
**TRIBAL STRATEGIES FOR PROTECTING AND
PRESERVING GROUNDWATER**

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I. INTRODUCTION

A. *Overview of the Issues*

The protection of Indian water rights, in particular tribal rights to groundwater, has taken on increased urgency as the American West enters successive years of drought in what appears to be a trend towards long-term climate change with its broader implications.¹ As states struggle to control and conserve their reserves of groundwater from depletion in drought conditions, tribal rights to groundwater are moving to the forefront of efforts to protect Indian water rights. California, which is experiencing “exceptional drought” conditions in most areas of the state, is the last of the western states to pass legislation regulating groundwater.² In California’s arid environment, with its multiple

1. See U.S. Global Change Research Program, *Climate Change and the American People*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT 1 (Jerry Melillo et al. eds., 2014) [hereinafter CLIMATE CHANGE IMPACTS IN THE UNITED STATES]. This Assessment is issued by a team of 300 experts and guided by a 60-member advisory committee.

2. *California*, U.S. DROUGHT MONITOR, <http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?CA> (last visited Dec. 16, 2014); see George Skelton, *The Cup’s Half Full Without Groundwater Regulation*, L.A. TIMES, Aug. 17,

and diverse demands by multiple private and municipal water users, the potential threat to tribal groundwater rights cannot be ignored.³ The urgency of the situation is compounded by an increasing state population and the resulting expansion in recent decades of urban areas to the edges of Indian reservations, with accelerated demands being placed on local and shared groundwater sources.⁴ In this water-scarce and high-demand environment, protection of essential and valuable tribal rights to groundwater cannot be assured without confirming the actual extent of the tribal water right through quantification or other means.⁵ The specific concerns raised in this article are not unique to California; however, California provides an extreme example because of the current drought and the large clusters of Indian reservations in Southern California dependent on groundwater for their sole or primary source of water.⁶

2014, at 2, *available at* LEXIS. California is the only western state without an enforceable set of statewide groundwater management standards. On August 29, 2014, the last day of the 2013–2014 session, the California Legislature passed three interrelated bills (together and hereinafter the “Sustainable Groundwater Management Act”): S.B. 1168, A.B. 1739, and S.B. 1319, which were signed into law by the Governor on September 16, 2014. Act of Sept. 16, 2014, chs. 346–47, 2014 Cal. Legis. Serv. (West) (to be codified in scattered sections of CAL. WATER CODE); Act of Oct. 7, 2013, ch. 623, 2013 Cal. Stat. 93 (to be codified at WATER § 10321). The purpose of this Act is to generally require local agencies located within high and medium priority basins to establish groundwater sustainability agencies to adopt management plans that provide for the sustainable management of groundwater. Press Release, Office of Governor Edmund G. Brown, Jr., Governor Brown Signs Historic Groundwater Legislation (Sept. 16, 2014), *available at* <http://gov.ca.gov/news.php?id=18701>.

3. See T.M. Bull Bennett et al., U.S. Global Change Research Program, *Chapter 12: Indigenous Peoples, Lands, and Resources*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES, *supra* note 1, at 298; Gregg Garfin et al., U.S. Global Change Research Program, *Chapter 20: Southwest*, in CLIMATE CHANGE IMPACTS IN THE UNITED STATES, *supra* note 1, at 463.

4. Bennett et al., *supra* note 3, at 283.

5. See *id.* at 304 (“Potential impacts to treaty rights and water resources exist, such as a reduction of groundwater and drinking water availability and water quality decline, including impacts from oil and natural gas extraction and sea level rise-induced saltwater intrusion into coastal freshwater aquifers New datasets on climate impacts on water in many locations throughout Indian Country, such as the need to quantify available water and aquifer monitoring, will be important for improved adaptive planning.”).

6. See REG’L WATER MGMT. GRP. & REG’L ADVISORY COMM., 2013 SAN DIEGO INTEGRATED REGIONAL WATER MANAGEMENT PLAN 4-1 (2013) (discussing San Diego tribes’ various water needs, sources, and management strategies). There are thirty-

Just as in situations of off-reservation diversion of surface waters that are sources of tribal water rights, off-reservation pumping and recharge of groundwater from basins underlying or adjacent to reservations can threaten the continued, sustained yield of these water sources to satisfy the purposes of the reservation. It is the intent of this article to focus on the development of strategic approaches to preserve the exercise of tribal rights to groundwater and to protect tribal access to usable groundwater under federal and state law in the absence of, and as an alternative to, a general stream or basin adjudication.

A preliminary step towards that protection is to determine the extent of a tribe's groundwater rights. In California, most of the Indian water rights, including rights to groundwater, remain unquantified.⁷ Until these rights are quantified, they remain vulnerable to the competing water needs of local governments and private entities. Unless tribes assess for themselves their current and potential future demand for water and determine how this demand correlates to their rights to water under federal and state laws, their ability to protect these rights from encroachment by other water users will be severely compromised. This is especially so in a state like California that does not regulate groundwater pumping and in which groundwater supplies over half of the water in dry years.⁸ The development of effective strategies for the

two federally recognized tribes in the Southern California counties of San Diego, San Bernardino, and Riverside, which include the major metropolitan areas of Los Angeles and San Diego. *See* Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs, 79 Fed. Reg. 4748-02 (Jan. 29, 2014).

7. ADVISORY COUNCIL ON CAL. INDIAN POLICY, FINAL REPORTS & RECOMMENDATIONS TO THE CONGRESS OF THE UNITED STATES: EXECUTIVE SUMMARY 42 (1997) (stating that the preliminary step to quantification of water resources "had not been taken for most tribes in California"); *see also* Letter from Stephen V. Quesenberry to Michael Connor (Oct. 26, 2000) (on file with the author) (Michael Connor is now Deputy Secretary of the Department of Interior).

8. Sections (1)(a)(2) and (5) of S.B. 1168 state the California Legislature's findings that "[g]roundwater accounts for more than one-third of the water used by Californians in an average year and more than one-half of the water used by Californians in a drought year when other sources are unavailable" and that "[f]ailure to manage groundwater to prevent long-term overdraft infringes on groundwater rights." Sustainable Groundwater Management Act, ch. 346, 2014 Cal. Legis. Serv. (uncodified legislative findings); *see also* Kevin Fagan, *As Farmland Subsidies, Water Worries Mount*, S.F. CHRON., July 26, 2014, available at 2014 WLNR 20512810; Opinion, *Pass Law to Regulate Diminishing California Groundwater*, S.F.

protection of tribal rights to groundwater, therefore, will involve the investigation and quantification of tribal water rights through comprehensive studies.⁹ It will also involve the development of tribal groundwater management plans and water codes and an understanding of the mechanisms available under state law to protect these rights.

These efforts must consider the interplay between federal and state water law governing tribal rights to groundwater, the role of evolving state water policy, the ways tribes can use their own authority to manage and protect groundwater resources, and the relationships between tribes and competing water users. Within the broader discussion of strategies are the tribes' ongoing efforts to confirm their federally reserved water rights through litigation or settlement, and to protect the quality of their water by applying federal law, establishing tribal groundwater management plans, using state law protections, and enacting tribal ordinances. Furthermore, notwithstanding the protections afforded by state common law to certain rights to groundwater, these protections are not part of a regulatory regime and do not have the broad scope that are part of the federally reserved water right in terms of priority date, purposes, and the inclusion of both present and future uses consistent with the purposes of the reservation.

Finally, there is an overriding factor that will play an increasing role in the groundwater discussion, and that is the specter of climate change with its long-term implications for tribal water supply and water quality¹⁰—in other words, “scarcity,” and in some

CHRON., July 26, 2014, *available at* 2014 WLNR 20502680.

9. See, e.g., Gale Courey Toensing, *BIA Head Kevin Washburn Speaks to ICTMN About Bay Mills and the Need to Resolve Water Rights*, INDIAN COUNTRY TODAY MEDIA NETWORK (Nov. 17, 2014), <http://indiancountrytodaymedianetwork.com/2014/11/17/bia-head-kevin-washburn-speaks-ictmn-about-bay-mills-and-need-resolve-water-rights-157867> (“One of the best things we can do to help tribes, Western Tribes primarily—is to quantify their water rights so that they can use them and/or market them.” (quoting Interior Assistant Secretary of Indian Affairs Kevin Washburn)).

10. A new study, which is the first to quantify the amount that groundwater contributes to the water needs of western states, found more than seventy-five percent of the water loss in the drought-stricken Colorado River Basin since late 2004 came from underground resources. See STEPHANIE L. CASTLE ET AL., GROUNDWATER DEPLETION DURING DROUGHT THREATENS FUTURE WATER SECURITY OF THE COLORADO RIVER BASIN 5904 (2014). The study used data from NASA's Gravity Recovery and Climate Experiment (GRACE) satellite mission to track changes in the mass of the Colorado River Basin and found that the extent of

cases “extreme scarcity.” Though it is beyond the scope of this article to delve into its effects, climate change implicates an increasingly competitive, water-scarce environment in which it is urgent to secure tribal groundwater rights and protect groundwater sources serving tribes.

B. Getting Started: The Critical Questions

For many tribes, awareness of water rights issues has been triggered by situations that acutely demonstrate their dependence on water sources and rights taken for granted in the past, but never quantified. Examples of these include: (1) the limitation or complete preclusion of tribal economic development initiatives for lack of a sustained supply of groundwater, (2) contamination of groundwater used by the tribe for generations as a source of drinking water and for other domestic uses, (3) surface water streams that once flowed year round that are now intermittent or primarily dry during the late spring and summer months, and (4) reservation wells that have dried up or require re-drilling to greater depth because of the declining water table. These examples illustrate the tribes’ increasing dependence on groundwater and the range of potential impacts that tribes may suffer when increasing competition and demand for clean water is combined with natural or human-induced scarcity.

Tribes that are newly entering the groundwater rights fray must prepare themselves by addressing fundamental technical and legal questions regarding the nature and scope of their rights, the actual or potential impacts on these rights, and the identity and interests of competing water users. Some tribes have already initiated the inquiry and are well on their way to a resolution of the issues.¹¹ Other tribes have gradually and selectively addressed their

groundwater loss may pose a greater threat to the water supply of the western United States than previously thought. *Id.* at 5905. The Colorado River is the only major river in the southwestern United States and its basin supplies water to about forty million people in seven states, including parts of Southern California, as well as irrigating roughly four million acres of farmland. *Id.*; *Colorado River Basin—Protecting the Flows*, AMERICANRIVERS.ORG, <http://www.americanrivers.org/initiative/water-supply/projects/colorado-river-basin-protecting-the-flows/> (last visited Dec. 9, 2014).

11. See, e.g., Joanna (Joey) Meldrum, *Reservation and Quantification of Indian Groundwater Rights in California*, 19 HASTINGS W.-N.W. J. ENVTL. L. & POL’Y 277, 282 n.28 (2013) (discussing the Santa Ynez Band).

water needs as issues arose and as funding permitted.¹² The awareness of still other tribes, perhaps the vast majority, has been triggered by witnessing first-hand the water demands created by population growth and density near tribal lands, urbanization of formerly rural or agricultural areas, increasing dependence on groundwater for irrigation of their own or their neighbors' agricultural land, and climate change. All of these tribes have gradually come to realize that the best way to protect their rights to groundwater is to actively engage in the management and use of the groundwater. This engagement is supported by the authority of tribal, federal, and state laws protecting their rights to groundwater.

The initial steps tribes must take to achieve this goal will be determined by the information developed in response to the following critical questions:

- (1) What are the sources, including location, of groundwater used by the tribe? Are those sources being threatened—in quantity or quality—by excessive pumping (depletion) or other actions by competing users? How much is potentially available, and what is the tribe's current and projected need for groundwater?¹³
- (2) What are the tribal rights to groundwater under federal and state laws, and what are the groundwater claims or rights of competing users?¹⁴
- (3) What are some immediate and long-term strategies a tribe can use to protect its groundwater rights short of or in preparation for litigation, and to protect and manage its groundwater?¹⁵

The first point of inquiry involves technical investigative studies and assessments to identify and evaluate (1) tribal

12. The Round Valley Indian Tribes have been engaged in a decades-long struggle to redress the negative effects of hydropower dams on their water and fishing rights in the Eel River. *See, e.g.*, *Pac. Gas & Elec. Co.*, 106 FERC ¶ 61,065, 61,224 n.163 (2004). Funding received through the Bureau of Indian Affairs Water Resources Program enabled the tribe to complete a comprehensive water resources inventory of the Round Valley Indian Reservation. *Id.* at 61,224. The information obtained through the investigation also enabled the tribe to more effectively participate, in both technical and legal capacities, in the Potter Valley Project license amendment proceedings. *See id.* at 61,224.

13. *See infra* Part II.

14. *See infra* Part III.

15. *See infra* Part IV.

groundwater sources, including the hydrological connection between groundwater and surface streams, (2) the tribe's current and projected future uses and demand for groundwater, and (3) the effects on these water sources and uses of groundwater pumping or recharge (both on and off reservation).¹⁶ The information developed through these assessments and studies will provide the factual context and support for development of the tribe's legal position in response to the second point of inquiry. The information and analysis provided through the first two points of inquiry will be integral components of strategies developed under the third point of inquiry to assert and protect a tribe's groundwater and its rights to that groundwater.¹⁷ Issues most often arise in politically charged environments where multiple parties are asserting rights of ownership or use in a common or shared water resource. Therefore, there is a need for effective communication and cooperation in creating solutions that may involve compromises to achieve mutually agreeable goals with shared benefits and burdens.

II. DEVELOPMENT OF THE TECHNICAL AND FACTUAL BASIS FOR PROTECTION AND QUANTIFICATION OF TRIBAL GROUNDWATER RIGHTS THROUGH WATERSHED ASSESSMENTS, SOURCE WATER ASSESSMENTS, AND WATER BUDGETS

Strategic decisions for any purpose should not be made in a vacuum. There is always a context of known or discoverable information (technical or otherwise) that, if documented and evaluated in conjunction with the underlying interests, will provide the basis for informed decision-making. This is certainly the case in the area of water rights and, therefore, the development of the following information is critical.

As a first step, a tribe will need to conduct assessments and studies that address the questions set out in the first point of inquiry introduced above. This baseline information will be crucial in quantifying a tribe's groundwater rights and assessing the effectiveness of strategies for protection and management of the tribe's groundwater to meet the needs of future generations.¹⁸

16. See *infra* Part II.

17. See *infra* Part IV.

18. GLENN TOTTEN, WATER EDUC. FOUND., PROTECTING DRINKING WATER: A WORKBOOK FOR TRIBES § III (2000) (providing helpful and practical guidelines for

Depending upon the availability of existing data, groundwater studies and assessments can be difficult and expensive to prepare, and they may take years to fully complete. There are, however, federal and often state grant programs, including programs administered by the Environmental Protection Agency (EPA)¹⁹ and the Bureau of Indian Affairs,²⁰ which can fund groundwater assessments. Tribes should consider the requirements of these potential funding sources as they design their studies and assessments.

A water assessment is a useful starting point to getting a handle on how much water is available, who is using or affecting the water, water quality, and what it will take to maintain or improve that quality. This is valuable information to both the tribe and the general public. For example, the Tule River Tribe recently concluded an assessment of its water resources associated with the Tule River Indian Water Rights Settlement. The Tribe compiled and analyzed studies that had been developed to provide a technical foundation for the construction of a dam, reservoir, and other water infrastructure on the reservation. This information formed the foundation for an assessment of the tribe's ability to access groundwater resources.²¹ The report was comprehensive in that it examined the tribe's current and future needs for drinking water, domestic use, indoor and outdoor demand, commercial use, municipal use, fire prevention, industrial uses, mining, and agriculture.²²

To support an effort to quantify a tribe's groundwater rights, or if there are concerns about the stability of the tribal groundwater supply or its possible depletion, a tribe may also want to prepare a "water budget" that quantifies all major inflows, outflows, water levels, and storage changes.²³ The water budget

tribes undertaking a groundwater assessment).

19. See, e.g., *Grants for State Water Programs*, EPA, <http://www.epa.gov/region5/water/stpb/grants.htm> (last visited Dec. 13, 2014); *Tribal Water Protection*, EPA, <http://www.epa.gov/region9/water/tribal/tribal-sdwa.html> (last visited Dec. 8, 2014).

20. See, e.g., *Branch of Water Resources*, U.S. DEP'T INTERIOR, <http://www.bia.gov/WhoWeAre/BIA/OTS/NaturalResources/Water/> (last visited Dec. 13, 2014).

