The Reasonable Use Doctrine, the Public Trust Doctrine, and Surface Water Rights in California: Exploring the Frontiers of Water Rights Reform in an Era of Scarcity and Instability

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INTRODUCTION

The slogan "food grows where water flows" comes alive in the context of California.[1] Thanks to irrigation, California's predominately semi-arid climate[2] produces over one-third of the United States's vegetables and over two-thirds of its fruits and nuts.[3] California generates over thirteen percent of the United States's total agricultural value and leads the country in cash farm receipts.[4] But California has a water crisis, punctuated by the 1987-1992 drought, the 2012-2016

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[1] *See* Pamela Bellavita Carvajal, Food Grows Where Water Flows: Securing Water for Agricultural Production in a Drought-Stricken California (2017) (M.C.P. thesis, Massachusetts Institute of Technology) (on file with MIT Libraries, Massachusetts Institute of Technology).

[2] U.S. v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 166 (Cal. Ct. App. 1986).

[3] *California's Agricultural Production Statistics*, CAL. DEP'T. OF FOOD & AGRIC., https://www.cdfa.ca.gov/Statistics (last visited Oct. 16, 2020).

[4] *Id.*

drought, and an altered precipitation regime due to climate change.[5] The next drought has already arrived. Governor Newsom proclaimed a "drought state of emergency" in the Russian River, Sacramento-San Joaquin Delta, and Tulare Lake watershed counties.[6] On August 19, 2021, the State Water Resources Control Board's historic emergency curtailment regulations affecting the Sacramento-San Joaquin Delta watershed became effective.[7]

Given the State's active role in managing its water resources, it is a safe bet that existing water rights and water rights structures will change.[8] It is an equally safe bet that water rights holders will not go down without fighting, given the nexus between agricultural viability, profits, and water availability.[9] This paper explores strategies to soften the blow of this inevitable collision course within the context of surface water rights.

This paper is organized into four parts. Part I outlines California's dual system of surface water rights, consisting of riparian and appropriative rights.[10] Part II explores the key limitations on surface water rights in California, the public trust doctrine and the reasonable use doctrine.[11] Both doctrines are flexible and give the State ample legislative and regulatory authority.[12] Part III evaluates reforming vested water rights through legislation to maximize beneficial use while promoting conservation. To promote the policies of beneficial use and accountability, Part III concludes that legislation should be enacted to reform overly rigid aspects of California's water rights systems and to oversee *all* surface water rights through a permit system.

Part IV considers reforming vested water rights at the administrative and regulatory levels. Two approaches to reforming water rights are explored. First, water rights could be reformed through regulations that impose more stringent interpretations of "reasonable" and "beneficial" use and subject these terms to a

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[5] *Drought*, CAL. WATER RES. CONTROL BD., https://water.ca.gov/Water-Basics/Drought (last visited Oct. 21. 2021); *California's Central Valley*, U.S. GEO. SURV., https://ca.water.usgs.gov/projects/central-valley/climate.html (last visited Oct. 16, 2020).

[6] Gov. Gavin Newsom, State of Emergency Proclamation (May 10, 2021), https://www.gov.ca.gov/wp-content/uploads/2021/05/5.10.2021-Drought-Proclamation.pdf; *see also* Gov. Gavin Newsom, State of Emergency Proclamation (Apr. 21, 2021), https://www.gov.ca.gov/wp-content/uploads/2021/04/4.21.21-Drought-Proclamation.pdf.

[7] STATE OF CALIFORNIA, OFFICE OF ADMINISTRATIVE LAW, NOTICE OF APPROVAL OF EMERGENCY REGULATORY ACTION (2021), https://www.waterboards.ca.gov/drought/delta/docs/deltareg_oal_approval.pdf.

[8] *E.g.*, *see* Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 515 (Cal. Ct. App. 2020).

[9] *See id.* at 516 ("Stanford Vina is entitled to use roughly 66 percent of the flow of Deer Creek."). Agricultural water uses are limited if this water right is limited.

[10] Siskiyou County Farm Bureau v. Dep't of Fish & Wildlife, 188 Cal. Rptr. 3d 141, 148 (Cal. Ct. App. 2015).

[11] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 523 (Cal. Ct. App. 2020).

[12] *See* Nat. Audubon Society v. Sup. Court, 658 P.2d 709, 728 (Cal. 1983); *see also* Light v. State Water Resources Control Bd., 173 Cal. Rptr. 3d 200, 217 (Cal. Ct. App. 2014).

heightened public interest standard. To further California's policy of preventing waste, the reasonable use doctrine must be updated to reflect twenty-first century technologies and California's acute and increasing water scarcity. California should apply the principle that profitable and useful activities, alone, do not constitute beneficial uses. Beneficial uses should comport with a heightened public interest standard.[13]

The second approach is reforming water rights through regulations and water quality control plans that establish minimum instream flow requirements.[14] The Bay Delta Water Quality Control Plan and the California State Water Resources Control Board's emergency regulations during the 2011-2016 drought are reviewed as case studies. Overall, instream flow requirements are advantageous, as they are pegged to precipitation levels and reform water rights on an ad hoc basis when required. Instream flow requirements therefore have sufficient flexibility to accommodate California's variable precipitation. The Bay-Delta Water Quality Control Plan illustrates that instream flow requirements can be set for California's largest drainage basin through a single plan.[15]

Ultimately, this paper seeks to contribute to the literature regarding how California can adapt to conditions of increasing water scarcity. This paper concludes that California may be at a crucial juncture that requires fundamental and substantive changes. It also concludes that California possesses the legal authority and administrative capacity to implement changes that will allow the State's limited water resources to stretch further.

I. CALIFORNIA'S DUAL SYSTEM OF SURFACE WATER RIGHTS

California has a "dual system" of surface water rights, consisting of "riparian" users and "appropriators."[16] Riparian rights are based upon owning land that abuts a natural watercourse.[17] Riparian rights are an inheritance of English common law

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[13] *See e.g.*, 2002 Cal. Legis. Serv. Ch. 516, 399.11(b) (S.B. 1078) (West) (California's Renewables Portfolio Standard forced utilities to purchase electricity from renewable sources.).

[14] *See* Envtl. Prot. Info. Cent. v. Pac. Lumber Co., 430 F. Supp. 2d 996, 999 n.4 (N.D. Cal. 2006) ("California administers its portion of the [Clean Water Act's] NPDES program through the Porter-Cologne Water Quality Control Act . . . Cal. Water Code § 13000 *et seq.*, which, in turn, created a group of Regional Water Quality Control Boards . . . ."); *see also* CAL. WATER CODE § 13000 (West 1969).

[15] However, it must be noted that legality of instream flow regulations is currently being litigated in a high-profile water case, Stanford Vina Ranch Irrigation Co. v. State of Cal. After an adverse ruling by the California Court of Appeal, the Stanford Vina Plaintiffs have petitioned the California Supreme Court for review. Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 522 (Cal. Ct. App. 2020); Stanford Vina Ranch Irrigation Co. v. State, Case No. S263378 (Cal. 2020).

[16] Light v. State Water Res. Control Bd., 173 Cal. Rptr. 3d 200, 209 (Cal. Ct. App. 2014).

[17] Anaheim Union Water Co. v. Fuller, 150 Cal. 327, 328-29 (Cal. 1907); *see also* W. Barron A. Avery, *Disenfranchising the Non-Riparian*, 39 CUMB. L. REV. 437, 441 (2009) (defining riparian rights).

and remain the dominant water right in the eastern United States.[18] In contrast, appropriative water rights emerged during the California Gold Rush and are the dominant water right in the western United States.[19] Appropriative rights are not based upon land ownership.[20] Both water rights are usufructuary, meaning a water right holder's property interest is limited to *using* water and does not extend to owning the water *corpus* itself.[21] Riparian and appropriative surface water rights are the focus of this paper's analysis of reforming water rights in California.

A. Californian Riparianism: An English Common Law Holdout in the American West

When California became a State in 1850, it adopted English common law as an interim legal system and therefore adopted the common law of riparian rights.[22] Riparian rights are incidental to owning riparian land and are not gained by use nor lost be nonuse.[23] They must be used on riparian land.[24] Riparian users are only entitled to use a watercourse's natural flow.[25] Riparian users are limited to a "regulatory storage" right, which under California Admin Code Section 657, cannot exceed thirty days.[26] The State Water Resources Control Board ("Board") lacks permitting authority over riparian rights.[27] When water rights conflict during times of scarcity, riparian rights generally trump appropriative rights under the "rule of priority."[28] "Although riparian users must curtail their use proportionately *among themselves* in times of shortage, they are entitled to satisfy their reasonable needs first, before appropriators can even begin to divert water."[29] Therefore,

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[18] *The Water Rights Process*, CAL. STATE WATER RES. CONTROL BD., https://www.waterboards.ca.gov/waterrights/board_info/water_rights_process.html (last visited Oct. 17, 2020).

[19] Cal. v. U.S. 438 U.S. 645, 653-54 (1978); Michael Toll, *Reimagining Western Water Law: Time-Limited Water Right Permits Based on a Comprehensive Beneficial Use Doctrine*, 82 U. COLO. L. J. 595, 601-02 (2011).

[20] Siskiyou County Farm Bureau v. Dep't of Fish and Wildlife, 188 Cal. Rptr. 3d 141, 148 (Cal. Ct. App. 2015).

[21] *Id.* at 148 ("Ownership of California's water is vested generally in the state's residents . . . .").

[22] *The Water Rights Process*, *supra* note 18.

[23] Gary W. Sawyers, *A Primer on California Water Rights*, https://aic.ucdavis.edu/events/outlook05/Sawyer_primer.pdf (last visited Oct. 24, 2021).

[24] *Siskiyou*, 188 Cal. Rptr. 3d at 148.

[25] Sawyers, *supra* note 23 at 2; *see* Stevinson Water Dist. v. Roduner, 36 Cal. 2d 264, 271 (Cal. 1950).

[26] Clifford W. Schulz & Gregory S. Weber, *Changing Judicial Attitudes Towards Property Rights in California Water Resources*, 19 PAC. L.J. 1031, 1084 FN 236 (1988); Cal. Code Regs. Tit. 23, § 657.

[27] Cal. Farm Bureau Fed'n v. State Water Res. Control Bd., 247 P.3d 112, 118, (Cal. 2011).

[28] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 522 (Cal. Ct. App. 2020). However, riparian rights are not *per se* superior. If an appropriative right is perfected before private ownership of the riparian land, the appropriative right prevails under the rule of priority. *See* Lux v. Haggin, 10 P. 674, 727, 739 (Cal. 1886)..

[29] *Stanford Vina Ranch Irrigation Co*., 264 Cal. Rptr. 3d at 522.

riparian water rights are highly valuable water rights, especially during times of shortage.

B. Prior Appropriation: Legacy of the Gold Rush

In 1855, five years into California's statehood, the California Supreme Court articulated the doctrine of prior appropriation in *Irwin v. Phillips* and effectively legalized the appropriative right.[30] The rapid emergence of the appropriative right underscored the incompatibility between California's system of riparian rights and its geography.

