USING THE PUBLIC TRUST DOCTRINE TO "MAKE IT RAIN"

Ethan Story[*]

The question of "who owns the rain?" is not easily answered. This Note discusses the complexities of harvesting rainwater under existing legal principles. Here, it is augured that our elected officials should change policy to incorporate rainwater under the Public Trust Doctrine. By doing so it would clarify the legal ambiguity of harvesting rainwater. Additionally, the courts, state officials, and the public will benefit legally, environmentally, and economically.

[*] Ethan Story holds a J.D. and a Masters of Environmental Law and Policy from Vermont Law School.

INTRODUCTION

When water is plentiful, there is no need for law to govern it. Unfortunately, this is not the case today, and it has not been for quite some time. While some cities and states are experiencing flooding, others are

experiencing record droughts.[1] The states facing these record-breaking droughts have legitimate worries over how to govern their water supply.[2] However, there is an ancient method of collecting water that has become popular in these desperate times: rainwater harvesting.[3] The rise in popularity created a demand for clarity on the legal implications of rainwater harvesting.[4] This is also true across the nation as concerns rise around water quality standards, especially in the western states where water is scarce.[5] This Note proposes the solution to the water crisis that utilizes a centuries-old legal principle to allow rainwater collection without legal repercussion: the public trust doctrine (PTD).

Part one explains why rainwater harvesting is beneficial. Part two examines the challenges of accessing water in today's world. Part three turns to our nation's history of water law, including evolution of the malleable Public Trust Doctrine. This doctrine has a foundation in placing natural resources such as water, wildlife, and air into public ownership. Within this section, the Note proposes using the existing public trust law to permit rainwater harvesting. Part four provides a brief description of what some states do and do not allow concerning rainwater harvesting. The Note also suggests that the states that do not allow rainwater harvesting should incorporate water harvesting under the PTD. Last, part five describes the challenges to such a proposal.

I. MODERN CHALLENGES CONCERNING WATER

Water is the life source of society. Water is used for drinking, agriculture, manufacturing, energy production, transportation and

---

1. Angela Fritz & Jason Samenow, *Harvey Unloaded 33 Trillion Gallons of water in the U.S.*, WASH. POST (Sept. 2, 2017), https://www.washingtonpost.com/news/capital-weather-gang/wp/2017/08/30/harvey-has-unloaded-24-5-trillion-gallons-of-water-on-texas-and-louisiana (reporting that hurricane Harvey dropped close to 19 trillion gallons of water in the Greater Houston area); *see The California Drought: Who Gets the Water and Who's Hung Out to Dry?,* EARTHJUSTICE, https://earthjustice.org/features/the-california-drought (last visited Dec. 6, 2018) (explaining that in 2015, California experienced a record breaking drought where the Governor called for a mandatory 25% reduction of all residential water use).

2. *See* EARTHJUSTICE, *supra* note 2 (describing water concerns of different, sometimes competing, interests).

3. *Rise of the Rain Collectors*, Earth911 (Oct. 8, 2015), http://earth911.com/home-garden/rise-rainwater-collection/.

4. *See generally State Rainwater Harvesting Laws and Legislation*, National Conference of State Legislatures (NCSL) (Feb. 2, 2018), http://www.ncsl.org/research/environment-and-natural-resources/rainwater-harvesting.aspx (demonstrating that some states have pending legislation, failed legislation, and passed legislation on rain harvesting).

5. *Id.*

commerce, recreation, and waste removal.[6] Variable water availability consequently affects the operation of society. The shift in weather patterns due to climate change has diverse effects on the different parts of the nation.[7] Droughts and unusual heat waves, which cause higher than normal evaporation levels, can have drastic effects on water resources thousands of miles away.[8]

In the continental United States, the average "yearly precipitation has increased by 0.16 inches per decade since 1895."[9] Despite the increased national average of rain, the southwest and northeast areas of the country saw much drier-than-average conditions.[10] In areas where water is plentiful, factors such as deforestation, pollution, farming, increasing population, conflicting values, and simple overuse of water can place a burden on the water supply.[11] In other words, when water is available to those who have it, the trend is to use the water before it is gone and worry about the downstream users later.

Another issue affecting the availability of water is urban sprawl. In the mid-1940s there were 15 million acres of urban property in the United States.[12] In 2002, this number jumped to over 60 million acres.[13] As the population grows, urban development must also accommodate for it. The urban landscape is a mix of impermeable surfaces consisting of residential and commercial buildings, roads, and parking lots. These large constructed areas replaced the natural landscape surfaces that would inherently absorb or divert the water.[14] In contrast, urban areas offer little in natural

---

6. Kenneth D. Frederick & Peter H. Gleick, *Potential Impacts on U.S. Water Resources*, in CLIMATE CHANGE SCIENCE, STRATEGIES, & SOLUTIONS 63, 63 (Eileen Claussen ed., 2001).

7. NASA, HOW CLIMATE IS CHANGING, https://climate.nasa.gov/effects/, (detailing the regional effects of climate change in the U.S.) (last visited Dec. 6, 2018).

8. B.C. BATES ET AL., CLIMATE CHANGE AND WATER: IPCC TECHNICAL PAPER VI 35–51 (2008).

9. NOAA, CLIMATE CHANGE REPORT—2016, (2016) https://www.ncdc.noaa.gov/sotc/national/201613.

10. *Id.*

11. Daniel Findlay, *Rainwater Collection, Water Law, and Climate Change: A Flood of Problems Waiting to Happen?*, 10 N.C. J.L. & TECH. 74, 82-83 (2009); *see generally* CENT. INTELLIGENCE AGENCY, COUNTRY COMPARISON: POPULATION GROWTH RATE, THE WORLD FACTBOOK (2002), https://www.cia.gov/library/publications/the-world-factbook/rankorder/2002rank.html (listing world population growth rates); Trading Economics, *United States GDP Growth Rate,* https://tradingeconomics.com/united-states/gdp-growth (last visited Dec. 6, 2018).

12. CYNTHIA NICKERSON ET AL., U.S. DEP'T OF AGRIC., MAJOR USES OF LAND IN THE UNITED STATES, 2007, 5 (Dec. 2011), https://www.ers.usda.gov/webdocs/publications/44625/11159_eib89_2_.pdf (referencing data on major U.S. land uses data between 1945-2007 in Table 2).

13. *Id.*

14. *See id.* at 29-32 (discussing the conversion of rural land to urban uses in the U.S. in recent history).

drainage.[15] Thus, urban sprawl adds to the problem of where water goes, how it gets there, and how we supply water to these large concentrated areas.[16] Due to the growing demand for water, challenges posed by urban sprawl, and climate change, two things must change: how we acquire water and how we use water. [17]

II. WHY IS IT BENEFICIAL TO HARVEST RAINWATER?

Harvesting rainwater is a practice that has been done for thousands of years by many different cultures and civilizations.[18] Harvested rainwater is often used on the same property from which it originated.[19] This is unlike large water projects in the West where water is shipped in canals and pipelines.[20] In modern settings, containers such as barrels, tanks, or cisterns are used to collect rain from roofs.[21] People also use landscaping design to maximize rainwater capture.[22] Small bowl-like areas are set up in the property that collect the rainwater.[23] The landowner can then mulch and strategically arrange plants that will utilize the rainwater collected in the bowl-like areas.[24]

Almost half of the water used in the United States is for outdoor and agriculture purposes, and allowing people to harvest rainwater could

---

15. U.S. ENVTL. PROT. AGENCY, PROTECTING WATER QUALITY FROM URBAN RUNOFF: MANAGING URBAN RUNOFF, 841-F-03-003, Feb. (2003) https://www.epa.gov/sites/production/files/2015-10/documents/nps_urban-facts_final.pdf.

16. *Id.*

17. Olivia S. Choe, Note, *Appurtenancy Reconceptualized: Managing Water in an Era of Scarcity,* 113 Yale L.J. 1909, 1911 (2004).

