Entrusting Groundwater

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Groundwater is a precious—and all too often scarce—resource. As groundwater withdrawals continue apace, challenges have emerged around groundwater quality and quantity. In the past several years, court have increasingly been called to resolve disputes involving groundwater, a trend that even the United States Supreme Court has followed. Added to the mix is an increased recourse to the public trust doctrine as a tool for environmental progress. But is groundwater a public trust asset? Should it be? And what does a groundwater trust look like?

This Article seeks to answer these questions, exploring the relationship between groundwater and the public trust doctrine. It makes three contributions: (1) a catalog of the recent state-level legislative and litigative attention to groundwater, and the various ways in which courts have responded; (2) a normative case for why groundwater should be a public trust asset; and (3) an articulation of how to entrust groundwater.

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"Facing our current reality, it's time to update groundwater management tools and protect groundwater supplies—particularly in rural communities. We must take these actions today because in many parts of our state there are effectively no restrictions on groundwater pumping and local communities have little-to-no support to manage water supplies. As a result, a new water user can move in, dig a well, and pump as much water as possible—even if it dries up the community's aquifer."

—Katie Hobbs, Arizona Governor, January 9, 2023¹

INTRODUCTION

In March 2022, Michigan lawmakers introduced a bill aimed at protecting and preserving groundwater.² This bill, in itself, is

¹ Katie Hobbs, "State of the State 2023," January 9, 2023 (<u>https://azednews.com/full-text-of-gov-katie-hobbs-state-of-the-state-</u>2023/).

² See Shay Elbaum, Michigan's Groundwater and the Public Trust, 101-JUN MICH. B.J. 40, 43 (2022); see also Sarah Cwiek, "House Democrats Introduce Bills to Protect Michigan Groundwater," Michigan Radio NPR, March 21, 2022 (https://www.michiganradio.org/environment-climate-change/2022-03-21/house-democrats-introduce-bills-to-protect-michigan-groundwater).

nothing new; nearly every state has legislation dealing with extraction and use of groundwater.³

But the particular means by which Michigan lawmakers sought to protect the natural resource is novel: the bill declares that "[t]he waters of this state, including groundwater, are held in the public trust by this state. The public trust in the water of this state applies to the quantity and quality of the water."⁴ The bill casts the public trust doctrine—the ancient, often common law doctrine that protects certain natural resources for the benefit of the public⁵—as groundwater's savior. More than just a declaratory statement, the bill also instructs several state agencies to "review" the rules they administer and "ascertain whether the rules sufficiently ensure the protection of the public trust in the waters of this state."⁶ If not, the agency "shall promulgate new or revised rules[.]"⁷

Like previously introduced groundwater bills in Michigan's legislature, this bill went nowhere, not even garnering a committee vote.⁸ Perhaps that result was foreseeable; Republican control of

 7 Id.

³ See Jack Tuholske, *Trusting the Public Trust: Application of the Public Trust Doctrine to Groundwater Resources*, 9 VT. J. ENVTL. L. 189, 211 (2008) (noting that "every state has some type of regulatory overlay applicable to groundwater.").

⁴ Michigan House Bill No. 5953, Introduced March 22, 2022, at § 401(3) (<u>https://www.legislature.mi.gov/documents/2021-</u> 2022/billintroduced/House/pdf/2022-HIB-5953.pdf).

⁵ See generally Joseph L. Sax, The Public Trust Doctrine in Natural Resources Law: Effective Judicial Intervention, 68 MICH. L. REV. 471 (1970).

⁶ Michigan House Bill No. 5953, Introduced March 22, 2022 at § 401(3) (<u>https://www.legislature.mi.gov/documents/2021-</u>2022/billintroduced/House/pdf/2022-HIB-5953.pdf).