Gold prospectors flocked to California during the 1848 Gold Rush.[31] These settlers prospected on federally owned land and diverted water from watercourses to non-riparian parcels.[32] In *Irwin*, the plaintiff, a miner, tried to enjoin the defendant, a later-arriving miner, from diverting water.[33] The Supreme Court rejected the plaintiff's assertion of a riparian right because the lands in question were property of California or the United States.[34] The plaintiff lacked property *ownership*, an essential element of a riparian right.[35] The *Irwin* court held that conflicts regarding the right to "divert streams from their natural channels . . . must be decided by the fact of priority, upon the maxim of equity, *qui prior est in tempore, potior est in jure* [he who is prior in time is better in right]."[36] Moreover, the *Irwin* court held under the doctrine of prior appropriation, one must use diverted stream water for a beneficial purpose in order to perfect a right of priority.[37]

Appropriative rights are structured in a hierarchy in terms of priority. The appropriative hierarchy consists of a spectrum of users ordered by priority, from senior to junior.[38] The most senior appropriator is given priority to satisfy her reasonable needs first.[39] Accordingly, the reasonable use doctrine, discussed *infra*

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[30] Irwin v. Phillips, 5 Cal. 140 (Cal. 1855).

[31] *See* Siskiyou County Farm Bureau v. Dep't of Fish and Wildlife, 188 Cal. Rptr. 3d 141, 150 (Ct. App. 2015); *The California Gold Rush*, NAT. PARK SERVICE (Feb. 24, 2020), https://www.nps.gov/cali/learn/historyculture/california-gold-rush.htm.

[32] *See* U.S. v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 168 (Cal. Ct. App. 1986).

[33] Irwin v. Phillips, 5 Cal. 140, 145 (Cal. 1855).

[34] *Id.*

[35] *Id.*

[36] Irwin v. Phillips, 5 Cal. 140, 147 (Cal. 1855); JOHN H. MINAN, SYLLABUS: WATER LAW 2012, at Chapter 5: Prior Appropriation, (2011), http://home.sandiego.edu/~jminan/waterlaw /Irwin%20v%20Phillips.pdf (last visited Sept. 13, 2020).

[37] Irwin v. Phillips, 5 Cal. 140, 147 (Cal. 1855).

[38] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 522-23 (Cal. Ct. App. 2020).

[39] *Id.*

is crucial to determining the limits of senior rights and when junior rights can be exercised.[40]

C. The California Doctrine

In 1886, the California Supreme Court created the "California Doctrine," in recognizing both riparian and appropriative rights in *Lux v. Haggin*.[41] Rather than abolishing riparian rights,[42] the *Lux* court articulated the following test: if perfected before title to riparian land was established, an appropriative right trumps a riparian right and *vice versa*.[43] Crucially, correlative principles do not govern conflicts between appropriative and riparian rights. If title to riparian land is acquired before appropriative rights are perfected, the riparian cannot "be deprived of his common-law rights to the flow of the stream . . . ."[44] Yet, the Supreme Court's holding in *Lux v. Haggin* has arguably mutated: "because title to most private land in California was acquired before . . . appropriative rights were perfected . . . many . . . judicial opinions . . . simply assume that riparian rights are superior to appropriative rights . . . ."[45] For example, as held in *Stanford Vina*, the "rights of riparian users are paramount" and "are entitled to satisfy their reasonable needs first, before appropriators can even begin to divert water."[46] Thus, riparian rights generally sit above the appropriative rights hierarchy under the doctrine of priority.[47] However, riparian users' priority does not sanction unreasonable use of water resources.[48]

Like other western states, California adopted a permitting approach in the early 1900s. The Water Commission Act of 1914 created a permitting system for the "appropriation of unappropriated waters."[49] To acquire an appropriative right, one must apply to the Board for a permit to divert a particular quantity of water.[50] However, pre-1914 appropriative rights and riparian rights do not require permits.[51]

In maintaining its dual system of riparian and appropriative rights, California became an outlier in western water law. The overall trend in western states was,

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[40] *Id.*

[41] Lux v. Haggin, 10 P. 674, 697 (Cal. 1886).

[42] *Cf.* Coffin v. Left Hand Ditch Co., 6 Colo. 443, 447 (Colo. 1882).

[43] Lux v. Haggin, 10 P. 674, 727, 739 (Cal. 1886).

[44] *Id.* at 727.

[45] BARTON H. THOMPSON, JR. ET AL., LEGAL CONTROL OF WATER RESOURCES 213 (Barton H. Thompson, Jr. et al., eds., 6th ed. 2018).

[46] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 522 (Cal. Ct. App. 2020).

[47] Westlands Water Dist. v. U.S., 337 F.3d 1092, 1102-03 (9th Cir. 2003).

[48] *See* CAL. CONST. art. X, § 2 (West 1976).

[49] State Water Resources Control Bd. Cases, 39 Cal. Rptr. 3d 189, 243 (Cal. Ct. App. 2006) (quoting WELLS H. HUTCHINS, THE CALIFORNIA LAW OF WATER RIGHTS 95 (1956)).

[50] U.S. v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 168-69 (Cal. Ct. App. 1986).

[51] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 522 (Cal. Ct. App. 2020).

when adopting a permitting system, to limit or abolish riparian rights. For example, in 1909 Oregon adopted its Water Code, which established that post-1909, all surface water rights in Oregon would be appropriative.[52] Riparian rights vested before the Oregon Water Code could continue.[53] The State of Washington followed Oregon's path with its Water Code of 1917, which established that all new surface water rights must be appropriative rights acquired through a permit system.[54] Arizona and Colorado completely abrogated the riparian rights doctrine.[55] Thus, California's dual system, which leaves riparian rights untouched and unaffected by the permitting process, is abnormal in western water law.

D. The California Doctrine in Practice

Approximately thirty-eight percent of currently held water rights escape the State's permitting process; these rights are riparian, pueblo, and pre-1914 appropriative rights.[56] "Rights regulated under SWRCB licenses and permits include about 40 percent of state water subject to water rights. The federal government holds the remaining 22 percent of water rights."[57] However, much of the federal government's water rights are constrained by pre-existing water rights. For example, some of California's most senior water rights holders, including Westlands Water District, exchanged their water rights for water deliveries from the Central Valley Project.[58] Similar contractual arrangements occurred between parties entitled to divert water from the Sacramento River and the federal government.[59] In short, California's dual system of water rights is firmly entrenched and is pervasive in California water law.

II. CONSTRAINTS ON SURFACE WATER RIGHTS IN CALIFORNIA: THE PUBLIC TRUST DOCTRINE AND THE REASONABLE USE DOCTRINE

This part explores the primary constraints on surface water rights in California, the public trust doctrine and the reasonable use doctrine. First, the public trust doctrine is discussed. The public trust doctrine lies at the heart of water rights because the State owns all water within its borders. Water rights are

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[52] Cal. Or. Power Co. v. Beaver Portland Cement Co., 295 U.S. 142, 152 (1935).

[53] *Id.*

[54] *In re* Deadman Creek Drainage Basin in Spokane Cnty, 694 P.2d 1071, 1072 (Wash. 1985).

[55] *See* S.W. Sand & Gravel, Inc. v. Cent. Ariz. Water Conservation Dist., 212 P.3d 1, 8 (Ariz. Ct. App. 2008); *see also* Oppenlander v. Left Hand Ditch Co., 31 P. 854, 856 (Colo. 1892) ("[I]t appears that the constitution has, to a large extent, obliterated the common-law doctrine of riparian rights, and substituted in lieu thereof the doctrine of appropriation.").

[56] Cal. Farm Bureau Fed. v. State Water Res. Control Bd., 247 P.3d 112, 118 (Cal. 2011).

[57] *Id.*

[58] Westlands Water Dist. v. U.S., 337 F.3d 1092, 1102-03 (9th Cir. 2003).

[59] *Id.*

usufructuary.[60] This part outlines the public trust doctrine and its expanding role in water law. Second, the reasonable use doctrine, enshrined in Article X, Section 2 of California's Constitution, is conceptualized as an outgrowth of water scarcity in the western United States. The goal of this part is to identify the underlying authority and policy reasons for reforming surface water rights in California.

A. The Public Trust Doctrine

As stated in California Water Code Section 102, "[a]ll water within the State is the property of the people of the State . . . ."[61] Thus, the first principle of California's water law is that its water is not amenable to private ownership and, in spite of usufructuary rights, remains public property.[62] The public trust doctrine follows closely on the coattails of this public ownership principle and is a major constraint on water rights in California.[63]

"[T]he public trust doctrine provides that certain natural resources are held by the state in special status."[64] The State, the trustee, has a fiduciary duty to hold these resources in trust for the public, the beneficiaries.[65] The State cannot "abdicate" its public trust duties and cannot alienate public trust resources.[66] The doctrine dates back to the *Institutes of Justinian* under ancient Roman law, which proclaimed that "[b]y the law of nature these things are common to mankind—the air, running water, the sea, and consequently the shores of the sea."[67] The doctrine has dramatically expanded in California. The natural resources subject to public trust protection have expanded from tidal and submerged lands and inland navigable waterways to include non-navigable lakes and rivers.[68] The uses receiving public trust protection have expanded from commerce, navigation, and fishing to include recreation and environmental preservation.[69]

Exemplified by the California Supreme Court's landmark decision in *National Audubon Society v. Superior Court*, the public trust's most impactful expansions

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[60] Eddy v. Simpson, 3 Cal. 249, 252 (Cal. 1853); CAL. WATER CODE § 102 (West 1943)("the right to the use of water may be acquired by appropriation in the manner provided by law").

[61] CAL. WATER CODE § 102; *see also* Light v. State Water Res. Control. Bd., 173 Cal. Rptr. 3d 200, 209 (Cal. Ct. App. 2014).

[62] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 522 (Cal. Ct. App. 2020).

[63] *See* Nat'l Audubon Soc'y v. Sup. Court, 658 P.2d 709, 712 (Cal. 1983).

[64] RICHARD M. FRANK., PUBLIC TRUST DOCTRINE (CH.2) *in* CALIFORNIA ENVIRONMENTAL LAW AND LAND USE PRACTICE 2-3 (Menaster & Selmi ed. 2019).

[65] MARY WOOD, NATURE'S TRUST 126-27 (2014).

[66] Illinois Cent. R.R. Co. v. State of Illinois, 146 U.S. 387, 453-54 (1892). Illinois Central is widely regarded as landmark case that established the public trust doctrine as a powerful concept in United States law. *See* MARY WOOD, NATURE'S TRUST 126-27 (2014).

[67] MARY WOOD, NATURE'S TRUST 126 (2014).

[68] FRANK, *supra* note 64, at 2-43.

