

Water, Water Everywhere? Establishing a Public Trust in Groundwater to Address Agricultural Pollution in California

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Unbeknownst to some, thousands of residents in California's San Joaquin Valley lack access to clean drinking water, which carries very real economic and human costs. The problems encountered by residents in the Valley disproportionately affect poor communities and communities of color. The issue thus falls directly within larger problems highlighted by the environmental justice movement, where those with comparatively less political power suffer unequally when the political process fails to adequately curb environmental degradation.

The biggest problems with polluted groundwater aquifers in California, and particularly those in the San Joaquin Valley, may be traced in large part to unregulated agricultural activity. These activities remained largely unregulated by the state until the last few years, even though state agencies have had sufficient statutory authority to act for decades. Despite recent efforts to do more in this space, it remains unclear how effective the state will be in addressing these problems.

This Article explores the extent to which the public trust doctrine may help direct the state's efforts to protect California's groundwater resources and to more vigorously enforce existing violations against agricultural polluters. By combining the doctrine with California constitutional principles and statutory policies, the Article proposes extensions to the doctrine's current scope and purpose and walks through potential remedies afforded by it. In so doing, the Article presents the doctrine as an important tool to confront the political failure that has led to the current crisis.

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INTRODUCTION

With the passage of California Assembly Bill 685 in 2012, the California legislature established that “every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.”¹ It remains unclear, however, what impact this bill will have beyond lofty declarations of general policy. Six years after its passage, tens of thousands of residents in the San Joaquin Valley for example, continue to suffer from acute contamination of their drinking water.² This contamination imposes very real economic³ and human costs.⁴

A closer look at drinking water contamination in the San Joaquin Valley reveals a deep history that has contributed to the current situation.⁵ A full

¹ CAL. WATER CODE § 106.3(a).

² See JONATHAN LONDON ET AL., UC DAVIS CTR. FOR REGIONAL CHANGE, *THE STRUGGLE FOR WATER JUSTICE IN CALIFORNIA’S SAN JOAQUIN VALLEY: A FOCUS ON DISADVANTAGED UNINCORPORATED COMMUNITIES* (2018).

³ Many of the poorest communities often pay a “triple-penalty” for contaminated drinking water—they bear the health costs of unsafe drinking water; they purchase that water at high cost; and they must purchase “substitute” water, often expensive bottled water, for drinking and cooking purposes. LONDON ET AL., *supra* note 2, at 8.

⁴ See, e.g., Laura Florez, *Where’s the Water?*, VISALIA TIMES (Aug. 4, 2004) (documenting how a resident had to get a ride to buy five-gallon water jugs from a nearby city to bathe her infant without risking her child ingesting water contaminated with nitrates); Scott Kraft, *Drinking Water Crisis: A California Town Fights Back*, L.A. TIMES (Nov. 7, 2010), <http://latimesblogs.latimes.com/greenspace/2010/11/drinking-water-nitrates-california-agricultural-runoff.html> (documenting how a member of the community wakes up worrying about whether she has enough bottled water to make coffee and to give her elderly mother with her medications); Eyal Matalon, *San Joaquin Valley Residents Express Their Concern Over Drinking Water Contamination*, EL TECOLOTE (June 30, 2010), <http://eltecolote.org/content/news/san-joaquin-valley-residents-express-their-concern-over-drinking-water-contamination/> (describing how Jesús Quevedo lost his son José to leukemia, which doctors believe was due to chronic exposure to pesticides both in the fields as well as his drinking water); ELI MOORE & EYAL MATALON, PAC. INST., *THE HUMAN COSTS OF NITRATE-CONTAMINATED DRINKING WATER IN THE SAN JOAQUIN VALLEY* (2011), https://pacinst.org/reports/nitrate_contamination/nitrate_contamination.pdf (telling the story of a student who tried not to get thirsty during gym class because the fountains at her school were shut off due to nitrate contamination, and the only alternative was to purchase a drink she could not afford).

⁵ For example, selective annexation of whiter and more affluent communities by cities, through a phenomenon known as municipal underbounding, has left many poor communities and communities of color on the fringes of existing cities to fend for themselves for basic services such as sewer and water service. See Michele Wilde Anderson, *Cities Inside Out: Race, Poverty, and Exclusion at the Urban Fringe*, 55 UCLA L. REV. 1095, 1097 (2008). There are some indications that these exclusionary practices may be motivated by race. See Daniel T. Lichter et al., *Municipal*

discussion of that history extends beyond the scope of this article.⁶ In short, poor communities and communities of color in the Valley have disproportionately suffered from lack of clean water.⁷ In this way, California's clean water crisis slots into the larger discussion of socioeconomic and racial inequality raised in numerous other contexts by the environmental justice movement.

Common to this discussion is the lack of political will to force large industries to internalize the costs and impacts of doing business. These impacts include health effects associated with environmental degradation that communities often bear unequally due to their comparative lack of political power.⁸ Drinking water contamination in the San Joaquin Valley shares many of these same characteristics. The Valley contains some of the most contaminated groundwater aquifers in the country.⁹ This is particularly problematic since 87% of the Valley's Community Water Systems¹⁰ have groundwater as their source.¹¹

The most common pollutant found in contaminated aquifers is arsenic.¹² While the State Water Board categorizes arsenic as naturally occurring,¹³ a Stanford University study published in 2018 has established a strong correlation between over-pumping of aquifers and arsenic concentrations.¹⁴ The study found

Underbounding: Annexation and Racial Exclusion in Small Southern Towns, 72 RURAL SOC. 47 (2007) (finding, based on census data from 1990 and 2000, that African American communities adjacent to nonmetropolitan towns in the South are more likely to be bypassed for annexation than similar white communities); *see also* *The Comm. Concerning Cmty. Improvement v. City of Modesto*, 583 F.3d 690, 705 (9th Cir. 2009) (finding sufficient evidence to overcome the City of Modesto's motion for summary judgment as to whether the City engaged in unconstitutional discriminatory behavior in its annexation practices).

⁶ For additional reading, in addition to Michele Anderson's and Daniel Lichter's papers, *supra* note 5, see Michelle Wilde Anderson, *Mapped Out of Local Democracy*, 62 STAN. L. REV. 931 (2010); Camille Pannu, *Drinking Water and Exclusion: A Case Study from California's Central Valley*, 100 CAL. L. REV. 223 (2012).

⁷ *See* LONDON ET AL., *supra* note 2, at 8 ("Lack of access to clean, safe and affordable drinking water has a racial and ethnic component: the vast majority of the valley's [disadvantaged unincorporated community] residents are people of color who also face cumulative impacts from environmental contamination brought on by proximity to air pollution, pesticides, toxic facilities and waste disposal.").

⁸ Much scholarship exists exploring the contours of environmental justice. For an overview of the types of struggles communities face, beyond water, see *THE QUEST FOR ENVIRONMENTAL JUSTICE: HUMAN RIGHTS AND THE POLITICS OF POLLUTION* (Robert D. Bullard ed., 2005).

⁹ MOORE & MATALON, *supra* note 4, at 11.

¹⁰ Defined in the Safe Drinking Water Act as "a public water system that – (A) serves at least 15 service connections used by year-round residents of the area served by the system; or (B) regularly serves at least 25 year-long residents." 42 U.S.C. § 300f(15).

¹¹ LONDON ET AL., *supra* note 2, at 14.

¹² STATE WATER RES. CONTROL BD., *COMMUNITIES THAT RELY ON A CONTAMINATED GROUNDWATER SOURCE FOR DRINKING WATER: REPORT TO THE LEGISLATURE* 17 (2013), https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/38/attachments/original/1394272808/xaxvc1nv_compressPdf.pdf.

¹³ *See id.*

¹⁴ Kurtis Alexander, *Overpumping of Central Valley Groundwater Has Side Effect: Too Much Arsenic*, S.F. CHRON (June 5, 2018), <https://www.sfchronicle.com/science/article/Over-pumping-of-Central-Valley-groundwater-has-12967278.php>.

that where over-pumping of aquifers had lowered ground levels by more than half an inch, the concentrations of arsenic in groundwater doubled and even tripled in some places.¹⁵ Thus, while the label “naturally occurring,” as distinguished from “anthropogenic” in official reports, may imply non-human causes, recent evidence shows that these contaminant levels may have human origins.

If basin overdraft is in fact a strong contributor to arsenic contamination, the implications for the San Joaquin Valley are not good. As shown in Figure 1, the majority of the state’s over-drafted basins are located in the Valley. Indeed, the highest concentration of arsenic found in the State Water Board’s 2013 report to the legislature came from a well in Madera County, reporting arsenic concentrations more than thirty times the Maximum Concentration Level (MCL).¹⁶ In 2017, Kern County topped the list of counties reporting wells with arsenic levels above the allowed MCL.¹⁷



Figure 1 - Critically Overdrafted Groundwater Basins (Source: California Department of Water Resources, Bulletin 118: Interim Update 2016)

¹⁵ *Id.*

¹⁶ See STATE WATER RES. CONTROL. BD., *supra* note 12, at 52 (reporting concentrations of arsenic from the Madera County well at 377 µg/L compared to the MCL of 10 µg/L).

¹⁷ STATE WATER RES. CONTROL. BD., GROUNDWATER INFORMATION SHEET: ARSENIC 2 (2017), https://www.waterboards.ca.gov/gama/docs/coc_arsenic.pdf.

After arsenic, nitrates comprise the second most common contaminant found in polluted aquifers.¹⁸ A 2012 study commissioned by the University of California, Davis Center for Watershed Sciences concluded that nitrate contamination was “overwhelmingly the result of crop and animal agricultural activities.”¹⁹ In addition, wastewater treatment plants and food processing facilities can have a considerable impact on a localized basis.²⁰ Here too, the San Joaquin Valley appears to have borne the brunt of the problem. In 2007, for example, 74% of all nitrate MCL violations in the state were found in the San Joaquin Valley, affecting over 275,000 people.²¹

In terms of the impact of these contaminants on poor communities and communities of color, the data may in fact be underreporting the problem. Most of the official data comes from Community Water Systems. These are systems that are large enough to fall under state testing and reporting requirements.²² Systems that serve fewer than twenty-five people a day for fewer than sixty days a year and that have fewer than fifteen connections are classified as either State Small Water Systems (SSWSs, between five and fifteen connections), Local Small Water Systems (LSWSs, between two and four connections) or private domestic wells.²³ These smaller systems are not regulated at the state level.²⁴ To the extent that testing and reporting is required, that is mandated at the county level.²⁵ In the San Joaquin Valley, for example, nitrate testing for SSWSs “may occur only upon the initial permitting (Kern County); annually (Fresno and Tulare Counties); or on a different schedule, depending on concentration levels (Kings County).”²⁶ Likewise, for LSWSs, nitrate testing is “either not required (Tulare, Fresno, and Kings Counties); or is required only at well initial permitting (Kern County).”²⁷ Private domestic well data is generally not available across the region.²⁸ While over 90% of residents in the San Joaquin Valley living in Disadvantaged Unincorporated Communities (DUCs)²⁹ receive water from

¹⁸ STATE WATER RES. CONTROL. BD., *supra* note 12, at 17.

¹⁹ JONATHAN H. VIERS ET AL., ADDRESSING NITRATES IN CALIFORNIA DRINKING WATER: TECHNICAL REPORT 2—NITROGEN SOURCES AND LOADING TO GROUNDWATER 1 (2012), <http://groundwaternitrate.ucdavis.edu/files/139110.pdf>.

²⁰ *Id.* at 1-2.

²¹ *Id.* at 13.

²² LONDON ET AL., *supra* note 2, at 13.

²³ See STATE WATER RES. CONTROL. BD., DECISION TREE FOR CLASSIFICATION OF WATER SYSTEMS 1 (2017), https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/publicwatersystems/class_dec_tree.pdf; *Id.* at 14.

²⁴ LONDON ET AL., *supra* note 2, at 13.

²⁵ *Id.*

²⁶ *Id.* at 14.

²⁷ *Id.*

²⁸ *Id.*

²⁹ “Disadvantaged Unincorporated Communities are disproportionately low-income places that are densely settled and not within city limits.” CHIONE FLEGAL ET AL., POLICYLINK, CALIFORNIA UNINCORPORATED: MAPPING DISADVANTAGED COMMUNITIES IN THE SAN JOAQUIN VALLEY 6 (2013), https://www.policylink.org/sites/default/files/CA%20UNINCORPORATED_FINAL.pdf; see also CAL. GOV’T CODE § 56033.5.

CWSs, more than 25,000 residents receive water from smaller systems where water quality testing and reporting is less stringent or not required.³⁰

The data strongly suggests, based on the types of contaminants found in public water systems, the likely causes of these contaminants, and the spatial distribution of contamination across the state, that agriculture plays a significant role in groundwater pollution. It is useful, therefore, to look at what environmental laws may help regulate agricultural activity and the extent to which those laws have been effective. Three sets of federal and California state statutes attempt to address the problem of agricultural pollution of groundwater in some way: the federal Clean Water Act (CWA) and its state counterpart, the Porter-Cologne Water Quality Control Act (Porter-Cologne); the Safe Drinking Water Act (SDWA); and the Sustainable Groundwater Management Act (SGMA). However, these statutes provide imperfect remedies to directly address the problem of agricultural pollution of groundwater. Moreover, the state has also been slow to implement and enforce its existing powers under these statutes against the agricultural industry.

Where then may communities harmed by unsafe drinking water turn to when legislative and regulatory efforts prove inadequate? Legal scholars have written extensively about the public trust doctrine as a possible alternative, documenting its historical roots, and advocating its expanded application. Many courts have also considered the scope of the doctrine, most notably the California Supreme Court in its landmark decision *National Audubon Society v. Superior Court*.³¹ However, while legal scholarship and court opinions have focused on how the doctrine affects consumptive water rights, little has been written applying the public trust doctrine to water quality issues.

