 222 (1845).

49. People v. Silberwood, 67 N.W. 1087, 1089 (Mich. 1896).

trust doctrine applied to the submerged lands of the Great Lakes just as it applied to submerged lands of tidal waters.[50] The court further held that the State holds navigable waters in trust for the public and cannot alienate the public rights, adopting the *Illinois Central Railroad* holding.[51] The court noted, "[t]he rule is that the State may grant the *jus privatum* but never alienate the *jus publicum*."[52] This references the English common law separation of the two aspects of title in public trust lands, recognizing that when Michigan grants lands subject to the public trust, it does so with a sort of public trust servitude.[53] The explicit adoption of the holding of *Illinois Central* demonstrated Michigan's acknowledgment of its duties under the public trust doctrine to protect navigable waters and the submerged lands beneath them.[54]

The court formally recognized the public trust doctrine in navigable inland lakes in 1860 in *Lorman v. Benson*.[55] Riparian owners in Michigan have title from their property to the center of inland lakes, but navigable riparian waters are also subject to the public trust doctrine, so the surface of the lake is held in the public trust by Michigan, and the public has its traditional public trust doctrine rights on the surface of navigable inland waters in Michigan.[56]

The boundary of the public trust along the shore of the Great Lakes has been an issue at the Supreme Court of Michigan for many years. In *Kavanaugh v. Rabior*, the court determined that land was in the public trust "if it was marked as a lakebed when a survey established the meander line."[57] The court overturned the *Kavanaugh* cases in *Hilt v. Weber*, where it moved the boundary of the public trust to the water's edge, where it had been before the *Kavanaugh* cases.[58]

The Michigan legislature also codified its public trust doctrine.[59] The Michigan Constitution of 1963 includes a provision detailing the importance of environmental protection: "The conservation and development of the natural resources of the state are hereby declared to be of paramount public concern . . . . The legislature shall provide for the protection of the air, water and other natural resources of the state from pollution, impairment and destruction."[60] The Michigan Natural Resources and Environmental Protection

50. *Id.*

51. Nedtweg v. Wallace, 208 N.W. 51, 53 (Mich. 1926).

52. *Id.*

53. Thomas M. Amon, *Strolling the Beach of Uncertainty: The Case for Legislative Action in the Wake of* Glass v. Goeckel, 53 WAYNE L. REV. 715, 721 (2007).

54. Breck, *supra* note 46, at 272.

55. Lorman v. Benson, 8 Mich. 18 (1860).

56. Amon, *supra* note 53, at 728.

57. Jesse Markos, *In the Wake of* Glass, 53 WAYNE L. REV. 771, 775 (2007) (citing Kavanaugh v. Rabior, 192 N.W. 623 (Mich. 1923)). This decision was reaffirmed in *Kavanaugh v. Baird*. Kavanaugh v. Baird, 217 N.W. 2 (Mich. 1928).

58. *Id.* at 776–77.

59. *See* MICH. COMP. LAWS § 324.30111 (2019) (stating riparian owners' rights are subject to the public trust to the ordinary high-water mark).

60. MICH. CONST. 1963, art. IV, § 52.

Act gives citizens a private cause of action to protect public trust resources.[61] This gives Michigan residents an additional avenue to bring public trust claims in addition to their traditional common law public trust rights.

2. *Glass v. Goeckel*: Recent Expansion of the Public Trust Doctrine by the Supreme Court of Michigan

The seminal case for the public trust doctrine in recent Michigan history is *Glass v. Goeckel*, decided over a hundred years after *Illinois Central Railroad*, in 2005.[62] Unlike *Illinois Central Railroad*, *Glass* did not concern the collision of public rights and the rights of private developers, but rather the rights of the public versus the rights of private citizens who owned land on the shores of the Great Lakes.[63] The central issue in *Glass* was "whether the public has a right to walk along the shores of the Great Lakes where a private landowner ostensibly holds title to the water's edge."[64] The land at issue in *Glass* was not submerged lands of a Great Lake, but the boundary of the public trust at the shoreline.[65]

The plaintiff, Joan Glass, claimed that she had the right to walk along Lake Huron, while the defendants Richard and Kathleen Goeckel argued that Glass was trespassing on their land when she walked on the shoreline in front of their property.[66] The Goeckels' deed to their land states that the lake boundary was "the meander line of Lake Huron," which the Goeckels argued meant that they had the right to exclude Glass up to the water's edge.[67] Glass originally sued the Goeckels on an easement theory, but in the later lawsuit contested her right as a member of the public to walk on the Goeckels' land between the ordinary high water mark and the edge of Lake Huron.[68]

Glass argued that her right to walk the shores of Lake Huron was protected by the public trust doctrine, and the Supreme Court of Michigan agreed.[69] The court explained that although the State conveyed littoral property to a private party, it did not convey or limit the public rights in the navigable water of Lake Huron.[70] Thus the land was "originally conveyed *subject to specific public trust rights in Lake Huron and its shores up to the ordinary high water mark*."[71]

Glass is also important for the Michigan public trust doctrine because of the court's analysis regarding the scope of the public trust doctrine and the recognition that Michigan has an affirmative obligation to "preserve and protect

61. MICH. COMP. LAWS § 324.1701(1) (2019).
62. Glass v. Goeckel, 703 N.W.2d 58 (Mich. 2005).
63. *Id.* at 61.
64. *Id.*
65. *Id.*
66. *Id.*
67. *Id.* at 62–63.
68. *Id.* at 63.
69. *Id.* at 78.
70. *Id.* at 62.
71. *Id.*

navigable waters for its people," which the court noted stemmed from the obligation recognized since Roman times.[72]

This case clearly recognized the right of the public to walk up to the ordinary high-water mark on the shores of the Great Lakes, but its narrow holding produced confusion about the extent of the public trust doctrine in Michigan.[73] The case's holding recognized the right of Michigan residents to walk along the shore of the *Great Lakes* to the ordinary high-water mark, making it unclear if the right to walk on the shoreline even applies to other inland navigable waters in Michigan.[74]

PART II

A. Basics of PFAS and its Origins in Michigan

PFAS refers to "[p]er- and polyfluoroalkyl substances . . . a group of man-made chemicals that . . . .have been manufactured and used in a variety of industries . . . in the United States since the 1940s."[75] PFAS are a particularly serious threat because they take a long time to break down in the environment and stay in the human body for a long time, so levels of PFAS in the body do not decrease even a long time after exposure, but continually increase with every new exposure.[76] PFAS have been linked to a variety of health problems in animals and humans, including tumors in animals and higher cholesterol levels.[77] Studies have shown that the chemicals in PFAS can: affect human fertility, increase blood pressure in pregnant women, increase the probability of thyroid disease, increase cholesterol levels, affect the human immune response, and increase the probability of cancer.[78] Drinking water can be contaminated when factories manufacture PFAS or other products that use PFAS, or when municipalities or the armed forces use PFAS for firefighting.[79]

When PFAS were first introduced, they "allowed manufacturers to create waterproof, stain resistant, and non-stick products . . . . used in practically

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72. *Id.* at 63.

73. Jonathan Burleigh, Note, *Don't Fence Me Out: What Are the Rights and Responsibilities of the Public and Riparian Landowners After* Glass v. Goeckel*?*, 84 U. DET. MERCY L. REV. 499, 500–01 (2007).

74. *See id.*

75. *See Basic Information on PFAS*, *supra* note 6.

76. *Id.*

77. *Id.* The adverse health effects of PFAS have been most studied with the PFOA and PFOS PFAS chemicals, which are not manufactured in the United States anymore. *Id.* However, those chemicals are still used in international manufacturing, so imported materials used for goods produced in the United States could have those chemicals including "carpet, leather and apparel, textiles, paper and packaging, coatings, rubber and plastics." *Id.*

78. *Per- and Polyfluoroalkyl Substances (PFAS) and Your Health*, AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, https://www.atsdr.cdc.gov/pfas/health-effects.html (last visited Mar. 18, 2019).