[69] *Id.* at 2-27.

have occurred within the realm of surface water rights.[70] *National Audubon* centered around a fight over water resources between the National Audubon Society and the City of Los Angeles.[71] The City of Los Angeles obtained a permit to "appropriate virtually the entire flow of four of the five streams" that fed Mono Lake.[72] During the 1970s, diversions under Los Angeles' water right caused Mono Lake's water levels to drop dramatically, endangering Mono Lake's wildlife and impairing Mono Lake's navigability.[73] Although the tributaries were non-navigable, the Supreme Court held that diverting these tributaries was subject to the public trust doctrine to protect the navigable waters of Mono Lake.[74] The Supreme Court held, in crucial part:

> [T]he state has an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible . . . . Once the state has approved an appropriation, the public trust imposes a duty of *continuing supervision* over the taking and use of the appropriated water. In exercising its sovereign power to allocate water resources in the public interest, the state is not confined by past allocation decisions which may be incorrect in light of current knowledge or inconsistent with current needs.[75]

While *National Audubon* greatly expanded the State's authority to reform vested water rights, the Supreme Court also struck a balance. The *National Audubon* court held, as a practical necessity, California "depend[s] upon the appropriation of vast quantities of water for uses unrelated to instream trust values." Therefore, the State must be able to grant appropriative rights even if such rights do not promote and may even "unavoidably harm, the trust uses at the source stream."[76] However, *National Audubon* ultimately increased the State's regulatory authority, holding that a water right holder can "assert no vested right to use those rights in a manner harmful to the [public] trust."[77] Therefore, the State's expanded regulatory authority comes at the expense of the State's decreased power to grant water rights permits.[78] Thus, *National Audubon*

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[70] *Id.* at 2-17, 2-40; Nat'l Audubon Soc'y v. Sup. Court, 658 P.2d 709 (Cal. 1983).

[71] Nat'l Audubon Soc'y v. Sup. Court, 658 P.2d 709, 711-12 (Cal. 1983).

[72] *Id.* at 711.

[73] *Id.* at 714-15.

[74] *Id.* at 721.

[75] *Id.* at 728 (emphasis added).

[76] *Id.* at 727.

[77] *Id.*

[78] A core holding of National Audubon was that the State *never* had the authority to transgress public trust resources, even if such resources were "long thought free of the trust." Nat'l Audubon Soc'y v. Sup. Court, 658 P.2d 709, 723 (Cal. 1983). Therefore, the use of "increased" and "decreased" are explanatory phrases used to connote the practical implications of National Audubon.

constrains the Board's discretion to issue permits and provides litigants a standard with which to hold the Board accountable.

Perhaps the most controversial aspect of the public trust doctrine is its status as a shield to Fifth Amendment takings liability.[79] Fifth Amendment takings occur when private property is taken for public use without just compensation.[80] There are two categories of takings: physical takings and regulatory takings, the latter famously discussed by the Supreme Court in *Penn Central*.[81] This paper focuses regulatory takings. However, it must be noted that takings claims in water law are relatively unsettled, and there may be a growing movement to treat water law regulations as physical takings.[82]

In *Lucas v. South Carolina Coastal Council*, the Supreme Court articulated an updated regulatory takings test. The Court held a categorical regulatory taking occurs if a State regulation denies a private party "all economically productive or beneficial uses of land," unless "background principles of nuisance and property law" dictate otherwise.[83] In *Esplanade Properties, LLC v. City of Seattle*, the Ninth Circuit held that the public trust doctrine is one of the background principles of State property law alluded to in *Lucas*.[84] Accordingly, the public trust doctrine protects States from takings liability, and is interpreted to fall "within the sphere of the police power."[85]

However, as illustrated by *Mineral County v. Lyon County* and *Stanford Vina*, water rights holders have recently challenged the public trust doctrine's status as a shield for takings liability.[86] In *Mineral County*, in response to a certified question posed by the Ninth Circuit Court of Appeal, the Nevada Supreme Court held in part that "the public trust doctrine does not permit reallocating water rights already adjudicated and settled under the doctrine of prior appropriation."[87] Additionally, in *Stanford Vina*, the plaintiffs challenged the California State Water Board's drought-related curtailment orders issued during 2014 and 2015 as Fifth Amendment takings.[88] The California Court of Appeal firmly held that the emergency curtailment orders were within the scope of the Board's authority and did not constitute a taking. Yet, relying upon the Nevada Supreme Court's opinion in *Mineral County v. Lyon County*, the *Stanford Vina* plaintiffs sought further

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[79] *See* Kathryn M. Casey, *Water in the West*, 6 CHAP. L.R. 305 (2003) (discussing why vested water rights merit protection under the Takings Clause).

[80] Penn Cent. Transp. Co. v. City of N.Y., 438 U.S. 104, 123 (1978).

[81] *See id* at 123-26.

[82] *See* Casitas Mun. Water Dist. v. U.S., 543 F.3d 1276, 1296 (Fed. Cir. 2008).

[83] Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1030-31 (1992).

[84] Esplanade Properties, LLC v. City of Seattle, 307 F.3d 978, 985-86 (9th Cir. 2002).

[85] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 533 (Cal. Ct. App. 2020) (*quoting* Gin S. Chow v. City of Santa Barbara, 22 P.2d 5, 16 (Cal. 1933)).

[86] Mineral County v. Lyon County, 473, 430 P.3d 418 (Nev. 2020).

[87] Mineral County v. Lyon County, 473 P.3d 418, 421 (Nev. 2020).

[88] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 514-15 (Ct. App. 2020).

review by the California Supreme Court.[89] But in February 2021, the United States Supreme Court rejected the *Stanford Vina* plaintiff's petition for writ of certiorari, closing the matter.[90] Therefore, under the current state of California law, the public trust doctrine is an incredibly powerful basis for reforming and curtailing vested water rights.

B. The Reasonable Use Doctrine as an Outgrowth of Western Water Scarcity

The reasonable use doctrine is an outgrowth of western water scarcity and emerged in conjunction with the doctrine of prior appropriation.[91] The reasonable use doctrine requires that water diverted from natural streams be put to beneficial use and be limited to the amount reasonably required for such use.[92] The doctrine of prior appropriation, as discussed, carries an ethic of reasonable use. To perfect an appropriative right the diverted water must (a) be put to beneficial use and (b) such use is "not to exceed the amount of waters actually appropriated and necessarily used . . . ."[93] Thus, the doctrine of prior appropriation and the doctrine of reasonableness seek to eliminate waste. In conclusion, while the reasonable use doctrine and the doctrine of prior appropriation are distinct and require separate considerations, they emerged during the same era of western settlement, share core values, and are highly intertwined doctrines.

The reasonable use doctrine governs "[t]he right to water or to the use or flow of water in or from any natural stream or watercourse in [California]. [94] Codified in Article X, Section 2 of the California Constitution in 1928, the reasonable use doctrine is "the overriding principle governing the use of [natural] water [flows] in California."[95] The crux of the reasonable use doctrine is that water from natural streams must be put to beneficial use and limited to the amount reasonably required for such use.[96] The doctrine condemns waste.[97]

The reasonable use doctrine has strong underlying policy values. The doctrine was incorporated via a constitutional amendment in 1928 in reaction to

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[89] *Id.*

[90] Stanford Vina Ranch Irrigation Co. v. Cal., 141 S.Ct. 1387 (U.S. 2021).

[91] *E.g.*, *see* Cal. Or. Power Co. v. Beaver Portland Cement Co., 295 U.S. 142, 155-56 (1935).

[92] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 523 (Cal. Ct. App. 2020); CAL. CONST. art. X, § 2 (West 1976).

[93] Irwin v. Phillips, 5 Cal. 140, 147 (Cal. 1855); Cal. Or. Power Co. v. Beaver Portland Cement Co., 295 U.S. 142, 156 (1935).

[94] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 523 (Cal. Ct. App. 2020); CAL. CONST. art. X, § 2 (West 1976).

[95] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 523 (Cal. Ct. App. 2020), (*quoting* Light v. State Water Res. Control Bd., 173 Cal. Rptr. 3d 200, 209 (Cal. Ct. App. 2014)).

[96] CAL. CONST. art. X, § 2 (West 1976).

[97] *Id.*

Herminghaus, which held that riparians were *not* "limited to reasonable and beneficial uses of the water."[98] Article X, Section 2 provides, in part:

> It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable . . . . The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion of water.[99]

Three crucial policies are manifest in this constitutional provision. First, the rule of reasonableness stems from the "conditions prevailing in this State."[100] These prevailing conditions are water scarcity.[101] Moreover, this provision establishes that the reasonable use doctrine is a fact-intensive inquiry rather than a bright-line rule.[102] As the California Supreme Court held in *Joslin v. Marin Municipal Water District*, reasonable use of water "depends on the circumstances of each case, [but] such an inquiry cannot be resolved in vacuo isolated from state-wide considerations of transcendent importance."[103] In 1967, the *Joslin* court asserted that water conservation was an "ever increasing need" of transcendent importance in California.[104] Thus, like the public trust doctrine, the reasonable use doctrine is flexible and can be used to spearhead water conservation policies.

Second, due to water scarcity, California has declared it must exercise its police power to protect the "general welfare" of its citizens by requiring its water resources "be put to beneficial use to the fullest extent possible."[105] Placing water rights reform within the scope of the State's police power is a crucial policy decision because if a State acts pursuant to its police power, such action cannot constitute a Fifth Amendment taking.[106]

Third, Article X, Section 2 provides a standard for ensuring beneficial use. The right to use water is limited to the amount reasonably required for the subject

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[98] U.S. v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 170-71 (Cal. Ct. App. 1986).

[99] CAL. CONST. art. X, § 2 (West 1976).

[100] *Id.*

[101] United States v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 166 (Cal. Ct. App. 1986) (discussing California's semi-arid climate).

[102] *See* Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 523 (Cal. Ct. App. 2020).

[103] Joslin v. Marin Municipal Water Dist., 429 P.2d 889, 894 (Cal. 1967).

[104] *Id.* at 895.

[105] CAL. CONST. art. X, § 2 (West 1976); *see* United States v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 200 (Cal. Ct. App. 1986).

[106] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 532-33 (Cal. Ct. App. 2020).

beneficial use.[107] Such right "shall not extend to the waste or unreasonable use," unreasonable method of use, or unreasonable method of water diversion.[108] The Board is entitled to interpret these substantive standards through regulations and can delineate the bounds between reasonable use and unreasonable use and waste.

These three themes are crucial to this paper's overall discussion and provide an analytical framework. Prevailing conditions of water scarcity are intensifying, which has disrupted long-standing practices of water use and diversion.[109] Broadly, water scarcity results from the incompatibility of increasing demand for water amidst reduced supply due to climate change. However, beyond a natural phenomenon, allocating water scarcity is a policy decision. By treating water conservation as an "ever increasing need,"[110] scarce water resources may go towards conservation efforts at the expense of competing beneficial uses.[111] Therefore, determinations of what "general welfare," "beneficial use to the fullest extent possible," and "unreasonable use" mean invariably rest upon values and therefore possess a subjective dimension.[112] Accordingly, the future of water rights in California is a highly contested subject, and policymaking in this area will benefit from understanding the sources and implications of this conflict.