18. *History of Rainwater Harvesting*, RENEWABLE ENERGY HUB, https://www.renewableenergyhub.co.uk/rainwater-harvesting-information/the-history-of-rainwater-harvesting.html, [hereinafter *History of Rainwater Harvesting*] (last visited Dec. 6, 2018).

19. *See* Water Association of Kern County, *The State Water Project (SWP)*, http://www.wakc.com/water-overview/sources-of-water/state-water-project-swp/ (last visited Dec. 6, 2018) (explaining that California's water "[p]roject includes 34 storage facilities, reservoirs and lakes; 20 pumping plants; 4 pumping-generating plants; 5 hydroelectric power plants; and about 701 miles of open canals and pipelines"); *see, e.g.*, *Harvesting Rainwater by Not Letting it Go to Waste*, Nat'l Public Radio (Jan. 10, 2008, 12:01 AM ET) [hereinafter *Not Letting Rainwater Go to Waste*], https://www.npr.org/templates/story/story.php?storyId=17977057 (describing the common method of rainwater harvesting).

20. *See* Lauren Sommer, *About That $17 Billion Water Project Delta Tunnels 101*, KQED Science (July 25, 2016), https://ww2.kqed.org/science/2016/07/25/about-that-17-billion-water-project-delta-tunnels-101/ (reporting that California plans to build two 30-mile-long pipelines that are forty feet in diameter to transport water from the Sacramento River to the Bay area).

21. *Not Letting Rainwater Go to Waste*, *supra* note 19.

22. *Id.*

23. *Id.*

24. *Id.*

potentially reduce demand on municipal water infrastructure.[25] Most people use rainwater for outside purposes, as it is costly to treat for consumption.[26] Rainwater can carry pollutants from the impermeable surface that drains into the barrel, such as arsenic leached from wood shingles.[27]

Another benefit of rainwater harvesting is that it prevents pollution during large storms.[28] When a rainwater harvesting system is installed, it reduces the amount of runoff and the amount of pollutants that would normally enter a stormwater collection system.[29] Harvesting rainwater can alleviate stress on the dilapidated and aging combined sewer overflow systems, which are located throughout the United States, and mitigate water quality concerns of downstream users.[30]

Though rainwater harvesting has been around for many years, some states are just starting to harness rainwater collection benefits.[31] In California, many cities have started the practice of rainwater harvesting. For instance, in the fall of 2008 San Francisco spent $100,000 on harvesting-tank building workshops.[32] Santa Monica installed a cistern under the city public library that holds up to 200,000 gallons of rainwater for non-drinking uses like watering plants and flushing toilets.[33] Santa Monica also implemented a rebate program for homeowners who start their own rainwater harvesting system.[34]

California's ventures into rainwater harvesting show potential for everyone, from individual homeowners saving on water cost to entire municipalities reducing pollution loads deposited into municipal treatment

---

25. *Rainwater Harvesting for Changing Water Realities*, CAL. GREEN SOLS. (June 13, 2008), http://www.californiagreensolutions.com/cgi-bin/gt/tpl.h,content=2177.

26. U.S. ENVTL. PROT. AGENCY, EPA-841-R-13-00, RAINWATER HARVESTING 7 (Jan. 2013), https://www.epa.gov/sites/production/files/2015-11/documents/rainharvesting.pdf [hereinafter EPA RAINWATER HARVESTING].

27. *Id.* at 21.

28. Blue Barrel, *Environmental Benefits of Rainwater Harvesting*, https://www.bluebarrelsystems.com/blog/environmental-benefits-of-rainwater-harvesting/ (last visited Nov. 17, 2018).

29. EPA RAINWATER HARVESTING, *supra* note 26, at 7.

30. *Id.* at 28; *See* Bert Walton, *America's Water Infrastructure Shows Its Age*, WATER NEWS (Mar. 5, 2012) http://www.circleofblue.org/2012/world/americas-water-infrastructure-shows-its-age-the-national-debate-about-how-to-pay-for-repairs/ (explaining there are water pipes still in use that are over a century old, and the U.S. spends $2.8 billion every year repairing water main breaks resulting in a loss of over 1.7 trillion gallons of water).

31. *History of Rainwater Harvesting*, *supra* note 18.

32. Milia Wollan, *Rainwater Collectors Work to Ease Shortages*, DAILY NEWS (Wash.), Aug. 31. 2008, http://tdn.com/news/rainwater-collectors-work-to-ease-shortages/article_06a36fcc-dbb6-5432-b786-12d00619141a.html.

33. *Id.*

34. *Id.*

facilities.[35] A residential home with a roof area of one thousand square feet can collect six hundred gallons of water for every one inch of rain.[36] If only fifteen percent of residential water came from rainwater harvesting, the United States could save upwards of a billion gallons of water per day.[37] Therefore, allowing harvesting rainwater could help reduce water demands as well as help meet municipal water-use reduction goals that many cities have implemented.[38]

III. A BRIEF LOOK AT THE HISTORY OF WATER LAW

A. Riparianism

Riparian water law developed in the eastern states during an era when water concerns were non-existent,[39] and water was more of an amenity than a commodity.[40] The United States adopted riparianism from England, granting landowners whose lands touches a watercourse the right to use the water.[41] The traditional riparian right focuses solely on the fact that one owns property bordering the water's edge.[42] The riparian doctrine, also known as the natural flow doctrine, states that the riparian land owner has a right to a steady stream of water "undiminished as to quality or quantity."[43] Upstream landowners can use the water, but they may not diminish the use for those downstream.[44]

---

35. *See* Charles Q. Su, *Rainwater Harvesting on the Sea: A New Sustainable Water Resource*, 35 WATER INT'L 6, 779, 783 (2010), https://www.tandfonline.com/doi/abs/10.1080/02508060.2010.533347 (proposing that states start to develop submarines that capture rainwater in the ocean and transport water back to shore for use).

36. Findlay, *supra* note 11, at 80–81.

37. *Id.* at 80.

38. *See, e.g.*, CITY OF PHOENIX WATER SERVS. DEP'T, DROUGHT MGMT. PLAN AND WATER USE REDUCTION GUIDELINES (2015), https://www.phoenix.gov/waterservicessite/Documents/2015%20DMP%20FINAL.pdf (listing the City of Phoenix, Arizona's water conservation plan); *see also* CITY OF CENTER, TEXAS, CITY IMPLEMENTS STATE II OF WATER CONSERVATION PLAN, http://www.centertexas.org/news/city-implements-stage-ii-water-conservation-plan (stating that the city of Center has set a goal of reducing usage by 400,000 gallons of water per day) (last visited Nov. 18, 2018); *and* CEDAR HILLS, UTAH, CITY IMPLEMENTS WATER CONSERVATION GUIDELINES, http://www.cedarhills.org/node/2785 (last visited Dec. 14, 2018) (explaining the City's water usage goals).

39. *See generally* WATERS AND WATER RIGHTS § 7.01-7.03 (Robert E. Beck & Amy K. Kelly eds., LexisNexis 1991 ed.) (2007) (providing the theories of how riparian water law developed).

40. BARTON H. THOMPSON, JR ET AL., LEGAL CONTROL OF WATER RESOURCES 29 (6th ed. 2018).

41. *Id.*

42. *Id.*

43. *Id.* at 30.

44. *Id.*

The rapid growth of industry in the East brought heightened competition for the supply of available water.[45] This growth resulted in many eastern states transitioning from the natural flow riparian doctrine to the reasonable use riparian doctrine.[46] The reasonable use doctrine, still based on the requirement that property touch the watercourse, recognizes that all water use will produce an adverse result—some more than others.[47] The test for what is reasonable depends on the downstream riparian landowners.[48] If the use fundamentally harms or impairs the use downstream, then the use is unreasonable and unlawful.[49] The exception to this rule is if the upstream use is necessary to any beneficial use along the entire stream.[50] Humans have a common interest in water; therefore, under the riparian doctrine, we must all accept that there will be minor inconveniences that provide a disproportionate benefit to others.

