Unbundling Property in Water

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Abstract
Attempts to privatize water resources have triggered a “morality play of rights versus markets, human need versus corporate greed.” Salzman (2006). The controversy is not limited to the developing world. One of the most divisive issues in contemporary natural resources law in the United States is whether interests in water are property. According to the Restatement of Property, the term “property” describes “legal relations between persons with respect to a thing.” Of course, not all economic relationships give rise to property rights. The common metaphor for property, a bundle of rights, does little to illuminate defining characteristics of property or to resolve disputes over whether constitutional or common law claims involve property.

Judicial treatment of water is all over the map. The Court of Federal Claims awarded California irrigators millions of dollars as compensation for a taking of their property rights when flows were curtailed to protect endangered salmon, but other federal and state courts have found just the opposite. To unbundle the concept of property, this article critiques the conflicting approaches for water and proposes an alternative means of identifying tangible and intangible things as property. We use a web of interests as a strong yet flexible metaphor for property, complemented by a patterning definition representing elemental strands of the web. If the interest in question is not an irrevocable interest in the exclusive possession and use of a discrete, marketable asset, it is not “takings property.” Merrill 2000. Viewed through this lens, it becomes clear that interests in water in most jurisdictions are not takings property, although they may be a limited form of property for purposes of due process or common law claims.

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Introduction

Water is the issue of the decade, if not the century. The United Nations General Assembly has focused the world’s attention on the imperative of ensuring access to water for drinking and sanitation by proclaiming 2005 to 2015 as the International Decade for Action. Fresh water supply, which is indispensable for both human well-being and environmental integrity, is on par with climate change as the two physical limitations most likely to change the way we live.

As the quest for sustainable management of water resources becomes more urgent, a movement championing greater recognition of private property rights to attain efficient use and allocation of water is gaining momentum. The World Bank and the International Monetary Fund have encouraged nations in the developing world to conform to a market paradigm by privatizing their water supplies. Paradoxically, at the same time, members of the international community have identified water as a basic human right, potentially complicating the drive toward privatization. It should come as no surprise, then, that attempts to privatize water resources have triggered a “morality play of rights versus markets, human need versus corporate greed.”

The privatization controversy is not limited to the developing world. One of the most divisive issues in contemporary natural resources law in the United States is whether interests in water are legally recognized as property. In the West, surface water is typically viewed as a form of private property, while in the East it is not. In either case, the law is surprisingly unsettled; over two centuries of American caselaw have yielded no consistent answers. Divergent judicial views are illustrated by two recent cases. In 2005, the Nebraska Supreme Court held that surface water is not property,

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4 See Intergovernmental Panel on Climate Change, Climate Change 2007: The Physical Science Basis, Summary for Policymakers at 5, 7 (Feb. 2, 2007) (concluding that drought is likely to become more widespread while tropical storms become more intense).
rejecting both common law conversion claims against groundwater pumpers and constitutional claims against the state,7 while just a few years earlier the Court of Federal Claims, applying California law, concluded just the opposite and awarded irrigators over $20 million when supplies were curtailed to protect endangered species.8 Neither court provided a principled analysis in support of its conclusion.

Why is the classification of property, or for that matter any legal interest, necessary? Classification is an important pathway for human understanding and organizing new information. It also serves rule of law imperatives. Well-ordered legal systems must be based on normative principles that ensure against arbitrary power and guide conduct in a manner that is clear and consistent as well as fair. Absent clarity and competency, expectations are frustrated and public and private affairs become more difficult to accomplish.

Classifying a thing as property has tremendous legal consequences under the takings and the due process clauses of the U.S. Constitution. The takings clause forbids governments from taking private property without just compensation.9 Due process ensures that no person be deprived of property arbitrarily or without procedural safeguards.10 In either case, the party claiming injury must, as a threshold matter, have some sort of property at stake.

Beyond constitutional implications, additional legal consequences flow from classification as property. It is determinative of issues ranging from the ability to prevent trespass, conversion or nuisance under the common law, to mortgage the thing in question, to freely convey it or split it between present and future interests, to receive special treatment under federal or state tax laws, and to impose or avoid trade constraints.

Treating a natural resource like water as property also has significant implications for conservation. The recognition of secure private property rights can encourage maximum utilization of resources and foster stewardship and wise investment of labor and capital. By the same token, the absence of legally protected interests in property can result in a “tragedy of the commons,” where a public or commonly held resource is

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9 U.S. Const. Amd. V.
plundered as each selfish (yet economically rational) actor takes steps to promote self-interest with little regard for externalities that deplete the resource.\textsuperscript{11} On the other hand, jurisdictions that claim to recognize property rights in water, particularly those in the western United States, have not necessarily encouraged conservation but rather have created incentives for exploitation.\textsuperscript{12}

Water is a uniquely essential resource with uniquely public attributes, unlike real estate, currency, jewelry, and many other things that are treated as property. Its uniqueness justifies an in-depth consideration of whether it may be treated as a private commodity, subject to profit-motivated management. This article analyzes the nature of property in water as a creature of positive law. To do so, it delves into the nature of property as a normative legal construct, and also the nature of water as a thing potentially subject to that construct.

Historically, property rights were viewed as \textit{in rem}, governing only those relationships closely tied to a discrete thing.\textsuperscript{13} During the twentieth century, however, a relational, \textit{in personam} approach took hold, fostered by Hohfeldian analysis and law and economics.\textsuperscript{14} This views property as any relationship between persons with one or more legal rights bundled in virtually any combination of incidents or attributes associated with ownership.\textsuperscript{15}

Interests in water, like other tough cases at the margins of property or “quasi-property,” illustrate a broadly applicable point. Rather than being merely relational, property rights attach to persons only with respect to their relationship to some discrete thing, be it tangible or intangible, corporeal or incorporeal. The inimitable aspect of property law, as opposed to contract, tort, or public law, is its concern with things. A rational conception of property must recognize both the human relationships with a thing

\begin{itemize}
\item \textsuperscript{11} Garret Hardin, The Tragedy of the Commons, 162 SCIENCE 1243 (1968).
\item \textsuperscript{14} Thomas W. Merrill and Henry E. Smith, What Happened to Property in Law and Economics?, 111 Yale L. J. 357, 359 (2001).
\item \textsuperscript{15} \textit{Id.}; Schroeder, \textit{supra} note , at 292.
\end{itemize}
and the nature of the thing itself. An in-depth assessment of the nature of interests in water undercuts the commonly accepted contemporary view that property is more about legal relations among people than about the thing itself.

Property gives a person, the owner of a thing, legal rights to control that thing and to exclude all the world -- not just specified individuals but a large class of others -- from possession or use of that thing.\(^\text{16}\) People tend to feel strong attachments to things known as property. Land and certain types of personal property form important components of a person’s identity and self-actualization.\(^\text{17}\) But other things cannot be treated as property at all in American law. Examples of things that are themselves non-property but that are elemental to important, recognizable property interests include human body parts (non-property), essential to medical research and patents (property); trust (non-property), a key component of business goodwill (property); love (non-property), often symbolized through wedding rings and love songs (property); personality and appearance (non-property), both elemental to celebrity rights to publicity (property); and imagination (non-property), necessary for inventions, books, art, and many other forms of intellectual property.\(^\text{18}\)

Instead of perpetuating the commonly employed “bundle of rights” metaphor to describe property, we seek an organic, multi-dimensional symbol that better reflects property-based relationships with things. The bundle metaphor does not leave room for the thing; instead, it is a one-dimensional depiction of various interests typically associated with property, with no prioritization or acknowledgement of attributes that must invariably be present for a thing to be considered property. The bundle fails to assess either the character of the thing in question or the nature of human relationships with it, and it also overlooks the importance of that thing to related human and ecological communities.

This is not to say that there is no place for metaphor in property law. The use of metaphor, a basic building block of human cognition, complements rule of law objectives by infusing legal classifications with the wisdom of commonly held experiences through

\(^{16}\text{Schroeder, supra note } 292; Merrill and Smith, supra note } 359.\\(^{17}\text{MARGARET JANE RADIN, REINTERPRETING PROPERTY 191-202 (1993).}\\(^{18}\text{Craig Anthony Arnold, The Reconstitution of Property: Property as a Web of Interests, 26 Harv. Envtl. L. Rev. 281 (2002).}
visual imagery. Building on a concept crafted by Tony Arnold, we envision property as a “web of interests,” where the thing considered property is at the center and relationships with the thing -- incidents of private ownership as well as public and communal rights -- form the webframe and internal strands of the web.\textsuperscript{19} Due to its remarkable strength and flexibility, a spider web is considered the “Holy Grail” of biomaterials with potential for design innovation within the rapidly expanding field of biomimicry.\textsuperscript{20} Its attributes make it equally attractive for design innovation in property law. Although Professor Arnold proposed the web metaphor as a means of analyzing issues related to property, we take it one step further, using it to determine whether property exists in the first place. The web can only exist if its elemental parts are intact. The same is true for property, which only exists if the elemental incidents of property with respect to the thing in question are intact.

The web metaphor is intended to identify and describe all sorts of property. Its application to water illustrates its potential effectiveness as a heuristic tool. The outermost circumference of the web, or the webframe, represents societal norms attached to the thing in question. As applied to water rights, the webframe reflects the public trust doctrine, which safeguards public access for critical purposes such as navigation and subsistence use. Governmental rights and responsibilities as the trustee of the res (the water, stream beds and shorelines) are found here at the outer parameter of the web. The orbital strands radiating from the center of the web represent appropriators of the water, riparian landowners and other people who use the water for subsistence, recreation, or navigation, the fisheries and other water-dependent species, and, for interstate waterbodies, upstream and downstream states. The spoke-like strands that hold the web together represent the elemental incidents of property. Only if these incidents are present can the private interest in water be considered property; otherwise, the web falls apart.

Elemental strands, or incidents, can be distilled from the laundry list of incidents identified by A.M. Honore’ to three key attributes: rights of exclusive possession, rights of exclusive control or use, and rights of alienation.\textsuperscript{21} These elemental strands can be

\footnotesize{\textsuperscript{19} Arnold, supra note , at 292.  
\textsuperscript{21} A.M. Honoré, Ownership, in Oxford Essays in Jurisprudence 107, 112-24 (1961).}
calibrated with greater precision, in a manner that focuses attention on the thing in question, through Thomas Merrill’s patterning definitions for identification of constitutional property.\textsuperscript{22} Merrill describes a full private property right as an irrevocable, vested right to exclude others from discrete, marketable assets.\textsuperscript{23} Thus, the thing at the center of the web must be a discrete asset exchanged by economic actors on a fairly regular basis, and the claimant must identify a durable, non-ephemeral right to exclude others from possessing, using, or alienating it. These elements dovetail with Supreme Court takings jurisprudence. The requirement for a durable interest in a discrete asset requires a “reasonable investment-backed expectation” in the exclusive possession, use, and conveyance of the thing.\textsuperscript{24} Exclusivity in the possession and use of a discrete asset corresponds to whether a competing interest or regulatory restriction is inherent in “background principles” of property law.\textsuperscript{25} When the public interest in the thing is strong enough for a government regulator to condemn it or otherwise restrict its use, all three elements must be present to support a takings claim.

If exclusivity in the use of an asset is found, but the interest is ephemeral, revocable, or non-marketable, one might have a limited form of property for purposes of due process or common law claims, but not a full property right for purposes of takings law.\textsuperscript{26} In other words, different patterns of full ownership, limited ownership, or non-ownership may emerge with respect to the same type of thing in different contexts.

Water is a case in point. Under the doctrine of riparian reasonable use, widely followed in the East, each user’s right is correlative and dependent on the needs and reasonable uses of others. Non-constitutional sources of law do not treat water as a discrete, marketable asset or allow riparian landowners an irrevocable right to exclude others from using it. In the western United States, however, the notion of water as property is the strongest in both common perception and in legal jurisprudence. Water rights give appropriators a right to put water to beneficial use, which is considered the basis, measure, and limit of the right. If water is put to beneficial use, the user develops a

\begin{itemize}
\item \textsuperscript{22} Thomas W. Merrill, The Landscape of Constitutional Property, 86 Va. L.Rev. 885, 970-81 (2000).
\item \textsuperscript{23} \textit{Id.} at 969.
\item \textsuperscript{24} Penn Central Transp. Co. v. New York City, 438 U.S. 104 (1978).
\item \textsuperscript{25} Lucas v. South Carolina Coastal Council, 505 U.S. 1003 (1992).
\item \textsuperscript{26} Merrill, \textit{supra} note \ , at 969, 980-984.
\end{itemize}
prior appropriation right, which is typically reflected in a state-issued permit or judicial decree. In most western jurisdictions, an appropriator has a durable right to put a specific quantity of water to an exclusive beneficial use, but the appropriator may not merely possess the water (it must be used or it is forfeited) and may not freely convey it. As a result, the appropriator may have a limited form of property for purposes of due process or common law claims, but not a full property right for purposes of takings law.

We begin this article with an assessment of the psychological and social need to create clearly defined legal classifications, particularly when it comes to property. Part II delves into the physical nature of water and the legal nature of water rights in riparian and prior appropriation jurisdictions. The web metaphor and patterning definition for identifying and describing property are introduced in Part III. Part IV tests this analytical framework by applying it to tangible and intangible things that have proven most difficult to classify, including body parts, great works of art and air. Finally, in Part V, we return to water. We conclude that limited property rights in water exist under the prior appropriation doctrine, but these are not full property rights, because the appropriator has no reasonable expectation to possess or convey the water as a discrete, marketable asset. Placing water in context, at the center of the web of interests, helps explain this result. The public interest in water, depicted by the webframe, is so compelling that, by precluding non-use and imposing trade constraints, public access is ensured and private property rights are correspondingly limited by the absence of those elemental strands.

I. CLASSIFICATION, COGNITION, AND THE RULE OF LAW

"Legal thought is, in essence, the process of categorization."27

Classification is an elemental tool in basic human cognition as well as in law. The function of classification, or grouping of concepts or things with similar concepts or things, has been studied extensively by psychologists and legal realists alike. Classification as property has special significance to proprietors and to society, and special consequences under constitutional law.

A. Classification and Cognition in Psychology and Law

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Cognitive psychologists describe classification as an important pathway for learning, processing, and organizing new information. Classifying things and placing them in categories is a common sense means of identification, simplification, and prediction – if one thing within a category behaves a certain way, than other related things might too. In the early twentieth century, classification became a discrete line of inquiry among legal scholars seeking coherence and consistency through the trilogy of predictability, reliability, and clarity. Roscoe Pound explained the exercise of classification as “a shaping and developing of traditional systematic conceptions and traditional systematic categories in order to organize the body of legal precepts so that they may be: (1) stated effectively with a minimum of repetition, overlapping, and potential conflict, (2) administered effectively, (3) taught effectively, and (4) developed effectively for new situations.”

Of course, coherence and consistency do not always go hand in hand. At times, inconsistency can foster greater degrees of coherence by enhancing other legitimate objectives, such as flexibility, responsiveness, and innovation, and by serving as a dynamic laboratory for the development and protection of individual and communal rights. But inconsistency often comes with a high price, yielding both substantive errors and perceptions, at least, of unfairness. It also spawns inefficiencies due to the lack of decisionmaking coherence, specifically, predictability, reliability, and clarity.