Finally, the reasonable use doctrine has a key limitation: the *Mojave* rule.[113] In *City of Barstow v. Mojave Water Agency*, the California Supreme Court held that when courts reform water rights based upon the reasonable use doctrine (i.e., Article X, Section 2), existing water rights priorities must be preserved "to the extent those priorities do not lead to unreasonable use."[114] In conclusion, while the reasonable use doctrine is a powerful basis for reforming water rights, when possible, it must be applied to maintain the status quo of California's water rights structure.

III. REFORMING VESTED WATER RIGHTS AT THE LEGISLATIVE LEVEL TO MAXIMIZE BENEFICIAL USES AND TO PROMOTE CONSERVATION

This part explores legislative solutions to restructure California's water rights system and the nature of vested water rights. Legislative fixes are suggested because the current statutory framework dates back to 1914 and is outdated in

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[107] CAL. CONST. art. X, § 2 (West 1976).

[108] *Id.*

[109] *See* Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 534 (Cal. Ct. App. 2020) (discussing California's historic 2012-2015 drought).

[110] Joslin v. Marin Municipal Water Dist., 429 P.2d 889, 894 (Cal. 1967).

[111] U.S. v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 170 (Cal. Ct. App. 1986).

[112] *See, e.g.*, Cal. Or. Power Co. v. Beaver Portland Cement Co., 295 U.S. 142, 157 (1935) ("[T]he western third of the United States . . . [is] impossible of agricultural use without artificial irrigation.").

[113] Russell M. McGlothlin & Jena Shoaf Acos, *The Golden Rule* of Water Management*, 9 GOLDEN GATE U. ENVT'L. L.J. 109, 112 (2015).

[114] City of Barstow v. Mojave Water Agency, 5 P.3d 853, 865 (Cal. 2000).

several respects. These reforms include adopting a regulated riparianism framework, allowing riparian storage to promote groundwater recharge, and subjecting pre-1914 appropriative rights to a permitting process. These amendments to California's water rights system would be hotly contested by senior appropriators and riparians. However, when viewed in light of other States' water law systems and California's acute water scarcity, subjecting riparian rights and pre-1914 appropriative rights to permitting are common-sense solutions. California is at a crossroads regarding the future of its water resources. Therefore, the State should act to minimize regulatory blind spots and exercise its authority to ensure that *all* surface water resources are put to reasonable use.

A. Restructuring California's Water Rights System and Reforming the Nature of Water Rights through Legislation

California's water rights system can be restructured through legislation that redefines the obligations and powers of riparian and appropriative rights. As discussed, the Water Commission Act of 1914 created a permitting system for the "appropriation of unappropriated waters."[115] This Act exempted pre-1914 appropriative rights and riparian rights from the permitting process. Here, the overall argument is that permits promote accountability, which therefore increases the Board's ability to identify unreasonable uses of water. Because water is scarce and is becoming increasingly scarce, the State should make a comprehensive effort to prevent waste. Accordingly, a permitting system for *all* water rights is the best method to ensure that if water is wasted, allocations shall be reduced to put excess water to beneficial use(s).

1. The Water Rights Permitting System in California

The permitting system is defended as a beneficial process that encourages the State's goal of putting its water resources to beneficial uses. Therefore, it is necessary to describe California's permitting process. Currently, permits are only required for post-1914 appropriative rights.[116] In contrast, the California Supreme Court has clearly held that the Board "has no permitting or licensing authority over riparian . . . rights, or over appropriative rights acquired before 1914."[117] Therefore, the proposed policy of requiring permits for *all* water rights in California exceeds the Board's authority and requires legislation.

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[115] State Water Res. Control Bd. Cases, 39 Cal. Rept. 3d 189, 245 (Cal. Ct. App. 2006) (*quoting* WELLS H. HUTCHINS, THE CALIFORNIA LAW OF WATER RIGHTS 95 (1956)).

[116] Cal. Farm Bureau Fed'n v. State Water Res. Control Bd., 247 P.3d 112, 118 (Cal. 2011).

[117] *Id.*

The Water Rights Division of the Board issues permits.[118] In issuing permits "the Board has two primary duties: (1) to determine if surplus water is available and (2) to protect the public interest."[119] Permits have terms that govern the right to take and use water.[120] If the permit terms are followed, the Board will issue the permit holder a license, which confirms the subject water right.[121]

Yet, the process for applying for an appropriative permit requires several steps, including filing an application, environmental review under the California Environmental Quality Act (CEQA), and public notice.[122] These steps, particularly environmental review under CEQA can be a lengthy process. However, CEQA review may not be relevant to permitting existing riparian and pre-1914 water rights, because these rights are already in effect. Reforming or denying the exercise of these rights without properly invoking the public trust doctrine or the reasonable use doctrine would likely constitute a Fifth Amendment taking. Therefore, the Legislature should bypass some of the application process requirements (e.g., CEQA review) if it subjects riparian and pre-1914 appropriative rights to a permitting system.

Obtaining and maintaining a permit also requires paying fees to the California Department of Tax and Fee Administration.[123] Having to pay for something recognized as free for over 100 years would certainly be a point of opposition. Also, there are numerous categories of fees, so depending on a party's activities, the applicable fees could pile up.[124] These fees can be costly, especially for major water rights holders. Many farmers have tight budgets and little margin for error, so the increased costs of being subjected to water rights permits could significantly affect the viability of farms, particularly small to mid-size family farms.

On the other hand, one could argue that the current fee structure is extremely favorable to farmers. For example, in 2020-2021, the annual permit and license fee is "$300 plus $0.090 per each acre-foot greater than 10 acre-feet."[125] This annual fee will be applied to Westlands Water District as an illustration. Under the Central Valley Project, Westlands has contractual rights to approximately one

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[118] U.S. v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 169 (Cal. Ct. App. 1986); Cal. Farm Bureau Fed. v. State Water Res. Control Bd., 247 P.3d 112, 118 (Cal. 2011).

[119] United States v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 170 (Cal. Ct. App. 1986).

[120] *Id*. at 169-170.

[121] *Id*. at 170.

[122] *The Water Rights Process*, CAL. WATER RES. CONTROL BD., (Aug. 20, 2020), https://www.waterboards.ca.gov/waterrights/board_info/water_rights_process.html#process.

[123] *SWRCB Water Rights Fiscal Year 2020-2021 Fee Schedule Summary*, CAL. WATER RES. CONTROL BD., https://www.waterboards.ca.gov/resources/fees/water_rights/docs/fy20-21_fee_schedule_summary.pdf (last visited Nov. 16, 2020).

[124] *See id*.

[125] *Id.*

million acre-feet of water annually[126] For perspective, the Central Valley Project has about twelve million acre-feet of storage.[127] Shasta Lake, the project's largest reservoir, has a storage capacity of 4.55 million acre-feet.[128] Thus, to maintain its right of approximately twenty percent of Shasta Lake's total *capacity*, Westlands would have to pay approximately $90,000 each year. $90,000 for a sizable chunk of the State's water resources is a bargain when Westlands serves Fresno County, which had farm receipts of nearly eight billion dollars in 2018.[129] Therefore, some arguments against expanding California's water rights permitting system based on cost are clearly unconvincing.

2. Reforming Riparian Rights

Riparian rights in California should be reformed in two ways. First, riparian rights should be subject to a "regulated riparianism" permitting system to promote accountability.[130] Second, riparian rights should be expanded in limited circumstances to promote groundwater recharge and to maximize beneficial uses.

California should adopt the "regulated riparianism" approach now prevalent in the eastern United States.[131] The overall trend in United States. water law has been moving towards a permitting system. This trend applies to the water-rich States east of the 100th meridian. "[M]any eastern states [are] abandoning classic riparian rights in favor of a new permit system that is based on riparian . . . principles."[132] This riparian reform is motivated by increasing water shortages and the impacts of climate change.[133] For example, in Virginia, regulated riparianism emerged to "deal with the uncertainties associated with common law riparian rights" and to protect "beneficial instream uses" through permits.[134] In 2011, an expert commentator stated that "regulated riparianism" had been adopted in approximately half of the States "once committed to traditional riparian rights . . . ."[135] By 2018, "[a]pproximately 20 states in the East ha[d] adopted some sort of permit system."[136]

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126 N. Coast Rivers All. v. Westlands Water Dist., 174 Cal. Rptr. 3d 229, 237 (Cal. Ct. App. 2014).

127 *Id*. at 238.

128 Pac. Coast Fed'n of Fishermen's Assn's v. Gutierrez, 606 F. Supp. 2d 1122, 1158 (E.D. Cal. 2008).

129 KAREN ROSS, CAL. DEP'T OF FOOD & AGRIC., CALIFORNIA AGRICULTURAL STATISTICS REVIEW 2018-2019 5, https://www.cdfa.ca.gov/statistics/PDFs/2018-2019AgReportnass.pdf (last visited Nov. 16, 2020).

130 *See* Joseph W. Dellapenna, *The Evolution of Riparianism in the United States*, 95 MARQ. L. REV. 53, 86-87 (2011).

131 *Id*. at 85-86.

132 *Id.*

133 *Id.* at 86.

134 Mattaponi Indian Tribe v. Virginia, 72 Va. Cir. 444, 453 (Va. Cir. Ct. 2007).

135 Dellapenna, *supra* note 130 at 86.

136 THOMPSON ET AL., *supra* note 45 at 140.

Regulated riparianism imposes an administrative permit system governed by riparian principles. Under a regulated riparian approach, the State or local government issues "time-limited permits" to riparian users that determine water rights for a period of reasonable use.[137] There are three advantages to such an approach. First, the reasonableness of the riparian uses is frequently evaluated due to the recurring cycle of permit expiration and renewal. Second, regulated riparianism systems promote the public interest by effectively converting water rights from a "common property system to a public property system . . . ."[138] This conversion mitigates the "tragedy of the commons" and provides greater accountability of a state's water resources.[139] Third, regulated riparian permits increase certainty among water rights holders.[140] Considering these benefits, California's acute water scarcity, and the State Water Resources Control Board's demonstrated capacity to regulate, regulated riparianism should be seriously considered in California.

In fact, California's courts have espoused policy decisions that comport with the thrust for regulated riparianism. For example, in *Forni* (1976) the California Court of Appeal emphasized:

> As we have repeatedly underscored, the overriding constitutional consideration is to put the water resources of the state to a reasonable use and make them available for the constantly increasing needs of all the people. In order to attain this objective, the riparian owners may properly be required to endure some inconvenience or to incur reasonable expenses.[141]

The *Forni* court did not contemplate a regulated riparianism approach, but its underlying policies may provide fertile ground for regulated riparianism reform.[142] *Forni* recognized the "increasing needs of *all* the people."[143] *Forni* also supported the policy that riparian rights must conform to the reasonable use doctrine, and that the reasonable use doctrine may justify "inconvenience" or "reasonable expenses."[144] Having to procure and pay for a permit is an inconvenience to and a reasonable expense for appropriators (according to the Board). Finally, since *Forni*, California's demand for water has expanded while its supply has diminished due to changed precipitation. Therefore, due to

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137 *Id.* at 85.

138 Dellapenna, *supra* note 130 at 86.

139 *See* Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1243-44 (1968).