21. TULE RIVER INDIAN TRIBE, WATER SETTLEMENT TECHNICAL REPORT 3-1 to -10, 5-1 to -15 (2013).

22. *Id.* at 3-3 to -10.

23. The state has defined water budget as "an accounting of the total

could include, for example, a comprehensive well inventory; groundwater level data; location, rate, and amount of groundwater extractions; meteorological measurements such as precipitation; and evapotranspiration rates.²⁴

Tribes should also be willing to approach and work with state or local governments or water authorities to ensure that tribal needs are included in any wider assessments of basins or sub-basins. For example, California's Sustainable Groundwater Management Act will require many local agencies overlying medium-priority and high-priority basins (as identified by the state's Department of Water Resources) to establish groundwater sustainability management agencies (which may be designated from existing agencies or created anew) and to prepare and implement groundwater sustainability plans by 2020.²⁵ Such plans must include, among other things, much of the information that would be in a groundwater assessment, and these agencies must consider the interests of all beneficial uses and users of groundwater,

groundwater and surface water entering and leaving a basin including the changes in the amount of water stored." Sustainable Groundwater Management Act, ch. 346, § 10721, 2014 Cal. Legis. Serv. (West) (to be codified at CAL. WATER CODE § 10721). For example, California recommended in 2003 that the groundwater management plans prepared by local or regional agencies include a water budget with such information. See CAL. DEP'T OF WATER RES., CALIFORNIA'S GROUND WATER: BULLETIN 118, at 8 (2003) [hereinafter BULLETIN 118].

24. See BULLETIN 118, *supra* note 23, at 95–96, for a discussion of what may be in a groundwater budget and the value of such a document. Water budgets can take many forms, from being general assessments of resources to those prepared for specific projects. See, e.g., Deborah L. Hathaway, *Preliminary Report on Groundwater Assessment for the Flathead Indian Reservation*, CONFEDERATED SALISH & KOOTENAI TRIBES (May 26, 2010), http://www.cskt.org/tr/docs/waterrights_negotiation_publicmeetingslides-May2010.pdf; see also SARAH BEESLEY & ROCCO FIORI, GEOMORPHIC AND HYDROLOGIC ASSESSMENT AND RESTORATION PLANNING IN THE SALT CREEK WATERSHED, LOWER KLAMATH RIVER SUB-BASIN, CALIFORNIA 17 (2007) (explaining how the Yurok Tribe prepared a water budget to help guide the restoration of a fishery on its lands).

25. See Sustainable Groundwater Management Act, ch. 346, § 3 (to be codified at WATER § 10722.4(d)) (requiring a groundwater sustainability agency be designated/established and a groundwater management plan be adopted); *id.* (to be codified at WATER § 10723) (describing the structure and responsibilities of the agencies); see also *id.* (to be codified at WATER § 10723.6) (describing how to designate a groundwater sustainability agency); *id.* (to be codified at WATER § 10723.2) (requiring that the agencies must consider the interests of California Indian tribes, among others).

including Indian tribes and the federal government.²⁶ Thus, tribes in California must be afforded an opportunity to submit evidence regarding their needs and interests to these local agencies, and as discussed below in Part IV, this law also provides tribes an opportunity to develop and implement groundwater sustainability management plans.

The water assessment can also be useful in identifying what a tribe *does not know*, especially those factors to be addressed going forward. For example, the Karuk Tribe's recent water quality assessment discussed the need to eventually create a groundwater quality management program, while focusing on the tribe's immediate need to map groundwater resources and collect data on water quality.²⁷ The report then identified the tribe's ten highest priorities in creating a groundwater assessment program.²⁸ Thus, regardless of the current stage of tribal regulation or management of groundwater, a comprehensive assessment will enable the tribe to determine the best strategy to assert and protect its water rights.

III. THE INTERACTION OF STATE WATER RIGHTS AND FEDERALLY RESERVED WATER RIGHTS

Development of strategic approaches to groundwater protection requires an understanding of the legal framework surrounding groundwater rights and the scope of tribal groundwater rights protection under tribal, federal, and state law. A tribe's response to situations of groundwater depletion, recharge, or contamination by competing water users also requires an understanding of the asserted groundwater rights of these users.

26. See WATER § 10723.2 (West, Westlaw through Res. Ch. 1 of 2013–2014 2nd Ex. Sess.). A groundwater sustainability plan must include, among other things, a description of the physical setting and characteristics of the aquifer, available historical data, groundwater levels, groundwater quality, subsidence, groundwater-surface water interaction, and a general discussion of historical and projected water demands and supplies. *Id.*

27. KARUK TRIBE OF CAL., WATER QUALITY ASSESSMENT REPORT: CLEAN WATER ACT SECTION 305(B) REPORTING § 3.1 (2001).

28. *Id.* § 4.2 tbl.4-1. The Tribe still primarily monitors surface water, as evidenced by the lack of groundwater data in its annual water quality assessments. KARUK TRIBE, WATER QUALITY ASSESSMENT REPORT: KLAMATH RIVER, SALMON RIVER, SCOTT RIVER, SHASTA RIVER, AND CAMP CREEK 12 (2013).

A. *California's Bifurcated Surface Water Rights and Correlative Groundwater Rights System*

Most water rights are managed according to one of two state-defined systems: the riparian doctrine or the prior appropriation doctrine, but California employs a blend of both systems. The riparian doctrine is based on English common law²⁹ and allows a landowner adjacent to a natural stream or body of water to use that water for any purpose, including diversion.³⁰ The riparian system is used in most eastern states, but in California only a “share” of the surface water flowing past the property is available for use by the adjacent landowner, and that water is restricted from being dammed or contained.³¹ In the western United States, the appropriative use or “prior appropriation” doctrine controls.³² The prior appropriation doctrine arose, appropriately enough, in California and grew out of the mid-19th century gold rush.³³ The early case, *Irwin v. Phillips*,³⁴ held that a person who put water to a beneficial use first has the right to use that water over those who seek to use it at a later time.³⁵ The prior appropriation doctrine is therefore a more controlled system compared to the free-for-all riparian system.³⁶ In prior appropriation, the water rights do not

29. See *Lux v. Haggin*, 10 P. 674, 746–48 (Cal. 1886) (acknowledging that California statute had adopted the common law riparian doctrine of England); T.E. Lauer, *The Common Law Background of the Riparian Doctrine*, 28 MO. L. REV. 60, 60–62 (1963). But see Joseph W. Dellapenna, *The Evolution of Riparianism in the United States*, 95 MARQ. L. REV. 53, 56–57 (2011) (disputing English common law origins).

30. See Lauer, *supra* note 29, at 60–61.

31. See William R. Attwater & James Markle, *Overview of California Water Rights and Water Quality Law*, 19 PAC. L.J. 957, 970–71 (1988).

32. See Joseph W. Dellapenna, *Riparian Rights in the West*, 43 OKLA. L. REV. 51, 52, 54 n.12 (1990). See generally 1 LINDA A. MALONE, ENVIRONMENTAL REGULATION OF LAND USE § 8:3 (2014) (describing the prior appropriation doctrine in detail).

33. Clifford W. Schulz & Gregory S. Weber, *Changing Judicial Attitudes Towards Property Rights in California Water Resources: From Vested Rights to Utilitarian Reallocation*, 19 PAC. L.J. 1031, 1046–48 (1988).

34. 5 Cal. 140 (1855).

35. *Id.* at 147 (“[H]owever much the policy of the State . . . has conferred the privilege to work the mines, it has equally conferred the right to divert the streams from their natural channels, and as these two rights stand upon an equal footing, when they conflict, they must be decided by the fact of priority upon the maxim of equity, *qui prior est in tempore potior est injure*.”).

36. See 1 MALONE, *supra* note 32, § 8:3.

attach to a particular piece of land, but, as the Supreme Court describes them:

[O]ne acquires a right to water by diverting it from its natural source and applying it to some beneficial use. Continued beneficial use of the water is required in order to maintain the right. In periods of shortage, priority among confirmed rights is determined according to the date of initial diversion.³⁷

In short, the prior appropriation doctrine is a “first in time, first in right” system.³⁸ The “date of initial diversion” is referred to as the “priority date,” and the older the date, the closer a user is to the “front of the line.” If there is not enough water for all users, the rights of junior water rights holders are restricted until the rights of senior holders have been satisfied.³⁹

California employs a dual surface water rights system that is a blend of the above systems. It recognizes the primacy of landowners’ “share” of riparian rights, but blends those riparian rights with rights allocated based on prior appropriation.⁴⁰ Generally, the state attempts to allocate riparian use equally among all users in times of shortage, as state law holds that riparian rights run with the land and therefore have no priority date.⁴¹ However,

37. *Colo. River Water Conservation Dist. v. United States*, 424 U.S. 800, 805 (1976).

38. *See* Schulz & Weber, *supra* note 33, at 1048.

39. *See* 62 CAL. JUR. 3D *Water* § 422 (2014). *See generally* Judith V. Royster, *Winters in the East: Tribal Reserved Rights to Water in Riparian States*, 25 WM. & MARY ENVTL. L. & POL’Y REV. 169, 184 (2000).

40. California water rights also include Pueblo water rights, grounded in the Treaty of Guadalupe Hidalgo between the United States and Mexico, which give users the right to use surface and groundwater in and under their lands; prescriptive rights, which for California are adversely possessed water rights pre-dating the 1914 creation of the State Water Control Board; and federally reserved rights, which are discussed *infra* Part III.D. For a discussion of Pueblo water rights, see *Cartwright v. Pub. Serv. Co. of N.M.*, 343 P.2d 654, 659 (N.M. 1958) (discussing origins in the Treaty of Guadalupe Hidalgo), *overruled on other grounds by State ex rel. Martinez v. City of Las Vegas*, 2004-NM-009, 133 N.M. 375, 89 P.3d 47 (overruling the doctrine from New Mexico law); 62 CAL. JUR. 3D, *supra* note 39, § 421 (discussing the nature of Pueblo water rights in California). For a discussion of prescriptive rights, see CAL. WATER CODE § 1006 (West, Westlaw through Res. Ch. 1 of 2013–2014 2nd Ex. Sess.) (stating that the Water Commission Act of 1914 does not affect rights acquired before that date). *See also* Attwater & Markle, *supra* note 31, at 979, 983–84.

41. *See* CAL. JUR. 3D, *supra* note 39. Any diversions of water from streams or

this system is based on self-reporting of water use,⁴² so the efficacy of the state's attempts to limit all riparian users in the time of shortage is questionable. The state is more "hands on" with appropriative rights, and has instituted a permitting system and regulatory mechanism to ensure that junior users do not usurp the rights of senior holders.⁴³

While surface water is subject to regulation, groundwater is a different story. Although the system of allocating groundwater in California nominally follows the same riparian/prior appropriation system described above (called "correlative rights" since the riparian and prior appropriation rights co-relate to one another),⁴⁴

riparian (which must be used for the adjacent parcel only) must be reported to the State Water Resources Control Board. WATER §§ 5100–5108 (Westlaw). Generally, exercised riparian rights retain priority over all appropriative rights in California, and come first before any appropriative rights are satisfied. *See Light v. State Water Resources Control Board*, 226 Cal. App. 4th 1463, 1478 ("Under the 'rule of priority,' which governs diversion [when the supply of water is inadequate to satisfy the needs of all water rights holders], the rights of riparian users are paramount. 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. As a result, appropriators may be deprived of all use of water when the supply is short."), *rev. denied*, No. 5220256, 2014 Cal. LEXIS 8008 (Oct. 1, 2014). However, the California Supreme Court has held that, in the context of statutory stream adjudications involving all users, unexercised riparian rights may be subordinated to previously granted appropriative rights and to appropriative rights granted after the decree but prior to the riparian owner's exercise of the right through application to the State Water Resources Control Board. *See, e.g., In re Water of Hallett Creek Stream Sys.*, 44 Cal. 3d 448, 470–72 (1988); *In re Waters of Long Valley Creek Sys.*, 25 Cal. 3d 339, 358–59 (1979). State courts of appeal have noted that subordination of riparian rights may only occur under statutory adjudication, not in the context of private adjudication. *Pleasant Valley Canal Co. v. Borrer*, 61 Cal. App. 4th 742, 783–84 (1998) (regarding riparian surface water); *Wright v. Goleta Water Dist.*, 174 Cal. App. 3d 74, 88–89 (1985) (regarding overlying groundwater rights).

42. *See* WATER § 5101 (Westlaw).

43. The state of California requires water rights holders to participate in a permitting process, which delineates the water rights each permittee holds, including the amount of water able to be used and the permit's priority date. WATER §§ 1200–1491 (Westlaw). *See generally The Water Rights Process*, CAL. ENVTL. PROT. AGENCY, http://www.waterboards.ca.gov/waterrights/board_info/water_rights_process.shtml (last visited Dec. 9, 2014). The state's water code imposes significant scrutiny on permittees who hold priority dates after 1914—the date the State Water Control Board began regulation.

44. Wells A. Hutchins, *Trends in the Statutory Law of Ground Water in the Western States*, 34 TEX. L. REV. 157, 163 (1955).

there has been no functional state regulation of groundwater—a situation unique to California. Courts have found that groundwater is subject to the “reasonable use” standard that prohibits waste⁴⁵—a tenet enshrined in California’s Constitution and statutes.⁴⁶ Groundwater rights have not been regulated on a statewide basis but have been regulated on a piecemeal basis by local water districts and adjudications,⁴⁷ though this may change when new locally produced groundwater sustainability plans required by the Sustainable Groundwater Management Act are implemented by local agencies (or if they fail to draft a plan by statutory deadlines, state-drafted plans).⁴⁸ While non-overlying users could gain appropriative rights to groundwater, they will be subordinated to overlying landowners using wells.

Under California law, the overlying landowner has a higher priority than parties enjoying an appropriative groundwater right, which applies to use of water from a basin other than one underlying the lands on which the water is used.⁴⁹ However, as the California Supreme Court has explained, “overlying water rights are usufructuary only, and while conferring the legal right to use the water that is superior to all other users, confer no right of

45. Schulz & Weber, *supra* note 33, at 1044–45, 1061–63.

46. See CAL. CONST. art. 10, § 2 (West, Westlaw 2013); see also WATER § 100 (Westlaw); Peabody v. City of Vallejo, 40 P.2d 486, 487 (Cal. 1935); CRAIG M. WILSON, THE REASONABLE USE DOCTRINE & AGRICULTURAL WATER USE EFFICIENCY (2011).

47. California has many adjudicated groundwater basins, which are governed by mutual or court-sanctioned agreements to allocate groundwater rights, monitor and limit usage, and maintain quality. There are twenty-two adjudicated groundwater basins in California, all but one of which is located in Southern California. See CAL. DEP’T OF WATER RES., ADJUDICATED GROUNDWATER BASINS (2011).

48. See BULLETIN 118, *supra* note 23, at 32 (discussing the history of groundwater management in California and the previous absence of state regulation). The Sustainable Groundwater Management Act creates a new system of groundwater management, but devolves the authority for regulation to local communities under groundwater sustainability agencies and their plans, which are created for each groundwater basin. See Sustainable Groundwater Management Act, ch. 346, § 3, 2014 Cal. Legis. Serv. (West) (to be codified at WATER § 10720.1) (“In enacting this part, it is the intent of the Legislature to provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater.”).

49. ASS’N CAL. WATER AGENCIES, SUSTAINABILITY FROM THE GROUND UP: GROUNDWATER MANAGEMENT IN CALIFORNIA 13 (2011).

private ownership in public waters.”⁵⁰ Thus, groundwater rights under California law carry no specific property right in the corpus of the water itself.⁵¹

As discussed above, in the face of the current drought and increasing reliance on groundwater sources to meet consumptive uses, the California Legislature passed the Sustainable Groundwater Management Act, which will require all groundwater basins designated as high or medium priority basins by the Department of Water Resources subject to critical conditions of overdraft to be managed under a groundwater sustainability plan or coordinated groundwater sustainability plans by January 31, 2020. The deadline is extended to 2022 for all other high and medium priority basins except as specified.⁵² The new law also grants groundwater sustainability agencies specific authorities including, but not limited to, the ability to: require the registration of groundwater extraction facility, require that a groundwater extraction facility be equipped with a water-measuring device, regulate groundwater pumping, and impose certain charges.⁵³ If the State Water Resources Control Board finds that a local agency or groundwater sustainability agency has not taken certain required actions by specified deadlines, or if the management plan is found

50. *City of Barstow v. Mojave Water Agency*, 23 Cal. 4th 1224, 1237 n.7 (2000); *Cent. & W. Basin Water Replenishment Dist. v. S. Cal. Water Co.*, 109 Cal. App. 4th 891, 905 (2003) (“[T]here is no private ownership of groundwater.”).

