

THE RISE AND THE DEMISE OF THE ABSOLUTE DOMINION
DOCTRINE FOR GROUNDWATER

*Joseph W. Dellapenna**

I. INTRODUCTION

We live in a world with ever-greater water shortages.¹ Shortages are driven by a combination of factors: growing human populations; increasing per capita water usage; and accelerating climate disruption.² In coping with these shortages, groundwater will play a central role, if only because the greater part of fresh water on the planet Earth is found underground.³ As a result, we see greater and greater attention—including legal attention⁴—given to groundwater across the United States.⁵ In many respects this is because the law in some states is still rooted in legal principles established in the nineteenth century—an era of pervasive ignorance about groundwater.⁶

A good deal of legal confusion about groundwater persists.⁷ Among other problems, there is no single legal definition for groundwater. Statutes, judicial opinions, tradition, and pragmatism have provided numerous definitions that generally ignore the fact that the division of surface and groundwater into separate legal categories, as well as the subdivision of groundwater into several additional legal categories (such as “percolating water” and “underground streams”), contradicts scientific hydrology.⁸ These old classifications, however, remain embedded in the law.⁹

Lawyers and jurists have developed a body of law for percolating groundwater, the first approach to which was variously called the “absolute dominion” rule, “the absolute ownership,” or the “rule of capture.”¹⁰ This article uses the term “absolute dominion,” generally including within that term decisions or arguments that use either of the other two terms.

In the common-law tradition, the absolute dominion doctrine dates at least from 1836.¹¹ Similar rules are even older in the civil law tradition.¹² Yet today, the absolute dominion doctrine has largely disappeared from the common law world. The doctrine survives most strongly and most clearly in Indiana, Maine, and Texas.¹³ Even in those jurisdictions, however, the doctrine’s reach has been limited legislatively and judicially. Elsewhere, the doctrine is far weaker if it exists at all. Continuing modification is the least that can be expected from courts and legislatures wherever the rule purportedly survives; complete abandonment is more likely.

In this article, I summarize the rise and fall of the absolute dominion doctrine, with particular emphasis on the ongoing struggle over the rule in Texas. Part II briefly summarizes its origins and widespread adoption in the

*Please refer to original version for accurate page numbers

common law world. Part III delineates the characteristic features of the doctrine when it was applied. Part IV describes its abandonment throughout most of the United States. Part V examines the intense struggle over the rule in Texas. Part VI discusses some of the possible roles that federal law could play. Finally, Part VII draws some conclusions about the rule and its future prospects.

II. ORIGINS AND SPREAD

The absolute dominion doctrine was a relatively late development in the common law. Long before the nineteenth century, groundwater was one of many natural phenomena affecting human life. Wells and springs were important for human activity. So too were streams, ponds, and rain barrels for collecting water. The nineteenth-century development of the common law for surface streams and surface run-off—in contrast with the general silence regarding groundwater—indicates that surface waters were recognized as carrying great significance early on, while the paucity of common-law activity relating to groundwater suggests that groundwater was far less significant.¹⁴

Nineteenth-century judges knew little about the location and behavior of groundwater.¹⁵ Hydraulic principles, though known to the Romans empirically, were just beginning to be established scientifically in the mid-nineteenth century.¹⁶ Despite this, common-law judges were also aware of the market costs that different legal rules could impose. They knew that their choices concerning groundwater would contract or expand the property rights of landowners and make the exploitation of groundwater more or less expensive.¹⁷ Yet throughout the nineteenth century, there was little need for legal attention to groundwater.

Before the invention of the of the high-speed centrifugal (turbine) pump in 1937, the abstraction of groundwater was limited to small, shallow wells, and the abstraction usually had only small—if any—effect on neighboring landowners.¹⁸ Early litigation over groundwater in England and North America usually involved landowners who needed to dewater the land in order to operate mines or develop the land in other ways and in the process deprived neighbors of water from their wells.¹⁹ Dewatering became possible with the invention and perfection of the Newcomen pump, in 1776, through linkage with James Watts' steam engine.²⁰ While still relatively inefficient, the Watt/Newcomen pump was good enough to spark litigation.²¹ Nineteenth-century American courts were frequently confronted by this problem and led the way in developing the absolute dominion doctrine. The first reported common-law case in which the court addressed the problem in terms recognizable as the absolute dominion doctrine was *Greenleaf v. Francis*,²² decided in Massachusetts in 1836. The first English decision to express the absolute dominion doctrine clearly was *Acton v. Blundell*.²³

*Please refer to original version for accurate page numbers

Other possible rules were known, but the choice among the possibilities was difficult for judges who knew that these decisions would have important economic, social, and legal consequences. The choice of the absolute dominion doctrine was driven in large measure by the relative lack of knowledge of groundwater hydrogeology in the mid-nineteenth century. One court summarized the existence, origin, and movement of groundwater in one dramatic word—“occult.”²⁴

Defining groundwater as “occult” conjures up the image of the divining rod—a y-shaped stick of hazel—in the sensitive hands of a water-witch, dowsing for an underground source of water.²⁵ Occult literally means something hidden from sight, and traditional medical terminology uses it to mean a condition not detectable by a topical examination.²⁶

In the mid-nineteenth century, courts in England and the United States faced an abruptly posed matter of first impression: What rights did someone have in groundwater? Courts could have chosen to protect existing uses of water, subject to change only by contracts among landowners drawing upon the aquifer or by a prescriptive user among them. This was an option particularly because the early cases involved deliberate dewatering to allow the extraction of coal, ore, aggregates, or other material, thereby cutting off the flow of water to long-established wells and springs in the neighborhood. The owners of the wells or springs had relied upon this supply of water for their economic activities, yet now they saw the flow diminished or utterly dried up by a mine that dumped the water, unused and so polluted as to deprive the well owners of any possibility of use.

Lord Ellenborough, Chief Justice of the King’s Bench, adopted this approach in 1808 in *Balston v. Bensted*.²⁷ In that case, the court found liability when the dewatering of a quarry shut off the flow of water in a spring that the plaintiff used for the manufacture of paper.²⁸ Ellenborough concluded that “20 years’ exclusive enjoyment of water in any particular manner affords a conclusive presumption of right in the party so enjoying it.”²⁹ As a result of the court’s ruling, the quarry owner had to convey the groundwater from the dewatered quarry to the water collector of the paper manufacturer. While the quarry owner could dewater and the paper manufacturer could not stop the dewatering, the quarry owner had to deliver the water to the manufacturer for continued economic use. The English House of Lords later would expressly disapprove of *Balston* after the general embrace of the absolute dominion doctrine by common-law courts.³⁰

The English decision that broke with *Balston* without expressly overruling it was *Acton v. Blundell*.³¹ That case has come to be identified as the source of the absolute dominion doctrine,³² notwithstanding its earlier adoption in Massachusetts.³³ True enough, the English groundwater decisions did not refer to the Massachusetts decision, unlike the doctrine of riparian rights for surface waters, where English courts did refer to American authorities in adopting riparian rights after that body of law emerged in the United

*Please refer to original version for accurate page numbers

States.³⁴ The most that the failure to cite the American authorities demonstrates is that the doctrine of absolute dominion emerged independently on both sides of the Atlantic. The parallel reasoning in the English and American courts perhaps suggests that the earlier American developments influenced the English decisions.

Like contemporary American courts, the English courts justified absolute dominion on the basis that the location and behavior of groundwater was simply too unknowable to allow any other rule.³⁵ English courts therefore described percolating groundwater—unlike underground streams—as part of the land under which the water was located, and thus, as belonging to the surface owner.³⁶ The English courts specifically rejected Roman law as the basis for the English absolute dominion doctrine.³⁷ And long after hydrogeologic knowledge became available, English courts continued to adhere to an extreme version of absolute dominion, as did the Chancery Division in 1969:

[A] man [*sic*] may abstract the water under his land which percolates in undefined channels to whatever extent he pleases, notwithstanding that this may result in the abstraction of water percolating under the land of his neighbor and, thereby, cause him injury. In such circumstances, the principle of *sic utere tuo et alienum non laedas* [does not apply]. . . . Moreover, since it is not actionable to cause damage by the abstraction of underground water, even where this is done maliciously, it would seem illogical that it should be actionable if it were done carelessly. Where there is no duty not to injure for the sake of inflicting injury, there cannot . . . be a duty to take care not to inflict the same injury³⁸

English courts were still enforcing this stark position as late as 1987 in *Stephens v. Anglian Water Authority*.³⁹ In denying relief for a landowner whose land subsided because of a neighbor's dewatering of a quarry, Lord Justice Slade indicated,

As the law stands, the right of the landowner to abstract subterranean water flowing in undefined channels beneath his land . . . appears to us, in the light of [common-law] authorities, to be exercisable regardless of the consequences, whether physical or pecuniary, to his neighbours. Whether or not this state of the law is satisfactory is not for us to say.⁴⁰

American courts came to refer to the absolute dominion doctrine as the “English Rule,” notwithstanding its independent American origin.⁴¹ The English Rule today actually is subject to important restrictions.⁴² Following *Greenleaf* and *Acton*, American courts embraced the absolute dominion doctrine. In 1855, the Vermont Supreme Court rejected a reasonable use rule adopted by the trial court and deliberately chose, after thoroughly canvassing available cases, the absolute dominion doctrine: “[I]t is better to leave [subterranean waters] to be enjoyed absolutely by the owner of the land, as

*Please refer to original version for accurate page numbers

one of its natural advantages, and in the eye of the law a part of it.”⁴³ The Vermont court was keenly aware that no tradition existed, no precedent bound it, and what could be found in the law books was not part of an established common law rule of property.⁴⁴ The judges simply thought it impractical to adopt a rule for groundwater similar to the one for riparians owning land along the banks of surface streams.⁴⁵ Once again, groundwater was simply too unknowable:

[T]he law governing running streams is not applicable to underground water[] . . . ; and if it is to be established that there are correlative rights existing, between adjoining proprietors of the land, to the use of water percolating the earth, an entire new chapter in the law will be necessary to define what these rights are, and to put them on some tangible and practical ground, that the rules concerning them may be applied to common use. But from the very nature of the case, this seems impracticable. The laws of . . . water under ground, and of its progress while there, are not uniform, and cannot be known with any degree of certainty, nor can its progress be regulated The secret, changeable, and uncontrollable character of underground water in its operations, is so diverse and uncertain that *we cannot well subject it to the regulations of law*, nor build upon it a system of rules, as is done in the case of surface streams We think the practical uncertainties which must ever attend subterranean waters is reason enough why it should not be attempted to subject them to certain and fixed rules of law, and that it is better to leave them to be enjoyed absolutely by the owner of the land, as one of its natural advantages, and in the eye of the law as a part of it⁴⁶

In 1861, the Ohio Supreme Court in *Frazier v. Brown* described groundwater in similar words:

[T]he existence, origin, movement and course of such waters, and the causes which govern and direct their movements, are so *secret, occult and concealed*, that an attempt to administer any set of legal rules in respect to them would be involved in hopeless uncertainty, and would be, therefore, practically impossible.⁴⁷

Chief Justice J. Scott Brinkerhoff, writing for the court in *Frazier*, undertook a comprehensive legal survey that, despite some confusion, seems to have inspired most of the courts in this period in deciding the rules to govern groundwater. He decided that wells that diminished stream flow gave no cause of action to riparians because the mere operation of a well in relation to a stream and, implicitly, an aquifer could not create a prescriptive right.⁴⁸ Only if the defendant acted from motives of “*unmixed malice*, without any object, and, when done, incapable of answering any end, either of ornament, convenience, or profit, connected with the enjoyment and use of his property,” might the court at some future date decide that a user of groundwater had exceeded his or her rights.⁴⁹

Frazier meant that the law applicable to streams and to groundwater in Ohio would be different. In Ohio, anyone could take as much groundwater from under the landowner's ground as technology allowed, and a first extractor's right to pump was subordinate to whatever technical superiority other landowners could later command. A second user could draw away from the first user all of the water that the second user's better technology could command. The Ohio court concluded that to limit the ability of a landowner to extract groundwater or to dewater land would be to the "material detriment of the common wealth, . . . [impeding] drainage and agriculture, mining, the construction of highways and railroads[,] . . . sanitary regulations, building and the general progress of improvement in works of embellishment and utility."⁵⁰

The absolute dominion doctrine was soon adopted by most other states.⁵¹ Even an occasional statute embraced it: "The course of a stream of water underground and its exact condition before its first use are so difficult of ascertainment that trespass may not be brought for any supposed interference with the rights of a proprietor."⁵² That word "occult" has its attractions.⁵³

III. CHARACTERISTIC FEATURES

Despite claims that any doctrine other than absolute dominion was impractical, the courts that embraced the doctrine might have chosen other rules.⁵⁴ Keeping groundwater issues out of courts as a submerged part of the landowner's general estate might reduce the amount of litigation and thereby lower transaction costs to some extent,⁵⁵ but neighboring landowners would still negotiate and dispute over groundwater. The judges in cases such as *Frazier v. Brown* spoke largely in pragmatic terms, but they did mention the rights of landowners, suggesting a more principled approach.⁵⁶

One principled approach, already mentioned, saw the absolute dominion doctrine as a property rule. Legal commentators, including Joseph Angell—the first American to write about water law—explained the absolute dominion doctrine in these words:

[L]and . . . extends *downwards* as well as upwards; so that whatever is in a direct line between the surface of the land and the centre of the earth, belongs to the owner of the surface. It would consequently seem to follow, that whether what is *subterranean* be solid rock, mines, or porous soil, or salt springs, or part land and part water, the person who owns the surface may . . . apply all that is there found to his own purposes *ad libitum*.⁵⁷

Angell's formulation rested on the maxim derived from Blackstone, "*Cujus est solum, ejus est usque ad coelum et ad inferos*" ("to whomever the soil belongs, so also belongs up to heaven and down to the inferno").⁵⁸ Yet

*Please refer to original version for accurate page numbers

Angell was actually more uncertain about underground water conditions than his passage suggests. He was not even sure how to distinguish underground streams and percolating water:

Whether in the case of two adjoining closes, upon one of which is a spring and watercourse issuing from it, the owner of the other close is liable for sinking a well in it, and thereby cutting off, or diminishing, the water of the spring? In other words, whether the same law applicable to the diversion of a watercourse running over the surface of the land, is applicable to springs underground?⁵⁹

Legal progress was slow, so slow that respectable commentators did not even see groundwater as a separate topic from the ownership of land. Early in the twentieth century, Joseph Long did not mention diffused or percolating groundwater in the first edition of his book in 1902.⁶⁰ Just fourteen years later, he defined the common law rule in his second edition as follows:

[P]ercolating waters . . . constitute part and parcel of the land in which they are found, and belong absolutely to the owner of such land, who may deal with them as he sees fit, except that he cannot collect and turn them in a definite channel on his neighbor's land. With this qualification, any loss or injury in respect to percolating waters which the owner . . . may inflict on other landowners by his use of his own land and the waters there, is *damnum absque injuria*.⁶¹

Some courts in the United States compared groundwater to *ferae naturae*, wild creatures to be pursued and captured by whoever could do so. This “rule of capture” initially emerged in relation to oil and gas.⁶² As the Pennsylvania Supreme Court said,

Water and oil, and still more strongly gas, may be classed by themselves, if the analogy be not too fanciful, as minerals *ferae naturae*. In common with animals, and unlike other minerals, they have the power and the tendency to escape without the volition of the owner . . . They belong to the owner of the land, and are part of it, so long as they are on or in it, and subject to his control; but when they escape, and go into other land, or come under another's control, the title of the former owner is gone.⁶³

The concept of “fugitive minerals” was later extended to groundwater.⁶⁴ Jan Laitos has seen this *ferae naturae* analogy as a conscious rejection of Blackstone's *ad coelum et ad inferos* rule because these resources do not conform to such rigid formulas.⁶⁵ While some courts might be tempted to treat water, oil, and gas as no different than coal, forming part of the realty in the same fashion, the rule of capture dominated, either directly or indirectly.⁶⁶ As a result, ownership of the “fugitive mineral” comes only after it has been “transformed into personal property and subjected to the owner's control, . . . los[ing] its ‘wild’ status.”⁶⁷ The surface owner's right to oil and

*Please refer to original version for accurate page numbers

gas has been analogized to a *profit à prendre* (right of taking), an incorporeal hereditament, or some other concept equally arcane and, more likely than not, to create a distinction without a difference.⁶⁸

Analogizing groundwater to oil and gas only goes so far, for today oil and gas are generally subject to compulsory “pooling” to ensure a fair share of the profits to each overlying landowner.⁶⁹ Such pooling has not been applied to groundwater. As long as a user has lawful access to an aquifer, whether by a landowner, lessee, licensee, or other land interest, under the absolute dominion doctrine, the one doing the pumping may draw the water into a well, pump it to the surface, subject it to control, and thereby take ownership of what could have been the property of the holder of some other interest in land.⁷⁰ Yet under the American version of the “English Rule,” dominion was far less absolute than under its English counterpart.⁷¹ True, a landowner has no duty to let water percolate through the land for the benefit of an adjoining landowner.⁷² Equally clear, a landowner has no duty to allow percolating water to drain through the land for the benefit of an adjoining landowner.⁷³ Yet the absolute dominion doctrine received considerable revision in American courts by the early twentieth century as hydrologists and engineers, and eventually lawyers and jurists, learned more about the nature and behavior of percolating groundwater.

Responding to municipal or private pumping of groundwater for resale, courts sometimes limited such abstractions of water under the “absolute dominion” of the surface owner to uses located on land overlying the aquifer.⁷⁴ Other courts introduced quite a different limitation, one that turned on the nature of the use rather than its location: A landowner pumping groundwater must have some “useful purpose of his own, though . . . the water may be entirely diverted from the land to which it would otherwise naturally pass.”⁷⁵ The purpose must be more than merely eliminating a business rival.⁷⁶ This seems to be the thrust of Chief Justice Dowling’s opinion, who wrote on behalf of a unanimous court in *Gagnon v. French Lick Hotel*:

The strong trend of the later decisions is toward a qualification of the earlier doctrine that the landowner could exercise unlimited and irresponsible control over subterranean waters on his own land, without regard to the injuries which might thereby result to the lands of other proprietors in the neighborhood.⁷⁷

Instead, American courts derived from cases like this what became the near universal exclusion from the absolute dominion of landowners “malicious” actions—that is, the abstraction of groundwater in order to hurt a neighbor rather than to develop the groundwater user’s own land.⁷⁸ In fact, the earliest decision in which an American court adopted the absolute dominion doctrine explicitly included an exception for malicious injuries.⁷⁹ Other American decisions went further to conclude that mere negligence in the exercise of one’s absolute dominion over groundwater was actionable as

a tort.⁸⁰ Yet other decisions concluded that a landowner's absolute dominion did not prevent liability for unreasonable interference with the use of surface water.⁸¹

Requiring a legitimate use for the abstracted water, excepting malicious or negligent acts from a landowner's "absolute dominion" (which most likely would be signaled by the lack of a legitimate use), or imposing liability for unreasonable interference with surface water rights might have signaled abandonment of the absolute dominion doctrine.⁸² That is not quite true. These various exceptions or limitations allow a court to prohibit unreasonable groundwater abstraction, but only if the court is willing to characterize the pumping as either malicious or negligent, or as unreasonable relative to surface water rights.

In *Wiggins v. Brazil Coal & Clay Co.*,⁸³ a 1983 case, the same court that decided *Gagnon* reaffirmed the survival of the absolute dominion doctrine in that state—at least until it is displaced or modified further by statute. In reaffirming absolute dominion for Indiana, the court recognized the important limitations on the rule. The court required that the challenged activity be done in the "usual and proper manner" and that no "unnecessary damage" result.⁸⁴ In other words, the Indiana Supreme Court reaffirmed a landowner's absolute dominion as qualified by the limitations just outlined. If there is an intent to injure, if an excavation is not conducted under standard procedures, if water is abstracted for the sole purpose of preventing a neighbor from using the water, or if the challenged groundwater user receives no benefit but merely imposes a gratuitous injury, then the absolute dominion doctrine does not protect that groundwater user in Indiana.⁸⁵

In *Wiggins* itself, the court denied liability under the absolute dominion doctrine because hurting a neighboring landowner or denying a neighbor the use of the groundwater was not the primary motive for the dewatering of an aquifer; rather, the motive was to enable the mining of coal for the benefit of the mining company.⁸⁶ There, the injury was not gratuitous but was necessary in order for the landowner to benefit from the location of coal on its land. The Brazil Coal & Clay Company, therefore, was entitled to completely dewater a lake and an aquifer in order to allow the company to extract coal, regardless of the injury of the persons who had benefited from the groundwater in the ground or collected in the lake.

IV. THE MOVE AWAY FROM ABSOLUTE DOMINION

The absolute dominion doctrine worked well when there was little demand for groundwater and the technology for abstracting it remained primitive. The technologies for exploiting groundwater were improving for some time and then changed dramatically in the middle of the twentieth century.⁸⁷ Partly because of these better technologies, demand for groundwater exploded in the second half of the twentieth century.⁸⁸ This in turn created a

*Please refer to original version for accurate page numbers

high likelihood of a tragedy of the commons for groundwater so long as the absolute dominion doctrine remained in place.⁸⁹

Because of the resulting pressures on the legal regime for groundwater in absolute dominion states, courts and legislatures in many states frankly abandoned the doctrine in favor of correlative rights or the reasonable use rule beginning in the middle of the twentieth century.⁹⁰ Courts and legislatures in western states extended the reach of appropriation statutes to tributary groundwater⁹¹ or simply by extending general appropriation statutes to groundwater as well as surface water.⁹² Other western legislatures enacted appropriation statutes applicable to percolating, non-tributary groundwater.⁹³ Finally, more recently, a growing number of states have either extended their regulated riparian statutes to include percolating groundwater,⁹⁴ or they have enacted separate regulated riparian statutes specifically applicable only to groundwater.⁹⁵ Today, only a handful of states still adhere to the absolute dominion doctrine, and even in those states one can seriously question whether the state actually adheres to the rule.

Each state that moved away from absolute dominion in favor of an alternative has its own unique history regarding the transition. In many of these states, absolute dominion might survive to some, often uncertain, extent. Many of the statutory enactments contain exemptions from their coverage based on the purpose of the use, the size of the use, or the place from which the groundwater is abstracted.⁹⁶ Presumably, although statutes are seldom explicit on the point, the absolute dominion doctrine continues to apply to groundwater within the scope of these exemptions should a dispute arise between such exempted water users.⁹⁷ Yet the scope of the absolute dominion doctrine in some states is so narrow that many of these states should be characterized as having abandoned the doctrine completely. Some exemptions are more sweeping. Three regulated riparian statutes exempt most or all agricultural uses from their scope,⁹⁸ while other regulated riparian statutes exempt groundwater unless it is within a declared management area or the like.⁹⁹ Statutes with such broad exemptions could be described as hybrid systems, with both regulated riparian elements and absolute dominion elements.

Because the absolute dominion doctrine has been characterized in property terms, any abandonment of the absolute dominion doctrine could be challenged as a taking of property. Yet states that have made such changes have faced surprisingly few challenges for the taking of property, and all such challenges to statutory abolition of absolute dominion have been rejected.¹⁰⁰ The judicial reasoning in rejecting these takings claims actually has been rather thin. Courts have characterized the statutes as involving the regulation of property rather than its taking; generally they have been content to stop there.¹⁰¹ Apart from the groundwater context, whether a regulation of property amounts to a taking of the property is a complex and often difficult question.¹⁰² Suffice it to say that courts remain divided over how

*Please refer to original version for accurate page numbers

much interference amounts to a taking of property.¹⁰³ In fact, courts relatively rarely find a taking apart from the “categorical” takings—takings involving a physical invasion of the property or in which all economic uses of the property are foreclosed.¹⁰⁴

The reluctance of courts to find a regulatory taking is enough to explain the lack of successful challenges on this basis against the statutory abandonment of the absolute dominion doctrine, especially if the statute adopts a regulatory approach rather than simply abolishing the absolute dominion doctrine.¹⁰⁵ Yet there is a simpler explanation: There cannot be a taking before the person claiming the taking has a vested property right.¹⁰⁶ Two courts have taken this approach regarding the replacement of the reasonable use rule applied to groundwater, finding that the right to make a reasonable use of groundwater is not a vested property right before the water is abstracted.¹⁰⁷ That argument, however, might be easier to make for the reasonable use rule, which some might see as not actually representing a property interest,¹⁰⁸ than for the absolute dominion doctrine, conceived of as actual ownership of the water beneath the soil. If the absolute dominion doctrine is conceived as a rule of capture, then almost by definition there can be no property interest before the water is “captured,” i.e., before it is pumped from the ground.¹⁰⁹ Even for a property-based concept of absolute dominion, however, the imposition of a new regulatory legal regime should not amount to a taking; merely including property within an area subject to developmental controls is not a taking until an actual proposal to develop has been denied.¹¹⁰

Even a property-centered explanation of the absolute dominion doctrine does not require compensation for abandoning the doctrine. First, the continual movement of groundwater makes the exercise of any “absolute dominion” ephemeral.¹¹¹ Furthermore, the original rationale was that absolute dominion was necessary because the presence and behavior of groundwater was “unknowable”¹¹² and even “occult.”¹¹³ These decisions amounted to a refusal to decide the dispute rather than an embrace of the idea of ownership.¹¹⁴ Today, when hydrologists, water users, and courts can determine a great deal about groundwater, a refusal to decide a case on the grounds that the court cannot access sufficient information to resolve the issues is simply irresponsible.