⁸ See Elbaum, supra n. 2 at 41 ("Similar bills have been introduced in past sessions without success."); see also Michigan Legislature, House Bill 5953 (2022)

the Michigan House and Senate in 2022 stymied environmental legislation.⁹ And the bill itself faced stiff opposition; opponents of the bill published pieces with hyperbolic titles like "Bill would restrict property owners from using their own water."¹⁰

But the bill raises important questions about the intersection of groundwater protection and the public trust doctrine. Michigan, after all, is not the only state interested in connecting its public trust doctrine with groundwater; a growing number of states and localities have explored using the public trust as a tool to protect groundwater.¹¹ And, accordingly, a growing body of judicial

⁽https://www.legislature.mi.gov/(S(uwrf1yrqeuq5uwxguia5peei))/mileg.a spx?page=getObject&objectName=2022-HB-5953).

⁹ See, e.g., Kelly House, "Michigan Democrats aim to tighten environmental regs, reduce industry control," *Bridge Michigan*, Jan. 24, 2023 (<u>https://www.bridgemi.com/michigan-environment-watch/michigan-democrats-aim-tighten-environment-regs-reduce-industry-control</u>).

¹⁰ Jamie A. Hope, "Bill would restrict property owners from using their own water," *Michigan Capitol Confidential*, Sept. 15, 2022 (https://www.michigancapitolconfidential.com/news/bill-would-restrictproperty-owners-from-using-their-own-water).

¹¹ For example, Vermont passed legislation in 2008 that declared groundwater a public trust resource. *See* Vermont Act 199, S.304, 2008 (https://dec.vermont.gov/sites/dec/files/dwgwp/dwrules/pdf/act199.pdf); *see also* "Declaring Groundwater as a Public Trust," Vermont Natural

Resources Council

⁽https://vnrc.org/groundwater/#:~:text=Our%20work%20paid%20off%20 when,or%20corporation%20%E2%80%93%20own%20Vermont's%20wat er.). In 2019, a Maine bill proposed convening a working group to groundwater. authorize public a trust for See https://www.mainelegislature.org/legis/bills/bills 129th/billtexts/HP016 001.asp. A 2022 Sonoma County proposed ordinance defines certain wells requiring "a public review." \mathbf{as} trust See https://permitsonoma.org/permitsonomaannouncesnewrevisionstodraft wellpermitordinance.

precedent has answered—sometimes in the affirmative, sometimes in the negative—whether groundwater is a public trust asset.¹²

Unanswered, however, is *how* the doctrine would protect groundwater. Is groundwater like any other asset of the public trust doctrine? Should it be? What does a groundwater trust look like?

These questions arise at the confluence of two interrelated trends. First is the increasing turn toward the public trust doctrine to respond to new environmental threats. The public trust doctrine is an old doctrine, but it has lately been learning new tricks, appearing in a wave of children-led climate change lawsuits,¹³ state climate-deception lawsuits,¹⁴ and recent toxic tort cases,

¹² See Envtl. Law Found. v. State Water Res. Control Bd., 237 Cal. Rptr. 3d 393, 397 (Cal. App. 2018) (holding that the public trust applies to groundwater extractions that impact navigable waterways); see also Mineral Cnty. v. Lyon Cnty., 473 P.3d 418, 422 (Nev. 2020) (holding that the public trust doctrine covers all state waters, including groundwater); White Bear Lake Restoration Ass'n ex rel. State v. Minn. Dept. of Nat. Res., 946 N.W.2d 373 (Minn. 2020) (declining to extend the public trust doctrine to groundwater in this case).

¹³ See "State Legal Actions," Our Children's Trust, <u>https://www.ourchildrenstrust.org/state-legal-actions</u> ("Our Children's Trust has launched youth-led climate lawsuits and legal actions in all 50 states over the past decade.").

¹⁴ See Compl., State v. Chevron Corp., No. PC-2018-4716 (R.I. Super. July 2, 2018), Count VII "Impairment of Public Trust Resources," (<u>http://climatecasechart.com/wp-content/uploads/sites/16/case-documents/2018/20180702_docket-PC-2018-4716_complaint.pdf</u>); see also Compl., Platkin v. Exxon Mobil Corp., MER-L-001797-22 (N.J. Super. Oct. 18, 2022), Count III "Impairment of the Public Trust," (<u>http://climatecasechart.com/wp-content/uploads/sites/16/case-documents/2022/20221018_docket-MER-L-001797-22_complaint.pdf</u>).

including litigation concerning PFAS¹⁵ and MTBE.¹⁶ The doctrine is thus as present as ever, on the cutting edge of the most pressing environmental problems.