51. *Big Rock Mut. Water Co. v. Valyermo Ranch Co.*, 78 Cal. App. 266, 275 (1926); Harold A. Ranquist, *The Winters Doctrine and How It Grew: Federal Reservation of Rights to the Use of Water*, 1975 BYU L. REV. 639, 673 (1975) (stating that federally reserved water rights are property rights to the resource itself and, as such, cannot be lost from non-use and can be marketed with the approval of Congress); *see* 25 U.S.C. § 177 (2012).

52. *See* Sustainable Groundwater Management Act, ch. 346, § 10720.7 (to be codified at WATER § 10720.7). The new law defines “sustainable groundwater management” to mean the management of a groundwater basin to provide for multiple long-term benefits without resulting in or aggravating conditions that cause significant economic, social, or environmental impacts such as long-term overdraft, land subsidence, ecosystem degradation, depletions from surface water bodies, and water quality degradation, in order to protect the resource for present and future generations. *See also* S. COMM. ON NATURAL RES. & WATER, BILL ANALYSIS: AB 1739 (2014), *available at* http://www.leginfo.ca.gov/pub/13-14/bill/asm/ab_1701-1750/ab_1739_cfa_20140825_212135_sen_floor.html.

53. *See generally* Sustainable Groundwater Management Act, ch. 346 (to be codified in scattered sections of CAL. WATER CODE).

to be inadequate, the Board may designate a basin as a probationary basin and may adopt an interim plan for that basin.⁵⁴

Tribes, however, as sovereign governments with jurisdiction over their lands and, in many cases, possessing federally reserved water rights, stand in a unique position with regard to the state's proposed regulation of groundwater. Any attempt by the state to regulate the tribes' use of groundwater would have to take into account tribal regulatory jurisdiction and the federal nature of the reserved rights.⁵⁵ While this could be beneficial for tribes, it would also be a potential source of conflict between the tribes and the state. Next, this article will discuss the federally reserved water right and its application (or sometimes non-application) to groundwater.

B. *The Winters Doctrine*

Questions regarding the federal nature of Indian water rights are tied directly to the United States' Indian policies of the middle to late 19th century, which evolved from treaty-making, the creation of reservations, and attempts to force Indians into agricultural lifestyles.⁵⁶ The reservations, as tribal homelands, were ostensibly meant to be productive—to provide tribes with their own resources and means of subsistence, for which water was a necessity.⁵⁷ Conflicts over water rights came to a head in the early 20th century Supreme Court case of *Winters v. United States*, which has come to define the nature and scope of Indian water rights.⁵⁸

54. See WATER §§ 10735.2, 10735.8 (West, Westlaw through Res. Ch. 1 of 2013–2014 2nd Ex. Sess.). S.B. 1319 amended the California Water Code to include sections 10735.2 and 10735.8 to, *inter alia*, identify actions necessary to correct a condition of long-term overdraft or a condition where groundwater extractions result in significant depletions of interconnected surface waters, including recommendations for appropriate action by any person.

55. For example, the new groundwater law in California amends the water code to clarify that federally reserved water rights to groundwater must be respected in full in the adjudication or management of groundwater by a groundwater sustainability agency or by the State Water Resources Control Board; in the case of a conflict between federal and state law in such adjudication or management, federal law shall prevail. See WATER § 10720.3(d) (Westlaw).

56. For more discussion of the historical and legal context of Indian policy that underlays water rights decisions, see Robert T. Anderson, *Indian Water Rights, Practical Reasoning, and Negotiated Settlements*, 98 CAL. L. REV. 1133, 1137–38 (2010).

57. Judith Royster, *Indian Tribal Rights to Groundwater*, 15 KAN. J.L. & PUB. POL'Y 489, 497 (2006).

58. *Winters v. United States*, 207 U.S. 564 (1908).

In the *Winters* case, the United States brought suit against companies on lands near the Fort Belknap Reservation in Montana for damming and diverting the waters of the Milk River,⁵⁹ which formed one boundary of the reservation.⁶⁰ The diversion prevented water from flowing along the tribes' lands.⁶¹ The United States argued that the parties' conception of the reservation's purpose must be fulfilled, stating that river water was necessary "to train, encourage, and accustom large numbers of Indians residing upon the said reservation to habits of industry and to promote their civilization and improvement."⁶² Despite the companies' arguments that not allowing them to divert the water would prevent them from irrigating their own land, that their rights had been perfected under state law,⁶³ and that the tribes' right to water was extinguished upon Montana statehood,⁶⁴ the Court held in favor of the United States and the tribes. The Court rejected the companies' arguments and found that the tribes had not forfeited the water rights that made the "area of their occupation" valuable.⁶⁵ The Court further found that the reserved rights attached to the land when the federal government created the reservation, giving rise to the "priority date" of federally reserved rights coinciding with the creation dates of reservations.⁶⁶ Importantly, the Court also held that since the tribes' rights were federally reserved, they were paramount to rights later perfected under state law.⁶⁷ Thus, as federal rights, the reserved rights were not subject to state law requirements of use or forfeiture, and thus could not be lost or diminished if not put to a "useful" purpose.⁶⁸ The victory of the United States in *Winters* gave rise to the principle that when the federal government set aside land for tribes, it also impliedly reserved water rights for the benefit of the tribes—a principle now called the *Winters* doctrine.⁶⁹

59. *Id.* at 567.

60. *Id.* at 565–66.

61. *Id.* at 567.

62. *Id.* at 566–67.

63. *Id.* at 569–70.

64. *Id.* at 568.

65. *Id.* at 576.

66. *Id.* at 576–77.

67. *Id.*

68. *United States v. Adair*, 723 F.2d 1394, 1410–11 (9th Cir. 1983) (citing 1 R. CLARK, *WATERS AND WATER LAW* § 55.2, at 578–81 (1967)).

69. For a full discussion of the *Winters* case background, see THE FUTURE OF

The *Winters* doctrine was further refined with respect to the scope of the reserved right in later cases, most notably *Arizona v. California (Arizona I)*.⁷⁰ *Arizona I* concerned the allocation of the waters of the Colorado River among the states using it, although the United States stepped in on behalf of a number of tribes (and also to assert water rights for other federally reserved lands).⁷¹ The Court followed the *Winters* doctrine, holding that the reservations were “not limited to land, but included waters as well.”⁷² The Court noted that most of the reservation lands were arid and that “[i]f the water necessary to sustain life is to be had, it must come from the Colorado River or its tributaries.”⁷³ Both Congress and the President, when establishing the reservations, were aware that “water from the river would be essential to the life of the Indian people and to the animals they hunted and the crops they raised.”⁷⁴ Thus, as in *Winters*, the Court relied on the creation date of the reservation to be the priority date for those rights.⁷⁵

Another important aspect of *Arizona I* was its adoption of a quantification method for water rights: “practicably irrigable acreage” (PIA).⁷⁶ Recognizing that one of the purposes of a reservation was for agrarian use, the Court approved a special master’s decree quantifying the right under PIA, a standard should be based on the tribes’ showing that “the land is capable of

INDIAN AND FEDERAL RESERVED WATER RIGHTS: THE *WINTERS* CENTENNIAL (Barbara Cosens & Judith V. Rosyter eds., 2012). See also COHEN’S HANDBOOK OF FEDERAL INDIAN LAW § 19.02 (Nell Jessup Newton, ed., 2012), available at LEXIS. Cohen’s Handbook explains that *Winters*, coupled with a case handed down three years prior, *United States v. Winans*, stands for federally reserved rights for all water uses. *Id.* (citing *United States v. Winans*, 198 U.S. 371 (1905) (providing that, to effectuate certain treaty rights with regards to traditional fishing places, some rights were reserved by tribes by implication and necessity and were not subordinated to state laws when the traditional fishing lands became part of a new state)).

70. *Arizona v. California (Arizona I)*, 373 U.S. 546 (1963).

71. *Id.* at 595. The tribes include those living on the Chemehuevi, Colorado River, Fort Mojave, Cocopah, and Fort Yuma Reservations. *Id.* at 595 n.97. The United States’ claims were also brought on behalf of water interests for “National Forests, Recreational and Wildlife Areas and other government lands and works.” *Id.* at 595.

72. *Id.* at 598.

73. *Id.*

74. *Id.* at 598–99.

75. *Id.* at 600.

76. *Id.* at 600–01.

sustained irrigation based on arability and engineering feasibility, and that it is capable of irrigation at a reasonable cost.”⁷⁷ The standard is workable for tribes with larger, arable land bases, but will likely produce too little water for tribes with small land bases, or those tribes that rely primarily on commercial or industrial uses, rather than agriculture, for development.⁷⁸ However, it is not mandatory that the PIA standard be used; when there is minimal or no quantified agricultural water use, a court may use a different standard to quantify the amount of water needed for domestic use.⁷⁹

Later decisions have addressed both the quantification method of the *Winters* right and the determination of the “primary purposes” for which the reservations were established. The focus on the determination of “primary purposes” may work against tribes, as courts have held that the *Winters* rights do *not* apply to secondary purposes.⁸⁰ However, Congress’ vision of a gradual “civilizing” process for the Indians implies a flexibility of purpose,⁸¹ and there may be more than one primary purpose.⁸² Tribes have attempted to broaden the concept of primary purpose—and thus the quantity of water reserved under *Winters*—by asserting the primary purpose of

77. *Id.*; see *State ex rel. Martinez v. Lewis*, 861 P.2d 235, 247 (N.M. Ct. App. 1993); see also *In re Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys.*, 753 P.2d 76, 101 (Wyo. 1988), *aff’d sub nom.*, *Wyoming v. United States*, 492 U.S. 406 (1989); COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 19.03[5][b].

78. *Cf. Lewis*, 861 P.2d at 246–51 (finding that the Mescalero Apache Tribe was limited to a diversion of 2322.4 acre-feet of water, despite having a reservation of more than 463,000 acres and the tribe’s insistence it was due 17,750.4 acre-feet, due to the fact it could not meet the reasonable cost factor of the PIA standard: irrigation of land was not economically feasible); *New Mexico v. Mescalero Apache Tribe*, 462 U.S. 324, 326 (1983).

79. See, e.g., *United States v. Wash. Dep’t of Ecology*, No. 2:01 CV 00047Z, 2005 WL 1244797 (W.D. Wash. May 20, 2005). In this case, the court rejected arguments that the Lummi Tribe was limited to quantification of their federally reserved rights under the PIA standard alone, and found that “domestic” use was also a primary purpose of the tribe’s reservation, thus calling for a broader quantification of the water rights in question. *Id.* at *11–12.

80. *United States v. New Mexico*, 438 U.S. 696, 702 (1978); *United States v. Adair*, 723 F.2d 1394, 1408–09 (9th Cir. 1983); *Colville Confederated Tribes v. Walton (Walton II)*, 647 F.2d 42, 47 (9th Cir. 1981).

81. *Walton II*, 647 F.2d at 47 n.9.

82. *Adair*, 723 F.2d at 1410.

a reservation is to create a permanent homeland for a tribe.⁸³ This approach, which incorporates domestic, agricultural, community, commercial, and industrial uses, has been met with mixed success.⁸⁴

C. *Reserved Rights and Groundwater*

The *Winters* and *Arizona I* cases dealt with rights to surface water in rivers and streams, but did not expressly deal with access to groundwater. However, in an increasingly drought-stricken West, groundwater is quickly replacing surface water for agricultural and domestic uses, and, in some instances, may be the only viable source of water for a tribe and its communities. As a result of these climatic changes and increasing demands, groundwater levels are receding beyond historic lows.⁸⁵ Notwithstanding this, tribes who rely on groundwater to satisfy their reserved water right have had considerable success in translating the *Winters* surface water right doctrine to the sphere of groundwater.

83. *In re* Gen. Adjudication of All Rights to Use Water in Gila River Sys. & Source (*Gila River V*), 35 P.3d 68, 74 (Ariz. 2001).

84. *Id.* at 76. The court in *Gila River V* drew a distinction between Indian reservations and other types of federal reservations, holding that “a fact intensive inquiry . . . on a reservation-by-reservation basis” was appropriate. *Id.* However, at least one lower federal court, in an unpublished opinion, has rejected the general “tribal homeland” purpose articulated in *Gila River V*, holding that it conflicts with the Ninth Circuit’s formulation of what constitutes a “primary purpose” in *Skokomish Indian Tribe v. United States*, 401 F.3d 979 (9th Cir. 2005). See *Wash. Dep’t of Ecology*, 2005 WL 1244797, at *10. In *Skokomish*, the court held that to support a finding of primary purpose, the activities engaged in must be more than “important” to the tribe and must be determined at the time of the reservation. *Skokomish*, 401 F.3d at 989. Significantly, the court rejected Indian fishing as a primary purpose, stating, “Demonstrating that the United States intended for the Tribe to continue fishing on the reservation is not the same as showing that fishing was a primary purpose of the reservation.” *Id.* See also the *Agua Caliente* discussion *infra* Part IV.A.

85. See, e.g., CAL. DEP’T OF WATER RES., PUBLIC UPDATE FOR DROUGHT RESPONSE: GROUNDWATER BASINS WITH POTENTIAL WATER SHORTAGES AND GAPS IN GROUNDWATER MONITORING (2014). In the past nine years, the Colorado River Basin, which covers Wyoming, Colorado, Utah, New Mexico, Nevada, Arizona, and California, has lost about sixty-five cubic kilometers of fresh water—nearly double the volume of the country’s largest reservoir, Lake Mead—and more than three-quarters of the total, or about forty-one million acre-feet (fifty cubic kilometers), was from groundwater. See Reid Wilson, *Study: Colorado River Basin Drying Up Faster than Previously Thought*, WASH. POST, July 24, 2014, available at 2014 WLNR 20284032.

The first court that issued a specific groundwater decision dealing with *Winters* rights was the outlier to those successes. In *Big Horn River System*, the Wyoming Supreme Court declined to extend the *Winters* doctrine to groundwater, stating that “not a single case applying the reserved water doctrine to groundwater is cited to us.”⁸⁶ However, the Wyoming court nevertheless hedged, stating that “[t]he logic which supports a reservation of surface water to fulfill the purpose of the reservation also supports reservation of groundwater.”⁸⁷ Other courts have since followed that logic without the Wyoming Supreme Court’s reticence, most notably the Arizona Supreme Court, which stated that it “[could] appreciate the hesitation of the *Big Horn* court to break new ground, but we do not find its reasoning persuasive.”⁸⁸

In *Gila River III*, the Arizona Supreme Court considered whether groundwater not subject to prior appropriation under state law was susceptible to the federal reserved right of the *Winters* case.⁸⁹ The court held that it was, stating that “[f]ederal reserved rights extend to groundwater to the extent groundwater is necessary to accomplish the purpose of a reservation.” The court further held that the federal reserved rights holders are entitled to greater protection from groundwater pumping than water users who hold only state rights to the extent that greater protection may be necessary to maintain sufficient water to accomplish the purpose of the reservation.⁹⁰ The ruling relied heavily on an earlier, non-Indian reserved rights case, *Cappaert v. United States*.⁹¹ *Cappaert* addressed the question of whether the federal government had a reserved right to groundwater such that it could enjoin a private landowner from pumping water that lowered a subsurface pool to a level that prevented an endangered fish species from spawning.⁹² The pool was located in the Death Valley National Monument, and

86. *In re* Gen. Adjudication of All Rights to Use Water in Big Horn River Sys., 753 P.2d 76, 99 (Wyo. 1988), *aff’d sub nom.*, Wyoming v. United States, 492 U.S. 406 (1989).

87. *Id.*

88. *In re* Gen. Adjudication of All Rights to Use Water in the Gila River Sys. & Source (*Gila River III*), 989 P.2d 739, 745 (Ariz. 1999) (en banc).

89. *Id.* at 741, 745.

90. *Id.* at 751. Note that the reserved right only extends to the amounts needed to accomplish the purposes of the reservation, and that purpose (and the amount of water needed to fulfill it) is a fact-specific inquiry. *Id.* at 748.

91. *Cappaert v. United States*, 426 U.S. 128 (1976).

92. *Id.* at 135–36.

the landowner was pumping water from land that was beyond the monument's boundaries, but hydrologically connected to the pool.⁹³ The Court ruled in the United States' favor, finding that the federal government held reserved rights to water appurtenant to the National Monument, and that the federal rights need not be perfected under state law to be operative.⁹⁴ Notably, the Supreme Court in *Cappaert* sidestepped the issue of whether *groundwater* rights were subject to the *Winters* doctrine, finding that the pool itself was actually surface water, despite being fifty feet below the opening of the cavern.⁹⁵ Instead of finding that there was a federal reserved right in groundwater itself, it found that "the United States can protect its water from subsequent diversion, whether the diversion is of surface or groundwater."⁹⁶

While the Supreme Court has recognized a reserved right in surface water—and protects it against diversion resulting from either surface or groundwater use—it has not declared outright that groundwater is subject to *Winters* doctrine protections. Following *Cappaert* and *Gila River System*, however, many other state and federal courts have found reserved rights in groundwater.⁹⁷

93. *Id.* at 133–34.

