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NEWS & ANALYSIS

Nature and Property: A Riparian Law Perspective

by Ashley S. Miller

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I. Introduction

This Article will characterize how one area of property law, title rules for coastal and riverfront property, represents particular views of nature. In doing so it will examine how the law in this area defines the line between natural and non-natural. What does "natural" mean in riparian law? How do humans fit into that picture? In what ways do differing ideas of "nature" inform property rights? Does property law reflect any coherent notion or ethic[1] of nature, or deliberately invoke a particular notion of nature to justify its institutions?

Property law is a particularly relevant institution to examine in this vein, as it can be said to represent the contact point between humans and nature, acting as the socially endorsed system through which all interaction with the environment occurs.[2] Property law in that sense symbolizes the pervasive control and impact that humans have had on the environment; there is a trend in recent environmental thought toward conceptualizing the entire world as "unnatural," or impacted by human activity, a sort of worldwide garden which humans are cultivating on a global scale.[3] Given this central role that property law plays in the human interaction with nature, it is inherently an environmentally charged area of law. Therefore it is crucial to understand the ethical content inherent in property law.

A. Recent and Prior Scholarship

There is ongoing attention among scholars of property and environmental law to humans' relationship to the nonhu-

The author is a candidate for J.D., 2004, New York University School of Law; Executive Editor, *New York University Environmental Law Journal*, 2003-2004; B.A. in history *cum laude*, 1999, Columbia College, Columbia University. The author would like to thank Prof. Katrina Wyman for her guidance and many helpful suggestions, and the participants in the Seminar on Property Theory at New York University School of Law, Fall 2003, for their input.

1. "Ethic" here, and throughout, is used in the sense of worldview, system of thought, or philosophy. Throughout, the words "environmental" and "ethic" will be used broadly, signifying generally "attitudes toward the non-human world." *See* Oxford English Dictionary (2d ed. 1989) (definition B.3.a, defining ethic as, "[t]he moral principles or system of a particular leader or school of thought").

2. Numerous scholars, each in slightly different ways, have acknowledged property law as a crucial point of interaction between humans and the environment. *See, e.g.*, Craig Anthony Arnold, *The Reconstitution of Property: Property as a Web of Interests*, 26 Harv. Envtl. L. Rev. 281, 281 (2002) (stating that, "[p]roperty matters to the environment" and arguing for a new conception of property as a web of interests, because, "[t]he modern metaphor of property as a bundle of rights, or . . . sticks, is incompatible with two essential principles of environmentalism . . . : (1) the interconnectedness of people and their physical environment; and (2) the importance of the unique characteristics of each object"); Alyson C. Flournoy, *Building an Environmental Ethic From the Ground Up*, 37 U.C. Davis L. Rev. 53, 65, 72, n.45 (2003) [hereinafter *Building an Environmental Ethic*] (noting role of property rights in notions of sustainability, and the role of the property rights movement in highlighting the need to reconcile environmental values with conflicting values); Terry W. Frazier, *The Green Alternative to Classical Liberal Property Theory*, 20 Vt. L. Rev. 299, 301, 318-19 (1995) (arguing for a "Green" property regime based on the principles of ecology, social responsibility, grass-roots participation in the political process, and nonviolence which, "recognizes not only the interdependent relationships between human neighbors in political communities, but also the vast network of interdependent relationships between human and non-human neighbors in land communities"); Keith H. Hirokawa, *Dealing With Uncommon Ground: The Place of Legal Constructivism in the Social Construction of Nature*, 21 Va. Envtl. L.J. 387, 417 (2003) ("[A] successful legal construction of nature will depend on the common law and statutory representations of property, as well as adjudicatory requirements of causation, legal duties, and identification of an injuring party."); Carol M. Rose, *Given-ness and Gift: Property and the Quest for Environmental Ethics*, 24 Envtl. L. 1, 30 (1994) [hereinafter Rose, *Given-ness and Gift*] ("Given the impact of human beings on natural resources, everything "out there" in some sense must be managed as a zoo or a garden. Nowadays, like it or not, even a decision to do nothing represents a human option and a version of human management.").

3. Rose, *Given-ness and Gift*, *supra* note 2, at 30. *See also generally* Bill McKibben, The End of Nature (1999); Michael Pollan, Second Nature: A Gardener's Education 222-26 (1991) (arguing that ethics idealizing wilderness or the free market are no longer realistic or useful, and that a new ethic is necessary, based on the metaphor of "gardening," in the sense of unromantic acknowledgement of humans' unavoidable connection to nature and concomitant responsibility to manage the environment on a macro scale).

man environment, and the role which perceptions of nature play in the law of property and environmental regulation.[4]

Generally speaking, these scholars engage in two enterprises: identifying the often implicit ethical precepts embedded in law or political discourse as it currently exists (a descriptive project, analyzing statutes or common law),[5] or formulating normative theories of the proper attitude that humans and the law should adopt toward the nonhuman environment (environmental ethics or environmental theories).[6] Clearly the two types of work overlap; it would be difficult to describe any law's implicit environmental theory without some sense of what the various theories are, and any normative theory will likely be influenced by current law's stance on the issues, in addition to the author's own beliefs.

This Article will adopt and combine the approaches taken by Profs. Alyson Flournoy, Holly Doremus, and Eric Freyfogle, adapted here for the common-law context as necessary. Professor Flournoy states her goal is to "explore how we might gain a better sense of the values embedded in our . . . law and to identify ethics or ethical impulse that these [laws] seem to reflect."[7] To that end she identifies several categories of environmental theories,[8] and engages in close textual analysis, as well as an analysis of law as applied.[9] Professor Doremus' work engages in similar analysis of meaning, concentrating on political rhetoric in the environmental debate, and illustrating how this rhetoric fails to fully address the realities of what she terms the "nature problem," that is, the environmental crisis.[10] Professor Freyfogle has used a close examination of two cases to show how the decisions exemplify differing ideas about ownership of ecologically sensitive land.[11] This Article will apply these techniques to the common law governing riparian title, which governs the title consequences of the processes of accretion, reliction, and avulsion.[12]

B. Why Examine Riparian Title Rules? The Common Law as an Accreted Ethic of Nature

This Article will extend the approaches taken in prior scholarship, adopting both a descriptive and normative posture toward the common law. One normative message implicit throughout this Article is that the unearthing of implicit ethical underpinnings of legal rules can help clarify our understanding of the proper role of law in shaping our environment, and enables more coherent policymaking with regard to environmental problems.[13] As for the positive message, Part II will outline various environmental theories to provide a context for Part III, which will analyze the common law of riparian title to identify the implicit theory (or theories) of nature embodied or endorsed by this area of law. This particular area of law has not yet been specifically addressed in the literature on environmental ethics,[14] and can help provide valuable insight into issues of environmental ethics for at least two reasons.

First, in riparian title cases courts routinely use the word "natural." This word, and how it is construed in common-law cases, provides a clear and immediate window into courts' environmental ethic, as they are directly interpreting a doctrine which uses the rhetoric of nature.

Second, riparian title law is originally and traditionally a common-law concept, and thus itself represents legal accretion, providing inherent analytical advantages. How could a common-law doctrine be an advantage in what has been called an "age of statutes"?[15] First, the common-law's slow accumulation of precedent is perhaps less influenced by one-time political bargaining or lobbying, both of which of course profoundly affect statutes and make texts and meanings more difficult to interpret.[16] Of course, it would go too

4. *See, e.g.*, Holly Doremus, *The Rhetoric and Reality of Nature Protection: Toward a New Discourse*, 57 Wash. & Lee L. Rev. 11 (2000); *Building an Environmental Ethic*, *supra* note 2; Alyson C. Flournoy, *In Search of an Environmental Ethic*, 28 Colum. J. Envtl. L. 63 (2003) [hereinafter Flournoy, *In Search of an Environmental Ethic*]; Eric T. Freyfogle, *The Owning and Taking of Sensitive Lands*, 43 UCLA L. Rev. 77 (1995); John A. Humbach, *Law and a New Land Ethic*, 74 Minn. L. Rev. 339 (1989); James P. Karp, *Aldo Leopold's Land Ethic: Is an Ecological Conscience Evolving in Land Development Law?*, 19 Envtl. L. 737 (1989); Rose, *Given-ness and Gift, supra* note 2; Carol M. Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. Chi. L. Rev. 711 (1986); John G. Sprankling, *An Environmental Critique of Adverse Possession*, 79 Cornell L. Rev. 816 (1994); A. Dan Tarlock, *Environmental Law: Ethics or Science?*, 7 Duke Envtl. L. & Pol'y F. 193 (1996).

5. *See generally* Doremus, *supra* note 4; Flournoy, *In Search of an Environmental Ethic*, *supra* note 4; Karp, *supra* note 4; Sprankling, *supra* note 4.

6. *See generally* Freyfogle, *supra* note 4; Humbach, *supra* note 4; Rose, *Given-ness and Gift*, *supra* note 2.

7. Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 102.

8. These environmental theories will be discussed further *infra* Part II.

9. Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 103-09. It should be noted that Flournoy's work is in a statutory context. *Id*.