The doctrine's continued vitality is symptomatic of a broader resort to state and local law—and away from federal law—to address environmental harms.¹⁷ The aging federal environmental statutory canon,¹⁸ the low likelihood of new federal environmental

¹⁸ See, e.g., Richard J. Lazarus, *Environmental Law at the Crossroads: Looking Back 25, Looking Forward 25, 2 MICH. J. ENVTL. & ADMIN. L. 267, 271–72 (2013) (noting the lack of new environmental laws*

¹⁵ See, e.g., N.J. Dept. of Envtl. Protec. v. E.I. du Pont de Nemours and Company, 2021 WL 6144081, at *4 (D.N.J. Dec. 30, 2021) (noting in a PFAS contamination case that New Jersey's failure to warn claim "stems from its role as *parens patriae* and as trustee of New Jersey's environment and natural resources); *see also* State of North Carolina v. EIDP, Inc., 2023 WL 2326101, at *6 (N.C. Super. Mar. 2, 2023) (finding in PFAS contamination suit that "[a]s trustee of North Carolina's lands and waters, both public and private, the State has brought a suit that it alone is entitled to bring.").

¹⁶ See, e.g., Rhode Island v. Atlantic Richfield Co., 357 F. Supp. 3d 129, 144–45 (D.R.I. 2018) (dismissing state's public trust claim for impairment of groundwater through MTBE contamination); see also State v. Hess Corp., 20 A.3d 212, 217 (N.H. 2011) (noting in MTBE contamination case that "the State does not explicitly rely upon the public trust doctrine as a separate cause of action, and instead asserts that it must act in the citizens' interest as the trustee of the statewide water supply").

¹⁷ See, e.g., John R. Nolon, In Praise of Parochialism: The Advent of Local Environmental Law, 26 HARV. ENVTL. L. REV. 365 (2002); see also Katrina M. Wyman & Danielle Spiegel-Feld, The Urban Environmental Renaissance, 108 CAL. L. REV. 305, 349 (2020); Joel A. Mintz, The Uncertain Future Path of Environmental Enforcement and Compliance, 33 ENV'T L. 1093, 1094 (2003) (reviewing CLIFFORD RECHTSCHAFFEN & DAVID L. MARKELL, REINVENTING ENVIRONMENTAL ENFORCEMENT AND THE STATE-FEDERAL RELATIONSHIP (2003)) (noting the "devolution' of responsibility for environmental enforcement" in the 1990s).

legislation,¹⁹ and a federal court system seemingly hostile to administrative approaches to address new environmental problems²⁰ have made for slow environmental progress on the federal front. State and localities have sought to pick up the slack.²¹ From new legislation to innovative litigation, state and localities have become the pioneers of environmental law.²² It is little

²² See, e.g., John R. Nolon, In Praise of Parochialism: The Advent of Local Environmental Law, 26 HARV. ENVTL. L. REV. 365 (2002); see also Katrina M. Wyman & Danielle Spiegel-Feld, The Urban Environmental

since the Clean Air Act 1990 Amendments); *see also* Gregg Easterbrook, "Let's Modernize Our Environmental Laws," *The New York Times*, Oct. 7, 2015 ("Our major environmental laws are a generation or more out of date—written for conditions of the past, not the present.") (https://www.nytimes.com/2015/10/08/opinion/why-can-the-eparegulate-smog-but-not-greenhouse-gases.html).

¹⁹ See, e.g., Kim, S.E. and Urpelainen, J. (2017), The Polarization of American Environmental Policy: A Regression Discontinuity Analysis of Senate and House Votes, 1971–2013. REVIEW OF POLICY RESEARCH, 34: 456-484. (https://doi.org/10.1111/ropr.12238); but see Gayathri Vaidvanathan, "Biden Signs Historic Climate Bill as Scientists Applaud," Nature Magazine, Aug. 17.2022(https://www.scientificamerican.com/article/biden-signs-historicclimate-bill-as-scientists-applaud/).

²⁰ See, e.g., West Virginia v. EPA, 597 U.S. (2022).