94. *Id.* at 144–47.

95. *Id.* at 142.

96. *Id.* at 143.

97. See COHEN'S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 19.03[2][b]; see also *United States v. Orr Water Ditch Co.*, 600 F.3d 1152, 1158 (9th Cir. 2010) (recognizing that a tribe's water rights to surface water protected it against diminution resulting from the allocation of groundwater because of the "reciprocal hydraulic connection between groundwater and surface water"); Royster, *supra* note 57. Royster's article lists out many of the cases that have found reserved rights in groundwater: *Gila River Pima-Maricopa Indian Comm. v. United States*, 695 F.2d 559, 561 (Fed. Cir. 1982) (holding that the Gila River Tribe's groundwater provided sufficient sources of irrigation for the reservation and rejecting surface rights in the Salt River); *United States v. Washington*, 375 F. Supp. 2d 1050, 1070 (W.D. Wash. 2005) (declining to consider surface sources that could fill the reserved right instead of the groundwater aquifer at issue in the litigation, and stating that Lummi Tribe held a reserved federal right in the aquifer water), *vacated*, *United States ex rel. Lummi Indian Nation v. Wash. Dep't of Ecology*, No. C01-0047Z, 2007 U.S. Dist. LEXIS 86162 (W.D. Wash. Nov. 20, 2007) (approving a settlement agreement reserving to the Lummi all but 120 acre-feet of water annually, as negotiated); *New Mexico ex rel. S.E. Reynolds v. Aamodt*, 618 F. Supp. 993, 1010 (D. N.M. 1985); *Tweedy v. Tex. Co.*, 286 F. Supp. 383, 385 (D. Mont. 1968); *In re Gen. Adjudication of All Rights to Use Water in Gila River Sys. & Source*, 173 P.3d 440, 444 (Ariz. 2007) (en banc); *Confederated Salish & Kootenai Tribes of the Flathead Reservation v. Stults*, 312 Mont. 420, 430, ¶ 34, 59

Today, the majority of court decisions on the question tip towards the idea that tribes retain federally reserved rights in groundwater,⁹⁸ but the interplay between those rights and the states' water rights systems may give rise to conflicts. Such is the case, especially in California, where surface water rights are apportioned based on the correlative water rights doctrine (the dual riparian-appropriation system). Pursuant to the Sustainable Groundwater Management Act of 2014, California now generally subjects groundwater to this same doctrine.⁹⁹ This article next discusses how these conflicts might play out in the complex landscape of tribal land ownership in California.

D. The Intersection of Federally Reserved Rights and State Groundwater Law Poses Hard Questions and Presents Potential Opportunities for the Protection of Tribal Rights to Groundwater

In California, the potential application of the reserved water right to groundwater presents both challenges and potential opportunities for tribes regarding access to and protection of the sources of tribal groundwater. By asserting a federally reserved *Winters* doctrine right to groundwater, tribes will be claiming a right (1) with a priority based on the date the overlying reservation lands were reserved, (2) that cannot be forfeited or lost for non-use, and (3) that in periods of scarcity can effectively preempt the exercise of rights of other overlying landowners and water appropriators under state law.¹⁰⁰ In conjunction with the federally reserved right, tribes with lands overlying groundwater sources can also claim the correlative right of "reasonable use" of the groundwater under state law.¹⁰¹ These federal and state rights overlap to some extent and afford tribes some strategic choices for purposes of negotiating or

P.3d 1093, 1099 (2002).

98. COHEN'S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 19.03[2][b].

99. *California Governor Signs Law Regulating Groundwater Supply*, WALL ST. J. (Sept. 16, 2014), <http://online.wsj.com/articles/california-governor-signs-law-regulating-groundwater-supply-1410891696>; *see also* BULLETIN 118, *supra* note 23, at 32 (discussing the history of groundwater management in California and the previous absence of state regulation).

100. COHEN'S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 19.01[1].

101. Joseph L. Sax, *We Don't Do Groundwater: A Morsel of California Legal History*, 6 U. DENV. WATER L. REV. 269, 304 (2003) (saying that tribes would be considered the same as any other overlying user and could claim the overlying right to reasonable use).

litigating protection of groundwater sources essential to sustaining tribal homelands.

As discussed above in Part III.A, California law protects the right of an overlying landowner to the groundwater resource.¹⁰² Because the right is usufructuary only, as between the owners of land overlying a groundwater basin, “the rights of each to the water are limited, in correlation with those of others, to his ‘reasonable use’ thereof when the water is insufficient to meet the needs of all.”¹⁰³ Therefore, a tribe whose lands overlie a basin that also includes other overlying landowners has a correlative right under state law to extract water from the basin based on “reasonable use.” If the water is insufficient to meet the needs of all the overlying landowners, the use of each must be adjusted in relation to the others.¹⁰⁴ As explained above, the lack of regulation or quantification of groundwater use in the state makes this proportional reduction all but impossible to enforce,¹⁰⁵ though this may change with the implementation of the Sustainable Groundwater Management Act.¹⁰⁶

102. *Jordan v. City of Santa Barbara*, 46 Cal. App. 4th 1245, 1268 (1996); *Cal. Water Serv. Co. v. Edward Sidebotham & Son, Inc.*, 224 Cal. App. 2d 715, 725 (1964) (“An overlying right to water, analogous to that of the riparian owner in a surface stream, is the owner’s right to take water from the ground underneath for use on his land within the basin or watershed; it is based on the ownership of the land and is appurtenant thereto.”). One with overlying rights has rights superior to that of other persons who lack legal priority, but is nonetheless restricted to a reasonable beneficial use. *Jordan*, 46 Cal. App. 4th at 1268. After first considering this priority, courts may limit it to present and prospective reasonable beneficial uses consonant with article ten, section two of the California Constitution. *Id.*

103. *Niles Sand & Gravel Co. v. Alameda Cnty. Water Dist.*, 37 Cal. App. 3d 924, 934 n.11 (1974) (citations omitted).

104. *City of Barstow v. Mojave Water Agency*, 23 Cal. 4th 1224, 1241 (2000).

105. That is not to say that management of groundwater basins is impossible. The state has implemented a management system in two Southern California groundwater basins that requires persistent monitoring, a monthly report of water extraction by each user, and management by a Watermaster to ensure the extractions are not over the water budget. The system also includes a “water bank,” or “water pools,” so those who do not use their total allocations may “save up” future allocations. *See generally Southern District, Background*, DEP’T WATER RESOURCES, <http://www.water.ca.gov/watermaster/aboutwatermaster/index.cfm> (last visited Dec. 9, 2014).

106. The Sustainable Groundwater Management Act grants local groundwater sustainability agencies powers including the authority to require groundwater extraction facilities to be measured by a water-measuring device and to control groundwater extractions by regulating, limiting, and suspending extractions from

Federally reserved rights are more expansive and differ from rights created under state law in that the priority of the reserved right is based on the date the reservation was created—not on when the water was first put to beneficial use—and cannot be lost through non-use.¹⁰⁷ Moreover, in times of scarcity, if the federally reserved right’s creation date pre-dates ownership of other overlying lands, the federal right is satisfied first, with no proportional reduction.¹⁰⁸ Because there is no “correlative rights” principle applicable to the federally reserved right, it has the potential to completely preempt “reasonable use” of the groundwater by other overlying landowners. Therefore, depending on the date of creation of the reservation and the scope of the tribal water need relative to the amount of water available, the federally reserved right could effectively preempt the state water rights of other users in situations of water scarcity.¹⁰⁹

individual groundwater wells and extraction facilities and establishing groundwater extraction allocations. *See* Sustainable Groundwater Management Act, ch. 346, §§ 10725.8, 10726.4 Cal. Legis. Serv. (West) (to be codified at CAL. WATER CODE §§ 10725.8 and 10726.4).

107. *In re* Gen. Adjudication of All Rights to Use Water in the Big Horn River Sys., 48 P.3d 1040, 1047 (Wyo. 2002) (“A fundamental difference between a reserved right held by an Indian and one transferred to a non-Indian was that the Indian did not lose the right by nonuse.”). *See generally* United States v. Winans, 198 U.S. 371 (1905).

108. OR. WATER RES. DEP’T, WATER RIGHTS IN OREGON 5 (2009) (describing function of most senior water right).

109. This is not, however, a foregone conclusion. As one author has pointed out,

Even if a [tribe] could establish a reserved right to groundwater, it is still unclear as to whether a court seeking to protect such a right has the authority to enjoin groundwater pumping outside the exterior boundaries of a federal reservation. This issue implicates questions of state sovereignty, since enforcing a federal reserved right to groundwater by curtailing groundwater rights obtained under state law could upset longstanding property right expectations.

Debbie Leonard, *Doctrinal Uncertainty in the Law of Federal Reserved Water Rights: The Potential Impact on Renewable Energy Development*, 50 NAT. RESOURCES J. 611, 621–22 (2010). The author further notes that, although *Cappaert v. United States*, 426 U.S. 128, 141 (1976), “set the stage for the resolution of this issue by affirming the injunction against a state groundwater user in favor of the federal reservation . . . the issue of whether a state groundwater right *must* give way to federal rights remains an open question.” Leonard, *supra*, at 622 (emphasis added); *see also supra* note 55 and accompanying text.

In this unsettled legal environment, the specter of protracted litigation involving complex factual situations¹¹⁰ and uncertain results is cause for concern by all water users. Such a scenario is even more daunting when one considers the extended drought in California with its implications for accelerated pumping of groundwater and potential permanent depletion of groundwater sources.¹¹¹ Juxtaposed with these temporal and climatic factors is the absence of state regulation of groundwater, which instead is almost exclusively regulated by the courts. The only state-adjudicated federally reserved water rights are those pertaining to surface stream flow.¹¹² In short, the alternative of litigation in either federal or state court, whatever its eventual outcome, may not be the most effective or timely alternative for protection of the resource.¹¹³

This conjunction of complex multiple factors (technical, legal, historical, policy, and climatic) offers the opportunity, as well as the challenge, for California tribes to seek protection of reservation groundwater sources, including groundwater quality. The challenge will be in determining which strategic use of the laws will be most relevant to their factual situation (e.g., state groundwater law, federally reserved water rights, or inherent tribal authority over reservation lands and waters, including authority confirmed under

110. In California, the diverse circumstances surrounding the creation, termination, and restoration of Indian lands (unratified treaties, executive orders, federal statutes, secretarial withdrawals, and administrative and judicial decisions “unterminating” Indian rancherias) complicates the key factors essential to a federally reserved water rights analysis, such as the priority date and the purpose(s) of the reservation.

111. See GROUNDWATER VOICES COALITION, LAND SUBSIDENCE FROM GROUNDWATER USE IN THE SAN JOAQUIN VALLEY 2 (2014); Mark Grossi, *New Report Warns: No Groundwater Refills After Underground Layers Collapse*, FRESNO BEE (July 25, 2014), <http://www.fresnobee.com/2014/07/25/4040983/new-report-warns-no-groundwater.html>.

112. E.g., Complaint for Declaratory and Injunctive Relief at 10, *Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water Dist.*, No. 5:13-cv-00883 (C.D. Cal. May, 14, 2013) [hereinafter *Agua Caliente Band Complaint*] (pointing out that in the 1938 Whitewater General Stream Adjudication involving water rights of the Band, the United States asserted an entitlement under federal law to a large quantity of groundwater for the Band for irrigation, domestic, and stock-watering purposes, but that the court did not act on these groundwater claims based on an opinion by the state’s Division of Water that the court lacked jurisdiction under the applicable state law).

113. See discussion *infra* Part IV.B.

the Clean Water Act (CWA) and Safe Drinking Water Act (SDWA), discussed below in Part V.

A recent major example of a tribal response to this question is that of the Agua Caliente Band of Cahuilla Indians. In the *Agua Caliente* litigation,¹¹⁴ the tribe asserted an early priority date of the federally reserved rights—“no later than the Executive Orders of 1876–1877” and as early as “time immemorial”¹¹⁵—and a broad, comprehensive claim to an amount of water sufficient to “foster, promote and fulfill the homeland purposes” of the Band’s reservation.¹¹⁶ The sweeping scope of the tribe’s claim, when aligned against the immediate threat to both the quality and sustainability of the groundwater resource by entities unreceptive to tribal needs, made litigation a logical, essential, and strategically sound response. There was no reason to rely on the more limited protections of state groundwater law with its correlative rights approach and “reasonable use” standard. However, for other California tribes whose factual situations may not be as strong, resorting to state groundwater law, coupled with inherent tribal authority under the CWA, the SDWA, or intergovernmental efforts, may be a better choice to achieve protection of a sufficient quantity and quality of groundwater to meet tribal needs.

IV. STRATEGIC CONSIDERATIONS FOR LITIGATION OR SETTLEMENT

A. *Agua Caliente Band v. Desert Water Agency: A Case of First Impression in California Regarding Application of the Winters Doctrine to Groundwater*

The Agua Caliente Band of Cahuilla Indians filed suit in the U.S. District Court for the Central District of California on May 14, 2013, initiating the first California case seeking confirmation and quantification of tribal groundwater rights under the *Winters* doctrine. In *Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water District*,¹¹⁷ the Band alleges that excessive groundwater pumping has caused overdraft of the Coachella Valley Groundwater Basin, and that efforts to recharge the Basin with water that has greater salinity and total dissolved solids has

114. See discussion *infra* Part IV.A.

115. Agua Caliente Band Complaint, *supra* note 112, at 16.

116. *Id.* at 15–16.

117. *Id.*

degraded water quality.¹¹⁸ The Band asserts a federally reserved right to the groundwater resource with a priority date of “time immemorial” for the purpose of providing and sustaining a tribal homeland on the lands of the Agua Caliente Reservation, “including housing, schools, government offices, and cultural and commercial enterprises.”¹¹⁹ The Band seeks related declaratory and injunctive relief, including declarations that it possesses groundwater rights in the sub-basins “in sufficient quantities to foster, promote, and fulfill the homeland purposes for which the lands of the tribe’s reservation were set aside for the tribe and its members, both for all present and future purposes” and quantification of those rights.¹²⁰ In addition, the Band seeks a declaration that it has “a prior and paramount ownership interest in sufficient pore space in the Groundwater Basin aquifer underlying the Coachella Valley and the tribe’s reservation to store its federally reserved right to groundwater for all present and future purposes.”¹²¹

The United States filed a motion to intervene on May 13, 2014, which was granted by the district court on June 19, 2014.¹²² In its motion and supporting authorities, the United States asserts that “it has a significant interest in its own right and as trustee, in protecting [the Tribe’s] water rights.”¹²³

This case should be watched closely by tribes in California and elsewhere, especially the tribes in Southern California whose reservations were set aside by executive order under the Mission Indian Relief Act of 1891¹²⁴ and who, like the Agua Caliente Band, rely primarily on groundwater to fulfill the range of water needs essential to creating a reservation homeland.

While other tribes have not taken the steps the Agua Caliente Band has to secure its reserved groundwater rights, a number of tribes have reached agreements with other water users and the federal government regarding groundwater use.

118. *Id.* at 11.

119. *Id.* at 14.

120. *Id.* at 3–4, 16.

121. *Id.* at 3–4, 16–17.

122. *See* Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water Dist., No. 5:13-cv-00883 (C.D. Cal. June, 19, 2014) (order granting United States’ motion to intervene).

123. *Id.* at 2.

124. Mission Indian Relief Act of 1891, ch. 65, 26 Stat. 712.

B. Water Settlements and Adjudications Involving Tribes

Litigation like that brought by the Agua Caliente Band is one route to determine the rights among parties, the quantification of those rights, and the quality of water required to give those rights value. However, the vast majority of water rights determinations are concluded as part of negotiated settlements between the parties. Many times, these settlements are termed general stream adjudications, though the process for fixing these rights is more often than not a court-directed negotiation with a designated mediator or special master.¹²⁵ The process of adjudication, however, can be a lengthy one—the Klamath Basin adjudication began in 1975 and continues to this day, for example¹²⁶—and may not result in an actual solution, instead further delaying the process. Tribes may have more success securing beneficial results (at a much lower investment of both funding and time) if they pursue negotiated water rights agreements over groundwater as the first solution. Tribes that pursue such an approach should address both surface and groundwater rights in the negotiation, including provisions ensuring the tribe a role in any future decisions involving the allocation, use, or management of groundwater sources.

