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Christopher S. Elmendorf

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CHRISTOPHER S. ELMENDORF\*

# Securing Ecological Investments on Other People's Land: A Transaction-Costs Perspective

## ABSTRACT

*This exploratory article on contracting for habitat restoration considers landowner and land-trust strategies under the following conditions: (1) restoration entails initial specific investments by the land trust and adaptation over time, (2) landowners are uncertain about land-trust "type" (specifically, whether the land trust's hidden agenda is to oust the landowner), (3) land trusts are uncertain about landowner type (specifically, the landowner's private cost of complying with the contract), and (4) habitat restoration is characterized by increasing returns to scale (contiguous acreage). Several contracting strategies are compared. Two appear promising: "liability-rule conservation easements," which would establish contracting frameworks with third-party determination of price; and "collective contracting" via supermajoritarian special districts authorized by law to bind the member landowners. It is suggested that contracts with special districts may prove valuable not only for overcoming holdouts, but also as a way of reducing the land trust's vulnerability to opportunism that is premised on asymmetric information about landowner type.*

## I. INTRODUCTION

You own worked-over but ecologically valuable land. I want to protect what ecological function it still has, and more: I want to restore it to ecological glory. I might do this by making your land my land—by

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\* Acting Professor of Law, University of California at Davis School of Law. Thanks to Greg Klass and Nick Parker for exceptionally helpful early discussions, to Susan French for her detailed and thoughtful commentary, and to everyone who was part of the fray at the PERC 2002 Political Economy Forum for their input. I am indebted to the many people and organizations that facilitated my work on this article. I began thinking about the underlying ideas while a Joint Research Fellow of the National Wildlife Federation and the Political Economy Research Center and while receiving support from the Olin Program in Law and Economics at the Yale Law School. Judge Guido Calabresi made it possible for me to write the first draft of this article during my clerkship year. And Deans Rex Perschbacher of the U.C. Davis School of Law and Ricky Revesz of the N.Y.U. School of Law generously made their schools' facilities available to me prior to my joining the U.C. Davis faculty.

buying it—and then by giving it over to the ministrations of conservation biologists and restoration ecologists. But you may have powerful attachments to your land and be unwilling to part with it for anything like the prevailing market price. Or, if I am the government or a conservation organization, there may be de facto political constraints on my owning “too much” land in your community.<sup>1</sup> Or if you have a special talent that I lack for, say, cultivating food or timber, it may be economically efficient for you to maintain a correlative ownership interest.<sup>2</sup> The question then becomes whether we can forge a mutually beneficial contractual arrangement whereby you continue to own the land, or some interest in it, while I invest in its ecological rehabilitation. That question is the subject of this article.

The style of this article is exploratory. It situates “conservation contracting” within the literature on opportunism in contractual relationships and identifies various techniques and institutions, some familiar and some more fanciful, that might be used to manage the forms of opportunism to which conservation contracting appears vulnerable. The ambition of the article is not to establish formally the superiority of one or another contracting tool, in the context of a neat and simple model of transactional opportunism, but rather to provoke thought about a range of concerns and possible solutions. The article anticipates a follow-up empirical project on the conservation contracting techniques actually in use, and also an ongoing conversation with conservation practitioners, through which academics may come to better understand the weaknesses of their suppositions, and practitioners in the infant industry of private lands conservation may be encouraged to think more expansively about their enterprise. It is also my hope that further studies in a formal vein will refine and challenge the economic conjectures and intuitions presented here.

I analyze conservation contracting in terms of a set of strategic interactions between two types of land trusts,<sup>3</sup> the “greens” and the “dark greens,” and two types of landowners, the “olives” and the “browns.” In this schema, greens aspire to protect working landscapes in which dispersed rural land ownership and economic activity persist

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1. See generally Christopher S. Elmendorf, *Ideas, Incentives, Gifts, and Governance: Toward Conservation Stewardship of Private Land, in Cultural and Psychological Perspective*, 2003 U. ILL. L. REV. 423.

2. See Dominic P. Parker, *Land Trusts and the Choice to Conserve Land with Full Ownership or Conservation Easements*, 44 NAT. RESOURCES J. 483 (2004).

3. “Land trust” is the emergent term for a nonprofit organization that secures, by contract, protections for the environmental amenity values of privately owned land. See generally LAND TRUST ALLIANCE, at [www.lta.org](http://www.lta.org) (last visited Apr. 8, 2004).

even as the greens invest in the restoration of degraded habitats.<sup>4</sup> Dark greens may mouth the green line, but their true ambition is to consolidate land ownership, displace rural inhabitants, and let “wilderness” reclaim the land.

On the landowner side, olives share many of the ideals of the green land trusts. For olives, cooperating with the greens to restore degraded habitats has a positive subjective value—though this may be outweighed by objective costs like foregone agricultural output or development opportunities.<sup>5</sup> Browns represent the mirror image of the olives. Subjectively, they tend to disvalue cooperative/restorative ventures with environmental groups. Landowners and land trusts negotiate under conditions of asymmetric information about one another’s true type.

The greens’ conservation investments are characterized by the following features: (1) a high degree of asset specificity, *vis-à-vis* the target landscape (investments, once made, have little salvage value should the project be abandoned); (2) potentially long lives (an initial investment may create ecological benefits for many years, with relatively modest upkeep costs); (3) *ex-ante* uncertainty regarding ecological benefits; and (4) increasing returns to scale (contiguous acreage subject to conservationist management).