This article discusses the public trust doctrine as applied to groundwater quality in three parts. Part II looks at existing state and federal laws that might allow the state to eliminate agricultural sources of pollution, with particular emphasis on gaps in existing laws that allow groundwater contamination to continue. Part III then traces the historical roots of the public trust doctrine and current California jurisprudence on the doctrine's scope. Finally, Part IV makes the case that, as trustee for the public, the state has a duty to do more to prevent harmful agricultural practices that impair the state's groundwater resources.

³⁰ LONDON ET AL., *supra* note 2, at 15.

³¹ 33 Cal. 3d 419 (1983).

I. ENVIRONMENTAL LAWS RELEVANT TO GROUNDWATER QUALITY

A. *The Clean Water Act and Porter-Cologne Water Quality Control Act*

1. Historical Background: State efforts to regulate water pollution

Prior to 1972, states were primarily responsible for regulating water quality,³² initially prompted by local health concerns related to polluted water systems in rapidly growing cities³³ and later expanding to issues of state-wide and regional concern by the 1920's.³⁴ Notwithstanding some notable exceptions,³⁵ federal regulation of water pollution remained largely limited to providing states with technical assistance and funding support throughout most of the twentieth century.³⁶ Many state efforts during this time focused on setting water quality standards.³⁷ These standards consisted of two components. States first classified bodies of water based on their use.³⁸ They would then define maximum levels of specific contaminants allowed in those waters based on their classification.³⁹ These standards proved difficult to implement, however, because states had to translate limits on specific pollutants into actionable discharge restrictions on specific sources.⁴⁰ In addition, state enforcement of their pollution laws remained weak,⁴¹ at least in part because large industrial employers would threaten to relocate their businesses to neighboring states with more lax environmental controls.⁴² By the 1970s, state regulatory efforts proved inadequate in the face of industrialization and a growing American population.⁴³

2. Passage of the Clean Water Act and changes in emphasis

The federal government took a drastically different approach to water pollution control with the passage of the Federal Water Pollution Control Act Amendments of 1972 (the Clean Water Act or CWA). For the first time, the new

³² William L. Andreen, *Water Quality Today-Has the Clean Water Act Been A Success?*, 55 ALA. L. REV. 537, 537 (2004).

³³ William L. Andreen, *The Evolution of Water Pollution Control in the United States-State, Local, and Federal Efforts, 1789-1972: Part I*, 22 STAN. ENVTL. L.J. 145, 178 (2003).

³⁴ William L. Andreen, *The Evolution of Water Pollution Control in the United States-State, Local, and Federal Efforts, 1789-1972: Part II*, 22 STAN. ENVTL. L.J. 215, 216 (2003).

³⁵ See, e.g., the Rivers and Harbors Act of 1899 (also known as the Refuse Act).

³⁶ See Andreen, *supra* note 34, at 237-244 (discussing the federal water pollution control efforts beginning with Federal Water Pollution Control Act of 1948 through the Water Pollution Control Act of 1965).

³⁷ Andreen, *supra* note 33, at 191.

³⁸ *Id.* Established usage categories included industrial, agricultural, fish and wildlife (environmental), recreational, and drinking water (domestic), among others. *Id.*

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Id.* at 194.

⁴² *Id.* at 155.

⁴³ See *id.* at 196-98.

federal law established national controls on water pollution and relegated states to a secondary role.⁴⁴ Though ambient water quality standards continued to play a part, the CWA shifted its regulatory focus to technology-based standards.⁴⁵ Under this approach, all pollution discharges of a particular industrial type were subject to the same uniform standards, regardless of the state where the discharge occurred or other factors that often complicated earlier regulatory efforts.⁴⁶ At the same time, the national program deemphasized ambient water quality and shifted its focus to a comprehensive permit system designed to control discharges from a wide variety of point sources.⁴⁷ While other states had experimented with regulating point sources through permit programs, the CWA extended these schemes to cover all states and almost all point source discharges.⁴⁸

The CWA expanded coverage of point source pollution primarily through five provisions. Section 301 made it illegal to discharge any pollutant except in compliance with the CWA.⁴⁹ Sections 402 and 404 established the primary permitting schemes allowing such discharges. Section 402 created the National Pollution Discharge Elimination System (NPDES) covering most types of discharges.⁵⁰ Section 404 covered dredge and fill permits.⁵¹ Finally, the CWA created very broad definitions of terms related to these provisions. It defined “discharge of a pollutant” to mean “any addition of any pollutant to navigable waters from any point source,”⁵² and it defined “point source” to cover a wide variety of sources including “any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.”⁵³

3. Regulation of agricultural sources of pollution

Due to the CWA’s broad coverage of point source pollution, one might expect that the Act’s point source controls could encompass at least some agricultural activities. For example, farmers typically apply fertilizers or pesticides through some sort of conveyance or conduit. Conveyances and

⁴⁴ Andreen, *supra* note 32, at 537.

⁴⁵ Andreen, *supra* note 33, at 158.

⁴⁶ *Id.* Other factors that complicated earlier regulatory efforts included the different use classifications across states of particular bodies of water, the volume of water contained within those bodies, and the number of other polluters that were also present or absent. By focusing solely on technology-based standards for discharges, the writers of the CWA simplified enforcement of pollution controls and avoided many issues states had faced earlier with enforcing ambient water quality standards. *Id.*

⁴⁷ *Id.* at 158-59.

⁴⁸ *Id.* at 159.

⁴⁹ 33 U.S.C. § 1311(a).

⁵⁰ *Id.* § 1342.

⁵¹ *Id.* § 1344.

⁵² *Id.* § 1362(12).

⁵³ *Id.* § 1362(14).

conduits fall within the CWA's definition of "point source."⁵⁴ Perhaps the obvious problem with this line of reasoning, however, is that fertilizer and pesticides are often applied directly to fields, not navigable waters. Thus, these activities would normally fall outside the purview of the CWA. Still, one might expect that as agricultural runoff is collected and discharged back into waterways, these collection points and conveyances could fall under the point source regulatory scheme, even if they themselves were not the original source of the pollution.⁵⁵ However, in two places, the CWA allows these agricultural sources to escape point source permitting requirements. First, the CWA's definition of point source expressly excludes "agricultural stormwater discharges and return flows from irrigated agriculture."⁵⁶ By definition, therefore, agricultural runoff is not a point source. Second, under the NPDES permitting system, the Environmental Protection Agency (EPA) may not require permits for agricultural runoff, nor may EPA require states to issue permits for these sources of pollution under state permitting programs.⁵⁷

Since the CWA's comprehensive point source permitting scheme generally exempts agricultural sources of pollution, it is useful to examine the extent to which the Act's control of nonpoint sources may regulate agricultural activity. The CWA does not explicitly define the term "nonpoint source"; however, the Act does identify "agricultural and silvicultural activities, including runoff from fields and crop and forest lands" as nonpoint sources.⁵⁸ In addition, the EPA has published non-binding information indicating that it considers "[e]xcess fertilizers, herbicides and insecticides from agricultural lands and residential areas" as nonpoint sources of pollution.⁵⁹

Unlike the Act's detailed technology-based permitting scheme for point sources, the CWA largely leaves regulation of nonpoint sources to state implementation.⁶⁰ The CWA includes some provisions designed to encourage states to address agricultural nonpoint source pollution. However, these provisions generally have not proven to be effective.⁶¹ Section 208 sets forth provisions to "encourage[] and facilitat[e] the development and implementation of areawide waste treatment management plans."⁶² This section requires these

⁵⁴ *See id.*

⁵⁵ In *South Florida Water Management District v. Miccosukee Tribe*, 541 U.S. 95 (2004), the United States Supreme Court held that point sources "need not be the original source of the pollutant; [they] need only convey the pollutant to 'navigable waters . . .'" 541 U.S. at 105.

⁵⁶ 33 U.S.C. § 1362(14).

⁵⁷ *Id.* § 1342(l)(1).

⁵⁸ *See* 33 U.S.C. § 1314(f) (requiring EPA to issue guidelines to states and other agencies regarding methods of controlling nonpoint source pollution such as that originating from agriculture).

⁵⁹ *Basic Information About Nonpoint Source (NPS) Pollution*, U. S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution> (last updated Aug. 10, 2018).

⁶⁰ Jan G. Laitos & Heidi Ruckriegle, *The Clean Water Act and the Challenge of Agricultural Pollution*, 37 VT. L. REV. 1033, 1040 (2013).

⁶¹ *Id.*

⁶² 33 U.S.C. § 1288(a).

management plans to also include “agriculturally and silviculturally related nonpoint sources of pollution, including return flows from irrigated agriculture, and their cumulative effects, runoff from manure disposal areas, and from land used for livestock and crop production.”⁶³ However, critics have generally viewed Section 208 as a failure because “the EPA lack[ed] authority to impose or even offer an alternative enforceable areawide management plan, when a state provide[d] one that [was] inadequate, or when a state fail[ed] to develop an adequate plan,” and Congress cut funding to the program in 1981.⁶⁴

In 1987, Congress amended the CWA and added section 319 to address agricultural nonpoint sources.⁶⁵ Section 319 calls for states to submit “state assessment reports” that identify waters impaired by nonpoint sources and the significant sources of that impairment.⁶⁶ In addition, states are directed to develop “state management programs” that identify best management practices (BMPs) for reducing pollution from nonpoint sources as well as a schedule for implementation of BMPs.⁶⁷ As with section 208, however, section 319 has also proven inadequate in addressing nonpoint source agricultural pollution.⁶⁸ Though section 319 plans are required to identify best management practices for addressing pollution from agricultural sources, the measure contains no enforcement provisions.⁶⁹ Thus, implementation of BMPs largely relies on voluntary compliance.⁷⁰ As a consequence, section 319 state plans have generally failed to eliminate agricultural sources of pollution.⁷¹

Section 303 arguably provides more effective tools for regulating nonpoint source pollution.⁷² Similar to the approach that some states voluntarily took prior to the enactment of the CWA, section 303 requires states to identify water quality standards (WQS) for waters in the state.⁷³ The WQS consists of “the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses.”⁷⁴ Unlike similar state programs prior to 1972, section 303 requires all states to submit WQS for state waters. Section 303 also requires the EPA to make a determination as to whether the state-submitted WQS satisfy the requirements of the act.⁷⁵ If the EPA determines that the state WQS are insufficient, it must identify the changes required to meet CWA

⁶³ *Id.* § 1288(b)(2)(F).

⁶⁴ *See* Laitos & Ruckriegle, *supra* note 60, at 1041-42.

⁶⁵ *Id.* at 1043.

⁶⁶ 33 U.S.C. § 1329(a).

⁶⁷ *Id.* § 1329(b).

⁶⁸ *See* Laitos & Ruckriegle, *supra* note 60, at 1044-45.

⁶⁹ *Id.* at 1044.

⁷⁰ *Id.*

⁷¹ *Id.* at 1044-45.

⁷² *Id.* at 1046.

⁷³ 33 U.S.C. § 1313(c)(2)(A).

⁷⁴ *Id.*

⁷⁵ *Id.* § 1313(c)(3).

requirements.⁷⁶ If the states do not correct the identified deficiencies, the EPA must then publish its own WQS for the state.⁷⁷

In an additional departure from previous state efforts prior to 1972, section 303 and associated EPA regulations also provide mechanisms to tie the identified WQS for state waters into the permitting system for point source pollution. In particular, states must provide a list, along with a priority ranking based on the severity of the pollution, of waters which fail to meet the identified WQS after taking into account permits established for point sources impacting those waters.⁷⁸ States must also identify the total maximum daily load (TMDL) of pollutants the impaired waters may sustain.⁷⁹ These TMDLs balance “load allocations” between point sources and nonpoint sources.⁸⁰ When considering approval of new point source discharge permits into impaired waters, states may only issue such permits if permit applicants show sufficient load allocations are available for the discharge and that existing dischargers are subject to compliance schedules “designed to bring the segment into compliance with applicable water quality standards.”⁸¹ In this way, section 303 helps prevent further degradation of a state’s most impaired waters.

The requirements of section 303 apply even if nonpoint sources make up the only source of pollution for a particular body of water. The agriculture and timber industries have contended that, under section 303, a state’s impaired waters should include only those waters affected by point sources.⁸² However, the Ninth Circuit has held that states must list and prioritize impaired waters, even if only nonpoint sources contribute to their impairment.⁸³ Thus, where agricultural pollution has caused a violation of the applicable WQS, states must identify that water in their section 303 list and define appropriate TMDLs for that water. Combined with the restrictions on point source permits for these waters, these provisions preclude new point source permits affecting waters impaired only by agricultural nonpoint sources, unless the TMDLs allow for it and a plan exists to bring the impaired waters in line with the published WQS.

4. Regulation of agricultural pollution in California

Like many environmental laws passed in the 1970s, the Clean Water Act allows states to take control of some aspects of the implementation. For example, states may submit to EPA a proposal to administer NPDES permits within their

⁷⁶ *Id.*

⁷⁷ *Id.* § 1313(c)(3), (c)(4).

⁷⁸ *Id.* § 1313(d)(1)(A).

⁷⁹ *Id.* § 1313(d)(1)(C).

⁸⁰ See 40 C.F.R. § 130.2(i) (defining TMDL as load allocations between point sources, nonpoint sources, and the natural background pollutions levels of the body of water and indicating that “the TMDL process provides for nonpoint source control tradeoffs”).

⁸¹ *Id.* § 122.4(i).

⁸² Laitos & Ruckriegle, *supra* note 60, at 1053.