This reasoning is found in one of the more extended analyses of the propriety of abandoning the absolute dominion doctrine in favor of the reasonable use rule, *State v. Michels Pipeline Construction, Inc.*¹¹⁵ Justice Horace Wilkie, writing for a unanimous court, concluded that despite clear precedent for the absolute dominion doctrine in Wisconsin,¹¹⁶ that holding was based on uncertain precedents that were overruled shortly after that case was decided.¹¹⁷ Furthermore, Wilkie reasoned, the reasonable use rule simply brought activities relating to groundwater “in line with the general limitation on all use of property embedded in the law of nuisance.”¹¹⁸ He also

*Please refer to original version for accurate page numbers

found “a basic inconsistency in saying that a person has a property right in underground water that cannot be taken without compensation, for when he [sic] exercises that right to the detriment of his neighbor, he is actually taking his neighbor’s property without compensation.”¹¹⁹ Courts could also rely on the ancient maxim of the common law that when the reason for a rule ceases, the rule itself ceases (*Cessante ratione, cessat ipsa lex*).¹²⁰ A growing list of courts have, on this last basis alone, abandoned absolute dominion in favor of the correlative rights or the reasonable use rule—including *Michels* itself.¹²¹

A landowner’s “absolute dominion,” however, generally has been described as a rule of property. Because of the proposition that property rules require greater stability than other rules of law, and therefore should rarely, if ever, be overruled, some have argued that a judicial overturning of the absolute dominion doctrine would be a taking of property. While a judicial overruling of precedent is not as likely to amount to a taking as a legislative change in the law, such breaks with precedent have been held to be a taking of property in other contexts if they come as a surprise and upset well established expectations that have formed the basis for significant investments.¹²² There has been one such challenge to a court decision abandoning the absolute dominion doctrine, and that challenge was readily rejected.¹²³ Yet in anticipation of such challenges, several courts have declined to abandon the absolute dominion doctrine out of concern for the risk of taking property. In *Michels*, Justice Wilkie dealt with this problem by characterizing the rule of stare decisis, even as applied to property rights, as merely a prudential requirement that the court carefully consider any change in the law and not as requiring that changes in property law could never be made.¹²⁴

Even if one assumes that legislative or judicial abandonment of the absolute dominion doctrine generally would require compensation, the dire emergency resulting from continued adherence to that doctrine could preclude such a requirement. First, the common law has always recognized that it is not lawful for an owner to use property so as to injure another or another’s property (*sic utere tuo ut alienam non laedas*).¹²⁵ The entire law of nuisance is derived from this principle,¹²⁶ as is the concept that the state has a police power to regulate property.¹²⁷ A finding of a nuisance is enough to preclude any obligation to compensate for its prohibition.¹²⁸ One court thus relied on the *sic utere tuo* maxim to uphold enactment of a regulated riparian law to displace the reasonable use rule for groundwater.¹²⁹

Even if the *sic utere tuo* maxim is not a sufficient answer, there is still the emergency doctrine. Under the emergency doctrine, when a situation ensures that some private property must be destroyed regardless of the government’s decisions, the government can choose which forms of property shall be destroyed without having to pay compensation.¹³⁰ Thus, Virginia did not have to pay compensation when ordering the destruction of red cedar trees to protect apple orchards from cedar rust.¹³¹ If pumping is not curtailed

*Please refer to original version for accurate page numbers

or forbidden at certain wells that draw from the aquifer, the resource will be destroyed even more certainly than would have been Virginia's apple orchards.

In sum, as the Ohio Supreme Court noted, decisions moving from absolute dominion to the reasonable use rule "should thus be read as protecting landowners' property rights in groundwater, rather than [as] limiting them."¹³² While a federal court read this conclusion as making a city's wells actionable as a taking of property if the wells interfered with reasonable uses of groundwater, the federal court did not question the state's ability to abandon the absolute dominion doctrine.¹³³ Courts in two other states used the emergency doctrine to justify the statutory abrogation of the reasonable use rule as applied to groundwater.¹³⁴

Thus, in addition to the vagaries of the regulatory takings doctrine, either the *sic utere tuo* maxim or the emergency doctrine should preclude claims for compensation because of abandonment of the absolute dominion doctrine. Challenges based on the equal protection clause similarly have received short shrift,¹³⁵ as have challenges based on all alleged violations of due process of law¹³⁶ and other general constitutional limitations on the exercise of governmental power.¹³⁷ Nonetheless, one cannot entirely rule out the possibility that such a challenge would succeed. After all, the Oklahoma Supreme Court decided in 1990 that the application of the state's appropriative rights statute to displace riparian rights for surface water sources even for unexercised riparian rights constituted an unconstitutional taking of property.¹³⁸ Indeed, the Texas struggle over the absolute dominion doctrine has been heavily influenced by fear; fear that a taking would be found has played a big part in the Texas struggle over the absolute dominion doctrine.¹³⁹

Perhaps some courts and commentators are pushing for an extension of the public trust doctrine to groundwater because of such fears.¹⁴⁰ Whether the public trust doctrine would work better than the other arguments in favor of state regulatory authority, or even the state's authority to substitute a different system of groundwater rights for the absolute dominion doctrine, is open to question if only because there is little connection between groundwater and the water uses that traditionally justified the public trust—navigation, commerce, and fishing.¹⁴¹ Given the strength of the arguments favoring abandonment of the absolute dominion doctrine, a court actually need not resolve whether the public trust doctrine can be stretched so far to justify regulating or abolishing the "absolute dominion" of the overlying landowner.

The 1990s "property rights movement" challenged much of the foregoing reasoning.¹⁴² The movement's most practical result has been statutes specifically enacted to ensure that state or local governments compensate for regulations that have a significant impact on the use of vested property rights.¹⁴³ How these statutes would apply to a decision to transition from the

absolute dominion doctrine to some other approach to groundwater (most likely, the reasonable use rule or regulated riparianism) is uncertain given the strong arguments that the absolute dominion doctrine does not actually create a vested property right.¹⁴⁴ Nonetheless, such statutes might further deter courts from considering changing the absolute dominion doctrine in states where it still is followed. The uproar over the Supreme Court's decision in *Kelo v. City of New London*,¹⁴⁵ that public authorities could exercise their eminent domain power to acquire land for transfer to another private owner in order to develop the community, might also deter courts from abandoning the absolute dominion doctrine as a possible taking of property.¹⁴⁶

V. THE STRUGGLE OVER GROUNDWATER LAW IN TEXAS

Only three states—Indiana, Maine, and Texas—have reaffirmed their commitment to the absolute dominion doctrine with, at most, minor limitations on that doctrine during the last two decades of the twentieth century.¹⁴⁷ In states such as Massachusetts and Rhode Island, the most recent precedents are so ambiguous that one cannot confidently say whether those states still follow the absolute dominion doctrine.¹⁴⁸ This is complicated by the fact that Massachusetts has now enacted a regulated riparian statute.¹⁴⁹ In Indiana and Maine, recent legislation seems to have begun a movement away from the doctrine.¹⁵⁰ Only in Texas has the affirmation of the absolute dominion doctrine generated great political controversy and persistent challenges before the courts. This section provides an extended look at the resulting struggle in Texas.

A. The Common Law Origins of the Absolute Dominion Doctrine in Texas

Groundwater use in Texas has grown exponentially over the last half-century. Only 770 new wells were drilled in Texas in 1962. In contrast, 12,554 new wells were drilled in 1989.¹⁵¹ Approximately 9,700,000 gallons of groundwater were extracted per day, representing sixty-one percent of the total water consumed in the state, with about eighty percent of that groundwater used in agriculture.¹⁵² After 1989, demand for groundwater continued to increase in the state.¹⁵³ The massive increased use of groundwater in Texas had already caused serious environmental problems, including falling water tables, intrusion of saltwater in coastal aquifers, reductions in stream baseflows, and subsidence of the land surface.¹⁵⁴ Given the Texas courts' insistence on protecting the rule of capture, groundwater law in Texas does not offer much hope for preventing or solving these problems.¹⁵⁵ The recent struggle over that law has not developed in a way as to allow a rational response to those problems.

*Please refer to original version for accurate page numbers

Until *Houston & Texas Central Railway Co. v. East* was decided in 1904,¹⁵⁶ Texas courts did not definitely commit themselves to the absolute dominion doctrine, which they more commonly refer to as the “rule of capture.”¹⁵⁷ In that case, the railway company pumped water from a well on its land to such an extent a neighboring landowner was prevented from using his well. The Texas Supreme Court held that the neighboring landowner had no cause of action despite concluding that the railway’s actions were unreasonable.¹⁵⁸

The Texas Supreme Court reaffirmed the rule of capture for groundwater repeatedly in the last twenty-five years of the twentieth century.¹⁵⁹ Its concept of the rule of capture involved a particularly strong version of the absolute dominion doctrine. The court modified that approach in *Friendswood Development Co. v. Smith-Southwest Industries* in 1978.¹⁶⁰ There the court held that, prospectively only, a prima facie case for negligence could be made out against a large groundwater user whose pumping causes subsidence on neighboring land. In doing so, the court indicated that the absolute dominion doctrine or rule of capture did not protect a groundwater user who causes some malicious injuries:

[I]f the landowner’s . . . withdrawing ground water [sic] from his land is negligent, willfully wasteful, or for the purpose of malicious injury, and such conduct is the proximate cause of the subsidence of the land of others, he will be liable for the consequences of his conduct. The addition of negligence as a ground for recovery shall apply only to future subsidence proximately caused by future withdrawals of ground water [sic] from wells[,] which are either produced or drilled in a negligent manner[,] after the date this opinion becomes final.¹⁶¹

Friendswood had developed a well field in order to sell water to industrial and commercial users despite engineering reports that had predicted land subsidence from the pumping.¹⁶² Friendswood proceeded anyway, causing the predicted land subsidence. Because the land was located next to a lake, the subsidence also caused erosion and flooding, again as predicted in engineering reports.¹⁶³ The state legislature then created a regional coastal subsidence district, which included Friendswood’s well field, and empowered the district to regulate groundwater withdrawals in order to prevent further subsidence.¹⁶⁴ Although the Texas Supreme Court held that it had never intended the rule of capture to cover a malicious injury, it also concluded that Friendswood had not acted maliciously or without a beneficial purpose both for itself and its industrial customers.¹⁶⁵ The court then criticized the absolute dominion doctrine as follows: “[S]ome aspects of the English or common law rule as to underground waters are harsh and outmoded, and the rule has been severely criticized since its reaffirmation by this Court in 1955 [G]ood reasons may exist for lifting the immunity from tort actions in cases of this nature”¹⁶⁶

*Please refer to original version for accurate page numbers

The court was constrained, however, because its earlier decisions had become “an established rule of property law . . . under which many citizens own land and water rights.”¹⁶⁷ The court noted that the wells at issue in *Friendswood* had been drilled “after the English rule had been reaffirmed by this Court in 1955,” and that the legislature had undertaken prospective limitation upon well drillers, at least as regards subsidence.¹⁶⁸ The court’s negligent pumping exception for the Texas rule of capture is, at least conceptually, an important modification of the rule of capture in Texas. Determining the extent of the modification was part of the reason for the ensuing litigation and legislative action relating to groundwater in Texas; although, as it turned out, claims under the Federal Endangered Species Act¹⁶⁹ were at least as important in challenging the doctrine in Texas.

B. Legislative Interventions

The Texas legislature has gnawed substantially at the rule of capture’s edges by using the concept of “critical areas” without actually tackling the continued application of the absolute dominion doctrine head-on. In fact, the Texas legislature has embraced the absolute dominion doctrine, explicitly incorporating it into the Texas Water Code.¹⁷⁰ The legislature defined “groundwater” in 1995 as “water percolating below the surface of the earth.”¹⁷¹ This definition is broader than its earlier statutory definition.¹⁷²

Early legislative interventions in Texas were modest. Owners of artesian wells were required to encase them and to prevent harm to others resulting from “the water . . . rising above the first impervious stratum below the surface of the ground.”¹⁷³ They were directed to file reports with what was then named the Texas Natural Resources Conservation Commission (“Commission”) (formerly the Texas Water Commission, renamed the Texas Commission on Environmental Quality on September 1, 2002).¹⁷⁴ It was forbidden as waste to allow the water from an artesian well or spring to run off the owner’s land or to percolate through the stratum above that in which the water was found,¹⁷⁵ and improperly cased wells were declared a nuisance.¹⁷⁶ A landowner who used artesian water could only use it “for a purpose and in a manner in which it may be lawfully used”¹⁷⁷—whatever that may mean under the rule of capture.

Legislation enacted in 1987 now grants the Commission the authority to “make and enforce rules and regulations for protecting and preserving the quality of underground water.”¹⁷⁸ The Commission, in conjunction with the Texas Railroad Commission, also possesses regulatory jurisdiction over injection wells.¹⁷⁹ The Commission must issue “certificates of convenience” authorizing public water supply enterprises to offer services to particular areas.¹⁸⁰ The 1987 statute focuses on the injection of wastes, particularly from oil and gas exploration and exploitation, and not on the development of water resources; it does not even reach injection wells for recharging drawn-

*Please refer to original version for accurate page numbers

down aquifers with fresh, potable water to replenish a water source or to prevent subsidence. The latter is dealt with under other statutes.¹⁸¹

The Commission administers a program for those engaging in certain “subsurface excavation” and “underground workings.”¹⁸² Under these statutes, the traditional dewatering rights of landowners under the rule of capture have been severely limited. While the power over excavations and underground workings seems to be aimed primarily at mining operations, it would cover any major subsurface excavations that could affect groundwater, given the statutory distinction between “subsurface excavations” and “underground workings.”

The continued existence of the rule of capture in Texas means that the constraint on the Commission of “existing rights[,] . . . including water rights and adjacent surface rights[,]” is a problem.¹⁸³ The problem has been litigated not under the excavation and injection statutes, but under statutes creating groundwater conservation districts.¹⁸⁴ The Texas legislature’s authorization of groundwater conservation districts and “priority groundwater management areas”¹⁸⁵—whether by special statute or by the general statute first enacted in 1971, thoroughly revised in 1995, and amended again in 2001—makes even greater inroads on the rights of landowners than the already existing statutes on artesian wells or the injection of wastes.¹⁸⁶ The current law reaffirms the rule of capture¹⁸⁷ and indicates that laws and administrative rules relating to the use of surface waters do not apply to underground waters.¹⁸⁸ Landowners are required to create groundwater conservation districts to cover part or all of each priority management area.¹⁸⁹ If they fail to do so, the Commission is charged with doing so.¹⁹⁰ Within priority groundwater management areas, the “commissioners court”¹⁹¹ for a county may restrict the subdivision of land in order to ensure that current or projected water use within the county does not exceed “the safe sustainable yield of the county’s water supply.”¹⁹² By these statutes, Texas has already moved far from the absolute dominion doctrine or the rule of capture.

The Texas legislature declared in 1997 that such districts are the “preferred method of groundwater management” and charged them “to provide for the conservation, preservation, protection, recharging, and prevention of waste of groundwater, . . . and to control subsidence caused by the withdrawal of water from . . . groundwater reservoirs.”¹⁹³ The district’s board of directors has the authority to

make and enforce rules, including rules limiting groundwater production based on tract size or the spacing of wells, to provide for conserving, preserving, protecting, and recharging of the groundwater or of a groundwater reservoir . . . in order to control subsidence, prevent degradation of water quality, or prevent waste of groundwater and to carry out the powers and duties provided in this chapter.¹⁹⁴

Yet it is in this chapter of the Texas Water Code that the legislature explicitly reaffirms the “ownership and rights of the owners of the land and their lessees and assigns in groundwater.”¹⁹⁵

With ample enforcement powers,¹⁹⁶ operational powers,¹⁹⁷ and the eminent domain power,¹⁹⁸ groundwater conservation districts seem to have broad enough authority to do nearly anything they deem necessary for the rational management of groundwater. Completing this picture, the districts must “require a permit for the drilling, equipping, or completing of wells or for substantially altering the size of wells or well pumps.”¹⁹⁹ This sounds like a regulation of the act of drilling, yet permits are to be issued subject to terms and conditions as necessary “to prevent waste and achieve water conservation, minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, lessen interference between wells, or control and prevent subsidence.”²⁰⁰ Finally, the districts are to give special consideration to proposals to transfer groundwater out of the district.²⁰¹

In *Beckendorff v. Harris-Galveston Coastal Subsidence District*,²⁰² the Texas Court of Civil Appeals rejected a challenge to the constitutionality of the authority to address coastal subsidence in the precursor statute to the even broader provisions now in force regarding groundwater conservation districts.²⁰³ The Texas Supreme Court cited the *Beckendorff* decision with approval in *Friendswood*, upholding the continued application of the rule of capture only a year later.²⁰⁴

Perhaps the most far-reaching provision regarding groundwater conservation districts allows the Commission to create a priority groundwater management area over the opposition of landowners, water users, or the communities within the proposed area, and to create districts to manage the groundwater of such areas if the area suffers critical groundwater problems.²⁰⁵ The election of governing boards, however, allows room for considerable local input if a district is created over local opposition.²⁰⁶ Furthermore, if the Commission does not determine that critical problems exist in a particular area and there is no local initiative in this direction, none of the apparently broad regulatory powers can come into play.²⁰⁷

In light of the Texas legislation on groundwater, some concluded that despite the repeated judicial reaffirmations of rule of capture in Texas,²⁰⁸ the rule had in fact been displaced by legislative action by 1990.²⁰⁹ If this were so, only wells that were exempt from the permit requirements or not located within a groundwater conservation district would still be subject to the rule of capture.²¹⁰ Yet as David Todd noted, the state legislature “appears to have given authority to institutions and groups which are largely not willing or empowered to accept responsibility for the problem.”²¹¹ Texas courts subsequently confronted the question of whether these legislative interventions, including the strengthened legislation enacted after 1990, actually displaced the rule of capture.

C. The Struggle in the Courts

Commentators increasingly criticize the rule of capture in Texas.²¹² By 1990, the Texas legislature had enacted statutes authorizing groundwater conservation districts with broad regulatory authority over the abstraction and use of groundwater in the state.²¹³ Yet the legislature continued to reaffirm landowners' "ownership and rights" in groundwater, notwithstanding the broad regulatory powers conferred on groundwater management districts.²¹⁴ Similarly, by 1990, the most recent judicial pronouncements on groundwater rights had reaffirmed the absolute dominion doctrine, limited only by liability for negligent or malicious actions.²¹⁵

The contradictions between the various statutes and judicial precedents invited litigation over the extent to which the absolute dominion doctrine (the rule of capture) survives in Texas. Courts would make the rule of capture nearly impervious to change. As one court noted, "When squarely faced with the issue, the [Texas] Supreme Court has consistently adhered to the English rule[, the absolute dominion doctrine]."²¹⁶ The following three subsections review the struggle in the Texas courts over revising or reforming groundwater law. The first subsection begins with the epic struggle over the Edwards Aquifer, sparked by the threat to apply the federal Endangered Species Act to groundwater usage drawing from the aquifer. The second subsection turns how the struggle played out elsewhere in the state. The third subsection analyzes the most recent, and perhaps decisive, decision that brings the two lines of cases together.

1. *The Struggle over the Edwards Aquifer*

The Edwards Aquifer is one of the largest artesian aquifers on the planet. Located to the northwest of San Antonio, it discharges an average of about 900,000 acre-feet (1.1. km³) annually.²¹⁷ San Antonio is the seventh largest city in the United States and, until recently, was the largest city in the world that was totally dependent on groundwater.²¹⁸ San Antonio makes the largest abstractions of water from the aquifer. The city was plunged into crisis when the drought of 2012 caused the water table in the aquifer to fall precipitously.²¹⁹ The aquifer is the source of the San Marcos and Comal Springs, which are the home of an endangered species—the fountain darter.²²⁰ In 1990, a commercial catfish farm was pumping about forty-five million gallons of water per day from the aquifer.²²¹ Under the rule of capture, no one could dispute the fish farm's claim to the water. The owner stated that he would demand several million dollars in compensation for the loss of his water rights if any restriction were imposed on his abstractions. In late 1991, the owner did, however, stop pumping temporarily as part of an agreement to apply for permits from state and federal environmental agencies.²²²

That demand outstripped supply from the Edwards Aquifer was already evident in the 1980s, causing the Commission²²³ to attempt an end-run around the rule of capture in order to resolve the problems. The Commission created the Edwards Underground Water District, which adopted a regional water plan in 1988 incorporating pumping limits—all to little effect.²²⁴ When conciliation efforts by the state water commissioner and outside mediation failed, the Guadalupe-Blanco River Authority sued San Antonio in 1989. It alleged that the Edwards Aquifer was an underground stream subject to the controls that Texas imposed on streams. The case bounced between state and federal courts.²²⁵ Without waiting for a final court ruling, the state's Attorney General, Dan Morales, announced on November 4, 1991, that "the commission's authority to regulate groundwater is constitutional, even to the extent that it might override the traditional right of capture in the state."²²⁶

Drawing on this authority, the Commission issued an emergency declaration on April 15, 1992, "taking over" the Edwards Aquifer and declaring the southern half of the aquifer to be an underground river, essentially voiding the traditional property rights of the owners of land overlying the aquifer.²²⁷ The Commission immediately banned the building of all new wells and ordered all persons pumping from the aquifer through existing wells to apply for permits by September 1, 1992.²²⁸ The Commission also ordered water use from the aquifer to be reduced by twenty-five percent over the next ten years. At a rally twelve days later on April 27, 1992, Governor Ann Richards announced her support of the Commission because "the federal government will take control of the aquifer if the state doesn't."²²⁹

Governor Richards was referring to a suit filed by the Sierra Club against the United States Secretary of the Interior (Manuel Lujan), the Texas Water Commission, the Texas Parks and Wildlife Commission, the Texas Department of Agriculture, the City of San Antonio, industrial water users, a builders' association, some major irrigators, and the catfish farmer.²³⁰ The suit, relying on the Endangered Species Act, sought to prevent pumping from the Edwards Aquifer in order to protect the endangered fountain darter in the San Marcos and Comal Springs.²³¹ Secretary Lujan denied that the federal government had failed in its duties to protect the fountain darter. On February 1, 1993, Judge Lucius Bunton found that the abstractions from the Edwards Aquifer were jeopardizing the fountain darters in violation of the Endangered Species Act.²³² Judge Bunton also found that the "critical habitat of Texas Wild-Rice" was "destroyed or adversely modified" by abstractions from the aquifer.

Judge Bunton ordered the Fish and Wildlife Service to determine the minimum spring flows required for the preservation of any listed species at Comal Springs, San Marcos Springs, and the Edwards Aquifer, and to set interim minimum spring flow requirements for preserving these species until the United States Fish and Wildlife Service acted. He also ordered the

Commission to prepare a plan to ensure that the levels of Comal Springs and San Marcos Springs were adequate, even in droughts, ordering it to submit a plan by March 1, 1993. Finally, he ruled that the Sierra Club could seek further relief if, by May 31, 1993, the state did not implement a regulatory system sufficient to protect the endangered species.

The outcome in *Sierra Club v. Lujan* did not resolve the question of property rights in Texas groundwater, but the decision did exert great pressure on the Texas executive and legislative branches to act. The interests in the region remained divided. Some irrigators and the City of San Antonio, hitherto foes, became allies. Other irrigators and the catfish farm largely, albeit not entirely, allied against them. Nevertheless, they all wanted to be free to pump water from the aquifer. Other cities, water authorities, and water users, who were drawing on the aquifer or were dependent economically on the San Marcos and Comal Springs, wanted to greatly reduce pumping of the aquifer. Many would have liked to see San Antonio transfer its water reliance from groundwater to surface impoundments, although environmentalists and locally affected landowners did not want surface impoundments.

Even a wrenching revision of the Texas common law, away from the rule of capture to some other rule, would have been an insufficient response to Judge Bunton's decision. Only state regulation would be an effective response, yet regulation was not welcomed despite the necessary statutes already being on the books. Regulation to protect some rights meant that other rights are limited or destroyed. Regulations responding to Judge Bunton's order promised to overturn groundwater rights in Texas. Yet under the pressure of the *Lujan* litigation, the Commission and the City of San Antonio undertook to negotiate a settlement for others to join. Rains had lifted the water level in the aquifer, allowing the Commission to put off the issuance of new regulations, hoping for a legislative solution.²³³ The Texas legislature responded to Judge Bunton's order in late May 1993, creating the Edwards Aquifer Authority ("Authority").²³⁴

The Edwards Aquifer Authority Act indicated that the Authority was "required for the effective control of the resource to protect terrestrial and aquatic life, domestic and municipal water supplies, the operation of existing industries, and the economic development of the state."²³⁵ It appears to address all matters covered by the order, declaring the aquifer "a distinctive natural resource" and "a unique aquifer." The Edwards Aquifer Authority Act also created a special regional management district to control and protect the aquifer and the interests dependent on it. It also limited withdrawals in order to protect the aquifer.²³⁶ The Act requires the authority to devise a comprehensive management plan and a critical period management plan for the aquifer. It also creates a permit system and guidelines for determining historical water use rights to the aquifer.²³⁷

The Edwards Aquifer Authority Act was not seriously challenged on environmental grounds.²³⁸ Early in 1997, the Federal Court of Appeals dis-

missed an appeal by the state and other parties from *Lujan* on the grounds that the Edwards Aquifer Authority Act rendered the appeal moot.²³⁹ Other litigation continued to linger in the courts.²⁴⁰ Although the environmental groups were largely satisfied, two problems kept the Edwards Aquifer Authority Act from fully coming into effect for a considerable period: the question of whether previous groundwater users had had their property rights taken; and whether the creation of the Authority violated the preclearance requirements of the federal Voting Rights Act.

If a catfish farm cannot operate without water abstractions intolerable to other interests dependent on the Edwards Aquifer, eminent domain might be necessary to compensate for the catfish farmer's reasonable investment-backed expectations under the rule of capture. The rule of capture was the law in Texas when the catfish farmer's investment was made, and the resulting expectations would now be frustrated by newly adopted—and dramatically different—legal rules.²⁴¹ Such claims did not preclude the abandonment of the absolute dominion doctrine in other states, yet that issue eventually would prove troubling in Texas.²⁴²

In fact, the catfish farmer wound up in court not to seek compensation, but because his pumping was challenged by the old Edwards Underground Water District (“District”). The District argued that use by the catfish farm was wasteful and that return flows to the Medina River, although authorized by an NPDES permit, were polluting the river. The case was settled before trial and an agreed judgment was entered, whereby the farmer was enjoined from pumping from his wells until he received a permit from a permitting agency or until June 15, 1995, whichever came first.²⁴³ The Authority did not begin to issue permits by 1995, however, so the farmer was able to resume pumping then. There seems to have been no further litigation challenging the farmer's activities as wasteful or polluting.

The other attack came from an unexpected quarter and served to reinforce the fears of those who saw themselves (or their state) being subverted by federal bureaucrats. The same act that created the Authority, an appointed institution, replaced the former Edwards Underground Water District.²⁴⁴ The dissolved water district had been governed by an elected board of governors. When the Edwards Aquifer Authority Act was submitted to the Justice Department for preclearance according to the Voting Rights Act of 1965,²⁴⁵ the Justice Department determined that the new arrangement would deprive minority voters of their opportunity to participate in the governing body. Apparently, this decision overrode the policy approved by the Supreme Court of allowing water management districts to be set up on a non-representative basis.²⁴⁶ A three-judge panel upheld the application of the Voting Rights Act to the Authority. It also held, however, that there were genuine issues of material fact as to whether the Edwards Aquifer Authority Act was either free of a discriminatory purpose or did not lead to retrogression in the position of racial minorities.²⁴⁷ Before those issues could be tried,

the Texas legislature sought to forestall the litigation by changing the composition of the board from nine appointed members to fifteen elected members.²⁴⁸

Before the latest legislative intervention could be litigated, the Texas district court in Medina County intervened to declare the entire statutory scheme unconstitutional for violating several provisions of the state constitution. In particular, it found that abandoning the absolute dominion doctrine was an unconstitutional taking of property.²⁴⁹ The court made this decision despite the specific provision of Article XVI of the Texas Constitution directing the legislature to protect the state's natural resources and granting the legislature specific authority to create conservation and reclamation districts.²⁵⁰ In due course, the Texas Supreme Court reversed this decision.²⁵¹

A different groundwater district faced a related challenge to its authority when it held an election to authorize a maintenance tax. The court held that such districts were not empowered to hold such elections, but deferred when the legislature enacted a statute to authorize such elections retroactively.²⁵² The Texas Court of Appeals rejected the claim that the retroactive application of the statute was a taking of property in violation of the Texas and federal constitutions. The decision was based on the grounds that the legislation was "remedial," without any effect on the plaintiff's rights.²⁵³ Texas courts also readily rejected a challenge to the legality of user fees that had been imposed by the Barton Springs-Edwards Aquifer Conservation District (yet another predecessor abolished and replaced by the Authority).²⁵⁴

The Authority did eventually begin to function, at which point its power over water withdrawals was implicitly challenged in *Herrmann v. Lindsey*.²⁵⁵ Ronald and Karen Herrmann sold the right to pump water to Columbia Realty, Inc., and then sold half of their land, including the entire irrigated portion, to Glenn and Cynthia Lindsey, reserving all water rights except for domestic and livestock needs. The Lindseys obtained a permit from the Authority for one-half of the water purportedly transferred to Columbia Realty. Thereafter, the Herrmanns and Columbia Realty sued to reform or rescind the contract of sale to the Lindseys because of "failure of consideration" for the transfer of half of the water right to Lindseys. The Texas Court of Appeals upheld a summary judgment in favor of the Lindseys based upon the Authority's decision and the failure of the plaintiffs to pursue administrative remedies against that decision. The court treated the Authority as having the power to determine who has the right to abstract water from the aquifer and the terms that control such abstraction, although the court did not give extensive consideration to the extent of the Authority's power.