140 Dellapenna, *supra* note 130 at 86.

141 People *ex rel.* State Water Res. Control Bd. v. Forni, 126 Cal. Rptr. 851, 856 (Cal. Ct. App. 1976).

142 However, it should be noted that the Forni court held that the State Water Resources Control Board's regulation did *not* impose a permit requirement on riparian users "as a precondition to the exercise of their riparian rights." *Id.* at 857.

143 *Id.* at 856 (emphasis added).

144 *Id.*

California's evolving challenges and needs, a regulated riparian approach is likely to only appear increasingly reasonable.

It does not make sense for California's riparian rights to have a lower level of accountability than those of most riparian States. As stated, California's riparian rights are an outlier in the west. California is the only Western State that did not abolish the creation of *new* riparian rights. Even Oregon and Washington, which are more water rich than California, limited the creation of new riparian rights. Regulated riparianism has been implemented successfully in several eastern states. There is also Regulated Riparian Model Water Code.[145] California and the State Water Resources Control Board should use their expertise to determine which form of regulated riparianism would best fit California's needs and water policy.

Second, riparians' rights to store water should be expanded in limited circumstances. Limiting riparians' storage right to thirty days is overly rigid, considering California's periodic water scarcity from May to November. However, in reforming riparian rights to allow storage, it would be crucial for the State *not* to create "super"[146] water rights. Riparian rights already have priority over appropriative rights in times of scarcity. Thus, it could make most sense for riparians to be at the bottom of the hierarchy when it comes to storage rights. In other words, riparians could store surface water *only after* appropriators have met their reasonable needs.

However, it must be noted that riparians are only entitled to the use of a watercourse's *natural flow*.[147] Consequently, riparians are barred from accessing the artificially high flows that occur during the summer months as a result of releasing water from dams such as Shasta Dam, Lake Oroville, and Friant Dam. Therefore, it could be argued that allowing riparian storage during the winter months when flows are at their highest and water demand is at its lowest, is relatively harmless—provided California is not suffering drought conditions.

Groundwater recharge is another possibility for allowing riparian storage. The Water Code could be amended to deem groundwater recharge by riparians a beneficial use. A regulated riparianism approach that creates time-limited groundwater recharge permits could strategically implement this policy. Such a policy would be logical in light of the Sustainable Groundwater Management Act (SGMA).[148] SGMA was passed in 2015 in response to extreme groundwater overdrafts during the 2012-2016 drought.[149] Because surface water was limited

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[145] *See* Am. Soc'y of Civil Eng'rs, The Regulated Riparian Model Water Code (Joseph W. Dellapenna ed., 1997).

[146] "Super" is the author's interpretation and is quoted for rhetorical effect.

[147] Boyd,., *supra* note 22 at 1; Lux v. Haggin, 10 P. 674, 757 (Cal. 1886).

[148] CAL. WATER CODE § 10720 (West 2015).

[149] Lynn M. Forsythe et al., *A Report Card: Progress Under California's Sustainable Groundwater Management Act*, 21 U. DEN. WATER L. REV. 199, 200, 203 (2018).

during the drought, farmers increasingly relied on groundwater and created "critically overdrafted groundwater basins."[150] The history of SGMA highlights the fact that many farmers rely on both surface and groundwater. In fact, on average approximately fifty percent of the water used in the Central Valley, California's most productive region, is groundwater.[151] Accordingly, promoting groundwater recharge is a high priority.[152] Therefore, allowing riparians to store surface water through groundwater recharge could be an ideal policy for managing California's water scarcity, maximizing beneficial uses, and ensuring compliance with SGMA.

3. Reforming Pre-1914 Appropriative Rights to Require Permits

To promote the policies of accountability and reasonable use, California should enact legislation that requires pre-1914 appropriative right holders to obtain permits. The Water Commission Act of 1914, which created a permitting system for California's "unappropriated waters," exempted pre-1914 appropriative rights.[153] Pre-1914 appropriative rights were exempted because they vested before the Water Commission Act became effective. However, regulating water rights falls within the scope of California's police powers. As stated in Article X, Section 2 of California's Constitution, "the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent [possible]."[154] Therefore, the Legislature has the authority to impose permitting requirements on pre-1914 appropriative rights.

California arguably has a *duty* to subject pre-1914 appropriative rights to a permit system under Article X, Section 2, which sets forth the reasonable use doctrine. How can the State honor Article X, Section 2 and "put [water resources] to beneficial use to the fullest extent of which they are capable" if a significant portion of its water resources escape routine oversight?[155] The Board has the authority to "prevent illegal diversions and to prevent waste or unreasonable use of water" under pre-1914 appropriative rights.[156] In fact, under California Water Code Section 275, the Board "*shall* take all appropriate . . . actions before executive, legislative, or judicial agencies to prevent waste [and] unreasonable use . . . of water in this state."[157]

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[150] *Id.* at 202 205.

[151] *Id.* at 201.

[152] CAL. WATER CODE § 10720.1(g) (West 2016) ("In enacting [SGMA], it is the intent of the Legislature to . . . increase groundwater storage and remove impediments to recharge.").

[153] State Water Res. Control Bd. Cases, 39 Cal. Rept. 3d 189, 243 (Cal. Ct. App. 2006) (*quoting* WELLS H. HUTCHINS, THE CALIFORNIA LAW OF WATER RIGHTS 95 (1956)).

[154] CAL. CONST. art. X, § 2 (West 1976).

[155] *Id.*

[156] Cal. Farm Bureau Fed. v. State Water Res. Control Bd., 247 P.3d 112, 118 (Cal. 2011).

[157] CAL. WATER CODE § 275 (West 1943) (emphasis added).

A permitting system would strengthen the Board's duty to prevent waste and unreasonable uses of water by overseeing pre-1914 rights and their uses. Without a permitting system, such rights are less visible to the State, which increases the likelihood that waste or unreasonable uses go undetected. Therefore, within the context of pre-1914 rights, the Board is currently limited to a piecemeal or an ad hoc approach to enforcing the reasonable use doctrine. Unless an obvious problem comes the State's way, the exercise of pre-1914 rights[158] that run afoul of the reasonable use doctrine are more likely to receive impunity without a permitting system. Obvious problems could include diversions that threaten an endangered species or highly visible public trust resources. In conclusion, pre-1914 rights should be subject to a permitting system to promote accountability and to provide the Board with increased ability to apply the reasonable use doctrine.

IV. REFORMING WATER RIGHTS AT THE ADMINISTRATIVE AND REGULATORY LEVEL THROUGH REGULATIONS

This part considers two approaches to reforming water rights at the administrative and regulatory level. The first approach is reforming water rights through regulations that impose more stringent interpretations of "reasonable" and "beneficial" use. The second approach is reforming water rights through Water Quality Control Plans and emergency regulations that establish minimum instream flow requirements.

A. Regulations that Impose Heightened Requirements of "Reasonable" and "Beneficial" Use under the Reasonable Use Doctrine

This subpart reviews the Board's authority to promulgate regulations to prevent unreasonable use. It then explores regulatory policies that incorporate technology-forcing standards regarding irrigation techniques. It is suggested that these policies could be enforced through the annual permit renewal process. Assuming pre-1914 and riparian rights remain exempt from the permitting process, a supplemental program would be required to monitor these water rights holders.

1. The Board has Regulatory Authority to Prevent Unreasonable Use of California's Water

As discussed, the reasonable use doctrine requires that the method of water use must be reasonable. The Board's authority to promulgate regulations to prevent unreasonable use of water has received long-standing recognition. Over fifty years ago, the *Forni* court upheld the Board's authority to issue regulations that identify "an unreasonable method of use within the meaning of the Constitution and the

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[158] *See* Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 516-17 (Cal. Ct. App. 2020).

Water Code."[159] The regulation held that diverting water from Napa River between March 15 and May 15 for frost protection was an unreasonable use and an unreasonable method of use.[160] The regulation was "motivated by a lack of adequate water to satisfy the [vineyard] frost protection of all users."[161]

Light further affirmed the Board's regulatory authority to administer the reasonable use doctrine.[162] In *Light*, the Board issued a regulation that provided "a diversion of water [from the Russian River for frost protection from March 15 through May 15] that is harmful to salmonoids is an unreasonable use of water if the diversion can be managed to avoid the harm."[163] Thus, the subject regulation in *Light* essentially took the regulatory template from *Forni* and infused it with the public trust doctrine and species protection as a beneficial use.[164] In fact, the *Light* court held that the Board has the authority to use the public trust as a substantive standard to determine whether a diversion of water is reasonable.[165] Therefore, *Light* illustrates that the Board's regulatory authority pursuant to the reasonable use doctrine has expanded alongside the evolving nature of the reasonable use and public trust doctrines.

2. The Board Should Impose Technology-Forcing Regulations to Improve Irrigation Efficiency and Prevent Waste

There is a great opportunity to promote conservation via technology-forcing regulations to improve irrigation efficiency. Accordingly, the trend towards expanding the Board's regulatory authority to ensure reasonable use should be extended through cutting-edge technical possibilities and programs. The underlying premise of such regulations would be: An outdated, inefficient method of use constitutes waste and is therefore unreasonable. This subpart attempts to provide templates for such regulations and seeks to mitigate issues that could cause inequities among smaller farmers. But first, it is argued that the Board sits at an opportune moment in history to enact such regulations.

The Board should impose technology-forcing regulations that define reasonable methods of use in irrigation for two reasons. First, California's increasing water scarcity establishes water conservation as an elevated matter of Statewide importance.[166] Therefore, more vigorous conservation efforts should be pursued to make agriculture more efficient. While irrigation techniques in

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159 People *ex rel.* State Water Res. Control Bd. v. Forni, 126 Cal. Rptr. 851, 858 (Cal. Ct. App. 1976).

160 *Id.* at 854 n.2.

161 Light v. State Water Res. Control Bd., 173 Cal. Rptr. 3d 200, 213-14 (Cal. Ct. App. 2014).

162 *Id.* at 213.

163 *Id.* at 214.

164 *Id.* at 217 n.11.

165 *Id.*

166 *See* Joslin v. Marin Municipal Water Dist., 429 P.2d 889, 895 (Cal. 1967).

California have become more efficient, the bar can and should be set much higher. Enforcing such heightened requirements would better equip the Board to prevent unreasonable uses and, therefore, satisfy its duties under Article X, Section 2 of California's Constitution.

Second, reasonableness is not static. Available technologies allow the reasonable use doctrine to be administered in new and more efficient ways. Improved technologies exist on both sides of the equation. Agricultural research and technologies prove that irrigation can be made significantly more efficient in California. On the regulatory side of the equation, the Board can utilize artificial intelligence (AI) and data analytics in conjunction with agricultural science to administer ambiguous programs. Implementing regulations that mandate improved irrigation efficiency are prudent because they will help farmers succeed with reduced supply, a reality farmers face.