Under these conditions, the green land trust that undertakes to contract for ecological restoration may find itself hobbled by two forms of landowner opportunism: *temporal opportunism* (hold-up problems), whereby the landowner tries to appropriate the land trust’s initial specific investment on her parcel by demanding an excessive price in subsequent contracting periods; and *spatial opportunism* (hold-out problems), whereby landowners try to exploit the fact of increasing returns to scale by threatening not to participate in the conservation organization’s landscape-level<sup>6</sup> restoration plan.

Temporal opportunism arises in many commercial relationships. The standard solution is either long-term contracts or vertical integration. Analogously, the land trust and landowner might economize on temporal opportunism costs by agreeing to a long-term or perpetual

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4. For more on the “working landscapes” perspective on environmental restoration, see the web site and publications of the Sonoran Institute, available at [www.sonoran.org](http://www.sonoran.org) (last visited Apr. 8, 2004).

5. By subjective value, I mean the intrinsic or consumption value (positive or negative) that the landowner attaches to the restoration endeavor, apart from whatever financial costs or benefits (“objective value”) are incurred.

6. By “landscape level,” I mean a plan targeted at an ecological landscape in which property is held by numerous individuals, rather than a plan targeted at a particular landowner.

conservation easement that establishes ecological performance objectives and partitions land management rights between the landowner and the land trust. Yet, under the conditions posited by this article—specifically, landowner uncertainty about land trust type and landowner fear of a dark-green land grab—landowners would much prefer to deal with land trusts through a sequence of short-term contracts that spell out the landowner's rights with specificity. And, I will suggest, the green land trusts themselves have reputational reasons to favor short-term contracts for ecological management, provided that temporal opportunism by landowners can somehow be moderated.

This article identifies five means by which landowner opportunism over a series of short-term conservation contracts might be controlled: land trust reputation (for never conceding to hold-up demands during contract renewal negotiations), open space easements, landowner signaling of idiosyncratic preferences, liability-rule conservation easements (through which the land trust and landowner would contract into liability rules to govern subsequent short-term contracts), and mortgages. The efficacy of most of these strategies is limited, at bottom, by the landowner's private information about the costs to her (subjective as well as financial) of complying with the land trust's proposed conservation plan. The liability-rule easement seems the most promising strategy, both as a way of inducing landowners truthfully to reveal their preferences and known compliance costs *ex ante* and as a way of sustaining a long-term, economically efficient program of ecological investment even in the event that the landowner's preferences turn out to be "browner" than initially anticipated.

This article also proposes and compares three tools for dealing with the problem of spatial opportunism: conservation easements subject to a form of put option ("terminable conservation easements"), conservation contracts that employ "most-favored-nation" and unanimity clauses, and contracting with landowner-controlled special districts (in lieu of individual landowners). The last approach seems by far the most fruitful. Moreover, special districts have the potential to mute idiosyncratic landowner preferences and to improve land trust information about landowners' costs of complying with proposed conservation investment plans. As such, special district contracting should also reduce land trust vulnerability to *temporal* opportunism.

This article unfolds as follows. Part II frames the set of assumptions on which I rely. These correspond to fairly conventional views on the spatial element in nature conservation and on the tensions between country people and environmentalists. They are meant to capture something of the ecological and social reality in relatively "natural" rural vicinages where (i) much of the private land is still held

by long-time residents, many of whom use the land for farming, ranching, or small-scale timber production, and (ii) there is some second-home development pressure. Of course, such places are not the exclusive locus of conservation work, but they attract lots of attention and present some interesting contracting problems, and, for better or worse, they represent the universe of the present article. Part III explores the forms of landowner opportunism to which conservation investments on other people's land are given and identifies some possible solutions. This part begins by considering in isolation the negotiations between a single landowner and a conservation organization and then shows how the problem changes when the land trust's field of vision expands to include a landscape of many parcels. Part IV offers a few concluding remarks.

## II. AN INFORMAL MODEL OF CONSERVATION CONTRACTING

### Actors<sup>7</sup>

- Conservation organizations come in two varieties: *green* and *dark green*. Green organizations want to protect and restore natural systems while maintaining a working landscape where land remains in private ownership and economic activities continue. Dark green organizations want to displace the current inhabitants, do away with agriculture, and let "wilderness" reclaim the land.

- Landowners also come in two basic varieties, call them *olive* and *brown*. Both types try to make money off their land. Olives also want to maintain something of their land-based heritage and hope for a future in which open lands, agricultural production, and conservation stewardship coexist. Some browns also have nonpecuniary motivations in their relation to land. But the browns' nonpecuniary concerns relate to things like independence and tradition; conservationist ideals leave them cold, or worse.

### Information

- Conservation organizations have poor information about whether any given landowner is olive or brown. Landowners have poor information about whether any given conservation organization is green or dark green. Wolves are feared to dress as sheep.

- Conservation organizations initially have poor information about the land treatments likely to result in ecological improvements, but, through

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7. The assumptions under this heading are distilled from the literature on environmental attitudes discussed in Elmendorf, *supra* note 1, at 437-51.

a site-specific process of “adaptive management” (trial and error), they can identify and implement ecologically successful restoration measures.<sup>8</sup> Inevitably, there will be many failures along the way, and some sites that once looked promising will have to be written off as unrestorable given technical, financial, and know-how constraints.