Riparian lands are lands that touch or surround a water body.[51] It is not necessary for the land to be an underwater–only border, no matter what kind of watercourse is at question.[52] Traditionally, the riparian doctrine allows use of the water only on the tract of land itself.[53] Restricting the use to the tract of land itself ensures that upstream users did not harm downstream users by diminishing the flow of the stream or river.[54]

B. Prior Appropriation

> In a dry and thirsty land, it is necessary to divert the waters of streams from their natural channels, in order to obtain the fruits of the soil, and this necessity is so universal and imperious that it claims recognition of the law. [W]hen the lands of this territory were derived from the general government, they were subject to the

---

45. Anita Porte Robb, *Applying the Reserved Rights Doctrine in Riparian States*, 14 N.C. CENT. L.J. 98, 100 (1983).

46. *See id.* (explaining that industrialization and competition for water led to a transition to the reasonable use doctrine).

47. Snow v. Parsons, 28 Vt. 459, 462 (1856).

48. *Id.*

49. *Id.*

50. *Id.*; *see also* Samuel C. Wiel, *What is Beneficial Use of Water*, 3 CAL. L. REV. 460, 460 (1915) (discussing that a beneficial use is to be determined by a jury and what a reasonable person would consider a beneficial use).

51. N.M. FOREST AND WATERSHED HEALTH, RIPARIAN ZONE, http://allaboutwatersheds.org/library/kyw-poster-files-and-links/riparian-zone (last visited Dec. 14, 2018).

52. THOMPSON, *supra* note 40, at 29.

53. People v. Shirokow, 605 P.2d 859, 864 (2008).

54. *See, e.g.*, Town of Gordonsville v. Zinn, 106 S.E. 508 (Va. 1921) (explaining the limited policy considerations and land grants).

> law of nature, which holds them barren until awakened to fertility by nourishing streams of water, and the purchasers could have no benefit from the grant without the right to irrigate them.[55]

In the Western United States, the prior appropriation regime developed from the concept of "first-in-time, first-in-right."[56] This doctrine places no significance on the actual property owner, but rather the individual that applies the water of a natural stream to a "beneficial use."[57] Compared to the riparian doctrine used by the eastern states, the western states developed this doctrine with the understanding that the scarcity of water would require a new legal theory to promote development.[58] This system, founded on seniority, permits the first person who uses the water to have access to their allotment before anyone else.[59] Thus, a junior appropriator who is upstream to a senior appropriator may have to let water flow past their diversion point to ensure that the downstream senior user has access to their appropriated amount.[60] Additionally, if the senior appropriator stops putting the water to use, they ultimately lose their rights to that allotted amount.[61]

The water law doctrines discussed above both have established legal precedent.[62] However, neither one expressly addresses the legality of rainwater.[63] Local governments can apply the PTD to allow rainwater harvesting within the framework of riparianism and prior appropriation.

C. Proposal: Under the Public Trust Doctrine, Private Land Owners Should be Able to Harvest Rainwater Without Repercussion.

With the ever-growing problem of water scarcity, mainly from climate change, a detailed and scientifically-informed approach to implementing polices that will protect and possibly enhance the water cycle is needed.[64] The PTD offers a legal paradigm to resolve this issue.

---

55. Yunker v. Nichols, 1 Colo. 551, 553–55 (1872).
56. Findlay, *supra* note 11, at 83.
57. THOMPSON, *supra* note 40, at 176.
58. Arizona v. California, 283 U.S. 423, 459 (1931).
59. *Id.*
60. THOMPSON, *supra* note 40, at 179.
61. *Id.* at 176.
62. Findlay, *supra* note 11, 83–89.
63. *Id.*
64. Robin K. Craig, *Adapting to Climate Change: The Potential Role of State Common-Law Public Trust Doctrines*, 34 VT. L. REV. 781, 781 (2010).

1. History

The PTD has a long, convoluted history.[65] It originated from English common law when the British Crown held title to the land that ran beneath the tidal waters.[66] The principle was that the Crown owned the beds under the water to provide for commerce and navigation.[67] Thus, the Crown held this property in trust for the people.[68]

In the United States, when the thirteen original colonies won their independence, they adopted this common-ownership concept of underwater land.[69] Each state received trust property of submerged lands including control over navigable waters.[70] This doctrine spread west as the nation did.[71] Upon the establishment of the Northwest Territory, navigable waters would be "forever free" for the citizens of the United States, and any new state admitted would receive the same sovereignty as the original states.[72] Article IV of the Northwest Ordinance provided that:

> The navigable waters leading into the Mississippi and St. Lawrence, and the carrying places between the same, shall be common highways, and forever free, as well to the inhabitants of the said territory, as to the citizens of the United States, and those of any other states that may be admitted into the confederacy, without any tax, impost, or duty therefor.[73]

The language of this ordinance sets a duty on the state to regulate navigable waters.[74] The ordinance also establishes that the state must protect and promote the trust and allow the public to use this trust property.[75]

---

65. *See* Thomas Cooper, The Institutes of Justinian: With Notes 67 (3d ed. 1812) ("Things common to mankind by the law of nature, are the air, running water, the sea, and consequently the shores of the sea").

66. Willow River Club v. Wade, 76 N.W. 273, 274 (Wis. 1898).

67. *Id.* at 278.

68. *Id.* at 281–82.

69. Diana Shooting Club v. Husting, 145 N.W. 816, 819 (Wis. 1914).

70. *Id.* at 818.

71. *See id.* (holding that when the Northwest Territory was formed, trust property was held for all citizens of the United States).

72. *See* Muench v. Public Serv. Comm'n, 53 N.W.2d 514, 516 (Wis. 1952) ("These conditions were incorporated into the Northwest Ordinance of 1787, which set up the machinery for the government of the Northwest Territory.").

73. Diana Shooting Club, 145 N.W. at 818 (quoting the Northwest Ordinance of 1787).

74. *Id.*

75. Muench, 53 N.W.2d at 516; City of Milwaukee v. State, 214 N.W. 820, 830 (Wis. 1927).

2. Illinois Central Railroad Co. v. Illinois

The *Illinois Central Railroad Company v. Illinois* ("*Illinois Central*") case was a landmark case as it helped shape the PTD.[76] The Supreme Court of the United States examined whether the Illinois legislature was within its rights to convey one square mile of Lake Michigan to the Illinois Central Railroad for development, including land that at one point was submerged by the lake.[77] Upon review, the Court held that conveying that land was beyond the Illinois legislature's authority because the Great Lakes were owned by the states as sovereigns at the time of their admission into the Union.[78] More importantly, the Court held that the state owned rights to the land beneath the waters in trust for the benefit of the citizens for uses such as navigation, hunting, fishing, and commerce.[79] The Court came to this conclusion by looking to the PTD. Under the PTD, the Court believed that it was outside the state's power to convey public trust land (including waters) for a private use or to convey land in a way that would impede on the public's right of use.[80]

The PTD gained its momentum from *Illinois Central*. The holding gave the PTD teeth and characteristics that many jurisdictions and states rely on today by providing the fundamental purpose and scope of the doctrine.[81] The PTD applies to both the navigable waters, such as the Great Lakes, and the tidal lands that run alongside of those waters.[82] Even more importantly, the Court acknowledged that the scope of the doctrine might have to change over time to ensure that the public has a right to use and access these navigable waters and tidal lands.

Many courts have embraced the *Illinois Central* interpretation of the scope of the PTD. The New Jersey Supreme Court held that, "[W]e perceive the public trust doctrine not to be 'fixed or static,' but one to 'be molded and extended to meet changing conditions and needs of the public it was created to benefit.'"[83] Much like the New Jersey Supreme Court, the California Supreme Court held, "In administering the trust the state is not

---

76. *See generally* Ill. Cent. R.R. v. Illinois, 146 U.S. 387 (1892) (explaining the fundamental concept of the PTD).