79. *Basic Information on PFAS*, *supra* note 6.

everything."[80] In addition, it was commonly used in the firefighting foam, aqueous film forming foam (AFFF), by fire departments and the armed forces.[81] At first, PFAS concerns centered around employees who were exposed to the chemicals at the workplace in the 1970s and 1980s, but in the 2000s drinking water contamination became evident.[82] After this evidence came to light, companies quit using perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS), the two PFAS chemicals seen as the most toxic, and AFFF stopped being produced,[83] but unfortunately, PFAS are not contaminants that quickly break down. Even though the use of PFAS in manufacturing has decreased, PFAS will continue to remain in the environment and threaten water resources until they are cleaned up.

B. Effects of PFAS on Michigan's Waters and the Response of the Michigan Department of Environmental Quality

As of the writing of this Note, the State of Michigan has publicly identified forty-six contaminated PFAS sites.[84] Of these, three are categorized as "Lakes & Streams": the Clinton River/Lake St. Clair, the Flint River Watershed, and the Huron River.[85] PFAS have affected many groundwater sources in Michigan, but this Note focuses on its effects on surface water bodies in Michigan. The number of contaminated "Lakes & Streams" sites are likely to grow as the Michigan Department of Environmental Quality (DEQ) continues to test lakes and rivers for PFAS levels in water and fish samples.[86]

The Clinton River is in southeast Michigan, and the Clinton River Watershed connects to Lake St. Clair, Lake Huron, and Lake Erie.[87] After elevated levels of PFOS were discovered in the Clinton River Watershed, the Michigan Department of Health and Human Services issued a "do not eat" advisory for bluegill and sunfish.[88] On June 7, 2018, an AFFF spill caused PFAS foam to form on the canal at the base of the Clinton River and at Lake St. Clair.[89] Fortunately, a carbon treatment system was installed to treat the water

80. *PFAS in Michigan: What We Know and What We Need*, MICH. ENVTL. COUNCIL, https://www.environmentalcouncil.org/pfas_in_michigan (last visited Mar. 18, 2019).

81. *Id.*

82. *Id.*

83. *Basic Information on PFAS*, *supra* note 6.

84. *PFAS Sites Being Investigated*, *supra* note 4.

85. *Lakes & Streams Affected by PFAS*, MICHIGAN.GOV, https://www.michigan.gov/pfasresponse/0,9038,7-365-86510_88060_88065—-,00.html (last visited Mar. 18, 2019).

86. *Id.* Contaminated groundwater can very easily spread to surface water bodies, which may also increase the number of surface water contamination sites.

87. *Clinton River/Lake St. Clair*, MICHIGAN.GOV, https://www.michigan.gov/pfasresponse/0,9038,7-365-86510_88060_88065-452829—,00.html (last visited Mar. 18, 2019).

88. *Id.*

89. *Id.*

due to that spill, so PFAS levels in those water bodies were not elevated due to the recent spill, but PFAS that contaminated the water bodies before the spill remain.[90] The recent spill demonstrates the continued danger of further PFAS contamination.

The Flint River Watershed "consists of hundreds of tributary creeks, lakes, and the Flint River proper."[91] Elevated PFAS levels discovered in 2013 by the DEQ in the Flint River resulted in fish advisories.[92]

The Huron River's elevated PFAS levels were discovered after the City of Ann Arbor tested its own drinking water and found high PFAS levels and subsequently tested the Huron River, the source of its drinking water.[93] The Michigan Department for Health and Human Services issued a "do not eat" fish advisory for all fish in the Huron River due to elevated PFAS levels, and on September 18, 2018, the department issued a notice to residents to not swallow foam on the Huron River.[94]

With at least three watershed contaminations identified by the DEQ, affecting three major Michigan rivers, the most pressing question is: how can Michigan implement quick and effective cleanup solutions to the PFAS crisis? Michigan residents want to hold the industrial facilities that produced or used PFAS and those who used firefighting AFFF foam accountable for the contamination they caused, but they need an effective enforcement mechanism for that to happen. There are multiple routes Michigan could choose with regard to the PFAS crisis. First, Michigan could rely on the federal government to regulate the cleanup of PFAS, and the disadvantages of this option is discussed in Part III.A, *infra*. Second, Michigan residents could decide to rely solely on its legislature and DEQ to rectify the situation, an option that is also discussed in Part III.B, *infra*. Lastly, Michigan could use the public trust doctrine to buttress a legislative and administrative response to the PFAS crisis.

The DEQ has been conducting PFAS tests since 2001, when the DEQ tested for PFOA and PFOS in twenty-one streams in Michigan.[95] The DEQ did not act when the results of that study were analyzed because the levels of PFOA and PFOS were not considered dangerous according to "what was known about PFAS at the time."[96] The next activity regarding PFAS by the DEQ was in 2011, when the DEQ discovered dangerously high levels of PFOS in fish near the former Wurtsmith Air Force Base (Wurtsmith) in Oscoda County, resulting

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90. *Id.*

91. *Flint River Watershed*, MICHIGAN.GOV, https://www.michigan.gov/pfasresponse/0,9038,7-365-86510_88060_88065-476513—,00.html (last updated Mar. 8, 2019).

92. *Id.*

93. *Huron River*, MICHIGAN.GOV, https://www.michigan.gov/pfasresponse/0,9038,7-365-86510_88060_88065-476105—,00.html (last visited Mar. 8, 2019).

94. *Id.*

95. *Testing and Treatment*, MICHIGAN.GOV, https://www.michigan.gov/pfasresponse/0,9038,7-365-88059—-,00.html (last visited Mar. 18, 2019).

96. *Lakes & Streams Affected by PFAS*, *supra* note 85.

in "do not eat" advisories for fish near the contaminated site.[97] Due to the results at Wurtsmith, the DEQ conducted statewide sampling in 2013 and 2014 for PFAS in Michigan's rivers, which revealed that "several rivers had PFOS concentrations above background levels in either water, fish, or both."[98]

Testing continued for PFAS, and in 2017 the DEQ tested foam on Lake Margrethe and found PFAS in that foam.[99] After that discovery, the Michigan Department of Health and Human Services issued health advisories that Michigan residents should not consume the foam due to PFAS foam in five water bodies: Van Etten Lake, Lake Margrethe, the Rogue River, the Thornapple River, and the Huron River.[100] PFAS foam should not be ingested by humans, but it could be difficult for Michigan residents to determine whether foam is naturally occurring or if the foam is due to elevated PFAS levels in the waterbody.[101] Although PFAS foam is not usually deliberately consumed by humans, "people also are advised to avoid situations where the foam could be ingested - such as through splashing."[102] The potential danger from splashing likely limits the ability of Michigan residents to use affected water bodies for recreational boating or fishing, which necessarily involve disruptions of the water.[103] Michigan health officials have recently warned Michigan citizens against even touching PFAS foam, further restricting the use of affected waterbodies.[104]

PART III

A. Federal Environmental Statutes and Regulations

The first section of the Clean Water Act outlines its admirable but unrealistic goal "that the discharge of pollutants into the navigable waters be eliminated *by 1985*."[105] That section further declares "it is the national policy

97. *Id.*

98. *Id.*

99. *Camp Grayling - Lake Margrethe, Grayling, Crawford County*, MICHIGAN.GOV, https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704-488777—,00.html (last visited Mar. 18, 2019).

100. *PFAS Foam on Lakes and Streams*, MICHIGAN.GOV, https://www.michigan.gov/pfasresponse/0,9038,7-365-88059_91295—-,00.html (last visited Mar. 18, 2019).

101. *Id.*

102. Paula Gardner, *'Astronomical' PFAS Level Sets New Michigan Contamination Milestone*, MLIVE (Sept. 24, 2018), https://www.mlive.com/news/2018/09/astronomical_pfas_contaminatio.html.

103. Garret Ellison, *Thornapple River Foam Tests Positive for PFAS*, MLIVE (June 29, 2018), https://www.mlive.com/news/grand-rapids/2018/06/thornapple_river_pfas_foam.html.