Though not exhaustive of regulatory possibilities, three case studies may illustrate how technology-forcing standards could be implemented in the irrigation sector. First, the Board could promulgate a regulation that, based upon certain criteria, defines flood irrigation as an unreasonable method of use. The second regulatory possibility is to define reasonable methods of use in terms of irrigation scheduling. The third possibility is to mandate regulated deficit irrigation plans. Each of these policies, alone, would result in substantial water savings while maintaining agricultural yields. These policies would mitigate the devastating effects that climate change and water scarcity are projected to have on agriculture.

a. The Board Should Impose Technology Forcing Standards that Target the Biggest Water Users and Provide Greater Flexibility to Smaller Farmers to Avoid Inequities and Farm Closures.

In applying the proposed standards, discussed below, the State should adhere to its policy of targeting the biggest water users. The State recognizes that as agriculture uses approximately eighty percent of California's water, "even small improvements in agricultural water use efficiency can be significant."[167] As such, the State Legislature has prioritized achieving increased efficiency of water use among the biggest agricultural suppliers.[168] Senate Bill 7, codified in California Water Code Section 10608 *et seq*., provides: "Improvements in technology and management practices offer the potential for increasing water efficiency in California . . . providing an essential water management tool to meet the need for

[167] *Agricultural Water Use Efficiency*, CAL. DEP'T OF WATER RES., https://water.ca.gov/Programs/Water-Use-And-Efficiency/Agricultural-Water-Use-Efficiency (last visited Nov. 24, 2020).

[168] CAL. WATER CODE § 10853 (West 2011); *See* 2009 Cal. Legis. Serv. 7th Ex. Sess. Ch.4 (S.B. 7) (West).

water for urban, agricultural, and environmental uses."[169] Water Code Section 10608 further provides: "Growing population, climate change [along with economic and conservation factors] . . . make it essential that the state manage its resources as efficiently as possible."[170]

However, the requirements of Section 10608 are only *required* for suppliers providing water to at least 25,000 irrigated acres, "excluding recycled water . . . ."[171] Thus, the Legislature added a degree of flexibility to the mandate to "manage its [water] resources as efficiently as possible."[172] If the State interpreted this mandate literally, it would apply the technology-forcing standards of Code Section 10608 *et seq.* to *all* water suppliers that supply irrigated lands. But the State clearly chose to temper the impacts of its laws while achieving its goals by targeting the biggest water suppliers.

Water Code Section 10608 *et seq.*'s tempered approach, mindful of the financial and technical realities of small water suppliers, is endorsed and should be applied to the below regulations. But Code Section 10608 *et seq.* only applies to water suppliers and does not cover the ultimate water users. Therefore, an additional layer of regulation is needed. Yet, as stated, technology-forcing standards should be applied in a manner that (a) helps achieve California's water conservation goals and (b) is mindful of the unique challenges small and mid-size family farms with lower technical capacities face.

b. Technology-Forcing Regulations the Board Could Adopt to Increase Water Efficiency

i. Flood Irrigation Standards

The wastefulness of flood irrigation underscores the Board's need to pass regulations that impose standards for reasonable irrigation techniques. According to an extensive U.S. Geological Survey report from 2018, approximately forty-four percent of California's irrigated acreage was irrigated using surface (i.e., flood) irrigation in 2015.[173] The report further concluded that approximately thirty-eight percent of California's irrigated acreage was irrigated using micro-irrigation, a highly efficient form that includes drip irrigation.[174] Another study concluded forty percent of California's crops are grown using flood irrigation.[175]

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169 CAL. WATER CODE § 10608 (West 2010).

170 *Id.*

171 CAL. WATER CODE § 10853 (West 2011).

172 CAL. WATER CODE § 10608 (West 2010).

173 CHERYL A. DIETER ET AL., U.S. GEO. SURVEY, ESTIMATED USE OF WATER IN THE UNITED STATES IN 2015, 27 (2018), https://pubs.usgs.gov/circ/1441/circ1441.pdf.

174 *Id.*

175 Jessica Schroeder, *Maximizing the Benefit of Desalination in California*, 39 *ENVIRONS* L. & POL'Y J., 141, 159 (2016) (*citing* CHRISTIAN-SMITH ET AL., POTENTIAL WATER SAVINGS ASSOCIATED

Admittedly, these studies may not be completely accurate. There may have been significant changes in irrigation techniques since 2015. It is also difficult to accurately monitor a State as large as California. However, these studies clearly provide a reliable basis for concluding that flood irrigation continues to play a major role in Californian agriculture.

Yet, "studies have shown that agriculture water use [in California] could be reduced by about seventeen to twenty-two percent per year while maintaining productivity and total acreage irrigated [from changes] in consumptive use."[176] Water rights holders should be forced to abandon wasteful methods of use when more efficient alternatives are clearly available.

ii. Irrigation Scheduling Standards

Second, the Board could mandate irrigation scheduling to maximize beneficial agricultural uses.[177] The goal of irrigation scheduling is to use water most efficiently and beneficially, considering the individual crop and the particular conditions.[178] The California Irrigation Management Information System (CIMIS) provides California's recommendations regarding irrigation scheduling.[179] As of 2012, "approximately twenty percent of California farmers use CIMIS-based services and, on average, the use of CIMIS resulted in an eight percent yield increase and [a] thirteen percent reduction in water use."[180] Increasing yield while reducing water use highlights the ability of irrigation scheduling to maximize the beneficial use of water.

The Board could condition permits on adherence to an irrigation scheduling plan. The Board could provide that the relevant CIMIS-based standard is the default irrigation schedule, and that permit holders can follow a functionally equivalent schedule. By declaring that irrigation scheduling is an element of a reasonable method of use, the State would take water use into the twenty-first century. The State should leverage the readily available modeling techniques and state-of-the-art agricultural science to safeguard the future of its water resources. Since World War II, agriculture has become increasingly technological, with famers constantly on a technological treadmill. Therefore, there is no reason—apart from the equitable issues raised above—why farmers should not have to adapt to new technological requirements regarding their water use.

WITH AGRICULTURAL EFFICIENCY IMPROVEMENTS: A CASE STUDY OF CALIFORNIA, PAC. INST., 209 (2012)).

176 *Id.*

177 *Id.*

178 *Id.* at 160.

179 *Id.*

180 *Id.*

iii. Regulated Deficit Irrigation Standards

Third, the Board could infuse regulated deficit irrigation plans in each permit.[181] Regulated deficit irrigation ("RDI") saves water by "reducing irrigation during stress-tolerant stages of a crop's lifecycle . . . ."[182] The 2005 California Water Plan found applying RDI to tree crops and vineyards could "save 1 to 1.5 million acre-feet of water per year."[183] While implementing regulated deficit irrigation would require technology such as plant-based monitors to track plant stress, this technology barrier is probably not insurmountable. For example, the State could proliferate this technology and subsidize the adoption of this technology. The State could also seek Federal funding through the Farm Bill, for example.

There are advantages for the State to pioneer a regulated deficit irrigation scheduling program. For example, plant monitors could be connected to programs equipped with artificial intelligence ("AI") technology. Under this system, the monitor could trigger an automated communication to the farmer instructing the farmer what stage the crop is in and what its minimum water requirements are to maximize yield. The communication could also be relayed to the Board's database, and the continued data stream from the monitor could indicate whether the famer deviated from the regulated deficit irrigation program.

The State could then use an AI program and data analysts to quickly identify potential unreasonable uses and/or waste. This proposed policy may sound dystopic, particularly in contrast to the image of farmers being rugged folk connected with nature. However, the reality is that agriculture has subjected California's water resources to enormous stress. Water uses have continued at unsustainable rates for decades. Accordingly, the State should use all available tools at its disposal to protect the welfare of its citizens and their water resources. With AI shaping contemporary society, it is logical for the State to put this technology to beneficial use. Massive amounts of data can be instantly processed. The enforcement gap that has plagued environmental law could be closed.

3. The Board Could Utilize its Existing Authority or Issue New Regulations to Impose a Heightened Public Interest Standard Regarding "Beneficial" Use.

Within the context of climate change, California has decided that social benefit means more than profitability. For example, in 2002, California adopted its

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[181] *Id.*

[182] *Id.*

[183] *Id.* at 161.; *but see* CAL. DEPT. OF WATER RES., CALIFORNIA WATER PLAN UPDATE 2018 (2019), https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/California-Water-Plan/Docs/Update2018/Final/California-Water-Plan-Update-2018.pdf (The 2018 Plan Update does not mention regulated deficit irrigation).

Renewables Portfolio Standard ("RPS") Program, which forced public utilities to procure electricity from renewable energy resources.[184] The Legislature decided generating affordable and available electricity was no longer enough; California needed more renewable electricity.[185] California's RPS Program launched monumental strides. SB 100, codified in California Public Utility Code Section 454.53 ultimately requires that by 2045, renewable and zero-carbon energy resources must supply 100 percent of all retail sales of electricity in California.[186] Continuing California's climate change leadership, Governor Newsom signed Executive Order N-79-20, which sets a goal that "100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035."[187] Making a reliable and affordable car is not beneficial enough; California seeks to electrify its transportation sector. Thus, a heightened standard of public interest has reformed California's conception of beneficial uses. The State Water Resources Control Board could take advantage of this momentum.

The Board is already bound by public interest standards when deciding whether to grant permits to appropriate water.[188] As stated in California Water Code Section 1257:

> In acting upon applications to appropriate water, the board shall consider the relative benefit to be derived from (1) all beneficial uses of the water concerned . . . The board may subject such appropriations to terms and conditions as in its judgment will best develop, conserve, and utilize in the public interest, water sought to be diverted.[189]

Currently, the Board also has the authority to reform *any* water right if it is exercised in a manner that violates the reasonable use doctrine or the public trust doctrine. Therefore, while California Water Code Section 1257 only covers the Board's power to subject appropriative applicants to terms and conditions that will best utilize water in the public interest, the Board has more expansive powers. Based upon these expansive regulatory powers, Water Code Section 1257 could provide fertile ground for interpretive regulations.

The phrases, "the Board shall consider," and "[t]he Board may subject such appropriations to terms and conditions as in its best judgment," delegate interpretive power and afford discretion to the Board.[190] These provisions explicitly give the Board the power to determine beneficial uses in relation to the

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184 2002, Cal. Legis. Serv. Ch. 516 (S.B. 1078) (West).

185 *See id.*

186 CAL. PUB. UTIL. CODE § 454.53 (West Ann. 2019).

187 GOVERNOR GAVIN NEWSOM, EXECUTIVE ORDER N-79-20 (Sept. 2020), https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-climate.pdf.

188 Johnson Rancho County Water Dist. v. State Water Rights Bd., 45 Cal. Rptr. 589, 596 (Cal. Ct. App. 1965).

189 CAL WATER CODE § 1257 (West 1955).

190 *Id.*

public interest. Therefore, Water Code Section 1257 provides a basis for the Board to issue regulations that define beneficial use and the public interest.

Crafting a bright-line regulation regarding the public interest and beneficial uses is inadvisable. Both are fact-intensive concepts that apply differently in different situations. As such, it would be more advisable to formulate a broader policy that the courts and the Board could rely on when adjudicating cases or administrative matters. Two broad policies to protect the public interest at large may be: (1) profitability alone is insufficient to constitute a beneficial use; and (2) beneficial use should be measured, in part, by the extent to which benefits of a use are conferred on the people of California.