Classification serves important rule of law precepts by providing both structure (consistency) and coherence. The rule of law is founded in large part on adoption of consistent rules capable of guiding both individual conduct and non-arbitrary dispute

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29 Roscoe Pound, Classification of Law, 37 Harv. L. Rev. 933, 944 (1924). Pound found classification useful for problem-solving, but expressed doubts about the "extravagant expectations as to what may be accomplished through classification of law." Id. at 938.
31 Franck, BIT by BIT, supra note 1, at 63. See also Susan D. Franck, The Legitimacy Crisis in Investment Arbitration: Privatizing Public International Law Through Inconsistent Decisions, 73 Fordham L. Rev. 1521, 1584 (2005) (discussing need for consistency in treaty arbitration).
32 See Schroeder, supra note 2, at 289 (for law and legal concepts to serve a basic social, economic and philosophical function, “the combinations of jural elements cannot be random or arbitrary and cannot be freely altered at will”).
resolution.\textsuperscript{33} It also entails a conceptual link between law and accepted principles of morality capable of commanding the assent of those bound by the law.\textsuperscript{34}

The identification of relatively clear analytical parameters through categorization allows legal rights to be determined by law rather than by authoritarian decisionmakers wielding unbridled discretion.\textsuperscript{35} The resulting predictability, reliability, and clarity breed coherence as well as consistency. This promotes confidence in the rule of law and increases the efficiency and accuracy of dispute resolution mechanisms, all the while protecting justified expectations.\textsuperscript{36} The use of metaphor, a basic building block of cognition and problem-solving, complements rule of law objectives by infusing rules and legal classifications with the wisdom of commonly held experiences through visual imagery.\textsuperscript{37}

\textbf{B. Classification and Property}

Justice Frankfurter once described property as a “broad and majestic term,” among the “(g)reat (constitutional) concepts . . . purposely left to gather meaning from experience.”\textsuperscript{38} Why, then, this insistence on defining and classifying property rights?

The rule of law is particularly important when it comes to private property. Absent clear parameters to promote coherence and consistency, the concept of private property loses its usefulness for advancing either social or economic objectives.\textsuperscript{39} Decisionmakers can protect public and private interests in things subject to property rules only if they articulate a substantive, coherent definition of property.\textsuperscript{40} “For those participating in the global economy where there may be a variety of competing standards

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\item Professor Franck notes that the rule of law also requires accessible and fairly structured tribunals. Franck, BIT by BIT \textit{supra} note, at 63.
\item Fallon, \textit{supra} note, at 23.
\item Franck, BIT by BIT, \textit{supra} note, at 63 n.61, citing Joseph R. Grodin, Are Rules Really Better Than Standards?, 45 Hastings L.J. 569, 570 (1994).
\item \textit{See} Part III.C., \textit{infra}.
\item National Mutual Ins. Co. v. Tidewater Transfer Co., 337 U.S. 582, 646 (Frankfurter, J., dissenting).
\item Schroeder, \textit{supra} note, at 256.
\end{enumerate}
\end{footnotesize}
(or a lack thereof), the rule of law is essential; without it, there is a detrimental impact upon those governed by the rules and their willingness and ability to adhere to such rules.”

Thomas Merrill and Henry Smith stress the *numerus clausus* (closed number) rule as a design principle for property. Regardless of whether the issue arises in a civil law jurisdiction or a common law court, this principle demands that property rights comport with a limited menu of standard forms. Standardization reduces information costs imposed on third parties; conversely, the creation of idiosyncratic property rights increases costs and stifles economic and social transactions.

Thomas Grey argued that property rights have become increasingly unimportant in liberal capitalist theory, in large part due to the shift in legal thinking to the “bundle of rights” concept of property as any combination of relationships among people. To the contrary, far from losing its usefulness as a legal construct, property is still a discrete and important functional category within the law. In American society, property is perceived as something quite different than other legal rights, and categorization as property has important legal consequences under the U.S. Constitution as well as federal and state statutes and the common law.

First and perhaps foremost, parties seeking to protect an interest under Takings Clause of the U.S. Constitution must demonstrate that their interest is property to avoid dismissal. Persons seeking protection for economic interests under the Due Process

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41 Franck, BIT by BIT *supra* note , at 66, citing, inter alia, Antonin Scalia, The Rule of Law as a Law of Rules, 56 U. Chi. L. Rev. 1175, 1179 (1989) (“Rudimentary justice requires that those subject to the law must have the means of knowing what it prescribes ... There are times when even a bad rule is better than no rule at all.”).


Clauses of the Fifth and Fourteenth Amendments must also establish they have property at stake. In *Board of Regents v. Roth*, the Supreme Court articulated the need for boundaries to delineate the notion of property for purposes of procedural due process, though it cautioned against “rigid or formalistic limitations.”

Statutory rights and responsibilities also result when a thing is classified as property. Can the thing be mortgaged? Can it be freely conveyed or split between present and future interests? How is it treated under laws governing inheritance? Is the depletion or conveyance of the thing, or a commitment to conserve it, entitled to special treatment under federal or state tax laws (like amortization, like-kind exchanges, or conservation easements)? If trade restraints are imposed on the thing, can an expropriation claim be asserted under international investment commitments?

As for the common law, claims for conversion, trespass, and nuisance may only be asserted if a property interest is at stake. Absent property, parties are left with negligence, contract, or other types of claims, some of which may be far more difficult to prove. Negligence, for example, requires breach of a duty and proximate cause, whereas conversion, trespass, and nuisance do not. Also, in common law disputes between parties, the choice between property rules and tort or contract rules has important consequences in terms of remedies. Property rules are generally enforced through equitable remedies like injunctions, in contrast with tort or contractual liabilities, which usually lead to monetary relief. Judges, of course, retain discretion to deny equitable

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47 Roth, 408 U.S. at 572.

48 See *Wiechens v. United States*, 228 F. Supp. 2d 1080, 1085 (D. Ariz. 2002) (recognizing a right to use water as a property right under Arizona law but holding that the exchange of that right for land was not a like-kind exchange under Internal Revenue Code § 1031(a) because rights limited by "priority, quantity, and duration. . . [are] not sufficiently similar to the fee simple interest"); Schubert (5th Cir.) (allowing amortization of groundwater depletion).


50 Emily Sherwin, Introduction: Property Rules as Remedies, 106 Yale L.J. 2083, 2085 (1997); Louis Kaplow & Steven Shavell, Property Rules Versus Liability Rules: An Economic
relief when the harm of issuing such relief outweighs the benefit, but when it comes to property, the baseline is more firmly rooted in equity, with the thought that money cannot make the claimant whole when property has been lost.

II. WATER AND WATER RIGHTS

According to Professor Carol Rose,

If water were our chief symbol for property, we might think of property rights . . . in a quite different way. We might think of rights literally and figuratively as more fluid and less fenced in; we might think of property as entailing less of the awesome Blackstonian power of exclusion and more of the qualities of flexibility, reasonableness and moderation, attentiveness to others and cooperative solutions to common problems.  

This is a compelling statement, but it begs the question:  are interests in water really Property, with a Capital P, in all of its glorious wonder.  If so, are they Property at all times and in all contexts, or just a limited form of property, recognizable some of the time, and only in some contexts?

A. The Nature of Water and the Public Trust Doctrine

Water is a unique resource.  Its physical properties are unlike any other natural resource or thing.  It is essential to all life; few substances share this distinction.  There is no capacity for exclusive possession of water in a stream, a lake, or even an irrigation ditch.  It is constantly moving along the surface, seeping into the ground, evaporating into the air, and being taken up by plants, fish, and other aquatic species.  Quantities are never entirely certain; drought, precipitation, and variable human uses create ever-changing circumstances.

According to Professor Joseph Sax, who has written frequently on the nature of property rights, the uniqueness of water is universally recognized:

The roots of private property have never been deep enough to vest in water users a compensable right to diminish lakes and rivers or to destroy the marine life.


within them. Water is not like a pocket watch or a piece of furniture, which an owner may destroy with impunity. The rights of use in water, however long standing, should never be confused with more personal, more fully owned, property.\footnote{Joseph L. Sax, \textit{The Limits of Private Rights in Public Waters}, 19 Envlt. L. 473, 482 (1989).}

Beyond pocket watches and arm chairs, water and land -- that quintessential symbol of private property -- are different in many ways. All people must have access to water to satisfy their thirst and sanitary needs, but “not everyone needs to own land for there to be adequate food supplies.”\footnote{Myrl L. Duncan, \textit{Reconceiving the Bundle of Sticks: Land as a Community-Based Resource}, 32 Entl. L. 773, 798 (2002).} Moreover, surface water “is as mobile and difficult to apportion as land is stationary and easy to carve into parcels.”\footnote{Id. at 798.}

The physical characteristics and essential nature of water, in contrast to land and other things, have led human societies throughout time to treat water in a communal manner.\footnote{See Salzmann, \textit{supra} note \footnote{Joseph L. Sax, \textit{Understanding Transfers: Community Rights and the Privatization of Water}, 1 West N.W. 13, 13 (1994).}, at 96.} The conceptual underpinnings of this approach, however, continue to evolve. Once upon a time, running waters and oceans were deemed “too plentiful and unbounded to reduce to private property.”\footnote{Carol Rose, \textit{The Comedy of the Commons: Custom, Commerce, and Inherently Public Property}, 53 U. Chi. L. Rev. 711, 718 n.29 (1986).} As Professor Rose noted, “The 'plenitude' or 'boundlessness' exceptions . . . fail to explain the 'publicness' of those properties that our traditional doctrines most strongly deemed public property. Roadways, waterways, and submerged lands . . . are hardly so copious or so unbounded that they are incapable of privatization. Riverbeds and shorelands can be staked out, roadways can be obstructed, waterways diverted, squares plowed up; in short, they can easily be 'reduced to possession' in the classic common law manner of creating proprietary rights out of a ‘commons.’”\footnote{Id. at 718.}

At the same time, certain aspects of both fresh water and oceans, such as shorelines, navigable waterways, and tidal areas, is deemed so necessary to individual and community survival
that they became “jus publicum” – the public right – and therefore beyond the purview of private ownership.\textsuperscript{58}

In systems built upon Roman or English legal foundations, water is viewed as a type of communal resource, a “public trust,” where the sovereign retains rights and responsibilities to protect the resource for the public.\textsuperscript{59} Roman, English and early American law recognized only a usufructuary right in riparian landowners to use water, and then only so long as its flow remained undiminished for use by downstream riparians.\textsuperscript{60}

The public trust doctrine is not limited to jurisdictions with Roman or English roots. There is “an astonishingly universal regard for communal values in water worldwide.”\textsuperscript{61} A review of Asian, African, Islamic, Latin American, and Native American laws reveals that the doctrine has been embraced by many societies with divergent legal traditions.\textsuperscript{62}

The doctrine has enjoyed modern staying power in the United States through the work of legal scholars and judicial opinions at both the federal and state level.\textsuperscript{63} Courts have referenced it in granting public access for navigation and fishing.\textsuperscript{64} and, in some

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\textsuperscript{59} Duncan, supra note \textsuperscript{5}, at 792, citing 1 Samuel C. Weil, Water Rights in the Western States 10-13 (3d ed. 1911).

\textsuperscript{60} Duncan, supra note \textsuperscript{5}, at 792, 1 Samuel C. Weil, Water Rights in the Western States, 1-21 (3d ed. 1911); Getzler, supra note \textsuperscript{5}, at 1.


\textsuperscript{63} Professor Rose notes that the doctrine has enjoyed three waves of popularity, the most recent of which was jump-started by Joseph Sax. Rose, Comedy, supra note \textsuperscript{5} at 729-730 (citing Joseph L. Sax, The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention, 68 Mich. L. Rev. 471 (1970)). For analysis of state caselaw, see Eric Pearson, Illinois Central Railroad v. Illinois, 146 U.S. 387 (1892); Arkansas v. McIlroy, 595 S.W.2d 659 (1980).

\textsuperscript{64} See Martin v. Weddell’s Lessee, 41 U.S. 367 (1842); Illinois Central Railroad v. Illinois, 146 U.S. 387 (1892); Arkansas v. McIlroy, 595 S.W.2d 659 (1980).
\end{flushright}
cases, in recognizing the right of the public to preserve its waters to support fish and wildlife species.  

In the eastern United States, the public trust doctrine underlies the law of riparianism, where land owners adjacent to a natural watercourse possess usufructuary rights to water that flows through or past their land, but are liable for monetary damages or injunctive relief if they deplete the natural flow in a way that harms other users. The natural flow rule was founded on the premise that land and water flowing by it were not a commodity for production but rather an amenity to be enjoyed for its own sake as an attribute of “dominion” over real property by the landed English and colonial gentry. Rather than restricting waterways for enjoymont by landowners, however, the usufructuary principle in effect subordinates private rights to community interests by recognizing limited private rights of riparian landowners to engage in both consumptive and nonconsumptive uses, while protecting the public's right to use the streams for nonconsumptive uses, such as navigation and fishing.  

By the time the Industrial Revolution rolled around in the early 1800’s, it became apparent that development of water resources would be necessary to support textile mills, tanneries and other activities. The principle of undiminished natural flow evolved into the doctrine of reasonable use, which allows all reasonable uses of water on the riparian tract, even if natural flows are diminished. The new doctrine retains a concern for the public interest by prohibiting unreasonable uses that harm adjoining neighbors or prevent public access. Today, the riparian doctrine, as adopted in most eastern states, incorporates a explicit public interest consideration into the definition of reasonableness. Reasonableness is a question of fact resolved by the courts on a case-to-case basis when disputes arise. A riparian who experiences substantial harm will attempt to show that the defendant’s use is unreasonable through the application of a multi-factored balancing test that considers local customs, the necessity and suitability of

66 See Freyfogle, Common Wealth, supra note , at 49.
68 Duncan, supra note , at 794.
69 Id. at 794-795.
70 Id. at 795.
the use to the affected area, the types of competing uses and their importance to society, the needs of other riparians, and the fairness of requiring either party to bear the loss.\textsuperscript{71}

A riparian limitation eventually was carried over into American groundwater law as well. American courts initially followed the English doctrine of “absolute ownership,” a straightforward rule of capture allowing whoever had the biggest pump to withdraw groundwater for use in any fashion, anywhere the capturer pleased.\textsuperscript{72} The majority of states soon deviated from that doctrine in order to prevent pernicious, wasteful results.\textsuperscript{73} Most eastern jurisdictions now follow the American reasonable use doctrine, which allows any non-malicious, non-wasteful uses on the overlying tract.\textsuperscript{74} Others have adopted variations of several other groundwater doctrines, such as correlative rights (the California doctrine), prior appropriation, or liability rules based on the Restatement (Second) of Torts.\textsuperscript{75} Only a few jurisdictions continue to adhere to “absolute ownership” as a rule governing groundwater use.\textsuperscript{76} Ironically, this doctrine – a misnomer if ever there was one -- results in the utter lack of protection for established interests. As soon as someone with a more powerful pump comes along, existing uses of the aquifer can be diminished or completely eviscerated, with no legal recourse.\textsuperscript{77}

In the American West, the scarcity of surface water resources and limitations on opportunities for riparian land ownership prompted courts and legislatures to turn away from riparianism and craft a new system of water rights known as prior appropriation, based on the principle of “first in time, first in right.”\textsuperscript{78} Although this system promotes privatization of surface water resources to a greater extent than riparianism, legislatures, agencies, and courts have struggled to craft legal tools to balance individual rights with the collective rights of other water users and society as a whole. The public trust doctrine

\begin{footnotesize}
\textsuperscript{71} Snow v. Parsons, 28 Vt. 459 (Vt. 1856); Restatement (Second) Torts § 850A (1979).
\textsuperscript{73} See SAX, ET AL., LEGAL CONTROL OF WATER RESOURCES, supra note  , at 417, 421.
\textsuperscript{74} See id. at 417.
\textsuperscript{75} Id.
\textsuperscript{76} Sipriano v. Great Spring Waters of America, 1 S.W. 3d 75 (Tex. 1999); Maddocks v. Giles, 728 A.2d 150 (Me. 1999).
\textsuperscript{77} Frazier v. Brown, 12 Ohio St. 294, 308 (1861). For an assessment of rights created by riparian and groundwater rules, see Part V, infra.
\textsuperscript{78} See Part II.B, infra.
\end{footnotesize}
is frequently cited by western courts, but it has rarely operated as a significant curb on private rights. In a marked deviation from this trend, the Supreme Court of California indicated a willingness to impose the doctrine on appropriators in *National Audubon Society v. Superior Court* (the Mono Lake case):

The state as sovereign retains continuing supervisory control over its navigable waters and the lands beneath those waters. This principle, fundamental to the concept of the public trust, applies to rights in flowing waters as well as to rights in tidelands and lakeshores; *it prevents any party from acquiring a vested right to appropriate water in a manner harmful to the interests protected by the public trust.*

As a result, in California, the state water board must consider the public trust in making decisions on the application for, or transfer of, water rights. In spite of the court’s bold language, or perhaps because of it, the Mono Lake decision has had relatively little impact on the exploitation of water resources in the West under the prior appropriation doctrine. The case is frequently cited, but few other states have embraced it as precedent. Most other states do, however, scrutinize new appropriations and transfers or changes in use to prevent harm to other users or to the public interest.