⁸³ *Pronsolino v. Nastro*, 291 F.3d 1123, 1135 (9th Cir. 2002).

respective borders.⁸⁴ In addition, under section 319, states must submit state assessment reports and management programs to deal with nonpoint source agricultural pollution in exchange for technical assistance and federal funding.⁸⁵ Finally, as required by section 303, states must list and prioritize impaired surface waters and establish TMDLs for those waters, even if agricultural pollution is the only source of impairment.⁸⁶

California's Porter-Cologne Water Quality Control Act predates the CWA, but the California legislature amended the act in 1972 to establish California's implementation of NPDES permits and other aspects of the Clean Water Act.⁸⁷ The Porter-Cologne Water Quality Control Act thus serves as California's primary scheme for regulating water pollution, fulfilling the state's obligations under the CWA, as well as providing additional regulatory controls beyond those required by federal clean water legislation.

a. Key provisions of the Porter-Cologne Water Quality Control Act

In certain respects, Porter-Cologne provides greater protections than the CWA for waters in California. For example, while the CWA concerns itself only with navigable surface water, Porter-Cologne defines "waters of the state" broadly to include "any surface water or groundwater, including saline waters, within the boundaries of the state."⁸⁸ Thus, from the outset, California's water quality regulatory structure covers all water in the state, including groundwater. In addition, Porter-Cologne does not distinguish between point and nonpoint sources of water pollution. Rather, it regulates waste discharge generally,⁸⁹ and it defines "waste" broadly to include "sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive . . . of human or animal origin."⁹⁰

The act divides the state into nine regions⁹¹ and allocates regulatory responsibility between the State Water Board and nine regional boards.⁹² Among other obligations, the regional water boards must create water quality control plans that function much like land use general plans.⁹³ These plans must consider beneficial uses of waters in the region and establish water quality objectives for those waters.⁹⁴ The plans must also detail an implementation program that includes compliance timelines and a description of measurements taken to ensure

⁸⁴ 33 U.S.C. § 1342(b).

⁸⁵ See *supra* text accompanying notes 65-69.

⁸⁶ See *supra* text accompanying notes 73-83.

⁸⁷ William R. Attwater & James Markle, *Overview of California Water Rights and Water Quality Law*, 19 PAC. L.J. 957, 1004 (1988).

⁸⁸ CAL. WATER CODE § 13050(e).

⁸⁹ See *id.* § 13260.

⁹⁰ *Id.* § 13050(d).

⁹¹ *Id.* § 13200.

⁹² See generally CAL. WATER CODE, Division 7, Chapter 3 for powers granted to the State Water Board and Chapter 4 for regional water board responsibilities.

⁹³ Attwater & Markle, *supra* note 87, at 998; CAL. WATER CODE § 13240.

⁹⁴ CAL. WATER CODE § 13241.

compliance with water quality objectives.⁹⁵ Regional boards submit their water quality plans to the State Water Board for approval.⁹⁶ Like the EPA with regard to state submittal of WQS, the State Water Board can suggest corrections to the regional water quality plans. If necessary, the State Water Board may also create its own plan for the region.⁹⁷ Once approved by the EPA, these plans, along with their water quality objectives, satisfy CWA requirements for establishing WQS for waters in the state.⁹⁸

Like the Clean Water Act, Porter-Cologne also establishes a discharge permit system that functions much like the NPDES system. Porter-Cologne requires any person who proposes to discharge waste that could affect the quality of state waters to file a report of waste discharge with the regional water board, unless waived.⁹⁹ Dischargers must also file such reports if the “character, location, or volume of the discharge” changes.¹⁰⁰ The regional boards review the submitted reports and issue waste discharge requirements (WDRs) that detail the nature of the discharge allowed.¹⁰¹ The WDRs implement the regional water quality control plans and must “take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and [other aspects of the regional plans].”¹⁰² Typically, a single state issued permit satisfies both state waste discharge and federal (NPDES) requirements.¹⁰³

Though WDRs are similar to NPDES permits, their scope is potentially much broader. For example, NPDES permits apply only to point source discharges into surface waters. In contrast, Porter-Cologne waste discharge permits apply to point and nonpoint source discharges. Moreover, a WDR is required for discharges into any state water. This includes all surface and groundwater, including the ocean.¹⁰⁴ Thus, while the CWA exempts agricultural sources of pollution from NPDES permit requirements, Porter-Cologne WDRs provide a mechanism to cover all such sources, even if the pollution only affects groundwater and has no impact to surface water.

b. Use of Porter-Cologne to regulate agricultural pollution through the year 2000

While statutory hooks exist to allow comprehensive regulation of agricultural sources of pollution that impair groundwater quality, California’s regulators have historically given the industry an enormous pass. When first

⁹⁵ *Id.* § 13242.

⁹⁶ *Id.* § 13245.

⁹⁷ *See id.* §§ 13242, 13248.

⁹⁸ Attwater & Markle, *supra* note 87, at 999.

⁹⁹ CAL. WATER CODE § 13260(a)(1), (b).

¹⁰⁰ *Id.* § 13260(c).

¹⁰¹ *Id.* § 13263(a).

¹⁰² *Id.*

¹⁰³ Attwater & Markle, *supra* note 87, at 1004.

¹⁰⁴ *See* CAL. WATER CODE § 13050(e).

enacted, some legislators made an effort to add comments in the legislative history indicating that agricultural irrigation had not historically been subject to regulation.¹⁰⁵ These statements gave regional boards considerable pause when evaluating how to regulate agricultural activities.¹⁰⁶ In the mid 1970s, the Central Valley Regional Board suggested some measures to reign in agricultural pollution. As a result, the legislature commenced hearings to scrutinize regional board operations.¹⁰⁷ Then in 1976, the legislature amended the act to require regional water boards to estimate costs and identify sources of financing prior to enacting any water quality plan that regulated agriculture.¹⁰⁸ Consequently, California did not seriously regulate agricultural pollution until the passage of Senate Bill 390 (S.B. 390) in 1999.

In the wake of the 1987 CWA amendments requiring section 319 assessment reports and management plans, California enacted its first nonpoint source control plan.¹⁰⁹ The plan called for voluntary controls that the industry would adopt absent express requirements to do so, conditional waivers for discharge, and individual WDRs.¹¹⁰ The first conditional waivers issued under the plan exempted over forty categories of nonpoint source discharges from WDR requirements, including dairy and irrigated agriculture.¹¹¹ These waivers also did not include any monitoring requirements to ensure compliance with the conditions on the waiver.¹¹² Thus, under California's inaugural nonpoint source control plan, the state effectively gave the agricultural industry a blanket waiver with no enforcement or compliance controls.

c. Senate Bill 390 and the 2004 Nonpoint Source Implementation Plan

Senate Bill 390 updated the waiver program and required the regional boards to reevaluate existing conditional waivers granted under earlier programs.¹¹³ The regional boards had to either issue WDRs for the nonpoint source discharges or grant new, more stringent waivers.¹¹⁴ Regional boards could also only issue new waivers if they were "in the public interest."¹¹⁵ In addition, the bill required these new waivers to contain monitoring requirements; waivers had to be renewed every five years; and regional boards could revoke them at any

¹⁰⁵ Attwater & Markle, *supra* note 87, at 1024.

¹⁰⁶ *Id.* at 1030, n. 281.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*; see An Act to Amend Section 13141 of the Water Code, ch. 149, § 1, 1976 Cal. Stat. 238; CAL. WATER CODE § 13141.

¹⁰⁹ Lee N. Smith & Loren J. Harlow, *Regulation of Nonpoint Source Agricultural Discharge in California*, 26 NAT. RESOURCES & ENV'T 28, 30 (2011).

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ CAL. WATER CODE § 13269(a)(1).

time.¹¹⁶ In 2003, the legislature passed Senate Bill 923, which further amended the waiver program to require consistency with regional water quality control plans.¹¹⁷ It also gave regional boards power to condition the waiver upon payment of a fee.¹¹⁸

Under the auspices of S.B. 390, the State Water Board issued a new nonpoint source implementation plan in 2004 (the 2004 Implementation Plan or 2004 plan).¹¹⁹ The 2004 Implementation Plan updated the earlier state nonpoint source plan in several key ways. First, it outlined three administrative tools that regional water boards could use to control nonpoint source pollution. It continued to encourage the use of WDRs and conditional waivers to control nonpoint source discharges, except that new conditional waivers carried with them an expiration date and monitoring requirements and could be revoked at any time.¹²⁰ Pursuant to Water Code section 13243, the 2004 Implementation Plan also indicated that regional boards could prohibit certain classes of discharge if included in their regional water quality control plans.¹²¹

Perhaps most significantly, the 2004 plan provided additional guidance for the implementation programs Porter-Cologne requires to ensure compliance with regional water quality control plans and board-issued WDRs, waivers, or discharge prohibitions.¹²² In a departure from earlier practice, the 2004 Implementation Plan allowed coalitions of agricultural dischargers to submit implementation programs that comply with conditional discharge waivers issued by the regional water boards.¹²³ The coalition representative (who may not be an

¹¹⁶ *Id.* § 13269(a)(2).

¹¹⁷ An Act to Amend Section 13269 of the Water Code, ch. 801, § 1, 2003 Cal. Stat. 5917 [hereinafter S.B. 923]; CAL. WATER CODE § 13269(a)(1).

¹¹⁸ S.B. 923, *supra* note 117; CAL. WATER CODE § 13269(a)(4).

¹¹⁹ Smith & Harlow, *supra* note 109; *see* STATE WATER RES. CONTROL BD., POLICY FOR IMPLEMENTATION AND ENFORCEMENT OF THE NONPOINT SOURCE POLLUTION CONTROL PROGRAM (2004), https://www.waterboards.ca.gov/water_issues/programs/nps/docs/plans_policies/nps_iepolicy.pdf [hereinafter 2004 NPS IMPLEMENTATION PLAN].

¹²⁰ Smith & Harlow, *supra* note 109.

¹²¹ 2004 NPS IMPLEMENTATION PLAN, *supra* note 119, at 5-6.

¹²² *See id.* at 8. *See also supra* notes 93-103 and accompanying text for a description of how regional plans, WDRs, waivers, and implementation programs work together. In short, the regional water boards create water quality control (general) plans for the region. These plans consist of high-level declarations of beneficial uses and water quality objectives for waters in the region. The regional boards then issue WDRs, conditional waivers, and/or discharge prohibitions that must be consistent with the beneficial uses and water quality objectives. These waste requirements and waivers, however, while more specific than the regional plans, still leave out some details with respect to individual growers. The implementation programs attempt to fill in those details by providing compliance timelines (if necessary) and by detailing reporting and monitoring requirements as applied to specific growers to ensure compliance with WDRs and waivers issued by regional boards.

¹²³ Smith & Harlow, *supra* note 109. The state and regional water boards as well as individual dischargers could also create these implementation programs. 2004 NPS IMPLEMENTATION PLAN, *supra* note 119, at 8.

actual discharger)¹²⁴ must monitor its members' compliance with the terms of the waiver and also fulfill the waiver's reporting requirements.¹²⁵

In addition, the 2004 Implementation Plan identified five key elements that any implementation program must satisfy.¹²⁶ Minimally, the implementation programs must "address [nonpoint source] pollution in a manner that achieves and maintains water quality objectives and beneficial uses."¹²⁷ Thus, if a program primarily relies on BMPs to achieve compliance with water quality objectives, for example, it must show a "strong correlation" between those BMPs and relevant objectives.¹²⁸ In another change of tone from earlier nonpoint source control plans, the 2004 plan indicates that an implementation program's use of BMPs may never "substitute for meeting water quality requirements."¹²⁹ Finally, the 2004 plan emphasizes that in cases of individual non-compliance with an implementation program's stated purposes, the regional water board may take appropriate enforcement action against an individual discharger.¹³⁰

- d. The Irrigation Lands Programs, conditional waivers, and WDRs after the year 2000

Following publication of the 2004 Implementation Plan, many regions created Irrigated Lands Programs to govern agricultural nonpoint source discharges.¹³¹ In 2006, for example, the Central Valley Regional Board issued two conditional waivers, one applicable to coalitions of dischargers¹³² and the other applicable to individual dischargers.¹³³ At the time, the regional board indicated that waivers, as opposed to WDRs, were required "because there are estimated to be more than 25,000 individual owners and/or operators of irrigated lands who discharge waste from irrigated lands and it is neither feasible nor practicable due to limitations of Central Valley Water Board resources to adopt WDRs within a reasonable time."¹³⁴ In addition, the board stated, "information is

¹²⁴ See 2004 NPS IMPLEMENTATION PLAN, *supra* note 119, at 8.

¹²⁵ Smith & Harlow, *supra* note 109.

¹²⁶ See 2004 NPS IMPLEMENTATION PLAN, *supra* note 119, at 11-15.

¹²⁷ *Id.* at 11-12.

¹²⁸ *Id.* at 12. The 2004 Implementation Plan uses the term "management practices" or "MPs" as a substitute for the CWA's use of the term "best management practices."

¹²⁹ *Id.*

¹³⁰ *Id.* at 14-15.

¹³¹ Smith & Harlow, *supra* note 109.

¹³² CAL. REG'L WATER QUALITY CONTROL BD. CENT. VALLEY REGION, ORDER NO. R5-2006-0053: COALITION GROUP CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM IRRIGATED LANDS (2006), https://www.waterboards.ca.gov/rwqcb5/board_decisions/adopted_orders/waivers/r5-2006-0053.pdf [hereinafter 2006 COALITION GROUP WAIVER].

¹³³ CAL. REG'L WATER QUALITY CONTROL BD. CENT. VALLEY REGION, ORDER NO. R5-2006-0054: INDIVIDUAL DISCHARGER CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM IRRIGATED LANDS (2006), https://www.waterboards.ca.gov/rwqcb5/board_decisions/adopted_orders/waivers/r5-2006-0054.pdf [hereinafter 2006 INDIVIDUAL DISCHARGER WAIVER].