### Ecology and Economics

- There are increasing returns to scale (*contiguous* acreage) in conservation investment. That is, the ecological benefits of a given form of investment increase more than proportionately with the number of contiguous acres subject to treatment.<sup>9</sup>
- Ecological restoration projects involve large up-front expenditures with little salvage value. If the project succeeds, it can generate benefits (with modest upkeep costs) for a long period of time.
- Conservation and agriculture are in general rivalrous land uses, though some kinds of conservation stewardship are thought to be compatible with some kinds of agricultural production.
- Conservation investments increase the development value of the property on which the investment is made and adjoining properties. Development (conversion to residential use) of the property subject to the conservation investment, or of adjoining properties, would degrade the conservation value of the investment.<sup>10</sup>
- Protected “open space” increases the development value of adjoining property.

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8. On adaptive management, see generally Simon Levin, *Toward a Science of Ecological Management*, 3 CONSERVATION ECOLOGY, Aug. 6, 1999, available at <http://www.consecol.org/vol3/iss2/art6> and at [www.ecologyandsociety.org/vol3/iss2/art6](http://www.ecologyandsociety.org/vol3/iss2/art6); Bradley C. Karkkainen, *Adaptive Ecosystem Management and Regulatory Penalty Defaults: Toward a Bounded Pragmatism*, 97 MINN. L. REV. 943 (2003).

9. On the spatial design of ecological reserves, see GRAEME CAUGHLEY & ANNE GUNN, *Reserves in Theory and Practice*, in CONSERVATION BIOLOGY IN THEORY AND PRACTICE 309 (1996).

10. It may seem contradictory to postulate both that ecological restoration attracts development and that development wrecks the restored lands—why would the developers undermine that which creates value for their development?—but there is no paradox if development benefits from some aspects of restoration (e.g., trout streams) and harms others (e.g., by spreading exotic plants, displacing native songbirds, etc.). For a review of the literature on the ecological impacts of dispersed rural housing development, see Jeremy D. Maestas et al., *Biodiversity and Land-Use Change in the American Mountain West*, 91 GEOGRAPHICAL REV. 509 (2001).

### III. THE VULNERABILITY OF CONSERVATION INVESTMENTS

The conservation organization that pays a landowner for the (temporary) right to make ecological investments risks exposure to multiple forms of landowner opportunism that, unless controlled, seriously dampen investment incentives *ex ante*. Ecological and economic interconnections among nearby parcels of land give rise to much of this strategic behavior. But for analytical purposes, let us initially abstract from these complications and consider in isolation the one-on-one dynamic between the land trust and a single property owner. Once we have an understanding of that dynamic in place, we can expand our field of view and explore the challenge of contracting to restore landscapes composed of many parcels.

#### A. The Single Parcel Case

##### 1. Two Forms of Temporal Opportunism

Much of the literature on transaction costs and, more recently, the law and economics of social norms analyzes situations in which an actor must decide whether to enter a relationship that may expose her to opportunism.<sup>11</sup> For present purposes, "opportunism" can be defined as one party (a) seeking to increase his share of the returns (often reducing total returns in the process) (b) in a manner that was not approved of by the other parties when the relationship was formed.

Human beings are as inventive in mitigating the risks of opportunism as they are devious in discovering them. The economics literature describes a host of solutions.<sup>12</sup> Typically, the literature conceptualizes a tradeoff between short-term gains from behaving opportunistically and long-term losses due to foregone transacting

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11. Classics include Benjamin Klein et al., *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297 (1978); Benjamin Klein & Keith B. Leffler, *The Role of Market Forces in Assuring Contractual Performance*, 89 J. POL. ECON. 615 (1981); Oliver E. Williamson, *Credible Commitments: Using Hostages to Support Exchange*, 73 AM. ECON. REV. 519 (1983). For a theory of social norms traceable to this literature, see generally ERIC A. POSNER, *LAW AND SOCIAL NORMS* (2000).

12. These include (1) government regulation, *see, e.g.*, Victor P. Goldberg, *Regulation and Administered Contracts*, 7 BELL J. ECON. 426 (1976); (2) price premiums and brand-name capital, *see, e.g.*, Klein et al., *supra* note 11; Klein & Leffler, *supra* note 11; (3) *ex-ante* screening for "good cooperators," *see, e.g.*, POSNER, *supra* note 11; (4) hostage-giving or, equivalently, reciprocal specific investment, *see, e.g.*, Williamson, *supra* note 11; (6) "hybrid" market/governance relationships crafted by contract, *see, e.g.*, OLIVER E. WILLIAMSON, *Comparative Economic Organization: The Analysis of Discrete Structural Alternatives*, in *THE MECHANISMS OF GOVERNANCE* 93 (1996); (7) governance-by-hierarchy, or vertical integration, *see, e.g., id.*; Klein et al., *supra* note 11.



opportunities, the opportunities being lost on account of earlier opportunism.<sup>13</sup> Under these circumstances, the prospect of future transactions—at the right price—may be enough to curtail opportunism. Thus, as Klein and his coauthors have shown, if Buyer B is a repeat customer of Producer P, B can induce P not to behave opportunistically (*e.g.*, not to shade on hard-to-monitor attributes of product quality) if B pays P a premium price for the good in question and credibly threatens to cease doing business with P in the event that B discovers that he has been sold shoddy goods.<sup>14</sup> The premium price means that P earns a “quasi-rent”<sup>15</sup> by doing business with B, and, if the present value of that rent exceeds the short-term benefits of opportunism, P won’t “cheat.”<sup>16</sup>