Delays of the implementation of the Edwards Aquifer Authority Act appeared to reach an end with the decision in *Edwards Aquifer Authority v. Chemical Lime, Ltd.*²⁵⁶ The Act set a deadline of March 1, 1994, for registering existing uses from the aquifer, with registered uses to be given a preference over uses that began after the effective date of the Act.²⁵⁷ This deadline

was exactly six months after the effective date of the Act, but it was long past when the Supreme Court of Texas finally upheld the Act against a range of constitutional challenges in *Barshop v. Medina County Underground Water Conservation District*.²⁵⁸ The Authority then adopted a regulation that required the registration of existing uses by December 30, 1996—six months after the decision in *Barshop*.²⁵⁹

When the Authority rejected a registration filed on January 17, 1997, as untimely, the would-be registrant sued. The Texas Court of Appeals held, upon rehearing after initially upholding the Authority's decision, that the actual effective date of the opinion in *Barshop* was February 10, 1997—the date the Supreme Court issued its mandate to the Court of Appeals to comply with the *Barshop* opinion.²⁶⁰ On appeal, the Texas Supreme Court held, some fifteen years after the Act was passed and twelve years after its stated effective date, that its actual effective date was December 30, 1996, and thus the deadline for filing applications for pumping permits was June 30, 1997.²⁶¹

The United States Court of Appeals for the Fifth Circuit came back into the litigation when it decided that an environmental organization could challenge the validity of federal decisions as inadequate under the Endangered Species Act.²⁶² Yet when a private water user finally raised the takings issue for the Edwards Aquifer in federal court, the Fifth Circuit rejected the claim as to both the Endangered Species Act and the Edwards Aquifer Authority Act.²⁶³ Several individuals attempted to relitigate the federal environmental standards established in the earlier litigation, but the court refused to issue a preliminary injunction for lack of likely success on the merits and for lack of proof of irreparable harm.²⁶⁴ An earlier attempt to challenge the decision of the Corps of Engineers to allow the city of San Antonio to construct a dam in Texas on grounds that it would violate the Endangered Species Act and the Clean Water Act was also rejected summarily by the federal district court.²⁶⁵ Even if the Endangered Species Act applied, it wouldn't entirely solve the problems. The Act only requires a "habitat conservation plan" that could allow substantial development even if it allowed the killing of a significant number of members of the species—in this case, spiders.²⁶⁶

Challengers had better luck in Texas state courts. A trial court in Travis County enjoined the enforcement of the Edwards Aquifer Authority Act upon finding that the agency had not followed proper procedures, remanding the rules to the agency.²⁶⁷ This ruling was promptly reversed by the intermediate court of appeals in a decision later affirmed by the Texas Supreme Court.²⁶⁸ In litigation challenging San Antonio's proposal to build a dam, the court treated the Texas Natural Resource Conservation Commission's rules relating to the Edwards Aquifer as preemptive of local zoning regulations.²⁶⁹ In another suit arising from the same dispute, a state court found that the City of San Antonio had violated basic procedural requirements in beginning the condemnation proceedings.²⁷⁰ The litigation over the Edwards Aq-

*Please refer to original version for accurate page numbers

uifer fed into the hotly contested debate over whether to reauthorize the Endangered Species Act.²⁷¹

Despite the protracted litigation over the power of the Authority, the Authority eventually turned its attention to developing and implementing a plan for the aquifer. In the end, the Authority authorized permits for 563,300 acre-feet per year, about 111,000 acre-feet more than the 450,000 acre-feet per year authorized by the Authority's enabling legislation,²⁷² with plans for the Authority to shut down some water uses before others in the event of shortage.²⁷³ According to the Authority, the extra amounts were necessary to satisfy the needs of "historical pumpers" as provided in the enabling legislation. Critics argued that the plan would cause the aquifer to fall to lower levels at the beginning of a drought than would be the case if pumping were always limited to 450,000 acre-feet per year and therefore would cause the water table to remain at much lower levels throughout a drought.²⁷⁴ With this plan at risk of yet another round of legal challenges, the Authority turned to monetary incentives to induce compliance. The Authority granted approximately one million dollars in rebates of management fees to permittees that withdrew less water than their permit authorized.²⁷⁵ This forestalled some of the legal challenges, but not all.

The extended litigation led the San Antonio Water System (SAWS) to seek water from other sources than the Edwards Aquifer—primarily from the Colorado and Guadalupe Rivers.²⁷⁶ The Greater San Antonio Chamber of Commerce ("Chamber") emerged as sharply critical of the effort to find alternate sources or to reduce projected growth, arguing instead for increased pumping from the Edwards Aquifer—even while conceding that such pumping would be illegal without changes in the law.²⁷⁷ Public officials described the opposition as pressuring for deals with "water speculators"—members of the Chamber who would profit from transporting water from the Edwards Aquifer to San Antonio.²⁷⁸

A series of droughts created pressure to search for alternative sources of water.²⁷⁹ The city, however, declined to buy rights to aquifer water when the rights were offered for sale because city officials thought the requested price was too high.²⁸⁰ These stresses led San Antonio to engage in "water farming," which meant the city began buying up farms to retire their irrigation system so the saved water could be added to the city's pumping rights.²⁸¹ San Antonio began "banking" some of its Edwards Aquifer water in 2004, pumping it into the Carrizo Aquifer.²⁸² With the droughts, the Authority called for a twenty percent reduction in pumping,²⁸³ with the city to draw upon the "banked water" for its needs.²⁸⁴ And looming over all of this was the question of what effect the climate disruption would have on the Edwards Aquifer.²⁸⁵ SAWS once again began to study artificial recharge of the Edwards Aquifer.²⁸⁶

The Edwards Aquifer litigation seemed poised to go on forever. That the litigation finally moved from challenges toward the existence of the Au-

thority to challenges to specific grants or denials of permits was a sign of the maturation of the Edwards Aquifer Authority. Meanwhile, another environmental group filed suit, arguing that the federal government had not done enough to protect the endangered species dependent on the Edwards Aquifer springs.²⁸⁷ All this set the stage for yet another conflict between the Authority and affected landowners. Before discussing the encounter, however, it is necessary to turn to the litigation over the rule of capture elsewhere in Texas while the struggle over the Edwards aquifer was occurring.

2. *The Struggle Spreads*

Up to this point, courts involved in the long and complex struggle over the Edwards Aquifer had not come to grips with what, if anything, was left of the absolute dominion doctrine or the rule of capture in Texas. The struggle over this issue spread to other parts of the state, especially after the Texas legislature strengthened the possibilities for regulation of groundwater abstractions. Several decisions would resolve the question, apparently decisively, in favor of the continued primacy of the rule of capture.

The first case in the spreading struggle involved a program launched by the Texas Natural Resource Conservation Commission to allow the storage of injected water in an aquifer and its subsequent retrieval and use by the injector or a transferee. A group of commercial and recreational users of the Guadalupe River challenged the first permit under this program in *Texas Rivers Protection Ass'n v. Texas Natural Resource Conservation Commission*.²⁸⁸ The permit authorized the Upper Guadalupe River Authority to inject water into the Lower Trinity Aquifer for retrieval by the City of Kerrville. Texas statutes expressly prohibit recharge schemes everywhere except in the Edwards Aquifer.²⁸⁹ Curiously, the court held that the retrieval plans were realistic and that the underground storage for municipal use was a “beneficial use” of surface water, with any recharge merely incidental to the storage—even though the permit listed “recharge” as a purpose of the diversion.²⁹⁰ In other words, the project would not recharge the Lower Trinity Aquifer but would merely store water in the aquifer—a distinction only a lawyer can grasp.

As excessive pumping of groundwater spread across the state, the Texas legislature attempted a comprehensive overhaul of groundwater law in 1997 in order to resolve the growing groundwater crisis by enacting a bill denominated SB 1.²⁹¹ The SB 1 was the first law to require all groundwater districts to adopt water plans to ensure the “orderly development, management, and conservation of water resources” and to undertake conservation measures, while authorizing districts to impose user fees and to limit the export of groundwater out of a district.²⁹² While it was the most comprehensive water management program in Texas history,²⁹³ it was still criticized as inadequate because of its failure to reform the rule of capture.²⁹⁴

*Please refer to original version for accurate page numbers

Texas courts avoided the issue as much as they could. For example, the Texas Court of Appeals invalidated a statute that created a special water district to allow the City of Austin to regulate the withdrawal of groundwater by four municipal utility districts in an area outside the city's boundaries because the statute violated the state constitution's prohibition on "local laws."²⁹⁵ Finally, in *Sipriano v. Great Springs Waters of America, Inc.*,²⁹⁶ the Supreme Court of Texas emphatically reaffirmed the rule of capture. In *Sipriano*, the plaintiff's wells allegedly went dry because of excessive pumping from a Great Spring's nearby well. The plaintiffs sought to avoid the rule of capture by following the suggestion in *Friendswood* that one pumping groundwater could be liable for negligently draining a neighbor's well.²⁹⁷ The court reasoned that it should await the legislature's lead in changing the groundwater law because the Texas Constitution vested responsibility over natural resources conservation in the legislature.²⁹⁸ The court concluded that SB 1 had not done so²⁹⁹—a remarkable conclusion given the major legislative changes in the regulatory regime for groundwater, even granting that the legislature had not addressed ownership rights explicitly. Neither the court nor the legislature seems to have considered how the regulations required in SB 1—regulations required if the groundwater of much or all of the state was not to be exhausted in the near future—was to be implemented if the rule of capture remained in place.³⁰⁰

Deference to the legislature on this matter creates a greater likelihood that abandonment of the rule of capture would be considered a compensable taking than would a judicial revision of the rule.³⁰¹ Yet even a legislative abandonment of the rule of capture should not amount to a taking. After all, the opinion in the very first Texas case in which the court had unequivocally adopted the absolute dominion doctrine, *Houston & Texas Central Railway Co. v. East*,³⁰² indicated that "[i]n the absence of express contract and a (*sic*) positive authorized legislation, as between proprietors of adjoining lands, the law recognizes no correlative rights in respect to underground waters percolating, oozing, or filtrating through the earth."³⁰³ The court in *Friendswood* referred to this same language in acknowledging that the rule of capture was subject to reasonable legislative regulation.³⁰⁴ The *Sipriano* court noted the language once again to conclude that it was necessary to defer to the legislature to abandon the absolute dominion doctrine.³⁰⁵

Since 1917, the Texas Constitution has imposed a duty on the legislature to regulate natural resources, specifically including several references to water resources.³⁰⁶ While section 59 does not specifically mention groundwater, the language of section 59 appears amply broad enough to reach groundwater as well as surface water resources.³⁰⁷ Only the most exaggerated rhetoric of the property rights movement³⁰⁸ could claim that an investor had any reasonable expectation of freedom from regulation under the absolute dominion doctrine as adopted and enforced in Texas. None of these specific points, moreover, even begin to raise the more general points re-

garding takings already discussed concerning the wholesale abandonment of the absolute dominion doctrine in numerous states in the last fifty years.³⁰⁹

Sipriano involved litigation between competing water users, not the regulatory authority of groundwater conservation districts.³¹⁰ Outside the Edwards Aquifer, the extent of the districts' regulatory authority finally reached an intermediate appellate court in *South Plains Lamesa Railroad, Ltd. v. High Plains Underground Water Conservation District No. 1*.³¹¹ The dispute in *South Plains Lamesa* arose out of a plan for the landowners in question to sell their water rights to entrepreneur T. Boone Pickens, with Pickens planning to pump hundreds of thousands of acres of water from the aquifer in northwest Texas for sale to water users in eastern and southeastern Texas, which were primarily municipalities.³¹² The High Plains Underground Water Conservation District sought to limit the amount of water pumped, allocating shares of the total it authorized to be pumped within the district in proportion to the size of the tract on which the water was to be pumped.³¹³ A unanimous panel stressed the general provision in the statute authorizing groundwater districts that nothing was to be construed as divesting ownership or rights in groundwater³¹⁴ and the Texas rule that an administrative agency has no power that is not clearly conferred by statute.³¹⁵ The court concluded that the district had no power to restrict pumping to a proportionate share of the allocated groundwater because the district had not been granted the power to ensure a fair sharing of groundwater among users drawing upon the same aquifer.³¹⁶ The court in *South Plains Lamesa* also questioned whether construing the statute broadly would delegate legislative power without "reasonable standards."³¹⁷

Judge Brian Quinn concurred on the basis that the water district had not notified groundwater users of the possibility that the district could revoke existing permits—or limit new permits—in order to ensure that well owners pump only a proportionate share of the allocated groundwater.³¹⁸ Nowhere in the two opinions did a judge consider whether legislation restricting the "absolute dominion" of a landowner would be a taking of property. Nor did they mention the proposal to divert water out of the dry Texas panhandle for sale to Dallas and other cities—the proposal driving the dispute through the courts.

The *South Plains Lamesa* decision, by invalidating rules limiting the pumping to a share proportionate to the surface area of the land owned by water users, in effect, allowed buyers to extract as much water as they could pump and then to export it out of the groundwater basin. The court decided the case without discussing how the water district was to discharge its responsibility to "minimize . . . the drawdown of the water table or the reduction in artesian pressure, to control subsidence, to prevent interference between wells, to prevent degradation of water quality, or to prevent waste" without allocating the right to pump to particular water users.³¹⁹ One cannot suppose that each landowner is free to take the entire amount a district con-

*Please refer to original version for accurate page numbers

siders suitable for the aquifer as a whole. Yet, without authority to impose limits on individual water users, how could a district fulfill its responsibility to conserve groundwater? Could a district restrict a landowner even to the total withdrawal authorized for the district as a whole without treading on the “absolute dominion” or right of capture of the individual landowner? If a district cannot impose some such limits, it cannot impose any limits at all on overall pumping from the aquifer.

The decision in *South Plains Lamesa* seemed to allow the absolute dominion doctrine or rule of capture to trump any meaningful regulation and to allow landowners to drain an aquifer dry. The decision also completely ignored the constitutional duty of the legislature to regulate groundwater.³²⁰ Whether the decision would have survived an appeal to the state supreme court is unknown because the water district and the plaintiffs settled their litigation.³²¹ This left some doubt about the state of the law, but it also left a legal situation favorable to those intent on drawing down aquifers. Later decisions by state and federal courts were more supportive of the authority of the groundwater conservation districts. In particular, in *Guitar Holding Co. v. Hudspeth County Underground Water Conservation District No. 1*,³²² the Texas Supreme Court addressed the legality of restricting the transportation of groundwater outside a water conservation district, holding that the district could enforce rules favoring “historic uses” and restricting even those uses as necessary to accomplish its comprehensive management plan.³²³ Such restrictions could limit both the amount pumped and the purpose for which it was used.³²⁴ The court also held that districts could impose more restrictive conditions on permits for the transfer of groundwater out of the district than were imposed on existing uses within the district.³²⁵ The court struck down, however, the district’s transfer rules because the rules allowed existing (“historic”) users to transfer their water out of the district on more favorable terms than new users.³²⁶ Lower courts, however, have continued to resist enforcing the sort of restrictions that were approved in *Guitar Holding Co.*³²⁷

T. Boone Pickens, having already invested one-hundred-million dollars in his project, announced that he was prepared to invest millions more to condemn privately owned lands to create a right-of-way for his pipeline.³²⁸ He sought to preclude a water district from restricting his right to export groundwater by creating a groundwater district in which the only two persons eligible to vote were his employees, as were the persons elected to the district board.³²⁹ As with the Edwards Aquifer Authority, the U.S. Department of Justice stepped in to declare the election to be in violation of the Voting Rights Act for failure to pre-clear the eligibility rules to allow non-resident landowners, or their officers, to run for office.³³⁰ On September 15, 2008, Pickens announced the indefinite suspension of his pipeline plans—ostensibly because of the greater potential profitability of a wind farm pro-

ject on the land rather than because of the legal difficulties for the water project.³³¹

Apparently a great majority of the people of Texas would support much stronger efforts to conserve water in the state than either the legislature or, especially, the courts have been willing to accept.³³² Texas courts, however, continued to hand down decisions that would have made it easier for Pickens to realize his plans. The Texas Court of Appeals upheld the right of a landowner to sever groundwater rights from the ownership of the land and to convey or retain either separately.³³³ The Texas Supreme Court held that municipalities were immune from damage suits for violating groundwater conservation rules, although their officials were not immune from orders to conform to those laws in the same matter.³³⁴

The legislature responded to this increasingly widespread litigation as well as to the growing water shortages by enacting in 2001, yet another overhaul of the state's groundwater law, denominated SB 2.³³⁵ SB 2 tightened the regulatory authority in general.³³⁶ This did not quite meet Judge Quinn's concern that the legislature should impose regulatory controls over most of the groundwater in the state before the courts should act;³³⁷ but if the legislative mandate were to be successful, all groundwater resources under stress would be subject to regulatory controls. Nor did SB 2 address the problem of inconsistent regulation by neighboring groundwater conservation districts.³³⁸ The Texas legislature failed to enact a proposed SB 3 in 2005, but did enact further reforms in 2007. Those reforms, however, focused more on surface waters than on groundwater.³³⁹ These various efforts at reform failed to address other pressing problems, leading at least one student commentator to conclude that its impact will be "minimal at best."³⁴⁰ Finally, the continuing droughts put water law reform back on the legislative agenda in 2013, although whether this would produce anything significant remains to be seen.³⁴¹

3. *Finally Confronting (More or Less) the Takings Problem*

The Texas legislature has tinkered with groundwater law for about fifteen years now, without making any real changes, particularly given the strong resistance from the courts for reading the resulting statutes as abolishing—or even significantly modifying—the rule of capture. Most likely, legislators fear that stronger action would amount to a taking of property, or, to put the idea somewhat differently, from an exaggerated concern about protecting property rights.³⁴² Careful analysis suggests that there is no taking of property even in the abolition of the "absolute dominion" or rule of capture, at least that is what the highest courts in forty-six states have concluded.³⁴³ Despite all the litigation over the rule of capture in Texas, the Texas courts still have not yet resolved the takings question, despite coming close in 2012.

The judicial reticence to face the takings question was shown in *Barshop v. Medina Underground Water Conservation District*.³⁴⁴ In that case, the Texas Supreme Court declined to decide whether the plaintiffs held vested property rights in unpumped groundwater (“groundwater in place”) and rejected their takings claim as an inappropriate facial challenge.³⁴⁵ Two federal court decisions underlined the reluctance. In *Coates v. Hall*,³⁴⁶ the court declined to consider a claim of a taking of property by a groundwater conservation district because the plaintiff had not exhausted remedies under state law.³⁴⁷ A year later, a federal magistrate for the same court ordered a trial on whether there was a taking, but did not actually resolve the issue.³⁴⁸

The issue finally came to the fore among the cases that arose as parts of the extensive litigation over the Edwards Aquifer when Burrell Day and Joel McDaniels, who had always thought they owned the water under their ground, presented a takings claim to the Texas Court of Appeals in *Edwards Aquifer Authority v. Day*.³⁴⁹ That court rejected a long list of other claimed violations of their rights, but held that they had “some ownership rights” in groundwater without spelling out what those rights were and whether they had been taken. Day and McDaniels had, for at least part of the period during which historic uses were measured, irrigated their land from a small lake on their property that was fed from the aquifer by artesian pressure.³⁵⁰ At a cost of \$95,000, they drilled a replacement well to draw from the Edwards Aquifer while their permit application for “historical use” was pending.³⁵¹ The permit application was subsequently denied on the grounds that they had not shown a qualifying historic use.³⁵² Day and McDaniels, the Edwards Aquifer Authority, and the state of Texas all appealed.

The Texas Supreme Court unanimously affirmed the decision of the Court of Appeals upholding an administrative decision by the Authority that once groundwater flowed into a stream or lake it lost its character as groundwater and became subject to appropriation and regulation as surface waters.³⁵³ This decision did not resolve the case because Day and McDaniels had also argued that they could not be denied the right to pump water from the aquifer without compensation for the loss of their property rights in the groundwater. Justice Nathan Hecht began his analysis of this claim by noting that nearly all earlier Texas cases had spoken in terms of the rule of capture.³⁵⁴ He acknowledged that the court had never actually held that a landowner owned “groundwater in place” (without pumping it).³⁵⁵ He also recognized that conceiving of a landowner’s rights in terms of “capture” did not entail the conclusion that the landowner owned the “groundwater in place” before it was pumped to the surface.³⁵⁶ Justice Hecht did not acknowledge that many people involved in Texas groundwater had concluded that there was no property in groundwater until it was captured. As a report by the Texas Alliance of Groundwater Districts stated in 2009, “[i]t’s been over 100 years since groundwater has been considered a vested property right in Texas. Groundwater may be captured by any neighboring well

without recourse by the landowner, so the property interests vest as a property right at the moment of capture.”³⁵⁷ Other state supreme courts have embraced the same point, as in *Village of Tequesta v. Jupiter Inlet Corp.*³⁵⁸:

There can be no ownership in seeping and percolating waters in the absolute sense, because of their wandering and migratory character, unless and until they are reduced to the actual possession and control of the person claiming them. Their ownership consists in the right of the owner of the land to capture, control, and possess them, to prevent their escape, if he (*sic*) can do so, from his land, and to prevent strangers from trespassing on his land in an effort to capture, control, or possess them. . . . Thus the term “ownership” as applied to percolating water never meant that the overlying owner had a property or proprietary interest in the corpus of the water itself.³⁵⁹

Rather than letting it go at that, and thus allowing maximum freedom to the state (and federal authorities) to address the increasingly critical groundwater crisis in Texas, Justice Hecht noted that “while the rule of capture does not entail ownership of groundwater in place, neither does it preclude such ownership.”³⁶⁰ He turned then to an analogy to the law of oil and gas to find that groundwater in place belonged to the overlying landowner.³⁶¹ As in the case of oil and gas, such ownership rights do not extend to the individual molecules of water—molecules that in Justice Hecht’s phrasing are “fugacious” as they move from beneath one landowner’s land to beneath another’s.³⁶² Nonetheless, he indicated that the landowner’s ownership was real enough to justify imposing a property tax for oil and gas and to prevent an uncompensated taking by the government for oil, gas, and water.³⁶³ The better reasoning would have been to reach the opposite conclusion—reliance on the rule of capture indicated precisely that there was no property in the groundwater before it was captured.³⁶⁴ He did not consider whether groundwater’s behavioral and resource characteristics were sufficiently similar to oil and gas to justify the treating these resources the same, or sufficiently different as to demand a different conclusion.³⁶⁵ Nor did he consider the possible relevance of the fact that both the absolute dominion rule and the rule of capture were based on a pervasive ignorance regarding groundwater rather than an affirmative decision regarding property rights.³⁶⁶ Nor did Justice Hecht explore the claim that a private property regime would be the most efficient and most fair way to manage groundwater—although many will find that premise to be implicit in the result he reached in the case.³⁶⁷

From the conclusion that a landowner owns the groundwater in place, it is a short step to conclude, as the court did, that regulations of groundwater use might amount to a taking.³⁶⁸ The court therefore remanded the case for trial to determine whether there was, in fact, a taking.³⁶⁹ This is not a mere pro forma remand, for the court itself noted a number of grounds for con-

cluding that the regulations at issue might not amount to a taking.³⁷⁰ In fact, Justice Hecht expressly indicated that takings claims are “not properly presented as a facial challenge” to groundwater regulations.³⁷¹ As discussed above, other grounds also support concluding that there was no taking in this case or most, if not all, groundwater regulation cases.

Justice Hecht began by noting that Texas generally followed the case law developed by the United States Supreme Court regarding compensation for takings of property.³⁷² He listed a series of reasons why the “absolute ownership” of groundwater by the owner of the overlying land was not actually absolute. First, he noted that even in the very first case applying the rule of capture, the right was not absolute but was limited by liability for malicious or wanton conduct.³⁷³ Second, he noted that from the earliest cases to the most recent, the property rights of the overlying landowner were qualified by the power of the state legislature to regulate groundwater management and use, which he described as being “recognized and encouraged” by the state supreme court.³⁷⁴ Third, he noted the difficulties of demonstrating a regulatory taking.³⁷⁵

In addition to the foregoing difficulties in proving that Day and McDaniels suffered an uncompensated taking, following the United States Supreme Court’s jurisprudence on the matter should lead to the conclusion that there would be no liability to regulating conduct that would unreasonably injure a neighboring landowner (i.e., would constitute a nuisance)³⁷⁶ or if the regulated conduct would violate the public trust doctrine.³⁷⁷ While the idea of regulating nuisances without compensation would seem to contradict directly the holding of absolute dominion or the rule of capture, under which the causing of an injury (reasonable or unreasonable) would not be actionable, Texas itself has a statute declaring wasteful wells to be nuisances.³⁷⁸ Texas courts have applied the statute without difficulty and without considering the broader import of the statutory declaration of a nuisance.³⁷⁹ Furthermore, as Judge Horace Wilkie noted in *State v. Michels Pipeline Construction, Inc.*,³⁸⁰ there is a basic inconsistency in holding that a person has a property right in underground water that cannot be taken without compensation but that the person can, by exercising that right, take his neighbor’s property without compensation—precisely what the law of nuisance is intended to prevent. Texas courts moreover have indicated that there is liability for negligence in pumping one’s groundwater, at least when it causes subsidence of a neighbor’s land, a conclusion very similar to nuisance.³⁸¹

Whether the Texas courts would apply the public trust to groundwater is questionable given that only a few states have so concluded to date,³⁸² and nothing in *Day* would seem to suggest such a forward looking approach on the part of the Texas courts. On the other hand, even the Texas courts should be able to grasp the “emergency doctrine”—when continued unregulated use would lead to the inevitable destruction of one or another uses of resources and saving both of the resources is impossible, the state can choose which to

*Please refer to original version for accurate page numbers

preserve without paying compensation to the one destroyed.³⁸³ This last premise has been applied to groundwater in two states already.³⁸⁴ From this premise, as well as the nuisance premise, one should conclude that abandoning the absolute dominion doctrine actually protects a landowner's property rights in groundwater rather than limits them.³⁸⁵

Nonetheless, there seems to be a real danger that the Texas Supreme Court in *Day* accomplished what was attempted by an intermediate court of appeals in *South Plains Lamesa*³⁸⁶: seriously hobbling or utterly precluding meaningful state or local regulation of a highly endangered resource.³⁸⁷ It is ironic that the same court has upheld the plenary power of the state to regulate surface waters—waters that are strongly interconnected with the groundwater that the court seems to be intent on protecting from state regulation.³⁸⁸ Such an outcome would be doubly ironic given that Justice Hecht, in his concurrence in *Sipriano*,³⁸⁹ had seemed to look forward to fair and effective regulation of groundwater usage: “[T]he extensive statutory changes in 1997, together with the increasing demands on the State's water supply, may result before long in a fair, effective, and comprehensive regulation of water use”³⁹⁰

Whether the result in *Day* means a complete negation of state regulation depends on how readily Texas courts at all levels find that there has been a regulatory taking of groundwater rights despite all the possibilities available for upholding regulations without finding a taking.³⁹¹ If the regulations imposed by the Authority are found to be a taking, the Authority will have to choose between allowing unlimited pumping by overlying landowners or finding the funds to pay massive compensation to those who will be forced to stop. Gerald Torres has concluded that there is another possible approach—the Edwards Aquifer Authority Act will have to apply correlative rights after the fashion of California and Nebraska whereby the sustainable yield of the aquifer would have to be allocated among historic users in proportion to their land ownership because the total withdrawal cap was less than the total quantity claimed by historic users.³⁹² Whether such an approach would really solve the compensation problem is debatable.