77. *Id.* at 433–34, 438.

78. *Id.* at 437.

79. *Id.* at 452.

80. *Id.* at 436–37.

81. *Id.* at 435–37.

82. James Olson, *All Aboard*: *Navigating the Course for Universal Adoption of the Public Trust Doctrine*, 15 Vt. J. Envtl. L. 135, 149 (2014).

83. Raleigh Ave. Beach Ass'n v. Atlantis Beach Club, Inc., 879 A.2d 112, 121 (N.J. 2005) (quoting *Matthews v. Bay Head Improvement Ass'n*, 471 A.2d 355, 365 (N.J. 1984)).

burdened with an outmoded classification favoring one mode of utilization over another."[84]

Even though some jurisdictions understand that neither the environment nor the doctrines dealing with the environment are static, courts sometimes limit the PTD to its traditional roots of navigable waters and streambeds.[85] This raises the question about how society is changing: is society evolving around traditional roots or is it evolving with newer, faster, and better technology that is nothing but traditional? Joseph Sax, professor of law at the University of Michigan, eloquently phrased the issue this way:

> [I]t is clear that the judicial techniques developed in public trust cases need not be limited either to [the] conventional interest or to question of disposition of public properties . . . [but] would be equally applicable and equally appropriate in controversies involving air pollution, the dissemination of pesticides, the location of rights of way for utilities, and strip mining or wetlands filling on private lands in a state where governments permits are required.[86]

These examples show that the different courts and scholarly opinions demonstrate that the PTD has and can change over time to ensure that states' citizens' resources (such as access to the water or possibly harvesting of water) are truly theirs to use.

D. Who Owns the Rain?

The answer to the question of who owns the rain is not easily found in the United States. Some states, like Vermont, say very little about how rainwater can be used.[87] Conversely, Kansas regulates who can use rainwater and for what purposes via a permit process.[88] Even then, if one does obtain a permit, they are only allowed to use rainwater for domestic purposes.[89] In short, even though we may never know who actually owns

---

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

85. *See* Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention,* 68 MICH. L. REV. 471, 488 (1969) (describing an instance where a Wisconsin court takes a relatively restrictive view of the doctrine).

86. *Id.* at 556–57.

87. *See generally* VT. DEPT. OF ENVTL. CONSERVATION, https://dec.vermont.gov/search/node/rainwater (last visited Nov 18, 2018) (demonstrating that the Vermont Department of Environmental Conservation has no obvious policies regarding rainwater).

88. Kansas Water Appropriation Act, KAN. STAT. ANN. § 82a-708a (2017).

89. § 82a-704a(f).

the rain, we as a nation know that rainwater is being tracked and regulated in some jurisdictions and is free to flow in others.

Some states explicitly say, or did at one time, that the states or the municipalities in those states own the rain. For instance, Gary Harrington, a resident of Medford, Oregon, was sentenced to jail and fined $1,500 for collecting rainwater on his property.[90] Medford, a city in southwest Oregon, where Harrington resides, had a 1925 water law that explained that the city "is granted the exclusive right to use for municipal purposes all the waters of Big Butte Creek, . . . and of its tributaries."[91] In the case with Harrington, the Oregon law makes it clear that the municipality owns all the water in the drainage.[92] The city claimed that it owned the rain because in its view rain is a main source of its water.[93] Therefore, when Harrington collected the state's water falling onto his property, he was violating the law. However, since the Harrington case, the state has revised its water laws to allow a homeowner to harvest rainwater but only from their rooftop.[94]

E. Nature of the Public Trust

As the demand for water flows into the spotlight for most of the western states, the need for clear legislation to allow for private and municipal rainwater collection will likely follow. When it does, the legislature will need to address the relationship between current water laws (riparian and prior appropriation schemes) and rainwater collection.[95] In general, public trust waters are the "navigable waters" of a State.[96] The public trust lands are the lands found under these waters, up to the mean high water mark.[97] These lands are unique in that the flora and fauna that

---

90. Craig Bannister, *If Oregon Owns the Rain, Then Who Owns The Air?*, CNS NEWS (July 29, 2012, 5:50 PM), https://www.cnsnews.com/blog/craig-bannister/if-oregon-owns-rain-then-who-owns-air.

91. Or. Rev. Stat. § 538.430(1).

92. Bannister, *supra* note 90.

93. *See* Kendra Alleyne, *Oregon Man Sentenced to 30 Days in Jail*, CNS NEWS (July 26, 2012, 8:58 PM), https://www.cnsnews.com/news/article/oregon-man-sentenced-30-days-jail-collecting-rainwater-his-property (describing that the state argued Harrington had diverted water that was part of the town's water supply).

94. Building Codes Division Oregon Smart Guide: Rainwater Harvesting, 1, https://www.oregon.gov/bcd/Documents/brochures/3660.pdf (last visited December 9, 2018).

95. States have different definitions of "diffuse surface water" and some states have no definition at all. *See, e.g.*, Ready Mixed Concrete Co. v. Farmers Reservoir & Irrigation Co., 115 P.3d 638, 642 (Colo. 2005) (discussing existing Colorado law that "[f]lowing water, even diffuse runoff and seepage that is not in a defined channel, is presumed to be tributary to the river system." Demonstrating that a land owner may not capture rainwater if it harms a prior appropriator downstream, illustrating tension between water laws).

96. DAVID C. SLADE ET AL., PUTTING THE PUBLIC TRUST DOCTRINE TO WORK 13 (1990).

97. *Id.*

live in these lands are also subject to the PTD.[98] Though not always, often the lands under the PTD are considered unsuitable for commercial use, any permanent development, or agriculture as a defining characteristic of the doctrine.[99] In contrast, these lands are considered an area for public purpose or recreation.[100]

Today, the PTD explains the relationship that a state has with its water resources and the public of the state.[101] It is a legal doctrine recognizing common public rights used to gain access to water resources like fishing, boating, hunting, commerce, and recreation.[102] It also provides a certain level of protection of some water resources such as the wildlife found within the public water and the land itself.[103] Because this doctrine holds the state's public interest in mind, each state has different ideas as to what is protected under the PTD.[104] One consideration is how heavily (or lightly) a state relies on the PTD to protect their navigable waters.[105] This reliance alludes to how developed and clear the state's legal doctrine will be.

If the state holds the resource as a trustee (in this case water), it is the state's responsibility to ensure its citizens have access to the water and fair use of it.[106] This raises the question: can fair use incorporate water that has fallen on your property? If so, can individuals use the rainwater to water their lawn, wash their car, or even water their livestock? Many state laws govern river diversion and groundwater extraction, however, rainwater collection often falls into a legal void.[107]

---

98. *Id.*

99. *Compare id.*, *with* Jayni Folely Hein, *Oil Companies are Drilling on Public Land for the Price of a Cup of Coffee. Here's Why That Should Change*, WASH. POST: POSTEVERYTHING (June 16, 2015), https://www.washingtonpost.com/posteverything/wp/2015/06/16/oil-companies-are-drilling-on-public-land-for-the-price-of-a-cup-of-coffee-heres-why-that-should-change/?utm_term=.16dae84a3ef2 (briefly discussing that many states lease oil and gas development on public land).

100. Slade, *supra* note 96, at 13.

101. Melissa K. Scanlan, *The Evolution of the Public Trust Doctrine and the Degradation of Trust Resources: Courts, Trustees and Political Power in Wisconsin*, 27 ECOLOGY L.Q. 135, 137 (2000).

102. *Id.* at 159; *see also* Forestier v. Johnson, 127 P. 156, 162–63 (Cal. 1912) (describing private ownership of submerged lands as subject to public rights to pass over lands on navigable waters in boats for hunting and fishing).

103. Slade, *supra* note 96, at 13.

104. *See* Scanlan, *supra* note 101, at 137 ("Courts have continually expanded what they recognize as the public's interest in public trust resources to include everything from the right to hunt to the right to maintain pollution-free water.").