10. Doremus, *supra* note 4, at 54.

11. Freyfogle, *supra* note 4, at 88-95.

12. *See* A. Dan Tarlock, Law of Water Rights and Resources §3:39 (2003). *See also infra* Part III.

13. Here, this Article closely echoes prior work, *see, e.g.*, Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 108-19 (arguing that clarity of understanding environmental ethics in law can counteract the idea that environmental law is purely technical, can promote more democratic law and policy, and can promote conflict resolution); Eric T. Freyfogle, *Private Land Made (Too) Simple*, 33 ELR 10155 nn.16-17 (Feb. 2003) and accompanying text:

> Just as a sound property scheme needs grounding philosophically and culturally, so too it needs grounding in the natural order. Here the work of biological scientists has helped immensely, though the themes of interconnection and interdependence also appear thoughtfully in writings by nonscientists. In the natural world, land parcels are not distinct; they are complexly woven into large landscapes.

14. *See* sources cited *supra* note 4. *See also* Eric T. Freyfogle, Lux v. Haggin *and the Common-Law Burdens of Water Law*, 57 U. Colo. L. Rev. 485 (1986); Carol M. Rose, *Energy and Efficiency in the Realignment of Common-Law Water Rights*, 19 J. Legal Stud. 261, 290-93 (1990); Freyfogle, *supra* note 13, at 10155 n.16.

15. Guido Calabresi, A Common Law for the Age of Statutes 163 (1982).

16. *E.g.*, Robert A. Schapiro & William W. Buzbee, *Unidimensional Federalism: Power and Perspective in Commerce Clause Adjudication*, 88 Cornell L. Rev. 1199, 1240 (2003) ("[C]ompromise is a pervasive feature of statutory law. Laws emerge from a complex process in which interest group pressure, political veto gates, party politics, multiple statute logrolling, and compromise create laws that reflect competing considerations and negotiations that may not be evident in the ultimate statutory text."). For example, if a lawmaker strategically conceded one important environmental protection (A) in exchange for a different but also important protection (B), how would one characterize the environmental ethic embodied in the statute, when from the legislative history and statutory text, all one might see is the presence of protection B and the absence of A? The balancing that occurred in the legislator's mind between A and B (be it a utilitarian or nature-centric balancing), might provide answers,

far to suggest that all judges are immune from political pressure, but the crucial difference is that statutory law represents only a single slice (or a few slices) of political sentiment in time, whereas common law is a gradual buildup of political pressures, averaging out over the long term.[17] Thus the common law does not incorporate temporary trends that may color a statute passed by an overzealous or underzealous legislature.[18] While it is perhaps tempting to view the common law as somehow more "pure" for this reason.[19] The real advantage, however, of the common law here is that it is gradual, and thus represents a consensus that is more reliable as an approximation of a law's environmental ethic, precisely because it has built up over a relatively long span of time.[20]

This is not to say that statutes are not a useful path in analyzing the law's implicit environmental ethic,[21] for statutes certainly can be instructive of more modern ways of perceiving the environment, and can provide substantial rewards in clarifying social attitudes toward environmental protection.[22] However, even in considering statutes, it can still be useful to consider the common law as a background principle against which the legislature acted, whether the legislature codifies the common-law rule or supercedes it.[23] Overall, common-law doctrines are useful because they represent long-term buildup of precedent representing traditional legal interpretations of "nature."

Finally, riparian law is particularly relevant because it not only regulates resources of unique and current environmental concern,[24] but also is a topic that scholars are currently debating which has potentially profound implications for federal takings law.[25]

II. Flavors of Ethics: From Economic Analysis to the Spotted Owl

Broadly speaking, all theories of the relationship between humans and their environment can be divided into two categories, anthropocentric and nature-centered. While this distinction can be hazy,[26] it remains an important organizing principle in environmental ethics.[27]

A. Human-Centered Views

Essentially, anthropocentric views of nature place primary importance on the needs of humans, without consideration of nonhuman needs.[28] Perhaps the most intuitive and common form of anthropocentrism is economic analysis, at least to the extent that it converts all factors in a decision into monetary values. Under the most extreme form of this view, a spotted owl's value would be purely economic, i.e., how much it could be sold for when stuffed by a taxidermist. This form of reasoning could be called a "purely economic utilitarian" form of anthropocentrism, since it concerns itself primarily (if not exclusively) with trade and commerce. Of course, economists have also devised methods of placing values on the environment as it exists "untouched" by humans,[29] but this is still anthropocentric in the sense that it translates the environment into human currency for analysis on presumably human terms.[30]

but this hypothetical is complicated exponentially in practice of course because every lawmaker is making similar calculations across diverse, long-term legislative agendas.

17. *E.g.*, Frank Upham, *Mythmaking in the Rule of Law Orthodoxy*, *in* Carnegie Endowment for International Peace, Rule of Law Series 19 (2002) ("U.S. justice is a deeply institutionalized form of politics that operates over relatively long time spans—either the terms of elected state judges or the political cycles of presidentially appointed federal ones.").
18. *See* Michael P. Van Alstine, *The Costs of Legal Change*, 49 UCLA L. Rev. 789, 791 (2002) ("The rise of legislative law, together with the advent of the administrative state, increased the typical size and ambition of lawmaking projects. Progress in the law thus has come to be characterized more by large legislative initiatives than by slow riparian titles of common law experience.").
19. *See also* Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 98 ("One could reasonably argue that the clearest lens on society's environmental ethic is the common law of property."); Freyfogle, *supra* note 4, at 104 ("[B]y the late twentieth century, the golden era of the common law was so clouded, even in legal memory, that many judges and lawyers accepted the common law of property as a near-timeless given, unwilling to modify it to incorporate . . . new ecological wisdom and shifting social values.").
20. *See* John F. Manning, *The Absurdity Doctrine*, 116 Harv. L. Rev. 2387, 2468 (2003) ("Where similar problems of textual generality recur over time, the accretion of precedent or the outright importation of common law solutions may solidify ad hoc judicial responses into reasonably precise conventions for resolving like cases.").
21. *See infra* notes 89-95 and accompanying text for a review of current state-level statutory law on riparian title rules.
22. *See* Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 98.
23. *See* Manning, *supra* note 20, at 2468 ("[T]he accretion of . . . common law solutions may solidify . . . into . . . background conventions, [which,] if sufficiently firmly established, may be considered part of the interpretive environment in which Congress acts.").
24. Daniel D. Barnhizer, *Givings Recapture: Funding Public Acquisition of Private Property Interests on the Coasts*, 27 Harv. Envtl. L. Rev. 295, 299-306 (2003) (discussing high costs of shoreline development).
25. While takings issues will not be explored in depth in this Article, *see infra* note 114, it is clear that the topic of coastal regulation is playing an influential role in the takings debate. *See, e.g.*, Barnhizer, *supra* note 24, at 354-74 (arguing for mechanisms to recapture the value of government subsidies or "givings" to coastal development, in order to avoid unjust compensation under takings law); Vicki Been, Lucas *v. The Green Machine: Using the Takings Clause to Promote More Efficient Regulation?*, *in* Property Stories (Andrew Morriss & Gerald Korngold eds., 2004) (discussing coastal development subsidies and their implications for takings law).
26. *See* Samuel P. Hays, Beauty, Health, and Permanence—Environmental Politics in the United States, 1955-1985, at 246-59 (1987). *See also infra* note 30.
27. *See* Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 80.
28. Richard L. Revesz, Foundations of Environmental Law and Policy 19 (1997) ("Human-centered works derive the appropriate conditions for the treatment of the environment by reference solely to the interests of human beings.").
29. *See* Environmental Regulation: Law, Science, and Policy 40-42 (Robert V. Percival et al. eds., 3d ed. 2000). For a critique of the idea that anything can still be considered untouched by human activities, see generally McKibben, *supra* note 3.
30. While it is possible to argue that any utility function that results in protection of nonhuman nature is therefore essentially biocentric, such an argument misses the fundamental point that utility is inextricably linked to human needs, and therefore, even though some humans need nature (for aesthetic or economic reasons), mere protection of nature is not biocentrism. Merely because an anthropocentric ethic is able to incorporate substantial ecological and environmental awareness does not make the ethic biocentric.

    It is also possible to argue that all nature-centered views are subject to the inherent contradiction that they are human theories, and therefore presumably have been created for the benefit (albeit noneconomic) of humans. Thus all nature-centric views are in some sense also anthropocentric.

    However, the anthropocentric-biocentric distinction is still viable because their rationales differ in clear ways; biocentric ethics purport to preserve nature for its own sake (regardless of any implicit human utility involved). Thus the biocentric claim clearly distin-

The impulse to maximize human well-being, though, is the essence of anthropocentric views of nature.[31] One possible element of this well-being is appreciation for nature, and this view is alive and well; one commentator has posited that environmental regulations represent judgments about "the good life" that society chooses in a collective way.[32] On this reasoning, a political unit protects nature because they value it and have determined that nature is in some fashion a positive factor to their existence. Another commentator has argued for an (implicitly anthropocentric) "objective" way of defining welfare in order to help inform the definition of property, a definition of welfare which incorporates appreciation of natural beauty in its calculus.[33] In these ways, human-centric views can be consistent with environmental protection, but the important point is that these theories protect nature based on human desires and utility (however broadly defined). A spotted owl might be preserved under this rationale because it is aesthetically pleasing, or culturally important.