VI. A FEDERAL ROLE?

The federal government has already entered the litigation regarding the absolute dominion doctrine in Texas under the Endangered Species Act.³⁹³ The role of the federal government could be stronger if it could claim reserved water rights for groundwater, a question that has seldom been litigated.³⁹⁴ The next question would be whether reserved water rights significantly limit the “absolute dominion” of users other than the federal government or a tribe.³⁹⁵ Even if reserved water rights did apply fully to groundwater, such claims could play only a small role in Texas because the public domain in those states never belonged to the federal government.³⁹⁶ Even in Texas,

*Please refer to original version for accurate page numbers

there might be Indian reserved water rights; although there doesn't seem to be a holding to that effect. Finally, even without reserved water rights, where the federal government and Indian tribes own land within the state, they could pump groundwater and would seldom, if ever, be challenged successfully.

VII. CONCLUSION

From near universal acceptance in the United States a century ago, the absolute dominion doctrine has now nearly disappeared in the United States. Courts across the land have found no reason to reject this change—courts, in fact, generally have led the way in making the change.³⁹⁷ Only in Texas has the doctrine managed to survive in a robust form. Its survival has been given a major boost by the Texas Supreme Court's decision in *Edwards Aquifer Authority v. Day*,³⁹⁸ holding that regulatory limitations of a landowner's pumping of groundwater might be a compensable taking of property. Yet in the twenty years since the Edwards Aquifer Authority Act was enacted, and after a bit more than fifteen years since it came into effect,³⁹⁹ only three takings claims have been presented against the Edwards Aquifer Authority. Whether there are many more such claims in the coming years will turn upon the ultimate outcome of the *Day* proceedings. At the least, it will tell us just how far the Supreme Court of Texas will go in protecting its recently discovered property or ownership rights in groundwater in place and in continuing to resist legislative and regulatory steps designed to address the serious and worsening groundwater crisis in the state.

* Professor of Law, Villanova University; B.B.A., University of Michigan (1965); J.D., Detroit College of Law (1968); LL.M. in International and Comparative Law, George Washington University (1969); LL.M. in Environmental Law, Columbia University (1974). Professor Dellapenna served as Rapporteur of the Water Resources Committee of the International Law Association, and in that capacity, led the drafting of the *Berlin Rules on Water Resources* (2004). He is also Director of the Model Water Code Project of the American Society of Civil Engineers, leading the drafting of the Association's *Regulated Riparian Model Water Code* and *Appropriative Rights Model Water Code*.

1. See INTERAGENCY CLIMATE CHANGE ADAPTATION TASK FORCE, NATIONAL ACTION PLAN: PRIORITIES FOR MANAGING FRESHWATER RESOURCES IN A CHANGING CLIMATE (2011), available at http://www.whitehouse.gov/sites/default/files/microsites/ceq/2011_national_action_plan.pdf; Yoshihide Wada et al., *Global Depletion of Groundwater Resources*, GEOPHYSICAL RES. LETTERS, Oct. 26, 2010, at 1 (2010).

2. See Joseph W. Dellapenna, *Climate Disruption, the Washington Consensus, and Water Law Reform*, 81 TEMP. L. REV. 383, 386–89 (2008) [hereinafter Dellapenna, *Climate Disruption*]; Joseph W. Dellapenna, *Global Climate Disruption and Water Law Reform*, 15 WIDENER L. REV. 409, 410–12 (2010) [hereinafter Dellapenna, *Global Climate Disruption*]; Joseph W. Dellapenna, *International Water Law in a Climate of Disruption*, 17 MICH. ST. J. INT'L L. 43, 48–52 (2008) [hereinafter Dellapenna, *International Water Law*]; see also GEORGE H. WARD, *Water Resources and Water Supply*, in THE IMPACT OF GLOBAL WARMING ON TEXAS 1 (Jurgen Schmandt, Gerald R. North & Judith Clarkson eds., 2d ed. 2011).

3. SHARLENE LEURIG, WATER RIPPLES: EXPANDING RISKS FOR US WATER PROVIDERS 7 (2012), available at <http://www.ceres.org/resources/reports/water-ripples-expanding-risks-for-u.s.-water-providers>; KARRIE LYNN PENNINGTON & THOMAS V. CECH, INTRODUCTION TO WATER RESOURCES AND ENVIRONMENTAL ISSUES 4–5 (2010); Ward, *supra* note 1.

4. See JOAN F. KENNY ET AL., ESTIMATED USE OF WATER IN THE UNITED STATES IN 2005, at 43 (2009); see also ROBERT GLENNON, WATER FOLLIES: GROUNDWATER PUMPING ON THE FATE OF AMERICA’S FRESH WATERS 3 (2002).

5. See generally Joseph W. Dellapenna, *A Primer on Groundwater Law*, 49 IDAHO L. REV. (forthcoming 2013) [hereinafter Dellapenna, *A Primer on Groundwater Law*].

6. See *infra* notes 15–48 and accompanying text.

7. See generally Dellapenna, *Global Climate Disruption*, *supra* note 2.

8. See Fourth Regional Technical Conference on Water Resources Development in Asia and the Far East, Colombo, Ceylon, Dec. 2, 1962, *Economic Commission for Asia and the Far East*, at 61, U.N. Doc. St./ECAFE/Ser.F/19; Jason B. Aamodt et al., *Groundwater: A Comparative Analysis of the Regulation of Groundwater Encountered in Surface Mining*, 64 OKLA. L. REV. 539, 540–42 (2012); J. David Aiken, *The Western Common Law of Tributary Groundwater: Implications for Nebraska*, 83 NEB. L. REV. 541, 547 (2004); Peter H. Gleick, *The Changing Water Paradigm: A Look at Twenty-First Century Water Resources Development*, 25 WATER INT’L 127, 132 (2000); Janusz Niemczynowicz, *Present Challenges in Water Management: A Need to See Connections and Interactions*, 25 WATER INT’L 139, 141 (2000); Kevin O’Brien, *The Governor’s Commissions Recommendations on Groundwater: Treading Water Until the Next Drought*, 36 MCGEORGE L. REV. 435, 441–50 (2005); Barton H. Thompson, Jr., *Beyond Connections: Pursuing Multidimensional Conjunctive Management*, 47 IDAHO L. REV. 273, 279–80 (2011).

9. See *Jones v. Home Bldg. & Loan Ass’n*, 114 S.E.2d 638, 644–46 (N.C. 1960) (summarizing the leading cases on the distinction between percolating waters and subterranean streams); see also *N. Gualala Water Co. v. State Water Res. Control Bd.*, 43 Cal. Rptr. 3d 821, 833–34, 839 n.16 (Ct. App. 2006).

10. Joseph W. Dellapenna, *The Absolute Dominion Doctrine Rule*, in 3 WATERS AND WATER RIGHTS § 20.01 (Amy K. Kelley ed., 2012) [hereinafter Dellapenna, *The Absolute Dominion Doctrine Rule*].

11. The rule apparently originated, or at least was first unequivocally announced, in *Greenleaf v. Francis*, 35 Mass. (18 Pick.) 117, 122–23 (1836). The earliest English decision to express the rule is *Acton v. Blundell*, (1843) 152 Eng. Rep. 1223 (Exch. Chamber).

12. For a simplistic but detailed review of the history of Roman law of groundwater with citations to numerous sources, see Dylan O. Drummond, Lynn Ray Sherman & Edmond R. McCarthy, Jr., *The Rule of Capture in Texas—Still So Misunderstood after All These Years*, 37 TEX. TECH. L. REV. 1, 18–29 (2004); Dellapenna, *The Absolute Dominion Doctrine Rule*, *supra* note 10, § 20.02.

13. See *Wiggins v. Brazil Coal & Clay Corp.*, 452 N.E.2d 958, 963–64 (Ind. 1983); *Maddocks v. Giles*, 728 A.2d 150, 152–53 (Me. 1999); *Sipriano v. Great Spring Waters of Am., Inc.*, 1 S.W.3d 75, 83 (Tex. 1999) (Hecht, J., concurring). The absolute dominion doctrine is also followed in some other common law countries. See, e.g., Daniel Aguilar, Note, *Groundwater Reform in India: An Equity and Sustainability Dilemma*, 46 TEX. INT’L L.J. 623, 629–31 (2011).

14. See, e.g., LOUIS ARTHUR GOODEVE, *THE MODERN LAW OF REAL PROPERTY* 4–5 (London, Maxwell & Son 1883) (the legal definition of “land” includes the “water which covers it”); JOHN M. GOULD, *THE LAW OF WATERS, INCLUDING RIPARIAN RIGHTS, AND PUBLIC AND PRIVATE RIGHTS IN WATERS TIDAL AND INLAND* §§ 46, 265–67 (Chicago, Gallahan & Co. 1883) (discussing rights to freshwater streams and rights relative to run-off water). Neither Goodeve’s book nor Gould’s book addressed groundwater.

15. See, e.g., Mark Kanazawa, *Origins of Common-Law Restrictions on Water Transfers: Groundwater Law in Nineteenth-Century California*, 32 J. LEGAL STUD. 153, 158–62 (2003).

16. OTTO J. HELWEG, WATER RESOURCES: PLANNING AND MANAGEMENT 1–3 (1985) (describing the Roman’s empirical knowledge of groundwater as early as the fourth century BCE and the establishment of scientific knowledge of groundwater in the nineteenth and twentieth centuries).

17. See, e.g., *Frazier v. Brown*, 12 Ohio St. 294, 311 (1861) (“[A]ny . . . recognition of correlative rights[] would interfere[] to the material detriment of the common wealth, [impeding] drainage and agriculture, mining, the construction of highways and railroads, . . . sanitary regulations, building and the general progress of improvement in works of embellishment and utility.”) *overruled by* *Cline v. Am. Aggregates Corp.*, 474 N.E.2d 324 (Ohio 1984). Cf. *Tyler v. Wilkinson*, 24 F. Cas. 472, 475–76 (C.C.D.R.I. 1827) (relying on economic necessity to justify a presumption of a grant of a right to use water from a common ditch).

18. Steve Schafer, *Economics and Finance*, in FLAT WATER: A HISTORY OF NEBRASKA AND ITS WATER 113 (Charles A. Flowerday ed. 1993); Leslie Sheffield, *Technology*, in FLAT WATER: A HISTORY OF NEBRASKA AND ITS WATER 113 (Charles A. Flowerday ed. 1993).

19. See, e.g., *New Albany & Salem R.R. Co. v. Peterson*, 14 Ind. 112 (1860); *Frazier*, 12 Ohio St. at 311; *Haldeman v. Bruckhart*, 45 Pa. 514 (1863); *Balston v. Bensted*, (1808) 170 Eng. Rep. 1022 (K.B.); see also *Aamodt et al.*, *supra* note 8, at 544–46.

20. For a narrative discussing the development of Mr. Watts’ steam engine, see JAMES PATRICK MUIRHEAD, THE LIFE OF JAMES WATT WITH SELECTIONS FROM HIS CORRESPONDENCE 74–83 (London, John Murray 1858).

21. See, e.g., George Selgin & John L. Turner, *Strong Steam, Weak Patents, or the Myth of Watt’s Innovation-Blocking Monopoly, Exploded*, 54 J.L. & ECON. 841, 852–54 (2011).

22. 35 Mass. (18 Pick.) 117 (1836).

23. (1843) 152 Eng. Rep. 1223 (Exch. Chamber).

24. *Frazier*, 12 Ohio St. at 311; see also *Acton*, (1843) 152 Eng. Rep. at 1234 (describing the existence of groundwater as “unknown”).

25. See generally BARBARA DOWDY-TRABKE, PENDULUM, L-ROD, Y-ROD: THE ULTIMATE GUIDE TO DOWSING (2007); HAMISH MILLER, DOWSING: A JOURNEY BEYOND OUR FIVE SENSES (2004).

26. WEBSTER’S NEW WORLD COLLEGE DICTIONARY 997 (Michael Agnes ed., 4th ed. 1999).

27. (1808) 170 Eng. Rep. 1022 (K.B.).

28. *Id.* at 1022–23.

29. *Id.* at 1023.

30. *Chasemore v. Richards*, (1859) 11 Eng. Rep. 140, 143 (H.L.).

31. (1843) 152 Eng. Rep. 1223 (Exch. Chamber).

32. See, e.g., *Bd. of Cnty. Comm’rs of Park v. Park Cnty. Sportsmen’s Ranch, LLP*, 45 P.3d 693, 705 (Colo. 2002); *Mich. Citizens for Water Conservation v. Nestlé Waters N. Am. Inc.*, 709 N.W.2d 174, 196–97 (Mich. Ct. App. 2005), *rev’d on other grounds*, 737 N.W.2d 447 (Mich. 2007); *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 824–25 (Tex. 2012).

33. See *Greenleaf v. Francis*, 35 Mass. (18 Pick.) 117 (1836).

34. See JOSHUA GETZLER, A HISTORY OF WATER RIGHTS AT COMMON LAW 268–82 (2004). This has not prevented many courts and commentators from asserting that riparian rights first developed in England. See, e.g., *id.* at 156–69. On the American origins of riparian rights generally, see Joseph W. Dellapenna, *The Right to Use Water*, in 1 WATERS AND WATER RIGHTS § 7.02(a) (Amy K. Kelley ed. 2011 ed.) [hereinafter Dellapenna, *The Right to Use Water*].

35. See, e.g., *Acton*, (1859) 152 Eng. Rep. at 1234.

36. *Id.* at 1232–35.

37. *See, e.g.*, Bradford Corp. v. Pickles, [1895] A.C. 587 (H.L.) (appeal taken from Eng.); Chasemore v. Richards, [1859] 11 Eng. Rep. 140, 152–56 (H.L.) (appeal taken from Eng.).

38. Langbrook Props., Ltd. v. Surrey Cnty. Council, [1969] 3 All E.R. 1424, 1439–40 (Ch.) (emphasis added).

39. [1987] 3 All E.R. 379 (C.A.).

40. *Id.* at 384.

41. *See, e.g.*, Allstate Ins. Co. v. Dana Corp., 759 N.E.2d 1049, 1054–55 (Ind. 2001); Mich. Citizens for Water Conservation v. Nestlé Waters N. Am. Inc., 709 N.W.2d 174, 196, 200–01 (Mich. Ct. App. 2005), *rev'd on other grounds*, 737 N.W.2d 447 (Mich. 2007); Citizens for Groundwater Prot. v. Porter, 275 S.W.3d 329, 349 (Mo. Ct. App. 2008).

42. The restrictions include strict liability for pollution and the doctrine of nuisance in some pollution cases. *See, e.g.*, Cambridge Water Co. v. E. Cnty. Leather PLC, [1994] 2 A.C. 264 (C.A.); *see generally* Andrew Waite, *Deconstructing the Rule in Rylands v. Fletcher*, 18 J. ENVTL. L. 423 (2006). Legislation has further limited the rule in England and Wales. *See, e.g.*, Water Act, 1945, 8 & 9 Geo. 6, c. 42 (creating conservation areas within which the Minister of Housing and Local Government could license groundwater withdrawals to protect municipal, industrial, or other water supplies); Water Resources Act, 1963, 10 Eliz. 2, c. 38 (U.K.) (requiring a license for using water from any source, including “any underground strata,” meaning water subjacent to the land surface for anything other than “underground works”).

43. Chatfield v. Wilson, 28 Vt. 49, 53–54 (1855).

44. *See id.* at 53.

45. *See id.* at 56.

46. *Id.* at 54 (emphasis added); *see also* Roath v. Driscoll, 20 Conn. 533, 541 (1850).

The laws of [groundwater’s] existence and progress . . . are not uniform, and cannot be known or regulated. It rises to great heights, and moves collaterally, by influences beyond our apprehension. These influences are so secret, changeable and uncontrollable [sic], we cannot subject them to the regulations of law, nor build upon them a system of rules, as has been done with streams upon the surface.

Id.

47. 12 Ohio St. 294, 311 (1861) (emphasis added); *see also* Acton v. Blundell, (1843) 152 Eng. Rep. 1223, 1228, 1232, 1234 (Exch. Chamber) (describing groundwater as “unknown” and “unknowable”).

48. *Frazier*, 12 Ohio St. at 310–11.

49. *Id.* at 304 (emphasis added).

50. *Id.* at 311.

51. *See generally* Corona Coal Co. v. Thomas, 101 So. 673 (Ala. 1924); Roath v. Driscoll, 20 Conn. 533 (1850); Saddle v. Lee, 66 Ga. 45 (1880); Edwards v. Haeger, 54 N.E. 176 (Ill. 1899); New Albany & Salem R.R. Co. v. Peterson, 14 Ind. 112 (1860); Chase v. Silverstone, 62 Me. 175 (1873); Western Md. R.R. Co. v. Martin, 73 A. 267 (Md. 1909); Greenleaf v. Francis, 35 Mass. (17 Pick.) 117 (1836); Bd. of Supervisors of Clarke Cnty. v. Miss. Lumber Co., 31 So. 905 (Miss. 1902); Forbell v. City of New York, 58 N.E. 644 (N.Y. 1900); Haldeman v. Bruckhart, 45 Pa. 514 (1863); *Frazier*, 12 Ohio St. at 294; Buffum v. Harris, 5 R.I. 243 (1858); Hous. & Tex. Cent. Ry. Co. v. East, 81 S.W. 279 (Tex. 1904); Chatfield v. Wilson, 28 Vt. 49 (1855); Clinchfield Coal Co. v. Compton, 139 S.E. 308 (Va. 1927).

52. GA. CODE ANN. § 51-9-8 (West 2006) (first enacted in 1863).

53. *Frazier*, 12 Ohio St. at 311; Acton v. Blundell, (1843) 152 Eng. Rep. 1223, 1228, 1232, 1234 (Exch. Chamber).

54. Thus, New Hampshire embraced the reasonable use rule in 1862. *Bassett v. Salisbury Mfg. Co.*, 43 N.H. 569, 579 (1862); *see generally* Joseph W. Dellapenna, *The Reasonable Use Rule*, in 2 WATER AND WATER RIGHTS § 22.01 (Amy K. Kelley ed., 2011) [hereinafter Dellapenna, *The Reasonable Use Rule*].

55. *See* David Todd, *Common Resources, Private Rights and Liabilities: A Case Study of Texas Groundwater Law*, 32 NAT. RESOURCES J. 233, 240–41 (1992). *Cf.* MORTON J. HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW 1780–1860*, at 105 (1977) (concluding that jurists adopted the absolute dominion doctrine as an expression of the theory of laissez-faire economics that had come to dominate their thinking by the middle of the nineteenth century).

56. 12 Ohio St. 294 (1861); *see supra* text accompanying notes 48–51 (analyzing *Frazier*).

57. JOSEPH K. ANGELL, *LAW OF WATERCOURSES* § 109 (4th ed. 1850). The first edition appeared in 1824. The fourth edition is the last in which Angell made significant revisions to section 109. Interestingly, Angell’s contemporary, Humphrey Woolrych, did not mention groundwater as late as 1853 in the earliest English treatise on water law—a decade after *Acton v. Blundell*. HUMPHREY W. WOOLRYCH, *A TREATISE OF THE LAW OF WATERS* (1st Am. ed. 1853).

58. 2 WILLIAM BLACKSTONE, *COMMENTARIES* *18; *see also* *Edwards v. Sims*, 24 S.W.2d 619, 620 (Ky. 1929) (“[The saying] is an old maxim and rule. It is that the owner of realty, unless there has been a division of the estate, is entitled to the free and unfettered control of his own land above, upon, and beneath the surface.”).

59. ANGELL, *supra* note 57, § 109 (original in italics).

60. *See* JOSEPH LONG, *THE LAW OF IRRIGATION* (1902). Long focused on the western doctrine of appropriation from a stream as the primary source for irrigation. He lost interest after concluding that diffused or percolating groundwater was not subject to appropriation. *Id.* §§ 33, 60.

61. JOSEPH LONG, *THE LAW OF IRRIGATION* § 45 (2d ed. 1916).

62. *Barnard v. Monongahela Natural Gas Co.*, 65 A. 801 (Pa. 1907).

63. *Westmoreland & Cambria Natural Gas Co. v. De Witt*, 18 A. 724, 725 (Pa. 1889); *see also* Gerald Torres, *Liquid Assets: Groundwater in Texas*, 122 YALE L.J. 143, 145–46, 151 (2012).

64. *See* Susana Elena Canseco, *Landowners’ Rights in Texas Groundwater: How and Why Texas Courts Should Determine Landowners Do Not Own Groundwater in Place*, 60 BAYLOR L. REV. 491, 503–04, 514–24 (2008); Drummond, Sherman & McCarthy, *supra* note 12, at 52–61.

65. JAN G. LAITOS, *NATURAL RESOURCES LAW: CASES AND MATERIALS* 756–57 (1985).

66. *Id.* at 757; *see also* Drummond, Sherman & McCarthy, *supra* note 12, at 39–41.

67. LAITOS, *supra* note 65, at 757–58; *see generally* Keith H. Hirokawa, *Property as Capture and Care*, 74 ALB. L. REV. 175 (2010).

68. *See, e.g.*, *Funk v. Haldeman*, 53 Pa. 229, 248–49 (1866). Laitos rejects even the distinction between whether oil or gas is real or personal property as “not central.” LAITOS, *supra* note 65, at 758.

69. *See, e.g.*, N.D. CENT. CODE § 38-08-08 (2011); *Gadeco, LLC v. Indus. Comm’n of N.D.*, 812 N.W.2d 405 (N.D. 2012).

70. *See, e.g.*, *Bd. of Supervisors of Clarke Cnty. v. Miss. Lumber Co.*, 31 So. 905 (Miss. 1902) (denying liability for using compressed air to force water up a well with the effect of drying out a neighbor’s wells); *Warder v. City of Springfield*, 9 Ohio Dec. Rep. 855 (1887) (upholding the right of a municipality to supply its needs from a well field drying up neighboring wells).

71. *See supra* notes 29–38 (discussing the English version of the absolute dominion doctrine).

-
72. *See, e.g.*, Tampa Waterworks Co. v. Cline, 20 So. 780 (Fla. 1896).
73. *See, e.g.*, Shahan v. Brown, 60 So. 891 (Ala. 1913).
74. *See, e.g.*, Hathorn v. Natural Carbonic Gas Co., 87 N.E. 504 (N.Y. 1909); Forbell v. City of New York, 58 N.E. 644 (N.Y. 1900).
75. *Cline*, 20 So. at 784.
76. *See, e.g.*, Gagnon v. French Lick Springs Hotel Co., 72 N.E. 849, 852 (Ind. 1904) (concluding that one could not extract groundwater for the purpose of putting a rival out of business; citing cases applying correlative rights, the reasonable use rule, and the appurtenant rule; and limiting use to the overlying land without any apparent recognition that these rules differed from the classic absolute dominion doctrine).
77. *Id.*
78. *See* Roath v. Driscoll, 20 Conn. 533, 542 (1850); Saddler v. Lee, 66 Ga. 45, 47 (1880); Long v. Louisville & Nashville R.R. Co., 107 S.W. 203, 205 (Ky. 1908); Rollins v. Blackden, 58 A. 69, 71 (Me. 1904); Greenleaf v. Francis, 35 Mass. (18 Pick.) 117, 122 (1836); Upjohn v. Bd. of Health of Richland Twp., 9 N.W. 845, 848 (Mich. 1881); Bd. of Supervisors of Clarke Cty. v. Miss. Lumber Co., 31 So. 905, 906–07 (Miss. 1902); Wheatley v. Baugh, 25 Pa. 528, 535 (1855); Hous. & Tex. Cent. R.R. Co. v. East, 81 S.W. 279, 281 (Tex. 1904).
79. *Greenleaf*, 35 Mass. (18 Pick.) at 122.
80. *See, e.g.*, Gamer v. Town of Milton, 195 N.E.2d 65, 67 (Mass. 1964); *Wheatley*, 25 Pa. at 535; Friendswood Dev. Co. v. Smith-Sw. Indus., 576 S.W.2d 21 (Tex. 1978). *See infra* notes 158–67 and accompanying text (discussing *Friendswood*).
81. *Collens v. New Canaan Water Co.*, 234 A.2d 826, 832 (Conn. 1967) (recognizing liability for interference with riparian rights if the pumping from a well was “in a spirit of wanton disregard of [riparian] rights [or] . . . in reckless disregard of the consequences [the groundwater user] knew or should have known would result”).
82. *Cf.* H. Floyd Sherrod, Jr., *The Groundwater Use Act of 1972: Protection for Georgia’s Groundwater Resources*, 6 GA. L. REV. 709, 733 (1972) (describing groundwater law in Georgia as “murky” in the face of precedents embracing the absolute dominion doctrine and incorporating exceptions for malice and negligence in the face of legislative modifications). Perhaps this explains a Georgia court’s reliance on non-recovery in tort for purely economic losses to dismiss a groundwater case rather than undertaking to explore the ramifications of the Georgia version of the absolute dominion doctrine. *See* Remax the Mountain Co. v. Tabsum, Inc., 634 S.E.2d 77 (Ga. Ct. App. 2006).
83. 452 N.E.2d 958 (Ind. 1983).
84. *Id.* at 963.
85. *Id.* at 964.
86. *Id.*
87. *See* Schafer, *supra* note 18; Sheffield, *supra* note 18.
88. *See, e.g.*, WAYNE SOLEY, ROBERT PIERCE, & HOWARD PERLMAN, ESTIMATED USE OF WATER IN THE UNITED STATES IN 1995, at 23 tbl.10 (1998) (U.S. Geological Survey Circular no. 1200); *see generally* Dellapenna, *The Absolute Dominion Doctrine Rule*, *supra* note 10, §§ 18.01, 18.05–06.
89. For the classic statement of the theory of the tragedy of the commons, see Garret Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968). Under the tragedy of the commons, each co-owner, acting purely rational, will place ever increasing demands on a resource even as it is exhausted, if only because other co-owners are doing the same. Adding demand is the only way to appropriate a share of a resource being grabbed by all. Current examples include ocean fisheries. *See, e.g.*, Hope M. Babcock, *Grotius, Ocean Fish Ranching, and the Public Trust Doctrine: Ride ‘em Charlie Tuna*, 26 STAN. ENVTL. L.J. 3, 36–41 (2007); Jay Ellis, *Fisheries Conservation in an Anarchical System: A Comparison of Rational Choice and Constructivist Perspectives*, 3 J. INT’L L. & INT’L REL. 1, 12 (2007); Gary D.