The Pechanga Band of Luiseño Indians is a tribe that *has* taken positive steps in securing its groundwater resources, as it entered a groundwater management agreement with the Rancho California Water District at the end of 2006.¹²⁷ The agreement, which covers the Wolf Valley Basin, contains several aspects: securing use of groundwater,¹²⁸ limiting total use of the groundwater by both the tribe and the water district,¹²⁹ ensuring annual assessments of groundwater pumping usage, creating of a technical committee

125. *Montana Water Court*, MONT. JUD. BRANCH (2012), <http://courts.mt.gov/water/default.mcp.x>. It is common for states to constitute a specific court for water rights adjudication. For example, Montana has created the Montana Water Court, which has exclusive jurisdiction over water rights claims. *Id.* Notably, this court has suspended its adjudications of Indian and federal reserved water rights in favor of negotiating compacts. *Id.*

126. *See generally* WATER RESOURCE DEP'T, KLAMATH RIVER BASIN GENERAL STREAM ADJUDICATION: FINDINGS OF FACT AND ORDER OF DETERMINATION (2013).

127. *See* RANCHO CALIFORNIA WATER DISTRICT AND PECHANGA BAND OF LUISEÑO INDIANS, GROUNDWATER MANAGEMENT AGREEMENT 1 (2006).

128. *Id.* at 4–8.

129. *Id.*

between the water district and the tribe,¹³⁰ and mandating usage reporting on both a monthly and annual basis.¹³¹ Instead of delineating the usage and quality requirements in the agreement itself, the technical committee is charged with updating those standards on an annual basis.¹³² While the agreement does not explicitly mention federally reserved rights in groundwater, the agreement gives the Pechanga Band something of a priority use in the basin's groundwater, as it enables the tribe to limit the water district's pumping in any year that Pechanga uses more than 1500 acre-feet.¹³³

The agreement appears to be somewhat of a stopgap measure, as the tribe, the water district, the federal government, and several other entities are parties to a water rights suit commenced in 1951 but nearing settlement, which involves the larger watershed, including the Wolf Valley Basin.¹³⁴ In that case, *United States v. Fallbrook*,¹³⁵ there have been dozens of interlocutory judgments and decrees, one of which recognizes the Pechanga Band's federally reserved water rights, without specifying the amount of that right.¹³⁶ Pechanga, the federal government, and the water district have reached a settlement in principle in the case, which has been the subject of legislation for settlement approval for several years.¹³⁷

130. *Id.* at 8–9.

131. *Id.* at 10.

132. *Id.*

133. *Id.* at 4–5. This provision seems somewhat perverse in an era of restricted use and strict water planning, as it *encourages* the Tribe to use at least 1500 acre-feet a year, lest the water district be able to pump the remainder of the tribe's allotment (if over that amount, subject to other deductions). *Id.* According to the New Mexico Office of the State Engineer, an acre-foot is the "volume of water needed to cover [one] acre of land . . . to a depth of [one] foot, equivalent to 325,851 gallons." *Glossary of Water Terms*, N.M. OFF. ST. ENGINEER, http://www.ose.state.nm.us/water_info_glossary.html (last visited Dec. 9, 2014). One acre-foot per year is about 893 gallons per day (325,851/365).

134. S. REP. NO. 113-215, at 2 (2014).

135. *United States v. Fallbrook Pub. Util. Dist.*, 101 F. Supp. 298 (S.D. Cal. 1951).

136. *See United States v. Fallbrook Pub. Util. Dist.*, 193 F. Supp. 342, 342 (S.D. Cal. 1961), *aff'd in part, rev'd in part*, 347 F.2d 48 (9th Cir. 1965); *see also* S. REP. NO. 113-215, at 2 ("In Interlocutory Judgment 41, the Court concluded that each of the three Tribes has a recognized federally reserved water right without specifying the amount of each of the Tribe's water rights.").

137. S. 1219, 113th Cong. (2013); H.R. 2508, 113th Cong. (2013); S. 2956, 111th Cong. (2010); H.R. 5413, 111th Cong. (2010); H.R. 4285, 111th Cong.

That legislation is wide ranging and would provide increased groundwater rights, improved infrastructure for Pechanga, and water recycling systems to increase the amount of high-quality water reinjected back into the basin's system.¹³⁸

Both the 2006 Groundwater Management Agreement and the proposed *Fallbrook* settlement are examples of comprehensive settlements that specifically address groundwater issues. This may reflect a recognition by Pechanga and its neighbors in the Santa Margarita River watershed that sole reliance on surface flow to meet their needs may prove inadequate.

In contrast, the legislative settlement of the San Luis Rey Indian Water Rights litigation¹³⁹ leaves groundwater rights unquantified, despite the fact that many tribes in the San Diego County region rely on groundwater exclusively.¹⁴⁰ Rather than treating groundwater as a critical aspect of water rights, the San Luis Rey settlement merely mentions groundwater in passing, stating that the federal government should assist the tribes in developing groundwater underlying federal lands as a "supplemental source" of water, and authorizing the federal government to access that groundwater for tribes.¹⁴¹ The legislation, which would "settle . . . the reserved water rights claims" of five tribes for funds and an entitlement to a portion of 16,000 acre-feet of water annually, may leave open the question of whether the tribes could assert reserved water rights claims to *groundwater* in the future.¹⁴² Another, the Tule River Tribe Settlement Agreement, is

(2009).

138. H.R. 2508; *see also* *Pechanga Band of Luiseño Mission Indians Water Rights Settlement Act: Hearing on S. 2956 Before the S. Comm. on Indian Affairs*, 111th Cong. (2010) (statement of Matthew G. Stone, Gen. Manager, Rancho California Water District).

139. San Luis Rey Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-675, 102 Stat. 4000.

140. *See* REG'L WATER MGMT. GRP. & REG'L ADVISORY COMM., *supra* note 6.

141. Duties of the United States for Development of Supplemental Water, Pub. L. No. 100-675, § 106(b), 102 Stat. 4000, 4002-03 (1988).

142. After the settlement framework was laid out in Pub. L. No. 100-675, the ongoing state court adjudication of the San Luis Rey watershed found that the groundwater in the Basin was really "underground streamflow" that was hydrologically connected to the surface water. Though it is underground, subsurface stream flow is treated like surface water, and thus is subject to the state's regulatory scheme and requirements. *See* Legal Classification of Groundwater in the Pauma and Pala Basins, No. 1645, 2002 WL 31441222, at *15 (Cal. State Water Resources Control B. Oct. 17, 2002).

similar; it only mentions the ability to use existing groundwater wells without mention of quantification or regulation.¹⁴³

Tribes may also be able to reach what would be conventionally regarded as groundwater through surface water settlements in certain instances. California courts and the State Water Resources Control Board have included within the Board's regulatory ambit both waters that are "hydrologically connected" to rivers or other surface water resources, and those that are flowing subterranean streams. A tribe may be able to access this type of groundwater when surface water resources do not fulfill the rights it has acquired under adjudication or settlement.¹⁴⁴ For example, in decisions classifying some groundwater as subsurface stream flow, the State Water Control Board explicitly adopted a four-part test to show that the groundwater so classified already falls within the Board's permitting jurisdiction. The test, now known as the *Garrapata* test, determines when the Board can gain control of "subterranean streams flowing through known and definite channels," a classification granted to the board in the Water Code.¹⁴⁵ To meet the *Garrapata* test, the Board must show that: (1) a subsurface channel is present, (2) the channel has a relatively impermeable bed and banks, (3) the course of the channel is known or capable of being determined by reasonable inference, and (4) groundwater is flowing in the channel.¹⁴⁶ The California First District Court of Appeal has adopted this subterranean flow test,¹⁴⁷ which gives further weight to a recent board decision in the

143. Tule River Reserved Water Rights Settlement Agreement Between the Tule River Indian Tribe, the Tule River Association, and the South Tule Independent Dutch Company art. 3.2(C) (Nov. 13–21, 2007), http://www.narf.org/nill/documents/NARF_water_settlements/Tule/2007agreement.pdf.

144. As discussed above, the state of California has implemented management requirements for high and medium priority groundwater basins, but the vast majority of basins in the state are currently low or very low priority. For basins that will be subject to management, these distinctions may blend into a holistic basin regulation, but other basins are likely to lag behind. See CAL. DEP'T OF WATER RES., CASGEM GROUNDWATER BASIN PRIORITIZATION RESULTS (2014).

145. CAL. WATER CODE § 1200 (West, Westlaw through Res. Ch. 1 of 2013–2014 2nd Ex. Sess.).

146. *Garrapata Water Co.*, No. 1639, 1999 WL 35019788, at *2 (Cal. State Water Resources Control Bd. June 17, 1999). Water that does not fit this test is "percolating groundwater" and is not subject to the Board's permitting authority. See BULLETIN 118, *supra* note 23, at 81–83.

147. See, e.g., *N. Gualala Water Co. v. State Water Res. Control Bd.*, 139 Cal. App. 4th 1577 (2006).

Pauma and Pala water basins that classified some subsurface water that was barely flowing—and sometimes flowing away from the surface river—as water subject to regulation under the state’s surface water scheme.¹⁴⁸ In this scenario, a tribe that can show that the groundwater resource is connected to an already adjudicated or settled river basin may be able to access the groundwater to fulfill settlement terms. This is particularly helpful if the settled basin has inadequate resources to meet the users’ needs. Still other tribes may find it more advantageous to negotiate groundwater issues separate from surface water rights, keeping in mind that what may appear to be groundwater will be considered “subterranean flow” under the *Garrapata* test.

Other than the recent Pechanga settlement agreement, most settlements have not specifically included groundwater as part of the federally reserved water right and have not addressed in any detail, or at all, groundwater protections or quantification.¹⁴⁹ The *Agua Caliente* case highlights this gap in the protection of federally reserved water rights and serves to focus attention on groundwater as an essential component of the federal right and the need for tribes to specifically address its protection and quantification in those situations where it serves as a source of tribal water.¹⁵⁰

This lack of inclusion of specific groundwater provisions may unintentionally limit the tribes’ groundwater rights. Preferably, tribes should seek to specify in settlements or other agreements that (1) groundwater rights are unaffected by the agreements, or (2) groundwater is specifically provided for in the agreement as either part of or supplemental to surface water rights. As some courts have held, notably the Supreme Court in *Arizona I*, federally created reservations are limited to the water they can reasonably use for irrigation.¹⁵¹ While application of the PIA standard is not mandatory, it is possible a court could use that standard and grant a relatively small reserved right to the tribe. It is also possible that a court or competing user could assert that any surface water

148. See *Waste Management, Inc.*, No. 1645, 2002 WL 31441222 (Cal. State Water Resources Control B. Oct. 17, 2002); see also CAL. STATE WATER RES. BD., SWRCB No. 0-076-300-0, REVIEW OF THE LAWS ESTABLISHING THE SWRCB’S PERMITTING AUTHORITY OVER APPROPRIATIONS OF GROUNDWATER CLASSIFIED AS SUBTERRANEAN STREAMS AND THE SWRCB’S IMPLEMENTATION OF THOSE LAWS (2002).

149. See, e.g., GROUNDWATER MANAGEMENT AGREEMENT, *supra* note 127, at 1.

150. See *supra* Part IV.A.

151. See *supra* Part III.B (discussing *Arizona I* and the PIA standard).

settlement has fulfilled the tribe's needs, and thus precludes further assertions of federally reserved rights to groundwater.¹⁵² While no court has done so, the increasing need for and scarcity of groundwater—and the attention currently being paid to its use—are strong indications that the state or local governments will seek to restrict groundwater access, especially if there is any ambiguity or silence on the issue in a settlement or other agreement.¹⁵³

V. STRATEGIC CONSIDERATIONS FOR PROTECTION AND MANAGEMENT OF GROUNDWATER

In addition to actions that an Indian tribe may take to assert or quantify its groundwater rights, a tribe may also consider a variety of strategies to protect and manage its groundwater resources. In conjunction with the assessment process, tribes may find it valuable to engage in public education efforts to keep the community informed, seek input, and gain support and cooperation for the groundwater assessments and voluntary conservation measures.¹⁵⁴ To avoid the appearance of a jurisdictional void, tribes may also want to consider adoption of a tribal ordinance or code that sets

152. While tribes' reserved water rights can indeed be powerful, there may be attempts to limit them, especially when a settlement has occurred and other parties or users feel that all rights have been settled. Therein lies the possibility that either surface or groundwater rights will be reserved, but not both. Judith Royster discussed this possibility in writing that groundwater rights may usurp surface water rights. *See* Royster, *supra* note 57, at 497 ("The *Winters* doctrine is premised on the concept that Indian tribes are entitled to sufficient water to fulfill the purposes for which their reservations are set aside, and water rights in Indian country have been quantified on that basis. If Indian tribes have rights of absolute dominion over groundwater resources beneath their lands, groundwater resources might be sufficient to satisfy the 'fulfill the purposes of the reservation' standard.").

153. *See* Terri Hansen, *Drought in California's Palm Springs Area Draws Attention to Nestle Plant on Morongo Reservation*, INDIAN COUNTRY TODAY MEDIA NETWORK (July 19, 2014), <http://indiancountrytodaymedianetwork.com/2014/07/19/drought-californias-palm-springs-area-draws-attention-nestle-plant-morongo-reservation>; Ian James, *Little Oversight as Nestle Taps Morongo Reservation Water*, DESERT SUN (July 14, 2014, 11:48 AM), <http://www.desertsun.com/story/news/environment/2014/07/12/nestle-arrowhead-tapping-water/12589267/>.

154. For example, the Hoopa Tribe sponsored radio programs and public service announcements about drinking water issues and the need to prevent source water contamination. *See* EPA, DRINKING WATER QUALITY IN INDIAN COUNTRY: PROTECTING YOUR SOURCES (2008) [hereinafter DRINKING WATER QUALITY IN INDIAN COUNTRY].

out general tribal interests and needs, and directs the tribal government to conduct studies and develop a groundwater protection or management plan.¹⁵⁵ The choices of groundwater protection strategies will depend upon factors unique to each tribe and each reservation, but fall largely into two categories: non-regulatory and regulatory. Regulatory strategies—which would have the force of law—could regulate conduct that threatens the tribe’s supply of groundwater and its quality, two intractably intertwined goals. However, regulatory laws intended to protect natural resources may be difficult and costly to enforce and, to the extent they implicate the conduct of non-members, may draw court challenges by state or local governments or private entities. Non-regulatory strategies, on the other hand, are not constrained by jurisdictional boundaries and may garner more broad-based support for certain activities. However, while such strategies may have a positive effect, they may not be sufficient to restrain the conduct of “bad actors” who engage in conduct that presents a substantial threat to a tribe’s groundwater.

In the following section, we discuss the various legal principles and authorities on which a tribe can base its development of regulatory and non-regulatory strategies for the protection and management of its water resources, especially groundwater.

A. Tribal Regulatory Authority in General

The law governing the scope of a tribe’s civil regulatory authority over water resources is complex and lacks bright lines

155. See, for example, Tribal Council Res. TC-0325-14-62 (Yocha Dehe Wintun Nation 2014), <http://yochadehe.org/tribal-government/yocha-dehe-fire-department/important-information> (follow “Drought Emergency” hyperlink), for the declaration of the drought emergency by the Yocha Dehe Wintun Nation establishing a water conservation education campaign, groundwater monitoring efforts, and implementation of water conservation strategies. The strategic goals identified in the California Water Action Plan, which was released on January 27, 2014, also provide a helpful starting point to consider how tribes in drought stricken areas may want to approach urgent needs. These California goals include the provision of essential data to enable sustainable groundwater management; funding partnerships for storage projects; updating the state’s groundwater plan; improving sustainable groundwater management; support distributed groundwater storage; increasing groundwater recharge; accelerating clean-up of contaminated groundwater and preventing future contamination. See STATE OF CAL., CALIFORNIA WATER ACTION PLAN 13–15 (2014) [hereinafter CALIFORNIA WATER ACTION PLAN].

that clearly demarcate that authority. With respect to conduct taking place within the Indian country¹⁵⁶ under a tribe's jurisdiction, a tribe may exercise its civil regulatory authority on the basis of its inherent sovereign powers¹⁵⁷ to protect the tribe, its economic security, and the health and well-being of its members.¹⁵⁸ With respect to the protection of a tribe's groundwater resources, a tribe may also seek the approval of the EPA to exercise the tribe's inherent sovereign powers within the framework of federal environmental law, in particular the CWA¹⁵⁹ and the SDWA.¹⁶⁰ A tribe may also seek to control conduct that threatens its groundwater resources through the use of intergovernmental agreements with the state, neighboring local governments, or federal agencies.¹⁶¹

The potential threats to a tribe's groundwater and the extent to which a tribe will be able to effectively protect and manage its groundwater will vary greatly depending upon the unique aspects of the tribe's reservation, the groundwater basin, and the nature of the threats to the tribe's groundwater. By analyzing these factors, which should be examined in a tribe's groundwater assessment,¹⁶² a tribe will be better situated to identify and adopt an effective set of

156. See *Alaska v. Native Vill. of Venetie Tribal Gov't*, 522 U.S. 520, 527 (1998) (interpreting "dependent Indian communities" in 18 U.S.C. § 1151 (1994) and defining "Indian country" as lands set apart for the use of Indians under the superintendence of the federal government); see also 18 U.S.C. § 1151 (2012) ("Indian country . . . means (a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States . . . and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.").