105. *Id.*

106. *Id.*

107. NCSL, *supra* note 4 (Only nineteen states currently have laws or pending legislation governing containment of rainwater include Arizona, Arkansas, California, Colorado, Hawaii, Illinois, Nevada, New Jersey, North Carolina, Ohio, Oklahoma, Oregon, Rhode Island, Texas, Utah, Virginia, Washington, U.S. Virgin Islands).

Prior appropriators might argue that the harvested rainwater of others belongs to them by law; they appropriated it for their use long before anyone set up a rain barrel.[108] If the harvested water is not allowed to flow into the local lakes and streams it harms prior appropriators' rights.[109] However, proponents of rainwater harvesting would argue that this is not the case. For instance, two-thirds of the rain and precipitation in this country evaporates or transpires back to the atmosphere.[110] So, even if allowed to flow into the rivers, well over half of this rainwater would have been lost to natural causes anyway.[111] If the state permits individuals to trap rainwater in containers with a lid, then this would solve the evaporation issue and put to use a resource that, in theory, was already wasted. Many rain barrels have lids to prevent evaporation, minimize windblown contaminates, and prevent breeding grounds for mosquitos.[112]

Another argument to allow rainwater harvesting is that rainwater management has a direct effect on navigable waters of the United States and, thus, falls under the PTD.[113] One could argue that certain natural resources, like rainwater, do not have an owner and, therefore, belong to all citizens.[114] When federal statutory law fails to offer implied (or even express) protection over a resource, the PTD imposes upon states a duty to protect the resource for its citizens.[115] The states may have an obligation to allow citizens to use current and advancing technology to capture rainwater that has fallen on their land in perpetuity without legal repercussion.[116] Under the idea that rainwater belongs to everyone, it is then up to state politicians to expand the state's PTD to allow its citizens to harvest rainwater, a public resource, without legal consequences.

---

108. *See* R. Mark Josephson, *An Analysis of the Potential Conflict between the Prior Appropriation and Public Trust Doctrines in Montana Water Law*, 8 PUB. LAND & RESOURCES L.R. 83, 102, 106 (discussing considerations, such as balancing prior appropriators' needs, when the prior appropriation and public trust doctrines conflict); *see History of Rainwater Harvesting*, *supra* note 18 (indicating many states have prohibited rain barrels until recently); *see also* Lawrence J. MacDonnell, *Out-of-Priority Water Use: Adding Flexibility to the Water Appropriation System*, 83 NEB. L.R. 485, 485 n.2 (2004) (noting the prior appropriation system was first recognized in 1855 in Western states).

109. MacDonnell, *supra* note 108, at 486–87, n.6.

110. Frederick & Gleick, *supra* note 6, at 63.

111. *Id.*

112. *See* 2016 Bill Text Colo. H.B. 1005 37-96.5-102 (1) (explaining that all rain barrels must have a lid to comply with the law).

113. *Should the public trust doctrine be expanded to the use of groundwater?*, PACIFIC LEGAL FOUNDATION, https://pacificlegal.org/public-trust-doctrine-expanded-use-groundwater/ (last visited Dec. 8, 2018)*; see* The Daniel Ball, 77 U.S. 577, 563 (1870) (establishing a test to determine which waters of the United States are navigable in fact).

114. *See e.g.*, Prah v. Maretti, 321 N.W.2d 182, 188 n.9 (Wis. 1982) (describing that all landowners have an interest in sunlight).

115. The Daniel Ball, 77 U.S. at 564.

116. *Id.*

One problem with this argument is that even though the PTD has close ties to many *United States judicial holdings*, it looks to have fallen through the cracks of administrative law. Many politicians do not believe that it is their duty to be the trustee of public property and its resources.[117] Rather, many legislators are under the belief that they are only to decide on political and statutory issues that result in protecting or destroying natural resources via permit systems.[118] This line of thinking only leads to the belief that it is someone else's job to protect state resources.[119] This illustrates yet another reason why states need to reevaluate its policies to ensure its resources are both protected and made available for use by its citizens.

F. Using the Public Trust Doctrine to Create New Policy

The idea of the public holding water resources in trust has been around for centuries.[120] Today, the idea of using the PTD to reach areas beyond water is starting to gain traction.[121] Mary Wood is a professor of law and faculty director of the Environmental and Natural Resources Law Center at the University of Oregon School of Law in Eugene and author of *Nature's Trust*.[122] She proposes a new legal framework based on the PTD to define and carry out the government's ecological responsibility.[123] Professor Wood believes there is a vast opportunity awaiting in supporting the PTD, which politicians currently are not utilizing.[124] She explains how the doctrine could and should guide a dramatically new approach to protecting the environment (land, water, air, and wildlife) as a whole.[125]

Wood's primary argument is that decision makers should use the PTD to support conservation efforts in both the public's and the environment's

---

117. MARY C. WOOD, NATURE'S TRUST 15 (2014).

118. *Id.*

119. *See id.* at 16 (describing that many view the public trust doctrine as only judicial, rather than legislative).

120 . Cooper, *supra* note 65, at 67.

121. The U.S. Supreme Court held in *Geer v. Connecticut* that the public trust doctrine was meant to include wildlife. *Geer v. Connecticut*, 161 U.S. 519, 521–23 (1896); *see* WOOD, *supra* note 117, at 15 (advocating for the public trust doctrine to cover the environment as a whole); *see also* Alyssa Falk, *As Easy as Shooting Fish in a Barrel? Why Private Game Reserves Offer a Chance to Save the Sport of Hunting and Conservation Practices,* U. ILL. L. REV. 1329, 1338–39 (2015) (discussing the potential of wildlife falling under the protection of the public trust doctrine).

122. *Mary Wood*, U. OR. SCH. OF L., http://law.uoregon.edu/explore/Mary-Wood (last visited Nov. 17, 2018).

123. WOOD, *supra* note 117, at 14.

124. *See id.* at 16–17 (summarizing how Wood foresees the PTD impacting political and social dynamics).

125. *See id.* at 15–16 (explaining that the public trust doctrine, if used correctly, could stimulate modern bureaucracy by implementing new statutory laws that could affect all natural resources).

best interest.[126] While this Note reinforces Wood's argument, it more specifically looks at using the PTD to allow private citizens and even municipalities to harvest rainwater as a public resource. This is not a farfetched argument because the PTD reaches much further than navigable waters. The original intent was to include not only "'navigable waters' in a state" in the PTD, but also "lands beneath these waters . . . [and] living resources, e.g. the fish and aquatic plants and animal life, inhabiting these lands and waters."[127] Additionally, looking to the holding of *Illinois Central*, the Court explained that the doctrine may need to be flexible in order to protect the public's best interest.[128] Much like how the western states created the prior appropriation doctrine to accommodate their water needs, local governments could adopt rainwater harvesting as part of their state's PTD to meet their growing water needs. Thus, the argument for state-level decision makers to allow the PTD to cover a multitude of resources (rainwater harvesting) for different reasons (to lessen the burden on public utilities, lower cost for taxpayers, etc.) is reasonable and realistic.

IV. WHAT ARE STATES DOING?

At the time of this publication, there were no laws banning rain barrels outright.[129] However, there have been numerous obstacles to allowing one to use one, and the legal issues change as much as the flow of the rivers themselves. Some states encourage rainwater harvesting while others have many requirements that make it hard for the average homeowner to set up a basic rain barrel.[130] This reinforces the premise that advocates must get ahead of the issue and use the courts to ensure the PTD applies to rainwater collection.

---

126. *See id.* at 15, 17 (discussing proposed fiduciary duty of government as trustee).

127. SLADE, *supra* note 96, at 13.

128. Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 436–37 (1892); *see also* Leora Broydo Vestel, *The Legalities of Rainwater Harvesting*, N.Y. Times: Green Blogs (June 29, 2009, 9:18 AM ET) https://green.blogs.nytimes.com/2009/06/29/the-legalities-of-rainwater-harvesting/ (explaining that while the purchase of a rain barrel is not illegal, the act of harvesting water via rain barrel a prior appropriation state, such as Colorado, can lead to legal consequences).