Professor Flournoy proposes further useful subcategories within anthropocentrism. She first outlines what she calls "ecological utilitarian ethics," a theory which uses cost-benefit analysis to determine the limits of market economics, particularly with regard to uncertainty.[34] She also identifies a "nuisance impulse," which, as its name's reference to common-law nuisance suggests, is the subset of anthropocentrism which protects human health, safety, and property.[35] She further identifies two kinds of nuisance impulse: utilitarian, which involves cost-benefit balancing, and rights-based, which involves protection of rights without cost consideration.[36]

Professor Flournoy also posits an "ecological utilitarian impulse," which is both utilitarian in that it is concerned with maximizing welfare, but also ecological in that it incorporates the scientific knowledge of ecology.[37] Blending these two areas of expertise, this impulse takes limits of scientific knowledge into account when it calculates the costs and benefits of a given decision.[38] Under this rationale a spotted owl might be preserved for the ecological and long-term potential economic value it might have as a higher order species in an ecosystem.[39]

The final subcategory of anthropocentrism Professor Flournoy outlines is the "sustainability impulse" which incorporates the insights of the ecological utilitarian impulse, but also adds consideration for future generations into a long-term, ecologically informed utilitarian calculus.[40] A primary value within a sustainability ethic is whether a given practice may be continued into the distant future, or indefinitely, without adversely affecting the natural systems upon which current or future life depends.[41] Therefore, under the sustainability impulse a spotted owl might be protected because it will, as a higher order species in an ecosystem, preserve the greater ecosystem, increasing the chances that future generations' needs can be met. Inherent in sustainability-oriented ethics are clear practical difficulties in valuing the rights of future generations and uncertainties in what their needs will be given the progress of technology[42]; however the essential goal is to give consideration to the rights of future generations in order to allow survival.[43]

B. Nature-Centered Views

In contrast to human-centered views stand so-called nature-centric views, whose primary claim is to value nonhuman nature for its intrinsic worth, as opposed to its instrumental worth to humans.[44] These theories can be divided roughly into two separate groups, which will be here termed community- and rights-based.[45]

1. Community-Based Views

Perhaps the most familiar figure in the realm of nature-centric ecological thinking is Aldo Leopold, whose *Sand County Almanac* remains a classic in the 20th century environmental ethics community.[46] The vision he sets forth is one which emphasizes the community between humans and the non-natural world.[47] In Leopold's words, this is a "land ethic," whose function is to, "enlarge[ ] the boundaries of the community to include soils, waters, plants, and animals,

guishes itself from anthropocentric ethics, which are largely self-consciously concerned only with humans' needs.

31. *See* Andrew Dobson, Green Political Thought 47-48 (1990) (describing distinction between "shallow ecology," i.e., anthropocentrism, concerned, for example, with effects of toxics in the environment because of their effects on human health, and "deep ecology," concerned with nature "for its own sake—for ecological principles such as complexity, diversity and symbiosis"); Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 80. One is naturally led to ask what criteria governs the choice of "ecological principles" that should be considered worth striving for. For further discussion on this point see *infra* Part II.C.

32. *See* Dobson, *supra* note 31, at 50; Mark Sagoff, The Economy of the Earth: Philosophy, Law, and the Environment (1988).

33. Daphna Lewinsohn-Zamir, *The Objectivity of Well-Being and the Objectives of Property Law*, 78 N.Y.U. L. Rev. 1669, 1673, 1705 (2003).

34. Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 80-81.

35. *Id*. at 84.

36. *Id*.

37. *Id*. at 85.

38. *Id*. For an examination of the extent to which U.S. law incorporates an ecological perspective and suggestions on increasing this perspective, see E. Donald Elliot, *Toward Ecological Law and Policy*, *in* Thinking Ecologically 170 (Marian R. Chertow & Daniel C. Esty eds., 1997).

39. *See, e.g.*, Fred Bosselman, *A Dozen Biodiversity Puzzles*, 12 N.Y.U. Envtl. L.J. (2004) (forthcoming).

40. *Id*. at 86.

41. *See id*.; Robert Goodin, *Sustainability*, *in* Donald VanDeVeer & Christine Pierce, The Environmental Ethics & Policy Book 443 (3d ed. 2003) ("The overriding, unifying principle . . . is that all human activities must be indefinitely sustainable.") (citation omitted); Shorge Shato, *Sustainable Development and the Selfish Gene: A Rational Paradigm for Achieving Intergenerational Equity*, 11 N.Y.U. Envtl. L.J. 503 (2003), *available at* http://www.law.nyu.edu/journals/envtllaw/issues/vol11/2/sato.pdf ("[S]ustainable development . . . means sav[ing] the human species from itself without shutting down the global economy.").

42. Shato, *supra* note 41, at 506 (noting differences in scholarship on the issue of what discount rate should be applied when cost-benefit analysis is used to value future generations' needs, ranging from parity (equal treatment of future and present generations) down to 3%).

43. Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 86.

44. Dobson, *supra* note 31, at 47 (describing nature-centric "deep ecology" in contrast to anthropocentrism).

45. *See* Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 81-82, 86.

46. *Id*. at 50. For a recent articulation of the land ethic, see generally Eric T. Freyfogle, The Land We Share, Private Property, and the Common Good (2003).

47. Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 50.

or collectively, the land."[48] Thus the "land" at issue is broadly defined, and the "ethic" functions on a community-wide scale, as evidenced by the oft-quoted Leopold maxim: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."[49] Of course, this standard raises a host of questions[50] on the contours and meanings of "integrity, stability, and beauty," concepts that clearly implicate complex scientific and aesthetic judgments.[51] It is therefore somewhat unclear what the specific rationale would be to protect a spotted owl under Leopold's standards, although it is perhaps beyond doubt that the owl would be protected, if only for its perceived beauty.

A related impulse is the privileging of "ecological" values, such as diversity, ecosystem health, or genetic resources.[52] Again, the choice of these values raises immediate questions on the criteria of their selection; if humans have chosen these values for preservation, are they because humans derive some implicit pleasure from protecting ecosystems (even on ecological or scientific terms)? This possibility suggests a fundamental incoherence in nature-centric views, as they are all theories created by humans and are thus subject to the criticism that humans' needs are served on some level by the theories.[53]

2. Rights-Based Views

Broadly speaking, these theories assign rights to nonhuman nature.[54] Under this view an owl as an independent entity might have its own individual, legally defensible rights. In one sense, such a grant of rights would be the clearest possible signal of value of the intrinsic worth of nonhuman nature, in contrast to the potentially hazy values of community-based nature-centric ethics.[55] Naturally, the contours of any such rights are themselves open to debate. Carol Rose has described possible rights as an extension to animals of the Kantian notion that creatures should be in control of their own destiny, not treated simply as tools toward fulfilling human desires.[56] Rose also notes several problems with any such theories, such as their apparent contradiction of the norm among animals to interfere with each others rights by preying on one another,[57] and the question of how to limit the class of rights-bearing nonhuman life.[58] She also notes that in terms of usefulness in protecting the environment, rights-based theories fall short because they protect individuals, while what is ecologically relevant is generally the protection of a whole species or ecosystem.[59]

C. Levels of Analysis in Examining Ethical Content of Legal Rules

In order to attempt to place a legal rule into a theoretical category, in this Article legal concepts will be analyzed on at least three possible levels in order to discern their implicit ethical content. First, a rule will be analyzed on the basis of the rationales that are articulated by courts. This level of analysis presumes that courts know what they are doing and why, and that their explanations are nonpretextual and worth examination.

The objective effects of the rule as applied will also be examined in an effort to discern its ethical content. "Objective effect" here is meant to refer to the legal rule's actual impact on real-world relationships or property; a law which had the effect of mandating state-run foster care of all children could be said to be "antinuclear family," or a law which assigned perpetual conservation easements to any accreted property could be said to be protective of the environment. A law which has the effect of subordinating human interest to natural processes could be viewed as nature-centric (despite a court-articulated anthropocentric rationale).

Finally, the incentive effects of the law on people will be examined. In this type of analysis, the response of a rational, self-interested regulated person will be assessed to ascertain whether foreseeable effects of the law can be characterized as nature- or human-centric.

These three levels of analysis can all coexist simultaneously, and often overlap with one another. However, as will be evident from the analysis, it is possible that one particular mode of analysis will be determinative or dominant in assessing a particular legal rule's overall ethical content. For example, incentive effects are particularly important in environmental ethics to the extent that ethics should be concerned with real-world practical outcomes. By contrast, often a court's articulated rationale for a rule will not be the final word in assessing the ethics of the legal rule.

Having outlined the basic theoretical framework and approach, the next part will analyze the law of riparian title.