157. E.g., *United States v. Mazurie*, 419 U.S. 544, 557 (1975) (recognizing tribes' inherent authority over their territories and members).

158. E.g., *Montana v. United States*, 450 U.S. 544, 566 (1981).

159. See generally Clean Water Act, 33 U.S.C. §§ 1251–1387.

160. See generally Safe Drinking Water Act, 42 U.S.C. § 300f.

161. See, e.g., CAL. DEP'T OF WATER RES., CALIFORNIA WATER PLAN UPDATE—PUBLIC REVIEW DRAFT 4-1 to -4 (2013) [hereinafter CALIFORNIA WATER PLAN UPDATE] (discussing cooperative relationships between the state and tribes to manage water resources); see also Shonee D. Langford, *Full Steam Ahead for the Umatilla Basin Aquifer Restoration Project*, W. WATER L. & POL'Y REP., Jan. 2010, at 67, 70 (providing the example of the Umatilla Basin Water Commission in Oregon, in which a group of two counties, a tribe, and two irrigation districts that formed a commission to recharge a local aquifer).

162. See *supra* Part II.

strategies, which a tribe may choose to implement through the exercise of the tribe's inherent sovereign power, the exercise of its authority under federal law or state law, intergovernmental agreements and efforts, or some combination of these.

B. The Exercise of Tribal Inherent Sovereign Powers

The right of self-government is a right held by Indian tribes in their capacity as sovereign entities.¹⁶³ “[T]ribes have long been recognized as sovereign entities, possessing attributes of sovereignty over both their members and their territory.”¹⁶⁴ The Supreme Court has also recognized and confirmed the “right of reservation Indians to make their own laws and be ruled by them.”¹⁶⁵ An Indian tribe's retained sovereignty includes not only “the power of regulating their internal and social relations,” but also the “power to make their own substantive law in internal matters . . . and to enforce that law in their own forums.”¹⁶⁶ Indian tribes retain inherent powers not specifically given up in a treaty, limited by Congress, or implicitly divested as inconsistent with their dependent status.¹⁶⁷

The right of internal self-government includes the right to prescribe laws applicable to tribal members and to punish infractions of those laws¹⁶⁸ and that authority extends to certain off-

163. See, e.g., *Worcester v. Georgia*, 31 U.S. 515, 556 (1832) (recognizing the national character of the Cherokees and their right of self-government); *Cherokee Nation v. Georgia*, 30 U.S. 1, 16 (1831) (“[The Cherokee Nation is a] distinct political society . . . capable of managing its own affairs and governing itself.”). See generally COHEN'S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 4.01.

164. *Smith v. Salish Kootenai Coll.*, 434 F.3d 1127, 1130 (9th Cir. 2006) (quoting *Babbitt Ford, Inc. v. Navajo Indian Tribe*, 710 F.2d 587, 591 (9th Cir. 1983)) (internal quotation marks omitted).

165. *Williams v. Lee*, 358 U.S. 217, 220 (1959).

166. *Santa Clara Pueblo v. Martinez*, 436 U.S. 49, 55–56 (1978) (citations omitted) (internal quotation marks omitted).

167. See, e.g., *Merrion v. Jicarilla Apache Tribe*, 455 U.S. 130, 146 (1982). See generally COHEN'S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 4.02.

168. *United States v. Wheeler*, 435 U.S. 313, 322 (1978); *Native Vill. of Venetie I.R.A. Council v. Alaska*, 944 F.2d 548, 556 (9th Cir. 1991) (“The practical result of this doctrine is that an Indian tribe need not wait for an affirmative grant of authority from Congress in order to exercise dominion over its members.”). In addition, Indian tribes may regulate, as part of their inherent tribal authority reaffirmed by Congress in the Indian Civil Rights Act, 25 U.S.C. §§ 1301–1304 (2012), the conduct of nonmember Indians through the exercise of their criminal jurisdiction over all Indians. See *United States v. Lara*, 541 U.S. 193, 210 (2004);

reservation conduct of members.¹⁶⁹ “The exercise of Indian sovereignty in the context of environmental regulation is, however, further complicated by the prevalence of non-Indian landownership within reservation boundaries.”¹⁷⁰ On-reservation threats to a tribe’s groundwater may often come from the conduct of nonmembers that occurs within the reservation, but on non-Indian fee lands, requiring the tribe to seek to restrain or otherwise regulate that conduct in order to protect the tribe, its resources, and the health and well-being of its citizens. As discussed below, a tribe’s power to exercise civil regulatory authority over the conduct of nonmembers, especially when on-reservation conduct occurs on non-Indian fee land within the reservation, will often depend upon a fact-specific inquiry.¹⁷¹ Although a tribe may affect the off-

Means v. Navajo Nation, 432 F.3d 924, 931 (9th Cir. 2005).

169. Federal and state courts have recognized the authority of tribes to regulate certain off-reservation conduct of their members, including the exercise of off-reservation treaty rights and matters of internal concerns of tribal members, such as the regulation of domestic relations among members, rules of inheritance for members, and potentially the ownership of tribal property. COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 7.02[1][c]; *see also* Chilkat Indian Vill. v. Johnson, 870 F.2d 1469, 1475 (9th Cir. 1989) (concluding that there was no federal jurisdiction over a tribe’s enforcement of a tribal property ordinance against its own members, because it was an internal matter subject to tribal court jurisdiction, without reaching the issue of whether the conduct arose within Indian country); Settler v. Lameer, 507 F.2d 231, 239 (9th Cir. 1974) (holding that tribal police could enforce tribal fishing regulations against tribal members off reservation because the tribe had a treaty-reserved right to fish at “usual and accustomed” sites outside reservation boundaries); John v. Baker, 982 P.2d 738, 757–58 (Ak. 1999) (citing Okla. Tax Comm’n v. Chickasaw Nation, 515 U.S. 450 (1995); Okla. Tax Comm’n v. Sac & Fox Nation, 508 U.S. 114 (1993)) (noting that Native American nations may possess the authority to govern themselves even when they do not occupy Indian country, holding that the authority to determine the custody of the children of tribal members falls squarely within the tribe’s sovereign power to regulate the internal affairs of its members, and finding that the tribal court had jurisdiction over child custody matters arising outside of Indian country).

170. Regina Cutler, *To Clear the Muddy Waters: Tribal Regulatory Authority Under Section 518 of the Clean Water Act*, 29 ENVTL. L. 721, 727 (1999) (citing Amendments to the Water Quality Standards Regulation that Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,877 (Dec. 12, 1991) (codified as amended at 40 C.F.R. pt. 131 (2014))).

171. Although Congress affirmed tribes’ inherent criminal jurisdiction over nonmember Indians, the courts have continued to distinguish between member and nonmember Indians for the purposes of determining a tribe’s civil regulatory authority. *See* Smith v. Salish Kootenai Coll., 434 F.3d 1127, 1132–33 (9th Cir.

reservation conduct of non-Indians through the application of federal law or an intergovernmental agreement,¹⁷² a tribe's power to directly regulate the off-reservation conduct of non-Indians does not extend beyond the boundaries of the tribe's reservation without the non-Indians' consent.¹⁷³

When considering a tribe's power to exercise civil regulatory authority over non-Indians, the conversation should begin with the foundation of inherent tribal power, but eventually must turn to the Supreme Court's ruling in *Montana v. United States*.¹⁷⁴ In that case, the Court set out the general proposition that "the inherent sovereign powers of an Indian tribe do not extend to the activities of nonmembers of the tribe." However, the Court laid out two important exceptions: (1) "[a] tribe may regulate, through taxation, licensing, or other means, the activities of nonmembers who enter consensual relationships with the tribe or its members, through commercial dealing, contracts, leases, or other arrangements";¹⁷⁵ and (2) a tribe may "retain inherent power to exercise civil authority over the conduct of non-Indians on fee lands within its reservation when that conduct threatens or has some direct effect on the political integrity, the economic security, or health or welfare of the tribe."¹⁷⁶

The first exception is often referred to as the "consensual relationship" exception.¹⁷⁷ If a nonmember enters into a consensual

2006).

172. For instance, as discussed below *infra* Part V.C, if a tribe establishes water quality standards under provisions of the CWA that authorize a tribe to be treated as a state, the EPA has the authority to require an upstream discharger to comply with the tribe's downstream standards.

173. *Merrion v. Jicarilla Apache Tribe*, 455 U.S. 130, 142 (1982) ("[A] tribe has no authority over a nonmember until the nonmember enters tribal lands or conducts business with the tribe."). As noted above, however, some courts have found that a tribe may have civil regulatory jurisdiction over certain off-reservation conduct pertaining to the regulation of its internal matters. *See, e.g., Baker*, 982 P.2d at 759.

174. *Montana v. United States*, 450 U.S. 544 (1981).

175. *Id.* at 565 (citing *Washington v. Confederated Tribes of Colville Indian Reservation*, 447 U.S. 134, 152-54 (1980); *Williams v. Lee*, 358 U.S. 217, 223 (1959); *Morris v. Hitchcock*, 194 U.S. 384 (1904); *Buster v. Wright*, 135 F. 947, 950 (8th Cir. 1905)).

176. *Id.* at 566 (citing *Fisher v. Dist. Court*, 424 U.S. 382, 386 (1976); *Williams*, 358 U.S. at 220; *Montana Catholic Missions v. Missoula Cnty.*, 200 U.S. 118, 128-29 (1906); *Thomas v. Gay*, 169 U.S. 264, 273 (1898)).

177. *See, e.g., Atkinson Trading Co. v. Shirley*, 532 U.S. 645, 656 (2001)

relationship with the tribe or a tribal member—for instance, as a lessee of land within the reservation or a contractor constructing or maintaining a facility on the reservation—the tribe may be able to exercise regulatory authority over the person under the first *Montana* exception.¹⁷⁸ However, the “consensual relationship exception requires that the tax or regulation imposed by the Indian tribe have a nexus to the consensual relationship itself.”¹⁷⁹ A tribe may consider taking steps to strengthen its authority under this first exception by requiring that nonmembers entering into consensual relationships with the tribe consent to the tribe’s regulation of their activities.¹⁸⁰

A determination of a tribe’s authority to exercise its civil regulatory authority under the second *Montana* exception can be extremely fact specific, especially if a tribe is regulating the conduct of a nonmember on non-Indian fee land within the reservation.¹⁸¹

(discussing *Montana*’s consensual relationship exception).

178. See *Montana*, 450 U.S. at 565. For example, the Ninth Circuit, in *Water Wheel Camp Recreational Area, Inc. v. LaRance*, upheld the tribal court’s conclusion that a lessee who consented to tribal law under the lease was subject to the tribe’s regulatory jurisdiction under the consensual relationship exception. 642 F.3d 802, 818–19 (9th Cir. 2011).

179. *Atkinson*, 532 U.S. at 656 (holding that a tribal hotel occupancy tax on guests of a hotel located on fee lands within the reservation was insufficiently related to any consensual relationship between the tribe and either the guests or the hotel operator, notwithstanding the hotel operator’s status as an “Indian trader”).

180. When applying the consensual relationship test, the *Water Wheel* court considered that the defendant was on notice that he was subject to tribal laws, regulations, and ordinances because it was explicitly stated in the lease agreement at issue. 642 F.3d at 818. Similarly, a tribe may require contract provisions or business licenses that provide for nonmember consent to the civil regulatory jurisdiction of the tribe and compliance with the tribe’s environmental and resource laws. Such contract provisions may be particularly important with respect to oil and gas production or mining on tribal lands involving underground injection wells. This is because, pursuant to the provisions of the Safe Drinking Water Act (SDWA), the EPA may treat a tribe as a state (TAS), and thus a tribe may regulate underground injection wells and oil and gas production. See *infra* Part V.C. The express consent of the nonmember to a tribe’s law may support a tribe’s submission to assume primacy under TAS or otherwise enable the tribe to take a more active role regarding such wells. For further discussion of TAS, see *infra* Part V.C.

181. See *Attorney’s Process & Investigation Servs., Inc. v. Sac & Fox Tribe of Miss. in Iowa*, 609 F.3d 927, 934 (8th Cir. 2010) (“The controlling principles [of tribal civil authority over nonmembers] are broad and abstract and must be carefully applied to the myriad disparate factual scenarios they govern.

In more recent cases, the Supreme Court has offered a narrower understanding of the two *Montana* exceptions than a textual reading would suggest,¹⁸² noting that “[t]he exception is only triggered by nonmember conduct that threatens the Indian tribe; it does not broadly permit the exercise of civil authority wherever it might be considered ‘necessary’ to self-government.”¹⁸³ To trigger a tribe’s jurisdiction under the second *Montana* exception, the Court stated that “[t]he impact must be demonstrably serious and must imperil the political integrity, the economic security, or the health and welfare of the tribe.”¹⁸⁴ In *Brendale v. Confederated Tribes & Bands of the Yakima Indian Nation*, the Court held that the Yakima possessed inherent zoning authority over nonmember-owned lands located in an area of the reservation closed to the general public and dominated by tribally-owned and member-owned parcels.¹⁸⁵ However, the Yakima lacked such authority over nonmember-owned lands in an area in which nearly half of the acreage was owned in fee by nonmembers.¹⁸⁶ Although substantially constraining tribal jurisdiction in the above decisions, the Supreme

Determining the contours of tribal civil jurisdiction and the boundaries of tribal sovereignty requires consideration of the historical scope of tribal sovereignty and the evolving place of the tribes within the American constitutional order, careful study of precedent, and ultimately a ‘proper balancing’ of the conflicting interests of the tribes and nonmembers.” (citing *Nevada v. Hicks*, 533 U.S. 353, 374 (2001)). Compare *Plains Commerce Bank v. Long Family Land & Cattle Co.*, 554 U.S. 316, 341 (2008) (noting that “[t]he sale of formerly Indian-owned fee land to a third party” does not qualify for the second *Montana* exception), with *Water Wheel*, 642 F.3d at 817 (holding that under the second *Montana* exception, the tribe could regulate a “business [that] involved the use of tribal land” and “constituted a significant economic interest for the tribe”).

182. See COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 4.02[3][c][i] (citing *Hicks*, 533 U.S. at 353; *Atkinson*, 532 U.S. at 656).

183. *Atkinson*, 532 U.S. at 657 n.12 (emphasis omitted).

184. *Brendale v. Confederated Tribes & Bands of the Yakima Indian Nation*, 492 U.S. 408, 431 (1989).

185. *Id.* at 444.

186. *Id.* at 415–16, 432. The Ninth Circuit subsequently found that “speculation concerning future foreclosures [was] insufficient to constitute the requisite imperilment” and “fail[ed] to establish a ‘direct effect on the political integrity, the economic security, or the health or welfare of the Tribe.’” *Yellowstone Cnty v. Pease*, 96 F.3d 1169, 1176–77 (9th Cir. 1996) (citing *South Dakota v. Bourland*, 39 F.3d 868, 870 (8th Cir. 1994)); see also *Philip Morris USA, Inc. v. King Mountain Tobacco Co.*, 569 F.3d 932 (9th Cir. 2009).