129. *See generally* NCSL, *supra* note 4 (an overview of the states that have laws or legislations concerning rainwater and rain barrels).

130. *See, e.g.*, COLO. REV. STAT. § 37-96.5-105 (2016) (explaining that in Colorado if the use of a rain barrel proves to be detrimental to a senior water rights holder, the State Engineer can stop a private collector); *see also* Philadelphia Water Dep't, Watershed Blog, News Stream: Mt. Airy Rain Barrels (Mar. 23, 2012) http://www.phillywatersheds.org/news-stream-mt-airy-rain-barrels (explaining that The Philadelphia Water Department and the Mt. Airy Business Improvement District installed rain barrels in local neighborhood in Philadelphia).

A. Colorado

Colorado is a state that follows the prior appropriation doctrine.[131] This first-in-time, first-in-right method is most common in the West where water is scarce.[132] This type of water law also makes the practice of harvesting rainwater extremely difficult. Capturing water out of priority may deny downstream and/or senior water right holders the use of water that they have planned for and often have state permits to acquire.[133] In arid environments, every little bit of water adds to the larger picture, and many people count on the rain to supply their appropriated rights and needs.

Due to the prior appropriation doctrine in the state, Colorado has slowly changed their laws on who and how one can harvest rainwater. Before 2009, it was illegal for a residential home owner to collect rainwater in Colorado.[134] In the event that a citizen harvested rainwater prior to 2009, they were subject to a $500 fine per day.[135] However, after some legislative proposals and decisions, the state finally passed two laws that allowed private citizens to harvest rainwater legally, but with some restrictions.[136] First, the collected water must be used on the property where the water is collected.[137] Second, residents are only allowed up to two barrels (with a combined total of 110 gallons), and the water must be used for outdoor purposes only.[138] The passing of these two laws shows that Colorado has made some progress in the past few years for allowing rainwater harvesting.

---

131. Dep't of Nat. Res., Colorado Division of Water Resources: Prior Appropriation Law, http://water.state.co.us/surfacewater/swrights/pages/priorapprop.aspx (last visited Dec. 8, 2018).

132. THOMPSON, *supra* note 40 at 176.

133. *See* Stephen N. Bretsen, *Rainwater Harvesting Under Colorado's Prior Appropriation Doctrine: Property Rights and Takings*, 22 FORDHAM ENVTL. LAW REV. 159, 170 (2010) (explaining that the ability of residents to harvest rainwater is limited because of prior rights and over-appropriation).

134. *See* ACER Watertanks: Is Rainwater Harvesting Legal in Your State? (Jan. 11, 2017) https://acerwatertanks.com/is-rainwater-harvesting-illegal/ (explaining that in 2009, two laws were passed (Senate Bill 80 and House Bill 1129) that loosened restrictions on rainwater harvesting); *see also* Jeff Guo, *It is Actually Illegal in Colorado to Collect the Rain That Falls on Your Home*, WASH. POST, Mar. 24, 2015 https://www.washingtonpost.com/blogs/govbeat/wp/2015/03/24/it-is-actually-illegal-in-colorado-to-collect-the-rain-that-falls-on-your-home/ (explaining the laws preventing rain barrels and harvesting rainwater before 2009) (last visited Nov 18, 2018).

135. Findlay, *supra* note 11, at 75.

136. COLO. REV. STAT. §§ 37-96.5-103, 37-90-105 (2016).

137. NCSL, *supra* note 4.

138. COLO. REV. STAT. § 37-96.5-103.

B. California

California, like most of the western states, is known for its struggle to obtain water.[139] In reaction to this crisis, California passed the Rainwater Capture Act of 2012.[140] This Act allows homeowners, commercial properties, and government landowners to operate rain barrel systems to harvest rainwater.[141] In fact, the legislation encourages property owners to harvest rainwater for beneficial use.[142] The Act also lays out a plan to reduce the dependency on potable water by 20% by 2020.[143] The Act does not explicitly say that there is a limit to how much one can collect.[144] One study found that, with a proper collection kit, a single-family home in California could replace upwards of 60% of their water needs.[145] In a state with an average rainfall of 20 inches of rain per year, a single-family home could collect as much as 24,000 gallons of water using a rain barrel kit.[146]

Property owners could not always collect rainwater in California. Prior to the 2012 Rainwater Capture Act, anyone who harvested rainwater

---

139. *See, e.g.*, Dennis Dimick, *5 Things You Should Know About California's Water Crisis*, NAT'L GEOGRAPHIC (Apr. 6, 2015), https://news.nationalgeographic.com/2015/04/150406-california-drought-snowpack-map-water-science/ (describing the current and historic water crisis in California); *see also* Olivia Lambert, *SBS Program Dateline Explores Water Wars in California*, NEWS. COM. AU (Aug. 1, 2017, 10:06 PM) http://www.news.com.au/technology/environment/conservation/sbs-program-dateline-explores-water-wars-in-california/news-story/264fb4f97ff3a2ba89930c8b69a758c5 (discussing California's water wars); *see Los Angeles Water Harvesting Laws*, RAIN GUTTER PROS INC. http://www.raingutterprosinc.com/los-angeles-water-harvesting-laws (noting that Los Angeles is known for its water shortages) (last visited Nov. 24, 2017); NCSL, *supra* note 4 (describing California legislation concerning rainwater collection).

140. CAL. WATER CODE § 10571 (2012).

141. *See id.* (indicating that capturing rainwater involves "efforts at all levels, from individual landowners to state and local agencies and watershed managers"); *Rain Barrel Program*, CITY OF OAKLAND, http://www2.oaklandnet.com/Government/o/PWA/o/FE/s/ID/OAK025822 (showing the city of Oakland ran a three-year program that subsidized rain barrels for local participants in rainwater harvesting) (last visited Nov. 17, 2018).

142. *See* CAL. WATER CODE § 10571 (indicating the benefits of rainwater harvesting and that individuals should participate).

143. *Id.*

144. *See Los Angeles Water Harvesting Laws*, *supra* note 139 (noting that residents may freely collect rainwater) (last visited Nov. 24, 2017).

145. *Id.*

146. *Rain Barrel Guide: How Much Water Can You Collect in Rain Barrels During a* Rainfall, RAIN BARRELS: ULTIMATE BUYER'S GUIDE, https://web.archive.org/web/20180504232035/http://www.rainbarrelguide.com/how-much-water-can-you-collect-in-rain-barrels-during-a-rainfall/ (last visited Nov. 18, 2018).

without a permit was subject to a fine because the state legally owned the rights to the rainwater.[147] The legislature enacted the Rainwater Capture Act because the legal doctrine of prior appropriation already allocated surface water (replenished by rain water) to other users.[148] However, the Act also contains limitations. For example, it is illegal to collect rainwater that has already drained from a previous system.[149] In other words, one cannot collect water that has already been put to use by another.[150] Lastly, the collected water must be put to a beneficial use, otherwise the collector is subject to a fine.[151]

C. New Mexico

New Mexico is also a prior appropriation water rights state. One hundred percent of New Mexico's water and water rights have been accounted for because of the state's reliance on this doctrine.[152] The State Engineer oversees the allocated water rights in the state; therefore, one must acquire existing rights to proceed with installing any system that collects water.[153] However, New Mexico does not have any laws that explicitly deal with the legal ownership of rainwater or any requirements for outdoor use of rainwater.[154] Conversely, the state has started a tax credit program for "Green Buildings," which could include rainwater harvesting.[155] Those wishing to participate in the tax credit program for green buildings with rainwater harvesting systems encounter issues with the law because a person must first acquire a water right from the State Engineer; but, 100% of the water in the state has already been accounted for.[156] The law is ambiguous in New Mexico. Therefore, New Mexico could benefit from legislative action that allows rainwater harvesting under the PTD.