In Klein & Leffler’s model, advertising and other conspicuous sunk costs communicate that a product’s selling price incorporates a large quasi-rent—for otherwise the firm could not afford the advertising—and thus let the customer know that the firm is unlikely to cheat.<sup>17</sup> Eric Posner uses a similar logic to account for the existence of social norms.<sup>18</sup> On his interpretation, norms are just a way that people publicly sink costs to attract partners for cooperative ventures. Agent A complies with an “expensive” norm, the thinking goes, because doing so signals the value she expects to receive from a prospective cooperative venture. Assuming that the venture in prospect has the structure of a repeat-play prisoner’s dilemma, then the agents who stand to gain the most from playing (partaking of the venture) are those with the lowest discount rates. These agents also make the best cooperative partners, for they are unlikely to sacrifice future cooperative gains for the one-time reward of defection. Agents with higher discount rates, who do not stand to gain as much from the subsequent venture, will not bother to comply with expensive norms. Costly and conspicuous norm compliance thus affords a means by which the “good types”—those with low discount rates—can find each other and pair off for happy cooperative hereafters.

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13. See Klein et al., *supra* note 11; Klein & Leffler, *supra* note 11; POSNER, *supra* note 11. See also David M. Kreps, *Corporate Culture and Economic Theory*, in PERSPECTIVES ON POSITIVE POLITICAL ECONOMY 90 (James E. Alt & Kenneth A. Schepsle eds., 1990).

14. Klein et al., *supra* note 11, at 304–05.

15. *Id.* at 298 (defining the “quasi-rent value of an asset” as “the excess of its value over its salvage value, that is its value in its next best use to another renter”).

16. Insofar as P has many customers, who communicate at low cost with one another, then, *ceteris paribus*, the price premium necessary to induce cooperation is lower, because P’s cheating of any one customer will cause others to jump ship.

17. Klein & Leffler, *supra* note 11, at 627–33.

18. POSNER, *supra* note 11.

The ecological investment/adaptive management "game" involves ongoing interactions between the landowner and the conservation organization, so it is natural to try to extend the Klein and Posner models to this context. The extension is plausible insofar as (1) the returns on ecological investments are temporally coextensive with the duration of the investment contracts, such that (2) landowner opportunism is limited to *intra-contract opportunism* (noncompliance with her duties under the investment agreement), and (3) conservation organizations face a competitive supply of investment opportunities (many landowners with relevantly similar properties). In each round of play, the conservation organization would make an unsalvageable investment of  $\$X$ , after which the landowner would choose to "cooperate" or "defect." If the landowner cooperates, the land trust would invest in her parcel again in the next round; if she defects, the land trust would seek greener pastures elsewhere. If  $\$C$  is the landowner costs of cooperating in any given round of play (direct costs plus the forgone benefits from defecting), then the landowner would have an incentive to defect in any given round unless the land trust pays her at least  $\$(C + P)$  for the right to make its investment, where the "premium"  $P$  is equal to  $rC$ , and  $r$  is the landowner's per-period discount rate.<sup>19</sup> Which is to say, the landowner will cooperate if the present value of the "premium" ( $P/r$ ) that she would receive from indefinitely repeated play is at least as great as the one-time gain from defecting ( $C$ ).

As a representation of the conservation contracting game, this model seems inapt in one key respect—specifically, its assumption that the returns on the ecological investment in any given round of play do not extend beyond that round. In games of adaptive ecological management, it is rather likely that the results in round  $n$  will *change the payoffs* in round  $(n + 1)$ . What results is a problem of *inter-contract opportunism*, that is, opportunism in the negotiation of subsequent contracts.<sup>20</sup>

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19. Here the extreme case is characterized where the land trust can do nothing at all to control intra-contract defection, other than to offer a premium price. In practice, contractual (legal) controls generally will have some effect, though there are evident limits to trying to achieve subtle ecological objectives via legally mandated land-use standards. See *infra* Part III.A.2.

20. To some extent, the distinction between intra- and inter-contract opportunism is artificial. A party to a contract may defect not just by cheating on the sly but by announcing his intention not to comply and demanding renegotiation of contract terms shortly after the other party makes a large specific investment. This might be classified as an intra-contract defection, because it occurred during the period of the contract, yet in form it has much in common with what I describe here as inter-contract opportunism. I am distinguishing between inter- and intra-contract opportunism only because I think it helps to highlight

This point is best illustrated by example. Assume that the land trust's investment takes the form of designing and implementing a wetlands restoration plan, which entails removing exotic species, reseeding natives, redirecting watercourses, and changing patterns of livestock grazing. The land trust and the landowner choose a short-term contract (say, 5 years), expecting that they will want to modify the wetlands restoration plan in view of what they learn in the first few years. Let's say that the wetland in its initial condition produces "wetland services" that the land trust values at \$100/5-years, and that with probability 0.5 the restoration plan (with full compliance) will succeed in raising the conservation value to \$200/5-years, and with probability 0.5 (with full compliance) will do no good at all, leaving the value at \$100. Maintaining the plan costs the land trust \$20/5-years; compliance costs the landowner the same amount. If the restoration plan succeeds, then in period two, the landowner can threaten not to renew unless the land trust pays her close to \$80/5-years (the new expected "marginal net value" to the land trust),<sup>21</sup> and, so long as the landowner complies with the management plan, she can make this demand for all subsequent periods. This generally will be much more than the minimum necessary to induce the landowner's participation and compliance *ex ante*, *i.e.*,  $(C + P) = (1 + r)*\$20$ , where  $r$  is the per-period (5-year) discount rate.<sup>22</sup>

A significant implication is that we must qualify the familiar supposition that players with low discount rates are the "good cooperators." If, through successive investments and the trials and errors of adaptive management, a land trust is likely to increase a property's conservation value over many rounds of play, the most devious and farsighted of landowners may well cooperate during and between early rounds of play, inducing further investments by the land trust, and only

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why it is that the prospect of future contracts may *not* do much to control landowner opportunism.