¹³⁴ 2006 COALITION GROUP WAIVER, *supra* note 132, at 9.

not generally available concerning the specific locations of impairments, specific causes, specific types of waste, and specific management practices that could reduce impairments and improve and protect water quality.”¹³⁵

Substantively, the waivers applicable to coalitions and individual dischargers were identical. The waiver applying to coalition groups contained some additional details pertaining to membership requirements and submittal of monitoring and compliance reports.¹³⁶ The key conditions placed on growers were three-fold: (1) individual dischargers or members of coalitions could not release new discharges or increase existing discharges that would impair surface water quality;¹³⁷ (2) they could not discharge any waste not covered by the waiver, though the waiver covered a wide variety of organic and inorganic materials including nitrates and pesticides;¹³⁸ and (3) they had to comply with the monitoring and reporting program developed by the regional board.¹³⁹ In addition to these key conditions, coalitions and individual dischargers were required to “achieve best practicable treatment or control of the discharge . . . to the extent feasible and that will achieve compliance with applicable water quality standards, protect the beneficial uses of waters of the state, and prevent nuisance.”¹⁴⁰ They also had to comply with any TMDLs for impaired waters.¹⁴¹ In general, the 2006 waivers applied only to waste discharges affecting surface waters.¹⁴² At the time, there was no waiver applicable to agricultural waste discharges to groundwater. Indeed, it appears that during this period such discharges were in violation of Porter-Cologne as well as the plain terms of the 2006 waivers.¹⁴³

In 2012, the Central Valley Regional Board changed its approach to agricultural discharges. In place of a general waiver, the board began the process of issuing WDRs that covered discharges in specific watersheds within the region.¹⁴⁴ Moreover, the new WDRs covered discharges to both surface and

¹³⁵ *Id.*

¹³⁶ *See, e.g., id.* at 25 (giving individual growers until December 31, 2006 to join a coalition group). The Central Valley Regional Board later rescinded this deadline. *See* CAL. REG’L WATER QUALITY CONTROL BD. CENT. VALLEY REGION, RESOLUTION NO. R5-2008-0052 (2008), https://www.waterboards.ca.gov/rwqcb5/board_decisions/adopted_orders/resolutions/r5-2008-0052_res.pdf.

¹³⁷ *See* 2006 COALITION GROUP WAIVER, *supra* note 132, at 25.

¹³⁸ *See id.*

¹³⁹ *See id.* at 24.

¹⁴⁰ *Id.* at 24.

¹⁴¹ *See id.* at 24.

¹⁴² *See* 2006 INDIVIDUAL DISCHARGER WAIVER, *supra* note 133, at 10; 2006 COALITION GROUP WAIVER, *supra* note 132, at 11.

¹⁴³ Porter-Cologne requires that all waste discharges to waters of the state, which include groundwater, comply either with a WDR or conditions of a waiver. *See supra* notes 99-104 and accompanying text. The terms of the 2006 conditional waivers indicate that growers may not discharge any waste not specifically covered by the waivers. *See supra* note 138 and accompanying text. Because the waivers covered discharges only to surface water, discharges to groundwater were not covered by them, and there were no other waivers or WDRs covering discharges to groundwater.

¹⁴⁴ *See* CAL. REG’L WATER QUALITY CONTROL BD. CENT. VALLEY REGION, IRRIGATED LANDS PROGRAM: FREQUENTLY ASKED QUESTIONS 1 (2016), https://www.waterboards.ca.gov/rwqcb5/water_issues/irrigated_lands/ilrp_faq.pdf [hereinafter ILRP FAQ]. To date, the Central Valley

groundwater.¹⁴⁵ These WDRs serve as the current governing documents related to agricultural discharges affecting groundwater in the Central Valley. The WDRs are much more comprehensive in scope than the earlier waivers. They contain findings that nitrate contamination in groundwater is a problem in the Valley and that agricultural discharges have contributed to this problem.¹⁴⁶ At the same time, however, several WDRs contains provisions allowing relaxation of monitoring and reporting requirements when coalitions seek reclassification of the beneficial uses of a groundwater aquifer.¹⁴⁷ The Tulare Lake Basin WDR states, for example:

The board recognizes that some areas within the Tulare Lake Basin Area overlie groundwater containing naturally occurring constituents, including salts, that may exceed water quality objectives for specific beneficial use designations. In such cases, the use may be unattainable, even in the absence of any waste discharge, and de-designation or modification of the designated use may be appropriate. It is reasonable . . . to delay the imposition of monitoring and reporting associated with high vulnerability areas in these circumstances.¹⁴⁸

The core substantive requirements of the WDRs are encapsulated in provisions outlining prohibitions, receiving water limitations, and the numerous reports and management plans required of growers and coalition representatives. The WDRs principally prohibit discharge of waste to waters of the state from irrigated agricultural operations, except as allowed by the WDR.¹⁴⁹ Waste

Regional Board has issued nine WDRs—eight covering coalition groups in different watersheds and one covering individual growers generally for the entire region. See *Irrigated Lands Regulatory Program—Regulatory Information & Adopted Waste Discharge Requirements (WDRs or Orders)*, CAL. WATER BOARDS CENT. VALLEY—R5, https://www.waterboards.ca.gov/rwqcb5/water_issues/irrigated_lands/regulatory_information/ (last updated Nov. 13, 2018).

¹⁴⁵ ILRP FAQ, *supra* note 144.

¹⁴⁶ See, e.g., CAL. REG'L WATER QUALITY CONTROL BD. CENT. VALLEY REGION, ORDER R5-2013-0120: WASTE DISCHARGE REQUIREMENTS GENERAL ORDER FOR GROWERS WITHIN THE TULARE LAKE BASIN AREA THAT ARE MEMBERS OF A THIRD-PARTY GROUP 5 (2013), https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0120.pdf [hereinafter TULARE LAKE BASIN WDR].

¹⁴⁷ See, e.g., *id.* at 8-9; CAL. REG'L WATER QUALITY CONTROL BD. CENT. VALLEY REGION, ORDER R5-2014-0001: WASTE DISCHARGE REQUIREMENTS GENERAL ORDER FOR GROWERS WITHIN THE WESTERN TULARE LAKE BASIN AREA THAT ARE MEMBERS OF A THIRD-PARTY GROUP 7-8 (2014), https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2014-0001.pdf.

¹⁴⁸ TULARE LAKE BASIN WDR, *supra* note 146, at 8-9. Circumstances under which reduced reporting and monitoring are allowed are when the coalition representative is actively pursuing reclassification of a specific groundwater basin and when the representative presents data indicating it is “reasonably likely” that the current designated use classification for the groundwater basin is inappropriate. *Id.*

¹⁴⁹ *Id.* at 18. Though the Central Valley Regional Board has issued WDRs for eight different watersheds, the substantive provisions of each are essentially identical to each other. Thus, the citations for notes 149-159 refer only to the Tulare Lake Basin WDR for simplicity.

includes inorganic material such as nitrogen and organic materials such as pesticides.¹⁵⁰ Relevant to groundwater, the WDRs provide that “discharge of waste” may be direct or indirect and may include “percolation of wastes through the soil to groundwater.”¹⁵¹ As for limitations, the WDRs stipulate, “[w]astes discharged from [growers] shall not cause or contribute to an exceedance of applicable water quality objectives in the underlying groundwater, unreasonably affect applicable beneficial uses, or cause or contribute to a condition of pollution or nuisance.”¹⁵²

Reporting and monitoring requirements under the WDRs are extensive. Individual growers must complete Farm Evaluations, develop Sediment and Erosion Control Plans, prepare and implement a Nitrogen Management Plan, and submit annual Nitrogen Management Plan Summary Reports.¹⁵³ The coalition representatives must prepare a Groundwater Quality Assessment Report (GAR) and a Groundwater Quality Trend Monitoring Workplan.¹⁵⁴ Under certain circumstances, such as where groundwater exceeds an applicable water quality objective or in high-vulnerability groundwater areas as determined by the GAR, coalition representatives must also develop Groundwater Quality Management Plans (GQMPs).¹⁵⁵ Among other requirements, the GQMPs must include actions designed to bring groundwater into compliance with applicable water quality objectives.¹⁵⁶

Finally, the WDRs expressly reference enforcement actions that the state and regional water boards, or courts, may take for failure to comply with their terms, including the imposition of substantial civil fines.¹⁵⁷ Consistent with directives in the 2004 Implementation Plan, the WDRs also indicate what types of violations may result in enforcement actions.¹⁵⁸ Examples of these violations include “[f]ailure to prevent future exceedances of water quality objectives once made aware of an exceedance,” “[f]ailure to monitor or provide information to the [coalition representative] as required,” and “[f]ailure to implement a . . . GQMP.”¹⁵⁹

¹⁵⁰ *Id.* at 198.

¹⁵¹ *Id.* at 199.

¹⁵² *Id.* at 19.

¹⁵³ *Id.* at 26-29.

¹⁵⁴ *Id.* at 31-32.

¹⁵⁵ *Id.* at 33-34. Coalition representatives must submit these plans to the regional water board, which will post it for notice and comment. *Id.* at 33.

¹⁵⁶ *Id.* at 136.

¹⁵⁷ *See id.* at 15.

¹⁵⁸ *See id.* at 16. The 2014 Implementation Plan directed the regional boards to “make clear, in advance, the potential consequences for failure to achieve an NPS control implementation program’s stated purposes.” 2004 NPS IMPLEMENTATION PLAN, *supra* note 119, at 15.

¹⁵⁹ TULARE LAKE BASIN WDR, *supra* note 146, at 16.

B. The Safe Drinking Water Act

Part II.A illustrates a complicated scheme of federal and state laws that regulate water pollution. Though the statutes and associated regulations have broad scope, the historical record shows that only in the last eight years has there been any meaningful attempt to regulate agricultural pollution affecting groundwater in California. Because this article concerns the quality of groundwater as used for drinking and other domestic purposes, it is useful also to examine the other major piece of federal legislation related to drinking water - the Safe Drinking Water Act (SDWA).

1. Overview

a. Primary and secondary drinking water regulations

The SDWA authorizes the EPA to promulgate primary and secondary regulations governing drinking water quality.¹⁶⁰ Primary drinking water regulations are those which identify contaminants that may adversely affect a person's health.¹⁶¹ Secondary drinking water regulations are those which specify MCLs requisite to protect public welfare.¹⁶² Because any MCL deemed necessary to protect a person's health falls within the definition of a primary drinking water regulation, secondary drinking water regulations encompass those designed to protect the public welfare but which do not raise identified health concerns. These may include MCLs, for example, required to eliminate adverse odor or color that could cause people not to use public water systems.¹⁶³

The key difference between these regulations, beyond their differing purpose, lies in how the SDWA treats the enforcement of these regulations. The SDWA applies primary drinking water regulations to every public water system in the states.¹⁶⁴ In addition, the act provides enforcement mechanisms to ensure compliance with the primary regulations.¹⁶⁵ In contrast, there are no provisions applying secondary drinking water regulations to state public water systems. Instead, if the EPA discovers noncompliance with a secondary regulation, notification to the state of such noncompliance is all that is required.¹⁶⁶

By definition, primary drinking water regulations only apply to public water systems.¹⁶⁷ If economically and technologically feasible, these regulations must specify the MCL for identified contaminants requisite to protect health.¹⁶⁸ If not feasible, the regulations must identify treatment techniques that "would

¹⁶⁰ See 42 U.S.C. § 300g-1(b)(1)(A), (c).

¹⁶¹ *Id.* § 300f(1)(B).

¹⁶² *Id.* § 300f(2).

¹⁶³ *Id.*

¹⁶⁴ *Id.* § 300g.

¹⁶⁵ See *id.* § 300g-3(a), (g).

¹⁶⁶ *Id.* § 300g-3(d).

¹⁶⁷ 42 U.S.C. § 300f(1)(A). See also *supra* note 10 for a definition of "public water system."

¹⁶⁸ *Id.* § 300f(1)(C)(i).

prevent known or anticipated adverse effects on the health of persons.”¹⁶⁹ Finally the primary regulations must include information related to methods of testing and quality control to ensure compliance with any specified MCLs.¹⁷⁰

The act requires a detailed procedure that the EPA must follow when determining which contaminants to regulate. Every five years, the EPA must publish a list of contaminants not currently regulated.¹⁷¹ This contaminant list must include any substance deemed “hazardous”¹⁷² and any pesticide formally registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).¹⁷³ Every five years, the EPA must also make a determination whether to regulate five or more of the unregulated contaminants on the list.¹⁷⁴ Once the EPA has determined to regulate a contaminant, it must promulgate a Maximum Contaminant Level Goal (MCLG).¹⁷⁵ The EPA must set MCLGs “at the level at which no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety.”¹⁷⁶ Finally, the agency must then promulgate MCLs as close to the MCLG as feasible.¹⁷⁷

b. State primacy

Like many other federal environmental statutes, the SDWA allows states to take over primary enforcement responsibility (primacy), provided that states adopt regulations “that are no less stringent than the national primary drinking water regulations.”¹⁷⁸ States must also satisfy numerous other criteria identified in the act before they can assume primacy, including the establishment of procedures for enforcement and inspection of public water systems,¹⁷⁹ the fulfilment of EPA-mandated record keeping and reporting requirements,¹⁸⁰ and the creation of specified administrative penalties.¹⁸¹ California assumed primacy for SDWA enforcement in 1978.¹⁸²

¹⁶⁹ *Id.* §§ 300f(1)(C)(ii), 300g-1(b)(7)(A).

¹⁷⁰ *Id.* § 300f(1)(D).

¹⁷¹ *Id.* § 300g-1(b)(1)(B)(i)(I).

¹⁷² The SDWA references the definition of “hazardous substance” from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). *Id.* § 300g-1(b)(1)(B)(i)(II). CERCLA defines “hazardous substance” as a composite of substances identified in numerous other acts, including the CWA. *See id.* § 9601(14).

¹⁷³ *Id.* § 300g-1(b)(1)(B)(i)(II).

¹⁷⁴ *Id.* § 300g-1(b)(1)(B)(ii)(I).

¹⁷⁵ *Id.* § 300g-1(b)(1)(A).

¹⁷⁶ *Id.* § 300g-1(b)(4)(A).

¹⁷⁷ *Id.* § 300g-1(b)(4)(B).

¹⁷⁸ *Id.* § 300g-2(a)(1).

¹⁷⁹ *Id.* § 300g-2(a)(2).

¹⁸⁰ *Id.* § 300g-2(a)(3).

¹⁸¹ *Id.* § 300g-2(a)(7).