Libecap, *Open-Access Losses and Delay in the Assignment of Property Rights*, 50 ARIZ. L. REV. 379, 387–92 (2008); Katryna M. Wyman, *The Property Rights Challenge in Marine Fisheries*, 50 ARIZ. L. REV. 511, 527 n.108 (2008). For a groundwater example, see *Southwest Engineering v. Ernst*, 291 P.2d 764 (Ariz. 1955). See also Robert Glennon, *Tales of French Fries and Bottled Water: The Environmental Consequences of Groundwater Pumping*, 37 ENVTL. L. 3, 4–5 (2007); Todd, *supra* note 55, at 242–48. For an attempt to refute the theory of the tragedy of the commons in general, see Jason Scott Johnston, *The Rule of Capture and the Economic Dynamics of Natural Resource Use and Survival Under Open Access Management*, 35 ENVTL. L. 855 (2005).

90. For courts that have replaced the absolute dominion rule with correlative rights, see *Katz v. Walkinshaw*, 74 P. 766 (Cal. 1903); *Beatrice Gas Co. v. Thomas*, 59 N.W. 925, 928–29 (Neb. 1894); and *Forbell v. City of New York*, 58 N.E. 644 (N.Y. 1900). For courts that have absolute dominion with reasonable use, see *Williams v. Gibson*, 4 So. 350, 353–54 (Ala. 1888); *Cason v. Florida Power Co.*, 76 So. 535, 536 (Fla. 1917); *Bower v. Moorman*, 147 P. 496, 500 (Idaho 1915); *Willis v. City of Perry*, 60 N.W. 727, 730 (Iowa 1894); *Schenk v. City of Ann Arbor*, 163 N.W. 109, 111–12 (Mich. 1917); *Patrick v. Smith*, 134 P. 1076, 1079 (Wash. 1913); and *Pence v. Carney*, 52 S.E. 702, 705 (W. Va. 1905). See generally Dellapenna, *The Absolute Dominion Doctrine*, *supra* note 10, §§ 21.01, 22.01.

91. See, e.g., *McLintock v. Hudson*, 74 P. 849 (Cal. 1903) (presuming all groundwater to be tributary of surface waters); *Safranek v. Town of Limon*, 123 Colo. 330, 228 P.2d 975 (1951) (also presuming all groundwater to be tributary of surface water); see generally Dellapenna, *The Absolute Dominion Rule*, *supra* note 10, § 19.05(a)(4); Gregory J. Hobbs, Jr., *Protecting Prior Appropriation Water Rights Through Integrating Tributary Groundwater: Colorado's Experience*, 47 IDAHO L. REV. 5, 15–17 (2010).

92. See, e.g., 1919 Ariz. Sess. Laws ch. 164, § 1; 1913 Cal. Stat. ch. 586, § 42; 1899 Idaho Sess. Laws ch. 380, § 2; 1913 Nev. Stat. ch. 140, §§ 1–2; 1915 Nev. Stat. ch. 210; 1903 Utah Laws ch. 100, § 101 (superseding *Wrathall v. Johnson*, 40 P.2d 755 (Utah 1935)).

93. See, e.g., 1927 N.M. Laws ch. 182; 1931 N.M. Laws ch. 131.

94. See, e.g., DEL. CODE ANN. tit. 7, §§ 6001–6031 (2001) (first enacted 1959); IOWA CODE ANN. §§ 455B.261–281 (2004) (first enacted 1959); MD. CODE ANN., ENVIR. §§ 5-501 to -514 (West 2007) (first enacted in 1957). See generally Dellapenna, *The Absolute Dominion Doctrine Rule*, *supra* note 10, ch. 23.

95. See ARK. CODE ANN. §§ 15-22-901 to -914 (LEXIS Repl. 2003) (first enacted 1991); GA. CODE ANN. §§ 12-5-90 to -107 (2006) (first enacted 1972); VA. CODE ANN. §§ 62.1-254 to -270 (2006) (first enacted 1992); WIS. STAT. § 281.34–35 (2009) (first enacted 2009); see generally Dellapenna, *The Absolute Dominion Doctrine Rule*, *supra* note 10, § 23.03(b)(7).

96. See, e.g., CAL. WATER CODE § 106 (West 2012) (exempting domestic uses from an appropriation statute); CONN. GEN. STAT. § 22a-377(a)(2) (2012) (exempting up to 50,000 gallons per twenty-four hours); DEL. CODE ANN. tit. 7, § 6029(2) (2001) (exempting up to 360 ac-in. per year if the stream has a minimum flow of 500,000 gallons per day); FLA. STAT. §§ 373.019(4), 373.219(1) (2006) (exempting domestic uses from a regulated riparian statute); 525 ILL. COMP. STAT. 45/1 to 45/7 (2004) (exempting waters pumped from within the Lake Michigan watershed); IOWA CODE §§ 455B.261(8), 455B.268(1) (2004) (exempting up to 25,000 gallons per day); KAN. STAT. ANN. §§ 82a-705a, 82a-728(a) (1997) (exempting domestic uses from an appropriation statute); MINN. STAT. §§ 103G.271(1)(b)(1), 105.41(1) (1997) (exempting domestic uses from a regulated riparian statute); N.J. STAT. ANN. §§ 58:1A-5(a), 58:1A-6 (West 2006) (exempting up to 100,000 gallons per day).

97. The Illinois statute substitutes the reasonable use rule for the absolute dominion doctrine in such cases. 525 ILL. COMP. STAT. 45/6 (2004); see also *Bridgman v. Sanitary Dist.*, 517 N.E.2d 309, 312 (Ill. App. Ct. 1987).

98. See GA. CODE ANN. § 12-5-105 (2006) (exempting farm uses begun before July 1, 1988); KY. REV. STAT. ANN. § 151.140 (West 2012) (exempting all agricultural uses); MD.

CODE ANN., ENVIR. § 5-502 (West 2010) (guaranteeing a permit to any agricultural use begun before July 1, 1988).

99. ALA. CODE § 9-10B-22 (2001); HAW. REV. STAT. § 174C-7 (2008); MASS. GEN. LAWS ch. 21G, § 4 (2002); N.C. GEN. STAT. §§ 143-215.13–.16 (2007); VA. CODE ANN. § 62.1-259(ix) (2006).

100. *Md. Aggregates Ass'n v. State*, 655 A.2d 886, 898–900 (Md. 1994) (holding that a statute regulating dewatering for mining is not a taking of property); *Crookston Cattle Co. v. Minn. Dep't of Natural Res.*, 300 N.W.2d 769, 774–75 (Minn. 1981) (holding that displacement of the absolute dominion doctrine by a regulated riparian statute is not a taking of property); *Kline v. State*, 759 P.2d 210, 212–13 (Okla. 1988) (holding that the Oklahoma Groundwater Law is not a taking of property); *Barshop v. Medina Cnty. Underground Water Conservation Dist.*, 925 S.W.2d 618, 628–31 (Tex. 1996) (holding that the Edwards Aquifer Authority Act is not a taking of property); *see also* *W. Maricopa Combine, Inc. v. Ariz. Dep't of Water Res.*, 26 P.3d 1171, 1176–77 (Ariz. 2001) (holding that displacement of the reasonable use rule for groundwater with a regulated riparian statute is not a taking of property); *Village of Tequesta v. Jupiter Inlet Corp.*, 371 So. 2d 663, 666–67 (Fla. 1979) (same). One challenge to a complete ban on groundwater abstraction, as opposed to a new legal regime regulating abstractions, was found to be a taking of property. *V. Jacobs & Sons v. Saginaw Cnty. Dep't of Pub. Health*, 284 F. Supp. 2d 711, 715–16 (E.D. Mich. 2003). The most recent Texas case was remanded for the trial court to consider whether there was a taking of property. *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 827–30 (Tex. 2012).

101. *Crookston Cattle Co.*, 300 N.W.2d at 774–75; *Kline*, 759 P.2d at 212–13.

102. *See, e.g.*, *Lingle v. Chevron U.S.A., Inc.*, 544 U.S. 528, 537 (2005); *Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency*, 535 U.S. 302, 311 (2002); *Palazzolo v. Rhode Island*, 533 U.S. 606, 617 (2001); *McAllister v. Cal. Coastal Comm'n*, 87 Cal. Rptr. 3d 365, 384–88 (Ct. App. 2008); *Kottschade v. City of Rochester*, 760 N.W.2d 342, 347–48 (Minn. Ct. App. 2009); *see generally* David B. Anderson, *Water Rights as Property in Tulare v. United States*, 38 MCGEORGE L. REV. 461 (2007); Melinda Harm Benson, *The Tulare Case: Water Rights, the Endangered Species Act, and the Fifth Amendment*, 32 ENVTL. L. 551 (2002); James H. Davenport & Craig Bell, *Governmental Interference with the Use of Water: When Do Unconstitutional "Takings" Occur?*, 9 U. DENV. WATER L. REV. 1 (2005); John D. Echeverria, *Is Regulation of Water a Constitutional Taking?*, 11 VT. J. ENVTL. L. 579 (2010); Bradley C. Karkkainen, *The Police Power Revisited: Phantom Incorporation and the Roots of the Takings "Muddle"*, 90 MINN. L. REV. 826 (2006); John C. Keene, *When Does a Regulation "Go too Far"?*—*The Supreme Court's Analytical Framework for Drawing the Line Between an Exercise of the Police Power and an Exercise of the Power of Eminent Domain*, 14 PENN. ST. ENVTL. L. REV. 397 (2006); Michael B. Kent, Jr., *Construing the Canon: An Exegesis of Regulatory Takings Jurisprudence After Lingle v. Chevron*, 16 N.Y.U. ENVTL. L.J. 63 (2008); Zachary C. Kleinsasser, *Public and Private Property Rights: Regulatory and Physical Takings and the Public Trust Doctrine*, 32 B.C. ENVTL. AFF. L. REV. 421, 453–56 (2005); John D. Leshy, *A Conversation About Takings and Water Rights*, 83 TEX. L. REV. 1985 (2005); Teresa A. McQueen, *Tulare Lake Basin Water Storage District v. United States: Takings Victory or ESA Reform Test Case?*, 37 URB. LAW. 529 (2005); Robert Meltz, *Takings Law Today: A Primer for the Perplexed*, 34 ECOLOGY L.Q. 307 (2007); Casey Schach, *Stream Buffer Ordinances: Are Municipalities on the Brink of Protecting the Health of Streams or Opening the Floodgates of Takings Litigation?*, 40 URB. LAW. 73 (2008); Christopher Serkin, *The Meaning of Value: Assessing Just Compensation for Regulatory Takings*, 99 NW. U.L. REV. 677 (2005); Scott Andrew Shepard, *The Unbearable Cost of Skipping the Check: Property Rights, Takings Compensation & Ecological Protection in the Western Water Law Context*, 17 N.Y.U. ENVTL. L.J. 1063 (2009); William Michael Treanor, Symposium, *Take-ings*, 45 SAN DIEGO L. REV. 633 (2008); Danaya C. Wright, *A New Time*

for Denominators: Toward a Dynamic Theory of Property in the Regulatory Takings Relevant Parcel Analysis, 34 ENVTL. L. 175 (2004).

103. See, e.g., Tahoe-Sierra Pres. Council, Inc. v. Tahoe Reg'l Planning Agency, 535 U.S. 302, 321, 324–43 (2002); Palazzolo v. Rhode Island, 533 U.S. 606, 618–24 (2001); Cwynar v. City of San Francisco, 109 Cal. Rptr. 2d 233, 253 n.9 (Ct. App. 2001); Gove v. Zoning Bd. of Appeals of Chatham, 831 N.E.2d 865 (Mass. 2005); Smith v. Town of Mendon, 822 N.E.2d 1214 (N.Y. 2004); State *ex rel.* R.T.G., Inc. v. State, 780 N.E.2d 998, 1005–10 (Ohio 2002); Machipongo Land & Coal Co. v. Commonwealth, 799 A.2d 751, 763–71 (Pa. 2002); Cummins v. Travis Cnty. Water Control Dist. No. 17, 175 S.W.3d 34, 54–57 (Tex. Ct. App. 2005); see generally J. David Breemer & R.S. Radford, *The (Less?) Murky Doctrine of Investment-Backed Expectations After Palazzolo, and the Lower Courts' Disturbing Insistence on Wallowing in the Pre-Palazzolo Muck*, 34 Sw. U. L. REV. 351, 409–25 (2005); Eric R. Claeys, *Takings and Private Property on the Rehnquist Court*, 99 Nw. U. L. REV. 187, 203–05 (2004); Davenport & Bell, *supra* note 102, at 16; Meltz, *supra* note 102, at 333–52; H. Dixon Montague & Billy Coe Dyer, *Compensability of Nonphysical Impacts of Public Works: A Game of Chance*, 34 URB. LAW. 171 (2002); William W. Wade, *Confusion About "Change in Value" and "Return on Equity" Approaches to the Penn Central Test in Equity Takings*, 38 ENVTL. L. RPT. 10486, 10489 (2008).

104. See, e.g., Ark. Game & Fish Comm'n v. United States, 133 S. Ct. 511 (2012) (holding that a temporary physical invasion on property is compensable as a temporary taking); *Lingle*, 544 U.S. at 540–45 (no taking even if the regulation did not serve a legitimate state interest); *Gove*, 831 N.E.2d at 865 (finding no regulatory taking without deprivation of all reasonable economic uses); *Buhmann v. State*, 201 P.3d 70 (Mont. 2008) (same); *Scotfield v. State*, 753 N.W.2d 345, 358–60 (Neb. 2008) (same); *Coast Range Conifers, LLC v. State*, 117 P.3d 990 (Or. 2005) (same); *Cherrystone Inlet, LLC v. Bd. of Zoning Appeals*, 628 S.E.2d 324 (Va. 2006) (same); see generally Gerald A. Fisher, *The Comprehensive Plan Is an Indispensable Compass for Navigating Mixed-Use Zoning Decisions Through the Precepts of the Due Process, Takings, and Equal Protection Clauses*, 40 URB. LAW. 831, 877–78 (2008); *Kent*, *supra* note 102, at 103–04; J.B. Ruhl, *Making Nuisance Ecological*, 58 CASE W. RES. L. REV. 753, 759–63 (2008); *Schach*, *supra* note 102, at 82, 88–89.

105. See, e.g., OKLA. STAT. ANN. tit. 60, § 60(A) (West 2001) (declaring that a landowner owns the water “under the surface”); see also *id.* tit. 82, §§ 1020.1–.22 (2011) (requiring a permit to withdraw groundwater from an aquifer when the total withdrawals from the aquifer exceed the “maximum annual yield”); see generally L. Paul Goeringer, *A Practitioner's Guide to the Oklahoma Groundwater Act: How to Dip Your Bread into the Gravy While It Is Still Hot*, 2 KY. J. EQUINE, AGRIC., & NAT. RESOURCES L. 157 (2009).

106. See, e.g., *Vanek v. State*, 193 P.3d 283, 288–89 (Alaska 2008); *Watergate E. Comm. Against Hotel Conversion v. D.C. Zoning Comm'n*, 953 A.2d 1036, 1047 (D.C. Ct. App. 2008); *Brescia v. N. Shore Ohana*, 168 P.3d 929, 951–53 (Haw. 2007); *Bormann v. Bd. of Supervisors*, 584 N.W.2d 309, 315–16 (Iowa 1998); *Kafka v. Mont. Dep't Fish, Wildlife & Parks*, 201 P.3d 8, 18–19 (Mont. 2008); *Walker v. United States*, 162 P.3d 882, 891–92 (N.M. 2007); *Wooten v. S.C. Coastal Council*, 510 S.E.2d 716, 717–18 (S.C. 1999); see generally *Anderson*, *supra* note 102; *Denise R. Johnson, Reflections on the Bundle of Rights*, 32 VT. L. REV. 247 (2007); *Nicole L. Johnson, Property Without Possession*, 24 YALE J. ON REG. 205 (2007); *Alain A. Levasseur, The Boundaries of Property Rights: La Notion de Biens*, 54 AM. J. COMP. L. 145 (2006).

107. *Aikins v. Ariz. Dep't of Water Res.*, 743 P.2d 946, 950–51 (Ariz. Ct. App. 1987); *Village of Tequesta v. Jupiter Inlet Corp.*, 371 So. 2d 663, 666–67 (Fla. 1979). But see *McNamara v. City of Rittman*, 473 F.3d 633, 639–40 (6th Cir. 2007) (finding a takings claim to be possible because the right to make a reasonable use of water is a property right).

108. Consider the analysis of what makes something a property right in *Keys v. Romley*, 412 P.2d 529, 537 (Cal. 1966). See also *Aikins*, 743 P.2d at 950–51; *Town of Chino Valley v.*

City of Prescott, 638 P.2d 1324, 1328 (Ariz. 1981); *Village of Tequesta*, 371 So. 2d at 666–67; see generally John G. Sprankling, *Owning the Center of the Earth*, 55 UCLA L. REV. 979 (2008). When a government physically interferes with groundwater used under the reasonable use theory, it is easier for a court to conclude that there has been a taking of property. See *Albahary v. City of Bristol*, 886 A.2d 802 (Conn. 2005); *McNamara v. City of Rittman*, 838 N.E.2d 640, 643–45 (Ohio 2005); see also *Davenport & Bell*, *supra* note 102, at 6–16.

109. See *Torres*, *supra* note 63, at 145–46, 151. For cases describing absolute dominion as a “rule of capture,” see *Martin v. City of Linden*, 667 So.2d 732, 738 (Ala. 1995); *Davis v. Agua Sierra Resources, LLC*, 203 P.3d 506, 508 (Ariz. 2009); *Board of County Commissioners v. Park County Sportsmen’s Ranch, LLP*, 45 P.3d 693, 701–02 (Colo. 2002); *United States Aviex Co. v. Travelers Insurance Co.*, 336 N.W.2d 838, 844 (Mich. Ct. App. 1983); and *Edwards Aquifer Authority v. Day*, 369 S.W.3d 814, 823–30 (Tex. 2012). The question will be examined again in reviewing the struggle over groundwater law in Texas.

110. For applications of this theory in the groundwater context, see *Crookston Cattle Co. v. Minnesota Department of Natural Resources*, 300 N.W.2d 769, 775 (Minn. 1981) and *Barshop v. Medina County Underground Water Conservation District*, 925 S.W.2d 618, 628–31 (Tex. 1996). See generally *Palazzolo v. Rhode Island*, 533 U.S. 606, 624–25 (2001); *Dunn v. Santa Barbara Cnty.*, 38 Cal. Rptr. 3d 316, 330–33 (Ct. App. 2006); *Santini v. Conn. Hazardous Waste Mgmt. Serv.*, 739 A.2d 680 (Conn. 1999); *Grenier v. Zoning Bd. of Appeals*, 814 N.E.2d 1154, 1157–58 (Mass. App. Ct. 2004), *rev’d on other grounds*, 831 N.E.2d 865 (Mass. App. Ct. 2005); *Pheasant Bridge Corp. v. Twp. of Warren*, 777 A.2d 334, 339 (N.J. 2001); *Smith v. Town of Mendon*, 822 N.E.2d 1214, 1217 (N.Y. 2004); *Helnore v. Dep’t of Natural Res.*, 694 N.W.2d 730 (Wis. Ct. App. 2005).

111. The Texas Supreme Court expressed the same idea in describing groundwater as “fugacious” (fleeting). *Edwards Aquifer Auth.*, 369 S.W.3d at 828, 830.

112. See, e.g., *Chatfield v. Wilson*, 28 Vt. 49, 54 (1855); *Acton v. Blundell*, (1843) 152 Eng. Rep. 1223, 1232 (Exch. Chamber).

113. *Frazier v. Brown*, 12 Ohio St. 294, 311 (1861).

114. Robert Haskell Abrams, *Water, Climate Change, and Law: Integrated Eastern States Water Management Founded on a New Cooperative Federalism*, 42 ENVTL. L. RPT. 10433, 10437 n.37 (2012); *Canseco*, *supra* note 64, at 495–505, 511–14. *But see* Fred O. Boadu, Bruce M. Carl, & Dhazn Gillig, *An Empirical Investigation of Institutional Change in Groundwater Management in Texas: The Edwards Aquifer Case*, 47 NAT. RESOURCES J. 117, 128–33 (2007) (arguing for a “property rights model” to understand the “rule of capture” or “absolute dominion”).

115. 217 N.W.2d 339, 343–48 (Wis. 1974).

116. *Huber v. Merkel*, 94 N.W. 354 (Wis. 1903).

117. *Michels*, 217 N.W.2d at 345.

118. *Id.* at 347; see also *Neuse River Found., Inc. v. Smithfield Foods, Inc.*, 574 S.E.2d 48 (N.C. Ct. App. 2002); see generally Michael C. Blumm & Lucus Ritchie, *Lucas’s Unlikely Legacy: The Rise of Background Principles as Categorical Takings Defenses*, 29 HARV. ENVTL. L. REV. 321, 328–41 (2005); James Burling, *The Latest Take on Background Principles and the States’ Law of Property After Lucas and Palazzolo*, 24 U. HAW. L. REV. 497 (2002); *Claeys*, *supra* note 103; John F. Hart, *Fish, Dams, and James Madison: Eighteenth Century Species Protection and the Original Understanding of the Takings Clause*, 63 MD. L. REV. 287 (2004); Richard J. Lazarus, *The Measure of a Justice: Justice Scalia and the Faltering of the Property Rights Movement Within the Supreme Court*, 57 HASTINGS L.J. 759, 799–805, 817–19 (2006); John D. Leshy, *A Conversation About Takings and Water Rights*, 83 TEX. L. REV. 1985, 2000–03 (2005).

119. *Michels*, 217 N.W.2d at 347.

120. See *Torres*, *supra* note 63, at 151. For recent examples of the application of this maxim, see *Funk v. United States*, 290 U.S. 371, 385 (1933); *Board of Water & Sewer Com-*

missioners v. Bill Harberst Construction Co., 870 So. 2d 699, 706 (Ala. 2003); *Campbell v. Asbury Automobile, Inc.*, 2011 Ark. 157, at 22–23, 381 S.W.3d 21, 37; *People v. Shiseop Kim*, 122 Cal. Rptr. 3d 599, 607 (Ct. App. 2011); *Del Monte Fresh Produce (Hawaii), Inc. v. Fireman’s Fund Insurance Co.*, 183 P.3d 734, 742 (Haw. 2007); *Puryear v. Progressive North Insurance Co.*, 790 N.E.2d 138, 140 (Ind. Ct. App.); *Bracey v. Sullivan*, 899 So. 2d 210, 213 (Miss. Ct. App. 2005); *Rohlfs v. Klemenhausen, LLC*, 277 P.3d 42, 61 (Mont. 2009); *State v. Tyrrell*, 453 N.W.2d 104, 111 (Neb. 1990); *Dolan v. Linnen*, 753 N.Y.S.2d 682, 698 (N.Y. Civ. Ct. 2003); and *Berberich v. Jack*, 709 S.E.2d 607, 615 (S.C. 2011).

121. *Michels*, 217 N.W. at 339; *see also* *Maerz v. U.S. Steel Corp.*, 323 N.W.2d 524, 527–30 (Mich. Ct. App. 1982); *Higday v. Nickolaus*, 469 S.W.2d 859, 865–70 (Mo. Ct. App. 1971); *Cline v. Am. Aggregates Corp.*, 474 N.E.2d 324, 326–27 (Ohio 1984); *Wood v. Picillo*, 443 A.2d 1244, 1249 (R.I. 1982).

122. *See* *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1031 (1992) (“A ‘State, by *ipse dixit*, may not transform private property into public property without compensation.”); *Hughes v. Washington*, 389 U.S. 290, 294–98 (1967) (Stewart, J., concurring) (same); *Purdie v. Attorney General*, 732 A.2d 442, 447 (N.H. 1999) (extending the land subject to the public trust is a compensable taking).

123. *Cherry v. Steiner*, 716 F.2d 687 (9th Cir. 1983).

124. *Michels*, 217 N.W.2d at 346–48.

125. *See, e.g.*, *Buckingham v. Elliott*, 62 Miss. 296, 301 (1884). For modern examples, *see* *Monks v. City of Rancho Palos Verdes*, 84 Cal. Rptr. 3d 75, 102 (Cal. Ct. App. 2008), and *McNamara v. City of Rittman*, 838 N.E.2d 640, 644 (Ohio 2005). *See also* *Fisher, supra* note 104, at 839; Keith H. Hirokawa, *Property Pieces in Compensation Statutes: Law’s Eulogy for Oregon’s Measure 37*, 38 ENVTL. L. 1111, 1130, 1132, 1134, 1139, 1144, 1162 (2008); Christopher Supino, *The Police Power and “Public Use”: Balancing the Public Interest Against Private Rights Through Principled Constitutional Distinctions*, 110 W. VA. L. REV. 711, 728–29 (2008); Edward A. Thomas & Sam Riley Medlock, *Mitigating Misery: Land Use and Protection of Property Rights Before the Next Big Flood*, 9 VT. J. ENVTL. L. 155, 164 (2008).

126. *Legg v. Cnty. Comm’rs*, 200 F. Supp. 2d 535, 538 (D. Md. 2002); *Healing v. Cal. Coastal Comm’n*, 27 Cal. Rptr. 2d 758, 767 (Ct. App. 1994); *Rae v. Flynn*, 690 So. 2d 1341, 1342 (Fla. Ct. App. 1997); *State v. Friedman*, 697 A.2d 947, 951 (N.J. Super. App. Div. 1997); *Diffenderfer v. Steiner*, 722 A.2d 1103, 1109 (Pa. Super. Ct. 1998); *see generally* Robert Haskell Abrams, *Broadening Narrow Perspectives and Nuisance Law: Protecting Ecosystem Services in the ACF Basin*, 22 J. LAND USE & ENVTL. L. 243, 257 (2007).