A strong parallel to the public trust doctrine can be seen in international law, where various conventions and declarations identify water as a basic human right, either on its own or as a necessary incident of other human rights. A few national

79 658 P.2d at 727 (emphasis added).
80 See id. at 732 (concluding that the state bears a continuing duty of supervision over appropriators of the state's waters in order to protect the public trust).
constitutions recognize access to water as a human right. By imposing a duty on governments to guarantee access to water supplies, the ideal of a human right to water, like the public trust doctrine, serves as a counterbalance to privatization forces.

B. Appropriative Rights

Prior appropriation arose during the late 1800s as a way to maximize the use of a scarce resource in the arid west and to promote settlement and economic development. Experiences with scarcity led western societies to believe that the gains from private resource management would outweigh the costs of establishing and enforcing a system of private rights.

Although the oft-repeated story is that westerners simply followed the customs of the mining camps in the use and allocation of water, the underlying objectives were almost certainly more complex. Prior appropriation’s roots are as likely to be found in the populist inclinations of farmers and homesteaders, who strongly resisted speculative investment by monopolistic land barons and railroad companies. Territorial courts and legislatures refused to allow speculators to corner the market and thereby exclude actual users from water resources.

These populist underpinnings do not reflect anti-property sentiment, however. To the contrary, it is commonly accepted wisdom throughout the West that appropriative rights are a form of property. A legally perfected water right, reflected in a judicial decree or an appropriative permit issued by a state agency, is sometimes characterized as an incorporeal hereditament. As such, a water right does not constitute ownership of

84 1996 Constitution of South Africa, art. 27(1)(b).
90 Id. Incorporeal hereditaments are intangible rights in land use, such as easements, franchises, and rents. Black’s Law Dictionary (8th ed. 2004).
the water itself; it is instead usufructuary, or a right to use water. After the water has
been diverted for use from a natural source, such as a river or lake, and placed into a
stock tank, a bottle, or some other discrete container, it may be deemed personal
property.

The prior appropriation regime serves as a simple way to determine who gets to
use water, how much he or she could use, and when. Priority is given to whomever is
“first in time,” meaning that junior users may get water only if all senior water rights are
fulfilled. The measure of a right to use water is quantified by how much the actor diverts
for “beneficial use.” Beneficial use is typically defined by state statutes to include just
about any domestic, agricultural, or industrial activity. Although wasteful uses are not
beneficial, definitions of “waste” are generally quite lenient and laws prohibiting waste
are rarely enforced. The benchmark -- historic, conventional uses and technologies –
forges many wasteful uses.

Like riparianism, western water rights are appurtenant to the land on which the
water is used, but unlike riparianism the water need not be used on the riparian tract.
Instead, it can be applied for beneficial use anywhere, regardless of whether the use is
within the watershed. As a result, water rights are transferable, but only as an
appurtenance with a conveyance of the land by deed, lease, mortgage or inheritance.
Changes in places or types of use are tightly controlled by state statutes and common law,
however, to ensure that no harm will come to other appropriators as a result of the
change. This means that changes and transfers have been the exception rather than the
norm. In other words, even in western jurisdictions, water rights are not viewed as an
ordinary commodity, even though the ability to transfer senior priorities to other uses and
locations to promote more efficient or more socially valuable uses has become
increasingly desirable.

91 John C. Peck, Title and Related Considerations in Conveying Kansas Water Rights, 66-
92 Surface Water Code of 1917--Basic characteristics and elements of an appropriative
right, 1C Wash. Prac. § 91.8 (4th ed.).
93 Neuman, supra note , at 920.
94 Id. at 922, 958-961, 975; Freyfogle, Common Wealth, supra note , at 28.
95 Neuman, supra note , at 933-946.
The situation involving water is very unusual, and it applies to virtually nothing else. . . . The only other common example where things are treated like water—that is, as community resources and not as ordinary salable commodities—arises with cultural properties, antiquities for example, where the nation of origin often asserts a national claim on the property in order to prevent exports.96

Water rights and water transfers may be further restricted by the terms of a delivery contract with a water supplier, such as an irrigation district or the U.S. Bureau of Reclamation (BOR). BOR contracts typically excuse the U.S. for delivery shortages in case of drought, and they often include provisions that preserve regulatory authority to limit deliveries to fulfill environmental or other needs.97

In addition, external forces, both physical and legal, operate on the appropriative system. Water rights are limited by uncertainties imposed by hydrologic variability, such as drought, flooding, and the extraction of hydrologically connected groundwater. They are also limited by competing legal demands from forces outside of the appropriative system, particularly requirements for fulfilling interstate compacts as well as streamflow protections imposed by federal treaties and federal and state environmental laws.

What happens when external constraints result in restrictions or curtailment of water supply? That depends in large part on whether a water right is property for constitutional law purposes or whether it is a more limited interest of some sort.

III. A TAXONOMY OF PROPERTY: LOCKEAN BUNDLES, HOBBESIAN STICKS AND STICKY WEBS

American academic commentary on the defining characteristics of property is “surprisingly thin,” given the importance attached to characterization as property in the law.98 Those who have dug deep into the nature and content of property tend to look at

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97 See Klamath Irrigation Dist. v. U.S., 67 Fed. Cl. 504, 523, 535-537 (2005) (remarking that a reduction in water deliveries to protect endangered species were unlikely to breach BOR contracts either because the contracts contain a water shortage clause authorizing reduced deliveries or because the sovereign acts doctrine makes government contracts subject to subsequent legislation of general applicability); 2007 WL 853018, No. 01-591L (Fed.Cl. Mar 16, 2007) (dismissing contract claims against BOR).

98 Merrill, supra, at 887-891, 970-81.
either the objectives and effect of property law or the standard incidents of property in search of a definition. Few have questioned the conventional “bundle of rights” formulation.

Property law serves several important functions. First, it provides a line of demarcation between the state’s sovereign power and individual rights by maximizing security through wealth and by promoting individual expression and political freedom. Recognition of property rights also provides a means of allowing persons to relate with each other in the marketplace. Property law can promote self-actualization through things like one’s home, often referred to as one’s castle, no matter how humble it may be, and items inherited from one’s parents or other loved ones, cherished pieces of art, wedding rings, and even automobiles. Property rights are taken much more seriously than broad but amorphous rights to liberty in American culture.

At the societal level, the rise of capitalism through privatization has served as a corollary to democracy in many contemporary societies worldwide, at least since the fall of the Berlin Wall. Property law promotes the social and economic values fostered by ownership in things of value. It helps create and safeguard stable relationships between persons and things, allowing both property owners and the broader community to extract the greatest value from the thing.

Shortly after the turn of the twentieth century, Wesley Hohfeld insisted that property rights are not rights to things at all, but instead are a multitude of personal rights and relationships. Hohfeld’s effort to reduce in rem rights to clusters of in personam

100 Schroeder, supra note , at 303-304.
103 Bell & Parchomovsky, supra note .
104 Wesley Newcomb Hohfeld, Some Fundamental Legal Conceptions As Applied to Judicial Reasoning, 23 Yale L.J. 16 (1913); Wesley Newcomb Hohfeld, Fundamental Legal Conceptions as Applied in Judicial Reasoning, 26 Yale L.J. 710 (1917). Hohfeld argued that land was no longer the primary basis of wealth, having been supplanted by intangible business interests. This meant that “the number of persons affected by or asserting rights in a particular property interest increased, leading courts to replace Blackstone's absolutist conception of
rights provided the foundation for the “bundle of rights” metaphor, which gained popularity among legal realists in the 1920s and 1930s and gathered even more steam with the law and economics movement, beginning in 1960.\textsuperscript{105} Today, the predominance of the relational paradigm in American law “is undeniable.”\textsuperscript{106} But it leaves us with no commonly accepted, concrete definition of property, leading some commentators to lament the death of property as a principled legal concept.\textsuperscript{107}

\textit{A. It Don’t Mean a Thing if it Ain’t Got that Thing}\textsuperscript{108}

The U.S. Constitution lacks a definition of property, even though it explicitly protects property from governmental invasion in several ways.\textsuperscript{109} Property interests, then, are created and defined by norms and rules flowing from an independent source such as state law.\textsuperscript{110}

In contemporary jurisprudence, reflected in the Restatement (First) of the Law of Property, the term “property” is used to describe “legal relations between persons with respect to a thing.”\textsuperscript{111} Of course, not all economic relationships entail property rights, and therein, as they say, lies the rub. In rather circular fashion, the U.S. Supreme Court ownership with one that emphasized balance among the competing interests.” Kenneth J. Vandevelde, The New Property of the Nineteenth Century: The Development of the Modern Concept of Property, 29 Buff. L. Rev. 325, 361 (1980).

\textsuperscript{105} Merrill & Smith, \textit{supra} note , at 365. \textit{See} Morton J. Horwitz, The Transformation of American Law 1870-1960, at 9-36, 151-56 (1992); Vandevelde, \textit{supra} note , at 361 (“Hohfeld both demonstrated that property does not imply any absolute or fixed set of rights in the owner and provided a vocabulary for describing the limited nature of the owner’s property”).

\textsuperscript{106} J. E. Penner, The "Bundle of Rights" Picture of Property, 43 UCLA L. Rev. 711, 713 (1996).

\textsuperscript{107} \textit{See} Schroeder, \textit{supra} note , at 240 (“Property was dead . . . [t]he coroner, Wesley Newcomb Hohfeld, revealed that the unity, tangibility, and objectivity of property perceived by our ancestors was a phantom”); Duncan, \textit{supra} note , at 14 (in conceiving of property as a "bundle of legal relations," Hohfeld contributed to the subversion of property rights). \textit{Cf.} Merrill & Smith, \textit{supra} note , at 357 (“Property has fallen out of fashion.”).

\textsuperscript{108} Apologies to the memory of Duke Ellington for spinning his song to suit our purposes.


\textsuperscript{110} Cleveland Board of Education v. Loudermill, 470 U.S. 532, 538 (quoting Board of Regents v. Roth, 408 U.S. 564 (1972)). \textit{See} Lucas v. South Carolina Coastal Council, 505 U.S. 1003 (1992) (referring to the limits imposed by the controlling state law in considering the property right involved in taking claims).

\textsuperscript{111} Restatement (First) of the Law of Property, Introductory Note (1936). \textit{See} Duncan, \textit{supra} note , at 775 n.14 (describing this commonly accepted definition as derivative of Wesley Hohfeld’s work in the late 1800s).
has noted that “economic uses are rights only when they are legally protected interests.”\textsuperscript{112} Whether such uses are legally protected interests depend “on the substance of the enjoyment thereof for which [the claimant] claims legal protection; [and] on the legal relations of the adversary claimed to be under a duty to observe or compensate his interests...”\textsuperscript{113} This description is frustratingly vague and not particularly helpful in attempting to discern a rule of general applicability.

In \textit{Klamath River Basin v. U.S.}, the U.S. Court of Federal Claims framed its struggle to define property rights in water as follows:

What is property? The derivation of the word is simple enough, arising from the Latin \textit{proprietas} or "ownership," in turn stemming from \textit{proprius}, meaning "own" or "proper." But, this etymology reveals little. Philosophers such as Aristotle \ldots and Locke each, in turn, have debated the meaning of this term, as later did legal luminaries such as Blackstone, Madison and Holmes, and even economists such as Coase.\textsuperscript{114}

Among the “luminaries” cited by the \textit{Klamath} court, lawyers and law students are undoubtedly most familiar with Sir William Blackstone. The American view of private property in land has been indelibly shaped by Blackstone, who described it as “that sole and despotic dominion ... over the external things of the world, in total exclusion of the right of any other ...”\textsuperscript{115} Ironically, it is highly unlikely that landowners enjoyed unfettered rights to real property when Blackstone penned this phrase, and even Blackstone himself expressed misgivings about the notion of exclusive dominion.\textsuperscript{116} Yet the concept seems to have taken on mythical proportions among property rights proponents and still exerts influence in the law today.\textsuperscript{117} Although the importance of

\begin{itemize}
\item \textsuperscript{112} U.S. v. Willow River Power, 324 U.S. 499, 503 (1945).
\item \textsuperscript{113} Id. The Court held that the federal navigational servitude precluded a landowner’s claim for loss of property on a navigable river.
\item \textsuperscript{114} Klamath Irrigation Dist. v. U.S., 67 Fed.Cl. 504 (2005); see Gray, supra note , at 1.
\item \textsuperscript{115} Sandra Zellmer and Scott Johnson, \textit{Biodiversity In and Around McElligot's Pool}, 38 \textit{Id. L.REV.} 473, 490 (2002), citing 2 WILLIAM BLACKSTONE, COMMENTARIES (Edward Christian ed., A Strahan 1823) (1800).
\item \textsuperscript{116} Duncan, supra note , at 747, citing Carol M. Rose, Canons of Property Talk, or, Blackstone's Anxiety, 108 Yale L.J. 601 (1998).
\item \textsuperscript{117} See Eric T. Freyfogle, The Owning and Taking of Sensitive Lands, 43 UCLA L. REV. 77, 99 (1995).
\end{itemize}
exclusivity in the possession and use of property can hardly be denied, it is not altogether clear why this is so.

One explanation might be found in natural law. Aristotle viewed the right to property as “inherent in the moral order.” He championed the primacy of private property as an expression of self-love, encouraging citizens to attend to their own affairs rather than meddling in the affairs of others. Aristotle saw the right to exclude as a critical aspect of property rights “because it allowed owners to display virtue by waiving this right and sharing the benefits of property ownership with others.” Similarly, the philosopher John Locke viewed the institution of private property as predating society and thus a priori. According to Locke, once individuals invest their labor to enhance and safeguard their interests, the state is forbidden from interfering with those rights because they become property, self-evidently, as a matter of natural law.

Natural law, however, fails to provide either a workable definition of property or a clear delineation of inalienable core property rights; there is no “unchangeable code of conduct” immune from regulatory influence. Even Blackstone, who asserted that property is a right that “every man is entitled to enjoy, whether out of society or in it,” characterized laws relating to property not as absolute rights but as qualified rights. Enter Jeremy Bentham, who viewed property as a creature of law rather than some natural force: without law, there is no property. “Right . . . is the child of law; from real laws come real rights; from imaginary laws, from laws of nature, fancied and

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120 Duncan, supra note , at 786. See Richard Epstein, Takings: Private Property and the Power of Eminent Domain 95, 265-66 (1985) (invoking Locke to support arguments that the state can only regulate private property if it pays just compensation unless the regulation in question restrains nuisance-like conduct or provides reciprocal advantages).
121 Id.
invented by poets, rhetoricians, and dealers in moral and intellectual poisons, come imaginary rights, a bastard brood of monsters. . .”¹²⁵

Bentham defined property “as a distinctive right in a thing good against the world that promotes security of expectations about the use and enjoyment of particular resources.”¹²⁶ His positive law approach continues to enjoy wide acceptance among legal scholars and jurists.¹²⁷ Like Bentham, the Supreme Court has repeatedly put the kibosh on natural law as an underpinning of property rights.¹²⁸ Bentham adherents, however, often neglect his caveat that property rights relate to particular things.