---

147. *Los Angeles Water Harvesting Laws*, *supra* note 139.

148 *See id.* (describing that, prior to the Rainwater Capture Act, individuals required permits to access water).

149. *Id.*

150. *Id.*

151. *Id.*; *see also* Samuel C. Wiel, *What is Beneficial Use of Water*, 3, 2 CAL. L. REV. 2 (1915) (discussing that a beneficial use is to be determined by a jury and what a reasonable person would consider a beneficial use).

152. *Rainwater Regulations and Statutes Around the World*, HARVESTH2O, http://www.harvesth2o.com/statues_regulations.shtml#nm (last visited Nov. 18, 2018).

153. *Id.*

154. *Id.*

155. *Id.*

156. *Id.*

D. Nevada

Nevada, a prior appropriation state, is one of the most troubling states in the nation concerning rainwater harvesting. In Nevada Revenue Statutes section 533.030, the state forbids rain barrels unless an individual has already appropriated that water.[157] Violating the Nevada law is a misdemeanor.[158] As JoAnn Kittrell, the public information manager for the Nevada Department of Conservation and Natural Resources, said, "Any collection of rainwater by anyone, anywhere in the state is in violation of Nevada water law."[159] This applies to both homeowners and corporations.[160] In short, the State Engineer has determined that even the smallest amount of water collecting is illegal.[161] Nevada's law takes precautions to protect those who hold prior water usage rights, much like how the Oregon water laws acknowledge the city of Medford, Oregon's existing right to utilize Big Butte Creek.[162] Therefore, the state and private appropriators can bring a lawsuit against anyone who has caused them harm by harvesting rainwater.[163]

E. Allowing Rainwater Harvesting to Fall Under the PTD Would Benefit the States

Access to water is necessary for every living being.[164] With growing populations and increasing global temperatures, the demand for water is swelling.[165] There are many suggestions to slow this problem. One example is allotment through water permits—where a user has the right to obtain and use water made available—either through selling or buying rights.[166]

---

157. NEV. REV. STAT. § 533.030 (2017).

158. Mark Robson, *Update 2: Can Nevadans Collect Rain in Barrels? No*, RENO GAZETTE JOURNAL (May 28, 2015, 9:09 PM), http://www.rgj.com/story/news/2015/05/26/ask-rgj-can-nevadans-collect-rain-barrels/27983037/.

159. *Id.*

160. *See id.* (noting that anyone in Nevada is subject to rainwater collection restrictions).

161. *Id.*

162. *See* OR. REV. STAT. § 538.430(1) (2017) (recognizing Medford, Oregon's existing water rights).

163. *See id.* (noting that no person may appropriate water, suggesting a cause of action against those who do so illegally); Robson, *supra* note 158 (indicating violating Nevada appropriation laws is a misdemeanor); *see also* Bretson, *supra* note 133, at 226 (describing that senior appropriators may bring a cause of action against the state in Colorado).

164. *Water – Its Importance and Source*, AUSTL. GOV'T DEP'T OF HEALTH (Nov. 2010), http://www.health.gov.au/internet/publications/publishing.nsf/Content/ohp-enhealth-manual-atsi-cnt-l~ohp-enhealth-manual-atsi-cnt-l-ch6~ohp-enhealth-manual-atsi-cnt-l-ch6.1.

165. World Bank Grp. [WBG], *High and Dry: Climate Change, Water, and the Economy*, at vi (2016).

166. *Id.* at viii, 34.

Another example is implementing pricing structures for commercial users, much like municipal water meters.[167] Some argue that implementing a pricing element attached to how much water is used could help preserve water, as many would become more resourceful in order to avoid waste or higher usage fees.[168] Another example involves utilizing the law to allow for water storage—specifically by allowing private parties and municipalities to collect rainwater under the PTD in the state's common law or as a matter of federal law.[169]

If states adopt rainwater harvesting under the PTD, homeowners would be able to either start or continue to collect rainwater. Homeowners could harvest rainwater without the fear that the State Engineer would stop these practices, or worse, would file a lawsuit alleging that homeowners caused harm to a downstream appropriator.[170]

For instance, if the Colorado State Legislature follows this recommendation, private rainwater harvesters could then use the water they collect for more than just outdoor use.[171] Private citizens could use this resource to support livestock, fill toilet tanks, or even wash clothes without fear of litigation. Additionally, in Colorado, a broader PTD would give all private citizens the right to collect more than 110 gallons and, in some cases, give them the right to even harvest rainwater in the first place.[172] Legal rainwater harvesting in Colorado is still a narrowly defined act. The laws are limited to small clusters of houses with a small-capacity well and single-family dwellings.[173]

Under the precipitation collection statute, a multi-unit building, one that has five or more units using municipal water, is barred from harvesting rainwater.[174] A building consisting of four family units or less is allowed to harvest 110 gallons for the entire building.[175] No matter the size of the family, a single-family dwelling can harvest up to 110 gallons of water, whereas a unit with five separate family dwellings can only harvest the same amount: 110 gallons of water. Therefore, this law prohibits some

---

167. *Id.* at 43.

168. *See id.* (indicating leaking plumbing in urban settings wastes 32 billion cubic meters of treated water worldwide).

169. *See id.* at ix (proposing expanding different types of water storage).

170. *See, e.g.*, COLO. REV. STAT. § 37-96.5-105 (2016) (explaining that, in Colorado, if the use of a rain barrel proves to be detrimental to a senior water rights holder, the State Engineer can stop a private collector).

171. *See* COLO. REV. STAT. § 37-96.5-103 (showing that rainwater collected in Colorado can be used for outdoor use only).

172. *See id.* (indicating individuals may not collect more than 110 gallons of rainwater); COLO. REV. STAT. § 37-90-105 (allowing rooftop precipitation collection for residences).

173. Bretsen, *supra* note 133, at 176.

174. COLO. REV. STAT. § 37-96.5-103.

175. *Id.*

families from utilizing a natural resource based on either their economic resources or lifestyle choices.[176] Yet, the law rewards families who can either afford or chose to live in a single-family dwelling.

The PTD protections that allow one to harvest rainwater reach farther than Colorado. Applying the PTD in California could allow citizens to collect rainwater and previously used drainage water. California neighborhoods could create a "daisy chain" of rainwater use, to maximize efficiency with minimal impact on the overall water supply. Allowing rainwater harvesting under the PTD in a state like Nevada (a prior appropriation state) could protect citizens from lawsuits when they harvest the rain and put it to beneficial use. Doing so would prevent the State Engineer from filing a lawsuit against a family who wanted to collect rainwater to simply water their garden.

To allow rainwater to fall under the PTD's legal framework would clarify legal access to harvest rainwater for both the legislature and its constituents. This may cure the confusion about the legal use of rain barrels, much like the ambiguity in Nevada and New Mexico.[177] Where there is such ambiguity in prior appropriation states, some citizens might not want to risk litigation just to make environmentally sound choices. Also, there is very little case law focusing on water not located within a stream or lake.[178] Therefore, providing clarity to legislation is not the only benefit: allowing rainwater harvesting under the PTD would also provide courts a legal doctrine to fall back on when a dispute arises.

With respect to diffused surface waters, most case law deals with the "civil law" approach. The "civil law" approach contemplates when a property owner rids their land to prevent flooding—not trying to keep the water falling on their property.[179] Generally, it is a tortious act under the civil law approach to divert the natural flow of surface water.[180] Under this rule, landowners are barred from acts such as raising their property elevation because it might cause run off, which might "harm" the neighboring property.[181] The one benefit of this rule provides a type of

---

176. *Id.*

177. *See* HarvestH2O, *supra* note 152 (explaining that there are known laws or statutes concerning rain harvesting).

178. THOMPSON, *supra* note 40 at 179.

179. *See* Argyelan v. Haviland, 435 N.E.2d 973, 976 (Ind. 1982) (explaining that it is "not unlawful to accelerate or increase the flow of surface water by limiting or eliminating ground absorption or changing the grade of land").