¹⁸² State of California Primary Enforcement Responsibility, 43 Fed. Reg. 25,180 (June 9, 1978).

c. The Underground Injection Control (UIC) Program

In addition to the primary drinking water regulations that detail MCLs, treatment techniques, testing, and reporting requirements for harmful contaminants in public drinking water systems, Part C of the SDWA creates a program for protection of drinking water from harmful contaminants originating from underground injection wells.¹⁸³ As with primary drinking water regulations, the SDWA requires the EPA to promulgate regulations governing underground injection wells and allows states to take over aspects of enforcement if the state programs meet these minimum requirements.¹⁸⁴ The EPA regulations governing injection wells are extensive. In summary, the regulations establish six classes of injection wells, each with a specified purpose.¹⁸⁵ The regulations then establish numerous requirements specific to each well class related to construction, monitoring and reporting, operation, siting, and in some cases financial responsibility.¹⁸⁶

2. Applicability to groundwater pollution from agricultural sources

Though the SDWA provides an important framework for regulating contaminants in sources of drinking water, including groundwater, the act only secondarily addresses the problem of agricultural pollution. Perhaps most importantly, the primary drinking water regulations require the EPA and states to establish important limits (MCLs) on the quantities of specific contaminants necessary to protect public health. These MCLs have often found their way back into the regional board water quality control plans.¹⁸⁷ The SDWA has thus served an important role in requiring the EPA and state regulatory bodies to consult the science and to set numerical limits on contaminants in drinking water.

However, the SDWA does not control the sources of the pollution as much as it mandates testing and treatment requirements for public systems. The SDWA does create the UIC program, which establishes critical controls on injections of wastes into the ground that have a potential to impact groundwater basins. However, agricultural pollution, caused by pesticides or by excess nitrates

¹⁸³ See 42 U.S.C. §§ 300h-300h-8.

¹⁸⁴ *Id.* §§ 300h(a)-(b).

¹⁸⁵ 40 C.F.R. § 146.5. The designated purpose of the six classes of wells are as follows: wells used by hazardous waste generators or treatment, storage & disposal operators (Class I), oil and natural gas recovery (Class II), extraction of minerals such as sulfur or uranium (Class III), hazardous or radioactive waste disposal (Class IV), wells used for a variety of activity including groundwater recharge wells or wells used to prevent salt water intrusion in groundwater (Class V), and wells used for underground sequestration of carbon dioxide (Class VI).

¹⁸⁶ See 40 C.F.R. Part 146, Subparts B through H.

¹⁸⁷ See, e.g., Cal. Code Regs. Tit. 22, § 64431 (establishing the MCL for Nitrates at 10 mg/L); CAL. REG'L WATER QUALITY CONTROL BD. CENT. VALLEY REGION, WATER QUALITY CONTROL PLAN FOR THE TULARE LAKE BASIN: THIRD EDITION 3-10 (2018), https://www.waterboards.ca.gov/rwqcb5/water_issues/basin_plans/tlbp_201805.pdf (setting the water quality objective for waters designated for municipal purposes to satisfy MCLs established by California for inorganic compounds as designated in Title 22, section 64431 of the California Code of Regulations).

seeping into aquifers, falls outside of the UIC framework. Moreover, while the SDWA mandates monitoring and treatment requirements for public drinking water systems, including wells that pull water from polluted aquifers, many smaller systems or private wells completely escape regulation.¹⁸⁸ There is some evidence that these smaller wells experience higher rates of contamination than larger public systems.¹⁸⁹ Indeed, many of these smaller systems lack the funds and technical expertise to adequately treat their water to remove harmful pollutants.

C. *The Sustainable Groundwater Management Act*

1. Overview

In the wake of extreme drought,¹⁹⁰ California passed the Sustainable Groundwater Management Act in 2014,¹⁹¹ thus becoming the last state in the country to regulate its groundwater.¹⁹² The act assigns implementation responsibilities among three sets of agencies: a new type of local agency established by SGMA called a Groundwater Sustainability Agency (GSA), the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB or the Water Board). SGMA provides that any local agency or combination of local agencies overlying a groundwater basin may elect to become a GSA.¹⁹³ Local agencies had until June 30, 2017 to form.¹⁹⁴ The act establishes a number of discretionary powers that GSAs may exercise in bringing their groundwater basins into compliance with the act's sustainability goals.¹⁹⁵ These powers include the authority to conduct investigations,¹⁹⁶ to require registration of wells,¹⁹⁷ to require installation of metering devices on wells,¹⁹⁸ to require

¹⁸⁸ See *supra* notes 22-30 and accompanying text.

¹⁸⁹ See LONDON ET AL., *supra* note 2, at 14.

¹⁹⁰ Governor Jerry Brown declared a drought state of emergency in California on January 17, 2014. See *Governor Brown Declares Drought State of Emergency*, OFF. GOVERNOR (Jan. 17, 2014), <https://www.ca.gov/archive/gov39/2014/01/17/news18368/index.html>.

¹⁹¹ CAL. WATER CODE §§ 10720-737.8. The three bills that form SGMA and its related statutes are Assemb. B. 1739, 2013–2014 Leg., Reg. Sess. (Cal. 2014), 2014 Cal. Stat. Ch. 347, available at http://www.leginfo.ca.gov/pub/13-14/bill/asm/ab_1701-1750/ab_1739_bill_20140916_chaptered.pdf; S. B. 1168, 2013–2014 Leg., Reg. Sess. (Cal. 2014), 2014 Cal. Stat. 346, available at http://www.leginfo.ca.gov/pub/13-14/bill/sen/sb_1151-1200/sb_1168_bill_20140916_chaptered.pdf; and S. B. 1319, 2013–2014 Leg., Reg. Sess. (Cal. 2014), 2014 Stat. Ch. 348, available at http://www.leginfo.ca.gov/pub/13-14/bill/sen/sb_1301-1350/sb_1319_bill_20140916_chaptered.pdf.

¹⁹² Tina Cannon Leahy, *Desperate Times Call for Sensible Measures: The Making of the California Sustainable Groundwater Management Act*, 9 GOLDEN GATE U. ENVTL. L. J. 5, 6 (2016).

¹⁹³ CAL. WATER CODE § 10723(a).

¹⁹⁴ *Id.* § 10735.2(a)(1).

¹⁹⁵ *Id.* § 10725(a).

¹⁹⁶ *Id.* § 10725.4.

¹⁹⁷ *Id.* § 10725.6.

¹⁹⁸ *Id.* § 10725.8(a).

extraction statements by well owners,¹⁹⁹ to impose spacing requirements for wells,²⁰⁰ to assess fees,²⁰¹ to adopt rules and regulations, and to perform any other act necessary or proper to carry out their duties.²⁰² SGMA also gives GSAs authority to subject persons who violate GSA imposed mandates to reasonable civil penalties.²⁰³

The key device that GSAs use to carry out management of groundwater basins is the Groundwater Sustainability Plan (GSP). SGMA sets out timelines and content requirements for GSPs. For basins or subbasins that are in “critical conditions of overdraft,” as defined in Bulletin 118 published by DWR,²⁰⁴ GSAs must adopt a compliant plan by January 31, 2020.²⁰⁵ GSAs in all other high or medium priority basins must adopt a compliant plan by January 31, 2022.²⁰⁶ The plan may be a single plan covering the entire basin, a single plan covering the entire basin created by multiple agencies, or multiple plans created by multiple agencies.²⁰⁷ In lieu of a GSP, GSAs may submit so-called “alternative plans” if (1) the GSA developed a Groundwater Management Plan (GMP) pursuant to Assembly Bill 3030 (1992),²⁰⁸ (2) the basin is an adjudicated basin,²⁰⁹ or (3) if the GSA can demonstrate the “basin has operated within its sustainable yield over a period of at least 10 years.”²¹⁰ Interestingly, the state has exempted GSPs from all requirements of the California Environmental Quality Act (CEQA).²¹¹

The key requirement that SGMA mandates in terms of plan contents is that GSPs must contain “[m]easurable objectives, as well as interim milestones in increments of five years, to achieve the sustainability goal in the basin within 20

¹⁹⁹ *Id.* § 10725.8(c).

²⁰⁰ *Id.* § 10726.4(a)(1).

²⁰¹ *Id.* § 10730(a).

²⁰² *Id.* § 10725.2.

²⁰³ *See id.* § 10732 (allowing civil penalties of up to \$500 per acre-foot of water extracted above the authorized amount and up to \$1000 initially plus \$100 for each additional day that a person has violated a rule, regulation, ordinance, or resolution created by the GSA).

²⁰⁴ *See* CAL. DEP’T OF WATER RES., BULLETIN 118: INTERIM UPDATE 2016 (2016), https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/B118-Interim-Update-2016_ay_19.pdf.

²⁰⁵ CAL. WATER CODE § 10720.7(a)(1).

²⁰⁶ *Id.* § 10720.7(a)(2).

²⁰⁷ *Id.* §§ 10727(b)(1)-(3).

²⁰⁸ *Id.* § 10733.6(b)(1). For an excellent history of all California legislation leading up to the passage of SGMA, see Leahy, *supra* note 192. The California legislature passed AB 3030 in 1992, and it marked one of the first legislative efforts into groundwater management. *Id.* at 16. Unlike SGMA, however, the creation of GMPs was entirely voluntary. *Id.* at 17.

²⁰⁹ CAL. WATER CODE § 10733.6(b)(2). For twenty-two groundwater basins, Courts have previously adjudicated groundwater extraction rights between parties. WATER EDUC. FOUND., THE 2014 SUSTAINABLE GROUNDWATER MANAGEMENT ACT: A HANDBOOK TO UNDERSTANDING AND IMPLEMENTING THE LAW 7 (2015), <https://www.watereducation.org/sites/main/files/file-attachments/groundwatermanagementhandbook.pdf>. These are expressly excluded from SGMA coverage.

²¹⁰ CAL. WATER CODE § 10733.6(b)(3).

²¹¹ *Id.* § 10728.6.

years of the implementation of the plan.”²¹² The act defines “sustainability goal” as management and use of the basin without causing undesirable results.²¹³ Undesirable results are any one of the following six conditions: (1) chronic lowering of groundwater;²¹⁴ (2) significant and unreasonable reduction in groundwater storage;²¹⁵ (3) significant and unreasonable seawater intrusion;²¹⁶ (4) significant and unreasonable degraded water quality;²¹⁷ (5) significant and unreasonable land subsidence;²¹⁸ and (6) depletions of interconnected surface water.²¹⁹ Thus, by the year 2040 for critically overdrafted basins, and by 2042 for all other high and medium priority basins, the GSPs must prevent all of these undesirable results.

SGMA primarily gives DWR assessment and approval responsibility over the submitted GSPs, subject to notice and comment. DWR must complete its assessment of GSPs within two years of submission.²²⁰ The agency must then make a formal determination as to whether the basin is likely to achieve its sustainability goal based on the plan implementation details.²²¹

The act primarily vests enforcement power to the SWRCB. In general, the Water Board may designate a groundwater basin as “probationary” if, after consulting with DWR, the agency finds (1) that a GSA has not been formed; (2) a required GSP has not been created; (3) the GSP is inadequate; or (4) the GSA is implementing the GSP in a way that will not lead to sustainability.²²² The act establishes procedures by which a GSA may respond to the designation of probationary status.²²³ As the ultimate hammer, however, SGMA gives the Water Board authority to adopt an interim plan if a GSA has not appropriately corrected identified deficiencies.²²⁴

2. Potential Problems with SGMA

On paper, there is much to like about SGMA. For the first time in the state’s history, the law establishes a requirement that local agencies create plans to achieve sustainability for the most critical groundwater basins. GSAs have broad powers to regulate groundwater extractions within their respective basins, including the power to impose civil penalties on those who violate their mandates. In addition, SGMA imposes meaningful sustainability requirements on GSAs,

²¹² *Id.* § 10727.2(b)(1).

²¹³ *Id.* § 10721(t), (u).

²¹⁴ *Id.* § 10721(x)(1).

²¹⁵ *Id.* § 10721(x)(2).

²¹⁶ *Id.* § 10721(x)(3).

²¹⁷ *Id.* § 10721(x)(4).

²¹⁸ *Id.* § 10721(x)(5).

²¹⁹ *Id.* § 10721(x)(6).

²²⁰ *Id.* § 10733.4.

²²¹ *Id.* § 10733(a).

²²² *Id.* § 10735.2.

²²³ *Id.* § 10735.4.

²²⁴ *Id.* § 10735.8.

requiring the local agencies to make incremental progress towards achieving sustainability as measured by six different metrics. Finally, the Water Board may step in and impose its own plan upon an appropriate finding that the basin has not made sufficient progress towards the sustainability goal.

Conversely, however, it remains to be seen how successful SGMA will ultimately be in achieving its goals. First, the act allows GSAs twenty years to achieve sustainability. For communities that suffer from contaminated drinking water today, SGMA provides no short-term solutions.

In addition, some worry that a key provision in SGMA creates a massive loophole for agricultural interests to control outcomes favorable to them.²²⁵ Specifically, SGMA allows any existing local agency with jurisdictional authority over a groundwater basin to become a GSA. This means that existing water and irrigation districts may become the new groundwater agencies. However, many of these districts are dominated by large agricultural interests, in part because of existing laws that allow voting for water and irrigation district boards proportional to land holdings.²²⁶ Indeed, it seems that in some instances, the implications of this structure may already be playing out. Community involvement in the creation of these GSPs is relegated to advisory committees with very little actual control.²²⁷ Thus, agricultural interests may ultimately win out.²²⁸

Finally, while SGMA provides a legal hook to address groundwater quality issues, much of the act focuses on the problem of overdraft. With the exception of one of the sustainability metrics, all of the remaining undesirable results—lowering of groundwater, reduction in groundwater storage, seawater intrusion, land subsidence, and depletion of interconnected surface water—pertain to extraction related problems. The act accelerates timelines for delivery of GSPs not based on water quality criteria, but rather on basin overdraft characteristics. Most of the GSA powers granted by the act—the power to require registration of wells, well spacing, extraction statements, even the authority to impose civil fines for over-extraction—relate to extraction related concerns as

²²⁵ See, e.g., Louise Nelson Dyle, *Aquifers and Democracy: Enforcing Voter Equal Protection to Save California's Imperiled Groundwater and Redeem Local Government*, 105 CAL. L. REV. 1471, 1479-82 (2017) (documenting the problems with GSAs with respect to board control); Jeremy P. Jacobs, *Thirsty Vineyard, Big Ag Test Landmark Aquifer Law*, E&E NEWS (July 16, 2018), <https://www.eenews.net/stories/1060089215> (“The bill’s sponsors made a critical compromise to get the law passed: They ceded initial authority over [GSPs] to local authorities and newly created Groundwater Sustainability Agencies, or GSAs. In the Cuyama Valley, that has meant a GSA controlled by agricultural interests. Only one member of the 11-member board lives in the valley part-time. Poor Hispanic residents aren’t represented on the board.”).