The positivist approach is reflected to some extent in the law and economics view of property rooted in Ronald Coase's article, The Problem of Social Cost.¹²⁹ Coase’s view of property as having no other function than as a baseline for contracting or for allocating rights to use resources “gave rise to a conception of property as a cluster of in personam rights and hastened the demise of the in rem conception of property.”¹³⁰

If it is true that property law is just a loose collection of highly malleable sticks in a bundle of rights, or a mere background condition that facilitates exchange, then property can be defined as whatever a government deems worthy of protection.¹³¹ This view inevitably leads to the “positivist trap” – quixotic, ad hoc decisionmaking resulting

¹²⁶ Merrill & Smith, supra note , at 366.
¹²⁷ Duncan, supra note , at 786 n.42.
¹²⁸ Board of Regents v. Roth, 408 U.S. 564 (1972); Demorest v. City Bank Farmers Trust Co., 321 U.S. 36 (1944); U.S. v. Cress, 243 U.S. 316 (1917). See Merrill, supra note , at 943 (“it would be extremely difficult for the Court at this point in time suddenly to ‘discover’ a set of [natural] property rights that originates directly in the Constitution and hence is immune from legislative modification”).
¹³⁰ Merrill & Smith, supra note , at 360.
¹³¹ Bell & Parchomovsky, supra note ; Merrill, supra note , at 949-950.
in too much or too little property relative to normative expectations. “Faced with outcomes that deviate from social expectations, or that seem to threaten other values near and dear to the judicial heart, . . . [the Supreme Court’s] response has been arbitrarily to embrace some provisions of nonconstitutional law while ignoring others, all the while covering its tracks with circular arguments, ipse dixits, and smoke and mirrors.”

What is needed, then, is a tool that enables courts to craft principled, equitable parameters on the rights in things protected as property. Analytical coherence can be brought to the notion of property first by identifying the in rem nature of property rights as a fundamental aspect of the law. Although those who believe that property is a right to a specified thing may be accused of “a childlike lack of sophistication,” Professors Thomas Merrill and Henry Smith have made a solid case that property rights are in fact and indeed should be different from in personam rights.

Because core property rights attach to persons only through the intermediary of some thing, they have an impersonality and generality that is absent from rights and privileges that attach to persons directly. When we encounter a thing that is marked in the conventional manner as being owned, we know that we are subject to certain negative duties of abstention with respect to that thing—not to enter upon it, not to use it, not to take it, etc. And we know all this without having any idea who the owner of the thing actually is. In effect, these universal duties are broadcast to the world from the thing itself.

Basically, Hohfeld and other legal realists “miss[] the point that property is a relationship between subjects that is mediated through an object.” The law of property governs relations between individual owners and others to a thing in order to determine the uses to which a thing may, or may not, be put and to delineate spheres of power, private and public. Property law should only apply to those things for which in rem

132 Id. at 953.
133 Merrill, supra note , at 950-951.
134 Merrill & Smith, supra note , at 358, citing Bruce A. Ackerman, Private Property and the Constitution 26-31, 97-103 (1977).
135 Id. at 360.
136 Id. at 359.
137 Schroeder, supra note , at 292.
138 Penner, supra note , at 799, 801.
ownership is necessary to realize the full value of the thing vis a vis the world.\textsuperscript{139} In systems based on English law, property rights historically were regarded as \textit{in rem} rights that attach to persons insofar as they have a relationship to a thing. Such rights confer on the person, known as the owner, the right to exclude a large and indefinite class of other persons from the thing.\textsuperscript{140} In contrast, property law does nothing special to protect \textit{in personam} interests, such as contracts and many types of regulatory permits; those interests are best suited for resolution through contract, tort, or public law mechanisms.\textsuperscript{141}

Just because the bundle of rights relational paradigm has become orthodoxy in American legal thought does not mean it is without fault.\textsuperscript{142} Property is not just “a random or arbitrary collection of disparate rights.”\textsuperscript{143} Even Blackstone was emphatic that property related to external things apart from one’s self, be they corporeal or incorporeal.\textsuperscript{144} Absent a focus on the nature of the thing in question and people’s relationship to that thing, free-wheeling formulations of various sticks within bundles of rights can be readily applied to serve political ends that are neither cohesive nor consistent. When property is deprived of substantive meaning grounded in the relationship to some thing, individual stewardship and sustainable management may be stymied, while undue regulatory intervention and even redistribution may be facilitated.\textsuperscript{145} “If property has no fixed core of meaning, but is just a variable collection of interests established by social convention, then there is no good reason why the state should not freely expand or, better yet, contract the list of interests in the name of the general welfare.”\textsuperscript{146} Since the early days of the Rehnquist Court, property rights have been strengthened rather than diminished under the bundle of rights rubric, but the

\begin{itemize}
\item \textsuperscript{139} Bell and Parchomovsky, supra note , at 580-581.
\item \textsuperscript{140} Merrill & Smith, supra note , at 360.
\item \textsuperscript{142} Merrill & Smith, supra note , at 365.
\item \textsuperscript{143} Jeanne L. Shroeder, Never Jam To-day: On the Impossibility of Takings Jurisprudence, 84 Geo. L.J. 1531, 1554 (1996).
\item \textsuperscript{144} Schroeder, supra note , at 280, citing 2 Blackstone at 16 (“The objects of dominion or property are things, as contradistinguished from persons”).
\item \textsuperscript{145} Merrill & Smith, supra note , at 365; Thomas C. Grey, The Disintegration of Property, in NOMOS XXII: Property 69 (J. Roland Pennock & John W. Chapman eds., 1980).
\item \textsuperscript{146} Merrill & Smith, supra note , at 365.
\end{itemize}
prevailing political winds could easily turn with the appointment of a different breed of judge.  

Considering whether an interest in a thing enjoys the standard incidents of ownership is one way to break down the concept of property, but Honore's list of property incidents only make sense as criteria for identifying property if it is clear that they refer to the types of things that are appropriate objects of property law. The standard incidents of ownership are the rights to exclusive possession and use and transferability. If exclusivity is not present, is the relationship something other than property? If one or more of the other incidents is lacking or somehow diminished, are we dealing with something other than property, or perhaps some sort of “quasi-property”?  

Take transferability, for example. Just because a thing can be traded for value does not make it property. J.E. Penner discusses body parts to illustrate this point. 

[O]ur body parts are clearly material objects in the world, and so like other chattels are obvious candidates for criterial objects of property. . . . [But] [f]or a thing to be held as property, we must not conceive of it as an aspect of ourselves or our ongoing personality-rich relationships to others. The key is not alienability . . . for clearly we can deal with our body parts, our friendships, our ability to work, and our civil rights in ways which benefit others; such dealings do not constitute the transfer of property. . . . It is the role of "property" as a conceptual device to distinguish personality-rich legal relations from those which are not.\footnote{Id. at 365. See, e.g., Dolan v. City of Tigard, 512 U.S. 374, 393 (1994) (finding a taking where the state exacted a public right-of-way in exchange for a permit); Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1027 (1992) (finding a taking where the potential for development was removed from the landowner’s bundle of rights). But see Andrus v. Allard, 444 U.S. 51, 66 (1979) (impairment of "one 'strand' in the bundle of property rights is not a taking because the aggregate must be viewed in its entirety").}

\footnote{Penner, supra note , at 799, 801.}

\footnote{Honore, supra note , at 107, 112-24.}


\footnote{Id. at 805-807, 817. See Arnold, supra note , at 292 (“American law recognizes property interests in business goodwill, but not friendship; in love songs, but not love; in celebrity identity, but not personality; and in expressions of ideas, but not ideas themselves. Thus, defining property rights, even in intangibles, requires attention to the interplay between the human relationships involved and the object of those relationships.”).}
Is it also true, then, that prohibitions or restrictions on transferability strip a thing of its potential as property? Patterning definitions are necessary to add more clarity and precision in identifying personality-rich versus commodity-rich things and relationships.

**B. Patterning Definitions**

Professor Merrill strikes a balance between coherence and consistency, and flexibility and rigidity, in his patterning definitions for constitutional property.\(^{152}\) He crafts a narrow definition for takings claims, with broader definitions for due process claims. Merrill’s approach demonstrates that context is crucial in identifying rights to property.

**1. Takings Property**

All of Merrill’s patterning definitions require a right to exclude, but for takings claims there must also be an irrevocable right to discrete, marketable assets.\(^{153}\) This dichotomy is justified for several reasons. First, the distinction between takings property and due process property reflects the textual differences of the clauses. Unlike the due process clauses, the takings clause of the Fifth Amendment applies only to “private property.”\(^ {154}\) Also, it refers specifically to things that are “taken” as opposed to merely “deprived.”

To *take* property connotes to seize, expropriate, or confiscate some thing, that is, a discrete asset. To *deprive* someone of property has a broader range of meanings; especially when coupled with the ideas of depriving someone of life or liberty, to deprive someone of property is either to dispossess them or to remove something of material value from them. Thus, the contrast between "take" and "deprive" may support the conclusion that the Due Process Clause is concerned with property in a broader sense.\(^ {155}\)

The divergent historical underpinnings of the takings and due process clauses provide further justification. The takings clause is firmly rooted in a concern for condemnation of conventional interests in land. It was motivated in part by the practice of military units to requisition supplies without compensation during the Revolutionary

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\(^{152}\) Merrill, *supra* note \(^ {953}\), at 953.

\(^{153}\) *Id.* at 969.

\(^{154}\) *Compare* U.S. Const. Amd. V *with* U.S. Const. Amd. XIV.

\(^{155}\) Merrill, *supra* note \(^ {983-984}\) (emphasis added).
War. Anxieties about expropriations of colonial property belonging to British loyalists and nullification of British land grants also played some role. All of the paradigmatic takings cases involved discrete assets.\textsuperscript{156} In contrast, the due process clause was intended to safeguard life, liberty, and property against the usual types of state-sanctioned punishment: executions, imprisonment, and fines and forfeitures.\textsuperscript{157} Its scope was meant to be far broader than specific, discrete assets.

Adopting a narrow definition of property for Fifth Amendment purposes makes good sense from a functional perspective as well, because the invocation of the takings clause has by far the most significant consequences.\textsuperscript{158}

[T]he Takings Clause, with its per se rules, its lack of a tradition of deference to local authorities and agencies, and its waiver of state sovereign immunity against claims for money damages, is strong medicine, best channeled into fairly narrow paths of government liability. . . It is often enforced through categorical or per se rules--most prominently the rules making any permanent physical invasion a taking and requiring the payment of compensation for any regulation that deprives an owner of all economically viable use of property. Even the orthodox "ad hoc" balancing test for determining when property is taken is applied by the Supreme Court with little or no deference to the decisions of local officials or regulators.\textsuperscript{159}

The relatively lenient consequences associated with violations of due process, such as remanding a case for pre-deprivation hearings, justifies broader coverage, as the costs of judicial review are likely to be lower. Merrill’s patterning definitions closely track realistic expectations about property by identifying a set of interests that are regarded most frequently as being property in a particular context or circumstance.\textsuperscript{160}

Merrill’s patterning definition for takings property specifies three elements. It requires that non-constitutional sources of law confer (1) an irrevocable right (2) to exclude others (3) from discrete, transferable assets.\textsuperscript{161} Merrill’s test is nested, meaning that if all three elements are present, then the interest in question is a property right not

\textsuperscript{156} Id. at 984.
\textsuperscript{157} Id. at 984.
\textsuperscript{158} Id. at 957, 980.
\textsuperscript{159} Id. at 985, 981.
\textsuperscript{160} Id. at 979.
\textsuperscript{161} Id. at 969.
only for takings analysis but also for due process and perhaps other purposes. If one or more elements are lacking, the interest might still be considered property for purposes of due process or other types of claims, but not for takings purposes.

Each of Merrill’s element warrants further discussion. First, the universal feature, exclusivity, is undoubtedly a key feature of a common law property right; some have argued that it is in fact the key feature of property.162 “Give someone that right to exclude others from a valued resource . . . and you give them property. Deny someone the exclusion right and they do not have property.”163

Exclusivity is generally understood to mean the power to possess an item, without interference from others, and to direct whether and how a resource will be used and who may use it. The conclusion that exclusivity is an invariant characteristic of private property has been embraced independently over and over again.164 This consensus is evidenced by the types of interests commonly regarded as property.165

Servitudes, including easements, profits, and real covenants, all include the right to exclude others from interfering with a particular use of land. Intellectual property rights are defined by the right to exclude others from the use of certain intangible ideas and images. Mortgages and liens entail the right to exclude others from impairing a security interest in resources. Even public property can be intelligibly described as property because . . . the government and its agents have the right to exclude others from these resources.166

Viewing exclusivity as the hallmark of property makes sense for at least three reasons. Exclusivity makes it relatively easy to identify with whom one must deal to

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165 Merrill, supra note , at 972.

166 Merrill, supra note , at 972, 976.
accomplish the exchange of a thing, which lowers transaction costs and allows resources to move to uses with higher social and economic value. The right to exclusive possession, even in non-use, also protects subjective values associated with things such as homes and cherished personal property, which fosters the development of personality, self-actualization and, in turn, community stability. Recognizing exclusive possession and use rights also diffuses societal power and helps safeguard individual liberty.\textsuperscript{167}

There may be degrees of exclusivity that warrant treatment as property in some circumstances but not in others. A license, for example, is merely a "permission slip" from someone who holds the right to exclude but agrees to allow another to gain access.\textsuperscript{168} Licenses have been deemed property for due process purposes, albeit not for takings purposes.

Elements specific to the patterning definition for a takings claim are irrevocability and the discrete asset requirement. Irrevocability does not mean that the interest never expires. Instead, there must be a strong degree of security of expectation.

For takings purposes, . . . property must be "vested" in roughly the same sense that a common-law property right is vested and a mere license is not. Basically, takings property must be irrevocable for a predetermined period of time, and there must be no understanding, explicit or implicit, that the legislature has reserved the right to terminate the interest before this period of time elapses. . . .\textsuperscript{169}

Merrill concedes that efforts to distinguish between vested, irrevocable rights and mere privileges or licenses are “prone to circularity.”\textsuperscript{170} For purposes of the patterning definition, interests in property must have a “strong degree of security of expectation,” that is, they must entail a high level of security against legal change, durable and irrevocable for a set time period\textsuperscript{171} Irrevocability also implies rights to devise or convey the thing to others. Federally issued grazing permits, for example, are mere licenses that cannot be freely conveyed, and that are revocable during the permit period for

\textsuperscript{167} Merrill, supra note , at 972-973. See Cohen, supra note , at 374 (suggesting that the right to exclude the world from the thing we call property captures the central features of common-law property that make it such a valuable social institution).

\textsuperscript{168} Merrill, supra note , at 980.

\textsuperscript{169} Id. at 978.

\textsuperscript{170} Id. at 962.

\textsuperscript{171} Id. at 969.
noncompliance and for various other reasons; as such, courts agree that there is no takings property in a grazing permit.\textsuperscript{172}

Finally, the takings claimant must show that a discrete asset is at stake. This requirement hones in on the thing governed by the owner’s right to exclude. It must be a valuable resource identifiable as something that is owned, as opposed to being inherently personal, inherently public, or just plain old “stuff.”\textsuperscript{173} It entails a type of tangible or intangible thing held by the claimant in a legally recognized property form such as a lease, an easement, a trademark, or a bank account. In addition, it must be something that is “created, exchanged or enforced by economic actors with enough frequency to be recognized as a distinct asset in the relevant community.”\textsuperscript{174} Thus, the essential incident of transferability is also reflected in this component of Merrill’s patterning definition.\textsuperscript{175}

2. \textit{Due Process Property}

Procedural due process requires that, prior to an action affecting an interest in property, notice must be given which is “reasonably calculated, under all the circumstances, to apprise interested parties of the pendency of the action and afford them an opportunity to present their objections.”\textsuperscript{176} Courts have interpreted property extraordinarily broadly, stretching the concept of property well beyond ownership of land and chattels to encompass public employment,\textsuperscript{177} education,\textsuperscript{178} and professional licenses.\textsuperscript{179} For due process purposes, property appears to encompass just about every kind of legally sanctioned entitlement.\textsuperscript{180}

\textsuperscript{172} U.S. v. Fuller, 409 U.S. 488 (1973); Hage v. U.S., 35 Fed. Cl. 147, 166-167 (1996). Grazing permits lack other key incidents of property as well, in that they deny permittees a right to exclude others from the federal grazing allotment. \textit{Hage}, 35 Fed. Cl. at 169.

\textsuperscript{173} Merrill, \textit{supra note} , at 973.

\textsuperscript{174} \textit{id.} at 972.

\textsuperscript{175} See \textit{id.} at 975-977 (“In most cases involving takings property, it will be obvious that there is both a readily identifiable discrete resource (the land, the chattel, the bank account) and a right to exclude with respect to that resource (conferred by ownership of a fee simple, a lease or an easement).”).