III. Title Rules Along Shifting Shores

The law governing erosion and buildup of land along seacoasts and rivers is a useful illustration of how legal rules re-

48. Aldo Leopold, A Sand County Almanac (Oxford Univ. Press 1949), *quoted in* Dobson, *supra* note 31, at 50.

49. Aldo Leopold, A Sand County Almanac With Other Essays on Conservation From Round River 262 (Sierra Club, Ballantine 1966), *quoted in* Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 77.

50. These questions are beyond the scope of this Article, but should be noted because they illustrate some of the difficulties embedded in this ethic.

51. *See* J.B. Ruhl, *Thinking of Environmental Law as a Complex Environmental System*, 34 Hous. L. Rev. 933, 971-73 (1997). For an in-depth and insightful examination of the scientific uncertainty on the issue of biodiversity alone (which may fall into Leopold's category of stability, or, of course, may not), see generally Bosselman, *supra* note 39. These questions obviously raise doubts about the utility of such an ethic for lawmakers, but perhaps noting the ethic's lack of utility itself misses Leopold's essential point, which is that utility is not the point.

52. Dobson, *supra* note 31, at 47.

53. Nonetheless, there is some utility in distinguishing those theorists which at least attempt to value nature on its own terms and for its intrinsic worth, from those who see nature as simply means to humans' ends. *See also supra* note 30.

54. Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 81. *See generally* Christoper D. Stone, *Should Trees Have Standing? Revisited: How Far Will Law and Morals Reach? A Pluralist Perspective*, 59 S. Cal. L. Rev. 1 (1985); Christoper D. Stone, *Should Trees Have Standing?—Toward Legal Rights for Natural Objects*, 45 S. Cal. L. Rev. 450 (1972); Paul W. Taylor, Respect for Nature: A Theory of Environmental Ethics (Princeton Univ. Press 1986).

55. *See supra* Part II.B.1.

56. Rose, *Given-ness and Gift, supra* note 2, at 20.

57. *Id*.

58. *Id*. Such limitations could be made on sentience, capacity to feel pain, or a number of other grounds, all of which are of course open to considerable debate. *Id*.

59. *Id*. at 21. *See also* Bosselman, *supra* note 39.

act to natural phenomena. The inexorable natural forces impacting property along rivers, bays, or the ocean, force the law to define rules by which waterfront property owners will be governed. Further, this area of law provides an interesting legal "experiment" because erosion and accretion are, of course, not *always* natural; shoreline erosion and shifts in waterfront parcels may be caused by structures, such as the increasingly common human structures along the seacoasts.[60]

The common law divides these natural processes (which occur both on the seacoast and along river ecosystems) into three categories: accretion, reliction, and avulsion.[61] Accretion is the gradual buildup of material (or alluvion) that deposits to form currents to form new land on a waterfront owner's adjacent parcel.[62] Reliction is the reverse, when water gradually recedes from the shoreline and uncovers new dry land adjacent to a shoreline owner.[63] Avulsion is a sudden occurrence of accretion or reliction, where a stream changes course, for example.[64]

A. Accretion

The traditional common-law rule governing accretion is that any accreted land belongs to the adjacent landowner.[65] The accretion to qualify as such must occur "gradual[ly] and imperceptive[ly],"[66] which is defined by the test, "though the witness may see from time to time that progress has been made, they could not perceive it while the process was going on."[67] The common-law rule clearly refused to distinguish between accretions caused by "natural" or "artificial" causes, and thus would allow waterfront owners to gain title to accreted property even when caused by intervention of third parties.[68] Some courts, though, did state that such rights to accretion were in some sense "natural" in their connection or association to the waterfront property itself (suggesting some theory of natural law which governs).[69] When accretion must be divided among several owners, it is divided in proportion to the amounts of shoreline each owner possessed pre-accretion.[70]

The law of accretion also applies to processes of erosion, if they are equally gradual.[71] The "law of accretion" is in that sense a misnomer and perhaps misleading, because it refers to both the process of accretion or building up of land, and the process of erosion. In the case of erosion, it is said that the owner bears the risk of loss, as title is lost when waters encroach on waterfront property.[72]

A brief note about reliction is necessary here, since the process of reliction is very similar to that of accretion. While accretion involves encroaching land, reliction is a case of receding water. Reliction occurs when land that appears as a result of receding waters along waterfront property; such land becomes part of the title of the upland parcel owner.[73] Therefore, the rule of law is functionally the same (landowners are subject to both gain and loss of property). Indeed, one leading treatise writer noted that reliction and accretion are often not even distinguished from one another, with no practical effect.[74] This Article will adopt the approach taken in that treatise, and address the two processes together, by the name of accretion, due to the functional legal equivalence of the two processes.[75]

There are some exceptions to the majority traditional common-law view of accretion; California distinguishes between natural and artificial causes of accretion, and only awards waterfront landowners title when the process is natural.[76] Modern courts have also read an exception into accretion law, denying title when the buildup has been caused by the owner of the affected parcel.[77]

The origins of the common-law doctrines governing riparian title are thoroughly outlined in one U.S. Supreme Court case from the late 19th century, *Nebraska v. Iowa*,[78] in which the Court quotes extensively from research done by the U.S. Attorney General's office.[79] According to this account, the common law of accretion traces back through English common law; William Blackstone in his *Commentaries* discusses a rule of accretion present in English com-

60. *See generally* Barnhizer, *supra* note 24, at 299-306; Wallace Kaufman & Orrin H. Pilkey Jr., The Beaches Are Moving—The Drowning of America's Shoreline (Duke Univ. Press 1983).

61. *See* St. Clair County v. Lovingston, 90 U.S. 46 (1874); Mayor, Aldermen, and Inhabitants of City of New Orleans v. Unied States, 10 U.S. (1 Pet.) 662 (1836); Tarlock, *supra* note 12, §3:39.

62. Tarlock, *supra* note 12, §3:41.

63. *Id*. §3:44.

64. *Id*. §3:42. It is unclear whether avulsion also encompasses sudden changes along bays or the ocean. *Id*; *but see* Garrett v. State, 289 A.2d 542 (N.J. Super. Ct. Ch. Div. 1972) (describing reliction in ocean coastal context).

65. 90 U.S. at 68-69.

66. *Id*.

67. *Id*.

68. *Id*. ("Whether it is the effect of natural or artificial causes makes no difference as to the ownership."); Tatum v. City of St. Louis, 28 S.W. 1002 (Mo. 1894) (noting that even if third party's structure or obstruction caused the accretion, the riparian owner is still entitled to accretion as property); Burk v. Simonson, 2 N.E. 309 (Ind. 1885); Lockwood v. New York & N.H. R. Co., 37 Conn. 387 (Conn. 1870); Williams v. Baker, 41 Md. 523 (Md. 1875). *See also* Frank v. Smith, 293 N.W. 329 (Neb. 1940) (more modern application of third-party rule).

69. *E.g.*, Minneapolis Trust Co. v. Eastman, 50 N.W. 82 (Minn. 1891) (conveyance of title includes, "riparian rights which are naturally incident to the land conveyed among which is the right to accretions formed by gradual alluvial deposits beyond the line of low water . . ."); Kennedy v. Municipality No. 2, 10 La. Ann. 54 (La. 1855) (characterizing right to accretion as a vested one, and is inherent in the property itself, and forms an essential attribute of it, resulting from natural law in consequence of the local situation of the land).

70. *E.g.*, Batchelder v. Keniston, 51 N.H. 496 (N.H. 1872); Kehr v. Snyder, 2 N.E. 68 (Ill. 1885).

71. Tarlock, *supra* note 12, §3:40.

72. *Id*.

73. *E.g.*, Hancock v. Moore, 146 S.W.2d 369 (Tex. 1941); Frank v. Smith, 293 N.W. 329 (Neb. 1940); Perkins v. Adams, 33 S.W. 778 (Mo. 1896); Warren v. Chambers, 25 Ark. 120 (Ark. 1867); Tarlock, *supra* note 12, §3:44.

74. Herbert T. Tiffany & Basil Jones, Tiffany on Real Property §1219 (2003):

> When one acquires additional land by deposit of soil, he is said to acquire it by accretion or alluvion. When he acquires it by the recession of the water, he is more properly said to acquire it by reliction (or dereliction), but the expression "accretion" is not infrequently applied in such a case as well as in that first referred to, and it will, for the sake of convenience, be so applied in the course of the following remarks.

75. *Id*. This approach is not meant to minimize the distinction, should it be useful in a particular situation, but merely for the sake of convenience.

76. Tarlock, *supra* note 12, §3:43.

77. *Id*.

78. 143 U.S. 359 (1892).

79. *Id.* at 361-67 (quoting 8 Op. Attys. Gen. U.S. 175, 177).

mon law that operated in substantially the same form as the majority view described above.[80]

The Attorney General memorandum traces the rule back even further, though, all the way back to Roman law.[81] The doctrine is described as not only long-standing, but also widespread, and unchallenged.[82] As an intriguing aside, it should be noted that the Roman origins of the law of accretion are perhaps not surprising, considering that Roman law's doctrine of adverse possession, known as *usucapio*, provided for transfer of title in two years.[83] In addition, the Roman doctrine of *usucapio* can be viewed alongside the doctrine of *occupatio*, under which finders of hitherto unknown things (like gems along the seashore) acquired title,[84] and the doctrine of *accessio*, under which the joining of smaller objects to larger results in a grant of title to the owner of the larger object.[85] Viewed together, these doctrines can be seen as effectively equivalent to a doctrine granting title to accreted land.