²¹ See Kari Lydersen, As EPA Backs Off Enforcement, States and Cities Have Little Capacity to Fill Gap, ENERGY NEWS NETWORK (Apr. 27, 2020), <u>https://energynews.us/2020/04/27/as-epa-backs-off-</u> enforcement-states-and-cities-have-little-capacity-to-fill-gap/

⁽describing the potential state agency role in environmental regulation in light of the EPA's lax approach to enforcement under the Trump administration); *See* INST. FOR POL'Y INTEGRITY, N.Y. UNIV. SCH. OF L., IRREPLACEABLE: WHY STATES CAN'T AND WON'T MAKE UP FOR INADEQUATE FEDERAL ENFORCEMENT OF ENVIRONMENTAL LAWS (2017), <u>https://policyintegrity.org/files/media/EPA Enforcement June2017.pdf</u> (noting the financial and political barriers to effective policing of environmental violations by the states).

wonder, then, that a doctrine wholly beholden to state law—the public trust doctrine—is seeing a resurgence.²³

Second is the increasing scarcity of groundwater, particularly in the arid west, and resulting disputes over what is left. Although overuse and extraction of groundwater have been on the radar of many scientists for years, the past several years have seen the problem escalate.²⁴ In every corner of the United States groundwater disputes are cropping up, catapulting the issue into the public's consciousness.²⁵ For example, a recent scan of news

Renaissance, 108 CAL. L. REV. 305, 349 (2020); Katrina M. Wyman, From Why to How Subnational Jurisdictions are Mitigating Climate Change, 83 OHIO ST. L.J. ONLINE 63 (2022).

²³ See, e.g., Robin Kundis Craig, A Comparative Guide to the Eastern Public Trust Doctrines: Classifications of States, Property Rights, and State Summaries, 16 PENN. ST. ENVTL. L. REV. 1, 3 (2007) (emphasizing the state-specific nature of the public trust doctrine, disclaiming the tendency to discuss the doctrine as if a single public trust doctrine governs throughout the United States.").

²⁴ See, e.g., Kirsten Engel, Esther Loiseleur, and Elise Drilhon, Arizona's Groundwater Management Act at Forty: Tackling Unfinished Business, 10 ARIZ. J. ENVTL. L. & POL'Y 187, 192 (2020) (noting that Arizona's 1980 Groundwater Management Act and 1948 Groundwater Code sought to deal with the issue of groundwater overdraft); see also Alastair Bland, "Ground zero: Rain brings little relief to California's depleted groundwater," Cal Matters, Feb. 7, 2023 (explaining that "Tulare County alone has seen 1,810 wells go dry since 2014") (https://calmatters.org/environment/water/2023/02/california-depletedgroundwater-storms/); Gianna Melillo, "How Arizona, California, and other states are trying to generate a whole new water supply," The Hill, Jan. 22, 2023 ("[G]rowing demand for water coupled with climate change has resulted in shortages as states pump out water from aquifers faster than they can be replenished.") (https://thehill.com/policy/equilibriumsustainability/3824483-how-arizona-california-and-other-states-aretrying-to-generate-a-whole-new-water-supply/).

 ²⁵ A Google Trends search in the United States for "drought" shows
a marked increase over the past five years.

sources reveals groundwater depletion woes in California,²⁶ drought emergencies affecting groundwater in Oregon,²⁷ and vows to crack down on groundwater extraction in Arizona.²⁸ In the wetter east, Maine faces PFAS contamination in its groundwater²⁹ and New York grapples with rising groundwater levels and their

(https://trends.google.com/trends/explore?date=today%205-

<u>y&geo=US&q=drought</u>). In the academy, too, groundwater has garnered considerable interest; a Westlaw search indicates 1,275 law review articles that mention "groundwater" over the past five years. <u>https://1.next.westlaw.com/Search/Results.html?query=adv%3A%20%22</u> groundwater%22&isPremiumAdvanceSearch=false&jurisdiction=ALLC <u>ASES&contentType=ANALYTICAL&querySubmissionGuid=i0ad62af0</u> 00000186c7abc60482ba7ebc&categoryPageUrl=Home%2FSecondarySo urces%2FSecondarySourcesLibrary&searchId=i0ad62af000000186c7a9 71c9ca9122d2&transitionType=ListViewType&contextData=(sc.Search)