127. COLO. REV. STAT. § 12-55.5-101 (2012); GA. CODE ANN. § 12-5-281 (2012); *Santa Monica Beach Ltd. v. Superior Ct.*, 968 P.2d 993, 1019 (Cal.); *see* *Robson Ranch Quail Creek, LLC v. Pima Cnty.*, 161 P.3d 588, 596 (Ariz. Ct. App. 2007); *Mozier v. Parsons*, 887 P.2d 692, 695 (Kan. 1995); *Richland Parish Police Jury v. Debnam*, 968 So. 2d 294, 301 (La. Ct. App. 2007); *Buhmann v. State*, 201 P.3d 70, 89–91, 100, 114 (Mont. 2008); *Kafka v. Montana Dep’t of Fish, Wildlife & Parks*, 201 P.3d 8, 39–48 (Mont. 2008); *Kim v. City of New York*, 681 N.E.2d 312, 322 (N.Y. 1997); *State ex rel. R.T.G., Inc. v. State*, 753 N.E.2d 869, 880 (Ohio Ct. App. 2001), *rev’d in part*, 780 N.E.2d 998 (Ohio 2002); *McQueen v. S.C. Coastal Council*, 530 S.E.2d 628, 633 (S.C. 2000), *vacated without opinion*, 533 U.S. 943 (2001); *TCI West End, Inc. v. City of Dallas*, 274 S.W.3d 913, 916–17 (Tex. Ct. App. 2008); *Lamar Corp. v. City of Longview*, 270 S.W.3d 609, 615–17 (Tex. Ct. App. 2008); *J.J. Storedahl & Sons, Inc. v. Clark Cnty.*, 180 P.3d 848, 852–54 (Wash. Ct. App. 2008); *see also, e.g.*, *New Jersey v. Delaware*, 552 U.S. 597, 610 (2008); *see generally* Mark Davis, *A Whole New Ballgame: Coastal Protection, Storm Protection, and the Legal Landscape After Katrina*, 68 LA. L. REV. 419, 431–39 (2008); Hirokawa, *supra* note 125, at 1134–53, 1161–65; Blake Hudson, *The Public and Wildlife Trust Doctrines and the Untold Story of the Lucas Remand*, 34 COLUM. J. ENVTL. L. 99, 117–29, 138–46 (2009); Supino, *supra* note 125, at 729;

Sandra B. Zellmer & Jessica Harder, *Unbundling Property in Water*, 59 ALA. L. REV. 679, 736–38 (2008); Timothy Zick, *Constitutional Displacement*, 86 WASH. U.L. REV. 515, 536–40 (2009).

128. See, e.g., *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1026–28 (1992); see also *Smith v. Santa Cruz Cnty.*, 88 Cal. Rptr. 3d 186, 213, 228–29 (Cal. Ct. App. 2008); *Monks*, 84 Cal. Rptr. 3d at 100–10; *Kafka*, 201 P.3d at 40–44; *Prosser v. Kennedy Enters., Inc.*, 179 P.3d 1178, 1182–83 (Mont. 2008); *McQueen*, 530 S.E.2d at 631–32; *Town of Rhine v. Bizzell*, 751 N.W.2d 780, 785–86, 802–03 (Wis. 2008); see generally Fisher, *supra* note 104, at 833–34, 839–43, 848, 891; Hirokawa, *supra* note 125, at 1132–39, 1142–45, 1150–53, 1161; Hudson, *supra* note 127, at 100–01, 125–39, 144–46; Nathan Jacobsen, *Sand or Concrete at a Private Beach? Private Property Rights on Eroding Oceanfront Land*, 31 ENVIRONS ENVTL. L. & POL’Y J. 217, 232–35 (2008); John Copeland Nagle, *From Swamp Drainage to Wetland Regulation to Ecological Nuisances to Environmental Ethics*, 58 CASE W. RES. L. REV. 787, 799–801 (2008); J.B. Ruhl, *The “Background Principles” of Natural Capital and Ecosystem Services—Did Lucas Open Pandora’s Box?*, 22 J. LAND USE & ENVTL. L. 525, 536–37 (2007); Henry E. Smith, *Community and Custom in Property*, 10 THEORETICAL INQUIRIES L. 5, 37–41 (2009); Supino, *supra* note 125, at 728–40, 759–62, 766–69; Dennis J. Webb, Jr. et al., *Zoning and Land Use Law*, 60 MERCER L. REV. 457, 477–83 (2008).

129. *Village of Tequesta v. Jupiter Inlet Corp.*, 371 So. 2d 663, 666 (Fla. 1979).

130. See *Odello Bros. v. Monterey Cnty.*, 73 Cal. Rptr. 2d 903, 909–11 (Cal. Ct. App. 1998); see generally Claeys, *supra* note 103; Hudson, *supra* note 127, at 123–26.

131. *Miller v. Schoene*, 276 U.S. 272, 280–81 (1928).

132. *McNamara v. City of Rittman*, 838 N.E.2d 640, 644 (Ohio 2005).

133. *McNamara v. City of Rittman*, 473 F.3d 633, 636 (6th Cir. 2007); see also Christopher Serkin, *Big Differences for Small Governments: Local Governments and the Takings Clause*, 81 N.Y.U. L. REV. 1624 (2006).

134. *Sw. Eng’g Co. v. Ernst*, 291 P.2d 764, 768 (Ariz. 1955); *Crookston Cattle Co. v. Minn. Dep’t of Natural Res.*, 300 N.W.2d 769, 774 (Minn. 1981); see also *Town of Chino Valley v. City of Prescott*, 638 P.2d 1324, 1329–30 (Ariz. 1981); *Kline v. State*, 759 P.2d 210, 212–13 (Okla. 1988).

135. *Crookston Cattle Co.*, 300 N.W.2d at 774–75; *Md. Aggregates Assoc., Inc. v. State*, 655 A.2d 886, 893–94 (Md. 1994); *Kline*, 759 P.2d at 212–13; *Barshop v. Medina Cty. Underground Water Conservation Dist.*, 925 S.W.2d 618, 631–32 (Tex. 1996). But see *Williamson v. Guadalupe Cty. Groundwater Conservation Dist.*, 343 F. Supp. 2d 580, 600–01 (W.D. Tex. 2004).

136. *Kline*, 759 P.2d at 212–13; *Md. Aggregates Assoc., Inc.*, 655 A.2d at 891–93, 900–01; *Barshop*, 925 S.W.2d 618, 632–33. But see *Williamson*, 343 F. Supp. 2d at 600–01. See generally Eric Pearson, *Some Thoughts on the Role of Substantive Due Process in the Federal Constitutional Law of Property Rights*, 25 PACE ENVTL. L. REV. 1 (2008).

137. *Md. Aggregates Assoc., Inc.*, 655 A.2d at 894–97 (rejecting claims of a violation of separation of powers and denial of a jury trial); *Barshop*, 925 S.W.2d at 633–37 (rejecting claims that the Edwards Aquifer Authority Act is a bill of attainder, an ex post facto law, retroactive, impairs the obligation of contracts, violates separation of powers, and denies the right to a jury trial).

138. *Franco-Am. Charolaise, Ltd. v. Okla. Water Res. Bd.*, 855 P.2d 568, 576–81 (Okla. 1990). The weight of authority is definitely to the contrary. See generally Dale Cottingham, *Compensation, Moral Claims, and the Decline of Riparian Rights*, 31 OKLA. CITY U.L. REV. 257 (2006); Dellapenna, *The Absolute Dominion Doctrine Rule*, *supra* note 10, § 8.03(b)(1).

139. See *infra* text accompanying notes 238–66, 341–92.

140. See *In re Water Use Permit Applications*, 9 P.3d 409, 440–56 (Haw. 2000) (applying the public trust to groundwater); see generally Kenton M. Bednarz, *Should the Public Trust*

Doctrine Interplay with the Bottling of Michigan Groundwater? Now Is the Appropriate Time for the Michigan Supreme Court to Decide, 53 WAYNE L. REV. 733, 738–39 (2007); Robin Kundis Craig, *A Comparative Guide to the Western States' Public Trust Doctrines: Public Values, Private Rights, and the Evolution Toward an Ecological Public Trust*, 37 ECOLOGY L.Q. 53, 87–88, 125–26, 164–65, 193 (2010); Jason J. Czarnezki, *Environmentalism and the Wisconsin Constitution*, 90 MARQ. L. REV. 465 (2007); Jack Tuholske, *Trusting the Public Trust: Application of the Public Trust Doctrine to Groundwater Resources*, 9 VT. J. ENVTL. L. 189, 214–35 (2008); Danielle Spiegel, Note, *Can the Public Trust Doctrine Save Western Groundwater?*, 18 N.Y.U. ENVTL. L.J. 412 (2010).

141. See *State ex rel. State Eng'r v. Comm'r of Pub. Lands*, 200 P.3d 86, 93–95 (N.M. Ct. App. 2008) (declining to extend the public trust to groundwater); see also Craig Anthony (Tony) Arnold & Leigh A. Jewell, *Litigation's Bounded Effectiveness and the Real Public Trust Doctrine: The Aftermath of the Mono Lake Case*, 8 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 1, 21–24 (2001); Justin K. Holcombe, *Protecting Ecosystems and Natural Resources by Revising Conceptions of Ownership, Rights, and Valuation*, 26 J. LAND RESOURCES & ENVTL. L. 83 (2005).

142. See, e.g., JEFF BENEDICT, *THE LITTLE PINK HOUSE: A TRUE STORY OF DEFIANCE AND COURAGE* (2009); Nestor M. Davidson & Rashmi Dyal-Chand, *Property in Crisis*, 78 FORDHAM L. REV. 1607 (2010); Nick Dranias, *The Local Liberty Charter: Restoring Grass-roots Liberty to Restrain Cities Gone Wild*, 3 PHOENIX L. REV. 113, 158–62 (2010); Steven J. Eagle, *Public Use in the Dirigiste Tradition: Public and Private Benefit in an Era of Agglomeration*, 38 FORDHAM URB. L.J. 1023 (2011); David Fagundes, *Property Rhetoric and the Public Domain*, 94 MINN. L. REV. 652 (2010); Shaun Hoting, *The Kelo Revolution*, 86 U. DET. MERCY L. REV. 65 (2009); Janet Thompson Jackson, *What Is Property? Property Is Theft: The Lack of Social Justice in U.S. Eminent Domain Law*, 84 ST. JOHN'S L. REV. 63 (2010); Harold L. Lowenstein, *Redevelopment Condemnations: A Blight or a Blessing upon the Land?*, 74 MO. L. REV. 301 (2009); Eduardo M. Peñalver, *Property Metaphors and Kelo v. New London: Two Views of the Castle*, 74 FORDHAM L. REV. 2971 (2006); Timothy Sandefur, *Mine and Thine Distinct: What Kelo Says About Our Path*, 10 CHAP. L. REV. 1 (2006); Robert L. Scharff, *A Common Tragedy: Condemnation and the Anticommons*, 47 NAT. RESOURCES J. 165 (2007); Steven Semeraro, *Sweet Land of Property?: The History, Symbols, Rhetoric, and Theory Behind the Ordering of the Rights to Liberty and Property in the Constitutional Lexicon*, 60 S.C.L. REV. 1 (2008); Nadav Shoked, *The Reinvention of Ownership: The Embrace of Residential Zoning and the Modern Populist Reading of Property*, 28 YALE J. ON REGUL. 91 (2011); Bill Want, *The Lucas Case: The Trial Court Strategy and the Case's Effect on the Property Rights Movement*, 27 STAN. ENVTL. L.J. 271 (2008). For broad critiques of the property rights movement, see Vincent Chiappetta, *The (Practical) Meaning of Property*, 46 WILLAMETTE L. REV. 297 (2009); Jamison E. Colburn, *Splitting the Atom of Property: Rights Experimentalism as Obligation to Future Generations*, 77 GEO. WASH. L. REV. 1411 (2009); Eric T. Freyfogle, *Private Property: Correcting the Half Truths*, 59 PLAN. & ENVTL. L. 3, (2007); Lazarus, *supra* note 118; Jonathan Remy Nash & Stephanie M. Stein, *Property Frames*, 87 WASH. U. L. REV. 449 (2010); Supino, *supra* note 125; and Jonathan Lahn, Note, *The Uses of History in the Supreme Court's Takings Clause Jurisprudence*, 81 CHI.-KENT L. REV. 1233 (2006).

143. See, e.g., ARIZ. REV. STAT. ANN. § 12-1134 (2003); FLA. STAT. § 70.001 (2004); OR. REV. STAT. ANN. § 197.352 (West 2009); TEX. GOV'T CODE ANN. § 2007.021 (West 2008); *MacPherson v. Dep't of Admin. Servs.*, 130 P.3d 308, 314–22 (Or. 2006) (upholding a takings statute enacted by referendum); *Hallco Tex., Inc. v. McMullen Cty.*, 221 S.W.3d 50, 58–62 (Tex. 2006) (barring a takings claim under the Texas Private Real Property Rights Preservation Act because of res judicata); see generally Michael C. Blumm & Erik Grafe, *Enacting Libertarian Property: Oregon's Measure 37 and Its Implications*, 85 DENV. U. L. REV. 279 (2007); Anne Marie Cavazos, *Beware of Wooden Nickels: The Paradox of Florida's Legisla-*

ive Overreaction in the Wake of Kelo, 13 U. PA. J. BUS. L. 685 (2011); Steven J. Eagle & Lauren A. Perotti, *Coping with Kelo: A Potpourri of Legislative and Judicial Responses*, 42 REAL PROP. PROB. & TR. J. 799 (2008); Hirokawa, *supra* note 125; William K. Jaeger, *The Effects of Land-Use Regulations on Property Values*, 36 ENVTL. L. 105 (2006); George Lefcoe, *Redevelopment Takings after Kelo: What's Blight Got to Do with It?*, 17 S. CAL. REV. L. & SOC. JUST. 803 (2008); Marc Mihaly & Turner Smith, *Kelo's Trail: A Survey of State and Federal Legislative and Judicial Activity Five Years Later*, 38 ECOLOGY L.Q. 703 (2011); Stephen D. Morrison, Jr., *Protecting Private Property: An Analysis of Georgia's Response to Kelo v. City of New London*, 2 J. MARSHALL L.J. 51 (2009); Michelle Bryan Mudd, *Was the Big Sky Really Falling? Examining Montana's Response to Kelo v. City of New London*, 69 MONT. L. REV. 79 (2008); Christopher Serkin, *Local Property Law: Adjusting the Scale of Property Protection*, 107 COLUM. L. REV. 883 (2007); Christopher W. Smart, *Legislative and Judicial Responses to Kelo: Eminent Domain's Continuing Role in Redevelopment*, 22 PROB. & PROP. 60 (2008).

144. See *supra* text accompanying notes 104–08.

145. 545 U.S. 469 (2005).

146. See William Yardley, *Anger Drives Property Rights Measures*, N.Y. TIMES, Oct. 8, 2006, § 1, at 34; see generally BENEDICT, *supra* note 142; Robert C. Bird, *Reviving Necessity in Eminent Domain*, 33 HARV. J.L. & PUB. POL'Y 239 (2010); Charles E. Cohen, *The Abstruse Science: Kelo, Lochner, and Representation Reinforcement in the Public Use Debate*, 46 DUQ. L. REV. 375 (2008); John J. Costonis, *New Orleans, Katrina, and Kelo: American Cities in the Post-Kelo Era*, 83 TUL. L. REV. 395 (2008); Dranias, *supra* note 142; Marci A. Hamilton, *Political Responses to Supreme Court Decisions*, 32 HARV. J.L. & PUB. POL'Y 113 (2009); Hoting, *supra* note 142; John Dwight Ingram, *Eminent Domain After Kelo*, 36 CAP. U. L. REV. 55 (2007); Jackson, *supra* note 142; John C. Keene, *When Does a Regulation "Go too Far?"—The Supreme Court's Analytical Framework for Drawing the Line Between an Exercise of the Police Power and an Exercise of the Power of Eminent Domain*, 14 PENN. ST. ENVTL. L. REV. 397 (2006); Amnon Lehari, *The Property Puzzle*, 96 GEO. L.J. 1987 (2008); Marc B. Mihaly, *Living in the Past: The Kelo Court and Public-Private Economic Redevelopment*, 34 ECOLOGY L.Q. 1 (2007); Mudd, *supra* note 143; Stephanie M. Stern, *Residential Protectionism and the Legal Mythology of Home*, 107 MICH. L. REV. 1093 (2009); Carol L. Zeiner, *Eminent Domain Wolves in Sheeps' Clothing: Private Benefit Masquerading as Classic Public Use*, 28 VA. ENVTL. L.J. 1 (2010).

147. See Dellapenna, *The Absolute Dominion Doctrine Rule*, *supra* note 10, §§ 20.07–.07(b). Indiana, at least, allows extensive regulation of the “absolute dominion doctrine;” although, thus far, that has mostly happened only at the local level. *Town of Avon v. W. Cent. Conservancy Dist.*, 957 N.E.2d 598 (Ind. 2011).

148. *Prince v. Stockdell*, 494 N.E.2d 1021, 1023 (Mass. 1986) (“[W]e . . . need not reach this question. In another case, we might be inclined to reexamine the doctrine[,] which gives the owner of overlying land absolute control over subsurface water on such land.”); *Wood v. Picillo*, 443 A.2d 1244, 1248–49 (R.I. 1982) (overruling the proposition that under the absolute dominion doctrine, one could pollute groundwater with impunity; no discussion of possible limits on the right to pump groundwater from a well).

149. MASS. GEN. LAWS ANN. ch. 21G, §§ 2, 7 (West 2010).

150. See Dellapenna, *The Absolute Dominion Doctrine Rule*, *supra* note 10, § 20.07(b).

151. Todd, *supra* note 55, at 234.

152. *Id.*

153. 2 TEX. WATER DEV. BD., WATER FOR TEXAS § 1.1 (1997); see also Ronald A. Kaiser, *Texas Water Marketing in the Next Millennium: A Conceptual and Legal Analysis*, 27 TEX. TECH. L. REV. 181, 185–88 (1996); Afamia C. Nakat & Charles D. Turner, *Water Use and Transfer Scenarios in El Paso County, Texas, USA*, 29 WATER INT'L 338 (2004); John R. Pitts, *The Emerging Role of Groundwater Districts*, 67 TEX. B.J. 55, 55 (2004). One com-

mentator notes that the state of Texas is estimating a twenty-seven percent further increase in demand by 2060. Canseco, *supra* note 64, at 493.

154. Todd, *supra* note 55, at 234–38.

155. *Id.* at 248–62; *see generally* Canseco, *supra* note 64, at 503–04, 514–24.

156. 81 S.W. 279 (Tex. 1904). *See generally* Canseco, *supra* note 64, at 492, 497–98, 503, 514–16; Drummond, Sherman, & McCarthy, *supra* note 12, at 42, 50–51; Bruce E. Toppin III, Comment, *The Path of Least Resistance: The Effects of Groundwater Law's Failure to Evolve with Changing Times*, 38 ST. MARY'S L.J. 503, 509–13 (2007). Texas courts have used terminology regarding groundwater inconsistently, with the “rule of capture” being the name they most frequently apply. *See* Canseco, *supra* note 64, at 496–97; Drummond, Sherman, & McCarthy, *supra* note 12, at 53.

157. Two commentators have somewhat confusingly referred to the Texas law of groundwater as “the absolute capture rule.” Mark S. Davis & Michael Pappas, *Escaping the Sporhase Maze: Protecting State Waters Within the Commerce Clause*, 73 LA. L. REV. 175, 191 n.91 (2012)

158. Hous. & Tex. Cent. Ry. Co. v. East, 81 S.W. 279, 280 (Tex. 1904). For a detailed discussion of the case’s history and subsequent developments, *see* Eric Opiela, Comment, *The Rule of Capture in Texas: An Outdated Principle Beyond its Time*, 6 U. DENV. WATER L. REV. 87, 88–101 (2002).

159. Sipriano v. Great Spring Waters of Am., Inc., 1 S.W.3d 75, 83 (Tex. 1999); City of Sherman v. Pub. Utils. Comm’n, 643 S.W.2d 681, 686 (Tex. 1983); Friendswood Dev. Co. v. Smith-Sw. Indus., 576 S.W.2d 21, 26 (Tex. 1978); *see also* City of Corpus Christi v. City of Pleasanton, 276 S.W.2d 798, 801–04 (Tex. 1955); *see generally* Canseco, *supra* note 64, at 499–502, 504–05, 511–13, 516–18.

160. 576 S.W.2d 21 (Tex. 1978).

161. *Id.* Justices Jack Pope and Sam D. Johnson strongly dissented against making the rule prospective only. *Id.* at 31–35; *see also* Drummond, Sherman, & McCarthy, *supra* note 12, at 46–50; Todd, *supra* note 55, at 251–56; Alex W. Horton, Comment, *Where’d All the (Ground) Water Go? Three Approaches to Balancing Resource Efficiency with Rural Sustainability in Texas*, 49 S. TEX. L. REV. 691, 698–700 (2008).

162. *Friendswood*, 576 S.W.2d at 22.

163. *Id.* at 22–23; *see also* Opiela, *supra* note 158, at 98–100.

164. *Friendswood*, 576 S.W.2d at 23–24.

165. *Id.* at 30. The court erroneously concluded that the rule in *Acton v. Blundell*, (1843) 152 Eng. Rep. 1223 (Exch. Chamber), did not protect malicious actions, even though the court did refer to the case in which English courts unequivocally rejected the malicious act exception to their version of the absolute dominion doctrine. *Bradford Corp. v. Pickles*, (1895) 1 Ch. 145, *aff’d*, (1895) A.C. 587 (H.L.).

166. *Friendswood*, 576 S.W.2d at 28–29.

167. *Id.* at 29.

168. *Id.* The court referred both to the statute authorizing the specific coastal subsidence district covering Friendswood’s activities and to a general statute charging the Texas Natural Resources Conservation Commission, as it was then called, to take action regarding subsidence. *See* TEX. WATER CODE ANN. §§ 151.001–.164 (repealed in 2009).

169. 16 U.S.C. §§ 1531–1544.

170. TEX. WATER CODE ANN. § 36.002 (West 2011).

171. *Id.* *See also id.* §§ 35.002(5), 36.001(5). The new definition is consistent with the decision in *Denis v. Kickapoo Land Co.*, 771 S.W.2d 235 (Tex. App. 1989)

172. Until 1995, the Texas Water Code defined “underground water” as “water percolating below the surface of the earth and that is suitable for agricultural, gardening, domestic, or stock raising purposes, but does not include defined subterranean streams or the underflow of rivers.” TEX. WATER CODE ANN. § 52.001(6) (repealed 1995).

173. *Id.* § 11.202. The earliest form of this statute was enacted in 1895; the current version was enacted in 1977.

174. TEX. WATER CODE ANN. §§ 11.203, 11.204 (West 2011). This statute had an effective date of September 1, 1977, and refers to “a person who drills an artesian well or has one drilled.” *Id.* § 11.203(a). All verbs are in the future tense. This likely only limits the initial reporting provisions that become a requirement “within one year after an artesian well is drilled.” *Id.* § 11.204. Other sections seem, however, to apply to all artesian wells, whenever drilled, such as those concerning waste (section 11.205, casing, section 11.206), and even the annual report (section 11.207(a)) (though not applying to an artesian well user employing the water only for domestic use), none of which seem to indicate that they apply only to artesian wells drilled after September 1, 1977. *See* Act of Apr. 20, 2001, 77th Leg., R.S., ch. 965, § 18.01; *Chocolate Bayou Water Co. v. Tex. Natural Res. Conservation Comm’n*, 124 S.W.3d 844, 846 n.1 (Tex. Ct. App. 2003) (containing the name changes to the Commission).

175. TEX. WATER CODE ANN. § 11.205 (West 2011) (with some limited exceptions).

176. *Id.* § 11.206.

177. *Id.* § 11.205(a).

178. *Id.* § 28.011. This statute initially seemed focused on preventing salt-water or other intrusions into fresh water strata. *Id.* § 28.012.

179. *Id.* § 27.051. The Railroad Commission no longer regulates railroads, but regulates oil and gas production. There is, therefore, a proposal to change its name, without agreement thus far on what the new name should be. Kate Galbraith, *Commission That Overseas Drilling Is Being Overhauled, Even Its Name*, N.Y. TIMES, Jan. 25, 2013, at A23.

180. TEX. WATER CODE § 13.246(a) (West 2011); *see* *Creedmore-Maha Water Supply Corp. v. Tex. Comm’n on Env’tl. Quality*, 307 S.W.3d 505 (Tex. Ct. App. 2010) (upholding an expedited decision regarding a certificate of convenience); *City of San Antonio v. BSR Water Co.*, 190 S.W.3d 747 (Tex. Ct. App. 2005) (holding that the Environmental Quality Commission does not have authority to resolve a breach of contract dispute arising because of the issuance of a certificate of convenience).

181. *See, e.g.*, TEX. WATER CODE ANN. § 11.154 (West 2011); *Juliff Gardens, LLC v. Tex. Comm’n on Env’tl. Quality*, 131 S.W.3d 271 (Tex. Ct. App. 2004) (upholding a requirement of permits under the Texas Health Code for landfills that threaten sources of public water supply).

182. TEX. WATER CODE ANN. § 31.001(9) (West 2011); *see, e.g.*, *Citizens Against Landfill Location v. Tex. Comm’n on Env’tl. Quality*, 169 S.W.3d 258 (Tex. 2005). A “subsurface excavation” does not include “excavations associated with the exploration, development, and production of oil, gas, or geothermal sources and . . . excavations designed to serve as permanent tunnels,” while “underground workings” are covered only if they “penetrate into, through, or below the uppermost water-bearing strata,” which would include all except those in arid locations. The legislature has made clear that the Commission’s jurisdiction extends to “groundwater, percolating or otherwise.” TEX. WATER CODE ANN. § 31.001 (West 2011).

183. TEX. WATER CODE ANN. § 30.012(a)(2) (West 2011); *see* *City of Marshall v. City of Uncertain*, 206 S.W.3d 97 (Tex. 2006) (holding that the Commission on Environmental Quality must evaluate all relevant criteria, and not just the effect on existing water rights); *see also* *Citizens Against Landfill Location*, 169 S.W.3d at 258.

184. *See* *South Plains Lamesa R.R., Ltd. v. High Plains Underground Water Conservation Dist. No. 1*, 52 S.W.3d 770 (Tex. Ct. App. 2001); *see also* *infra* notes 313–23; *Coates v. Hall*, 512 F. Supp. 2d 770, 788–90 (W.D. Tex. 2007); *Guitar Holding Co. v. Hudspeth Cnty. Underground Water Conservation Dist. No. 1*, 263 S.W.3d 910 (Tex. 2008).

185. “Priority groundwater management areas” are defined in sections 35.002(11) and 35.007–.009 of the Texas Water Code Annotated.

186. TEX. WATER CODE ANN. §§ 35.001–36.374 (West 2011); *see also* *Coates*, 512 F. Supp. 2d at 770; *Guitar Holding Co.*, 263 S.W.3d at 910. *See generally* Nicholas E. Arrott,

Comment, *Caution! T. Boone Pickens to Permanently Alter Texas's Landscape Above and Below Ground, from the Panhandle to Metropolis*, 9 TEX. TECH. ADMIN. L.J. 265, 268–73 (2008); Carl R. Galant, *In Drought, a Storm Brews: DFCS and the Oil and Gas Exemption*, 44 TEX. TECH. L. REV. 817 (2012); Edmond R. McCarthy, Jr., *Mixing Oil and Gas with Texas Water Law*, 44 TEX. TECH. L. REV. 883, 910–27 (2012); John R. Pitts, *The Emerging Role of Groundwater Districts*, 67 TEX. B.J. 55, 55 (2004).

187. TEX. WATER CODE ANN. § 36.002 (West 2011).

188. *Id.* § 35.003.