The Court in *Nebraska* also quotes the 18th century French legal scholar Emmerich de Vattel at length, who provided insight into the distinction between accretion and avulsion,[86] and noted that avulsion is "very uncommon."[87] The primary distinction between accretion and avulsion, he noted, is that in accretion the riverbank, which defines a parcel's borders, remains *intact* and merely shifts, whereas in avulsion, the quick change in flow actually *destroys* the original bank, therefore the new bank is distinct and is not the defining line of the property as it was originally outlined.[88]

Overall, it is clear that the doctrine granting title of accreted land to the upland owner has very deep roots. In that sense then it is a useful window into long-held views about this area of property law as it relates to humans' relationship with their environment.

Before analyzing the ethical content of the common law, it is also useful to also note by way of contrast that a small minority of U.S. states have to date addressed the processes of accretion and reliction and erosion via statute.[89] Two of these, North Dakota and Oklahoma, simply codify the common-law doctrine.[90] Clearly the states that lack a seacoast have statutes that only apply to rivers; it is unclear though why those inland states that have passed legislation have chosen to do so. One possible explanation of the North Dakota, Ohio, and Oklahoma statutes is that these states are notable for their flatness and lack of elevation, and therefore may be more subject to rivers changing course, requiring a well-established body of riparian title law to deal with possible title uncertainties created by shifting rivers. In general, though, accretion appears to have been one of the lesser modified areas of riparian common law.[91]

Hawaii's statute is the most extensive; it provides procedures for quiet title action in cases of accretion,[92] and requires a showing by the landowner seeking title that the accretion is both "natural" and "permanent," on a preponderance of the evidence standard.[93] Permanent in this context means it has existed for 20 years, though "natural" remains undefined.[94] The right to bring such an action along the seashore is limited among private citizens to those that have already lost land to erosion.[95] The state itself also has power to bring a quiet title action.[96] Such a rule appears to respect the state's interest in adjudicating disputes about its sovereign territory. The grant of a right to bring a quiet title action to a private landowner only if she has already lost land, however, may represent a concern about takings; if the state deprived a waterfront landowner from all possibility of regaining lost property (the effect of forbidding a quiet title action), the landowner might argue that the statute effected a "total" taking of the owner's common-law riparian right to accretion.[97]

Having outlined the basic common-law rules, its origins and exceptions, the next sections will first address the ethics embedded in traditional common-law majority rule, turning then to the exceptions.

1. Ethical Content of Majority Rule as Applied to Buildup of Land

In one sense, the law of accretion is unambiguously anthropocentric, since previously unowned, "natural" elements have gone into human ownership. This simple fact, stated more broadly, is that material coming into settled contact with private property actually becomes private property; it is hard to imagine a view more deferential to human utilitarian norms than one that equates substantial contact with ownership. Indeed, the accretion rule has almost a mystical quality, signifying a quasi-divine human dominion over the natural world, transforming once-"free" particles of matter previously suspended in water into property that belongs to one human, with all the rights that property entails.[98]

80. *Id*. at 364.

81. *Id*. ("The doctrine is transmitted to us from the laws of Rome.").

82. *Id*. ("Such, beyond all possible controversy, is the public law of modern Europe and America; and such, also, is the municipal law both of the Mexican republic and the United States.").

83. Alan Watson, Roman Law and Comparative Law 46 (1991).

84. *Id*. at 47.

85. *Id*.

86. 143 U.S. at 364-67.

87. *Id*. at 366.

88. *Id*. at 366-67.

89. Several searches of all state statutes turned up only six statutes addressing title issues of accreted land: Hawaii, Haw. Rev. Stat. §§171-1, 171-2, 343-3, 501-33, 669-1; North Dakota, N.D. Cent. Code §47-06-05; Ohio, Ohio Rev. Code Ann. §721.04; Oklahoma, Okla. Stat. tit. 60, §335; and Oregon, Or. Rev. Stat. §274.440.

90. N.D. Cent. Code §47-06-05; Okla. Stat. tit. 60, §335.

91. *See* Tarlock, *supra* note 12, §§3:89-3:102 ("Statutory Modification of the Common Law of Riparian Rights," not mentioning the law of accretion or riparian title).

92. Haw. Rev. Stat. §669-1.

93. *Id*. §501-33.

94. *Id*.

95. Haw. Rev. Stat. §669-1.

96. *Id*.

97. *See* Lucas v. South Carolina Coastal Council, 505 U.S. 1003, 22 ELR 21104 (1992); *see also supra* Part III.A.2.

98. This conversion, of course, is not irrevocable, *see infra* Parts III.A.1.-3. (discussing erosion). The property interest in accreted land has said to be "fee, determinable upon the occupancy of the soil by the river." Tarlock, *supra* note 12, §3:41. There is substantial scholarship on the topic of divinely ordained human domination over nature; the Christian religion has even been accused of causing the environmental crisis of the 20th century. *See* Carolyn Merchant, Reinventing Eden—The Fate of Nature in Western Culture 20-24 (2003) ("The Genesis [verse] 1 ethic, claims that humans must 'replenish the earth and subdue it.' Or, as historian Lynn White Jr. argued in 1967, it is 'God's will that man exploit na-

It should be noted that the individual nature of the property in question here is not essential to the analysis. If land that accreted were held in common, or by the state, this could still be considered in some sense an anthropocentric legal rule, because the state could then use it as it saw fit for social utility, and humans would be the ultimate beneficiaries. By contrast, a more nature-centric view might, for example, put the land in trust for conservation, or for future generations, signaling a version of the ecological utilitarian or sustainability impulses.[99] However, the law as it stands gives the accreted land to an individual, which strongly suggests the capacity for private enterprise and therefore an economic utilitarian impulse.

The contrast here between granting the land to the state and to an individual highlights a potential gap in the ethics of nature as outlined above. While there is a category in the existing literature for a community-based nature-centric ethic,[100] some scholars appear to have neglected to include a category for anthropocentric *communitarian* conceptions of humans' relationship with nature.[101] Under such a view, social welfare would be maximized by deciding how to put a particular parcel to use *in common*, such as under the public trust doctrine. A decision by the government to use an item in common would therefore reflect a rational communal-level calculation that society as a whole will be better off if the parcel in question is shared.[102] This ethic perhaps is unfamiliar in the current cultural climate, which is arguably quite individualist.[103] However, outlining a communitarian utilitarian category is perhaps useful, if only to show contrast, because communal ownership of a resource is one possible (albeit uncommon) approach to environmental conservation.

The rationales explicitly advanced by courts for the accretion rule are often self-consciously utilitarian. One, essentially an administrative costs argument, phrased *de minimis non curat lex* (the law does not concern itself with trifles),[104] itself exhibits a certain disdain for these matters, and perhaps, the natural world. The implication of this rationale is that because the amount of land at issue is so small, it is not an issue that merits the resources required by official legal attention. That is, the cost of deciding who should own accreted land in each of these cases does not justify the benefits that would result from individualized decisionmaking. The cheapest rule under such a mentality is simply to let title fall where the property does, the adjoining owner. Such a rationale is safely categorized as a nearly purely economic utilitarian argument, as it appears to rely on the assumption that it is administratively expedient for courts to overlook such small matters because it will save social resources via reduced litigation and property-line disputes.[105]

A second rationale that is articulated by courts, ensuring access to water,[106] has distinctly utilitarian overtones to it. The ethical content of the access rationale depends on the goal which access is being used to achieve. Access is itself valued for a variety of conceivable reasons; from commercial boating and fishing to recreational swimming and other activities. In the case of commercial boating or other business activities, the access rationale implicates a pure economic utilitarianism, since access enables profit-making activity. By contrast, where access is valued for recreational purposes, such as walking along the beach or swimming, or for aesthetic reasons, such as the beauty of an undisturbed coast, the access rationale implicates a utilitarian ethic that includes these aesthetic and recreational pleasures in its welfare calculus.[107] Both of these reasons for access, commercial or recreational/aesthetic (both of which are inherently *human* access, tellingly) are therefore anthropocentric, and utilitarian, differing only in how broadly they define welfare.

The third rationale shows that sometimes the utilitarian ethic is explicitly stated as, "the law favors the productive use of land and the waterfront owner is in the best position to put the land to productive use."[108] This efficiency rationale is self-consciously anthropocentric; under the court's conception the proper role of land is to be productive under human industry, and the proper role of the law is to enable humans to engage in such economic creation by removing barriers such as clouds on title. Under this ethic, the scientific knowledge of ecology is apparently nonexistent; land is reduced to either a commodity or a raw material of production of wealth and the law's role is to grease the wheels of production.