²⁶ See, e.g., Raymond Zhong, "Parched California Misses a Chance to Store More Rain Underground," *The New York Times*, Feb. 21, 2023 (https://www.nytimes.com/2023/02/21/climate/california-stormsgroundwater-aquifer-recharge.html); *see also* NASA Earth Observatory, "Reservoirs Rise, but Groundwater Woes Remain," Jan. 29, 2023 (https://earthobservatory.nasa.gov/images/150953/reservoirs-rise-butgroundwater-woes-remain).

²⁷ See, e.g., Jane Vaughan, "Water managers could withhold Klamath County drought permits this year," Oregon Public Broadcasting, Feb. 14, 2023 (https://www.opb.org/article/2023/02/14/water-managers-couldwithhold-klamath-county-drought-permits-this-year/).

²⁸ See, e.g., William Pitts, "Saudi farms are sucking Arizona's groundwater dry. The state's new AG vows to stop them," *12 News* Jan. 6, 2023 (<u>https://www.12news.com/article/news/local/water-wars/mayes-vows-repeal-saudi-farm-deal/75-b2d6bb89-8973-40dd-85d3-5f983a28911a</u>).

²⁹ See, e.g., Kaitlyn Budion, "Initial round of PFAS testing of groundwater finds about 75% of Maine sites within safe levels," *Central Maine*, Jan. 12, 2023 (<u>https://www.centralmaine.com/2023/01/11/initial-round-of-pfas-testing-of-groundwater-finds-about-75-of-maine-sites-with-safe-levels/).</u>

potential to flood.³⁰ From sea to shining sea, groundwater disputes are inescapable.

This trend has, inevitably, resulted in legislative and litigative responses. Although many states have legislated groundwater use for decades, a sizable number have passed new groundwater legislation or regulations in just the past decade: California's Sustainable Groundwater Management Act was enacted in 2014,³¹ Minnesota's Groundwater Protection Rule became effective in 2019,³² and New Jersey's rules on maximum contaminant levels for PFAS in groundwater was adopted in 2020.³³ More states are considering new groundwater efforts too.³⁴

³⁰ See, e.g., Samantha Maldonado, *The City*, Jan. 18, 2023 (<u>https://www.thecity.nyc/2023/1/18/23559815/rising-groundwater-</u>threatens-new-york-city).

³¹ See, e.g., "Sustainable Groundwater Management Act (SGMA)," California Department of Water Resources (https://water.ca.gov/programs/groundwater-management/sgmagroundwater-management).

³² See, e.g., "Part 1 of the Groundwater Protection Rule," *Minnesota* Department of Agriculture (<u>https://www.mda.state.mn.us/part-1-groundwater-protection-</u>

<u>rule#:~:text=Minnesota's%20Groundwater%20Protection%20Rule%20w</u> <u>ent,and%20protect%20our%20drinking%20water</u>).

³³ See, e.g., Ashley Csaszar, "New Jersey Establishes MCLs, Ground Water and Remediation Standards for PFOA, PFOS," *Penn E&R*, June 20, 2020 (<u>https://www.penn-er.com/2020/06/08/new-jersey-establishes-mcls-ground-water-and-remediation-standards-for-pfoa-pfos/#:~:text=The%20rules%2C%20adopted%20on%20June,trillion%20(ppt)%2C%20respectively).</u>

³⁴ For example, Nevada is considering a number of bills that could change how the state manages groundwater basins. *See, e.g.*, Daniel Rothberg, "2023 could be 'session of water bills' in the Legislature," *The Nevada Independent*, Feb. 9, 2023 (<u>https://thenevadaindependent.com/article/2023-could-be-session-of-</u> <u>water-bills-in-the-legislature</u>). In Arizona, the Governor issued an Executive Order to establish a Governor's Water Policy Council "tasked

In tandem, state and federal courts have increasingly been called upon to settle groundwater disputes. The past several years have seen a number of state supreme courts opining on groundwater-related cases.³⁵ Even the United States Supreme Court has not been spared from weighing in on groundwater controversies, resolving two major groundwater-related lawsuits in its recent terms.³⁶

The result is that the public trust doctrine's potential role in resolving groundwater disputes is more important than ever.