180. Gwenn Rinkenberger, *Landowner's Right to Fight Surface Water: The Application of the Common Enemy Doctrine in Indiana*, 18 VAL. U.L. REV. 481, 484 (1984).

181. *Id.* at 484–85.

predictability for all property owners.[182] The harshness of this rule has dissuaded many states from accepting it, especially because increased development leads to diverting diffused water. However, providing citizens with unambiguous language that allows for rainwater harvesting under the PTD could end further litigation and confusion on how to handle such disputes. Meaning that instead of diverting water away from the property, which could lead to damage of a neighboring property, one could capture water for on-tract use.

Last, to gain the full effect of the PTD, this Note proposes that by holding this resource in trust, the state could implement strategies allowing entire cities and municipalities to harvest rainwater. If states implement tactics allowing entire cities to collect water, it could also result in benefits across many spectrums. These tactics could protect cities by providing flood control.[183] These tactics could also lead to a decrease in pollution and even reduce sewer overflows.[184] Studies also show that implementing rainwater-harvesting systems can have a positive effect on developed land by complementing the hydrology of the land in its predeveloped condition.[185] Second, in some cases, it would align well with: city planning buffer areas; sediment and erosion control; storm water control; and illicit discharges of water.[186] Finally, by allowing cities to collect rainwater under a legal doctrine, the law could relieve litigation pressure on the courts regarding ambiguous water laws. Therefore, allowing entire cities to harvest rainwater reduces pressure on municipalities' storm water and drainage water systems, as well as their legal systems.

V. COUNTER ARGUMENT AND COMPLEXITIES

No clear plans or easy answers exist to any natural resource problems—using the PTD to allow rainwater harvesting is no exception. Currently, the concept of harvesting rainwater is still in its infancy and few are taking advantage of this method to capture the resource. If large suburban areas start the practice of harvesting rainwater, the negative effects to downstream flows and groundwater levels increases.[187] These negative

182. Timothy Weston, *Gone with the Water: Drainage Rights and Storm Water Management in Pennsylvania*, 22 VILL. L. REV. 901, 907 (1977).
183. EPA RAINWATER HARVESTING, *supra* note 26, at 28.
184. *Id.*
185. *Id.*
186. *Id.* at 32.
187. Bretsen, *supra* note 133, at 176.

effects could injure senior appropriators.[188] In short, when many private citizens collect a large amount of rain they prevent rainwater from flowing into the local rivers and lakes that others rely on for their source of water.[189] Following the holding of *Webb's Fabulous Pharmacies Inc., v. Beckwith*, it would not be surprising to find a rise in takings claims brought on behalf of the acting city as they would argue that the state "took their water rights from them."[190] The only way this takings claim could hold water is if under prior state law, the property owner's rights to the rainwater were clearly subordinate to the rights of surface water users.

Case law from other jurisdictions further complicates the counter argument. The court in *De Grayner & Co. v. Department of Natural Resources* defined a navigable body of water as one that can float any "boat, skiff, or canoe, of the shallowest draft used for recreational purposes."[191] Since the PTD covers navigable waters and the courts define navigable bodies of water, rainwater would be exempt from this area, as one cannot "float" a boat of any kind on rainwater.

Safety is also an issue. Elected public officials must address public safety and health if they champion any bill that allows people or entire municipalities to collect rainwater. One of the reasons Colorado does not let its citizens use rainwater for indoor use is because of concerns over contamination and health hazards.[192] In a traditional rainwater harvesting system, rainwater flows over the roof into a drain system and discharges into a storage container.[193] The water that flows over the roof is susceptible to pollutants and bacteria deposited from birds and other animals.[194] Another factor is that the chemicals on roofing materials can also be hazardous to consume.[195] Details of the potential pollutants and how they interact with the type of roofing material is shown in Table 1.

---

188. *See id.* (describing that if rainwater is captured, surface water levels could be impacted, which can injure the rights of prior appropriators).

189. Webb's Fabulous Pharmacies, Inc., v. Beckwith, 449 U.S. 155, 164 (1980).

190. *Id.* at 163–65.

191. DeGrayner & Co. v. Dep't of Nat. Res., 236 N.W.2d 217, 222 (Wis. 1975) (citing *Muench v. Public Serv. Comm'n*, 53 N.W.2d 514, 519 (Wis. 1952)).

192. Colo Dep't of Pub. Health and Env't, Best Practices in Sustainability: Residential Rain Barrels, https://www.colorado.gov/pacific/sites/default/files/DEHS_Sust_RainBarrel2017.pdf (last visited Nov. 30, 2017); *see Water-Efficient Technology Opportunity: Rainwater Harvesting Systems*, Fed. Energy Mgmt. Program: Office of Energy Efficiency & Renewable Energy https://www.energy.gov/eere/femp/water-efficient-technology-opportunity-rainwater-harvesting-systems (diagramming the traditional rainwater harvesting schematic) (last visited Nov. 17, 2018).

193. U.S. ENVTL. PROT. AGENCY, *Soak Up the Rain: Rain Barrels*, https://www.epa.gov/soakuptherain/soak-rain-rain-barrels (last updated Feb. 2, 2018).

194. *Id.*

195. *See id.* (explaining that harvested rainwater should not be used on gardens meant for consumption).

Table 1[196]

Roofing Material	**Pollutants of Concern**	**Suitable End Uses**
Asphalt shingles	Lead, Mercury	Contaminants vary by product. Sample water quality prior to use.
Galvanized metal	Cadmium, Nickel, Zinc, Phosphorus	Contaminants vary by product. Sample water quality prior to use.
Green roof	Nutrients, COD	Suitable for irrigation and other non-potable end uses.
Copper flashing, solder	Copper	Not suitable for human consumption, including drinking water, vegetable gardening, or swimming pools.
Lead flashing, solder	Lead	Not suitable for human consumption, including drinking water, vegetable gardening, or swimming pools.
Wood shingle	Copper, Arsenic, Nutrients	Not recommended for rainwater harvesting.
Cement and terra cotta tiles	Lead, Copper, Cadmium, Bacteria, Asbestos	Not recommended for rainwater harvesting.
Aluminum roofing	None	All uses
Rubber membrane	None	All uses

Table 1 demonstrates that those who decide to harvest rainwater could run into more issues and costs than anticipated. To harvest rainwater, one might need to purchase a containment system and also pay for testing.[197] This supports the argument that use of harvested rainwater may not be feasible because it may be contaminated.

In order to maintain a safe but functional rainwater-harvesting scheme, the states should enact laws to protect the public and the public's resource in unison. As for the public resource, the states should follow the language of the Supreme Court in *Illinois Central*, which explains that states will

196. EPA RAINWATER HARVESTING, *supra* note 26, at 21.
197. *Id.*

need to adapt to the times as insurance for their citizens.[198] As for the safety concern, many organizations, such as the Environmental Protection Agency, have provided guides and tools (e.g., Table 1) to understand what steps can be taken to protect people from unintended harm.[199]

CONCLUSION

Asking states to adopt rainwater harvesting as part of the PTD is smart water policy and smart development policy given current climate change issues. Interpreting the PTD this way would likely require decision makers to invest time and effort to ensure that the costs do not outweigh the benefits. However, the cost of inaction would be far greater than the cost of action. One thing is for certain; the future will demand a need for more water and reasonable ways to obtain that water. With the right kind of policy, local governments can ensure that people and the ecosystem are not susceptible to the forecasted floods and droughts ahead. The framework of using the PTD to allow rainwater harvesting already exists; it is up to the local decision makers to use the tools at their disposal to protect the citizens that they represent.

198. *See generally* Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 435–38 (1892) (describing the need for evolution in the laws to adapt to the growth of population in cities, sovereign states, and the United States).

199. *See generally* EPA RAINWATER HARVESTING, *supra* note 26 (providing guidance for the protection of public safety).