Some courts have articulated a rationale that appears less anthropocentric, arguing that accretion is an inherent quality, or "natural" product of waterfront land, just as, for example, fruit is the natural product of a tree.[109] While this is perhaps rhetorically appealing to a biocentrist, similar language is used to describe interest on financial accounts,[110] suggesting that as a general notion of property law, this "natural product" reasoning is utilitarian in its underpinnings. Further, the rhetoric of "products" clearly implicates human utility, as opposed to a truly biocentric approach.[111] It again recalls the economic utilitarian ethic where land is merely a unit of economic production. Land is not a member of a

ture for his proper ends.'"). In this view, the accretion rule could be seen as yet another example in this divinely ordained human domination over the environment.

99. *See supra* notes 37-40 and accompanying text.

100. *See supra* Part II.B.1.

101. Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 81-82, 86.

102. Carol Rose has pointed out that such public notions of ownership have a robust history that traces back to Roman times, but have long been a "cross-current," i.e., not a majority view, in Anglo-American jurisprudence. *See* Rose, *supra* note 4, at 712-14.

103. *See id*.

104. Board of Trustees of the Internal Improvement Fund v. Medeira Beach Nominee, 272 So. 2d 209, 212-13 (Fla. App. 1973); Tarlock, *supra* note 12, §3:41.

105. *See supra* notes 28-29 and accompanying text.

106. *Medeira Beach Nominee*, 272 So. 2d at 212-13.

107. *See supra* note 32.

108. Brainard v. State, 12 S.W.3d 6, 18 (Tex. 1999).

109. *Id*.; Minneapolis Trust Co. v. Eastman, 50 N.W. 82 (Minn. 1891) (conveyance of title includes, "riparian rights which are naturally incident to the land conveyed among which is the right to accretions formed by gradual alluvial deposits beyond the line of low water . . ."); Kennedy v. Municipality No. 2, 10 La. Ann. 54 (La. 1855) (characterizing right to accretion as a vested one, and is inherent in the property itself, and forms an essential attribute of it, resulting from natural law in consequence of the local situation of the land.).

110. *E.g.*, E.S.I. Meats, Inc. v. Gulf Florida Terminal Co., 639 F.2d 1348 (5th Cir. 1981) ("On general principles, once admit that interest is the natural fruit of money, it would seem that, wherever a verdict liquidates a claim, and fixes it as of a prior date, interest should follow from that date.") (quoting Sullivan v. McMillan, 19 So. 340 (Fla. 1896)).

111. *Compare supra* Part II.A. *with supra* Part II.B.

community or a thing to be valued for its own inherent qualities of beauty, but rather it is a commodity that creates products (and humans are the consumers of those products). Once again, nature under this ethic resembles a factory for human enrichment, a starkly economic utilitarian view of the natural world.

2. Ethical Content of Majority Rule as Applied to Erosion of Land

The property interest in accreted land has been said to be "fee, determinable upon the occupancy of the soil by the river."[112] This brings up the case of erosion, in which case the law says title moves with the shoreline, removing the eroded part of the coastal owner's title, and in the case of riverfront property, likely granting title to the landowner across the river (if there is any accretion).[113] Quiet title actions are also a possibility, when erosion (and possible re-building of eroded land) has created uncertainty as to the proper owner of a particular area.

Erosion is treated similarly to accretion in a legal sense, but presents a different ethical posture. While the case of accretion presents a largely anthropocentric rule, the law as applied to erosion could conceivably be characterized as nature-centric, or at the very least putting property owners,' i.e. human, rights at the behest of unpredictable and natural forces. Indeed the law of erosion appears to give powerful legal effect to a natural process, allowing nature to "take"[114] a waterfront owner's property. In one case, a property owner lost over 125 acres of land to erosion, a seemingly drastic result.[115] One could certainly imagine alternative rules that would be less nature-centric than the current law, such as some form of compensation for lost property,[116] or a grant of ownership to the area submerged.[117]

The point here though is that the law as it stands places natural forces in a privileged position relative to humans' property rights; an arguably biocentric approach that gives legal force to natural processes.[118]

It can also be argued, however, that in the case of seacoast property, that because water below the mean high tide mark generally belongs to the state under the public trust doctrine, that what is really occurring here is not purely a privileging of nature over humans, but merely a privileging of the public interest over the individual landowner.

Nonetheless, where the state gains ownership through erosion, the public interest at issue is also linked to a natural process. Thus the situation is more than one of simply transfer of title from one person to others; it is rather transfer because it has been determined that an individual's interests is subordinated to natural processes that have been empowered with the public interest. The natural processes and the public interest coincide, and therefore there is an element of biocentrism when the public interest and natural forces deprive an individual of its property.

The grain of biocentrism here though is slight; while the public interest does coincide with a natural process, it should be noted that transfer from one human (an individual) to others (the public) is a fundamentally human-centric transaction. Further, the reasoning behind the public trust doctrine is also anthropocentric; human recreational needs are, of course, *human* needs.[119]

It therefore would be going too far to characterize the law of erosion as a purely rights-based nature-centric ethic. While the law does appear to prioritize a natural entity (here, water flows) over a human property interest, there is no grant of specific, individual rights to the water itself.[120] Thus the law of erosion appears to fall short of qualifying as a full-fledged rights-based nature-centric ethic.

3. Ethical Content of the Majority Rule of Accretion Law as a Whole

When viewed as a whole, the law of accretion applies to both processes of erosion and accretion. In a dynamic natural system of constantly shifting shores, such a holistic perspective is perhaps most appropriate.

Viewed in this way, the law of accretion appears to present a community-based nature-centric ethic.[121] As waters encroach on waterfront land, the owner loses property. Conversely, if land builds up, the owner gains property. Thus there is an intimate link between title and nature under this system. This link could be seen as a form of community, an acknowledgement of the unavoidable connection between humans and their environment along the shoreline. There is also a certain reciprocal nature to the title rules between humans and waters; such give-and-take is reminiscent of relationships in a community of repeat players.[122] The point here is that by forcing humans' property interests to be inherently inseparable from unpredictable natural processes, the law is creating a sort of reciprocal connection between humans and the natural world that might resemble a legal regime under a communitarian, nature-centric view. A nature-centric lawmaker who believed in community between humans and nature would, after all, still have to confront a question of how to deal with shifting shorelines, and it is likely that such a lawmaker would decide to allow title lines to shift with the shores, since such a rule reflects the inherent connection that people have to the earth.

112. Tarlock, *supra* note 12, §3:41.

113. *Id*.

114. It is unclear whether such a taking would require compensation under the federal Constitution. At least one case has suggested that the right to accretion is implicit compensation for the loss of eroded land. Bonelli Cattle Co. v. Arizona, 94 S. Ct. 517 (1973):

> [R]iparian lands may suffer noncompensable losses or be deprived of their riparian character altogether by the State or Federal Government in the exercise of the navigational servitude. In compensation for such losses, land surfaced in the course of such governmental activity should inure to the riparian owner where not necessary to the navigational project or its purposes.

Such an implicit compensation rationale is very intriguing in light of current scholarship on takings law, which makes very similar arguments. *See supra* note 25 (citing scholarship on givings recapture in coastal law).

115. Hancock v. Moore, 146 S.W.2d 369 (Tex. 1941).

116. *But see supra* note 114.

117. Subdivision of lakes occurs, and could conceivably be applied to riparian situations as well. Tarlock, *supra* note 12, §3:48. *But see* Jesse Dukeminier & James E. Krier, Property 815-23 (4th ed. 1998) (addressing public trust doctrine).

118. *See supra* Part II.B.

119. Dukeminier & Krier, *supra* note 117, at 815-23 (addressing rationales for public trust doctrine).

120. *See supra* notes 56-59 and accompanying text.

121. *See supra* Part II.B.1.

122. *See* Robert Putnam, Bowling Alone 134-45 (2000) (discussing reciprocity as a key element of social capital).

Another question is whether the system of accretion and erosion law meets the traditional definition of community-based nature-centric ethics, as presented by Leopold. Given the inherent flux of shorelines, it could be argued that the law of accretion and erosion, which allows the contact point between humans and the environment to shift with the currents, does not meet Leopold's criteria of "stability."[123] However, the stability at issue in Leopold's work is the stability of the entire "biotic community," as well as its integrity and beauty. Presumably, Leopold would find that allowing shorelines to naturally shift does in fact promote these values in the biotic community.