²²⁶ See Dyle, *supra* note 225, at 1480; Pannu, *supra* note 6, at 257 (noting how the U.S. Supreme Court upheld limitations that denied non-landowners the right to vote for board directors as constitutional against equal protection challenges).

²²⁷ See CAL. WATER CODE § 10727.8 (giving GSAs discretion to appoint advisory committees consisting of interested members of the community and requiring only that GSAs consult with such committees).

²²⁸ See Jacobs, *supra* note 225 (quoting a Santa Barbara County Supervisor as saying, “The fact that SGMA has gotten us together on one board won’t necessarily accomplish [its goals] if every decision that gets made is simply the landowners overturning the will of the voters as a whole. . . . The votes that have taken place on substantive issues thus far have been the large landowners rolling us.”).

well. The GSAs have no authority (and, given their potential control by agricultural interests, likely no desire) to impose restrictions on agricultural sources of pollution. Thus, while SGMA holds great promise in many regards, it provides insufficient mechanisms to directly regulate many of the causes of groundwater pollution.

II. THE PUBLIC TRUST DOCTRINE

As Part II shows, federal and California state legislatures have given regulators numerous tools to address the problem of contaminated drinking water in the state. In some instances, these tools provide powers to directly address the problem of agricultural pollution. However, state regulators have historically shown great reluctance to exercise those powers to meaningfully control agricultural pollution of groundwater aquifers. In other instances, the legislative tools provided, while important and helpful, provide imperfect solutions that indirectly help regulators prevent contamination of drinking water.

Though the public trust doctrine originates from the common law of property, as discussed in further detail below, courts since the 1970s have shown a greater willingness to apply the doctrine more broadly to protect natural resources. In particular, courts have shown a willingness to expand the doctrine's scope, allowing it to "operat[e] flexibly as [a] common law backstop to political failures."²²⁹ In many ways, the crisis faced by thousands without access to clean drinking water in California, despite legislative authority to address the problem, is a glaring example of political failure. The situation is therefore primed for application of the public trust doctrine. Before examining how the public trust doctrine may apply, however, it is useful to first examine the historical roots of the doctrine, its traditional scope, and the principles behind the modern expansion of the doctrine.

A. *Traditional Scope*

While the public trust doctrine has its roots in Roman and English law, its transition to American law carried with it uniquely American applications.²³⁰ For example, the United States Supreme Court has held that the federal government's property rights extend only to the mean high-water mark of the seashore.²³¹ When the original thirteen colonies gained independence from England, they took title to their shorelands from the Crown and held them in trust for the public.²³² Under the "equal footing" doctrine, as other states were admitted

²²⁹ Albert C. Lin, *Public Trust and Public Nuisance: Common Law Peas in A Pod?*, 45 U.C. DAVIS L. REV. 1075, 1078 (2012).

²³⁰ Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 475-76 (1970).

²³¹ *Shivley v. Bowlby*, 152 U.S. 1, 11-14 (1894).

²³² *Id.* at 15.

to the union, they also took title to shorelands, and indeed all lands under navigable waters, just as the original colonies did.²³³

While American law was clear as to property rights between the federal and state governments, considerable confusion remained as to a state's obligation to hold these lands open to the public.²³⁴ Key questions lingered as to whether the public trust doctrine restricted the states' police power with regard to trust lands (thus, significantly circumscribing states in their use of the land), or whether it simply required states to manage these lands consistent with a public purpose.²³⁵

States have not been entirely consistent in their application of the doctrine; though common threads have emerged. First, courts have traditionally interpreted the doctrine's scope to cover the land below the low water mark on seashores and the great lakes and the water over that land.²³⁶ In addition, courts have applied the doctrine to cover rivers and streams "of consequence."²³⁷ In determining which rivers and streams are covered, some courts have engaged in a discussion of navigability, while others have held that the doctrine covers those waters large enough for public recreation.²³⁸ Second, with regard to state power to dispose of trust lands, state courts have traditionally held that states may grant portions of the trust lands to private parties, but only insofar as the state has not abdicated all of its authority over the lands.²³⁹

The United States Supreme Court affirmed these concepts in *Illinois Central Railroad Company v. Illinois*,²⁴⁰ one of the most significant cases in public trust jurisprudence. That case involved a grant of lands by the Illinois legislature of all lands one mile out from the shore under Lake Michigan, including almost the entire waterfront of the City of Chicago. In its decision, the Court held that the title a state holds to trust lands is fundamentally different in character than other state property. "It is a title held in trust for the people of the state, that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein, freed from the obstruction or interference of private parties."²⁴¹ Thus, while a state may make modifications to trust lands, such as constructing docks or piers to make the lands more useful for the public, it may not abdicate "general control of the state over lands under the navigable waters of an entire harbor or bay, or of a sea or lake."²⁴²

Scholars have noted that the Court did not fully explain the legal foundation for its decision.²⁴³ This lack of clarity has led to uncertainty as to the

²³³ Pollard v. Hagan, 44 U.S. 212, 216 (1845).

²³⁴ Sax, *supra* note 230, at 476.

²³⁵ *Id.* at 477.

²³⁶ *Id.* at 556.

²³⁷ *Id.*

²³⁸ *Id.*

²³⁹ *Id.* at 487-88.

²⁴⁰ 146 U.S. 387 (1892).

²⁴¹ *Id.* at 452.

²⁴² *Id.* at 452-53.

²⁴³ See Alexandra B. Klass, *Modern Public Trust Principles: Recognizing Rights and Integrating Standards*, 82 NOTRE DAME L. REV. 699, 704 (2006).

precise limits that the public trust doctrine places on states' power to make land use decisions. Some scholars have attempted to ground the Court's decision in federal doctrine—for example, federal preemption and other constitutional principles.²⁴⁴ Regardless of its precise legal grounds, the Court indicated a reluctance to allow states to either restrict usage of a trust resource to something less than its traditional scope or to subvert public uses of the resource to private interests.²⁴⁵ In general, the decision has been understood as a federal limitation on a state's ability to completely eliminate the doctrine from its common law jurisprudence.²⁴⁶ However, states have latitude to enlarge the doctrine beyond its minimum scope.²⁴⁷

B. Extensions of the Public Trust Doctrine Beyond Its Traditional Scope

1. Extension of the purpose and scope of the public trust doctrine

Prior to the 1970s, public trust cases confined their scope mostly to property disputes—cases involving whether the federal or state government had a right to transfer traditional public trust lands to private ownership. However, that began to change with Joseph Sax's seminal paper²⁴⁸ on the public trust doctrine published in 1970. Sax's paper²⁴⁹ suggested extending the doctrine's application to natural resources law more generally.²⁵⁰ Following its publication, numerous courts, from California to New Jersey to Wisconsin, cited Sax's article in applying the public trust doctrine to protect environmental and recreational values in the preservation of tidelands and wetlands and in the protection of recreational uses of beaches.²⁵¹

In the early 1980's the California Supreme Court extended the doctrine's reach to cover inland lakes and rivers.²⁵² Then, in 1983, the California Supreme Court considered the doctrine's interaction with the state's appropriative water rights system in the famous "Mono Lake" case, *National Audubon Society v. Superior Court*.²⁵³ That case involved a dispute over appropriative water rights granted to the Department of Water and Power of the City of Los Angeles (DWP) on four streams that fed into Mono Lake.²⁵⁴ The rights gave DWP permission to

²⁴⁴ *Id.* at 704-05.

²⁴⁵ Sax, *supra* note 230, at 490.

²⁴⁶ Klass, *supra* note 243, at 705.

²⁴⁷ *Id.*

²⁴⁸ See Richard M. Frank, *The Public Trust Doctrine: Assessing Its Recent Past & Charting Its Future*, 45 U.C. DAVIS L. REV. 665, 667 (2012) (describing Sax's article as one of the most consequential papers in the field of environmental law generally).

²⁴⁹ Sax, *supra* note 230.

²⁵⁰ See *id.* at 556-57 (suggesting applications of the doctrine to air pollution, pesticide pollution, and other uses).

²⁵¹ Frank, *supra* note 248, at 667-68.

²⁵² *Id.* at 669.

²⁵³ 33 Cal. 3d 419 (1983).

²⁵⁴ *Id.* at 424.

divert nearly all the water from these streams into the Owens Valley aqueduct.²⁵⁵ After construction of two facilities that began diverting water to Los Angeles, the water levels in Mono Lake fell dramatically, degrading the scenic and ecological values of the lake.²⁵⁶ The National Audubon Society filed suit seeking to enjoin the water diversions as a violation of the public trust.²⁵⁷

The California Supreme Court held that the authority granted to the state to hold lands in public trust extended to “waters tributary to Mono Lake and bars DWP or any other party from claiming a vested right to divert waters once it becomes clear that such diversions harm the interests protected by the public trust.”²⁵⁸ In so deciding, the court extended the doctrine in two key ways. First, it extended it to cover other *purposes* beyond the traditional applications of the doctrine to protect navigational, commerce, and fishing uses.²⁵⁹ It noted the flexibility of the doctrine to “evolve in tandem with public perception of the values and uses of waterways.”²⁶⁰ Citing *Marks v. Whitney*,²⁶¹ a California Supreme Court decision from a decade earlier, the Court observed that, “the public uses to which tidelands are subject are sufficiently flexible to encompass changing public needs. In administering the trust the state is not burdened with an outmoded classification favoring one mode of utilization over another.”²⁶² The court then held the doctrine applied to protect the scenic and ecological values of Mono Lake.

Next, the court considered extending the *scope* of the waters covered under the doctrine.²⁶³ It observed that Mono Lake was a navigable water way.²⁶⁴ However, DWP held appropriative rights not to Mono Lake itself, but rather to non-navigable streams that fed into the lake. The Court thus analyzed whether the doctrine applied to these waterways. Citing cases related to mining and dam construction from the turn of the twentieth century, the Court held that public trust doctrine protects navigable waterways such as Mono Lake from harmful diversions of non-navigable tributaries.²⁶⁵ The court thus showed a willingness to extend the doctrine to match evolving public values and to prevent the state from acting in ways that may even indirectly affect traditional public trust resources.

²⁵⁵ *Id.*

²⁵⁶ *Id.* at 424-25.

²⁵⁷ *Id.* at 425.

²⁵⁸ *Nat'l Audubon Soc'y*, 33 Cal. 3d at 425–26.

²⁵⁹ *Id.* at 434-35.

²⁶⁰ *Id.* at 434.

²⁶¹ 6 Cal. 3d 251 (1971).

²⁶² *Nat'l Audubon Soc'y*, 33 Cal. 3d at 434 (quoting *Marks*, 6 Cal. 3d. at 259).

²⁶³ *Id.* at 435-37.

²⁶⁴ *Id.* at 435.

²⁶⁵ *Id.* at 436-37.

2. Application to water quality disputes

The *National Audubon* decision showed how the public trust doctrine could affect extractive water rights. Three years later, the California Court of Appeal considered application of the doctrine to a water quality dispute in the so called “Racanelli decision.”²⁶⁶ The case involved two of the largest water projects in California—the Central Valley Project run by the Bureau of Reclamation and the State Water Project run by DWR.²⁶⁷ There was concern that diversions of water for the two water projects was affecting the salinity of the Sacramento-San Joaquin Delta (the Delta). After the State Water Board modified existing permits for Reclamation and DWR, requiring them to release enough water into the Delta to comply with its newly released water quality control plan for the Delta, the agencies sued.²⁶⁸ Reclamation argued that the Water Board had no authority to modify its appropriation permits once issued.²⁶⁹ However, citing *National Audubon*, the court held that the public trust “imposes a duty of continuing supervision over the taking and use of the appropriated water.”²⁷⁰ Moreover, because guarding against high levels of salinity in the Delta protected fish and wildlife, values that fell squarely within the California Supreme Court’s decisions in *National Audubon* and *Marks* as protected by the public trust, the court ruled that the public trust doctrine gave the Water Board ample authority to modify the existing permits.²⁷¹ The court thus affirmed that, in addition to applications related to water quantity disputes, the public trust doctrine could restrict water uses that affected water quality as well.

3. Extensions to cover groundwater

National Audubon extended the public trust doctrine to prohibit activity on the non-navigable tributaries of Mono Lake because that activity had a causal connection to harmful effects on the lake. The decision begs the question as to what other resources might also fall within the scope of the public trust. For example, could the doctrine be used to challenge activity on any hydrologically connected water source that impaired a navigable waterway contrary to the values protected by the public trust? In *Environmental Law Foundation v. State Water Resources Control Board*, the California Court of Appeal considered this question as applied to groundwater that was hydrologically connected to the Scott River, a navigable waterway and traditional public trust resource.²⁷² The court rejected arguments that groundwater is not navigable or that extraction of groundwater is

²⁶⁶ Frank, *supra* note 248, at 677; *United States v. State Water Res. Control Bd.*, 182 Cal. App. 3d 82 (Cal. Ct. App. 1986).

²⁶⁷ *State Water Res. Control Bd.*, 182 Cal. App. 3d at 97.

²⁶⁸ *Id.* at 111.

²⁶⁹ *Id.* at 149.

²⁷⁰ *Id.*

²⁷¹ *Id.* at 150.