21. Renewal may not be worth the full \$80 to the land trust, insofar as the trust has other investment opportunities. A rational land trust will evaluate any given opportunity against the next best (or superior) alternative, not against an absolute standard of whether conservation benefits exceed the costs to the land trust. Thus, if the organization could through some other investment earn a 33 percent "conservation return" on its capital over the relevant time period, it would pay no more than \$60 for the opportunity in this example, *i.e.*, the opportunity to create \$80 in conservation value. (For simplicity, this discussion assumes that the land trust plans ahead only one time period.)

22. Notice that the landowner's ability to appropriate the "ex-post conservation value" basically obviates the concern about intra-contract opportunism, because the landowner now captures the social value of her compliance. This should not be considered a justification for opportunism, however, because the "cooperation premium" solution gets the job done at lower cost.

demand rental payments equal to the full, ex-post conservation value of the property once that value has nearly been maximized. *From the land trust's perspective, the best contracting partner may be the landowner with a high discount rate who nonetheless does not defect between the early rounds of play.* This landowner's non-defection arguably implies that she has independent reasons to cooperate—perhaps she takes pleasure in the conservation value of her property or has other specific investments that depend on it.

It might seem that inter-contract opportunism is purely a distributional matter, a question of whether the land trust or the landowner retains what might be termed the "conservation rent."<sup>23</sup> This is not so for two reasons. First, if restoring land is a hit-or-miss venture that entails large, early-round specific investments by the land trust in, for example, laying transacts and conducting site-specific research, controlling exotic species, restocking native species, etc., then it may well be uneconomic for the conservation organization to make these investments unless it will earn quasi-rents down the road.<sup>24</sup> The returns on successful restoration projects have a heavy load to carry: they must justify not only the associated site-specific information gathering and land treatments, but also the costs of the many failures implied by the fact of ecological uncertainty and the vicissitudes of adaptive management. Second, the land trust, as a nonprofit organization in the public-goods business, does not have access to a private-market supply of capital commensurate with the value it can produce. Its work ultimately depends on public subsidies. Raising public moneys is politically difficult and economically costly (due, for example, to the "excess burden" associated with the familiar forms of taxation). From a societal perspective, then, contracting arrangements that keep the landowner from appropriating the conservation rent are generally desirable, for they allow more conservation value to be created with a given public subsidy.<sup>25</sup>

The next sections consider several means by which inter-contract opportunism might be controlled: (i) "active management" conservation easements, (ii) land trust reputation, (iii) open space conservation easements, (iv) preference signaling through the "bargain sale" of

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23. "Conservation rent" can be understood as the value of a conservation investment less the associated landowner and the land-trust costs.

24. Of course a land trust only "earns" rents metaphorically—the benefit is a public good that accrues to society, not to the land trust's balance sheet.

25. Cf. Barton H. Thompson, Jr., *The Endangered Species Act: A Case Study in Takings and Incentives*, 49 STAN. L. REV. 305, 354–67 (1997) (styling the question of whether society should compensate landowners whose property's market value is diminished by habitat regulations as a question of optimal tax policy).

conservation easements or ecological investment opportunities, (v) "liability rule" conservation easements, and (vi) mortgages.

## 2. Governance by "Active Management" Conservation Easement

From an ex-ante perspective, the prospect of landowner opportunism at the inter-contract stage militates in favor of vertical integration—land trust ownership of the property in question—or very long-term contracts that set up what Oliver Williamson calls a hybrid governance structure between the parties.<sup>26</sup> The perpetual conservation easement represents the limiting case of such governance-by-contract arrangement. Traditionally, however, conservation easements have not been used to regulate ecologically ambitious land stewardship and restoration projects.<sup>27</sup> More typical for conservation easements is the modest ambition of preserving open space and traditional land uses.<sup>28</sup> In principle, though, a conservation easement could provide for adaptive, conservationist management of the servient estate for the benefit of identified species or ecological processes. This I will call an "active management" conservation easement, to distinguish it from the more common "open space" easement. In an active management easement, the land trust acquires rights to manage habitat itself or to control the terms on which the landowner conducts agricultural, silvicultural, and other land-stewardship activities. In the customary open space easement, by contrast, the land trust simply polices a small set of well-defined proscriptions relating to activities like road building and housing development.

There are some serious difficulties with the active management conservation easement. In the dim light of ecological science, it is not at all clear ex ante what types of investments will bear fruit and how these will, or will not, entail changes in agricultural practices. It follows that the costs of specifying the respective rights of the parties in such an easement would be very high, and the likely result is either misspecification (relative to the information that comes to light as

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26. WILLIAMSON, *supra* note 12, at 101–05.

27. See BRENDA LIND, LAND TRUST ALLIANCE, WORKING RANGLAND CONSERVATION EASEMENTS 5 (2002) (stating that "[working ranchland conservation easements]...are well suited for limiting irreversible threats, but less suitable for influencing ranch management."); MARTY ZELLER, THE INNW FUND, STEWARDSHIP OF THE LAND: AN INVESTIGATION OF THE STATE OF THE ART 7–8 (1999); LAND TRUST ALLIANCE, THE STANDARDS AND PRACTICES GUIDEBOOK: AN OPERATING MANUAL FOR LAND TRUSTS ch. 14, at 21 (1997) (regarding the use of baseline documentation to demonstrate easement violations, a premise of which is that the easement's purpose is to maintain the status quo, not to improve it).