189. *Id.* §§ 35.012, 35.013–36.015, 36.017. Groundwater conservation districts must be confined within the boundaries of a priority groundwater management area.

190. *Id.* §§ 35.012, 35.013.

191. *Id.* § 35.019(a). This is the governing body of the county, not a court in the usual sense of that term.

192. *Id.* § 35.019.

193. TEX. WATER CODE ANN. § 36.0015 (West 2011). A “groundwater reservoir” is defined as “a specific subsurface water-bearing reservoir having ascertainable boundaries containing groundwater.” *Id.* § 36.001(6). “Subsidence” is defined in section 36.001(10).

194. *Id.* § 36.101(a). *See also supra* note 193 (definitions of “groundwater reservoir” and “subsidence”).

195. TEX. WATER CODE ANN. § 36.002 (West 2011).

196. *Id.* §§ 36.102, 36.115, 36.119.

197. *Id.* § 36.103(b)–(c).

198. *Id.* § 36.105. The districts are also liable to suit for inverse condemnation. *Williamson v. Guadalupe Cnty. Groundwater Conservation Dist.*, 343 F. Supp. 2d 580, 599–600 (W.D. Tex. 2004).

199. TEX. WATER CODE ANN. § 36.113(a) (West 2011); *see also Coates v. Hall*, 512 F. Supp. 2d 770 (W.D. Tex. 2007); *Guitar Holding Co. v. Hudspeth Cnty. Underground Water Conservation Dist. No. 1*, 263 S.W.3d 910 (Tex. 2008).

200. TEX. WATER CODE § 36.113(f) (West 2011); *see also Coates*, 512 F. Supp. 2d at 770; *see generally Canseco, supra* note 64, at 519–21; *Toppin, supra* note 156, at 525–57. For the definition of “subsidence,” *see* note 193; the criteria and standards for the permits are set forth in sections 36.113(b)–(d) of the Texas Water Code Annotated. Generally, certain small wells are exempted from the permit requirement. TEX. WATER CODE ANN. §§ 36.117(b)–(h), 36.121 (West 2011).

201. TEX. WATER CODE ANN. § 36.122 (West 2011).

202. 558 S.W.2d 75 (Tex. Civ. App. 1977).

203. *Id.* at 76–77; *see generally Drummond, Sherman, & McCarthy, supra* note 12, at 40–50.

204. *Friendswood Dev. Co. v. Smith-Sw. Indus.*, 576 S.W.2d 21, 24 n.7 (Tex. 1978); *see supra* notes 158–66 and accompanying text.

205. TEX. WATER CODE ANN. §§ 35.007, 36.0151 (West 2011). The creation of priority groundwater management areas does require public hearings. *Id.* §§ 35.008, 35.012(b), 35.009. Local landowners can petition for the creation of groundwater conservation districts within a priority groundwater management area, but the Commission is not required to await such action. *Id.* §§ 35.009, 35.012, 35.013, 36.013.

206. *Id.* §§ 36.051, 36.057.

207. *Id.*

208. *See generally City of Sherman v. Pub. Utils. Comm'n*, 643 S.W.2d 681 (Tex. 1983); *Friendswood*, 576 S.W.2d at 21; *City of Corpus Christi v. City of Pleasanton*, 276 S.W.2d 798 (Tex. 1955); *see also Canseco, supra* note 64, at 499–502, 504–05, 516–18.

209. *See, e.g.*, 73 TEXAS JURIS. 3d, *Water* § 256, at 430 (1990).

210. See TEX. WATER CODE ANN. §§ 36.117, 36.121 (West 2011); see also *supra*, note 199 (discussing these sections).

211. Todd, *supra* note 55, at 256. Todd goes on to develop the reasons for this relative powerlessness. *Id.* at 256–60; see also Chris Lehman, Comment, *Hung out to Dry?: Groundwater Conservation Districts and the Continuing Battle to Save Texas’s Most Precious Resource*, 35 TEX. TECH. L.J. 101, 118–34 (2004).

212. See, e.g., Eric Behrens & Matthew G. Dore, *Rights of Landowners to Percolating Groundwater in Texas*, 32 S. TEX. L. REV. 185, 192 (1991); Wendy M. Block & Frederick S. Richardson, *A Case of the Blues: The Inequity of Groundwater Legislation in Texas*, 7 PLAN. F. 42 (2001); Todd, *supra* note 55, at 249–59; Todd H. Votteler, *The Little Fish that Roared: The Endangered Species Act, State Groundwater Law, and Private Property Rights Collide over the Texas Edwards Aquifer*, 28 ENVTL. L. 845, 874–79 (1998). See also Johnston, *supra* note 89 (extended defense of the rule of capture). See generally Symposium, *The Rule of Capture and Its Consequences*, 35 ENVTL. L. 649 (2005).

213. See *supra* Part IV.B.

214. TEX. WATER CODE ANN. § 36.002 (West 2011).

215. *City of Sherman v. Pub. Utils. Comm’n*, 643 S.W.2d 681 (Tex. 1983); *Friendswood Dev. Co. v. Smith-Sw. Indus.*, 576 S.W.2d 21 (Tex. 1978); *City of Corpus Christi v. City of Pleasanton*, 276 S.W.2d 798 (Tex. 1955).

216. *Denis v. Kickapoo Land Co.*, 771 S.W.2d 235, 238 (Tex. App. 1989)

217. See EDMUND A. MAREK ET AL., *WATER, WATER CONSERVATION, AND THE EDWARDS AQUIFER* (1994); DEANNE C. MCKINNEY & DAVID W. WATKINS, JR., *MANAGEMENT OF THE EDWARDS AQUIFER: A CRITICAL ASSESSMENT* (1993); Jason D. Afinowicz, Clyde L. Munster, & Bradford P. Wilcox, *Modeling Effects of Brush Management on the Rangeland Water Budget: Edwards Plateau, Texas*, 41 J. AM. WATER RESOURCES ASS’N 181 (2005); Ronald T. Green, James R. Winterle, & James D. Prikryl, *Discharge from the Edwards Aquifer Through the Leona River Floodplain, Uvalde, Texas*, 44 J. AM. WATER RESOURCES ASS’N 887 (2008); Deanne C. McKinney & David W. McKinney, *Screening Water Supply Options for the Edwards Aquifer Region in Central Texas*, 125 J. WATER RESOURCES PLAN. & MGMT. 14 (1999); Todd H. Votteler, *Raiders of the Lost Aquifer? Or, the Beginning of the End to Fifty Years of Conflict over the Texas Edwards Aquifer*, 15 TUL. ENVTL. L.J. 257, 258–73 (2002). The Texas Supreme Court summarized the characteristics of the aquifer in *Edwards Aquifer Authority v. Chemical Lime, Ltd.*, 291 S.W.3d 392, 394–96 (Tex. 2009).

218. See Votteler, *supra* note 212, at 298–314.

219. Colin McDonald, *Biggest Water Users Revealed*, SAN ANTONIO EXPRESS-NEWS, Dec. 27, 2012, at 1; Colin McDonald, *Drought: Edwards Aquifer Gets Boost, But It’s Still Far Below Average*, SAN ANTONIO EXPRESS-NEWS, Oct. 2, 2012, at 8.

220. Strictly speaking, the darter population in Comal Springs became extinct in 1956 when the springs ceased to flow for a period of time; darters from San Marcos Springs were reintroduced into Comal Springs in 1975. The Comal Springs darter population is not classified as an experimental or artificial population. See T.L. ARSUFFI ET AL., *ECOLOGY OF THE INTRODUCED GIANT RAMS-HORN SNAIL, MARISA COMUARIETIS, IN THE COMAL RIVER ECOSYSTEM* 4 (1990).

221. See Votteler, *supra* note 212, at 855; see generally Linda L. Putnam & Martha Shoemaker, *Changes in Conflict Framing in the News Coverage of an Environmental Conflict*, 2007 J. DISP. RESOL. 167, 172–73 (2007).

222. See Boadu, McCarl, & Gillig, *supra* note 114, at 122–23.

223. The Texas Water Commission became the Texas Natural Resources Conservation Commission in 1995 and the Texas Commission on Environmental Quality in 2002. See 2001 Tex. Sess. Law Serv. ch. 965, § 18.01; *Chocolate Bayou Water Co. & Sand Supply v. Tex. Natural Res. Conservation Comm’n*, 124 S.W.3d 844, 846 n.1 (Tex. App. 2003).

-
224. Boadu, McCarl, & Gillig, *supra* note 114, at 126; Putnam & Shoemaker, *supra* note 221, at 171.
225. See *Guadalupe-Blanco River Auth. v. City of Lytle*, 937 F.2d 184 (5th Cir. 1991).
226. Legality of O-3205-A, Op. Tex. Att’y Gen. DM-54 (1991).
227. Texas Water Comm’n, 17 Tex. Reg. 2913–14 (Apr. 21, 1992); see Scott E. Deatherage & Caroline M. Legette, *Environmental Law*, 46 SMU L. REV. 1461, 1461–62 (1993).
228. Texas Water Comm’n, 17 Tex. Reg. at 2913–17.
229. Ann Richards, Governor, Tex., Address (May 1, 1992) (transcript available at American Political Network Inc. Greenwire).
230. *Sierra Club v. Lujan*, No. 91-CA-069, 1993 U.S. Dist. LEXIS 3361 (W.D. Tex. Feb. 1, 1993).
231. 16 U.S.C. §§ 1531–1544 (2006 and Supp. V 2012).
232. *Sierra Club*, 1993 U.S. Dist. LEXIS at 3361; see also Eric M. Albritton, Comment, *The Endangered Species Act: The Fountain Darter Teaches What the Snail Darter Failed to Teach*, 21 *ECOLOGY L.Q.* 1007 (1994); Drummond, Sherman, & McCarthy, *supra* note 12, at 68; Robert L. Gulley & Jenna B. Cantwell, *The Edwards Aquifer Wars: The Final Chapter?*, 4 *TEX. WATER J.* 1, 4–7 (2013); Matthew Carson Cottingham Miles, *Water Wars: A Discussion of the Edwards Aquifer Water Crisis*, 6 *S.C. ENVTL. L.J.* 213, 216 (1997); Votteler, *supra* note 212, at 851–66; see generally Michael R. Moore et al., *Water Allocation in the American West: Endangered Fish Versus Irrigated Agriculture*, 36 *NAT. RESOURCES J.* 319 (1996).
233. *San Antonio Is Guaranteed Rights to Aquifer, or River*, 9 *U.S. WATER NEWS* no. 2, at 24 (Aug. 1992). Fred Boadu, Bruce McCarl, and Dhazn Gillig have argued that more abstract forces were at work in the creation of the Edwards Aquifer Authority than mere fear of a federal takeover of water management decisions for the aquifer. Boadu, McCarl, & Gillig, *supra* note 114, at 128–46.
234. *TEX. REV. CIV. STAT.* art. 8280–219 (West 2011); see also Boadu, McCarl, & Gillig, *supra* note 114, at 126–28, 152–56; Drummond, Sherman, & McCarthy, *supra* note 12, at 63–64; Gulley & Cantwell, *supra* note 232, at 6–10; Votteler, *supra* note 217, at 276–96.
235. Edwards Aquifer Authority Act, 1993 Tex. Gen. Laws 2350, ch. 626, § 1.01, (quoted in *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 818 (Tex. 2012)), available at <http://www.edwardsaquifer.org/files/EAAact.pdf>.
236. *Id.* § 1.01.
237. *Id.* §§ 1.15, 1.17, 1.33, 1.35.
238. See *Sierra Club v. Babbit*, 995 F.2d 571 (5th Cir. 1993) (dismissing an appeal by environmental groups because they were not injured by the decision).
239. *Sierra Club v. City of San Antonio*, 112 F.3d 789 (5th Cir. 1997).
240. See *Sierra Club v. Glickman*, 156 F.3d 606 (5th Cir. 1998) (upholding the standing of an environmental organization to challenge the decision under the Endangered Species Act); *Sierra Club v. City of San Antonio*, 115 F.3d 311 (5th Cir. 1997) (upholding the right of the State of Texas to appear in the litigation as representative of the public interest, and not just as a proprietor of wells in the Edwards Aquifer); *Sierra Club v. Glickman*, 82 F.3d 106 (5th Cir. 1996) (upholding the right of the Farm Bureau to participate as representative of its members); *Hamilton v. City of Austin*, 8 F. Supp. 2d 886 (W.D. Tex. 1998) (denying a preliminary injunction to an individual plaintiff); *Save Our Springs Alliance, Inc. v. Austin Ind. Sch. Dist.*, 973 S.W.2d 378 (Tex. App. 1998) (challenging decisions made in violation of the Texas Open Meetings Act where the school board discussed “non-monetary” aspects of school location in the Edwards Aquifer area); *Save Our Springs Alliance Inc. v. Lowry*, 934 S.W.2d 161 (Tex. App. 1996) (challenging a decision by a community college to purchase land in the Edwards Aquifer area); *Living Waters Artesian Springs, Ltd. v. Edwards Aquifer Auth.*, No. 98-02644 (353rd Dist. Ct., Travis Cnty. Dec. 17, 1988) (declaring regulations void

because the agency followed improper procedures in adopting them); *see generally* LUCIUS D. BUNTON III, *A BIT OF BUNTON: MEMOIRS* 310–11 (1999) (Bunton presided over the Edwards Aquifer litigation); Votteler, *supra* note 217, at 273–75; Votteler, *supra* note 212, at 868–74.

241. On the role of investment-backed expectations in determining whether there has been a taking of property, *see Lingle v. Chevron U.S.A., Inc.*, 544 U.S. 528, 538–59 (2005); *Tahoe-Sierra President Council, Inc. v. Tahoe Regional Planning Agency*, 535 U.S. 302, 314, 320, 336–37, 342 (2002); *Palazzolo v. Rhode Island*, 533 U.S. 606, 626–30 (2001); and *Pennsylvania Central Transportation Co. v. City of New York*, 438 U.S. 104, 124 (1978).

242. *See infra* text accompanying notes 341–92. *See also* Dellapenna, *The Absolute Dominion Doctrine Rule*, *supra* note 10, § 23.05–.05(d) (discussing other states).

243. *Edwards Underground Water Dist. v. Living Waters Artesian Springs, Ltd.*, No. 91-CI-14682 (Tex. Dist. Ct. Mar. 8, 1994).

244. 1993 Tex. Gen. Laws ch. 626, *codified at* TEX. REV. CIV. STAT. § 8280-219(f) (repealed in 1981).

245. 42 U.S.C. § 1973(c) (2006).

246. *Ball v. James*, 451 U.S. 355 (1981) (upholding the election of irrigation district boards through a franchise based on land ownership rather than “one person, one vote”); *see also* *Deutsch v. Kalcevic*, 140 P.3d 340 (Colo. Ct. App. 2006) (upholding a rule limiting voting to persons owning land within a groundwater management district); *Foster v. Sunnyside Valley Irrigation Dist.*, 687 P.2d 841 (Wash. 1984) (requiring the irrigation district to grant the vote to all landowners resident within the district).

247. *Texas v. United States*, 866 F. Supp. 20 (D.D.C. 1994); *see also* R. Tim Hay, Comment, *Blind Salamanders, Minority Representation, and the Edwards Aquifer: Reconciling Use-Based Management of Natural Resources with the Voting Rights Act of 1965*, 25 ST. MARY’S L.J. 1449 (1994). A similar suit against a public water supply corporation, however, was held not to be covered by the Voting Rights Act on the grounds that the corporation was not a political subdivision under Texas law. *City of Combes v. E. Rio Hondo Water Supply Corp.*, 244 F. Supp. 2d 778 (S.D. Tex. 2003), *aff’d*, 539 U.S. 955 (2003).

248. 1995 Tex. Gen. Laws ch. 261.

249. *Medina Cnty. Underground Water Conservation Dist. v. Barshop*, No. 95-08-13471-CV (Tex. Dist. Ct., Nov. 27, 1995).

250. TEX. CONST. art. XVI, § 59.

251. *Barshop v. Medina Cnty. Underground Water Conservation Dist.*, 925 S.W.2d 618 (Tex. 1996); *see generally* Drummond, Sherman, & McCarthy, *supra* note 12, at 69–70; Stephanie E. Hayes Lusk, Comment, *Texas Groundwater: Reconciling the Rule of Capture with Environmental and Community Demands*, 30 ST. MARY’S L.J. 305, 330–65 (1998); Votteler, *supra* note 212, at 866–68.

252. TEX. WATER CODE ANN. § 36.201 (West 2011).

253. *Simmons v. Headwaters Underground Water Conservation Dist.*, No. 04-94-00372-CV, 1996 Tex. App. LEXIS 81 (Tex. App. Feb. 7, 1996).

254. *Creedmoor Maha Water Supply Corp. v. Barton Springs-Edwards Aquifer Conservation Dist.*, 784 S.W.2d 79 (Tex. App. 1990).

255. 136 S.W.3d 286 (Tex. Ct. App. 2003).

256. 291 S.W.3d 392 (Tex. 2009).

257. TEX. REV. CIV. STAT. ANN. § 8280–219(1.16) (repealed in 1981).

258. 925 S.W.2d 618 (Tex. 1996).

259. 21 Tex. Reg. 11377, 11381–82 (Nov. 22, 1996).

260. *Edwards Aquifer Auth. v. Chem. Lime, Ltd.*, 212 S.W.3d 683 (Tex. Ct. App. 2006), *rev’d*, 291 S.W.3d 392 (Tex. 2009).

261. *Edwards Aquifer Auth. v. Chem. Lime, Ltd.*, 291 S.W.3d 392 (Tex. 2009).

262. *Sierra Club v. Glickman*, 156 F.3d 606, 618 (5th Cir. 1998); *see also* Elizabeth Kristen, Note, *Sierra Club v. Glickman*, 27 *ECOLOGY L.Q.* 699 (2000).
263. *Shields v. Norton*, 289 F.3d 832 (5th Cir. 2002).
264. *Hamilton v. City of Austin*, 8 F. Supp. 2d 886 (W.D. Tex. 1998).
265. *Walsh v. Corps of Eng'rs*, 757 F. Supp. 781 (W.D. Tex. 1990).
266. *See, e.g., Save Our Springs Alliance v. Norton*, 361 F. Supp. 2d 643 (W.D. Tex. 2005); J.B. Ruhl, *How to Kill Endangered Species, Legally: The Nuts and Bolts of Endangered Species Act "HCP" Permits for Real Estate Development*, 5 *ENVTL. LAW.* 345 (1999).
267. *Living Waters Artesian Springs, Ltd. v. Edwards Aquifer Auth.*, No. 98-02644 (Tex. Dist. Ct. Dec. 17, 1998); *see Votteler, supra* note 217, at 873–74.
268. *Edwards Aquifer Auth. v. Bragg*, 21 S.W.3d 375 (Tex. App. Ct. 2000), *aff'd*, 71 S.W.3d 729 (Tex. 2002). The *Bragg* litigation moved to federal court, where it was fought over for six years. *Bragg v. Edwards Aquifer Auth.*, No. SA-06-CV-1129-XR, 2007 U.S. Dist. LEXIS 64676 (W.D. Tex. Aug. 31, 2007) (granting and denying several motions), *partial summary judgment denied*, 2008 U.S. Dist. LEXIS 1921 (W.D. Tex. Jan. 9, 2008) (denying plaintiff a summary judgment), *reconsideration denied*, 2008 U.S. Dist. LEXIS 23380 (W.D. Tex. Mar. 25, 2008), *aff'd*, 342 Fed. Appx. 43 (5th Cir. 2009) (granting defendant a summary judgment on federal claims and remanding the case to state court); *see generally* Canseco, *supra* note 64, at 506–09; Drummond, Sherman, & McCarthy, *supra* note 12, at 72–73.
269. *Medina Cnty. Comm'rs Court v. Integrity Grp., Inc.*, 21 S.W.3d 307 (Tex. App. Ct. 1999).
270. *City of San Antonio v. Fourth Court of Appeals*, 820 S.W.2d 762 (Tex. 1991).
271. *See, e.g., Robert W. Adler & Michele Straube, Watersheds and the Integration of U.S. Water Law and Policy: Bridging the Great Divides*, 25 *WM. & MARY ENVTL. L. & POL'Y REV.* 1 (2000); Jennie L. Bricker & David E. Filippi, *Endangered Species Act Enforcement and Western Water Law*, 30 *ENVTL. L.* 735 (2000); Sarah B. Van de Wetering & Robert W. Adler, *New Directions in Western Water Law: Conflict or Collaboration?*, 20 *J. LAND RESOURCES & ENVTL. L.* 15 (2000).
272. The permits are summarized in *Edwards Aquifer Authority v. Day*, 369 S.W.3d 814, 837 (Tex. 2012). *See also* Darcy Alan Frownfelter, *Edwards Aquifer Authority*, in *ESSENTIALS OF TEXAS WATER RESOURCES* 325, 364–66 (Mary K. Sahs ed., 2009); Gulley & Cantwell, *supra* note 232, at 10–21; Edwards Aquifer Authority, *Groundwater Sellers-Lessors List*, [EDWARDSAQUIFER.ORG](http://www.data.edwardsaquifer.org/pweb/SellLess.aspx) <http://www.data.edwardsaquifer.org/pweb/SellLess.aspx> (last visited April 6, 2013).
273. Jerry Needham, *Edwards Board Mulls Interruptible Rights; They Would Resolve the Pumping Limits Problem Until 2007*, *SAN ANTONIO EXPRESS-NEWS*, Oct. 15, 2003, at 8B. Economists have estimated that reducing pumping below 450,000 acre-feet would increase the costs of water by thirty-seven percent, with further reductions quickly doubling the cost, causing serious losses in profits, employment, and support for public services. Boadu, McCarl & Gillig, *supra* note 114, at 120–21.
274. Bruce Davidson, *EAA Pumping Plan Eyed for Change*, *SAN ANTONIO EXPRESS-NEWS*, May 9, 2004, at 2H; Jason Embry, *Striving to Balance Demands on Aquifer: Scientists' Study May Lead to Water Pumping Limits, Barton Springs District Wants to Guard Against Crises During Droughts*, *AUSTIN AM.-STATESMAN*, Dec. 30, 2003, at B1; Jerry Needham, *Panel Hears Complaints on Pumping Permits; Speakers Take Aim at Edwards Aquifer Authority Plans*, *SAN ANTONIO EXPRESS-NEWS*, Feb. 18, 2004, at 5B.
275. *Aquifer Authority Giving Rebates for Water Conservation*, *SAN ANTONIO BUS. J.*, June 20, 2007, available at 2007 WLNR 11567576.
276. Jerry Needham, *SAWS Eyes Long Straw for S.A.'s Future Thirst; It Approves 6-Year Study of \$1 Billion Colorado River Plan*, *SAN ANTONIO EXPRESS-NEWS*, Feb. 18, 2004, at 1A; *LCRA Launches Water Supply Study*, *AUSTIN AM.-STATESMAN*, May 3, 2004, at B5.

277. Christopher Anderson & Jerry Needham, *Water Pressure on SAWS; Chamber Leaders Pushing Plan for Utility to Buy from Briscoe-Led Group*, SAN ANTONIO EXPRESS-NEWS, Dec. 14, 2003, at 1B.

278. *Id.*

279. Guillermo X. Garcia, *City Council Turns Away Huge Developer Proposal*, SAN ANTONIO EXPRESS-NEWS, Apr. 18, 2008, at 8B; John W. Gonzalez, *San Antonio Area Hit with Restrictions on Water Use*, HOUS. CHRONICLE, July 20, 2006, at A14; John MacCormack, *Agricultural Hopes Drying Up*, SAN ANTONIO EXPRESS-NEWS, Mar. 11, 2009, at 1A; Jerry Needham, *Aquifer's Drop Triggers Water Limits for Region*, SAN ANTONIO EXPRESS-NEWS, July 20, 2006, at 1A; Jerry Needham, *Area Sweating Out Long, Hot, Dry Spell*, SAN ANTONIO EXPRESS-NEWS, June 6, 2008, at 1A; Jerry Needham, *Drought Now as Big as Texas*, SAN ANTONIO EXPRESS-NEWS, Mar. 6, 2009, at 1B; Jerry Needham, *Drought Only Gets Worse*, SAN ANTONIO EXPRESS-NEWS, Aug. 26, 2006, at 1A; Jerry Needham, *EAA Enacts Stricter Limit on Pumping*, SAN ANTONIO EXPRESS-NEWS, Sept. 9, 2006, at 1B; Ken Rodriguez, *San Antonio's Weather Is Taking the Tease-and-Run Approach*, SAN ANTONIO EXPRESS-NEWS, June 25, 2008, at 1B; SAWS *Drafting Plans for a Possible \$150 Million Desalination Project*, SAN ANTONIO BUS. J., June 5, 2007, available at 2007 WLNR 10484206; Joseph S. Stroud, *San Antonio Is Stepping Up Its Efforts to Find Alternate Sources*, SAN ANTONIO EXPRESS-NEWS, Aug. 13, 2006, at 15A.

280. Jerry Needham, *SAWS Boss Turns Thumbs Down on Water Sale Offers*, SAN ANTONIO EXPRESS-NEWS, Sept. 8, 2006, at 3B. Later SAWS was able to buy conservation easements on land within the recharge zone for the aquifer. Anton Caputo, *More Aquifer Land is Protected*, SAN ANTONIO EXPRESS-NEWS, Nov. 15, 2008, at 1A.

281. Jerry Needham, *S.A. Makes Deal with Landowner to Protect Aquifer*, SAN ANTONIO EXPRESS-NEWS, Jan. 11, 2008, at 3B; Jerry Needham, *Water Farming Pays Handsomely*, SAN ANTONIO EXPRESS-NEWS, Feb. 27, 2008, at 10B. SAWS was also buying land to protect recharge areas. Amanda Reimherr Buckert, *Land Purchase Will Help Preserve Environment*, SAN ANTONIO EXPRESS-NEWS, July 4, 2007, at 4; Jerry Needham, *Land Purchase Aims to Protect Aquifer*, SAN ANTONIO EXPRESS-NEWS, July 11, 2007, at 1B.

282. Jerry Needham, *SAWS Seeks to Supplement Aquifer More*, SAN ANTONIO EXPRESS-NEWS, Feb. 24, 2009, at 1B; Jerry Needham, *SAWS Stockpiling Water for a Dry Day*, SAN ANTONIO EXPRESS-NEWS, July 13, 2007, at 3B; *see also* Jerry Needham, *Stored Water Is Focus of Fight*, SAN ANTONIO EXPRESS-NEWS, Aug. 8, 2007, at 1A (reporting efforts by the Bexar Metropolitan Water District to draw water from the same aquifer, thereby tapping into San Antonio's "stored" water). Note that artificial recharge of water into an aquifer is prohibited in Texas except for the area subject to the Edwards Aquifer Authority. TEX. WATER CODE ANN. § 11.023(c) (West 2002). *See also infra* text accompanying notes 285–87 (containing the litigation over this prohibition).

283. Jerry Needham, *SAWS Adding Wells at a Cost of \$2 Million*, SAN ANTONIO EXPRESS-NEWS, Oct. 8, 2008, at 2B.

284. Hilary A. Lehman, *SAWS Set to Withdraw Water from Its Bank*, SAN ANTONIO EXPRESS-NEWS, June 27, 2008, at 1B; Jerry Needham, *SAWS Water Hopes Are Evaporating*, SAN ANTONIO EXPRESS-NEWS, Jan. 22, 2009, at 1A.