The first policy echoes California's stance on climate change: Within the context of climate change, California has decided that social benefit means more than profitability. As two commentators put it, "[c]limate change adaptation is all about water."[191] Therefore, the State may wish to give less deference to big agricultural water users, who consume eighty percent of California's "developed water supply."[192]

The second policy is essentially a significant-benefits factor to be considered in determining whether a use is beneficial. This policy is closely connected to the principle that profitability alone is not beneficial. For example, a 2016 UC Davis Study found that in 2011, California produced eighty-four percent of the world's almond production.[193] In 2020, the U.S. Department of Agriculture forecasted the United States to produce a record quantity of almonds, accounting for approximately 82% of global production. [194] California produces 100% of the United States' tree nuts and therefore 100% of its almonds.[195] Much of California's almonds are exported. In 2017, California exported $4.5 billion worth of almonds to foreign countries.[196]

As water belongs to the State of California and its water rights are usufructuary, water rights holders cannot sell their water to parties in other States or countries. However, through agriculture, farmers create an alienable form of property from their usufructuary rights. Therefore, from a life-cycle perspective, or a water footprint perspective, when farmers export almonds, they export the product of

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[191] Jesse Reiblich & Christine A. Klein, *Climate Change and Water Transfers* 41 PEP. L. REV. 439, 440 (2014).

[192] Jessica Schroeder, *Maximizing the Benefit of Desalination in California*, 39 *ENVIRONS* L. & POL'Y J., 141, 158-159 (2016).

[193] DANIEL GESSELER & WILLIAM R. HORWATH, UC DAVIS, ALMOND PRODUCTION IN CALIFORNIA 1 (2016), https://www.cdfa.ca.gov/is/ffldrs/frep/FertilizationGuidelines/pdf/Almond_Production_CA.pdf.

[194] U.S. DEPT. OF AG., TREE NUTS: WORLD MARKETS AND TRADE 1 (2021), https://apps.fas.usda.gov/psdonline/circulars/TreeNuts.pdf.

[195] CAL. DEPT. OF FOOD & AG., CALIFORNIA AGRICULTURAL EXPORTS 2017-2018, 110, https://www.cdfa.ca.gov/statistics/PDFs/2017-18AgExports.pdf (last visited Nov. 21, 2020).

[196] *Id.* at 105.

California's water resources. Thus, from a public interest perspective, how beneficial are those almond exports to the people of California at large? How beneficial are the taxes paid by the farmers compared to increased instream flows to benefit recreation and wildlife opportunities? Would other, more drought tolerant crops or lower yields be more beneficial?

Yet, the public interest at large should only be one factor in determining beneficial use. If it is the only factor, then private property would be susceptible to being taken for public use, which would violate the Fifth Amendment. Instead, the overall public interest is more appropriately considered in cases of water scarcity when dealing with very large water users. If the concept of beneficial use takes on a heightened public interest standard, it may be the case that the largest orchards have hundreds of trees that are not a beneficial use and are therefore unreasonable. Overall, property rights should be respected to the greatest extent possible, and *all* beneficial uses must be valued. However, California cannot escape the fact that there are limits to growth.[197]

B. Reforming Water Rights through Minimum Instream Flow Regulations

This section explores the ability of minimum instream flow regulations to reform or limit water rights. Instream flows are water flows that are simply left instream and allowed to run their natural course.[198] Instream flows are not diverted. The concept of instream flows is relatively new and is closely linked to the public trust doctrine and the Endangered Species Act.[199] Two types of instream flow regulations are explored: (1) instream flow requirements imposed through State Water Quality Plans pursuant to the Clean Water Act and (2) emergency Regulations that set minimum instream flows.

1. Minimum Instream Flows Set Through Water Quality Plans have the Potential to Permanently Reform or Regularly Limit the Exercise of Water Rights.

The Porter-Cologne Water Quality Control Act governs California's compliance with the effluent limitations standards of the Clean Water Act.[200] Thus, in California, the Porter-Cologne Water Quality Control Act is the controlling law regarding water quality standards.[201] The purpose of water quality

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197 *See* DONNELA H. MEADOWS ET AL., THE LIMITS TO GROWTH (1972).

198 *See* Paul R. Williams & Stephen J. McHugh, *Water Marketing and Instream Flows: The Next Step in Protecting California's Instream Values,* 9 STAN. ENV'T. L. J. 132, 133 (1990).

199 *See* Richard Ausness, *Water Rights, the Public Trust Doctrine, and the Protection of Instream Uses,* U. ILL. L. REV. 407, 409, 428 (1986); *See also* Scott W. Reed, *Fish Gotta Swim: Establishing Legal Rights to Instream Flows Through the Endangered Species Act and the Public Trust Doctrine,* 28 ID. L. REV. 645, 650-52 (1992).

200 *Id.*

201 City of Burbank v. State Water Res. Control Bd., 108 P.3d 862, 865 (2005).

control plans is to "ensure the reasonable protection of beneficial uses . . . ."[202] In *United States v. State Water Resources Control Board* (the Racanelli Decision), the notion that "[n]onconsumptive or 'instream uses,'" are beneficial uses to be protected by water quality plans gained traction.[203]

In the Racanelli Decision, the United States challenged the State Water Resources Control Board's 1978 water quality control plan for the Sacramento-San Joaquin Delta (1978 Bay-Delta Plan).[204] The 1978 Bay-Delta Plan established a water quality control plan to control salinity and to protect fish and wildlife in the San Francisco Bay Delta.[205] The Plan allocated water resources to "instream uses," or in other words, had minimum instream flow requirements.[206] These instream flow requirements sought to counterbalance the impact of water diversions from the Delta, which worsened salt water intrusion and harmed fish species.[207] Based upon these instream flow requirements, the Board "modified" the U.S. Bureau of Reclamation's right to divert water for the Central Valley Project.[208] The Racanelli court held that "the Board has the power and duty to provide water quality protection to fish and wildlife that make up the delicate ecosystem within the Delta."[209]

The Racanelli Decision created a major shift in the water rights landscape. As the court acknowledged, "while over 70 percent of [California's] stream flow lies north of Sacramento, nearly 80 percent of the demand for water supplies originates in the southern regions of the state."[210] The Delta is the "largest inland estuary in the Western Hemisphere,"[211] and is the focal point of the two major water projects in California.[212] Thus, if minimum instream flows for the Delta are set at high enough levels, California's water projects and the farms depending on such projects could be crippled. Currently, achieving optimal instream flows for wildlife and salinity control and achieving optimal quantities of water to maximize agricultural production seems impossible. Accordingly, setting minimum instream flows through water quality standards is highly controversial.

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202 CAL. WATER CODE § 13241 (West 1969).

203 U.S. v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 169-70 (Cal. Ct. App. 1986) (this case is commonly referred to as the "Racanelli Decision" because Racanelli was the presiding judge).

204 *Id.* at 165-66; *see also* STATE WATER RES. CONTROL BD., WATER QUALITY CONTROL PLAN SACRAMENTO-SAN JOAQUIN DELTA AND SUISUN MARSH (1978).

205 U.S. v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 166 (Cal. Ct. App. 1986).

206 *Id.* at 200.

207 *Id.* at 169-72.

208 *Id.* at 166.

209 *Id.*

210 *Id.*

211 Complaint at 37, para. 150, Ctr. for Biological Diversity v. U.S. Bureau of Reclamation, No. 20-CV-00706 (E.D. Cal. Feb. 15, 2021)..

212 United States v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 165 (Cal. Ct. App. 1986).

Since the Racanelli Decision, the Board has become more aggressive in its efforts to set minimum instream flows to protect fish populations and to safeguard the Delta from saltwater intrusion.[213] In 2018, the Board adopted its latest Amendment to the Bay-Delta Plan. The Plan establishes "unimpaired flow" requirements for the San Joaquin River's tributaries.[214] It seeks to maintain 40% unimpaired flows, "with an allowed adaptive range between 30% -- 50%" for the Stanislaus, Tuolumne, and Merced Rivers between February through June.[215] These minimum flows are set to achieve "water quality objectives for fish and wildlife beneficial uses."[216]

The 2018 Amendment states that the Board's measures to implement the plan will include regulating "existing water rights [and] regulatory measures to protect water quality."[217] The Board further states that implementation of the Bay-Delta plan can "be fully accomplished only if the Board assigns some measure of responsibility to water rights holders and water users to mitigate for the effects on the designated beneficial uses of their diversions and use of water."[218] Thus, by explicitly mentioning "water rights holders" and "water users" the Board indicates that the Bay-Delta Plan applies to all surface water users in California.

On the other hand, the Bureau of Reclamation charged ahead without regard for the Bay-Delta Plan. On February 28, 2020, the Bureau of Reclamation converted fourteen Central Valley Project contracts "into permanent water service contracts."[219] The effect of these conversions is that Reclamation has, subject to availability, promised to deliver specified quantities of water on a permanent basis.[220] The Center for Biological Diversity challenged Reclamation's conversions and based its complaint on a NEPA violation for failing to prepare an Environmental Assessment or an Environmental Impact Statement. But the Center for Biological Diversity focused on the impact such conversions would have upon the Delta through reduced flows.[221] In conclusion, the State Water Resources Control Board and the Bureau of Reclamation have taken opposing

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[213] Outside of the Delta, the Board has exercised its regulatory authority to establish periodic instream flow requirements for particular watercourses. *See, e.g.*, Light v. State Water Res. Control Bd., 173 Cal. Rptr. 3d 200, 208-09 (Cal. Ct. App. 2014) (Regulation 862 set instream flow requirements for the Russian River annually from March 15 to May 15 to protect salmonid populations.).

[214] CAL WATER RES. CONTROL BD., BAY-DELTA PLAN 12 (2018), https://www.waterboards.ca.gov/plans_policies/docs/2018wqcp.pdf.

[215] *Id.* at 26.

[216] *Id.* at 10.

[217] CAL WATER RES. CONTROL BD., WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY/SACRAMENTO-SAN JOAQUIN DELTA ESTUARY(2018).

[218] *Id.* at 3.

[219] Complaint at 37, para. 150, Ctr. for Biological Diversity v. U.S. Bureau of Reclamation, No. 20-CV-00706 (E.D. Cal. Feb. 15, 2021).

[220] *Id.* at 39, para. 159.

[221] *Id.* at 36, para.148.

standpoints. If the Board thwarts Reclamation's conversion of these contracts using the 2018 Bay-Delta Plan and the Racanelli Decision, another landmark decision on instream flows may follow.