\textsuperscript{177} Perry v. Sindermann, 408 U.S. 593, 602-03 (1972); Slochower v. Board of Education, 350 U.S. 551 (1956).


\textsuperscript{180} Bell & Parchomosky, \textit{supra note} , at 583 n.273.
In *Goldberg v. Kelly*, the Supreme Court found that due process requires states to follow extensive hearing procedures before terminating welfare benefits.\(^{181}\) It retrenched somewhat in *Roth*, where it took pains to explain that due process is required only for those entitlements with discernible boundaries.\(^{182}\) There, it held that an assistant professor without tenure did *not* have a property right sufficient to require university authorities to give him a hearing when they declined to renew his contract of employment, where the contract specified only a one-year term and lacked any provision for renewal.\(^{183}\)

The Fourteenth Amendment's procedural protection of property is a safeguard of the security of interests that a person has already acquired in specific benefits. . . To have a property interest in a benefit, a person clearly must have more than an abstract need or desire for it. He must have more than a unilateral expectation of it. He must, instead, have a legitimate claim of entitlement to it.\(^{184}\)

According to the Court, a “legitimate claim of entitlement” involves only those benefits or things that people rely on in their daily lives.\(^{185}\)

Subsequently, the Court clarified its due process test by emphasizing the element of exclusivity. In *College Savings Bank*, it held that a statutory cause of action for false advertising does not implicate due process property because the purported right, which rested on the ability to compete for future customers, did not encompass a right to exclude others.\(^{186}\) In contrast, business assets, including goodwill, are considered property for due process purposes because one has a right to exclude others from business goodwill by calling upon state authorities to protect the proprietor from extortion.\(^{187}\)

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\(^{182}\) Merrill, *supra* note , at , citing Board of Regents of State Colleges v. Roth, 408 U.S. 564, 572 (1972).

\(^{183}\) 408 U.S. at 578.

\(^{184}\) *Id.* at 577-578.

\(^{185}\) *Id.* at 578.

\(^{186}\) 527 U.S. at 673-74.

\(^{187}\) *Id.* at 674. *College Savings Bank* involved a substantive due process claim. Merrill’s patterning definition for substantive due process encompasses the broadest range of interests, *i.e.*, “everything relevant to calculating a person's material wealth or net worth.” Merrill, *supra* note , at 983. This protects against disproportionate punitive damage awards and irrational or retroactive economic legislation. *Id.*
The patterning definition of property for procedural due process purposes requires that a claimant possess “an entitlement having a monetary value that can be terminated only upon a finding that some specific condition has been satisfied.”^{188} There must be a right to exclude others from something of value, but unlike property for takings purposes, the due process patterning definition does not require a discrete, marketable asset. This definition accords with Supreme Court precedent, and it is also consistent with state cases regarding water rights. In *Sheep Mountain Cattle Co. v. Department of Ecology*,^{189} the Washington Supreme Court construed a vested water right as property for purposes of the due process clause. The state violated due process by issuing a termination order without providing any notice or a hearing to a water rights holder who had failed to show continuous beneficial use of the water.^{190} Because the court set aside the termination order on due process grounds, it was unnecessary to consider whether a taking of private property had occurred.^{191} In previous cases, however, the Washington Supreme Court had concluded that no taking occurred when latent water rights reverted to the state by operation of state forfeiture laws.^{192} Other courts have agreed, either because “[n]o one has any property in the water itself, but a simple usufruct,”^{193} or because there is no vested right in non-use or waste.^{194}

^{188} *Id.* at 961 (procedural due process).
^{190} *Id.* at 57, citing RCW § 43.21B.120.
^{191} *Id.* at 57.
^{194} *Id.* See Texaco, Inc. v. Short, 454 U.S.
C. The Power of Metaphor: Trading the Bundle for a Web

For all its flaws, the bundle of rights metaphor has persisted since the early twentieth century and today it “unquestionably reigns supreme” as the symbol of property.  It is employed by countless property law professors to illustrate the nature of present and future interests in real property to first year students. With Merrill’s patterning definitions at hand, however, is there any need for metaphor? If the patterning definitions fully serve the needs of property law as a “distinct and vital legal institution of its own merits,” embodying specific rules and definitions “designed to create and protect the value inherent in stable ownership of assets,” arguably, a property metaphor serves no useful purpose. Merrill’s approach not only provides clear guideposts for defining property, it also demonstrates that whether an interest in a thing is considered property can vary depending on context, without defeating rule of law objectives. An appropriate metaphor can assist in evaluating the contextual backdrop of a property or property-like dispute. So long as we keep our eyes on the thing it elucidates, a metaphor that describes human relationships with property, assisted by Merrill’s patterning definitions, can be a powerful heuristic tool.

Legal realists express nothing but disdain for the use of metaphor as a crude layperson’s device rather than a sophisticated analytical tool. Justice Cardozo warned that “[m]etaphors in law are to be narrowly watched, for starting as devices to liberate thought, they end often by enslaving it.” Those who do find a place for metaphor relegate it to the lowly spot of a “temporary place-holder for more fully developed lines of argument.” Lon Fuller argued that analytical crutches like metaphors should be used cautiously with full knowledge of their incompleteness, like “servants to be discharged as soon as they have fulfilled their function.”

516 (1982) (finding that the Indiana Dormant Mineral Interests Act, which provided that a severed mineral interest that was not used for twenty years lapsed and reverted to the surface owner, was not a taking).

195 Id. at 774. For theories on the origins of the metaphor, see William M. Wiecek, The Lost World of Classical Legal Thought 186, n.81 (1998); Penner, supra note , at 712.

196 Bell & Parchomovsky, supra note .


199 LON L. FULLER, LEGAL FICTIONS 5, 121 (1967).
It is certainly true that, once established, metaphors become “tenacious carriers of legal meaning,” allowing advocates to use them to obfuscate meaning and to manipulate rather than enlighten thought. But there are signs that the legal scholars’ hostility to the use of metaphor is an expression of elitism and disdain for “lower” classes rather than a principled analytical critique. Jeremy Bentham, for example, described metaphor quite graphically, as a "pestilence . . . a syphilis, which . . . carries into every part of the system the principle of rottenness.”

Among psychologists, linguists, and anthropologists, the use of metaphor is commonly accepted as a basic building block of understanding and problem-solving. As such, metaphors can strengthen prevailing rules and classifications by infusing them with common experience, through visual and often emotive terms.

At a basic level, . . . metaphors allow human beings to understand one phenomenon in relationship to another and to illuminate some salient details while shading others. In doing so, they order our social world by weaving new events into stock scenes and everyday occurrences. . . .[They] trigger[] powerful, recurring frameworks of meaning and patterns of belief, and set[] in motion deeply rooted folk images, archetypes, and story lines.

Metaphor can serve as a powerful decisionmaking heuristic to ground-truth hypotheses about the application of existing rules to new or previously unexplored domains. As such, the use of metaphor in legal reasoning is more likely to stimulate

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202 1 JEREMY BENTHAM, WORKS at 235, V, at 92 (1843). Bentham specifically singled out Blackstone's use of metaphor for criticism. See Tsai, supra note , at 186 n.10.
203 Tsai, supra note , at 182, citing, inter alia, GERARD A. HAUSER, INTRODUCTION TO RHETORICAL THEORY 3 (1986); GEORGE LAKOFF, WOMEN, FIRE, AND DANGEROUS THINGS: WHAT CATEGORIES REVEAL ABOUT THE MIND 407, 415 (1987); GEORGE LAKOFF & MARK JOHNSON, METAPHORS WE LIVE BY 157  (2003).
204 Tsai, supra note , at 190.
205 Id. at 189.
206 Jonathan H. Blavin and I. Glenn Cohen, Gore, Gibson, and Goldsmith: The Evolution of Internet Metaphors in Law and Commentary, 16 Harv. J. L. & Tech. 265, 266 (2002). See id. (“Metaphors wield enormous power over thought and behavior. Some psychology and linguistic scholars have even asserted that all knowledge and understanding is metaphorical in nature.”).
rather than constrain deliberation. Just as importantly, metaphor nurtures a sense of community and promotes the rule of law “by linking lawyer to layman and ruling institution to citizen.”

Both Tony Arnold and Carol Rose have made compelling arguments that imagery and metaphor are important tools in property law.

A metaphor captures the imagination far more than a grand theory. With its power to energize the imagination, a new metaphor effectively challenges old ideas and stimulates new ones. Thus, the metaphor, even in its simplicity, is not intended to be a "scary simplifier" but instead a linguistic and visual tool to aid in thinking about the thingness of property.

Judges seem to find the use of metaphor irresistible, for good reason. Metaphor is a means of reaching the litigants, the advocates and the broader public. “Metaphor is at once the first step in a complicated dance over institutional prerogative and legal meaning, the symbolic union of communitas and the democratic spirit, and the embodiment of our innermost hopes and fears as members of the American polity.”

Strong arguments can be made, however, that the bundle of rights metaphor has outlived its usefulness. Not only does it fail to serve as a well-calibrated mechanism to describe property rights in land or chattels, it does even less to identify or describe interests in things that occupy the margins of property law, such as water rights. True, viewing property as a “bundle of rights” can be useful in conceptualizing the sum total of rights one can have with respect to a parcel of land. The symbol makes it easier to understand the concept of present and future estates, such as life estates, reversions, and executory interests, in relation to the bundle, that is, the fee simple absolute. But it

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208 Tsai, supra note , at 189.
211 Tsai, supra note , at 193.
212 Duncan, supra note , at 774.
obfuscates the identification and distinct attributes of the specific thing over which ownership interests are asserted, and makes us think only superficially about the various ways people relate to things, concentrating only on rights and not on responsibilities to other related interests and to the thing itself. It is misleading and potentially destructive to employ a metaphor that views property as a one-dimensional, lifeless bundle.

In spite of its shortcomings, it would take much to dislodge the bundle metaphor from Supreme Court jurisprudence, which consistently invokes it, particularly in takings cases. In *Lucas v. S.C. Coastal Council*, Justice Scalia drew upon the “bundle of rights” acquired when a landowner takes title in finding that a restriction on coastal development effectuated a taking. The Court engaged in its most creative use of the metaphor in *Palazzolo v. Rhode Island*, where it concluded that prospective legislation could not redefine the property rights of landowners so as to preclude a takings challenge because “[t]he State may not put so potent a Hobbesian stick into the Lockean bundle.”

The Takings Clause . . . in certain circumstances allows a landowner to assert that a particular exercise of the State's regulatory power is so unreasonable or onerous as to compel compensation. Just as a prospective enactment, such as a new zoning ordinance, can limit the value of land without effecting a taking because it can be understood as reasonable by all concerned, other enactments are unreasonable and do not become less so through passage of time or title. Were we to accept the State's rule, the post-enactment transfer of title would absolve the State of its obligation to defend any action restricting land use, no matter how extreme or unreasonable.

The *Palazzolo* Court ultimately concluded that a *Lucas*-type claim of “per se taking” for a deprivation of all economic use was precluded by the undisputed value of the remaining portion of the tract where construction was still allowed.

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215 *Id.* at 627.

216 533 U.S. at 627.

The only hope of displacing the bundle metaphor is to construct a compelling replacement with high symbolic appeal. Some have suggested reforming the bundle by inserting “green wood” into it or tying the bundle with the “cord of public interest.” Neither approach goes far enough. Another alternative is to consider property as a vertical tripod, resting on the three elemental legs of property ownership: exclusive possession, use, and conveyance (represented in the patterning definition as an irrevocable interest in exclusivity). If any of these are missing, the tripod cannot stand; it simply falls apart. For water, at least, at the top of the tripod, resting above the three legs, is the public’s interest in access to adequate water supplies and water-dependent resources (the public trust). Yet, like the bundle, the tripod metaphor lacks an essential component: the thing that is the subject of a property interest.

We agree with Tony Arnold that a web of interests is a more appropriate metaphor for property. The web emphasizes the interrelatedness of things and people, and unlike the bundle or the tripod, places the thing in question smack dab in the middle of the inquiry. Placing the thing at the center is not meant to indicate that it is necessarily the most important part of the web; instead, it shows that all interest-holders have the thing in common.

Its centrality is one of commonality and context, not hierarchy and preoccupation. Seeing property as a web of interests can and should mean seeing the political, social, economic, and ethical aspects of property law, and the new metaphor should not be used to hide these aspects behind attention to an "objective" thing of ownership. . . . [A]n understanding of property as a web of interests embraces the complexity, ambiguity, and constantly evolving nature of property law.

The web is more effective for infusing property rights with environmental and communal considerations while reflecting the complex interrelationships between people, society, and things than is a collection of rights or sticks bound together in a lifeless, wooden

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constitute a Lucas–type per se taking, and concluding that, when the government enacts a temporary regulation denying property owner all viable economic use of property, the Penn Central factors should be applied rather than a categorical rule).

219 Duncan, supra note , at 804.
220 Arnold, supra note , at 340-342.
221 Arnold, supra note , at 340, 342.
bundle. Using a web as our metaphor for property has the added virtue of being a design innovation “inspired by nature.”

The web’s ecological dimensions make it an ideal metaphor for property. A spider web is a natural marvel. It consists of a firm webframe around a central hub of silk. Webs have remarkable properties, many of which are quite similar to humans’ expectations about property. These properties make spider silk the “Holy Grail” of biomaterials. Webs do not dry out or decay, and, like property, if sheltered they can out-last their creators. Some of the threads within the web are silky smooth while others are sticky, just as some aspects of property are crystal clear while others are muddy or viscous. Despite being extremely fine, filaments in a spider web are three times stronger than steel of the same diameter, but at the same time, elastic enough to stretch up to 40 percent of their length before breaking. The intangible but powerful emotional bonds people create with certain forms of property are similar.

Like human relationships with property, webs exhibit great variability, both in thickness and composition, depending on different types of spiders and what the spider is doing at the time of creation. Like property, spiders use their webs for a variety of purposes -- to make homes, to protect their offspring, to capture and consume other creatures and to travel. Humans have used spider silk for a variety of purposes, too. It was used by the ancient Greeks to dress wounds and, later, by indigenous people of the Pacific Rim and Asia for ornamentation, rain gear, and fishing nets. Before synthetic

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222 The use of nature as inspiration for design innovations is known as bionics or biomimicry. Kennedy, supra note . A well-known example of applied biomimicry is the Wright brothers’ use of bird wings in airplane design. Nature as a design principle is currently used to explore a variety of innovations, including the development of various biomaterials (some utilizing principles learned from spider silk) in robotics and even Nike shoes. Id.


224 Kennedy, supra note .


227 Amos, supra note .
fibers were invented, spider silk was indispensable for centering cross hairs in telescopes and gun sights and for measuring reticles in optical instruments.\textsuperscript{228} No two webs are exactly alike, but there are certain fundamental elements that must be present for their formation. They must have both a dragline, to transport the spider and tie the web to a stable structural base, and a webframe to support and give form to the filaments.\textsuperscript{229} Both of these components contain special protein-rich fibers. The amino acids in the web-protein have a specific sequence and content that makes the web-protein so strong.\textsuperscript{230} The individual strands within the web vary tremendously, but they, too, are composed of certain key ingredients.\textsuperscript{231} Compare interests in property, which must be composed of three key ingredients to be recognized as full property rights under the law (takings property): a durable, transferable interest in the exclusive possession and use of a discrete asset.

Like human cognition and decisionmaking, and like relationships to a thing subject to property law, webs are more than just a collection of orbital and linear strands; each is composed of multiple nodes, or points of interaction, and multiple feedback loops. Ecologically speaking, the nodes of a web serve as points of intersection or interaction, while the web connectors serve as pathways for positive or negative feedbacks.\textsuperscript{232} In cognitive psychology, nodes and feedback loops, or pathways, form the semantic networks so fundamental to drawing analogies between familiar experiences and newly


\textsuperscript{231} Osgood, \textit{supra} note . The main ingredients of silk fibers are proteins, and particular amino acids (cysteine and tyrosine, as well as glycine, alanine and proline) lend their specific and interacting properties to enable the silk fibroin protein to carry out its function perfectly. \textit{Id.; see Kennedy, \textit{supra} note .}

\textsuperscript{232} Email from Dr. Robert L. Sinsabaugh, Univ. of New Mexico Dept. of Biology (Feb. 9, 2007).
encountered things and experiences and drawing rational conclusions.233 For the property web, these nodes and feedback loops extend and provide meaning to, from, and between interested persons, the community, and the thing.