104. Ann Zaniewski, *Michigan Health Officials Warn: Don't Touch PFAS Foam*, DET. FREE PRESS (May 1, 2019, 6:01 AM), https://www.freep.com/story/news/local/michigan/2019/05/01/michigan-pfas-foam/3634026002/.

105. Clean Water Act § 101(a)(1), 33 U.S.C. § 1251(a)(1) (2018) (emphasis added).

that the discharge of toxic pollutants in toxic amounts be prohibited."[106] This powerful language appears to suggest that Congress granted the federal executive branch the primary power to protect the navigable waters of the United States nationally, but the Clean Water Act did not eliminate the role of states in environmental protection of state water resources. Indeed, the same section states, "It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources . . . ."[107] While the Clean Water Act granted federal regulatory power over navigable waters in the United States to the Environmental Protection Agency (EPA), the Clean Water Act was never intended to fully supersede and override State regulatory power. Instead, the section instructed "[f]ederal agencies [to] co-operate with State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution."[108]

In addition, the Clean Water Act's regulatory scope is inherently uncertain because Congress declined to define "the waters of the United States" in the act itself.[109] This has resulted in uncertainty about the act's jurisdictional scope, which has forced the executive agencies enforcing the Clean Water Act to attempt to define that phrase.[110] The EPA and the Army Corps of Engineers have both promulgated an administrative definition of "the waters of the United States," known as the "Clean Water Rule," in 2015, but as administrative rules, these definitions are vulnerable to changing presidential administrations with different environmental priorities.[111] The Clean Water Rule defines "waters of the United States" to include interstate waters, the territorial seas, impoundments of jurisdictional waters, covered tributaries, and covered adjacent waters.[112] Congress unsuccessfully attempted to overturn the Clean Water Rule in 2016, and current President Trump indicated that he intended to rescind the rule,[113] which he did on February 28, 2017; the EPA and the Department of the Army are currently in the process of revising the rule in a manner consistent with the Executive Order.[114] Political pressures to change

106. 33 U.S.C. § 1251(a)(3).

107. *Id.* § 1251(b).

108. *Id.* § 1251(g).

109. Jamison E. Colburn, *Governing the Gradient: Clarity and Discretion at the Water's Edge*, 62 VILL. L. REV. 81, 81 (2017).

110. *Id.* at 82.

111. *Id.*

112. Clean Water Rule: Definition of "Waters of the United States," 80 Fed. Reg. 37,054 (June 29, 2015) (to be codified at 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401).

113. Colburn, *supra* note 109, at 82. Currently, the Clean Water Rule is in effect in twenty-two states, while the twenty-eight other states use a 1986/1998 definition of "waters of the United States," found at 33 C.F.R. § 328.3 (1986). *Waters of the United States (WOTUS) Rulemaking*, U.S. ENVTL. PROT. AGENCY https://www.epa.gov/wotus-rule (last visited Mar. 18, 2019).

114. *Waters of the United States (WOTUS) Rulemaking*, U.S. ENVTL. PROT. AGENCY, https://www.epa.gov/wotus-rule (last visited Mar. 18, 2019).

the rule demonstrate its inherent uncertainty, which make the EPA a less-than-ideal agency to protect the waters of Michigan from pollution.

On its website section dealing with PFAS chemicals, the EPA describes its role in the PFAS crisis as supporting states and local communities.[115] While the EPA has already drafted a PFAS Management Plan, released unenforceable standards for PFAS levels (in addition to other efforts to help with the identification of dangerous PFAS levels), and increased research into the human health effects of PFAS, it cannot participate in cleanup efforts for PFAS.[116] Instead, the agency focused on engagement efforts with affected communities and "[d]evelop[ed] groundwater cleanup recommendations for PFOA and PFOS."[117] This is because the federal government has not included any PFAS compounds on its list of hazardous substances, which is necessary to give the EPA the authority to order and oversee cleanup work for a particular substance.[118] The lack of authority to regulate PFAS effectively eliminates the EPA as a potential solution to the PFAS crisis. This illustrates a fundamental inability of the federal government to adequately respond to all water crises, which may involve substances that are not yet listed as hazardous but are demonstratively dangerous to human health.

The EPA set a non-enforceable exposure threshold for PFOS and PFOA at 70 parts per trillion (ppt) in May of 2016, which may inform state decisions on where to set a PFAS exposure threshold, but the EPA cannot set a concrete drinking water standard.[119] Even if PFAS were added to the hazardous substances list, the process to determine how much PFOA and PFOS should be allowed in drinking water could take years, and the EPA has not passed a national drinking water standard *since 1996*.[120] Even if the EPA had the regulatory authority to pass enforceable PFAS standards to help clean up PFAS, it is not clear that the EPA could efficiently create PFAS standards to help those currently affected by PFAS.

The failure of the EPA to include PFAS on the hazardous substances list has other effects on former and current military bases in Michigan that likely used AFFF firefighting foam. The U.S. Air Force has already claimed it does not have to follow Michigan regulation on PFAS, relating to the Clark's Marsh

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115. U.S. ENVTL. PROT. AGENCY, EPA 823R18004, EPA'S PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) ACTION PLAN (2019), https://www.epa.gov/pfas/epas-pfas-action-plan.

116. *Id. Ground Water and Drinking Water*, U.S. ENVTL. PROT. AGENCY, https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos (last visited Mar. 18, 2019).

117. U.S. ENVTL. PROT. AGENCY, *supra* note 115.

118. Garret Ellison, *DEQ Says Four PFAS Plumes Leaving Wolverine Dump*, MLIVE (Nov. 27, 2018), https://www.mlive.com/news/grand-rapids/2018/11/deq_says_four_pfas_plumes_leav.html.

119. Garret Ellison, *EPA Data Shows Toxic PFCs in Two Large Michigan Water Systems*, MLIVE (July 28, 2016), https://www.mlive.com/news/2016/07/pfos_pfoa_plainfield_ann_arbor.html.

120. Garret Ellison, *Why Hasn't Michigan Set PFAS Limits for Drinking Water Yet?*, MLIVE (Oct. 17, 2018), https://www.mlive.com/news/2018/10/why_no_michigan_pfas_mcl.html.

contamination site near the Wurtsmith Air Force Base.[121] Michigan tried to enforce a regulation of 12 ppt for PFOS in Michigan groundwater at a point where the groundwater "co-mingles with a lake or river."[122] Perhaps due to the high cost of PFAS cleanup, which is estimated to be as high as $335 million for all contaminated military sites, the U.S. Air Force planned on a protracted cleanup strategy.[123] Indeed, the federal Superfund law, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), allowed the U.S. Air Force to choose a drawn-out, phased approach to address PFAS because the EPA has not designated PFAS as hazardous.[124]

The U.S. Air Force has since claimed that it will be proactive in cleaning up PFAS contamination, due to public outcry and not to any change in federal law.[125] Proactivity should not be dependent on public pressure, but on concrete laws which hold polluters accountable. The U.S. Air Force originally claimed it would not follow Michigan regulations due to federal sovereign immunity,[126] and even if the federal sovereign immunity claim was ineffective, litigating that issue would likely be very costly for Michigan, hampering Michigan's ability to force a clean-up on military bases. The fact that public pressures, and not federal policy changes, incited the U.S. Air Force to reverse its position and promise to clean-up PFAS contamination is demonstrative of the reality that without an affirmative duty to clean up toxic substances, federal government organizations may be particularly reluctant to act quickly due to concerns about the cost of such cleanup.

The Clean Water Act's prohibitions on the discharge of toxic chemicals and the grant of power to the EPA to aid in the protection of navigable waters nationwide is not enough to protect Michigan's water bodies from contamination, especially from PFAS pollution. In addition, the EPA cannot initiate any cleanup processes for PFAS sites, which is very disheartening because toxic PFAS chemicals have contaminated many water resources in Michigan already. This will remain the case until the EPA establishes national drinking water standards for PFAS and designates PFAS as hazardous substances, which would likely take months or years and may be affected by the political views of the current presidential administration, who nominates the head of the EPA. Therefore, the actual cleanup of PFAS, and likely other toxic chemicals, will largely depend on the response of the State of Michigan.