Court has continued to observe the right of tribes to exercise jurisdiction over nonmembers under certain circumstances.¹⁸⁷

Arguably, the case law regarding a tribe's authority to exercise civil regulatory authority under the second *Montana* exception has been especially protective of tribal jurisdiction over water rights and water sources.¹⁸⁸ In *Montana*, the Court noted the significance of reserved water rights as necessary to make the tribes' reservations "livable."¹⁸⁹ The Ninth Circuit in *Montana v. EPA* upheld the EPA's decision granting treatment as a state status to the Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation "to promulgate [water quality standards] that apply to all sources of pollutant emissions within the Reservation, regardless of whether the sources are located on land owned by members or nonmembers of the Tribe."¹⁹⁰ The court observed that "[a] water system is a unitary resource" such that "[t]he actions of one user have an immediate and direct effect on other users."¹⁹¹ Thus, the court recognized that "threats to water rights may invoke inherent tribal authority over non-Indians."¹⁹² The court held, "A tribe retains the inherent power to exercise civil authority over the conduct of non-Indians on fee lands within its reservation when

187. *Plains Commerce Bank v. Long Family Land & Cattle Co.*, 554 U.S. 316, 336 (2008) ("As our cases bear out, the tribe may quite legitimately seek to protect its members from noxious uses that threaten tribal welfare or security, or from nonmember conduct on the land that does the same The tribe is able fully to vindicate its sovereign interests in protecting its members and preserving tribal self-government by regulating nonmember activity on the [non-Indian-owned] land [within the reservation], within the limits set forth in our cases." (emphasis omitted) (citation omitted)).

188. As discussed *infra* Part V.C, a tribe acting pursuant to provisions of the CWA may establish water quality standards that are more stringent than federal standards, and the courts have found that the authority granted to tribes under these provisions is consistent with the second *Montana* exception. See also Marren Sanders, *Clean Water in Indian Country: The Risk (and Rewards) of Being Treated in the Same Manner as a State*, 36 WM. MITCHELL L. REV. 533, 542–45 (2010).

189. *Montana v. United States*, 450 U.S. 544, 566 n.15 (1981) (citing *Arizona v. California*, 373 U.S. 546, 599 (1963)).

190. *Montana v. EPA*, 137 F.3d 1135, 1138 (9th Cir. 1998). Indeed, the court noted that the affected dischargers included the state, the county, and several municipalities that engaged in regulated discharges on fee lands within the reservation. *Id.* at 1139.

191. *Id.* at 1141 (quoting *Walton II*, 647 F.2d 42, 52 (9th Cir. 1981)) (internal quotation marks omitted).

192. *Id.*

that conduct threatens or has some direct effect on the health and welfare of the tribe” and “[t]his includes conduct that involves the tribe’s water rights.”¹⁹³

As discussed further below, the EPA has also highlighted the problems that would arise if the “checkerboard” system of regulation, endorsed in the *Brendale* case, were to prevail in the context of water quality, describing “the difficulties of assuring compliance with water quality standards when two different sovereign entities are establishing [the] standards.”¹⁹⁴ In addition, the EPA recognizes that “water quality management serves the purpose of protecting public health and safety, which is a core governmental function, whose exercise is critical to self-government.”¹⁹⁵ Following the decision in *Nevada v. Hicks*,¹⁹⁶ however, when considering the second *Montana* exception, a court will also likely balance a state’s regulatory interests, if any, against the tribe’s interests.¹⁹⁷

If a tribe elects to pursue strategies to directly regulate the conduct of nonmembers on fee lands, a tribe’s groundwater assessment may enable the tribe to enhance its jurisdictional position by tailoring its regulations to conduct that the tribe can demonstrate imperils the tribe’s groundwater and the impact this contamination would have on the tribe. A tribe may also be able to enhance its position by developing an environmental regulatory program within the framework of one or more of the federal environmental statutes, such as the CWA and the SDWA, which authorize the EPA to treat Indian tribes like states. This is the case because when a tribe has been approved by the EPA for primary

193. *Walton II*, 647 F.2d at 52.

194. *See Sanders*, *supra* note 188, at 543 (citations omitted).

195. *Id.* (citing Amendments to the Water Quality Standards Regulation that Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,879 (Dec. 12, 1991) (codified as amended at 40 C.F.R. pt. 131 (2014))).

196. *Nevada v. Hicks*, 533 U.S. 353, 364 (2001). In considering the execution of search warrants by state officials on a tribal member’s home located on tribal land, the Court found that the Tribe’s ability to regulate state officers’ execution of process related to off-reservation violations of state laws was not essential to tribal self-government or internal relations, but that the state’s interest in execution of process was considerable, and held that the tribal court did not have jurisdiction to hear the member’s suit against the state officials. *Id.*

197. *See, e.g., Elliott v. White Mountain Apache Tribal Court*, 566 F.3d 842, 850 (9th Cir. 2009).

regulatory authority or “primacy,” the federal government stands behind the tribe in exercising its sovereign powers.¹⁹⁸

Two corollaries to a tribe’s exercise of its inherent sovereign power are the limitation on the authority of states and local governments to assert civil regulatory authority within the reservation and “the policy of leaving Indians free from state jurisdiction and control [which] is deeply rooted in the Nation’s history.”¹⁹⁹ Just as tribes cannot regulate off-reservation activities, states generally cannot regulate activities of a tribe or its tribal members within Indian country unless Congress has clearly expressed an intention to permit it.²⁰⁰ Thus, for example, within the context of the reciprocal impact of air quality standards on land use, the Ninth Circuit noted that “states and Indian tribes occupying federal reservations stand on substantially equal footing.”²⁰¹ Similarly, although the court recognized the state’s interests, the Ninth Circuit upheld the EPA’s rejection of a state’s application under the Resource Conservation and Recovery Act to regulate all hazardous waste activities within Indian country.²⁰² Pursuant to longstanding policy, the EPA retains responsibility for administering delegable environmental programs for Indian reservations where tribes have not sought and obtained EPA approval to be treated like a state for the purpose of administering the program.²⁰³ “Until Tribal Governments are willing and able to

198. See generally COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 10.02[1]; 1 ENVIRONMENTAL LAW PRACTICE GUIDE § 15A.02[2] (Michael B. Gerrard ed., 2014).

199. *Bryan v. Itasca Cnty.*, 426 U.S. 373, 376 n.2 (1976) (alteration in original) (quoting *McClanahan v. Ariz. State Tax Comm’n*, 411 U.S. 164, 168 (1973)) (internal quotation marks omitted).

200. *Wash. Dep’t of Ecology v. EPA*, 752 F.2d 1465, 1469–70 (9th Cir. 1985) (citing *Bryan*, 426 U.S. at 376 n.2). Absent governing acts of Congress, when considering a state’s jurisdiction over the activities of Indians on the reservation, “the question has always been whether the state action infringed on the right of reservation Indians to make their own laws and be ruled by them.” *Williams v. Lee*, 358 U.S. 217, 220 (1959). For example, the Supreme Court held that the attempts of California and the local county to regulate tribal bingo enterprises would impermissibly infringe on the tribal government and “the compelling federal and tribal interests supporting” those tribal regulations. *California v. Cabazon Band of Mission Indians*, 480 U.S. 202, 221–22 (1987). See generally COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 6.02.

201. *Nance v. EPA*, 645 F.2d 701, 714 (9th Cir. 1981).

202. See generally *Wash. Dep’t of Ecology*, 752 F.2d at 1465.

203. See EPA, POLICY FOR THE ADMINISTRATION OF ENVIRONMENTAL PROGRAMS

assume full responsibility for delegable programs, the [EPA] will retain responsibility for managing programs for reservations (unless the State has an express grant of jurisdiction from Congress sufficient to support delegation to the State Government).”²⁰⁴

Although tribes have the inherent authority to establish and enforce regulatory strategies that prohibit or compel certain conduct, such strategies can be controversial and expensive. Before establishing regulatory strategies, a tribe may first want to establish non-regulatory strategies that encourage conservation or employ best management practices for management and protection.²⁰⁵ Examples of such tribal strategies include establishing groundwater monitoring plans to record pumping information, water depth, and water quality; enacting tribal groundwater ordinances or codes to direct assessments and monitoring; establishing voluntary water conservation programs and public education programs; developing contingency plans for spills or other events that threaten groundwater; and acquiring land and easements for wetland protection or groundwater recharge point protection.²⁰⁶ To avoid the appearance of a jurisdictional void, tribes may also consider adoption of a tribal ordinance or code that sets out general tribal interests and needs and directs the tribal government to conduct studies and develop a groundwater protection or management plan. In addition, to the extent that a tribe operates the water system within the reservation, a tribe may also consider implementing measures such as encouraging water conservation through the rate structure and use of water meters.²⁰⁷

ON INDIAN RESERVATIONS (1984); *see also* Clean Air Act Title V Permit Program, 40 C.F.R. § 71.4(b) (2014); National Pollution Discharge Elimination System Program, 40 C.F.R. § 123.1(h); Underground Injection Control Program, 40 C.F.R. § 144.2; Approval of State Underground Storage Tanks Program, 40 C.F.R. § 281.12(a)(2). The EPA regulations governing the state administered Underground Injection Control Program (UIC) expressly exempt wells located on Indian lands from the scope of the state’s program. *E.g.*, 40 C.F.R. § 147.250 (providing that California will administer the UIC program throughout the state excepting Indian lands). *See generally* COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 10.02.

204. EPA, *supra* note 203, at 2. *See generally* COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 10.02.

205. *See* TOTTEN, *supra* note 18, at 87–89.

206. *Id.*

207. *See, e.g.*, EPA, SETTING SMALL DRINKING WATER SYSTEM RATES FOR A SUSTAINABLE FUTURE 31–35 (2006) (discussing specific rate structures that small water systems may use to encourage conservation).

Strategies that rely on alternatives to regulatory regimes, however, may not be enough, and “regulatory approaches, such as restricting land uses that may release contaminants in critical source water areas, are sometimes the best solution.”²⁰⁸ Since a tribe has the power to enact laws and adopt regulations governing activities within its Indian country, regulatory strategies are viable ways to ensure compliance with groundwater protection schemes. Examples of such regulatory initiatives include tribal laws requiring well construction and abandonment standards;²⁰⁹ mandating land use and construction requirements to protect sources of groundwater from contamination;²¹⁰ requiring the reduction or cessation of groundwater extractions when tribally set thresholds are reached, with attendant penalties; establishing a tribal groundwater management plan and enacting a groundwater permitting or allocation system within the reservation;²¹¹ enacting regulations or tribal codes for septic systems; regulating agricultural use and pumping of groundwater; or regulating how much water is exported from the tribe’s groundwater basin and when.²¹² Many of these strategies can be strengthened and

208. DRINKING WATER QUALITY IN INDIAN COUNTRY, *supra* note 154.

209. For example, the Oneida Tribe of Wisconsin established a well abandonment ordinance that “requir[ed] the proper abandonment, or upgrading, of all unused wells within the reservation.” *Id.*

210. See, e.g., Hualapai Groundwater Protection Overlay Ordinance, HUALAPAI ENVIRONMENTAL REVIEW CODE subtitle P (2013). This ordinance “imposes conditions on current land use practices and shall apply to all new construction, reconstruction, or expansion of existing buildings and new or expanded uses within the groundwater protection overlay area.” *Id.*; see also Groundwater Protection Ordinance, STOCKBRIDGE-MUNSEE TRIBAL LAW ch. 37, <http://www.mohican-nsn.gov/Departments/Legal/Ordinances/Ch%2037%20Groundwater%20Protection.pdf>. This comprehensive ordinance, *inter alia*, establishes and mandates various best management practices, regulates underground injection wells, establishes a wellhead protection program that limits land use, and regulates private sewage systems. *Id.*

211. See, e.g., Confederated Salish & Kootenai Tribes, Proposed Unitary Administration and Management Ordinance (Nov. 8 2012), *available at* <http://www.cskt.org/Water.admin.ordinance.pdf>. The Confederated Salish and Kootenai Tribes of the Flathead Reservation issued this working draft, which includes regulation of groundwater management areas and permits for the use of groundwater, as part of a comprehensive water rights settlement among the Confederated Salish and Kootenai Tribes, the State of Montana, and the United States. *Id.*

212. See, for example, TOTTEN, *supra* note 18, § C.1(b), for a discussion of various potential regulatory strategies.

expanded when coupled with strategies to exercise jurisdiction under federal laws, such as those discussed in the next section.

C. Jurisdiction Authorized Pursuant to Federal Statute.

In addition to protecting tribal water resources through the unilateral exercise of their sovereign inherent powers, tribes may, with the approval of the EPA, protect their water resources through the CWA and the SDWA. Although the CWA is generally associated with the protection of navigable surface waters, Congress expressly provided that the programs established under the Act protect groundwater as well.²¹³ The SDWA authorized a number of programs relevant to the protection of groundwater aquifers, including the establishment of national drinking water standards,²¹⁴ regulation of underground injection wells,²¹⁵ establishment of source water protection programs,²¹⁶ protection of sole source aquifers,²¹⁷ establishment of wellhead protection programs,²¹⁸ as well as support for a number of related activities. In addition, where a tribe has not been approved to assume primacy to administer the Underground Injection Control (UIC) program, the EPA will administer the UIC program on all Indian lands.²¹⁹ If a tribe so requests, the regulations further authorize the EPA to develop an alternate UIC program for Class II wells (generally wells involved in oil and gas development) to meet the tribe's unique interests and needs; pursuant to this authority, the EPA has developed specific programs for the Osage mineral reserve and the

213. See 33 U.S.C. § 1252(a) (2012).

214. Safe Drinking Water Act of 1974, Pub. L. No. 93-523, § 1412, 88 Stat. 1660, 1663 (codified as amended at 42 U.S.C. § 300g-1).

215. Safe Drinking Water Act Amendments of 1980, Pub. L. No. 96-502, § 1425, 94 Stat. 2737, 2737 (codified as amended at 42 U.S.C. § 300h-4); Safe Drinking Water Act of 1974, § 1424, 88 Stat. at 1678 (codified as amended at 42 U.S.C. §§ 300h-3 to 300-4));

216. Safe Drinking Water Act Amendments of 1996, Pub. L. No. 104-182 §§ 1453-1454, 110 Stat. 1613, 1673-79 (codified as amended at 42 U.S.C. §§ 300j-13 to -14).

217. *Id.* § 1427, 110 Stat. at 1650-51 (codified as amended at 42 U.S.C. § 300h-6).

218. Safe Drinking Water Act Amendments of 1996 § 1428, 110 Stat. 1692 (codified as amended at 42 U.S.C. § 300h-7).

219. 40 C.F.R. § 144.3(e) (2014).

lands of the Navajo, Ute Mountain Ute, and tribes in New Mexico and Oklahoma.²²⁰

Both the CWA and SDWA provide tribes with enhanced authority to protect their groundwater resources. These laws include provisions that authorize the EPA to treat an Indian tribe as a state by approving the tribe to administer programs like those administered by states; such statutory provisions are commonly referred to as “treatment as states” or “TAS.”²²¹ In particular, section 518(e) of the CWA (as amended in 1987) and section 1422(e) of the SDWA (as amended in 1986) authorize the EPA to treat an Indian tribe as a state for certain specified purposes.²²² The EPA has interpreted both TAS provisions as the exercise of inherent sovereign powers rather than a delegation of federal authority.²²³ With respect to the CWA, for example, if a tribe’s application includes surface waters located on fee lands or other

220. See *Promulgation of Class II Programs for Indian Lands*, 40 C.F.R. § 144.2; *Osage Mineral Reserve—Class II Wells*, 40 C.F.R. §§ 147.2901–.2929; *Lands of the Navajo, Ute Mountain Ute, All Other New Mexico Tribes*, 40 C.F.R. §§ 147.3000–.3016; *Lands of Certain Oklahoma Indian Tribes*, 40 C.F.R. §§ 147.3100–.3109; see also COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 10.03[2][b].

221. See COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 10.02[1]. “In rulemaking documents, EPA has expressed a preference for limiting its use of this term, preferring instead terminology such as ‘treatment in the same manner as a state,’ in response to comments received from tribes pointing out that tribes are different from states in many ways” 1 ENVIRONMENTAL LAW PRACTICE GUIDE, *supra* note 198, § 15A.02[2][c] n.181 (citing *Indian Tribes; Eligibility for Program Authorization*, 59 Fed. Reg. 64,339 (Dec. 14, 1994)).

222. Clean Water Act, Pub. L. No. 100-4, § 518(e), 101 Stat. 7 (1987) (codified as amended at 33 U.S.C. § 1377(e)); Safe Drinking Water Act Amendments of 1986, Pub. L. No. 99-339, § 1451, 100 Stat. 642 (codified as amended 42 U.S.C. § 300h-1(e)). To be eligible for TAS, the CWA requires that a tribe be federally recognized and exercising governmental authority, as well as: (1) have a “governing body carrying out substantial governmental duties and powers”; (2) exercise “functions . . . pertain[ing] to the management and protection of water resources which are held by an Indian tribe, held by the United States in trust for Indians, held by a member of an Indian tribe if such property interest is subject to a trust restriction on alienation, or otherwise within the borders of an Indian reservation”; and (3) that the tribe is “capable in EPA’s judgment of carrying out the functions to be exercised in a manner consistent with the CWA and applicable regulations.” 33 U.S.C. § 1377(e).