Scientists use the “web of life” as a metaphor for the interdependence of physical, psychological, and cultural phenomena.234 This concept has challenged conventional views of evolution and the organization of living systems. Edward O. Wilson, perhaps more than any other, sparked the public’s interest in biodiversity and the interconnectedness of life by emphasizing our “innate tendency to affiliate with, and draw deep satisfaction from, other organisms.”235

Using the web as a metaphor for property illustrates that land, natural resources, and people are part of an interdependent ecological system.236 Societal norms, such as the public trust doctrine, form the webframe, surrounding both the human relationships and the thing itself. The owner’s relationship with the thing forms one or more orbital strands, closest to the center of the web. The strongest strands are those that reflect reasonable expectations to exclusive possession and use and to retain, transfer, or otherwise dispose of the object. These strands, representing the incidents of property, radiate in spokes from the center to the webframe. Interests held by others, such as easements or future interests, comprise other orbital strands in the web. For land and natural resources, ecological relationships find a place in the strands of the web as well.

233 Mark H. Ashcraft, Cognition 261 (4th ed. 2006). See id. at 335 (describing the role of “scripts,” or “large-scale semantic and episodic knowledge structures that guide our interpretation and comprehension,” in memory, activation, insight, and generalized understanding).

234 Fritjof Capra, The Web of Life: A New Scientific Understanding of Living Systems (Paperback ed. 1997). See also E.O. Wilson, The Diversity of Life (2001) (emphasizing the need to familiarize ourselves with the complexity of the Earth’s organisms and ecosystems); E. O. Wilson, Consilience (2003) (bringing together various branches of knowledge to encourage scholars to bridge the gap between science and the arts by recognizing a common goal: to give us “a conviction . . . that the world is orderly and can be explained by a small number of natural laws”).


236 Arnold, supra note , at 319 (citation omitted).
What else can the web metaphor tell us about natural resources like water? Most importantly, it forces us to consider the nature of water itself, particularly the body of water involved in the property dispute. It helps discern whether the interest in this specific body of water is a full property interest for purposes of a takings claim, in the event of government curtailment, or some lesser interest. The metaphor also illustrates that public rights to navigation, fisheries, recreation, and water quality comprise one or more of the strands within the webframe. The water rights holder’s strongest strand, the dragline, is the exclusivity strand, which represents the very essence of property ownership under Merrill’s patterning definitions. If it is removed or compromised, the web itself collapses and there is no property.

IV. PROPERTY, QUASI-PROPERTY, OR SOMETHING ELSE ENTIRELY

All sorts of things, tangible and intangible, have proven difficult to classify as property or non-property. Humans and their body parts (including gametes and embryos) top the list, particularly with advancing technologies in genetic manipulation and cloning, but pets, art, virtual real estate, news, cultural objects, air, and, of course, water all pose challenges to the conventional concept of property. As new creations are invented and new situations encountered, this list will continue to grow. Finding a property right in “marginal” cases involving things such as body parts, culturally significant art, air, and water “raises profound questions about the role the category of property plays in our moral and legal discourse.”

While making no attempt to conduct a comprehensive survey of quasi-property cases, this Part takes a closer look at news, human bodies, art, and air in an effort to ground-truth the web metaphor and its patterning definitions, and to find helpful guideposts that may extend to water. This assessment yields few direct parallels, but it does demonstrate that the nature of the thing in question is essential to treatment as

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237 See id. at 318-319, 320 (“Property rules with respect to land and natural resources must reflect the interconnectedness and interdependence of the natural world, including all forms of life. . . . [P]roperty law must affirm and enforce . . . a relationship of temporary stewardship: a relationship of trust, commitment, and responsibility with an awareness that future generations will take our place. Humans are part of the ecological community, and therefore have duties to nature or duties to the land--a land ethic, as Aldo Leopold described it--that can and should be an integral part of property concepts.”).

238 Penner, supra note , at 721.
property. It also shows that courts have had no qualms treating unique or culturally sensitive things as property in some contexts but not others.

A. News

The news was at the center of the first dispute to compel an in-depth assessment of the nature of property by the U.S. Supreme Court. In *International News Service v. Associated Press*, the Court characterized news as “quasi property,” enforceable as property between competitors but not as between the news collector and the general public. The holding turned on whether the defendant had engaged in unfair competition, but the Court rationalized its decision to enjoin the competing press company in terms of property. In dicta, it stated that that “something as evanescent as news could not be property” in a court of common law, yet, in a case in equity, news “‘has all the attributes of property necessary for determining that a misappropriation of it by a competitor is unfair competition.”

Although we may and do assume that neither party has any remaining property interest as against the public in uncopyrighted news matter after the moment of its first publication, it by no means follows that there is no remaining property interest in it as between themselves. For, to both of them alike, news matter, however little susceptible of ownership or dominion in the absolute sense, is stock in trade, to be gathered at the cost of enterprise, organization, skill, labor, and money, and to be distributed and sold to those who will pay money for it, as for any other merchandise. . . . [W]e hardly can fail to recognize that for this purpose, and as between them, [the news] must be regarded as quasi property, irrespective of the rights of either as against the public.

J.E. Penner criticizes the case for perpetuating the notion that property “is no more than a particular legal device that protects the owner's relation to something of value by enforcing the exclusion of others, and as such may in principle be applied to anything

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239 248 U.S. 215 (1918). See Penner, *supra* note , at 716 n.22 (“To treat this case in terms of property . . . is to treat the property right, like a copyright, as the exclusive right to publish for value the news one has oneself gathered, in other words, as a market monopoly.”).

240 248 U.S. at 232, 234.


242 248 U.S. at 235-236 (emphasis added).
whatsoever.” By creating “a mystery substance, ‘quasi property,’” Penner argues that the case strips away one of property’s few generally acknowledged attributes, exclusivity “against all the world, not just against specified individuals.”

A look at the dispute through the lens of Merrill’s patterning definitions indicates that the International News opinion does not necessarily miss the mark after all. Neither competitor had an irrevocable right to exclusivity in a discrete asset – current events compiled in news articles -- for purposes of takings claims, but they each had some expectation in exclusive use as between competing news distributors. Their interests would likely rise to the level of due process property, just as they rose to the level of a common law claim against unfair competition or misappropriation.

B. Body Parts

Most if not all 50 state legislatures and many courts have recognized some limited form of rights, often characterized as quasi-property rights, in dead bodies and the organs and tissues of a decedent so that the decedent’s estate or next-of-kin may control burial rites, organ donation, or other lawful forms of disposition. Likewise, some courts recognize a legitimate claim of entitlement to possession of a decedent’s remains for burial, thereby affording the next-of-kin procedural due process protection. The quasi-property concept does not extend so far as to allow claims for conversion, however, when a body was mishandled or mistakenly cremated by the funeral home or where organs or tissues were used by researchers without consent. Courts have flatly rejected the

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243 Penner, supra note _, at 717-718.
244 Id. at 717-718.
245 See Donna M. Gitter, Ownership Of Human Tissue: A Proposal For Federal Recognition Of Human Research Participants' Property Rights In Their Biological Material, 61 Wash. & Lee L. Rev. 257, 276 n.80 (2004) (by adopting some form of the Uniform Anatomical Gift Act, all 50 states rely “upon a quasi-property rights theory in permitting a decedent to donate his body after death for the purposes of transplantation, therapy, research, or education”). For purposes of controlling lawful disposition, a few courts have applied the quasi-property label. See, e.g., Brotherton v. Cleveland, 923 F.2d 477, 482 (4th Cir. 1991).
246 Crocker v. Pleasant, 778 So.2d 978 (Fl. 2001).
“fictional theory” that exclusive or full property rights exist in bodies or body parts. Their reasoning is often grounded on the fact that bodies and body parts are not discrete, commercially transferable assets, although they do in fact have tremendous monetary value for biomedical research and organ transplants.

Reproductive material, such as gametes and embryos, have proven equally challenging, but courts have reached similar results. In Hecht v. Superior Court, a decedent’s girlfriend sued to recover vials of sperm deposited at a sperm bank. The decedent’s children sought to have the sperm destroyed, but the girlfriend wanted it distributed to her either as a gift from the decedent or as an asset of his estate. The trial court accepted the latter theory, and awarded her a percentage of the sperm. The California Court of Appeals agreed that the sperm was quasi-property for purposes of probate. Under the state probate code, the decedent retained decision-making authority and had a sufficient ownership interest in his sperm at his death to constitute property, which was defined as “anything that may be the subject of ownership. . . .” The court cautioned, however, that this interest was merely "decision making authority" and not “true” property.

A movement toward recognizing greater property rights for purposes of lawful disposition has gained momentum since Moore v. Regents of the Univ. of California. There, a patient asserted a property right in cells from his spleen in an action for conversion against researchers, biotech companies, and the University, which had established and patented a valuable cell line from his tissue. The court dismissed the claim, citing the common law principle that “[o]nly property can be converted.” It failed to explain what constitutes property, but simply concluded that a state statute

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248 Culpepper, 877 P.2d at 882. The court reasoned that the measure of damages for conversion depends on the market value of the converted good, which, in a corpse, is unascertainable. Id.

249 Id. See Remigius N. Nwabueze, Biotechnology and the New Property Regime in Human Bodies and Body Parts, 24 Lot. L.A. Int’l & Comp. L. 19, 53 (2002) (arguing that, due to advances in biomedical technology, “substantial legal protection, analogous to the protection given to property, is now desirable”).


251 Id.

252 Id. at 281.


254 Id. at 490.
governing the disposal of human tissues and infectious waste “eliminates so many of the rights ordinarily attached to property that one cannot simply assume that what is left amounts to 'property' or 'ownership' for purposes of conversion law.”255

Instrumentalist goals permeate the opinion.

Plaintiff has asked us to . . . regard the human vessel -- the single most venerated and protected subject in any civilized society -- as equal with the basest commercial commodity. . . . Does it uplift or degrade the "unique human persona" to treat human tissue as a fungible article of commerce? Would it advance or impede the human condition, spiritually or scientifically, by delivering the majestic force of the law behind plaintiff's claim?256

The dissenting opinion by Justice Mosk delved more deeply into the nature of property. It took the position that a legal limitation or prohibition may diminish the rights that otherwise attach to property but, like Merrill, Justice Mosk acknowledged that what remains might still be a legally protected property interest of some sort.257 “[P]roperty or title is a complex bundle of rights, duties, powers and immunities, [so] the pruning away of some or a great many of these elements does not entirely destroy the title.”258

C. Culturally Significant Artwork

According to the United Nations Educational, Scientific, and Cultural Organization (UNESCO), “cultural property is one of the basic elements of civilization.”259 Its protection and exchange "increases the knowledge of civilization, enriches the cultural life of all peoples and inspires mutual respect and appreciation among nations."260 Cultural property includes historic structures and artifacts, art and

255 Id. at 492, citing Cal. Health & Safety Code § 7054.4. The patient’s tort claims for breach of fiduciary duty and lack of informed consent were allowed to go forward.
256 Id. at 497-98 (Arabian, J., concurring). For in-depth critique of the opinion’s approach to property, see Penner, supra note 721, and Gitter, supra note 7, at 270-278. For an opinion accepting the approach, see Wash. Univ. v. Catalona, 437 F.Supp.2d 985, 997 (E.D. Mo. 2006) (agreeing that research participants “had parted with any semblance of ownership rights once their biological materials had been excised for medical research”).
257 793 P.2d at 509 (Mosk, J., dissenting).
258 Id.
260 Id. See UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects (1995) (noting "the fundamental importance of the protection of cultural heritage and cultural exchanges for promoting understanding between peoples, and the dissemination of culture for the
music, as well as natural landscapes and objects with spiritual or other intangible human associations. A determination of cultural significance is a controversial undertaking best left to anthropologists and community members themselves rather than to lawyers. The term "culture" is itself a deeply complex concept, often used in reference to a particular way of life by and through which a group of people brought together by common characteristics, such as ethnicity, religion, language, or history, express shared behaviors and values. For purposes of this article, we consider only those works of visual art for which some consensus can be reached with respect to their enduring public interest.

Although a Rembrandt painting, a Michelangelo sculpture, and a Diego Rivera mural can each be privately held, cultural norms in many nations of the world allocate some degree of access to the public, or at least prevent willful destruction of the artwork. In other words, public access or artistic rights are deemed as important as the rights of the private holder, in “seeming defiance of classical economic thinking and the common law doctrines so markedly mirroring that theory.”

Cultural norms discourage private owners from using their Rembrandt painting as a dart board or otherwise destroying it, and from exercising unfettered power of exclusion over it, because the activity comes at such a high cost to human history and cultural meaning. The Convention for the Protection of Cultural Property in the Event of Armed Conflict safeguards art and other forms of cultural property from willful

well-being of humanity and the progress of civilization."; J. H. Merryman, The Public Interest in Cultural Property, 77 Cal. L. Rev. 339, 348 (1989) ("Life is short, but art is long. The object that endures is humanity's mark on eternity.").


Rose, Comedy, supra note , at 781.

Id. at 716. Public access is not necessarily consistent with artistic rights, however, as it can result in destruction of art. Rose notes that, “In the absence of the socializing activities that take place on "inherently public property," the public is a shapeless mob, whose members neither trade nor converse nor play, but only fight, in a setting where life is, in Hobbes' all too famous phrase, solitary, poor, nasty, brutish, and short." Id.

Joseph Sax, Playing Darts with a Rembrandt (1999). See Monroe E. Price, State Arts Councils: Some Items for a New Agenda, 27 Hastings L.J. 1183, 1188 (1976) ("[T]raditional European concepts require that ownership of a Rembrandt does not include a right to deface the painting.").


International customary law gives culturally significant artwork a hybrid stature in property law, where the line between public and private is blurred.\footnote{Id. at 178-179. For an assessment of legal treatment of historic properties and sacred sites, \textit{see} Zellmer, Sustaining Geographies of Hope, \textit{supra} note , at 413.} The right to
exclude and the right to dispose of the art may be greatly restricted or even curtailed through government regulation. No doubt, a Rembrandt is a discrete asset of great value and owners can expect to maintain possessory rights to enjoy it and to pass it on through inheritance, but owners have no reasonable expectation of complete exclusivity or unfettered disposition. Several of the elemental strands in the web of interests are missing or severely compromised. If a government, acting for the benefit of the public interest in preservation of culturally significant art, prevents destruction or mutilation of the art, a takings claim should be dismissed. The owner cannot be forced to provide access to the public at any time, place, or manner, however, and as between two competing private claims to the art, private property rights are still substantial and entitle the owner to rights to possess, enjoy, and derive value from the art to the exclusion of competing interests.

D. Air

Like water, the law once treated air as both “so plentiful and so difficult to reduce to property” that it was left open to the general public. Clean air appeared to be an inexhaustible, costlessly obtained asset, so it seemed “pointless to the point of absurdity” to recognize property rights in air. “As it turns out, however, air is neither infinitely available nor always costlessly obtained.” If a power company constructs a large coal-fired, pollution-emitting power plant in the neighborhood, those who live nearby may find that clean air is no longer freely available. As with water, scarcity breeds appreciation. To recover what was lost, an adversely affected neighbor might sue the power company under a common law theory, such as nuisance, to protect the right to peaceful use and enjoyment of property. If successful, the company will have to pay for damages to health, the surrounding viewshed, and affected crops and livestock, and it may even have to install expensive equipment to control air pollution or face an outright

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275 Rose, Comedy, supra note , at 718, citing 2 Hugo Grotius, De Jure Belli Ac Pacis 190 (Kelsey trans. 1925) (“air and oceans too plentiful and unbounded to reduce to private property”).
276 Bell & Parchomovsky, supra note , at 577-578.
277 Id. at 578.
278 Id.
injunction of operations.279

Clean air has aspects of both a private and a public good, where consumptive uses are generally nonrivalrous and benefits of use are generally non-excludable.280 Today, under the 1990 amendments to the federal Clean Air Act, the air has been privatized to a certain degree, insofar as rights to emit sulfur dioxide and other forms of pollution are granted by government-issued permits and can be bought and sold.281 Although there is no irrevocable right to exclusivity in a discrete asset, limited property rights in clean air or in using the air for waste disposal purposes may be recognized for purposes of due process, statutory entitlements, or common law claims.