²⁷² *Envtl. Law Found. v. State Water Res. Control Bd.*, 26 Cal. App. 5th 844 (Cal. Ct. App. 2018).

different from diversion.²⁷³ These differences were not determinative. Rather, the proper inquiry, applying *National Audubon* directly, was the extent to which groundwater extraction could affect a navigable, public trust resource.²⁷⁴ Because the extractions could affect the Scott River, the court held that the state had an affirmative duty to consider the public trust when making decisions concerning them.²⁷⁵

The *Environmental Law Foundation* case is important for another reason. In addition to deciding the applicability of the public trust to hydrologically connected groundwater, the court also considered whether SGMA displaced the doctrine.²⁷⁶ The court noted that SGMA, while comprehensive, is not as extensive as the state's appropriative water rights scheme.²⁷⁷ In addition, it pointed to the fact that SGMA does not cover all groundwater basins.²⁷⁸ The court also highlighted that many provisions in SGMA do not take effect for several years.²⁷⁹ Thus, SGMA does not displace the public trust doctrine insofar as the doctrine applies to groundwater.

The State of Hawaii has gone beyond California in applying the public trust doctrine to groundwater. In *In re Water Use Permit Applications*, the Hawaii Supreme Court considered a number of disputes over water allocation from a major irrigation system that delivered water from one side of the island of O'ahu to the other.²⁸⁰ After engaging in extensive historical and constitutional analysis to uphold the public trust doctrine's validity,²⁸¹ the court then considered its scope. Relying in part on Hawaiian constitutional provisions that designated "all public resources" held in the public trust, as well as ancient Hawaiian sovereign practices related to groundwater, the court concluded that the public trust extended to groundwater as well as surface water.²⁸² Moreover, the court highlighted that, "common law distinctions between ground and surface water developed without regard to the manner in which 'both categories represent no more than a single integrated source of water with each element dependent upon the other for its existence.' [citations omitted]. Modern science and technology have discredited the surface-ground dichotomy. . . . Water is no less an essential 'usufruct of lands' when found below, rather than above, the ground."²⁸³

²⁷³ *Id.* at 859.

²⁷⁴ *Id.*

²⁷⁵ *Id.* at 861.

²⁷⁶ *Id.* at 862-69.

²⁷⁷ *Id.* at 865.

²⁷⁸ *Envtl. Law Found.*, 26 Cal. App. 5th at 865; *see also supra* text and accompanying notes 205-210. The act only requires basins in critical overdraft or those designated high- or medium-priority to have a GSP. Furthermore, basins that established a GMP pursuant to AB 3030 and those that courts have previously adjudicated are generally exempt.

²⁷⁹ *Envtl. Law Found.*, 26 Cal. App. 5th at 866.

²⁸⁰ *In re Water Use Permit Applications*, 94 Haw. 97, 111 (2000).

²⁸¹ *Id.* at 127-34.

²⁸² *Id.* at 133-135.

²⁸³ *Id.* at 135.

Finally, the court established numerous purposes of the trust. Among these were the traditional purposes of navigation, commerce, fishing, and the more modern extensions recognized in California of natural resource protection.²⁸⁴ Notable to this discussion, however, the court also established protection for domestic water use, “particularly drinking,” as a purpose of the public trust.²⁸⁵

4. Summary

Cases since the 1970s, in the wake of Sax’s paper, have gradually extended both the scope and purpose of the public trust beyond its traditional boundary. California cases have recognized a trust obligation to protect scenic and ecological values. The cases have also extended the doctrine to cover non-navigable waters including tributaries and groundwater, at least inasmuch as those waters are hydrologically connected to traditional trust resources. In addition, California courts have found that even comprehensive legislative schemes such as those governing appropriative water rights and groundwater management must give way to public trust principles. Finally, the Hawaii Supreme Court has rejected the notion that there is any real difference between surface and groundwater. It has applied the public trust doctrine to all groundwater, and it has recognized a purpose of the doctrine to protect drinking water and other domestic uses.

III. PROPOSAL

With this background, we can now turn to the central question of this paper: in what ways may the public trust doctrine be used to help address the political failures that have led to the current state of California’s groundwater? The proposal that follows relies on modern public trust principles and precedent to argue for an extension of the scope and purpose of the doctrine, allowing it to cover all polluted groundwater aquifers in the state. Based on that extension, the proposal then examines specific remedies and causes of action that the doctrine may afford to allow citizens to challenge private and state action that adversely affects their drinking water.

A. *Extending the scope of the public trust doctrine*

California has already moved beyond many jurisdictions to extend the public trust doctrine to cover resources with a hydrological connection to traditional public trust resources. In *National Audubon Society*, the California Supreme Court applied the doctrine to restrict appropriative water rights on non-navigable water ways, when those rights could indirectly affect a public trust resource (Mono Lake).²⁸⁶ More recently in *Environmental Law Foundation*, the

²⁸⁴ *Id.* at 136.

²⁸⁵ *Id.* at 137 (citing favorably to New Jersey court decision holding the same).

²⁸⁶ *See supra* text accompanying notes 263-265.

California Court of Appeal applied the doctrine to groundwater that was hydrologically connected to a navigable river (the Scott River).²⁸⁷

To the extent that groundwater basins in California have a hydrological connection to navigable lakes, rivers, and streams, California has already recognized that public trust principles apply to those resources. In the Tulare Basin, for example, a hydrological connection exists in groundwater aquifers above the rim dams where the majority of stream discharges originate from groundwater.²⁸⁸ However, on the valley floor, a massive expansion in groundwater extraction during the 1960s and 1970s has led to a drastic lowering of groundwater tables.²⁸⁹ In the western and southern parts of the Valley, for example, water tables have dropped by up to 400 feet in some places.²⁹⁰ The result is that much of the groundwater has been disconnected from surface water for decades.²⁹¹ Thus, the public trust principles articulated in *Environmental Law Foundation* do not cover many of the groundwater basins that agricultural practices have left polluted in the Central Valley.

For these areas, an extension of the public trust doctrine is required. An extension of the doctrine to cover disconnected aquifers could rest primarily on two ideas. First, in more recent cases, courts have extended the scope of the doctrine by combining public trust principles with policies expressed in environmental statutes and state constitutions.²⁹² Such an extension is applicable in California, where the state constitution and other statutes have effectively established a trustee-beneficiary relationship between the state and the people with respect to water generally, including groundwater. Second, courts have traditionally extended the public trust doctrine when there is a sense that the political process has failed²⁹³ and when that process has improperly handed over a public resource to private interests.²⁹⁴ As discussed in Part II and further below, the current state of California's polluted aquifers can in many ways be traced to breakdown of the political process.

1. Constitutional and statutory authority to extend the scope of the doctrine

Courts have historically shown restraint in expanding the public trust doctrine to resources beyond its traditional scope.²⁹⁵ At least in part, this may be

²⁸⁷ See *supra* text accompanying notes 272-275.

²⁸⁸ Brian Gray, *The Public Trust and SGMA*, CAL. WATER BLOG (Oct. 7, 2018), <https://californiawaterblog.com/2018/10/07/the-public-trust-and-sigma/>.

²⁸⁹ *Id.*; GILBERT L. BERTOLDI ET AL., GROUNDWATER IN THE CENTRAL VALLEY, CALIFORNIA—A SUMMARY REPORT A26-A27 (1991), <https://pubs.usgs.gov/pp/1401a/report.pdf>.

²⁹⁰ GILBERT L. BERTOLDI ET AL., *supra* note 289, at A27.

²⁹¹ CAL. DEP'T OF WATER RES., CALIFORNIA WATER PLAN UPDATE 2013: VOLUME 2 REGIONAL REPORTS, TULARE LAKE HYDROLOGIC REGION TL-63 (2013), https://water.ca.gov/LegacyFiles/waterplan/docs/cwpu2013/Final/Vol2_TulareLakeRR.pdf.

²⁹² Klass, *supra* note 243, at 727-28.

²⁹³ Lin, *supra* note 229, at 1084.

²⁹⁴ Sax, *supra* note 230, at 490.

²⁹⁵ See Lin, *supra* note 229, at 1088-89.

due to a concern that application of the doctrine can affect large numbers of people.²⁹⁶ Scholars have noted, for example, that appeals to extend the doctrine have no logical end.²⁹⁷ Thus, by restricting the doctrine to navigable waterways, courts have limited its impact on a potential wide range of private activity. In cases such as *National Audubon Society* and *Environmental Law Foundation*, for example, California courts have emphasized the connection between activity on a particular non-trust resource and its impact to a public trust resource.²⁹⁸

Yet an extension of the doctrine to cover newer resources need not be completely untethered. Indeed, as Alexandra Klass highlights, cases decided since the 1990s have often tied extensions of the public trust doctrine to policies articulated in state constitutions and a wide range of state environmental statutes.²⁹⁹ For example, in extending the doctrine to cover all groundwater in the State of Hawaii, the Hawaii Supreme Court relied on constitutional provisions requiring the state to protect and control water resources for the benefit of the people.³⁰⁰ The court held that the people had “elevated the public trust doctrine to the level of a constitutional mandate.”³⁰¹ The Hawaii court also rejected arguments that the state’s water code had displaced the common law public trust doctrine.³⁰² Rather, relying in part on *Illinois Central Railroad*, it concluded that the state could not abrogate its sovereign public trust duty.³⁰³ Instead of displacement, the court deemed the state’s water code to have incorporated public trust principles.³⁰⁴ As this and other cases show,³⁰⁵ by grounding public trust principles in state constitutional provisions and policies expressed in state environmental legislation, courts can appropriately restrain the doctrine to those principles established by democratic processes.

²⁹⁶ *Id.* at 1089.

²⁹⁷ *Id.*; Barton H. Thompson, Jr., *The Public Trust Doctrine: A Conservative Reconstruction & Defense*, 15 Southeastern Env’tl. L.J. 47, 58 (2006) (“[O]nce the public trust doctrine is cut free of its traditional geographic mooring, the limitations on the doctrine become unclear and potentially unfettered.”).

²⁹⁸ See *Nat’l Audubon Soc’y*, 33 Cal. 3d at 436-37 (illustrating the care the court took to anchor its decision on impacts to a traditional public trust resource); *Env’tl. Law Found.*, 26 Cal. App. 5th at 859 (rejecting admonishments of judicial overreach by expressly noting that the decision does not extend the public trust to cover all groundwater resources, but rather only those could adversely affect a navigable waterway).

²⁹⁹ Klass, *supra* note 243, at 727-30.

³⁰⁰ *In re Water Use Permit Applications*, 94 Haw. at 131-32.

³⁰¹ *Id.* at 131.

³⁰² *Id.* at 130-31.

³⁰³ *Id.* at 131.

³⁰⁴ Klass, *supra* note 243, at 735; *Id.* at 130 (“The [Water] Code does not evince any legislative intent to abolish the common law public trust doctrine. To the contrary . . . the legislature appears to have engrafted the doctrine wholesale in the Code.”).

³⁰⁵ For a more exhaustive list of modern cases that have found extension of public trust principles in state constitutional and statutory provisions, see Klass, *supra* note 243, at 730-742.

California's constitution declares that all water in the state, which includes groundwater, is for public use, subject to state oversight.³⁰⁶ Furthermore, California's Water Code reinforces this policy in declaring "all water within the State [to be] the property of the people in the State."³⁰⁷ These declarations fundamentally distinguish water rights in California from real property rights. That is, water rights in California are usufructuary.³⁰⁸ They grant the holder a right to the reasonable use of water, but they do not carry the traditional ownership rights³⁰⁹ that apply to real property.³¹⁰ The policies expressed in the California Constitution and the Water Code identify a trust relationship between the state and the people with respect to water generally. California does not hold title to water in the state; rather the people do. But the California Constitution allows the state to control and regulate water use in trust for the people. Another policy declared in the Water Code provides perhaps the clearest pronouncement of the state's trust obligations for water:

It is hereby declared that the *protection of the public interest* in the development of the water resources of the State is of vital concern to the people of the State and that the State shall determine in what way the water of the State, *both surface and underground*, should be developed for the greatest public benefit.³¹¹

In this way, the California Constitution and policy declarations in the state's Water Code provide clear guidance to courts, allowing them to extend the doctrine's scope to cover all groundwater resources, without fear of judicial overreach falling outside of the democratic process.

2. Extension of the public trust to counter failure in the political process

Not only would extension of the public trust to cover all groundwater in California not run counter to the political process, it may also serve as a valuable check on political failure. Contrary to any claim that extending the doctrine's scope would constitute a problematic judicial assertion of power, the doctrine can serve to reinforce existing environmental statutes where political indifference or lack of resources has led to violations of public trust purposes.³¹² Courts have

³⁰⁶ CAL. CONST. art. X, § 5 ("The use of all water now appropriated, or that may hereafter be appropriated, for sale, rental, or distribution, is hereby declared to be a public use, and subject to the regulation and control of the State, in the manner to be prescribed by law.").

³⁰⁷ CAL. WATER CODE § 102.

³⁰⁸ *Eddy v. Simpson*, 3 Cal. 249, 252 (1853) ("It is laid down by our law writers, that the right of property in water is *usufructuary*, and consists not so much of the fluid itself as the advantage of its use. * * * The owner of land through which a stream flows, merely transmits the water over its surface, having the right to its reasonable use during its passage. The right is not in the *corpus* of the water, and only continues with its possession.").

³⁰⁹ For example, the right of exclusion.

³¹⁰ CAL. WATER CODE § 1001.

³¹¹ CAL. WATER CODE § 105 (emphasis added).