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121. Garret Ellison, *Air Force Refuses to Follow Michigan PFAS Law*, MLIVE (Jan. 29, 2019), https://www.mlive.com/news/2019/01/air-force-refuses-to-follow-michigan-pfas-law.html.

122. *Id.*

123. *Id.*

124. *Id.*

125. Garret Ellison, *Air Force Pledges to be 'Proactive' on PFAS in Oscoda*, MLIVE (Feb. 8, 2019), https://www.mlive.com/news/2019/02/air-force-pledges-to-be-proactive-on-pfas-in-oscoda.html.

126. Ellison, *supra* note 121.

B. State Environmental Statutes and Regulations

The preeminent environmental law in Michigan is the Natural Resources and Environmental Protection Act of 1994 (NREPA).[127] This law outlines the authority of a Michigan administrative agency to regulate water resources.[128] The analogue to the EPA in Michigan is the DEQ which regulates "Michigan's air, land, and water resources to support a sustainable environment, healthy communities, and [a] vibrant economy."[129] The DEQ has the authority under the NREPA to enforce public trust rights, and the act defines "public trust" as "the perpetual duty of the state to secure to its people the prevention of pollution, impairment or destruction of its natural resources, and rights of navigation, fishing, hunting, and use of its lands and waters for other public purposes."[130] The DEQ has been active in the investigation of possible PFAS contamination, and has conducted statewide testing of all municipal systems for PFAS.[131] Unlike the federal government, the Michigan legislature has enacted a concrete definition of the water resources that are protected: "'Waters of the state' means groundwaters, lakes, rivers, and streams and all other watercourses and waters, including the Great Lakes, within the jurisdiction of this state."[132] The DEQ has the duty to "protect and conserve the water resources of the state and shall have control of the pollution of surface or underground waters of the state and the Great Lakes, which are or may be affected by waste disposal of any person."[133] Unlike the EPA, the scope of the waters under the DEQ's regulatory authority are not affected by political administrative changes. The DEQ's ability to regulate pollution in Michigan waters is clear, as is its duty to protect the waters of Michigan.[134] The decisions of the DEQ in its responses to specific water contamination and the standards the DEQ uses, however, are still subject to the drawbacks of the bureaucracy. Indeed, as the author of the original Michigan Environmental Protection Act, Joseph Sax[135] wrote: "[E]ven strongly

127. MICH. COMP. LAWS §§ 324.101–324.2707 (2019).

128. *Id.* at § 324.3103.

129. *About the Department of Environmental Quality*, DEP'T OF ENVTL. QUALITY, https://www.michigan.gov/deq/0,4561,7-135-3306—-,00.html (last visited Mar. 18, 2019). The new Michigan Department of Environment, Great Lakes, and Energy uses substantially the same language: "The Department of Environment, Great Lakes, and Energy's mission is to protect Michigan's environment and public health by managing air, water, land, and energy resources." *About Environment, Great Lakes, and Energy*, MICH. DEP'T OF ENV'T, GREAT LAKES, & ENERGY, https://www.michigan.gov/egle/0,9429,7-135-3306—-,00.html (last visited October 15, 2019).

130. MICH. ADMIN. CODE r. 322.1001(1)(m) (1986).

131. Garret Ellison, *Water Filtration Drops PFAS in Plainfield System to Trace Levels*, MLIVE (Oct. 25, 2018), https://www.mlive.com/news/grand-rapids/2018/10/plainfield_pfas_filter_wolveri.html.

132. MICH. COMP. LAWS § 324.3101(aa) (2019).

133. *Id.* at § 324.3103(1).

134. *Id.*

135. Fred R. Jensen, Comment, *Developing the Future of Michigan Environmental Law: Expanding and Blending MEPA with the Public Trust Doctrine*, 1 DET. C.L. REV. 65, 77 n.68

worded statutes often fail to have much effect at the lower end of the bureaucratic line, where critical decisions are made every day."[136]

There have been serious allegations that the DEQ has not been entirely proactive in its response to the PFAS crisis. A geologist who worked with the DEQ, Robert Delaney, wrote a report in 2012 warning the then-DEQ director Dan Wyant about the dangers of PFAS and the "high likelihood of 'significant exposure to Michigan citizens and ecosystems.'"[137] His report included several recommended actions, and as of the writing of this Note the only recommended action Michigan has taken is to conduct surface water testing, through the MPART program created by former Governor Rick Snyder in 2017.[138] Delaney thought it was likely that other contaminated sites would be found due to the PFAS contamination discovered at the Wurtsmith Air Force Base because of its use of AFFF firefighting foam in its fire training facilities.[139] He testified in front of the United States Senate Oversight Committee field hearing about this report.[140] Delaney noted that he did not know what happened to the report after he gave it to the director and to other upper managers at the DEQ.[141] The lack of a proactive response to the PFAS crisis by the DEQ illustrates that the ability of the DEQ to regulate the waters is tempered by the fact that the DEQ still needs to decide to act. This lackluster response to PFAS demonstrates the drawbacks of relying solely on an administrative agency to respond effectively to water contamination.

The costs of relying on an agency which is constantly subject to the legislature's decisions on its regulatory scope is demonstrated by the lame duck legislation signed by former Governor Rick Snyder on December 28, 2018.[142] That law states, "[A]n agency shall not adopt or promulgate a rule more stringent than an applicable federal standard unless specifically authorized by a statute of this state or unless the director of the agency determines that there is

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(1989). Michigan's environmental laws have since been revised and are now under the National Resources and Environmental Protection Act of 1994. *See* MICH. COMP. LAWS § 324.101 (2019).

136. Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 550 (1970).

137. Garret Ellison, *DEQ Expert Who Warned of PFAS to Testify Before U.S. Senate*, MLIVE (Nov. 3, 2018), https://www.mlive.com/news/2018/11/peters_pfas_gr_subcommittee_he.html.

138. *Id.*; *see also About MPART*, MICHIGAN.GOV, https://www.michigan.gov/pfasresponse/0,9038,7-365-86513—-,00.html (last visited Mar. 18, 2019).

139. Garret Ellison, *Major Warning About Michigan PFAS Crisis Came 6 Years Ago*, MLIVE (July 10, 2018), https://www.mlive.com/news/2018/07/meq_pfas_delaney_2012_report.html.

140. Ellison, *supra* note 137.

141. *Id.*

142. Jim Malewitz, *Gov. Snyder Signs Michigan Lame-Duck Bills Opposed by Environmentalists*, BRIDGE (Dec. 28, 2018), https://www.bridgemi.com/michigan-environment-watch/gov-snyder-signs-michigan-lame-duck-bills-opposed-environmentalists.

a clear and convincing need to exceed the applicable federal standard."[143] Michigan's current enforceable standard for PFAS is 70 ppt, the same as the EPA's non-enforceable threshold.[144] However, it is not clear that 70 ppt is the appropriate standard, especially considering that PFAS can bioaccumulate in humans.[145]

That law makes it much more difficult for the DEQ to pass a stricter standard for PFAS, even though additional DEQ research may find that a lower threshold is likely more beneficial. In order for DEQ officials to change the standard, they would have to wait for statutory authorization from the legislature, who may not agree with the DEQ on the proper standard for PFAS.[146] State Representative Winnie Brinks, for example, proposed a 5 ppt standard for PFAS in drinking water, while state Republicans wanted to wait for statewide testing results of the drinking water.[147] Alternatively, the director of the DEQ would have to demonstrate a "clear and convincing need," to adopt a stricter standard,[148] which may be difficult in the absence of clear research from the EPA (or the DEQ at this time) on PFAS levels, because such research may take a significant amount of time to complete.[149] Indeed, although Michigan introduced lower advisory guidelines for five types of PFAS on April 4, 2019, Governor Whitmer stated that maximum contaminant levels for those chemicals would be set a year later, in the spring of 2020.[150]

With the very real possibility of political disagreements between the Democratic and Republican parties over pollution issues, demonstrated by the lame duck bill tying Michigan environmental standards to the EPA, a neutral, common law doctrine like the public trust doctrine would allow more certainty for Michigan residents seeking to save Michigan's waters. Although the state statutes and the DEQ do contribute greatly to the protection of Michigan's waters, and are not limited by the navigability requirement of the public trust doctrine, the political solutions to the PFAS crisis are not always effective and may be uncertain due to normal political elections or personnel changes at the DEQ. It would be beneficial for Michigan residents to have an alternative

143. H.B. No. 4205, 99th Leg., Reg. Sess. §32(9) (Mich. 2018).

144. Garret Ellison, *Townships with PFAS: Don't Break Our Case in Lame Duck*, MLIVE (Dec. 11, 2018), https://www.mlive.com/news/2018/12/townships-with-pfas-dont-break-our-case-in-lame-duck.html.