V. INTERESTS IN WATER AS “TAKINGS PROPERTY”

Courts and commentators alike are split regarding the treatment of interests in water as takings property or as a quintessential public resource.282 The accuracy of either position turns on the context of the dispute, the underlying constitutional and statutory provisions of state law, the caselaw of the jurisdiction in question, and any applicable contractual terms that define the user’s interest in water.283 As such, it is not plausible to

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279 Id. Note that, if the complaining party is not a landowner, but simply recreates in a nearby public park, it will have a tough time having its interests redressed under a nuisance theory.

280 See Carol M. Rose, The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems, 83 Minn. L. Rev. 129, 179 (1998); Bell & Parchovsky, supra note , at 577-578.

Nonrivalrous consumption means that consumption of the good by one person does not rival consumption by another. . . . Nonexcludability refers to the inability of the good's owner to exclude consumers. . . . The result of these two features of public goods creates the need for government provision; that is, other than altruists, private persons would provide only those goods from which they could enjoy sufficient benefits to warrant the provision. Id. at 578.

281 Rose, Comedy, supra note , at 718 n.4, citing Stewart, Economics, Environment, and the Limits of Legal Control, 9 Harv. Envtl. L. Rev. 1, 13 (1985). The new source review program also stimulates the trade of property-like units of air pollution through a program that allows facilities to “bubble” their emissions to stay below certain emission thresholds. See Stewart, supra, at 14.


283 Gray, supra note , at 26.
assert that interests in water should always be treated as private property or, conversely, that they should never be.284

The generally applicable test for determining whether a constitutional taking has occurred is whether a governmental regulation goes “too far” in impacting private property.285 Once a property right is found to have been affected, courts employ a fact-based balancing approach that considers the effects of the regulation on reasonable investment-backed expectations.286 In rare cases where a regulatory action causes a physical invasion of the property or denies all economically beneficial use, however, the balancing test is not applied; rather, a per se taking will be found.287 That is, compensation must be paid unless the interest in question was already limited by a background principle of law that inheres in the claimant’s title.288 Water users who allege a taking of their interests in water bear a heavy burden of establishing compensable property rights because the water law of nearly every state confers “broad and adaptive regulatory powers on the government and concomitantly limit the plaintiffs' rights to appropriate or to receive water under conditions that conflict with statutory mandates to protect endangered species, water quality, and other environmental interests.”289

A. Appropriative Rights

The prior appropriation regime, as described above, is an expedient means of determining who gets water, how much she gets and when.290 Like various forms of private property, the protection of senior water rights in the West is deemed necessary to ensure stability and protect the value of reasonable expectations in continued use. The Nebraska Supreme Court has described the system of distributing water according to appropriators’ respective priorities as “undoubtedly enacted in furtherance of a wise public policy to afford an economical and speedy remedy to those whose rights are

284 See id. at 11-12 (“The unique characteristics of the property right in water thus add layers of complexity to the analysis of water rights takings cases that go far beyond takings cases involving land or other types of property”).
288 Id. at 1029.
289 Gray, supra note , at 26.
290 See Part II.B, supra.
wrongfully disregarded by others, as well as to prevent waste, and to avoid unseemly controversies that may occur where many persons are entitled to share in a limited supply of public water. . . .”291

Private rights to use surface water are ensconced in state constitutions, statutes, and caselaw throughout the western states. For example, the Colorado constitution states that “the right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied.”292 Yet another provision of that state’s constitution provides that water is “the property of the state, and the same is dedicated to the use of the people of the state, subject to appropriation. . . .”293 Colorado courts have interpreted these provisions to mean that water rights are vested property rights.294 As a result, Colorado boasts an active water market.

In view of the overappropriated status of three of its four major rivers, [Colorado’s] future well-being likely depends on continued transfers of appropriated agricultural water to other uses at other places. Colorado has grown from two million residents in 1970 to 4.6 million today, with an additional 2.5 million expected by 2030. . . . Much of this growth has been made possible by a steady change of water rights from agriculture to municipal use. . . .295

In Colorado, providing stability and securing expectations in continued use have prevailed as a matter of law and public policy, and water rights are firmly grounded on property law theories. Where the public trust doctrine has limited import, and water rights are granted and can be transferred with no regard for the general public interest, claims for compensation for governmental restrictions on vested water rights are likely to avoid dismissal.296

296 Gray, supra note , at 26.
Nebraska’s constitution is somewhat similar to Colorado’s, with an important distinction: “The right to divert unappropriated waters of every natural stream for beneficial use shall never be denied except when such denial is demanded by the public interest.”\textsuperscript{297} This language authorizes the state legislature to define through statute what constitutes the “public interest.”\textsuperscript{298} Statutes require public interest review for both new appropriations and changes or transfers, and non-use for five years or more can result in forfeiture.\textsuperscript{299} Changes in use are discouraged by statutory provisions that restrict changes between preference categories for domestic, agriculture, or industrial purposes.\textsuperscript{300} As a result, transfers are relatively rare, and those that do occur typically involve small-scale transactions between users with similar activities at the same or nearby locations.\textsuperscript{301}

In its 2005 opinion in \textit{Spear T. Ranch v. Knaub}, the Nebraska Supreme Court summed up the state’s water law provisions: “[a] right to appropriate surface water . . . is not an ownership of property.”\textsuperscript{302} As unequivocal as this sounds, the court tempered its statement in the next line: “Instead, the water is viewed as a public want and the appropriation is a right to use the water.”\textsuperscript{303} One might view this as a distinction without a difference, because rights to water have always been recognized as usufructuary -- a right to use but not outright ownership in the corpus of the water \textit{in situ}.\textsuperscript{304} Given the usufructuary and public nature of water rights, however, appropriators’ expectations of

\textsuperscript{297} Neb. Const. Art. XV, § 6 (emphasis added).

\textsuperscript{298} See In re Applications A-16642 236 Neb. 671, 463 N.W.2d 591, 604-605 (1990); In re Applications A-16027 et al. 242 Neb. 315, 495 N.W.2d 23, 31-34 (1993); Central Platte Natural Resources District v. City of Fremont 250 Neb 252, 549 N.W.2d 112,116-118 (1996). \textit{See also} Neb. Rev. Stat. § 46-234 (an application for a water appropriation may be refused when denial is demanded by the public interest); Neb. Rev. Stat. § 46-289 (the DNR may consider certain specified factors when determining whether an interbasin transfer is in the public interest).

\textsuperscript{299} See Neb. Rev. Stat. § 46-229 (specifying that water rights are forfeited if not used for a five-year period, but allowing longer forfeiture periods if non-use is due to circumstances beyond the appropriator’s control, participation in acreage reserve programs, and the like).


\textsuperscript{302} 269 Neb. 177, 186, 691 N.W.2d 116, 127 (2005) (emphasis added).

\textsuperscript{303} \textit{Id}.

exclusive use in a state like Nebraska, which is typical of most other western states, are far less than those of proprietors of land, who possess irrevocable interests in exclusive control of a discrete asset, be it a fee simple, an easement, or even a tenancy.  

The distinction between ownership of water and a mere right to use water made a tremendous difference to the Spear T plaintiff, a surface water appropriator harmed by groundwater pumping. The court rejected Spear T’s attempt to protect its “property” under a theory of conversion (an act of dominion wrongfully asserted over another's property), and left Spear T to tort remedies. Likewise, Spear T’s claim against the Department of Natural Resources for a taking of property under the Nebraska Constitution was dismissed.

Curiously, the court cited only groundwater-related precedent in holding that Spear T had no property interest in its surface water. In Nebraska, as in most other states, groundwater is governed by separate constitutional and statutory provisions. The Nebraska provisions specify that groundwater is a public resource for which only reasonable, correlative uses are allowed. Nebraska courts have consistently held that groundwater is not subject to private ownership; rather, it is owned by the state for the benefit of the public. Indeed, “Nebraska law has never considered ground water to be a market item freely transferable for value among private parties.”

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310 Sporhase, 208 Neb. at 705, 305 N.W.2d at 616; Bamford v. Upper Republican NRD, 245 Neb. 299, 512 N.W.2d 642 (1992); In re Application U-2, 226 Neb. 594, 605, 413 N.W.2d 290, 298 (1987); Prather v. Eisenmann, 200 Neb. 1, 7, 261 N.W.2d 766, 770 (1978). But see
Previous surface water cases had concluded that appropriators who complied with statutory requirements did in fact possess vested property rights.\textsuperscript{312} In 1952, \textit{City of Scottsbluff v. Winters Creek Canal Co.} invalidated an ordinance that deemed open canals to be public nuisances, requiring owners to fill them or construct water pipes.\textsuperscript{313} The court found that the ordinance was an arbitrary exercise of the police power, and opined in dicta that it would result in “confiscation of the company's property without due process or payment of just compensation.”\textsuperscript{314}

The issue was addressed directly in \textit{Enterprise Irrigation Dist. v. Willis}.\textsuperscript{315} There, the court held that the 1895 Irrigation Act, which limited appropriations to three acre-feet per acre, was not intended to apply retroactively. It conceded that the state may control the distribution of water to ensure beneficial use and guard against waste by virtue of its police power, but concluded that the statutory limitation could not be applied to an appropriation that vested prior to enactment. “That an appropriator of public water, who has complied with existing statutory requirements, obtains a vested property right has been announced by this court on many occasions.”\textsuperscript{316} The court continued that the state’s police power had never been expanded so far as to allow the legislature “to destroy vested rights in private property when such rights are being exercised and such property is being employed in the useful and in nowise harmful production of wealth” unless use of the property is “shown to be inimical to public health or morals or to the general welfare.”\textsuperscript{317}

Perhaps \textit{Spear T} evidences an evolution in the law to reflect modern social values, or perhaps the opinion is simply a more reasoned application of the long-standing notion

\textsuperscript{311} \textit{Sporhase}, 208 Neb. at 705, 305 N.W.2d at 616.
\textsuperscript{313} 155 Neb. 723, 728-730, 53 N.W.2d 543, 547-548 (1952).
\textsuperscript{314} 155 Neb. at 728-730, 53 N.W.2d at 547-548.
\textsuperscript{315} 135 Neb. 827, 830, 284 N.W. 326, 329 (1939).
\textsuperscript{316} \textit{Id.}
that water is a “public want.” Whether an emerging trend in the law is a deviation or merely a reflection of background principles of property law is an issue often raised in regulatory takings cases. Although background principles are generally found in state property law, when it comes to water, principles of federal law can also impose an inherent limitation on the claimant’s interest.

The Court of Federal Claims has struggled with the assessment of inherent limitations on purported water rights in cases involving both federal law and state water law. The only area that results in dismissal of private property claims on a consistent basis involves the federal navigational servitude. In *U.S. v. Rands*, the Supreme Court concluded that landowners adjacent to the Columbia River had no property rights as against the United States in any interests subject to the navigational servitude, including the flow of the water in the river, access to the water, and other values attributable to proximity to water. “[T]hese rights and values are not assertable against the superior rights of the United States, [and] are not property within the meaning of the Fifth Amendment. . . .”

By contrast, the disposition of takings claims brought by appropriators with state-sanctioned water rights has been remarkably inconsistent. In a case involving water that had been put to beneficial use on a federal grazing allotment, the claims court concluded that a private property interest existed.

Flowing water presents unique ownership issues because it is not amenable to absolute physical possession. Unlike real property, water is only rarely a fixed quantity in a fixed place. Nevertheless, the right to appropriate water can be property right. *Amici* provides no reason within our constitutional tradition why water rights, which are as vital as land rights, should receive less protection. . . . This court holds that water rights are not “lesser” or “diminished” property rights

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318 *Spear T Ranch*, 269 Neb. at 186, 691 N.W.2d at 127. See Duncan, *supra* note , at 795 (“Individual interests in water . . . must . . . be used consistently with the larger public good, which itself evolves over time to reflect changing public needs and values.”).
319 389 U.S. 121, 126 (1967).
 unprotected by the Fifth Amendment. Water rights, like other property rights, are entitled to the full protection of the Constitution.321

Similarly, in Tulare Lake v. U.S., the first of two major reclamation cases, the claims court awarded irrigators $26 million when the Bureau curtailed contract allowances from a state project that shared a coordinated pumping system with a Reclamation project in the Sacramento-San Joaquin Delta.322 Deliveries were stopped from 1992-1994 in order to provide flow for endangered species. The Tulare court concluded, without analysis, that the irrigators had legally protected property rights in water deliveries under California law and that a reduction in deliveries of approximately 10% effectuated a “per se” taking.323 Although there was “no dispute that [the supplier’s] permits, and in turn plaintiffs’ contract rights, are subject to the doctrines of reasonable use and public trust and to the tenets of state nuisance law,” the court concluded that only the state Water Resources Control Board could modify the permit terms to reflect changing needs.324 Because the Board had not done so during the period in question, the court declined: the laws “require a complex balancing of interests . . . and an exercise of discretion for which this court is not suited and with which it is not charged.”325

The Tulare opinion has been roundly criticized for, among other things, failing to analyze whether California water law or the relevant contracts created a property right. It refused to recognize either the public trust doctrine or California’s constitutional requirement that uses of water be both beneficial and reasonable as an inherent limitation on title, the exercise of which would not be a taking.326 Once it had determined that a

321 Id. at 171. The court remanded the claim for an application of Nevada law and the Act of July 26, 1866, 43 U.S.C. § 661, which provides, “Whenever, by priority of possession, rights to the use of water[on federal public lands]. . . have vested and accrued, and the same are recognized and acknowledged by the local customs, laws and decisions of courts, the possessors and owners of such vested rights shall be maintained and protected in the same.”


324 Id. at 324.

325 Id. at 323-24.

326 Gray, supra note , at 9. The California Constitution provides, in pertinent part: [T]he general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such
property right existed, the court jumped to the conclusion that the government regulation had effectuated a per se physical occupation of the water requiring compensation, a conclusion that is by no means cut and dried. California courts have consistently construed California law to mean that the state owns all of the water in the state, in a supervisory sense, and although water rights holders have the right to use water, they do not own the water and cannot waste it. Rather than seeking certiorari in the Tulare case, however, the U.S. settled with the irrigators.

Reluctant to delve into the nuances of the reasonable use and public trust doctrines, the Court of Federal Claims seized on [the Board’s previous decision to grant the permit] . . . as the conclusive definition of the water rights. . . . In essence, the court decided that an appropriator is legally entitled to engage in (and has property rights to) any conduct that is authorized by its water rights permit or license. This interpretation oversimplifies - and therefore misapprehends - the nature of California water rights.

Notably, the public trust doctrine in California forms a fundamental component of the water rights system as an inherent limitation on interests in water, the exercise of waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion of water.

Cal. Const. Art. 10, § 2. This provision encompasses both surface and groundwater resources.


327 49 Fed. Cl. at 319.