2. Emergency Instream Flow Regulations

Under Water Code Section 1058.5, the Board can promulgate emergency instream flow regulations, which are temporary regulations in response to drought conditions.[222] The Board can adopt such regulations (1) in response to critically dry conditions or (2) pursuant to the Governor's declaration of a state of emergency during critically dry years.[223] The Board can adopt minimum instream flow regulations without a declared state of emergency "in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years."[224]

Water Code Section 1058.5 reflects California's response to the 2011-2016 drought. In March 2014, Governor Brown signed Senate Bill No. 104, emergency legislation designed "to expedite drought relief."[225] The Bill amended California Water Code Section 1058.5 to allow the Board to promulgate emergency regulations during critically dry years. As amended, Section 1058.5 gives the Board power to pass emergency regulations subject to Article X, Section 2 to "promote water recycling or water conservation, to require curtailment of diversions when water is not available under the diverter's priority of right, or in furtherance of any of the foregoing, to require reporting of diversion or use or the preparation of monitoring reports."[226] Thus, as alluded to in Water Code Section 1058.5(a)(1), the Board's foundational legal authority for issuing emergency regulations is the reasonable use doctrine.[227]

In *Stanford Vina*, the California Court of Appeal held that the reasonable use doctrine and the public trust doctrine justified the Board's emergency regulations concerning three creeks in Tehama County.[228] Shortly following Senate Bill No. 104's enactment, the Board issued Regulation Code Section 887, "Emergency Curtailment Where Insufficient Flows are Available to Protect Fish in Certain Watersheds."[229] Section 877 established minimum instream flow requirements for Deer, Mill, and Antelope Creeks in Tehama County. The regulation "authorized the Board to issue curtailment orders" upon finding that minimum flow standards

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222 CAL. WATER CODE § 1058.5 (West 2020); Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 518 (Cal. Ct. App. 2020).

223 CAL. WATER CODE § 1058.5(a)(2) (West 2020).

224 *Id.*

225 Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 520 (Cal. Ct. App. 2020).

226 CAL. WATER CODE § 1058.5(a)(1) (West 2020).

227 *See id*.

228 *Stanford Vina Ranch Irrigation Co*., 264 Cal. Rptr. 3d at 518, 522, 530.

229 CAL. CODE REGS. tit. 23, § 877 (Barclays 2015) (repealed).

could not likely be achieved without curtailment.[230] The Board issued curtailment orders, which prevented Stanford Vina Ranch Irrigation Company from exercising its riparian and pre-1914 appropriative rights.[231] Stanford Vina, possessing an adjudicated right to use approximately two-thirds of Deer Creek's flow, challenged the constitutionality of the Board's regulations.[232]

The Court of Appeal rejected Stanford Vina's Fifth Amendment takings claim.[233] The *Stanford Vina* court held that the emergency flow requirements were a "valid exercise of the Board's legislative authority to regulate the reasonable use of water."[234] Therefore, the curtailment orders did not constitute a taking of private property for public use without just compensation because "Stanford Vina did not have a vested right to the unreasonable use of water."[235]

From a water right holder's perspective, the Court of Appeal's holding in *Stanford Vina*

casts a foreboding shadow. *Stanford Vina* shows how tightly the doctrine of reasonable use can contract in times of extreme scarcity. *Stanford Vina* sharpened the bite of *Light*'s holding that "[w]hat is a beneficial use at one time may, because of changed conditions, become a waste of water at a later time."[236] While the 2011-2016 drought was the most severe since California started recordkeeping in 1895, severe droughts are expected to occur more frequently in California due to climate change.[237] In fact, the current drought may eclipse the 2011-2016 drought. 2021 is the "third driest year on record" in California.[238] As of August 2021, 95% of the state experiencing severe drought, 88% is experiencing extreme drought, and 49% is in exceptional drought.[239]

Considering these projections and existing conditions, Water Code section 1058.5's regulatory trigger of a critically dry year preceded by at least two below-normal years might be easily met.[240] For example, Governor Newsom's State of

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230 *Stanford Vina Ranch Irrigation Co*., 264 Cal. Rptr. at 518, 524, 530.

231 *Id.* at 531.

232 *Id.* at 521.

233 *Id.* at 522.

234 *Id.* at 518, 532.

235 *Id.* at 522.

236 *Id.* at 523 (quoting Light v. State Water Resources Control Bd., 173 Cal. Rptr. 3d 200, 211 (Cal. Ct. App. 2014)), (*quoting* Tulare Irr. Dist. v. Lindsay-Strathmore Irr. Dist., 45 P.2d 972, 1007 (Cal. 1935)).

237 *Id.* at 517; *see* VALERIE MASSON-DELMOTTE, ET AL., *Climate Change and Land*, IPPC, 17 (January 2020), https://www.ipcc.ch/site/assets/uploads/sites/4/2020/02/SPM_Updated-Jan20.pdf ("Frequency and intensity of droughts has increased in some regions (including the Mediterranean . . . .").

238 CAL. DEPT. OF WATER RES., *Lake Oroville Community Update* (Apr. 02, 2021), https://water.ca.gov/News/Blog/2021/April/Oroville-Update-4-2-21.

239 NAT. OCEANIC & ATMOSPHERIC ADMIN., NAT. INTEGRATED DROUGHT INFO. SYS., *Current U.S. Drought Monitor Conditions for California*, https://www.drought.gov/states/california (last visited Aug. 21, 2021).)

240 CAL. WATER CODE §1058.5(a)(2) (West 2020).

Emergency Proclamation for the Russian River stated "California is in a second consecutive year of dry conditions."[241] If the current drought continues, Water Code Section 1058.5's trigger will be satisfied in 2022. But California's drought is so severe emergency curtailments were adopted in the Delta, California's largest watershed, in 2021.[242] Therefore, emergency instream flow regulations and curtailment orders could frequently limit water rights if emergency or critically dry conditions become the new norm, which appears to be happening.

Another aspect of emergency instream flow regulations is that they can take effect immediately. For example, in 2014 Governor Brown "suspended" the Board's duties under the California Environmental Quality Act (CEQA) to immediately mitigate the adverse effects of the drought on species of concern.[243] Therefore, the Board can adopt temporary regulations without going through the typical processes of notice and comment rulemaking. Of course, emergencies often require immediate action, so CEQA exemptions are needed. But the flipside of this practical necessity is that the ability to exercise one's water right can change overnight. Therefore, a consequence of emergency regulations' dynamism is that the status of water rights and water availability are even more precarious in California.

The *Stanford Vina* plaintiffs have appealed to the California Supreme Court. Thus, the status of the Board's authority to issue emergency instream flow may not be fully settled. However, it must be emphasized that the relevant standard in *Stanford Vina* is the "arbitrary and capricious standard," which gives the Board "deference by the judiciary."[244] Therefore, if the California Supreme Court hears *Stanford Vina*, the plaintiffs bear a high burden. Based upon this high burden and the power of the reasonable use and public trust doctrines, it is forecasted that emergency instream regulations will remain a viable option to limit vested water rights in California.

CONCLUSION

This paper surveyed the reasonable use and public trust doctrines as sources of law for reforming water rights within California's dual system. Of the two doctrines, the reasonable use doctrine, enshrined in Article X, Section 2 of California's Constitution provides a clearer mandate for reforming water rights.

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[241] Gov. Gavin Newsom, State of Emergency Proclamation, (Apr. 21, 2021), https://www.gov.ca.gov/wp-content/uploads/2021/04/4.21.21-Drought-Proclamation.pdf.

[242] STATE OF CALIFORNIA, OFFICE OF ADMINISTRATIVE LAW, NOTICE OF APPROVAL OF EMERGENCY REGULATORY ACTION (Aug. 19, 2021), https://www.waterboards.ca.gov/drought/delta/docs/deltareg_oal_approval.pdf; Delta Stewardship Council Cases, 262 Cal. Rptr. 3d 445, 457 (Cal. Ct. App. 2020) ("The Delta is the terminus for the Delta watershed, which is California's largest watershed, spanning more than 45,000 square miles (30 million acres)).")

[243] Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 517 (Cal. Ct. App. 2020).

[244] *Id. at* 524, 531.

In contrast, the public trust doctrine is an uncodified background principle of property law derived from ancient common law. Accordingly, the public trust doctrine provides less solid footing for legislation and regulations. But both doctrines apply to all of California's water rights, notably (pre-1914) appropriative and riparian rights. The doctrines also often pop up in the same cases and might be conceptualized as two sides of the same coin. For example, if a diversion uses enough of a creek's flow to impair the public trust values of fishing, recreation, and wildlife, such diversion would likely be an unreasonable use per *Vina Stanford*.[245]

Moreover, *National Audubon*'s landmark public trust holding may be a key source of the reasonable use doctrine's recent expansion in the context of minimum instream flows.[246] While the Board issued the 1978 Bay-Delta plan before *National Audubon*,[247] the Racanelli Decision relied upon *National Audubon* to uphold the Board's decision to establish water quality standards to protect the Delta.[248] Therefore, while distinct doctrines, the public trust doctrine and the reasonable use doctrine are highly interconnected and have evolved into powerful sources for reforming water rights alongside one another.

Overall, this paper has sought to spark discussion and imaginative policies regarding the future of water rights in California. Given increasing water scarcity due to climate change, policy values (e.g., instream flow requirements), and increasing demand, water rights are under enormous pressure in California. Changes in the available supply demand changes on the use side of the equation. Given the Legislature's support for emergency regulatory authority and the Board's willingness to use that authority, a business-as-usual approach is not viable for farmers. Adaptation is required, so farmers can put diminished water supplies to the highest beneficial uses.

Thus, the policy ideas presented via legislative and administrative/regulatory approaches to reforming California's water rights are intended to explore the need for adaptation and change. Some of these changes, such as subjecting pre-1914 appropriative rights to a permit system, or promulgating regulations defining "reasonable methods of use," would be highly unpopular and might have no chance of enactment. However, these reforms were explored because, politics and lobbying aside, there are clear, objective, and logical ways to make water use more efficient in California.

California may be at a crucial moment in history, a moment that requires an updated and amended water rights system. One crucial moment came in 1914,

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[245] *See* Stanford Vina Ranch Irrigation Co. v. State, 264 Cal. Rptr. 3d 509, 531 (Cal. Ct. App. 2020) ("'[To hold] diversions [that] reduce flows below "belly-scaping" amounts necessary for fish migrations and survivability would be "unreasonable"' was not arbitrary . . . .").

[246] *See* Nat'l Audubon Soc'y v. Sup. Court, 658 P.2d 709, 728 (Cal. 1983).

[247] *Id.* at 709.

[248] U.S. v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 171, 166 (Cal. Ct. App. 1986).

when California adopted a permitting system for new appropriative rights to bring order to its water rights system.[249] Another moment came in 1928, when California added the reasonable use doctrine to its Constitution in an attempt to prevent riparians from using water unreasonably.[250] Today, we have impending water scarcity, massive disparities in water use between users, and an agricultural sector that uses eighty percent of the State's water. Contrast these facts with our twenty-first century regulatory and technological capacities. The question begs itself: Why don't we make something better?

[249] State Water Res. Control Bd. Cases, 39 Cal. Rptr. 3d 189, 243 (Cal. Ct. App. 2006) (quoting WELLS H. HUTCHINS, THE CALIFORNIA LAW OF WATER RIGHTS 95 (1956)).

[250] U.S. v. State Water Res. Control Bd., 227 Cal. Rptr. 161, 170-71 (Cal. Ct. App. 1986) (discussing Article X, Section 2's enactment in response to *Herminghaus*.).