145. Garret Ellison, *Why a 'Safe' PFAS Level in Drinking Water is so Ambiguous*, MLIVE (Nov. 27, 2017), https://www.mlive.com/news/grand-rapids/2017/11/what_is_a_safe_pfas_level.html.

146. 2018 Mich. Pub. Acts 602.

147. Garret Ellison, *Democrats Want Legislature to Move PFAS Bill, Hold Hearings*, MLIVE (Sept. 4, 2018), https://www.mlive.com/news/2018/09/mich_house_democrats_pfas.html.

148. *Id.*

149. Ellison, *supra* note 145.

150. Paula Gardner, *Michigan Sets New Health Screening Limits for 5 Types of PFAS*, MLIVE (Apr. 4, 2019), https://www.mlive.com/public-interest/2019/04/michigan-sets-new-health-screening-limits-for-5-types-of-pfas.html.

method to use the courts and hold polluters accountable with the expansion of the public trust doctrine.

PART IV

A. Navigability

First, Michigan should expand its definition of navigability that outlines the scope of the public trust doctrine. The public trust doctrine has traditionally been limited to navigable waters, and the Supreme Court of the United States has determined that a state can define navigability for the purposes of its own public trust doctrine.[151] The traditional test that was received from English common law is the ebb and flow of the tide test, which determined waters were navigable if they were subject to the ebb and flow of the tide, like the oceans.[152] As this test would deem important freshwater bodies like the Mississippi and the Great Lakes non-navigable, when they clearly were navigable in fact by various naval vessels, the Court adopted a modified navigability test to determine federal Commerce Clause jurisdiction in *The Daniel Ball* in 1870.[153] Under that test, navigable waters are waters that are navigable in fact or, "when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water."[154]

Michigan has the authority to define navigability for the purpose of its own public trust doctrine, as the Court explicitly recognized in *PPL Montana, LLC v. Montana*.[155] Currently, Michigan uses a "log-flotation" test, first adopted in *Moore v. Sanborne*, in 1853.[156]

The log-flotation test was adopted during the lumber era in Michigan history, when Michigan's waters were used to transport logs to sawmills, a very important and commercially valuable activity at the time.[157] The logs that were floated down the stream were not the size of logs commonly used for bonfires today. Rather, these logs could be twenty to forty feet long.[158] The log flotation test was a departure from the traditional ebb and flow of the tide navigability

151. Robin Kundis Craig, *A Comparative Guide to the Western States' Public Trust Doctrines: Public Values, Private Rights, and the Evolution Toward an Ecological Public Trust*, 37 ECOLOGY L.Q. 53, 62–63 (2010).

152. The Daniel Ball, 77 U.S. 557, 563 (1870).

153. *Id.* at 564.

154. *Id.* at 563.

155. PPL Mont., LLC v. Montana, 565 U.S. 576, 604 (2012).

156. Moore v. Sanborne, 2 Mich. 519 (1853); *see also* Chris A. Shafer, *Public Rights in Michigan's Streams: Toward a Modern Definition of Navigability*, 45 WAYNE L. REV. 9, 11 (1999).

157. Shafer, *supra* note 156, at 11.

158. Mich. Citizens for Water Conservation v. Nestlé Waters N. Am., Inc., 709 N.W.2d 174, 219 (Mich. 2005) (noting testimony indicated logs that floated down the stream at issue there were twenty to forty feet long).

test for substantially similar reasons as for the federal change: the Supreme Court of Michigan recognized that the ebb and flow of the tide test was not effectively identifying commercially valuable waters in Michigan.[159] The court noted that most other states had already adopted a new test for navigability of their waters and stated "[t]he true test in determining the right of public use in fresh water streams . . . is whether a stream is inherently . . . capable of being used for the purposes of commerce for the floating of vessels, boats, rafts or logs."[160] The court further drew from the language of the Northwest Ordinance of 1787, which "declar[ed] 'that the navigable waters leading into the Mississippi and St. Lawrence, shall be common highways, and forever free.'"[161] The Northwest Ordinance provided evidence that legislators knew the traditional ebb and flow test, which would exclude very large rivers in North America, was too narrow of a test for navigability.

Michigan further expanded its test in 1974 when the Michigan Court of Appeals changed the test to a recreational boating test in *Kelley ex rel. MacMullan v. Hallden*.[162] The river at issue in that case was the St. Joseph River, and defendants erected chains across the river to prevent boats from crossing the river through the defendants' land.[163] The court explicitly referred to the fact that they felt the new recreational boating test was more appropriate due to the change in circumstances by 1974, as compared to the lumber era when the log flotation test was adopted.[164] The court stated:

> We therefore hold that members of the public have the right to navigate and to exercise the incidents of navigation in a lawful manner at any point below [the] high water mark on waters of this state which are capable of being navigated by oar or motor propelled small craft.[165]

However, the Supreme Court of Michigan rejected this attempted expansion of navigability in 1982.[166]

In *Bott v. Natural Resources Commission*, the Supreme Court of Michigan rejected the recreational boat test for navigability, with the result that "thousands of miles of streams in Michigan remain closed to the public for fishing and boating."[167] The court based this decision in part on practical concerns: it was worried about takings lawsuits if it accepted the expanded definition of navigability adopted by the Michigan Court of Appeals in *Hallden*.[168] Instead, the court wanted the Michigan Legislature to decide if

159. *Sanborne*, 2 Mich. at 519–20.
160. *Id.* at 520.
161. *Id.*
162. Shafer, *supra* note 156, at 34–35.
163. *Id.*
164. *Id.*
165. Kelley *ex. rel* MacMullan v. Hallden, 214 N.W.2d 856, 864 (Mich. Ct. App. 1974).
166. Bott v. Comm'n of Nat. Res., 327 N.W.2d 838 (Mich. 1982).
167. Shafer, *supra* note 156, at 11.
168. *Id.* at 12.

navigability should be expanded,[169] but legislative action could also effect a taking.[170] It is unclear that the legislature would be able to effectively avoid takings lawsuits when the court believed it could not.

Professor Chris A. Shafer argued that Michigan should expand its navigability definition in his article, *Public Rights in Michigan's Streams: Toward a Modern Definition of Navigability*.[171] Professor Shafer disagreed with the *Bott* court's fears that changing the definition of navigability would be a taking, and argued that the definition should be changed due to the vast change in circumstances since the log flotation test was adopted in 1853.[172] In particular, Professor Shafer praised Justice Moody's dissent in *Bott*: "Justice Moody's dissent, which is written as if it was the majority opinion, is much better reasoned and is a more accurate portrayal of Michigan's navigability law than Justice Levin's majority opinion."[173] The court in *Moore* first adopted the log flotation test because it recognized that the ebb and flow test was not appropriate for Michigan's navigational needs, and Justice Moody argued that as the log flotation test did not fit Michigan's navigational needs (which were primarily focused on recreation), the Supreme Court of Michigan should expand the navigability test.[174]

Professor Shafer devoted an entire section of his article to the value of recreational boating and fishing in Michigan.[175] Professor Shafer noted that Michigan was the first in the nation for boating in 1995, that recreational boating could add three to four billion dollars to Michigan's economy, and that "fifty-six percent of all boating activity in Michigan is for fishing."[176] The logging industry and other commercial endeavors are no longer the largest use of Michigan's waters, and the navigability test should reflect that change in circumstances. Indeed, the court's analysis in *Moore* provides a strong precedent for changing the navigable water definition when the use of Michigan's waters makes the old navigability test inappropriate.