But this potential is not exactly new. Scholars have long been interested in the connection between groundwater and the public trust doctrine.³⁷ Groundwater on its own has also remained a perennial area for academic focus.³⁸ There is nonetheless good

<u>arizonas-groundwater</u>).

³⁶ See Mississippi v. Tennessee, 595 U.S. (2021); see also County of Maui, Hawaii v. Hawaii Wildlife Fund, 590 U.S. (2020).

³⁷ See, e.g., Jordan Browning, Unearthing Subterranean Water Rights: The Environmental Law Foundation's Efforts to Extend California's Public Trust Doctrine, 34 SPG ENVIRONS ENVTL. L. & POL'Y J. 231 (2011); see also Tuholske, supra n. 3; Danielle Spiegel, Can the Public Trust Doctrine Save Western Groundwater?, 18 N.Y.U. ENVTL. L.J. 412 (2010); Derek Kliewer, Protecting the Public Trust: How an Ancient Environmental Doctrine and Modern Legislation Can Save California's Groundwater, 25 U. DENV. WATER L. REV. 27 (2021).

³⁸ See generally Christine A. Klein, Groundwater Exceptionalism: The Disconnect Between Law and Science, 71 EMORY L.J. 487 (2022); see also Dave Owen, Taking Groundwater, 91 WASH. U. L. REV. 253 (2013); Joseph W. Dellapenna, A Primer on Groundwater Law, 49 IDAHO L. REV. 265 (2013); Christine A. Kelin, Owning Groundwater: The Example of Mississippi v. Tennessee, 35 VA. ENVTL. L.J. 474 (2017); Joseph L.

with modernizing the Arizona Groundwater Management Act[.]" "Governor Hobbs Announces Actions to Modernize Arizona's Groundwater Management," Office of the Governor Katie Hobbs, Jan. 9, 2023 (https://azgovernor.gov/office-arizonagovernor/news/2023/01/governor-hobbs-announces-actions-modernize-

³⁵ See supra n. 12.

reason for further exploration. For one thing, the trends discussed above have quickened in the past decade, providing substantial new evidence both jurisprudentially and litigatively. New literature that incorporates these recent changes is thus needed.

For another, much of the existing groundwater literature focuses on *why* groundwater should be a public trust asset.³⁹ It often neglects to focus on the *how*—how do you incorporate a hydrologically complex water feature into a doctrine that is built on visible and easily ascertainable surface water? And how do you account for local governments in that structure, given that local governments are often in positions of authority regarding groundwater use and given that localities' roles in the doctrine are often ignored or misunderstood?⁴⁰

This Article seeks to answer these questions, exploring the relationship between groundwater and the public trust doctrine. It endeavors to make three contributions: (1) a catalog of the recent legislative and litigative attention to groundwater, and the various ways in which courts have responded; (2) a normative case for why groundwater should be a public trust asset; (3) an articulation of *how* to entrust groundwater. It proceeds in four parts. Part I covers the basic science of groundwater, focusing on hydrology and how current water uses affect it. Part II sketches the law's approach to groundwater, exploring the common law doctrines and current legislative and regulatory schemes. Part III describes the public trust doctrine's intersection with groundwater, exploring the historical treatment and the competing modern views. Finally, Part IV argues that groundwater is—or should be—a public trust

Sax, We Don't Do Groundwater: A Morsel of California Legal History, 6 WATER L. REV. 269 (2003); Barton H. Thompson, Jr., Beyond Connections: Pursuing Multidimensional Conjunctive Management, 47 IDAHO L. REV. 273 (2011).

³⁹ See generally id.

⁴⁰ See e.g., Sean Lyness, *The Local Public Trust Doctrine*, 34 GEO. ENVTL. L. REV. 1 (2022).

asset and delineates how states can entrust groundwater to best preserve and protect it. It advocates for a legislatively adopted approach that delegates authority to local entities while maintaining state oversight.