330 Gray, supra note , at 9, citing 49 Fed. Cl. at 324. For a contrary view, see Grant, ESA Reductions, supra note .
which is not a taking.\textsuperscript{331} California law is distinct from most other western states, however, in that the California code has been construed as providing the Board with continuing jurisdiction over water permits.\textsuperscript{332} Few if any state boards or agencies have a parallel authority, but they are all charged with remaining vigilant against forfeiture or waste, and most are required to scrutinize new appropriations and transfers to ensure that the public interest is satisfied.\textsuperscript{333} 

The claims court reached the opposite conclusion a few years later in \emph{Klamath Irrigation District v. U.S.}\textsuperscript{334} There, summary judgment was granted to the United States on the grounds that any interest irrigators had in Reclamation water was contractual in nature, and not property.\textsuperscript{335} Accordingly, the irrigators were left with only contract remedies when deliveries were curtailed to provide flows for endangered fish species.\textsuperscript{336} The court explicitly criticized the \emph{Tulare} opinion for failing to assess the underlying nature of the interest in question to discern whether the plaintiffs in fact possessed property rights: “\emph{Tulare} appears to be wrong on some counts, incomplete in others and, distinguishable, at all events.”\textsuperscript{337} 

The web metaphor, with its complementary patterning definition for takings property, vividly illustrates the fallacy of the \emph{Tulare} opinion. The webframe, representing the public trust doctrine, empowers the state, as trustee, to safeguard the public interest in water supplies and water-dependent resources. The appropriator, with a state-sanctioned interest in using the water, occupies one of the orbital strands radiating from the center of the web, and holds one of the spoke-like strands attaching the thing

\textsuperscript{331} Benson, \textit{supra} note , at 571.
\textsuperscript{332} \textit{Audubon Society}, 658 P.2d at 730-731, citing Water Code § 2501.
\textsuperscript{333} See Grant, Two Models, \textit{supra} note , at 486 (reporting that only two of the western states, Colorado and Oklahoma, fail to compel new appropriations to undergo a public interest review prior to permit issuance, while roughly half of the states allow transfers of existing appropriations without public interest review).
\textsuperscript{336} 67 Fed. Cl. at 532. On remand, the court concluded that the “sovereign acts doctrine” provided a complete defense to the irrigator’s contract claims. 2007 WL 853018 (Fed.Cl. Mar 16, 2007) (NO. 01-591L).
\textsuperscript{337} 67 Fed. Cl.at 538.
B. “Reasonable Use” Correlative Rights

If water rights are not takings property in prior appropriation jurisdictions, they are even less likely to be characterized as such in riparian jurisdictions and in jurisdictions that follow correlative rights rules for groundwater. Although a few early cases characterized riparian rights and groundwater rights as part and parcel of a landowner’s soil and therefore a real property right, the modern trend is clearly to the contrary, due in large part to a more complete understanding of hydrology. The correlative nature of rights under these doctrines means that such rights are not private property for takings purposes, but rather a web of shared interrelationships akin to a common property regime. Water availability is continuously subject to competing uses, and seniority of use does not give a user priority when conflict arises. Users are on notice that “entitlement to a set volume of water in perpetuity is an unrealistic and unilateral assumption.” Interests in the use of water under these legal systems are ephemeral, rather than irrevocable, and use rights are correlative, rather than exclusive; the user “has no property in the water itself but a simple usufruct while it passes along.” Domestic uses are an exception to this rule. A preference for domestic uses, including drinking water and satisfaction of other household needs, is a common feature of riparian water rights. It began as an exception to the natural flow doctrine's prohibition against consumptive withdrawals that depleted stream flow and continues

338 See Part IV.A, supra.
342 Harvey Realty Co. v. Wallingford, 111 Conn. 352, 359 (1930).
through modern iterations, which treat domestic use as per se reasonable, even if downstream uses are adversely affected.\textsuperscript{343}

Arkansas law illustrates the evolution of riparian surface water rights from a strict natural flow doctrine to the correlative reasonable use doctrine. In a 1913 case, the City of Hope was held liable to the lessee of riparian land who had moved his sawmill onto the adjacent stream intending to use the water for making steam to run the mill.\textsuperscript{344} The City’s sewage effluent polluted the stream and rendered it unsuitable for running the mill. The court described the natural flow doctrine:

\begin{quote}
It may be laid down as a well-settled principle that every proprietor over or past whose land a stream of water flows has a right that it shall continue to flow to and from its premises in the quantity, quality and manner in which it is accustomed to flow by nature, subject to the right of the upper proprietor to make a reasonable use of the stream as it flows past his lands. This right is part of his property in the land and, in many cases, constitutes its most valuable element . . . . These riparian rights are property . . . and are valuable . . . and cannot be abridged or capriciously destroyed or impaired. They are rights to which, once vested, the owner can only be deprived in accordance with the law of the land, and, if necessary that they be taken for public use, it must be for due compensation.\textsuperscript{345}
\end{quote}

In spite of its broad-sweeping affirmation of property rights in this dispute between two riparian users, it was not long before the Arkansas court had a change of heart. It held that private landowners along navigable waters could not obstruct the public's use of such waters for swimming, fishing and boating, so long as those public uses do not unreasonably interfere with the riparian owner's right of ingress and egress.\textsuperscript{346} This decision was subsequently extended to all waters capable of supporting recreational use

\begin{footnotesize}
\textsuperscript{343} A. Dan Tarlock, L. of Water Rights and Resources §§ 3.57, 3.96.
\textsuperscript{344} 107 Ark. 442, 155 S.W. 910 (1913).
\textsuperscript{345} 155 S.W. at 910 (quoting 1 John Lewis, Lewis on Eminent Domain §§ 61, 84 (1909)) (emphasis added). \textit{Accord} Meriwether Sand & Gravel Co. v. State, 181 Ark. 216, 26 S.W.2d 57, 61 (1930) (stating that riparian rights were part of the bundle of real property rights of riparian owners and were vested and valuable).
\textsuperscript{346} Anderson v. Reames, 204 Ark. 216, 161 S.W.2d 957 (1942).
\end{footnotesize}
for a substantial portion of the year, in effect elevating the public interest in flowing waters over private interests in exclusivity.\textsuperscript{347}

Oklahoma is an anomaly among states that have adopted the riparian reasonable use doctrine. The strongest indication that riparian rights could be considered property rights in and of themselves is found in \textit{Franco-American Charolaise, Ltd. v. Okla. Water Res. Bd.},\textsuperscript{348} where the Oklahoma Supreme Court concluded that the conversion from a common law reasonable use system to a statutory appropriative system could give rise to a takings claim under the state constitution if riparians were denied their vested interests in making prospective uses of adjacent waters. No compensation was paid, however, and the Oklahoma legislature subsequently adopted substantially the same legislation, explicitly stating its intent "to extinguish future claims to use water, except for domestic use, based only on ownership of riparian lands."\textsuperscript{349} The court later acknowledged that “[F]ew public interests are more obvious, indisputable, and independent of particular theory than the interest of the public of a state to maintain the rivers that are wholly within it substantially undiminished, except by such drafts upon them as the guardian of the public welfare may permit for the purpose of turning them to a more perfect use.”\textsuperscript{350}

Professor Dan Tarlock predicts that, with increasing scarcity and competitive pressure, eastern water law will move toward the western appropriative model by adopting a system of private property rights.\textsuperscript{351} Several eastern states have in fact adopted permit systems that infuse riparian uses with elements of an appropriative system.\textsuperscript{352} These permits attach to land and are generally nontransferable unless specifically authorized by the state.\textsuperscript{353} Unlike their western counterparts, administrative


\textsuperscript{348} 855 P.2d 568, 576-77 (1990), readopted, reissued and rehearing denied (1993).


\textsuperscript{351} A. Dan Tarlock, Introduction, 24 Wm. & Mary L. Rev. 535, 536 (1983).

\textsuperscript{352} Babcock, \textit{supra} note \textsuperscript{1}, at 1217.

\textsuperscript{353} Babcock, \textit{supra} note \textsuperscript{1}, at 1218.
agencies in many regulated riparian jurisdictions issue permits for a fixed period of time and can terminate or modify permits in order to reallocate water for a higher or more socially beneficial use. Also, regulated riparian states do not follow a strict seniority system, which would otherwise allow senior rights holders to defeat the rights of juniors in times of shortage. They do, however, provide some recognition of existing uses to encourage investment and protect reasonable expectations.

Today, most eastern states have adopted some form of permit or registration system for water use. Florida law is indicative of trends in eastern water law toward regulated riparianism. Florida adopted an integrated permit system for surface and groundwater in 1972. The Florida Supreme Court explicitly concluded that landowners do not possess a “constitutionally-protected property right in the water beneath the [real] property, requiring compensation for the taking of water when used for a public purpose.”

The state of Connecticut transitioned from a common-law riparian state to a regulated riparian state in 1982. Under regulations issued pursuant to its Diversion Act, all diversion permits must include a condition that the permit “conveys no property rights or exclusive privileges, and is subject to all public and private rights.” The legislation provides an exception for diversions existing on the date of enactment.

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354 Babcock, supra note , at 1217-1218.
355 Dellapenna, supra note , at 315; Breckenridge, supra note , at 595. See Aorata Water Trust v. Meridian Energy, NZ Rptr. (2005) (granting an existing permit holder a continuing, exclusive right to use water in a fully allocated lake by precluding the permitting authority from issuing any new permits to others).
359 Village of Tequesta v. Jupiter Inlet Corp. 371 So. 2d 663, 671-672 (Fla. 1979), cert. denied, 444 U.S. 965 (1979). See Coastal Petroleum v. Chiles, 701 So. 2d 619 (Fla. App. 1997) (rejecting a takings claim against the state for prohibiting offshore drilling because the public trust doctrine gave the legislature "authority to protect the lands held in trust for all people" without compensation to the claimant). Several other states have rejected takings claims brought against states that adopted regulated riparian statutes. Crookston Cattle Co. v. Minnesota Dep't of Nat. Resources, 300 N.W.2d 769 (Minn. 1981); Omernik v. State, 218 N.W.2d 734 (Wis. 1974).
requiring them only to register their usage rather than apply for (and perhaps be denied) a permit.\textsuperscript{362} The Connecticut Attorney General opined that the state has the power to take water from registered diversions in the event of a drinking water supply emergency, but declined to specify whether compensation must be paid.\textsuperscript{363} The opinion suggested, however, that due process considerations would entitle the holder to certain procedural protections.\textsuperscript{364} In \textit{City of Waterbury v. Washington}, the state Supreme Court addressed a dispute over the City’s registered uses that adversely affected streamflows on the Shepaug River.\textsuperscript{365} It concluded that, because the City operating in compliance with the state’s streamflow standards, which were designed to protect river health, its uses were not "unreasonable" under the statutory scheme.\textsuperscript{366} Although counsel had argued that the City had a constitutionally protected right to the water that could not be taken without compensation, the court did not address this issue, as it had ruled for the City on non-constitutional grounds.\textsuperscript{367} In light of the restrictions on water use imposed by the statutory scheme, it seems likely that interests in water would not be considered takings property, although they may be property for due process or other purposes.\textsuperscript{368}

As for groundwater law, it is difficult to draw any broadly applicable conclusions about the nature of a user’s rights because states vary significantly in their laws governing groundwater management, use, and allocation. Only a few states adhere to the doctrine of absolute ownership, and, as noted above, this doctrine, a complete misnomer, provides no protection whatsoever for established interests, because anyone with a larger pump is free to tap out the aquifer, regardless of effects on other users and the surrounding ecosystem.\textsuperscript{369}

By contrast, property rights in groundwater have been found in at least one jurisdiction under the Restatement of Torts. The Restatement assumes nonliability so

\begin{footnotes}
\item[362] Mayland, \textit{supra} note 1, at 712.
\item[364] \textit{Id.} at 19-20. For further analysis, see Mayland, \textit{supra} note 1, at 744.
\item[366] \textit{Id.} at 557.
\item[367] Mayland, \textit{supra} note 1, at 743, citing Brief for Appellant at 25.
\item[368] See \textit{id.} at 751 ("the status of water use as a property right could be considered heavily qualified, if not incomplete, especially when compared to the property right in privately owned land").
\item[369] See Part II, \textit{supra}.
\end{footnotes}
long as the proprietor of the land overlying an aquifer is putting the groundwater to a
beneficial purpose, whether that application be on the overlying land or elsewhere.370
The Ohio Supreme Court concluded that the assumption of nonliability created a separate
property right in the groundwater.371 Comment b to the Restatement lends support to this
view: “the interests protected . . . are property rights arising out of the ownership and
possession of land.”372 The Introductory Note explains the Restatement’s underlying
objective of “giving security to water rights” to encourage “investment in water-resource
development.”373 As such, interference with a landowner’s beneficial use of groundwater
may give rise to a property-based claim.374 As between two private users, this claim
sounds in trespass or nuisance, but as between a user and the government, it could be
expressed as a takings claim.375

Conversely, a Michigan court construed the Restatement rule as a tort-based
balancing test rather than a property rule, concluding that the “right to [the] enjoyment of
. . . water . . . cannot be stated in terms of an absolute right.”376 Instead, a landowner
whose use of water adversely affects a neighbor’s groundwater use must show that
“under all the circumstances of the case the use of the water by one is reasonable and
consistent with a correspondent enjoyment of the right by the other.”377 Nebraska’s
approach in adopting the Restatement rule to resolve disputes between groundwater and
surface water users likewise treats the surface water user’s claim as a tort rather than
property.378

The two other doctrines of groundwater use, the reasonable use rule and the
correlative rights rule, fall somewhere in between the extremes of so-called “absolute
ownership” and the Ohio interpretation of the Restatement of Torts in their

370 R.2d Torts sec. 858.
371 McNamara v. City of Rittman, 838 N.E.2d 640, 644 (Ohio 2005), citing R.2d Torts
372 R.2d Torts sec. 858 cmt. b.
373 R.2d Torts sec. 850A Introductory Note. Section 850A applies to uses of surface
water, but section 858(2) incorporates it by reference.
374 McNamara, 838 N.E.2d at 644.
375 Id.
378 See supra note 315 and accompanying text.
characterization of groundwater rights. As noted above, the Nebraska Supreme Court, which follows a hybrid reasonable use – correlative rights rule for disputes between groundwater users, has repeatedly rejected property-based claims for interference with groundwater use. Its rationale: groundwater is owned by the public, not the private user. Likewise, Florida and Washington courts have flatly rejected overlying landowners’ claims to property in groundwater.

Nebraska, Florida, Michigan, and Washington cases rejecting property-based claims to resolve groundwater disputes are supported by the application of Merrill’s patterning definition. Neither correlative rights nor tort-based liabilities create an irrevocable interest in exclusive use or possession of a discrete, marketable asset. These elemental strands are missing from the web of interests.

Conclusion

Over-appropriation has become a virtually insurmountable problem in many watersheds. This is not surprising. The basic premise of prior appropriation is to maximize use; leave no drop behind. By perpetuating the myth of unfettered private property rights in water, prior appropriation has caused rapid depletion of the resource and, in some cases, the collapse of entire riparian communities. Meanwhile, water rights holders are penalized for conservation and motivated to use as much water as possible. Governments are loathe to encourage innovation by revising the appropriative system and are equally reluctant to impose restrictions that protect ecological interests for fear of takings claims.

Is it plausible to treat water as property to ensure efficiency and marketability among private actors, but not to treat it as property when faced with takings claims against a government? A bold stance that “[a] right to appropriate surface water . . . is not an ownership of property” is legally defensible as between an appropriator and the

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379 See id.; Part I.A, supra.
381 Freyfogle, Common Wealth, supra note , at 28; Neuman, supra note , at 975.
382 Freyfogle, Common Wealth, supra note , at 40, 50 (“Far from being efficient in free-market economic terms, prior appropriation is highly wasteful.”).
383 Id. at 26, 45; Neuman, supra note , at 977.
384 Spear T Ranch, 691 N.W.2d at 127.
state because, under Merrill’s patterning definition, interests in water are not takings property. Under existing legal regimes in most states, water users lack an irrevocable, vested interest in the exclusive possession of a discrete, transferable asset. The web of interests metaphor explains this result by drawing our attention to public trust requirements, which form the all-encompassing webframe, and the innate physical limitations of water, portrayed at the center of the web itself. The metaphor does not, however, justify the dismissal of property-based claims for private interference. An appropriator’s interest in the continued use of available surface water vis a vis other water users is the very essence of the prior appropriation system. Although usufructuary interests, depicted as an elemental strand within the web of interests, are far less exclusive than fee simple interests in land and they are not irrevocable, they are robust enough to be considered a limited form of property for resolving disputes between users.

In order for water users to execute water transfers, engage in water banking, conserve streamflows, or participate in a myriad of beneficial uses, a clear characterization of which incidents of property inhere in a water right must be delineated in law and interpreted consistently by the courts. Moreover, adequate remedies for real world disputes between users must be available to water rights holders for the legal system to function and to evolve in a fashion that promotes both stability and the full range of values associated with water. The web of interests metaphor, coupled with complementary patterning definitions of property, provide a powerful heuristic tool for resolving disputes over water and other things at the margins of property law.