However, it is crucial here to address the *incentive effects* of the accretion and erosion rules, because judging these rules on their foreseeable effects is perhaps the most important way of evaluating their ethical content. The erosion rule, in particular, has the potential to encourage shoreline property owners to attempt to insulate themselves from the potential of losing their property to erosion, since there is no guarantee that accretion would ever return the eroded property. This self-protection would be a rational, self-interested reaction to the law of erosion, and should therefore be considered in evaluating the law's implicit ethic. Therefore, there is a very strong argument that the law of accretion and erosion is strongly anthropocentric, and even antibiocentric, since it creates a strong incentive for landowners to bulkhead, armor, or engineer in some other way against the possibility of erosion.[124] Under this reading, the engineered structure or protection represents the utility calculation of the landowner, whose incentives are largely economic. Whether or not the individual's calculation accounts for the needs of future generations or the scientific knowledge of ecology may inform what subcategory of utilitarianism is in play here. However, it is reasonable to assume that the landowner, who is not forced to internalize ecological externalities by the erosion rule, would not account for any benefits that accrue outside of her own sphere of ownership, therefore the erosion rule (and, as a result, the law of both accretion and erosion) can be characterized with a reasonable degree of certainty as a purely economic utilitarian rule.[125]

B. Exceptions in the Law of Accretion

1. California's Treatment of Artificial Accretion

As noted above, the majority common-law rule clearly refused to treat differently those accretions caused by "natural" causes versus those from "artificial" causes,[126] and thus waterfront owners would gain title to accreted property even when the accretion was in fact caused by acts of a third party.[127] There is some authority that if an artificial accretion was caused by a landowner (by way of a structure or otherwise) and the landowner *intended* thereby to add land to her parcel, that such accretion does not vest in her upland parcel.[128] However, the majority rule remained that the law would not treat natural or artificial accretion differently.[129]

This failure to distinguish natural from artificial processes, however, was not followed in California. Instead of awarding accreted land to the adjacent private landowner regardless of cause, the California rule maintains the status quo in cases of artificial accretion; the original line of title remains in place and the owner of the tideland retains any title it had previously, and additional land is awarded to the state.[130]

The rationale for this doctrine was that the state had an interest in tidelands which it owned, and it was not permitted to alienate those lands.[131] Since the state was forbidden by law to divest itself of these tidelands, an early court reasoned that it was not possible for another person to divest the state of those lands by means of constructing a shoreline structure that resulted in accretion.[132] What the state could not do directly itself, no one could do indirectly by causing accretion. This does not allow accretion caused by artificial causes to divest the state of its proprietary tidelands. This policy received a ringing endorsement recently by the California Supreme Court, which referred to the state's duties toward tideland under the public trust doctrine.[133]

It is puzzling that California remained the only state to adopt such a rule, since the protection of tidal lands is a pol-

123. *See supra* Part II.B.1.

124. *See* Hancock v. Moore, 146 S.W.2d 369 (Tex. 1941).

125. *See supra* Part II.A.

126. *See supra* notes 68-69 and accompanying text.

127. St. Clair County. v. Lovingston, 90 U.S. 46 (1874) ("Whether it is the effect of natural or artificial causes makes no difference as to the ownership."); Tatum v. City of St. Louis, 28 S.W. 1002 (Mo. 1894) (noting that even if third party's structure or obstruction caused the accretion, the riparian owner is still entitled to accretion as property); Burk v. Simonson, 2 N.E. 309 (Ind. 1885); Lockwood v. New York & N.H. R.R. Co., 37 Conn. 387 (Conn. 1870); Williams v. Baker, 41 Md. 523 (1875); Burk v. Simonson, 2 N.E. 309 (Ind. 1885).

128. Herbert T. Tiffany & Basil Jones, Tiffany on Real Property §1223 (2003) ("[T]he owner of land abutting on the water cannot himself extend its limits at the expense of adjoining proprietors by producing a condition which causes an accretion to his land.").

129. *Id.*

130. Tarlock, *supra* note 12, §3:43.

131. *Id.* The court in Carpenter v. City of Santa Monica, 63 Cal. App. 2d 772, 794 (1944), provided a thorough exposition of this policy concern:

> [A]ccretions formed gradually and imperceptibly, but caused entirely by artificial means—that is, by the works of man, such as wharves, groins, piers, etc., and by the dumping of material into the ocean—belong to the state, or its grantee, and do not belong to the upland owner . . . . If accretions along an entire bay caused by the construction of a pier or wharf were held to belong to the upland owners as against the state, or its grantee, it would mean, in some cases, that the power of the municipality to improve its harbor would be cut off unless the accreted areas were condemned. It would mean that every time the state or its grantee determined to build a wharf or pier, or to grant a permit or franchise for such construction, it would be granting away a material portion of the tidelands along the entire bay that might later be covered by artificial accretions. Such a rule would mean that the state or its grantee could thus grant into private ownership tidelands which it holds under an irrevocable trust. Such rule would permit the state or its grantees thus indirectly to convey away these tidelands, held in trust, when it cannot do so directly. Such a rule would be violative of fundamental concepts of public policy.

132. Patton v. City of Los Angeles, 147 P. 141 (Cal. 1915).

133. State of Cal. ex rel. State Lands Com. v. Superior Court, 44 Cal. Rptr. 2d 399, 412-13 (Cal. 1995):

> The state has no control over nature; allowing private parties to gain by natural accretion does no harm to the public trust doctrine. But to allow accretion cause by artificial means to deprive the state of trust lands would effectively alienate what may not be alienated. . . . This, we believe, was the driving force behind the California doctrine, and the reason it remains vital today. We thus reaffirm the continuing validity of California's artificial accretion rule.

icy which is relevant to all coastal states. One possible answer arises from the historical timing of California's settlement and the state's economic reliance on ocean-going shipping. This appears likely because the early cases addressing artificial accretion were concerned not with the recreation-promotion goals of the public trust doctrine, but rather with the ability to protect state tidelands to allow intensive improvement of harbors for shipping purposes.[134] The court in *Carpenter v. City of Santa Monica*[135] stated such a concern explicitly, noting that "[i]f [artificial] accretions along an entire bay . . . were held to belong to the upland owners as against the state . . . it would mean . . . that the power of the municipality to improve its harbor would be cut off unless the accreted areas were condemned."[136]

Perhaps then the artificial accretion rule was born of necessity; California's reliance on shipping for its economic growth required control over harbor conditions and improvements, and hence an artificial accretion rule emerged to address the extensive improvements that were being made to harbors to accommodate shipping needs. Without such a rule, the numerous piers and docks being built to accommodate ships could have resulted in extensive loss of state tidal lands, inhibiting future harbor development. Because California developed later than the East Coast, its legal system was newer and possibly more flexible, and could address the developing situation more directly via the artificial accretion rule. By contrast, the later economic development in Oregon and Washington would have allowed the traditional view (granting artificial accretion to upland owners) to take hold before heavy improvements to harbors could have created any need for an artificial accretion rule.[137]

The idea that one should not receive accretion caused by one's own actions or structures is an interesting contrast to John Locke's influential "labor" theory of property. While under Locke's theory, property is justified on the basis of an individual having mixed her labor with the material of the world, under the minority accretion rule the opposite is true: one would receive property, but *not* if you had happened to mix your labor with it. Under a strict Lockean rule, whoever constructed a waterfront structure that caused accretion would be entitled to that land, since that person had mixed her labor with the water currents, and therefore is entitled by natural right to the fruits of her labor. This minority accretion, however, is perhaps in conflict with an incentive calculation in the case of riparian land; under the Lockean rule one could own the entire riverbank of a river hundreds of miles long if one figured out how to create accretion (by introducing a large quantity of silt into the water, for example) by modifications upstream. Such accretions would block formerly riparian owners from their access, and would divest the owner of the riverbottom of her property. Thus, in a sense a Lockean rule applied in the riparian context would create perverse incentives because it might create a strong incentive for appropriating (by indirect creation) of distant land.

Locke himself may have accounted for such perverse incentives, though, in his own theory, for he qualifies his labor theory of property with a "sufficiency limitation"—one has a right to that which one has joined one's labor with, but only to the extent that there is "enough, and as good left in common for others."[138] Shoreline property is, of course, a strictly limited resource, and it is clearly in the public interest to have enough left over for productive use by others. In this sense then, Locke's theory explains the California artificial accretion rule; because we want enough shoreline property left over for everyone else under Locke's sufficiency limitation, artificial accretion should not accrue to its maker.

Similarly, under Locke's theory one may only possess as much as one can enjoy and use (the spoilage limitation),[139] therefore allowing vast, dispersed artificial accretion caused by a remote, deliberate upstream actor to accrue to the actor would not be consistent with Locke's theory.

Despite these interesting interactions with Locke's theories, the California rule appears to make sense in terms of the incentives it creates. California avoids the perverse incentives created by the strict application of Locke noted above, but to do so it is forced to blur the distinction between natural and artificial accretion. In one illustrative recent case, *State of California ex rel. State Lands Commission v. Superior Court (State Lands)*,[140] where 12 acres of land had accreted as a result of upstream mining activities and the upland owner had brought an action to quiet title, the court actually found that the accreted land did vest in the upland owner's title, a result which on first examination appears contrary to the majority California rule that all artificial accretion does not vest in the upland owner. How was this anomalous result reached?

The human causes in this case were a gradual, long-time accumulation of silt (a byproduct of mining that was occurring far upstream) on the riverbottom, portions of which gradually accreted on the property in question.[141] The mining had actually been stopped over a *century* before the lawsuit, but more recent dams and other human modifications of the river's flow that may have altered the flow of the river were shown to have contributed to the pattern of accretion.[142] First stating the general rule, the court then went on to muddy it:

> The general California rule is easy to state. If the accretion was natural, the private landowners own it; if it was artificial, the state owns it. But the specific application is far from easy. Is the accretion natural any time it is caused by the flow of the river, as the majority below found? Or is it artificial if caused by the hydraulic mining and by other human activities nearer the accreted land, as the state contends?[143]

134. *See Carpenter*, 63 Cal. App. 2d at 794; *Patton*, 147 P. at 142 ("[A]ll rights of riparian owners over the adjacent tidelands are subject to the public easements for the purposes of navigation, and must yield thereto when the latter are asserted by the state or its agencies.").