The *Moore* change in the definition of navigability also shows that takings claims based on the adoption of a recreational boat test would be unlikely to succeed. The adoption of the log flotation test in 1853 greatly expanded the amount of navigable waters in Michigan, because none of Michigan's waters would be navigable under the ebb and flow test.[177] Indeed, after the court reiterated that navigability was determined by the log flotation test in *Collins v.*

169. *Id.*

170. *Id.*

171. Shafer, *supra* note 156.

172. *Id.*

173. *Id.* at 40.

174. Bott v. Comm'n of Nat. Res., 327 N.W.2d 838, 864 (Mich. 1982) (Moody, J., dissenting).

175. Shafer, *supra* note 156, at 13–14.

176. *Id.*

177. *See* Moore v. Sanborne, 2 Mich. 519, 519–20 (1853).

Gerhardt,[178] its decision was challenged in the Sixth Circuit in *Ne-Bo-Shone Ass'n v. Hogarth*[179] on the grounds that it "disturb[ed] a settled rule of property."[180] In that case, the river at issue was not navigable-in-fact under the federal navigable-in-fact test, because boats could not navigate along the river, but it had been used for floating logs since 1880.[181] The Sixth Circuit, applying Michigan law, ruled that the case had not disturbed a settled rule of property because *Collins v. Gerhardt* was merely an affirmation of the rule established in *Moore v. Sanborne*,[182] even though the decision in those cases significantly expanded the public trust doctrine rights when they were decided. The U.S. Army Corps of Engineers estimated that five hundred river miles in Michigan satisfy the navigation-in-fact test, or are capable of use by commercial vessels, but an additional ten thousand miles of rivers and streams in Michigan were used during the logging eras and were historically navigable waters.[183] When the Supreme Court of Michigan adopted the log flotation test in *Moore v. Sanborne*, it likely expanded the public trust doctrine to approximately ten thousand miles of rivers and streams, and the Sixth Circuit declined to recognize this doctrine change as a taking. A further expansion of the navigability test to the recreational boat test, like the expansion to the log flotation test, would be unlikely to be a taking of the property rights of riparian owners along the effected water bodies.

In his dissent, Justice Moody considered the potential takings liability in regard to dead-end lakes, or lakes without a navigable inlet or outlet and completely surrounded by one private owner.[184] Justice Moody noted that the public trust would not extend to "wholly private lakes [which] are limited to those having no navigable inlet or outlet [and] which are completely surrounded by the land of one who is owner in fee," after reviewing the history of the court's decisions on wholly private lakes.[185] The determination of "wholly private lake" status, Moody argued, rested not on the navigability of the lake, but on whether the public had the ability to access the lake lawfully.[186] The determination did not depend on which navigability test the court applied, whether a log flotation test or a recreational boat test, but only on whether there was a navigable inlet or outlet the public could lawfully access.[187] The owners of wholly private lakes would be likely to raise a takings lawsuit, because they hold the sole power to exclude on those lakes, but because the Supreme Court

178. Collins v. Gerhardt, 211 N.W. 115, 117 (Mich. 1926).

179. Ne-Bo-Shone Ass'n v. Hogarth, 81 F.2d 70 (6th Cir. 1936).

180. Shafer, *supra* note 156, at 30.

181. *Ne-Bo-Shone Ass'n*, 81 F.2d at 70.

182. *Id.* at 73.

183. Shafer, *supra* note 156, at 31.

184. Bott v. Comm'n of Nat. Res., 327 N.W.2d 838, 869 (Mich. 1982) (Moody, J., dissenting).

185. *Id.*

186. *Id.*

187. *Id.*

of Michigan's conception of wholly private lakes does not depend on the navigability test, an expanded navigability test would not be a taking of any of the lake owner's rights.

Justice Moody also argued that the recreational boat test would not affect a taking because expanding rights under the public trust doctrine in more waters would not "interfere with any legitimate riparian rights, or alter private title."[188] Instead, in his view the public would merely be able to "make reasonable use of the waters of lakes and streams," while the riparian owners would retain rights of access, rights to the ordinary flow of the riparian water body, and the right to make reasonable use of the water themselves.[189] The expansion of the definition of navigability merely allows the public access to the waters to avail themselves of their public trust doctrine rights; it does not disallow the riparian owners from also using the water body for reasonable uses. Therefore, it is unlikely that an expansion of the public trust doctrine would be considered a taking under Michigan law.

It is also unlikely that the adoption of the recreational boat test in Michigan would violate the federal Takings Clause. First, the expansion of the navigability test would not be a physical taking, because the government would not dispossess an owner of private property, and owners of waterfront property would still be able to exercise their riparian rights.[190] Second, the adopted test would not be a per se taking under the *Lucas v. South Carolina Coastal Council* test, where the Court held that government deprivation of all economic value of a parcel of land is always a taking.[191] Riparian owners retain their riparian rights to reasonable use of water, both because applying the public trust doctrine does not "deprive[] a landowner of all economically beneficial uses,"[192] and because it does not in any way interfere with economically beneficial uses of the adjacent parcels of dry land.[193]

An expansion of the navigability test would also not be a taking under the *Penn Central* balancing test. The *Penn Central* balancing test is applied to regulatory actions that are not per se takings "to determine if the government's action goes 'too far.'"[194] The Court identified three factors for the *Penn Central* test: "[T]he nature of the governmental action, 'the economic impact of the regulation on the claimant, and . . . the extent to which the regulation has interfered with distinct investment-backed expectations.'"[195] The consideration of those factors depends on their impact on the parcel as a whole, not on other discrete property rights held by the parcel owners.[196] As Chris Shafer argued,

188. Shafer, *supra* note 156, at 40.

189. *Bott*, 327 N.W.2d at 873 (Moody, J., dissenting).

190. Shafer, *supra* note 156, at 50.

191. *Id.* at 49–50.

192. Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1018 (1992).

193. Shafer, *supra* note 156, at 62.

194. *Id.* at 56.

195. *Id.*

196. Keystone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 500 (1987).

under the *Penn Central* balancing test, it is unlikely that the expansion of navigability is a taking: "[E]xpanding public fishing and boating opportunities is clearly a legitimate governmental purpose . . . . the economic impact to the landowner is minimal."[197] Further, although expanded boat access may interfere with the investment-backed expectations of privacy for riparian owners, the expectation is less reasonable after the Michigan Court of Appeals briefly adopted the recreational boat test in 1974 in *Hallden*.[198] In addition, even if the expectation of privacy is reasonable due to the court's decision in *Bott*,[199] this factor does not outweigh the factors that do not cut in favor of a taking determination such as the minimal economic impact to the landowner and the strong legitimate public purpose. Therefore, the concern the *Bott* court had for potential takings liability is likely unfounded, and Michigan courts should not be afraid to adopt a recreational boat test for navigability due to fear of takings lawsuits.

For any expansion of the Michigan public trust doctrine's purposes to include water preservation to affect substantial change, Michigan must expand its definition of navigability to include more of Michigan's waters. The PFAS crisis does not discriminate between navigable waters under the log flotation test, and the recreational boat test would better identify commercially valuable waters Michigan residents use today. Michigan should readopt the recreational boat test for navigability due to the changes in the navigational uses of surface water bodies in Michigan: Michigan residents use surface water bodies increasingly for recreation and not solely for log flotation or other commercial uses.

B. Environmental Purpose for the Public Trust Doctrine

Michigan should expand the purpose of the public trust doctrine from the recognized categories of hunting, fishing, navigating, and commerce to also include environmental protections for navigable waters in Michigan. The recognition that the public trust doctrine protects the quality of waters would allow Michigan residents to bring suits against manufacturers under the NREPA,[200] and it would impose an affirmative obligation on the State to monitor the quality of its navigable waters proactively and clean up contaminated waters.[201]

Several states have expanded their public trust doctrines to include more environmental-type rights. California expanded its public trust doctrine in *Marks v. Whitney* to include preservation in 1971.[202] California opted to include preservation "so [the lands] may serve as ecological units for scientific study . . . and as environments which provide food and habitat for birds and marine life,

197. Shafer, *supra* note 156, at 62.

198. *Id.* at 63.