28. See the sources cited in note 27 *supra*.

ecological experimentation gets underway) or vague standards, described in terms such as “agricultural activities are permitted subject to an approved management plan, provided that the grantee shall approve any proposed plan that does not unreasonably interfere with conservation objectives.”<sup>29</sup> The landowner and conservation organization both have good reason to be leery of parceling out the rights of land ownership with such open-ended standards.

The landowner looks at the easement and says, whoa, I don’t know whether the group that made this offer is “green” or “dark green.” If they are dark green, I had better not give them much power over my agricultural livelihood.

On the other side of the table, the (green) conservation organization says to itself, this easement is a recipe for trouble. If, through the adaptive management process, we learn that conservation and agriculture or comparably remunerative land uses are compatible here, our hefty payment for the right to restrict agriculture will have amounted to a windfall for the landowner. If it turns out that they are not compatible and severe restrictions are necessary to keep farming or ranching from “unreasonably interfering with conservation objectives,” the necessary restrictions may prove impractical to enforce in court. Whether a court will buy our gloss on ecological reasonableness, or our science, is a craps shoot. Such determinations press the limits of the judicial comfort zone. Even if we were to win on the merits, we may come up short at the remedy stage. Courts are reluctant to issue injunctions where the required conduct is uncertain under the terms of the parties’ contract and where the costs of judicial supervision are high.<sup>30</sup> Both conditions would apply here. In any event, the fallout in the landowner community from an effective remedy would be devastating. “Agriculture under Attack: Litigious Land Trust, Landowner in Ruin” – so would read the headlines in the agricultural press. Catastrophe sells, even if catastrophe is not representative. The land trust’s reputation for being green – not dark green – would be in jeopardy.

It is no surprise, then, that publications from the Land Trust Alliance, the umbrella organization for land trusts, caution land trusts against using active management easements where the landowner

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29. Land trust practitioners generally believe that “active management” goals, if written into the easement, should be instituted through a required management plan that is subject to periodic approval by the land trust. See the Land Trust Alliance publications cited in *supra* note 27.

30. RESTATEMENT (SECOND) OF CONTRACTS §§ 362, 366 (1981). Note, however, that the new RESTATEMENT (THIRD) OF PROPERTY: SERVITUDES § 8.5 (2000) encourages courts to be vigorously protective and creative in enforcing conservation servitudes. How this will play out remains to be seen.

community tends to be wary of environmentalists<sup>31</sup> and advise land trusts not to predicate their easements on open-ended standards.<sup>32</sup>

I have one additional concern about the active management conservation easement as a solution to inter-contract opportunism. The sequential contracting arrangement that creates the problem of inter-contract opportunism also eases the problem of intra-contract opportunism. The landowner who performs well in one period is rewarded with a high-value contract in the next, whereas the landowner who shirks fares less well in the next period. Yet it is conventional for the grantee of a conservation easement to pay "up front" for the landowner's promise of perpetual conservation performance.<sup>33</sup> No horizon of future rewards encourages the landowner not to shirk. Perhaps this problem could be surmounted by making a portion of the compensation for the easement contingent on periodic performance evaluations by the land trust.<sup>34</sup>

### 3. Land Trust Reputation

One might think, or hope, that the threat of inter-contract opportunism is academic, that out in the field land trusts' reputations protect them against scheming landowners. To see how this could work, let's return to "round two" in the wetland-contracting example developed above.<sup>35</sup> Assuming that the conservation investment bore fruit in round one, the renewal of the contract is now worth almost \$80 to the land trust. Suspecting this, the landowner can try to hold up the land trust and extract the full rent. But whether the landowner succeeds in this depends on which is more credible: the land trust's threat not to pay more than  $(1 + r)*\$20$ , or the landowner's threat not to renew for less than what she takes to be the land trust's valuation of the contract.

In general, the land trust will have the more credible threat. This is because the land trust can back its threat with an appeal to reputation. If the land trust caves to any one landowner's holdup threat, other landowners will learn of this and start upping their demands. Capitulating to the holdup might also weaken the land trust's position

31. LIND, *supra* note 27, at 2, 13.

32. LAND TRUST ALLIANCE, *supra* note 27, at 10-11.

33. The author bases this assertion on the three years he spent working in the land trust community in the late 1990s.

34. Publications by and for land trust practitioners do not discuss this problem with conservation easements. I suspect this is so because, to date, conservation easements mostly have been used for open-space protection and thus do not place hard-to-monitor (susceptible to shirking) demands on the landowner.

35. See *supra* Part A.1.

vis-à-vis its major donors. (When the land trust's donors evaluate the organization's overall efficacy, projects that failed to justify associated specific investments will not garner favorable marks.)

The landowner, however, faces no similar penalty for not holding out. Her reputation for inter-contract bargaining probably matters little, and it is precisely because of this that she can afford to be opportunistic. Were her reputation to matter, as it might, for example, for the landowner who wants to solicit investments by other conservation groups, she would have a pointed reason not to extract the rent.<sup>36</sup>

The land trust's interest in defending its reputation in the eyes of landowners and donors surely bolsters its bargaining position at the inter-contract stage, but the extent of the bolstering is open to doubt. Landowners may have meager information about the universe of a land trust's prior actions;<sup>37</sup> donors may find it difficult to assess the land trust's performance. And whatever the general efficacy of the land trust's reputation for denying holdups, *the land trust remains vulnerable where the holdup can plausibly claim that the price she demands is her true reservation price, not mere posturing.*<sup>38</sup> In this regard, two situations are particularly problematic.