135. 63 Cal. App. 2d 772 (1944).

136. *Id.* at 794.

137. This speculative explanation leaves partially open the question of why East Coast states didn't adopt a rule similar to California, since clearly East Coast states were involved in shipping. Perhaps those states adopted the traditional common-law rule before large-scale oceangoing shipping became economically critical, and *stare decisis* preserved the traditional rule. California by contrast was able to develop its legal system later, in the 19th century, and therefore was able to meet its harbor and shipping needs with a new, different rule.

138 John Locke, Two Treatises of Government 306, §27 (Peter Laslett ed., 1967).

139. *Id.* §31.

140. 44 Cal. Rptr. 2d 399 (Cal. 1995).

141. *Id.*

142. *Id.*

143. *Id.*

How to resolve this dilemma? One of the difficult things about the case is how it highlights one of the premises of this Article—humans have now had such a pervasive impact on the environment that it is nearly impossible to separate purely natural processes from purely artificial.[144]

The court's solution here was to read "artificially" quite narrowly: "Accretion is artificial if directly caused by human activities in the immediate vicinity of the accreted land. But accretion is not artificial merely because human activities far away and, in the case of hydraulic mining, long ago, contributed to it."[145] While this reading of "artificial" effectively eviscerates the word of its common meaning, it also has significant implications. The court's decision was motivated by the fear that the "exception would swallow the rule," and by noting that danger, it clearly recognized the profound impact humans have had on the landscape, since the criteria to meet the exception, artificiality, is clearly prevalent in California rivers.[146] Because so much of ecosystems are already modified by human activities, any doctrine that took a strict reading of "artificial" would likely discover that nearly all seemingly "natural" processes are impacted by human activity.

Essentially, the court drew a line based on its own utilitarian calculus. The rule that artificial accretion should not inhere in upland title has authority in California law, and the court apparently did not want to overturn that law either explicitly or by allowing a broad, literal reading of "artificial."[147] It thus appears to have balanced the needs of finding an equitable decision in this case with the principle of *stare decisis*.

The ethics of the California situation are therefore ambiguous. First, it appears that the majority rule, distinguishing artificial and natural causes of accretion, was based on a utilitarian goal, enabling navigation of state-own tidelands and not allowing accretion to divest the state of that interest. This focus on the interest in navigation suggests a distinctly economic utilitarianism.

The more recent reading of "artificial" that limits it to direct, close-in-proximity events reinforces the appearance of utilitarianism. The court in *State Lands* distorted the meaning of "artificial," since it recognized the profound impacts humans have on their surroundings while refusing to admit that essentially this means all rivers in California are "artificial." This appears to be a kind of denial about humans' impacts on the environment, in order to achieve a particular result in one case.

State Lands is utilitarian on another level, though. Implicit in the court's decision is that it is very difficult to discern impacts that are remote in time or space. In this thinking, the costs of discerning whether humans are behind any particular phenomenon are not worth the benefits that would result from such knowledge. In one sense then, *State Lands* illustrates a background awareness that much of the environment is impacted by human activities (the court even says so), but also illustrates a more immediate, present-day calculus that those human impacts are not entirely relevant in deciding cases. What would be relevant to a court? Presumably divestment of the state's own lands would be a relevant factor to consider, as it was the motivating force behind the natural-artificial distinction to begin with.[148]

Therefore, the natural-artificial distinction in California, while it contains a background knowledge of humans' environmental impacts, appears to be a rule of utilitarian convenience. When the distinction serves other ends (such as protecting state tidal lands), it is relevant, but in other cases, such as *State Lands*, it is not determinative, and the court redefines "artificial." This attitude is an implicit rejection of a biocentric view; there is no privileging of "natural" accretion. Such natural land is not somehow more pure or valuable. Rather, distinguishing natural from artificial causes is merely a device to manage incentives and discourage shoreline property owners from attempting to co-opt state-owned land.[149] The meaning of artificial, which delineates the line dividing humans from their natural surroundings, was not given a close scientific analysis, or a careful factual look, rather, it was defined in terms of what the court believed was expedient for achieving the proper result, and a consistent legal doctrine under *stare decisis*. The *State Lands* rule is therefore utilitarian on multiple levels.

IV. Conclusion

The law of accretion is a valuable area of law for analysis in the realm of environmental ethics. It illustrates the many possible readings of one law,[150] and the importance of incentive effects on the analysis of a law's implicit environmental content.[151]

Perhaps the most obvious conclusion to be drawn from this analysis is that it is quite difficult to construe accretion in a way that is potentially biocentric.[152] Perhaps the analysis presented here begs the question of why one should bother comparing laws against a biocentric ethic, when they are so unabashedly utilitarian and anthropocentric in their content? Is there any law that presents a truly biocentric ethic? This question could prove challenging in future research.

Perhaps such a question is the right end to a study like this one; understanding that the law is predominantly anthropocentric, if that is true, is a valuable lesson. Indeed, nor is such an understanding a final conclusion; the many varieties of utilitarianism should be addressed and understood more thoroughly. The law of accretion stands as a good example of the many levels of anthropocentrism; accretion can be said to be a law that is purely utilitarian on an economic level, but it also has elements that can be seen as protecting recreational and aesthetic values as well.

144. *See supra* notes 2-3 and accompanying text.

145. 44 Cal. Rptr. 2d at 416 ("Over the years, numerous human activities have indirectly as well as directly caused a change in water flow and the accumulation of sediment in virtually every river and tideland in the state. To view all of this as artificial accretion would effectively eviscerate the general rule.").

146. The court quotes the trial court it is reviewing as stating: "[V]ery little remains natural in the strictest sense as to most California rivers. Dams regulate the flow and alter the extent to which banks are eroded, for example. But to consider the entire system an artificial one would be inappropriate." *Id*.

147. The court showed special concern for eviscerating the majority rule, but its decision created a result contrary to the majority rule anyway. *See id*.

148. *See supra* notes 132-37 and accompanying text.

149. *Id*.

150. *See supra* Part III.

151. *See supra* notes 123-25 and accompanying text.

152. *See supra* Part III.

Another lesson here is the difficulty of reconciling a desire to distinguish artificial from natural processes with a world that is already profoundly impacted by human activities.[153] The intuitive descriptions of "wild" and "artificial" still hold great meaning to individuals (not to mention environmentalists); how, though, should such concepts influence the law, if at all? The answer is far from clear. The *State Lands* case illustrates the danger of tying any legal rule to a definition of "artificiality," since nearly every ecosystem can be characterized as artificial on some level.[154] Perhaps the notion of artificiality can be a useful concept in defining strictly wild places, a standard against which our most treasured natural places should be held up to.

On the other hand, perhaps the concept of artificiality is past its time.[155] Perhaps it would be wiser to spend resources more judiciously, setting priorities on which conception a law should reflect, be it a purely economic utilitarian notion or one that emphasizes human health. The *State Lands* definition of nature in utilitarian terms suggests that utilitarian considerations can be injected into a word that has a clear and contrary plain meaning. If the legal system values accuracy in description, the incorporation of terms like "nature" into legal standards has the potential to eviscerate their common meaning, as well as complicate the administration of a standard in a predictable manner. Therefore perhaps neither "nature" nor "natural" can or should be used as a legal standard, due to the inherent vagueness of these concepts.[156] Additional confusion is particularly troublesome in an area like environmental law, where clear perceptions of human impact on the environment is necessary, and the meaning of "nature" isn't always clear even without the added complication of utilitarian calculus (like that in *State Lands*).[157] The underlying questions remain; without knowing the underlying ethic of a law, it is difficult to properly assess whether it reflects an attitude that is desirable.

This is perhaps the most valuable lesson of having analyzed the law of accretion: without analyzing a law's implicit ethical content, it is impossible to know whether a law is accomplishing its stated goals, or is in accordance with prevailing social values.[158]

153. *See supra* notes 141-49 and accompanying text.

154. *See id*.

155. *See, e.g.*, *supra* note 3 and accompanying text. For a defense of the value of wildness, and an argument that the Endangered Species Act is intended to preserve "wild nature," see generally Holly Doremus, *Restoring Endangered Species: The Importance of Being Wild*, 23 HARV. ENVTL. L. REV. 1 (1999). *See also* Fred Bosselman, *What Lawmakers Can Learn From Large-Scale Ecology*, 17 J. LAND USE & ENVTL. L. 207, 262-66 (2002) (discussing ecological value of "wildness").

156. *Cf*. Bosselman, *supra* note 39 (arguing that the scientific uncertainty surrounding biodiversity issues creates opportunities for wasteful litigation when biodiversity, without further specification, is employed as a legal standard).

157. *See supra* note 3 and accompanying text. *See also supra* notes 141-49 and accompanying text.

158. *See* Flournoy, *In Search of an Environmental Ethic*, *supra* note 4, at 102.