199. Bott v. Comm'n of Nat. Res., 327 N.W.2d 838 (Mich. 1982).

200. MICH. COMP. LAWS § 324.20135 (2019).

201. Glass v. Goeckel, 703 N.W.2d 58, 63 (Mich. 2005).

202. Marks v. Whitney, 491 P.2d 374, 380 (Cal. 1971).

and which favorably affect the scenery and climate of the area."[203] The Supreme Court of California first noted that the public trust was traditionally confined to navigation, commerce, and fishing, and that other states had included the rights "to fish, hunt, bathe, swim, to use for boating and general recreation purposes . . . and to use the bottom of the navigable waters for anchoring, standing, or other purposes."[204] The court then stated: "The public uses to which tidelands are subject are sufficiently flexible to encompass changing public needs. In administering the trust the State is not burdened with an outmoded classification favoring one mode of utilization over another."[205] The court recognized that the purpose of the public trust doctrine is not to protect only the three traditional public trust purposes for their own sake, but to administer the public trust waters in a way that considers the current needs of the public. The court reasoned that the preservation of the navigable waters was necessary for public enjoyment of public trust land, and that it was "one of the most important public uses of the tidelands," so the court was comfortable in expanding the public trust doctrine to environmental preservation.[206]

Hawaii's expansion of the traditional public trust doctrine is embodied in its constitution: "[T]he State and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including . . . water . . . . All public natural resources are held in trust by the State for the benefit of the people."[207] Hawaii's broad public trust doctrine is the product both of the Roman public trust doctrine and the history of Native Hawaiian rights, which has led to an "ecological public trust perspective in the state that favors public rights over private."[208] The relative lack of freshwater in Hawaii has also contributed to its broad public trust doctrine.[209] The Hawaii public trust doctrine includes the purpose of ecological preservation,[210] in addition to the water protection purpose articulated in Hawaii's constitution.

Both Hawaii and California are states known for their natural beauty, so it makes sense that they would want to ensure the protection of their natural sights while also protecting the traditional public trust purposes of navigation, fishing, and commerce.[211] Michigan also has a strong interest in protecting its natural beauty. The Great Lakes are a unique natural resource whose natural beauty

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203. *Id.*

204. *Id.*

205. *Id.*

206. *Id.*

207. HAW. CONST. art. XI, § 1.

208. Craig, *supra* note 151, at 86.

209. *Id.* at 87.

210. *In re* Water Use Permit Applications, 9 P.3d 409, 448 (Haw. 2000).

211. *See* Christopher Ingraham, *Every County in America, Ranked by Scenery and Climate*, WASH. POST, (Aug. 17, 2015, 8:00 AM), https://www.washingtonpost.com/news/wonk/wp/2015/08/17/every-county-in-america-ranked-by-natural-beauty/?noredirect=on&utm_term=.84d52517c67e ("[E]very single one of the 10 highest-ranked counties is located in California.").

contributes both to the tourism industry and quality of life in Michigan.[212] It would make sense for Michigan to follow California and Hawaii's example purely to protect its natural sights, including the beauty of the Great Lakes and its other inland lakes and rivers. In light of the general opposition from landowners to the expansion of the public trust doctrine,[213] however, it would be more realistic to first expand the Michigan public trust doctrine to protect its navigable waters from pollution, in addition to the more pressing concerns of contamination by hazardous chemicals.

Adopting an expansive definition of the public trust like California or Hawaii may not be the most feasible solution for the PFAS crisis. While *Marks v. Whitney* merely expanded the public trust doctrine to preservation, later California cases significantly extended the doctrine further. In *National Audubon Society v. Superior Court*, the California Supreme Court ruled that the California public trust protected the ecological values in the lake at issue, Mono Lake.[214] In that case, the city of Los Angeles started diverting water from five freshwater streams that carried runoff into Mono Lake, which dropped the lake level and threatened the environment of the migratory birds that live on an island in the lake because coyotes were suddenly able to reach the island.[215] The court noted that Mono Lake was navigable and that the public trust extended to ecological protection of Mono Lake to protect "the scenic views of the lake and its shore . . . and the use of the lake for nesting and feeding by birds."[216] The court also expanded its public trust to govern non-navigable tributaries that affect navigable waters,[217] recognizing the ability to consider ecological concerns for the freshwater stream diversion. Wildlife effectively became a protected natural resource around California's public trust regulated water following the court's consideration of the impact that a drop in water levels would have on migratory birds. Michigan should not adopt a similarly broad public trust doctrine at this time. Instead, it should focus on adding an environmental purpose to the public trust doctrine to protect Michigan's navigable waters from pollution like PFAS.

A more measured expansion of the public trust doctrine would be less likely to result in public opposition to the court's decision. Unlike *Glass*, where the Supreme Court of Michigan ruled that Michigan residents had a right to walk along the shoreline of the Great Lakes up to the ordinary high-water

212. *See* Melissa Stanger, Melia Robinson and Sophie-Claire Hoeller, *The Most Breathtaking Natural Wonder in Every State*, BUS. INSIDER (Dec. 10, 2015, 12:01 PM), https://www.businessinsider.com/beautiful-attractions-in-every-state-2015-4 (identifying Lake Superior as a uniquely beautiful natural wonder in Michigan); Mark Kuykendall and Sarah Nicholls, *Great Lakes Vital to Strong Michigan Tourism Industry*, MSU TODAY (June 1, 2016), https://msutoday.msu.edu/news/2016/great-lakes-vital-to-strong-michigan-tourism-industry.

213. *See Welcome to Save Our Shoreline's Home Page*, SAVE OUR SHORELINE, http://saveourshoreline.org/ (last visited Mar. 18, 2019).

214. Nat'l Audubon Soc'y v. Superior Court, 658 P.2d 709, 719 (Cal. 1983) (en banc).

215. *Id.* at 711.

216. *Id.* at 719.

217. *Id.* at 721.

mark,[218] this environmental purpose expansion would not alter the public-trust private-property line in navigable waters. Although *Glass* expanded the ability of the public to enjoy Michigan's Great Lakes shoreline, it affected the rights of private property owners and caused public fears over the integrity of private property ownership. For example, the Save Our Shoreline non-profit organization, based in Bay City, references the case in its list of ten objectives even in 2019: "[P]lacing the [ordinary high water mark] anywhere above the water's edge for the purpose of taking away private property rights is unconstitutional and has no basis under state law."[219] Save Our Shoreline is a group of predominately shoreline owners, who also opposed regulation of the DEQ and the United States Army Corp of Engineers in 2001 due to similar concerns about the infringement of private property rights.[220] As one commentator noted: "*Glass v. Goeckel* began as a local dispute between neighbors and metastasized into a battle between private property rights groups and public interest organizations . . . ."[221] Property owners who own non-navigable inland lakes would be concerned about *Glass* because of the possibility that the right to walk along the shoreline would be extended to their lakes, limiting their privacy.[222] Expansions of the public trust doctrine that are viewed as aimed at property rights are likely to be vigorously opposed by the same or similar groups.

The expansion of the public trust doctrine's purposes to include protection from pollution would not lower the property values of surface owners like an expansion of the right of pedestrians to walk along the shoreline. Rather, the property values of waterfront property depend on the quality of the water, as the quality of the water impacts how owners can use the water for fishing, boating, and other recreational activities. Even the Save Our Shoreline organization wants to eliminate invasive species and increase wetland protection.[223] Environmental measures to protect the quality of Michigan's waters will likely enhance the value of shoreline owners' land, especially if these efforts prevent the contamination of the water by chemicals that can eliminate the ability to fish or use the water for meaningful recreation. Already the PFAS crisis has resulted in fish advisories on major rivers and lakes in Michigan,[224] which limits the riparian owners' ability to enjoy their property and likely decreases their property values. For water bodies affected by PFAS foam, most recreational activities could be limited because it is dangerous for humans to ingest PFAS

218. Glass v. Goeckel, 703 N.W.2d 58, 62 (Mich. 2005).

219. *Welcome to Save Our Shoreline's Home Page*, *supra* note 213.