223. See *Amendments to the Water Quality Standards Regulation that Pertain to Standards on Indian Reservations*, 56 Fed. Reg. 64876-01, 64,880 (Dec. 12, 1991) (codified as amended at 40 C.F.R. pt. 131).

non-trust lands, the EPA effectively requires the tribe to show that it meets the second *Montana* exception.²²⁴ The EPA requires the tribe to make a factual showing that the waters are used by the tribe and its members and that such waters are subject to regulation under the CWA and then assert that the impairment of surface waters by the activities of nonmembers on fee lands would have a “serious and substantial effect on the health and welfare of the Tribe.”²²⁵ Once a tribe has shown that impairment of the waters on the reservation would have a serious and substantial effect on the health and welfare of the tribe, the EPA presumes that there has been an adequate showing of inherent authority.²²⁶ The EPA’s regulations for approving TAS have been upheld by the courts as “reflecting appropriate delineation and application of inherent Tribal regulatory authority over non-consenting nonmembers.”²²⁷ A tribe’s TAS status may also enhance a tribe’s ability to demonstrate that it has a substantial interest in protecting *all* water resources on the reservation through its inherent power to establish ordinances regulating the conduct of any person on any lands within the reservation who poses a serious and substantial threat to the tribe’s groundwater.

A tribe may seek TAS status for a number of different programs established under the CWA, including but not limited to the EPA’s water quality standards program,²²⁸ implementation of the National Pollution Discharge Elimination System (NPDES) permit system’s nonpoint source management programs, and grants for pollution control and the construction of treatment

224. See 40 C.F.R. § 131.8(b)(2)(ii) (requiring tribes to “[d]escribe the types of governmental functions currently performed by the Tribal governing body such as, but not limited to, the exercise of police powers affecting (or relating to) the health, safety, and welfare of the affected population, taxation, and the exercise of the power of eminent domain”); see also *Montana v. United States*, 450 U.S. 544, 566 (1981). The EPA established similar requirements for the SDWA. See, e.g., 40 C.F.R. § 145.52 (establishing the TAS requirements for the CIP program).

225. Amendments to the Water Quality Standards Regulation that Pertain to Standards on Indian Reservations, 56 Fed. Reg. at 64,879.

226. See *id.*

227. *Montana v. EPA*, 137 F.3d 1135, 1141 (9th Cir. 1998); see also *City of Albuquerque v. Browner*, 97 F.3d 415, 422 (10th Cir. 1996) (“Congress’s intent is unclear and ambiguous in regard to § 1377(e) but . . . the EPA’s construction of the 1987 amendment to the Clean Water Act is reasonable and permissible.”).

228. A tribe that is approved for the water quality standards program is also treated as a state for water quality certification under section 401 of the Clean Water Act. 40 C.F.R. § 131.4(c).

works.²²⁹ Under the SDWA, a tribe may seek TAS status to administer the UIC program²³⁰ and the Public Drinking Water System Supervision program.²³¹ The eligibility requirements for the various programs, however, differ to some degree, and the EPA requires a tribe to seek TAS separately for each program. For example, the geographic scope of TAS for regulatory programs is limited to waters that are within the exterior boundaries of a reservation,²³² but the TAS for the UIC program extends to all areas within the tribe's jurisdiction.²³³ Although the water quality standards, the NPDES permitting process, and certification processes are directly tied to discharges into surface waters, as noted above, Congress recognized that surface and groundwater are connected and that CWA programs can affect a tribe's groundwater resources as well. The extent to which discharges into surface waters will affect the quality of a tribe's groundwater resources, however, will depend on the hydrology in that area. In addition, in California, the State Water Resources Control Board has determined that certain groundwater is a subsurface flow of the surface water and subject to the state appropriative system for surface waters.²³⁴ State agencies in other states may make similar findings. If groundwater is treated as a subsurface flow for the purposes of the water permitting system, arguably it should also be

229. Water Resources Reform and Development Act, Pub. L. No. 113-121, 128 Stat. 1193 (2014) (to be codified at 33 U.S.C. § 1377(c)).

230. 42 U.S.C. § 300j-11 (2012); 40 C.F.R. § 145.52.

231. 42 U.S.C. § 300j-11; 40 C.F.R. § 142.72.

232. See 40 C.F.R. § 131.8(a)(2).

233. 42 U.S.C. § 300j-11(b)(1)(B); 40 C.F.R. § 145.56(b).

234. Legal Classification of Groundwater in the Pauma and Pala Basins, No. 1645, 2002 WL 31441222, at *14-15 (Cal. State Water Resources Control B. Oct. 17, 2002); Fallbrook Pub. Util. Dist., No. 432, at 14-15 (Cal. State Water Resources Control B. 1938). Basically, the question in that case was whether proposed municipal pumping projects for growing north San Diego County communities sought by Fallbrook, Oceanside, and Carlsbad would interfere with existing downstream irrigators and risk infiltration of seawater into the aquifer. The State Water Resources Control Board found there would likely be such interference, and it took jurisdiction of the proposed wells on the ground that they pumped from a subterranean stream. The Board limited operation of the wells in order to protect existing surface water rights. See STATE WATER RESOURCE CONTROL BOARD, NO. 0-076-300-0, REVIEW OF THE LAWS ESTABLISHING THE SWRCB'S PERMITTING AUTHORITY OVER APPROPRIATIONS OF GROUNDWATER CLASSIFIED AS SUBTERRANEAN STREAMS AND THE SWRCB'S IMPLEMENTATION OF THOSE LAWS (2002).

treated as surface water for the purposes of the water quality standards established under the CWA.

Under TAS status a tribe can set, subject to EPA approval, water quality standards that are more stringent than those recommended by the EPA or those that a state is imposing on an upstream entity.²³⁵ If a tribe has more stringent water quality standards than an upstream state, the EPA has the authority to require an upstream discharger to comply with the tribe's downstream standards.²³⁶ In the event that a tribe's standards differ from a state's standards, the EPA developed a mediation mechanism to resolve unreasonable consequences arising from different standards imposed on the same water body.²³⁷ However, because a tribe may set water quality standards that could affect non-Indian dischargers, including upstream state and municipal dischargers located off-reservation, tribes should be aware of the heightened potential for challenges and potentially costly litigation.²³⁸

The ability of a tribe to protect its groundwater resources through environmental programs established under the CWA or the SDWA will depend upon a number of factors, including the hydrology of the reservation and the primary threats to the tribe's groundwater. For example, if the state has determined that the groundwater is a subsurface flow of surface water located within the

235. *Wisconsin v. EPA*, 266 F.3d 741, 748 (7th Cir. 2001) ("Once a tribe is given TAS status, it has the power to require upstream off-reservation dischargers, conducting activities that may be economically valuable to the state . . . to make sure that their activities do not result in contamination of the downstream on-reservation waters (assuming for the sake of argument that the reservation standards are more stringent than those the state is imposing on the upstream entity)."); *City of Albuquerque v. Browner*, 97 F.3d 415, 423–24 (10th Cir. 1996).

236. *Browner*, 97 F.3d at 424 (upholding EPA's approval of water quality standards set by the Isleta Pueblo, which are more stringent than the state's standards and affected the discharge permit for the Albuquerque waste treatment facility into the Rio Grande); *see also* *Arkansas v. Oklahoma*, 503 U.S. 91, 114 (1992) (upholding EPA regulations for ensuring that a discharge in an upstream state does not violate the downstream state's water quality standards).

237. *See Wisconsin v. EPA*, 266 F.3d at 749–50; *Browner*, 97 F.3d at 427; 40 C.F.R. § 131.7.

238. *See generally* Dean B. Suagee & John P. Lowndes, *Due Process and Public Participation in Tribal Environmental Programs*, 13 TUL. ENVTL. L.J. 1 (1999); Dean B. Suagee, *The Tribal Right to Protect the Environment*, 27 NAT. RESOURCES & ENV'T, Fall 2012, at 52.

reservation, as California has done with the San Luis Rey River,²³⁹ the assumption of TAS to establish water quality standards under the CWA may help a tribe to address certain off-reservation conduct that degrades the groundwater. If underground injection wells within its reservation are a concern (for example, from oil or gas production), a tribe may want to actively engage with the EPA on the enforcement of the SDWA UIC program or assume primacy under the UIC program. Although the process for assuming primacy under TAS can be lengthy and potentially costly,²⁴⁰ these federal programs provide a variety of regulatory options for tribes to employ to manage groundwater.

D. Intergovernmental Efforts

Watersheds and groundwater basins often extend beyond the boundaries of a tribe's reservation. Moreover, groundwater extraction and use occurring off-reservation may have a significant effect on groundwater and surface water within the reservation. To effectively address such issues, a tribe may consider working with other tribes or local and regional entities (such as regional planning commissions, local agencies, and state agencies) to ensure the tribe's views are incorporated into regional/watershed decision making. In other cases, a tribe may be able to address threats to its groundwater by working more actively with EPA regulators. These intergovernmental efforts can serve as a supplement to, or in lieu of, the direct exercise of tribal regulatory authority. In addition, tribes may support groundwater regulation through intergovernmental cooperation as part of a water rights settlement. For example, as noted above, the Pechanga Band's 2006 settlement agreement with the Rancho California Water District, which was negotiated in the context of long-standing water rights litigation, provides for formation of an intergovernmental commission that

239. See generally *supra* notes 139, 142.

240. Enacting tribal water quality standards may be an expensive proposition, whether it is from tribal staff and attorney time needed to draft and enact the standards, ensuing litigation, or challenges from entities opposed to the heightened standards. See, e.g., Sanders, *supra* note 188, at 547–48, 548 n.93 (citing Denise D. Fort, *State and Tribal Water Quality Standards Under the Clean Water Act: A Case Study*, 35 NAT. RESOURCES J. 771, 772 (1995); Darren J. Ranco, *Models of Tribal Environmental Regulation: In Pursuit of a Culturally Relevant Form of Tribal Sovereignty*, FED. LAW, Mar.–Apr. 2009, at 46)).

sets annual groundwater allocations, manages use, and prepares planning reports.²⁴¹

In California, the Sustainable Groundwater Management Act will require local governments to more actively manage groundwater resources and adopt groundwater sustainability plans in the next five years, aiming to reach sustainability by 2020.²⁴² Although the regulatory authority will remain with local governments and agencies, this represents a major shift in the California groundwater regulatory scheme because, for the first time, local agencies will be required to adopt groundwater management plans that meet specific requirements, and these local agencies will have new tools to monitor and regulate groundwater extraction.²⁴³ However, because many of the groundwater basins and sub-basins underlie more than one local government, implementation of this law will likely require significant intergovernmental cooperation.

Implementation of the Sustainable Groundwater Management Act should be viewed in the context of the vision set out in the California Water Plan Update 2013 (State Water Plan), which advocates “three themes to address the water challenges facing California today: (1) advance integrated water management, (2) strengthen government agency alignment, and (3) invest in innovation and infrastructure.”²⁴⁴ Intergovernmental coordination is a major element of the State Water Plan.²⁴⁵ The Plan expressly recognizes that tribal governments are one of many kinds of governmental entities that may be responsible for ensuring that the water is safe and available in sufficient quantities for its intended purposes, and that tribes may be involved in a wide range of water management activities within their borders. Furthermore, the

241. GROUNDWATER MANAGEMENT AGREEMENT, *supra* note 127, at 4–10.

242. *See* Sustainable Groundwater Management Act, ch. 346, 2014 Cal. Legis. Serv. (West) (to be codified in scattered sections of CAL. WATER CODE).

243. The management of groundwater in California was traditionally left to local governments and local agencies that were authorized, but not required, to develop groundwater management plans. *See* BULLETIN 118, *supra* note 23, at 32. Groundwater issues were variously addressed through authority granted under the Water Code or other state statutes, through local government groundwater ordinances or joint powers agreements, or through adjudication.

244. CALIFORNIA WATER PLAN UPDATE, *supra* note 161, at ES-2.

245. *Id.* at 4-15 to -16; *see also* CAL. DEP’T WATER RES., GUIDING PRINCIPLES & STATEMENT OF GOALS FOR IMPLEMENTATION 3 (2013) (prepared for the 2013 Tribal Water Summit).

Governor's 2014 California Water Action Plan recognizes that collaboration between federal, state, local, and tribal governments is essential.²⁴⁶ Consistent with the State Water Plan and the California Water Action Plan, the Sustainable Groundwater Management Act provides that the federal government or federally recognized Indian tribes may voluntarily agree to participate in the preparation or administration of a groundwater sustainability plan or groundwater management plan through a joint powers authority or other agreement with local agencies in their basin.²⁴⁷

These developments offer tribes a unique opportunity to participate in the collection and assessment of data²⁴⁸ and the preparation of management plans to sustain groundwater basins. A participating tribe will be eligible to participate fully in the planning, financing, and management, and will be eligible for grants and technical assistance, if the exercise of regulatory authority, enforcement, or imposition and collection of fees is pursuant to the tribe's independent authority and not pursuant to a groundwater sustainability agency.²⁴⁹ Further, the new state law provides that the voluntary or involuntary participation of a holder of federally reserved groundwater rights in an adjudication or management shall not subject that holder to state law regulating other proceedings or matters not authorized by federal law.²⁵⁰ Although there are many questions and issues to be explored, this new law will create new opportunities for tribes in California to engage in intergovernmental efforts. Additionally, the new law expressly provides that, in an adjudication of groundwater rights involving the management by a groundwater sustainability agency,

246. CALIFORNIA WATER ACTION PLAN, *supra* note 155, at 1–4.

247. Sustainable Groundwater Management Act, ch. 346, § 10720.3 (to be codified at WATER § 10720.3) (stating that tribes may participate directly in a joint powers authority pursuant to existing state law); *see* CAL. GOV'T CODE § 6500 (West, Westlaw through Res. Ch. 1 of 2013–2014 2nd Ex. Sess.).

248. Groundwater sustainability plans must include, *inter alia*, a detailed description of the physical setting and characteristics of the aquifer system underlying the basin, and information to be gained through monitoring efforts such as those measuring groundwater levels, groundwater quality, subsidence, and streamflow. *See* Sustainable Groundwater Management Act, ch. 346, § 10720.3 (to be codified at WATER § 10720.3).

249. WATER § 10720.3 (West, Westlaw through Res. Ch. 1 of 2013–2014 2nd Ex. Sess.).

250. *Id.*

federally reserved water rights must be respected in full.²⁵¹ This provides tribes in California with another important reason to quantify their federally reserved groundwater rights.

The drought, however, with its resulting strain on groundwater resources, as well as the state and local responses to these factors, is likely to affect relationships among tribes, neighboring local governments, and agencies. Although, as noted above, state and local governments are generally precluded from exercising civil regulatory authority over conduct on tribal lands within a reservation,²⁵² state and local governments may seek to regulate, or otherwise affect the use and extraction of groundwater within Indian reservations through negotiated agreements.²⁵³ On the other hand, the urgency created by the drought may open the door to more serious negotiations between tribes and local governments to protect a common resource, and such discussions may be facilitated by the federal government and state agencies.

Although intergovernmental collaboration may be difficult, especially when it involves the use and management of a critical natural resource such as groundwater, such cooperation may provide the most effective means of protecting the resource. This is especially so because groundwater regulation may include entire groundwater basins or aquifers with multiple overlying landowners and users.

VI. RECOMMENDATIONS AND CONCLUSION

Tribes are faced with many options in asserting and exercising their groundwater rights. Their success in this effort will depend on the degree to which they are able to address their water resource issues in a comprehensive manner that protects their current water sources, ensures they have enough water to meet and sustain future growth and development, and establishes and enforces water quality standards.

As discussed herein, a tribe should start with an assessment of its groundwater resources, identifying their quality and potential, as well as the users affecting the water source. Tribes should then consider their strategies for asserting and protecting those rights—

251. *Id.* (“In the case of a conflict between federal and state law in that adjudication or management, federal law shall prevail.”).

252. COHEN’S HANDBOOK OF FEDERAL INDIAN LAW, *supra* note 69, § 6.03[1][a].

253. *Id.* § 6.05.

whether grounded in federally reserved rights or rights asserted under state or tribal law—recognizing that litigation usually ends in a negotiated settlement, and therefore, settlement as the first alternative may be the most productive strategy. Finally, tribes should consider the many regulatory and non-regulatory alternatives to protect their groundwater, using the whole range of authorities—tribal, federal, and state, including intergovernmental agreements—that will enable them to achieve that goal.