285. Anton Caputo, *Danger to Aquifer Is Called Unknown*, SAN ANTONIO EXPRESS-NEWS, April 30, 2008, at 1B.

286. Jerry Needham, *Study Shows Promise for Recharge*, SAN ANTONIO EXPRESS-NEWS, Feb. 14, 2009, at 1B.

287. Anton Caputo, *More Habitat Is Sought for Cave Critters*, SAN ANTONIO EXPRESS-NEWS, Jan. 15, 2009, at 5B; *see also* Jerry Needham, *Some Big Plans for Tiny Creatures*, SAN ANTONIO EXPRESS-NEWS, May 23, 2008, at 1A (describing the U.S. Fish & Wildlife Service's plans to protect additional endangered species in the Edwards Aquifer area).

288. 910 S.W.2d 147 (Tex. App. Ct. 1995).

289. TEX. WATER CODE ANN. § 11.023(c) (West 2002).

290. *Tex. Rivers Prot. Ass'n v. Tex. Natural Res. Conservation Comm'n*, 910 S.W.2d 147, 151–52 (Tex. App. Ct. 1995).

291. Act of June 1, 1997, 75th Leg., R.S., ch. 1010, 1997 Tex. Gen. Laws 3610 (codified at TEX. AGRIC. CODE §§ 791.026, 2155.44 (West 2004)); TEX. GOV'T CODE ANN. §§ 4.33, 791.026 (West 2004); TEX. HEALTH & SAFETY CODE ANN. §§ 341.035–.0356, 341.047(a)–(b), 341.0485, 341.048–.049 (West 2004); TEX. LOC. GOV'T CODE ANN. § 401.002; TEX. TAX CODE ANN. §§ 11.32, 151.318 (West 2004); TEX. WATER CODE §§ 11.002(9)–(10), 11.023, 11.028, 11.042, 11.0841, 11.085, 11.122, 11.134(b)(3)–(4), 11.139, 16.051, 11.177, 36.0015, 36.122, 36.207 (West 2002); see Dylan O. Drummond, Comment, *Texas Groundwater Law in the Twenty-First Century: A Compendium of Historical Approaches, Current Problems, and Future Solutions Focusing on the High Plains Aquifer and the Panhandle*, 4 TEX. TECH. J. TEX. ADMIN. L. 173, 205–07, 223–24 (2003); Drummond, Sherman & McCarthy, *supra* note 12, at 64–65; Lehman, *supra* note 211, at 107–10; Toppin, *supra* note 156, at 519–23.

292. TEX. WATER CODE ANN. §§ 16.051, 36.015, 36.122, 36.207 (West 2002); see Toppin, *supra* note 156, at 519.

293. See C. Richard Bath, *A Commentary on Texas Water Law and Policy*, 39 NAT. RESOURCES J. 121 (1999); Martin Hubert, *Senate Bill 1, The First Big and Bold Step Toward Meeting Texas's Future Water Needs*, 30 TEX. TECH L. REV. 53 (1999).

294. See Lusk, *supra* note 251, at 327–30; Toppin, *supra* note 156, at 521. The bill also did nothing to coordinate inconsistent regulatory strategies among adjoining groundwater conservation districts. Toppin, *supra*, at 522. The law left intact the statutory recognition of the absolute dominion doctrine. TEX. WATER CODE ANN. § 36.002 (West 2004).

295. *Sw. Travis Cnty. Water Dist. v. City of Austin*, 64 S.W.3d 25, 30–33 (Tex. App. Ct. 2000); see also *FM Props. Operating Co. v. City of Austin*, 22 S.W.3d 868 (Tex. 2000) (invalidating a delegation of regulatory authority to private actors within five miles of the city's boundaries); *Quick v. City of Austin*, 7 S.W.3d 109 (Tex. 1999) (upholding the city's application of its water-pollution regulations applicable within the city's "extraterritorial jurisdiction," but declaring the regulations inapplicable to projects subject to different regulations when initially approved); see generally Scott D. Deatherage, Matthew J. Knifton & Jennifer Hodgkins, *Environmental Law*, 54 SMUL REV. 1353, 1368–72 (2001).

296. 1 S.W.3d 75 (Tex. 1999); see generally Lehman, *supra* note 211; Toppin, *supra* note 156, at 514–15.

297. *Friendswood Dev. Co. v. Smith-Sw. Indus., Inc.*, 576 S.W.2d 21, 30 (Tex. 1978). See *supra* text accompanying notes 158–66 (discussing *Friendswood*). See also Canseco, *supra* note 64, at 501–02, 505.

298. *Sipriano*, 1 S.W.3d at 79 (analyzing TEX. CONST. art. XVI, § 59); see generally Bret Adams et al., *Environmental and Natural Resources Provisions in State Constitutions*, 22 J. LAND RESOURCES & ENVTL. L. 73, 223–28 (2002); Canseco, *supra* note 64, at 513; Horton, *supra* note 161, at 700–03.

299. *Sipriano*, 1 S.W.3d at 79–80. This conclusion might have reflected the fact that, at the time of the decision, only "a small fraction of the State" was included in groundwater conservation districts contemplated by the act. *Id.* at 81 (Hect & O'Neill, JJ., concurring). The two concurring justices would have abandoned the rule of capture, but agreed that the court should hold off pending the outcome of the regulatory changes introduced by SB 1 in 1997. *Id.* at 83.

300. About eighty percent of the groundwater pumped in Texas is used in agriculture, but municipal and industrial needs are expected to become the majority user of groundwater by 2040 during an era of vastly increased demand. Toppin, *supra* note 156, at 507. These developments promise increasing groundwater shortages, which have become pronounced in many areas already, including areas with aquifers shared with Mexico. See, e.g., Octavio E. Chavez, *Mining of Internationally Shared Aquifers: The El Paso-Juarez Case*, 40 NAT.

RESOURCES J. 237 (2000); Helen Ingram, *Lessons Learned and Recommendations for Coping with Future Scarcity*, 39 NAT. RESOURCES J. 179 (1999).

301. See Chris Connelly, Comment, *The Inconvenience in Texas Groundwater Law*, 46 HOUS. L. REV. 1301, 1324 (2009); Lusk, *supra* note 251; Opiela, *supra* note 158, at 108–10.

302. 81 S.W. 279 (Tex. 1904).

303. *Id.* at 280 (quoting *Frazier v. Brown*, 12 Ohio St. 294, 311 (1861)).

304. *Friendswood Dev. Co. v. Smith-Sw. Indus., Inc.*, 576 S.W.2d 21, 25, 29 (Tex. 1978).

305. *Sipriano v. Great Springs Waters of America, Inc.*, 1 S.W.3d 75, 79 (Tex. 1999).

306. TEX. CONST. art. XVI, § 59(a)–(b); see *In re Adjudication of Water Rights in the Llano River Watershed*, 642 S.W.2d 446 (Tex. 1982).

307. *Sipriano*, 1 S.W.3d at 77.

308. See, e.g., Marvin W. Jones & Andrew Little, *The Ownership of Groundwater in Texas: A Contrived Battle for State Control of Groundwater*, 61 BAYLOR L. REV. 578 (2009). See generally *supra* note 140 (discussing property rights).

309. See *supra* text accompanying notes 97–144.

310. *Sipriano*, 1 S.W.3d at 76.

311. 52 S.W.3d 770 (Tex. App. 2001); see Drummond, *supra* note 291, at 208–23; Drummond, Sherman, & McCarthy, *supra* note 12, at 70–72; Lehman, *supra* note 211, at 124–29.

312. Canseco, *supra* note 64, at 509–11; Drummond, *supra* note 291, at 217–19; David W. Yoskowitz, *Markets, Mechanisms, Institutions, and the Future of Water*, 31 ENVTL. L. RPTR. 10237, 10241 (2001).

313. *South Plains Lamesa*, 52 S.W.3d at 777–82.

314. *Id.* at 776–77 (discussing TEX. WATER CODE ANN. § 36.002 (West 2002)).

315. *Id.* at 779–80.

316. *Id.* at 780.

317. *Id.*

318. *Id.* at 782. For cases that did turn on such process claims, see *Williamson v. Guadalupe County Groundwater Conservation District*, 343 F. Supp. 2d 580, 599–601 (W.D. Tex. 2004) and *Lake Medina Conservation Society, Inc. v. Texas Natural Resources Conservation Commission*, 980 S.W.2d 511, 516–17 (Tex. App. 1998).

319. TEX. WATER CODE ANN. § 36.116(a) (West 2002).

320. TEX. CONST. art. XVI, § 59(a); see generally James A. Frederick, Comment, *Thou Shall Not Covet Thy Neighbor's Water: A Look at the Journey Both Texas and the Middle East Must Embark upon to Solve the Kinks in Their Water Regulation*, 29 HOUS. J. INT'L L. 423, 424–33 (2007).

321. P. Steven Kosub, *Water Resources Planning and Developments in Texas*, 5 WATER RESOURCES COMM. NEWSL., no. 4, at 10, 13.

322. 263 S.W.3d 910 (Tex. 2008).

323. *Id.* at 915–16; see also Torres, *supra* note 63, at 157–59. Any affected water user would have standing to challenge the grant of a permit. *Prototype Mach. Co. v. Boulware*, 292 S.W.3d 169, 172 (Tex. App. 2009).

324. *Guitar Holding Co.*, 263 S.W.3d at 916; see generally Stuart R. White, Note, *Guitar Holding: A Judicial Re-Write of Chapter 36 of the Texas Water Code?*, 62 BAYLOR L. REV. 313, 314 (2010).

325. *Guitar Holding Co.*, 263 S.W.3d at 916–17.

326. *Id.* at 917–18.

327. See *Rolling Plains Groundwater Conservation Dist. v. City of Aspermont*, 353 S.W.3d 756, 759–60 (Tex. 2011) (holding that the district could not sue to enforce its groundwater regulations against the city because the Water Code did not repeal the city's immunity from suit).

328. Susan Berfeld, *There Will Be Water: T. Boone Pickens Thinks Water Is the New Oil—and He’s Betting \$100 Million That He’s Right*, BUS. WEEK, June 23, 2008, at 40. The estimated total cost would be \$1.2 billion. Robert Carpenter, *Blue Oil*, 63 UNDERGROUND CONSTRUCTION, no. 7, June 2008, at 2; *see also* Arrott, *supra* note 186, at 279–84.

329. *See* Mark Babineck, *County Vote Won’t Take Long: Two Hold Key to \$2.5 Billion Water Pipeline Project in Panhandle*, HOUS. CHRON., Nov. 2, 2007, at A1; *Grassroots Effort to Scrap Dallas Toll Project Falls Shy*, FT. WORTH STAR-TELEGRAM, Nov. 7, 2007, at B1; *Races Draw Interest in Houston, Fort Worth*, SAN ANTONIO EXPRESS-NEWS, Nov. 7, 2007, at 11A. Some commentators described these and similar efforts as “water ranching.” Horton, *supra* note 161, at 705–08; Lehman, *supra* note 212, at 123–25.

330. Elliott Blackburn, *Pickens’ Energy Plans Clouded by Federal Decision*, LUBBOCK ONLINE (Aug. 23, 2008), http://lubbockonline.com/stories/082308/loc_322059853.shtml. *See supra* text accompanying notes 241–45 (regarding the Voting Rights Act issues for the Edwards Aquifer Authority).

331. Betsy Blaney, *Pickens Suspends Plans for Water Pipeline*, FT. WORTH STAR-TELEGRAM, Sept. 16, 2008, at C3.

332. Roger Crotreau, *Survey Backs State Protection of Waterways over Growth*, SAN ANTONIO EXPRESS-NEWS, Mar. 18, 2003, at 1B (noting that seventy-four percent of Texans support limiting water use in order to protect minimum flows and eighty-eight percent support appropriating water to sustain river flows for fish, wildlife, and recreation); *see also* Drummond, *supra* note 291, at 223–25; Drummond, Sherman, & McCarthy, *supra* note 12, at 93–96; Frederick, *supra* note 320, at 440–51; Suzanne Schwartz, *Whiskey is for Drinking, Water Is for Fighting: A Texas Perspective on the Issues and Pressures Relating to Conflicts over Water*, 38 TEX. TECH. L. REV. 1011, 1018–24 (2006); Toppin, *supra* note 156.

333. *City of Del Rio v. Clayton Sam Holt Hamilton Trust*, 269 S.W.3d 613, 617–19 (Tex. App. 2008).

334. *Rolling Plains Groundwater Conservation Dist. v. City of Aspermont*, 353 S.W.3d 756, 759–60 (Tex. 2011).

335. Act of June 15, 2001, 77th Leg., R.S., ch. 966, 2001 Tex. Gen. Laws 1880 (codified as TEX. TAX CODE ANN. §§ 11.32, 151.355 (West 2004)); TEX. UTIL. CODE ANN. § 182.052(a) (West 2004); TEX. WATER CODE §§ 9.001–.017, 11.002(11)–(14), 11.023(a), 11.024, 11.122(a), 11.134(b), 11.142, 13.137, 13.144–.145, 13.183(c)–(e), 13.187, 13.343, 13.2541, 15.602(8)–(15), 16.053(d), 16.053(e), 16.054(a), 16.504(c), 16.504(d), 17.8955, 17.9615–.9616, 26.050, 26.0286, 26.117(h), 26.359, 27.051(h), 35.002(11), 35.004, 35.007(a), 35.007(f), 35.008, 35.009(a)–(b), 35.012–.013, 35.018(c), 36.001(13), 36.001(18)–(22), 36.002, 36.0015, 36.011(b), 36.012(f), 36.013, 36.01436–.015, 36.0151(a), 36.016(a), 36.017(a), (d), (g), (i), 36.0171, 36.019, 36.060(a), 36.066(g), 36.101(a), 36.102(b), 36.1071(a)–(b), 36.1072(g), 36.108, 36.113(d)–(g), 36.116–.117, 36.121–.122, 36.205, 36.206(b)–(c), 36.303(a), 36.3011, 36.3035, 51.149, 36.113(e) (West 2004) (repealing TEX. WATER CODE §§ 35.005, 35.006 (West 2002)); *see* Lehman, *supra* note 211, at 110–14; Toppin, *supra* note 156, at 523–28.

336. *See* Dellapenna, *The Absolute Dominion Doctrine Rule*, *supra* note 10, § 20.07(a)(1).

337. *See supra* text accompanying note 316. Among other things, the statute requires the Texas Commission on Environmental Quality to designate groundwater management areas for every area of the state by September 1, 2003 and to complete the designation of priority groundwater management areas by September 1, 2005. TEX. WATER CODE ANN. §§ 35.004(1) (West 2002) (groundwater management areas), 35.007(1) (priority groundwater management areas).

338. *See* Jones & Little, *supra* note 308, at 604–08; Toppin, *supra* note 156, at 522, 527–28.

339. See Andrew K. Jacoby, Comment, *Water Pressure: The Eightieth Texas Legislature Attempts to Protect Instream Flows of Rivers and Streams, and Freshwater Inflows to Bays and Estuaries*, 20 TUL. ENVTL. L.J. 381, 395–96 (2007).

340. See Horton, *supra* note 161, at 703–04, 714–15; see also Toppin, *supra* note 156, at 528–33 (evaluating an earlier version of the bill). Toppin considers at some length the difference between the halting attempts of the Texas legislature to create a suitable regulatory regime for groundwater with its far earlier and far more successful creation of a regulatory regime for oil and gas. Toppin, *supra* note 156, at 538–52.

341. See Manny Fernandez, *As Texas Bakes in a Long Drought, Water Becomes a Focus for Legislators*, N.Y. TIMES, Jan. 13, 2013, at A18; Brett Walton, *Texas Legislature Discusses Drought, Water Planning, Reservoirs*, CIRCLE OF BLUE (Feb. 5, 2013), <http://www.circleofblue.org/waternews/2013/commentary/editorial-in-the-circle-fresh-focus/texas-legislature-discusses-drought-water-planning-reservoirs/>.

342. See *supra* note 140 (discussing the “property rights movement” and its influence on contemporary thinking).

343. See *supra* text accompanying notes 97–144.

344. 925 S.W.2d 618, 629 (Tex. 1996).

345. *Id.* at 630–31.

346. 512 F. Supp. 2d 770 (W.D. Tex. 2007).

347. *Id.* at 784–88.

348. *Williamson v. Guadalupe Cty. Groundwater Conservation Dist.*, 343 F. Supp. 2d 580, 598–99 (W.D. Tex. 2004) (ordering a trial on a takings claim based on regulations adopted by a groundwater conservation district).

349. 274 S.W.3d 742, 756–57 (Tex. Ct. App. 2008); see generally Canseco, *supra* note 64, at 507–09; Adrian Shelley, Note, *Fair, Effective, and Comprehensive: The Future of Texas Water Law*, 41 TEX. ENVTL. L. REV. 47 (2010).

350. *Edwards Aquifer Auth.*, 274 S.W.3d at 756.

351. *Id.* at 820.

352. *Id.* at 820–21.

353. *Id.* at 822–23.

354. *Id.* at 823–28. Justice Hecht concluded that the three instances where the Supreme Court of Texas had earlier used the phrase “absolute ownership” were pure dictum. *Id.* at 827 (referring to *City of Sherman v. Pub. Util. Comm’n*, 643 S.W.2d 681, 686 (Tex. 1983); *Friendswood Dev. Co. v. Smith-Sw. Indus.*, 576 S.W.2d 21, 25–26 (Tex. 1978); *Hous. & T.C. Ry. v. East*, 81 S.W. 279, 281 (Tex. 1904)).

355. *Id.* at 823.

356. *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 826 (Tex. 2012).

357. TEX. ALLIANCE OF GROUNDWATER DIST., *GROUNDWATER IN TEXAS 17* (2009), available at http://pg-tim.com/files/TX_Groundwater_in_Texas_2009_TAGD.pdf; see also Torres, *supra* note 63, at 145–46, 151.

358. 371 So. 2d 663 (Fla. 1979).

359. *Id.* at 667; see *Davis v. Agua Sierra Res., LLC*, 203 P.3d 506 (Ariz. 2009) (“In the absolute sense, there can be no ownership in seeping and percolating waters until they are reduced to actual possession and control by the person claiming them because of their migratory character. Like wild animals free to roam as they please, they are the property of no one.” *Id.* at 510 (quoting *Town of Chino v. City of Prescott*, 638 P.2d 1324, 1328 (Ariz. 1981)). See also *City of Barstow v. Mojave Water Agency*, 5 P.3d 853, 860 n.7 (Cal. 2000) (“Both riparian and 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 private ownership in public waters”); *In re Application U-2*, 413 N.W.2d 290, 298 (Neb. 1987) (“The protected right of landowners is the right to the use of the ground water, and does not reach the ownership of the water itself.”); *In re Town of Nottingham*, 904 A.2d 582, 592 (N.H.

2006) (citing *Village of Tequesta v. Jupiter Inlet Corp.*, 371 So. 2d 663 (Fla. 1979)); see generally A. Bryan Endres, *Geologic Carbon Sequestration: Balancing Efficiency Concerns and Public Interest in Property Rights Allocations*, 2011 U. ILL. L. REV. 623, 635; Robert G. Schaffer, *Davis v. Agua Sierra Resources: Bringing Some Clarity to Groundwater Rights in Arizona*, 1 ARIZ. J. ENVTL. L. & POLICY 25 (2010).

360. *Edwards Aquifer Auth. v. Day*, 369 S.W.3d 814, 828 (Tex. 2012).

361. *Id.* at 829–33; see also Torres, *supra* note 63, at 160–62.

362. *Edwards Aquifer Auth.*, 369 S.W.3d at 828, 830.

363. *Id.* at 832–33. Arguably, this conclusion was presaged by dicta in *City of Del Rio v. Clayton Sam Holt Hamilton Trust*, 269 S.W.3d 613, 616–19 (Tex. Ct. App. 2008). See also Torres, *supra* note 63, at 156–57, 162–64.

364. See *supra* notes 60–66 and accompanying text.

365. See Torres, *supra* note 63, at 165.

366. See *supra* notes 109–12, 118, 119 and accompanying text.

367. See, e.g., Bill Provencher & Oscar Burt, *A Private Property Rights Regime for the Commons: The Case for Groundwater*, 76 AM. J. AGRIC. ECON. 875 (1994).

368. *Edwards Aquifer Auth.*, 369 S.W.3d at 833–44.

369. *Id.* at 822.

370. *Id.* at 837; see also Ashlie Newman, Note, *Edwards Aquifer Authority v. Day and the Future of Groundwater Regulation in Texas*, 31 REV. LITIG. 403, 420–34 (2012); Torres, *supra* note 63, at 151–53, 159–60.

371. *Edwards Aquifer Auth.*, 369 S.W.3d at 837–44. The closest the court came to considering a takings claim against the Edwards Aquifer Authority was in *Barshop v. Medina Underground Water Conservation District*, 925 S.W.2d 618, 630–31 (Tex. 1996) (declining expressly to decide whether plaintiffs had compensable property rights and rejecting the takings claim as an inappropriate facial challenge).

372. *Edwards Aquifer Auth.*, 369 S.W.3d at 838.

373. *Id.* at 825–26.

374. *Id.* at 828 (citing, among other sources, Justice Hecht’s own concurring opinion in *Sipriano v. Great Spring Waters of Am., Inc.*, 1 S.W.3d 75, 81 (Tex. 1999) (Hecht, J., concurring)).

375. *Id.* at 838–43. See *supra* text accompanying notes 100–02 (analyzing these difficulties).

376. See, e.g., *Lucas v. S.C. Coastal Council*, 505 U.S. 1003, 1026–28 (1992); *State v. Michels Pipeline Constr., Inc.*, 217 N.W.2d 339, 345 (Wis. 1974); see also *supra* text accompanying notes 123–27; see generally Ruhl, *supra* note 128; Smith, *supra* note 128.

377. See, e.g., *Esplanade Props., Inc. v. City of Seattle*, 307 F.3d 978, 984–87 (9th Cir. 2002). Compare *Stop the Beach Renourishment, Inc. v. Fla. Dep’t of Env’tl. Prot.*, 130 S. Ct. 2592, 2610–13 (2010) (redefining the boundary between private and public lands on a shoreline was not a compensable taking), with *Solid Waste Agency v. Corps. of Eng’rs*, 531 U.S. 159, 689 (2001) (redefining the navigability of waters in order to prohibit the development of land results in a compensable taking), and *Lucas*, 505 U.S. at 1031 (“A State, by *ipse dixit*, may not transform private property into public property without compensation.”).

378. TEX. WATER CODE ANN. § 36.119(a) (West 2002).

379. See *Guitar Holding Co. v. Hudspeth Cnty. Underground Water Conservation Dist. No. 1*, 209 S.W.2d 146, 167–68 (Tex. Ct. App. 2006), *rev’d on other grounds*, 263 S.W.3d 910 (Tex. 2008).

380. 217 N.W.2d 339, 347 (Wis. 1974).

381. *Friendswood Dev. Co. v. Smith-Sw. Indus.*, 576 S.W.2d 21, 28–29 (Tex. 1978). See *supra* text accompanying notes 157–67 (analyzing *Friendswood*).

382. See *supra* note 138.

383. *Miller v. Schoene*, 276 U.S. 272, 279 (1928). *See supra* notes 128–29, 132 (analyzing *Miller*).

384. *Sw. Eng'g Co. v. Ernst*, 291 P.2d 764, 768 (Ariz. 1955); *Crookston Cattle Co. v. Minn. Dep't of Natural Res.*, 300 N.W.2d 769, 774 (Minn. 1981); *see also* *Town of Chino Valley v. City of Prescott*, 638 P.2d 1324, 1329–30 (Ariz. 1981); *Kline v. State*, 759 P.2d 210, 212–13 (Okla. 1988).

385. *McNamara v. City of Rittman*, 838 N.E.2d 640, 644 (Ohio 2005); *see also* Christopher Serkin, *Big Differences for Small Governments: Local Governments and the Takings Clause*, 81 N.Y.U. L. REV. 1624 (2006).

386. *See supra* text accompanying notes 307–17.

387. *See* Torres, *supra* note 63.

388. *Id.* at 146–47.

389. *Sipriano v. Great Spring Water of Am., Inc.*, 1 S.W.3d 75 (Tex. 1999).

390. *Id.* at 83 (Hecht, J., concurring).

391. *See* Deborah Clarke Trejo, *Identifying and Valuing Groundwater Withdrawal Rights in the Context of a Takings Claim—A Texas Case Study*, 23 TUL. ENVTL. L.J. 409, 424–25 (2010).

392. Torres, *supra* note 63, at 163–64.

393. *See supra* text accompanying notes 217–33.

394. Thus far, the lower courts have split over whether the federal government reserved water rights attach to groundwater—all cases in states that follow other forms of groundwater law. *Phelps Dodge Corp. v. United States*, 530 U.S. 1250 (2000); *United States v. Orr Water Ditch Co.*, 600 F.3d 1162 (9th Cir. 2010) (holding that reserved water rights attach to tributary groundwater); *United States v. Washington*, 375 F. Supp. 2d 1050 (W.D. Wash. 2005); *In re General Adjudication of the Gila River System*, 989 P.2d 739, 742–49 (Ariz. 1999) (holding that reserved water rights attach to groundwater); *In re General Adjudication of the Big Horn River System*, 753 P.2d 76, 99–100 (Wyo. 1988) (holding that reserved water rights do not attach to groundwater); *see also* Sarah Britton, *Groundwater, Tribal Rights, and Settlements*, in *TRIBAL WATER RIGHTS: ESSAYS IN CONTEMPORARY LAW, POLICY, AND ECONOMICS* 69 (John E. Thorson, Sarah Britton, & Bonnie G. Colby eds. 2006); DANIEL MCCOOL, *NATIVE WATERS: CONTEMPORARY INDIAN WATER SETTLEMENTS AND THE SECOND TREATY ERA* 128–34 (2002); Michael C. Blumm, David H. Becker, & Joshua D. Smith, *The Mirage of Indian Reserved Water Rights and Western Streamflow Restoration in the McCarran Amendment Era: A Promise Unfulfilled*, 36 ENVTL. L. 1157, 1183–88 (2006); Debbie Shosteck, *Beyond Reserved Rights: Tribal Control over Groundwater Resources in a Cold Winters Climate*, 28 COLUM. J. ENVTL. L. 325, 345–46 (2003).

395. *Cf. Cappaert v. United States*, 426 U.S. 128, 147 (1976) (holding that private groundwater rights are limited by the Endangered Species Act).

396. Resolution Admitting Texas to Statehood, H.R. 8, 28th Cong. (1845). Arguably, there are two other absolute dominion states: Indiana and Maine. *See* Dellapenna, *The Absolute Dominion Doctrine Rule*, *supra* note 10, § 20.07(b). The public domain in Maine also never belonged to the United States—although, it did in Indiana.

397. *See supra* text accompanying notes 85–144.

398. 369 S.W.3d 814 (Tex. 2012). *See supra* text accompanying notes 345–89.

399. *See supra* text accompanying notes 253–58.