220. Eric Nelson, *The Public Trust Doctrine and the Great Lakes:* Glass v. Goeckel, 11 ALB. L. ENVTL. OUTLOOK J. 131, 135 (2006).

221. Kilbert, *supra* note 30, at 11.

222. *See* Amon, *supra* note 53, at 715–16.

223. *Welcome to Save Our Shoreline's Home Page*, *supra* note 213.

224. *PFAS in Michigan Fish*, *supra* note 16.

foam: PFAS fears are likely to decrease boating, fishing, and swimming on those waters.[225]

It is not a coincidence that the PFAS contamination sites are close to manufacturing facilities or firefighting training sites.[226] PFAS pollution is not caused by shoreline property owners, and the spread of PFAS to more surface waters would likely cause those properties to lose significant economic value. Therefore, it is likely that property owners would not oppose expansion of the public trust doctrine for environmental purposes to protect the quality of water, as long as the courts tailored the environmental purpose narrowly. Expansion of the public trust doctrine to resources other than navigable waters would likely be seen as an infringement of property rights that groups may oppose. In contrast, it is likely all but certain that commercial property owners would be in favor of limiting the spread of toxic pollutants like PFAS that can spread through the drinking water and surface waters of Michigan.

The Supreme Court of Michigan's recent expansion of the public trust doctrine in *Glass* indicates that the court may be willing to further increase the scope of the public trust doctrine, and *Glass* serves as a precedent for those seeking to expand the doctrine to protect navigable waters from pollution. In *Glass*, the court changed the boundary of the public trust doctrine on the shoreline of the Great Lakes from the water's edge to the ordinary high-water mark, increasing the geographic areas where the public can walk on the Great Lakes shoreline.[227] The court reasoned "walking along the lakeshore is inherent in the exercise of traditionally protected public rights of fishing, hunting, and navigation."[228] The court later added to that list the right of "boating for commerce or pleasure."[229] It could easily be argued that the prevention of pollution in the navigable water bodies of Michigan is "inherent in the exercise of traditionally protected public rights," as pollution limits the ability of the public to use those rights.

The contamination of navigable waters can potentially affect the ability of the public to fish, hunt, and boat for pleasure, depending on the source of the contamination. PFAS specifically affect all those rights, because of the danger of toxic PFAS foam and the elevated levels of PFAS that make hunting and fishing pointless. The impact of harmful chemicals effectively abrogates the public trust right to fishing:

> Pollution poses problems for fisheries, both because of its destructive effects on the ecosystem and its contamination of fish. A right to fish is seemingly worthless without the ability to eat that fish, and the public trust should prevent contamination even in the

225. *PFAS Foam on Lakes and Streams*, *supra* note 100.

226. *See PFAS Sites Being Investigated*, *supra* note 4.

227. Glass v. Goeckel, 703 N.W.2d 58, 78 (Mich. 2005).

228. *Id.* at 62.

229. *Id.* at 65.

> absence of any further acknowledgment of environmental protection provisions under the doctrine.[230]

The PFAS contamination already affects the ability of Michigan residents to fish in many water bodies and has also started to impact deer hunting in Oscoda County.[231] It is necessary that the PFAS-contaminated water bodies be cleaned up so that Michigan residents can have a meaningful right to fish again. The dangerousness of PFAS foam also hampers the ability of the public to boat for pleasure on affected water bodies because splashing could cause accidental ingestion of PFAS foam.[232] It is likely that Michigan residents will avoid recreational boating on affected water bodies due to the PFAS foam risk, which effectively inhibits their ability to boat for pleasure on those water bodies. If the PFAS contamination spreads further, or other chemicals contaminate navigable waters, it is possible that boating for pleasure could dramatically decrease. It is therefore very likely that the prevention of pollution of navigable water is "inherent in the exercise of traditionally protected public rights,"[233] because the majority of the public trust doctrine rights are useless if the water quality decreases to a level that is hazardous to humans.

Admittedly, the protection of public trust waters from pollution is not a traditional public trust right and was not recognized by other state courts during the nineteenth or early twentieth century, as the "right of passage" was in Connecticut and New Jersey.[234] However, prevention of pollution is necessary to exercise the public trust doctrine rights of fishing, hunting, and boating for pleasure, just as the right to walk along the Great Lakes shore was necessary to be able to hunt, fish, or boat on the water.[235] Although the majority in *Glass* was eager to characterize their decision as maintaining the status quo,[236] the court did in fact expand the public trust doctrine because it changed the boundary of the public trust doctrine right to walk on the shoreline.[237]

However, that expansion of the public trust doctrine, like the expansion to protect navigable waters from pollution, is consistent with Michigan's "obligation to protect the public trust."[238] Michigan has not only the authority to regulate to protect public trust resources for the public, but also has "an affirmative obligation to protect the public interest in navigable waters."[239] Michigan currently fulfills this duty through the DEQ and by legislation

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230. Jeffrey W. Henquinet & Tracy Dobson, *The Public Trust Doctrine and Sustainable Ecosystems: A Great Lakes Fisheries Case Study*, 14 N.Y.U. ENVTL. L.J. 322, 341 (2006).

231. *See supra* Part II.B.

232. Gardner, *supra* note 102.

233. *Glass*, 703 N.W.2d at 62.

234. *Id.* at 74.

235. *Id.*

236. *Id.* at 75–76.

237. *Id.* at 78.

238. *Id.* at 78.

239. Mich. Att'y Gen. Op. No. 7162 (Sept. 23, 2004).

designed to protect water resources.[240] If Michigan expanded its public trust doctrine to recognize its obligation to protect public trust waters from pollution, its other branches of government would be duty bound to act to protect its navigable waters.

Although Michigan has a statutory authorization for a private cause of action for protection of public trust resources,[241] private lawsuits are not likely to bring the change necessary to prevent pollution of public trust waters without an expansion of the conception of the public trust. A court's expansion of the public trust would not only alleviate harms to the individual plaintiff in that case, but the "use of [expansive] language . . . suggests to legislatures and administrative agencies that there are limits which courts may impose" on actions which affect public trust resources.[242] More aggressive use of the public trust doctrine by the courts may lead to shorter timetables for protective measures for public trust resources as legislatures and administrative agencies realize their actions will be scrutinized by a court unwilling to stand aside while those bodies "adopt a . . . permissive view of the public trust."[243] This could force the legislature and the DEQ to act proactively to research and evaluate pollution guidelines to make sure they protect navigable waters, preventing a large gap between when a pollution problem is discovered and when effective guidelines are enacted to prevent further pollution. In order to protect the actual ability of Michigan residents to use their public trust doctrine rights, it would be appropriate for the Michigan judiciary to expand the public trust doctrine to protect navigable waters from pollution.

CONCLUSION

Michigan's PFAS crisis came at the heels of the Flint water crisis, capturing the attention of residents across the State of Michigan who fear the loss of the use of Michigan's valuable water bodies. Contamination sites litter the Upper and Lower Peninsula, affecting the drinking water as well as surface bodies of water. The public trust doctrine should be used in Michigan to cover the gaps in regulation of the DEQ and the EPA on pollution of navigable waters. The definition of navigability for the scope of the public trust doctrine should be expanded at least to the recreational boat test to allow the public trust doctrine to protect more water bodies, as the log flotation test is a remnant of the commercial practices of Michigan in the nineteenth century. Michigan should also expand the purpose of the public trust doctrine from the recognized categories of hunting, fishing, navigating, and commerce to also include environmental protections for navigable waters in Michigan. The expansion of the public trust doctrine is necessary to better protect Michigan's waters from PFAS pollution and future threats from other harmful chemicals.

240. *Id.*

241. MICH. COMP. LAWS § 324.1701(1) (2019).

242. Sax, *supra* note 136, at 543.

243. *Id.*