The first and more obvious is where ecological investment increases the development value of the landowner's parcel. The second occurs where the landowner has private information on her idiosyncratic (often subjective) costs of complying with the land trust's proposed renewal contract. Contracting in the presence of asymmetric information is notoriously difficult.<sup>39</sup> The next four sections float possible solutions to these problems.

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36. I suspect that the conservation market is simply too thin and landowners too anonymous for this landowner-reputation effect to become material in the foreseeable future.

37. There are as yet no independent institutions that specialize in conveying information to landowners about land trust behavior. Cf. Paul Milgrom et al., *The Role of Institutions in the Revival of Trade*, 2 *ECON. & POL.* 1 (1990) (modeling how merchant courts might have served to spread information among numerous agents and thus to facilitate reputational control of opportunism).

38. A "reservation price" is the "true" price below which the owner would refuse to sell, in the absence of strategic behavior. For an explanation, see the entries under "reservation price and reservation demand" in volume 4 and "bargaining" in volume 1, *THE NEW PALGRAVE: A DICTIONARY OF ECONOMICS* 158-59, 190-95 respectively (John Eatwell et al. eds., 1987).

39. See generally GARY D. LIBECAP, *CONTRACTING FOR PROPERTY RIGHTS* (1989).



#### 4. *Open Space Easements as Hands-Tying Bonds*

By granting an open-space easement at the time she agrees to an ecological investment contract, the landowner can "bond" herself not to sell her parcel to a developer at the inter-contract stage.<sup>40</sup> The easement allows the landowner who honestly intends not to sell to a developer to pledge this credibly *ex ante* and thus to attract greater ecological investment. The credibility of this pledge depends, of course, on the land trust's ability to enforce the open-space easement, but enforcement should not pose problems. The requirements of an open-space easement are easy for a court to understand, violations are generally unambiguous, and the judicial costs of administering specific performance are no greater than in an ordinary land-use dispute.<sup>41</sup> Enforcement would not impinge on agricultural activity or other long-standing land uses, so enforcement seems unlikely to jeopardize the land trust's reputation as green (not dark green).

#### 5. *Signaling Idiosyncratic Preferences with Easements and Ecological Investment Contracts*

Opportunism on account of ostensibly idiosyncratic preferences or other private information is not so easily handled. The land trust cannot be sure of the preferences of the landowners with whom it contracts. In principle, then, this threat is unbounded, whereas the land trust can always dispute the appraisal figures of the holdup who threatens to sell to a developer.

While the land trust cannot know the preferences of the landowners with whom it contracts, it may be able to form reasonable conjectures about them. Other things equal, the lifelong member of the Sierra Club who demands a premium price at the renegotiation stage will be less credible than the landowner who has never given a dime to the conservation cause. It may also be the case that a landowner's subjective valuation of any given variety of ecological investment tends

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40. Here "bond" is used in the sense of Jensen & Meckling's "bonding costs," which include costs incurred by the agent to limit her own opportunities for opportunism and thus to attract the trust, and investment, of the principal. See Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305, 325 (1976).

41. For a thorough review of the case law on conservation easements, see Melissa K. Thompson & Jessica E. Jay, *An Examination of Court Opinions on the Enforcement and Defense of Conservation Easements and Other Conservation and Preservation Tools: Themes and Approaches to Date*, 78 DENV. U. L. REV. 373 (2001). Tellingly, 18 of the 19 cited cases involve either a dispute over the existence of an easement or a violation of a (fairly clear-cut) rule against constructing buildings and associated structures or roads.

to correlate positively with the landowner's valuation of other sorts of ecological investments. If so, the landowner's willingness to accept less than her objective costs of compliance as compensation for a given short-term ecological investment, or her willingness to sell an open-space easement for considerably less than the value of the foregone development rights, might usefully signal her cooperativeness (*i.e.*, the incredibility of her possible holdup demand) at the inter-contract stage.

The reliability of such signals may be doubted, however, because if the land trust starts to rely on the (putative) signal, then the forward-looking landowner who thinks she can garner holdup earnings down the road may offer a "bargain sale" today to induce high-value investment from the land trust. Thus, "pooling equilibria," in which both opportunism- and conservation-minded landowners initially agree to contracts generous to the land trust, may prove common. Ironically, the separating equilibrium, in which true conservationists ("olives") underbid "brown" opportunists, likely depends on the land trust having an independently credible means of refusing to pay the idiosyncratic anti-environmentalist's price. A tipping point seems possible, where the terms of the initial contract only have value as a signal once the land trust establishes an independently credible means of refusing (later) to pay up, should the landowner demand a rent-capturing price. Once this point is reached, a positive feedback loop drives downward the threshold gap between price and objective cost requisite to signaling "olive" preferences. The more confidence the land trust has in the quality of the initial signal, the more insistent it can be in subsequent inter-contract negotiations, and this prospect further discourages browns from posing as olives and thereby further strengthens the signal.