³¹² *See* Klass, *supra* note 243, at 727.

been cognizant of these issues, and they have extended the doctrine's scope at times to address the problem.³¹³

For example, though not explicitly stated, the concern that the Illinois legislature had improperly handed over large parts of the Lake Michigan shoreline to a private party played an important role in the Supreme Court's decision in *Illinois Central Railroad*. The Court discussed the historical application of the doctrine to tide waters and noted how Lake Michigan was not affected by tides.³¹⁴ It then noted, "the doctrine is founded upon the necessity of preserving to the public the use of navigable waters from private interruption and encroachment,— a reason as applicable to navigable fresh waters as to waters moved by the tide."³¹⁵ The Court then held that the doctrine applied just as equally to the waters of Lake Michigan as it did the oceans.³¹⁶ Later, when describing the unique nature of the title for public trust lands, the Court noted such title is "held in trust for the people of the state, that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein, *freed from the obstruction or interference of private parties*."³¹⁷

California's reluctance to use its existing authority to regulate agricultural sources of groundwater pollution points to a lack of political will to confront the industry. As documented in detail in Part II.A, Porter-Cologne has given California regulators ample authority to control agricultural waste affecting groundwater in the state.³¹⁸ Yet until the passage of S.B. 390, which took effect in the year 2000, the state did not seriously regulate agricultural sources of pollution.³¹⁹ Even after the legislature established more stringent requirements on agricultural waivers, regional water boards declined to establish waivers or WDRs that covered agricultural discharges to groundwater.³²⁰ This political inaction has led to tragic consequences and hardship, as thousands in the Valley lack access to clean water with which they can drink, cook, or bathe.³²¹ The fact that the crisis carries overtones of environmental racism³²² only further solidifies the issue as a failure to address problems faced by the politically powerless.

Moreover, recent regulatory efforts by regional water boards to control agricultural pollution do not undermine application of the doctrine to groundwater. On the contrary, these efforts only reinforce that the state has had the authority to regulate discharges to groundwater all along. This fact gives further credence to the argument that the public trust may serve to shore up existing statutes. In addition, in California's latest major legislative act related to

³¹³ See *id.* at 727-730.

³¹⁴ See *Illinois Cent. R. Co.*, 146 U.S. at 436.

³¹⁵ *Id.*

³¹⁶ *Id.* at 437.

³¹⁷ *Id.* at 452 (emphasis added).

³¹⁸ See *supra* notes 88-104 and accompanying text.

³¹⁹ See *supra* notes 105-112 and accompanying text.

³²⁰ See *supra* notes 142-143 and accompanying text.

³²¹ See *supra* notes 2-4 and accompanying text.

³²² See *supra* notes 7-8 and accompanying text.

groundwater, there are indications that GSAs, the agencies charged with administering the act, have been captured by the agricultural industry and that their decisionmakers are insulated from democratic processes.³²³

All of these factors provide evidence of a breakdown in the political process. By extending the public trust doctrine to cover all groundwater in the state, courts can provide a valuable check on state political actors who have historically declined to address the problem under their given statutory authority.

B. Extending the purpose of the public trust doctrine

If the public trust doctrine applies to all groundwater resources in California, the next logical question concerns the extent to which it applies to prohibit degradation of groundwater quality by agricultural polluters. In some ways, the scope and purposes of the doctrine have always been closely tied. For example, under Roman and English law, the right to free navigation and fishing were important interests reserved for the public against sovereign interference.³²⁴ As such, property used for these purposes retained a special public character, and the public trust doctrine precluded the sovereign from giving such lands to private owners.³²⁵

With respect to groundwater, the traditional purposes of navigation and fishing clearly do not apply. However, California courts have long declined to limit themselves to “an outmoded classification favoring one mode of utilization over another.”³²⁶ The state’s courts have applied the doctrine, for example, to protect scenic and ecological values,³²⁷ including the protection of fish and wildlife against poor quality water that could adversely affect their habitat.³²⁸ Extending these decisions to ensure safe human consumption of groundwater is not difficult. Under existing precedent, it would seem bizarre, frankly, for courts to hold that the public trust protects waters from harmful degradation if it affects fish and wildlife, but not humans. If anything, the public trust has historically protected human interests first.

For these reasons, the states of Hawaii and New Jersey have already recognized a purpose of the public trust doctrine in their respective states to protect drinking water sources.³²⁹ In fact, in the Hawaii decision, the court pointed to California’s emphasis on domestic uses of water in its Water Code as a reason to justify the doctrine’s application to drinking water resources in Hawaii.³³⁰ Just as courts may rely on state statutes for expressions of policy to justify extensions

³²³ See *supra* notes 225-228 and accompanying text.

³²⁴ Sax, *supra* note 230, at 475.

³²⁵ *Id.*

³²⁶ *Nat’l Audubon Soc’y*, 33 Cal. 3d at 434 (quoting *Marks*, 6 Cal. 3d. at 259).

³²⁷ *Id.* at 435.

³²⁸ *State Water Res. Control Bd.*, 182 Cal. App. 3d at 150.

³²⁹ See *In re Water Use Permit Applications*, 94 Haw. at 137; *Mayor & Mun. Council of City of Clifton v. Passaic Valley Water Comm’n*, 224 N.J. Super. 53, 64 (Law. Div. 1987) (noting that “water is essential for human life” and thus, that the public trust doctrine applies to drinking water reserves).

³³⁰ *In re Water Use Permit Applications*, 94 Haw. at 137.

to the doctrine's scope, so too could they look to California statutes for expressions of policy to extend its purpose. The California Water Code explicitly espouses domestic purposes as the highest possible beneficial use of water in the state, above that even for irrigation.³³¹ This provides perhaps the strongest indication that California has failed to fulfill its public trust duty to hold the state's groundwater open to those uses most beneficial to the public. Indeed, it seems that historically the state has had its priorities reversed. It has protected agricultural interests to withdraw groundwater for irrigation and to apply large amounts of fertilizer and pesticides to the land, all to the detriment of those who need that water for domestic purposes.

C. Possible causes of action and remedies

Before examining possible causes of action related to violations of the public trust, it is important to first note how the doctrine may give ordinary citizens standing to bring public trust actions when statutes do not otherwise authorize citizen suits. While many federal environmental statutes provide citizen suit provisions,³³² many California environmental statutes, by comparison do not. For example, SGMA authorizes GSAs to impose administrative civil penalties on persons who violate GSA rules, regulations, ordinances, and resolutions.³³³ In addition, GSAs may bring an action in state court against violators when the penalties exceed specified dollar amounts.³³⁴ But the act does not allow private citizens to bring suit for such violations. Thus, in cases where GSAs favor agricultural interests and fail to bring action against agricultural violators, they may legitimately argue lack of resources or ask courts to defer to their prosecutorial discretion in deciding when and how to prosecute individuals for SGMA violations.

In these cases, the public trust doctrine may serve an important gap-filling role, allowing private citizens to seek enforcement of environmental statutes when states do not fulfill their public trust duty. Private citizen standing to bring such suits relies on similar principles as a breach of fiduciary duty by trustees towards beneficiaries. They may bring lawsuits seeking relief from a state's neglect of public trust resources, held in trust for the people.³³⁵

The remedy in these cases is mostly procedural in nature. In response to public trust suits brought by citizens, courts can essentially direct the state to "do your job" as trustee for public trust resources. For example, in *National Audubon Society*, the court did not tell the state that it could not issue water permits to divert water from tributaries of Mono Lake. Rather, it directed the state to consider its public trust duty when allocating water rights and to protect public trust resources

³³¹ CAL. WATER CODE § 106 ("It is hereby declared to be the established policy of this State that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation.").

³³² See, e.g., 33 U.S.C. § 1365(a) (authorizing citizen suits for violations of the Clean Water Act).

³³³ CAL. WATER CODE § 10732(b)(2).

³³⁴ *Id.* § 10732(b)(1).

³³⁵ See Lin, *supra* note 229, at 1093.

when feasible.³³⁶ However, in crafting procedural remedies for violations of the public trust, courts may defer less to the legislature and executive agencies than they might otherwise. For example, *Illinois Central Railroad* prohibits legislatures from abdicating all of their public trust responsibilities with respect to particular resources, even if that decision may be fundamentally a rational one.³³⁷

Likewise, under standard administrative law doctrine, courts will review agency actions unless a statute expressly precludes administrative review or when the action is committed to agency discretion by law.³³⁸ Generally, actions committed to agency discretion by law are those that courts have historically deemed unreviewable by common law.³³⁹ Traditional common law categories precluding judicial review include political questions, sovereign immunity, and prosecutorial discretion.³⁴⁰ However, unlike challenges brought in state and federal administrative law contexts, states may have less discretion to defer their actions when plaintiffs can show a failure to protect public trust resources. Under the public trust doctrine, there is no concept of reviewability. Courts may consider state actions, or a state's failure to act, when plaintiffs can show a violation of the public trust.

With this context, we can now consider possible remedies for actions brought against California or its regulatory bodies for failure to protect groundwater from harmful concentrations of contaminants such as nitrates and arsenic. With regard to nitrates, there was a clearer case for bringing suit under the public trust doctrine prior to the Central Valley Regional Board's issuance of WDRs starting in 2012 which began regulation of agricultural discharges to groundwater. Prior to this time, the state simply did not regulate agricultural discharges to groundwater at all, despite clear authority to do so. Yet, even after this time, the doctrine may still have value. For example, the Tulare Lake Basin WDR allows coalition representatives to seek reclassification of groundwater use designations and avoid monitoring and reporting requirements if it is "reasonably likely" that a use designation is improper.³⁴¹ Growers would likely seek these re-designations in order to escape more stringent water quality objectives that apply to groundwater used for domestic purposes. If there exists evidence that communities are currently using this groundwater for domestic purposes, however, they could challenge these re-designations as a violation of the public trust. Moreover, private citizens could challenge the procedure itself allowing a delay to reporting and monitoring while coalition groups actively seek re-designation. Until the regional board has officially re-designated the groundwater, its original use classification should govern. Thus, the state has a public trust duty to monitor waste discharges to groundwater and to verify that

³³⁶ *Nat'l Audubon Soc'y*, 33 Cal. 3d at 446.

³³⁷ *See supra* notes 242-246 and accompanying text.

³³⁸ *See* 5 U.S.C. § 701(a).

³³⁹ *See Webster v. Doe*, 486 U.S. 592, 608-09 (1988) (Scalia, J. dissenting).

³⁴⁰ *Id.*

³⁴¹ *See supra* notes 147-148 and accompanying text.

growers are not violating the terms of the WDR and causing exceedances of the existing water quality objectives.

Residents could also bring public trust suits for failure of the water boards to bring enforcement actions against specific violations of the WDRs. For example, the WDRs allow state and regional boards to bring enforcement actions against growers who discharge waste in violation of water quality objectives or who fail to implement a GQMP when required.³⁴² As discussed, traditional defenses of prosecutorial discretion may not apply in public trust disputes. When the state has failed to adequately protect a public trust resource and where it shows a lack of political will to take action, courts could impose an affirmative duty on states to begin the enforcement process.

As for arsenic, agricultural waste discharges may not cause high concentrations of arsenic in groundwater aquifers as much as groundwater overdraft.³⁴³ Thus, Porter-Cologne provides an imperfect vehicle under which residents may require state action in the public trust. However, SGMA primarily concerns itself with basin overdraft. Thus, it may prove a valuable tool in combating arsenic contamination in groundwater. First, since GSAs serve as the primary agencies responsible for developing groundwater plans and enforcing extraction related regulations, one could challenge the state's approval of those GSAs that do not allow democratic representation on their boards. Unlike the water quality control plans and water quality objectives in Porter-Cologne, all of which are created by state agencies, the state has delegated responsibility for creating GSPs to other entities. These entities may consist of special districts, such as irrigation and water districts, that allocate voting power amongst their constituents proportional to land holdings.³⁴⁴ While the United States Supreme Court has upheld this structure against Equal Protection challenges in the context of their duties as irrigation and water districts,³⁴⁵ this same voting structure could violate public trust principles with respect to groundwater. States may not abdicate their responsibility to protect public trust resources.³⁴⁶ By delegating authority to regulate groundwater to quasi-democratic entities, California may have violated its public trust duty to adequately protect this public trust resource.

In the absence of challenges to the GSAs themselves, residents could use public trust principles to challenge GSP approval, both by GSAs and by DWR. GSPs must show that a given basin or subbasin will achieve the sustainability goal, which includes a requirement to prevent “[s]ignificant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.”³⁴⁷ Thus, if a GSP does not adequately account for extraction impacts on arsenic concentrations, public trust actions could force GSAs to reconsider such impacts. Possibly, residents could also bring a public

³⁴² See *supra* notes 155-159 and accompanying text.

³⁴³ See *supra* notes 13-17 and accompanying text.

³⁴⁴ See Pannu, *supra* note 6, at 257.

³⁴⁵ See *id.*

³⁴⁶ *Nat'l Audubon Soc'y*, 33 Cal. 3d at 446.

³⁴⁷ CAL. WATER CODE § 10721(x)(4).

trust action to challenge the twenty-year timeline allowed by SGMA to achieve sustainability. Certainly, in a case like *National Audubon Society*, it is hard to imagine the court would have accepted a solution that would have restored Mono Lake to acceptable levels only over a twenty-year period. If communities must take care not to use their tap water for fear of arsenic poisoning, it would seem to run counter to public trust doctrine to allow the state, as trustee, to take twenty years to fully address the problem.

Finally, just as with public trust actions brought to encourage enforcement actions under Porter-Cologne for violations of WDRs, residents could bring similar actions when GSAs decline to exercise their enforcement authority under SGMA. Likewise, if the State Water Board declines to use its discretionary power to declare a basin probationary or to provide a substitute GSP for the basin, residents could show a violation of the state's public trust duty to sufficiently protect their groundwater, and courts could require the state to exercise its enforcement authority accordingly.

CONCLUSION

The lack of access to clean drinking water faced by thousands of residents in California's Central Valley is at once disheartening and tragic. It also highlights in human terms the injustice to poor communities and communities of color when the state fails to muster sufficient political will to confront powerful industries. Despite authority that has existed for decades under federal and state environmental statutes, California has only recently begun to address agricultural activity affecting groundwater quality. Even so, it remains uncertain the degree to which current regulatory efforts will have an impact.

In many ways, the problem is ripe for application of the public trust doctrine. The doctrine is at its most powerful when used in conjunction with state constitutional and statutory authority and when failure of the political process has led to a violation of public trust principles. In large part because of its flexibility, the doctrine continues to find new applications and relevance today. It may also provide a critical tool to force real and sustained government action to correct the environmental injustice that many disadvantaged communities in the Valley have suffered.