Notice, though, that there are real costs to a rigid land trust policy of never making financial concessions at the inter-contract stage to landowners who were initially pegged as conservation-minded.<sup>42</sup> What the land trust wants the landowner to do is likely to change from round to round, given the vicissitudes of adaptive management. Sometimes compliance with the land trust's evolving demands will impose costs on the landowner in excess of what the land trust believes to be the "objective" cost. This disparity may reflect the landowner's distaste for what the land trust wants to do or private information (that for economic

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42. By "concession" I mean concession to a putative preference or other privately held information. Should the landowner show an objective increase in his costs of compliance, the land trust can accommodate this without jeopardizing its bargaining position—provided that the land trust's rationale can be clearly articulated and conveyed to other landowners.

reasons the landowner wants to keep secret)<sup>43</sup> about the impact of the land trust's plan on the landowner's other activities.

Thus, an absolutist land-trust policy against making financial concessions at the inter-contract stage inevitably will result in the land trust and landowner failing to reach agreement on some contracts that would have been mutually beneficial, albeit only at a price higher than what the land trust imputes as the landowner's reservation price. Hence the land trust's dilemma: to induce the landowner to give an honest signal of the overall "greenness" of her preferences, the land trust must commit to a strategy of not accommodating idiosyncratic preferences that the landowner first asserts at the inter-contract stage—yet this strategy dooms some inter-contract negotiations where gains from trade remain.

#### 6. Contracting for Condemnation

It is customary to think of the conservation easement as a one-time division of property rights between the grantor and the grantee, with each party's rights subsequently protected by property rules. Yet in principle one could also use a conservation easement to change the means by which the parties' rights are protected—to contract for selective liability rules.<sup>44</sup> This offers a glimmer of hope for active management conservation easements and an answer to the signaling dilemma.

The uproar in my active management easement hypothetical<sup>45</sup> might have been muted had the conservation easement stated, "the grantee may reasonably restrict agricultural activities in furtherance of conservation objectives, provided that the grantee compensates the landowner for foregone agricultural income." This way, were agriculture to be curtailed, there would be no landowner in ruins.

Notice also that when the land trust offers to buy a liability-rule easement, the landowner has very good reason to reveal any idiosyncratic preferences that might conflict with conservation stewardship of her land. These favored activities she might negotiate to protect with property rules or with "premium" compensation rules that value the special activity at some fractional increment above its market value. In any event, the favored things are out on the table *ex ante*, in

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43. Cf. Omri Ben-Sharar & Lisa Bernstein, *The Secrecy Interest in Contract Law*, 109 *YALE L.J.* 1885 (2000).

44. The economic distinction between liability rules and property rules traces to Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 *HARV. L. REV.* 1089 (1972).

45. See *supra* Part III.A.2.

contrast to the usual sequential contracting scenario where, as we have seen, the landowner may be tempted to conceal her idiosyncratic preferences initially in the hopes of extracting rents at the inter-contract stage.

If, sometime down the road, the landowner discovers new idiosyncratic dislikes in tension with conservation or the property changes hands and the new owner objects to some element of the land trust's stewardship program, no impasse will occur. Either the land trust will force a contract at a price determined pursuant to the easement or the landowner will compensate the land trust for a contractual modification to her liking.<sup>46</sup> In this negotiation the landowner acts as buyer rather than seller and, as such, has no incentive to exaggerate her actual (dis)valuation of the conservation measure in question.

Landowners on guard against the "dark greens" may be wary of liability-rule easements that give the land trust sweeping powers to restrict agriculture, fearing such easements to be cunning ruses to oust the simple farmer from her land. Such landowners might be mollified, though, with supracompensatory protections for farming and ranching, and with arbitration provisions that ensure equal representation of agricultural interests in determining what the land trust owes to the landowner.

Given that liability-rule easements seem capable of solving the holdup problem and inducing landowners to signal their preferences honestly, it is curious that the concept has yet to appear in the practitioner or academic literature on conservation easements.<sup>47</sup> Speculations as to why this is so are largely beyond the scope of this article.<sup>48</sup>

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46. It may be objected that such "forced" contracts would undercompensate the landowner and thus deprive her of the premium ( $P$ ) that encourages intra-contract cooperation. There is something to this objection, but nothing prevents the land trust from offering premiums above the liability-rule price to which it is entitled, in an attempt to discourage intra-contract opportunism. The difficulty for the land trust lies in determining what premium to offer, given that the landowner's subjective valuation is unobservable.

47. Note that provisions for third-party determination of price are sometimes found in other long-term commercial contracts. See generally Goldberg, *supra* note 12, at 436-38.

48. One possibility worth investigating is that the liability rule easement represents "too big" a first step for the mutually wary landowner and land trust. Common sense and numerous empirical studies suggest that mistrust is most readily overcome gradually, starting with cooperative baby steps. See generally JULIA M. WONDOLLECK & STEVEN L. YAFFEE, MAKING COLLABORATION WORK: LESSONS FROM INNOVATION IN NATURAL RESOURCE MANAGEMENT (2000). A second possibility is that conservation groups may resist the liability rule easement on expressive grounds, in that the easement's anticipation of future compensation undermines the idea that the landowner has certain duties to nature or to the larger human community, the performance of which does not entitle him to compensation. Relatedly, use of liability rule easements might seem to legitimize landowner claims to compensation from the government for partial "regulatory takings."

## 7. *Mortgages*

A final possibility, suggested by the economist Myles Watts, is for the landowner to guarantee the land trust's initial specific investment by granting the land trust a mortgage equal to the cost of that investment.<sup>49</sup> The landowner would then pay off the mortgage over a fairly long interval of time (say, 30 years), during which the land trust and landowner would govern land management with short-term ecological stewardship contracts negotiated sequentially.<sup>50</sup> If the land trust's specific investment did not pan out, or if the landowner made excessive price demands at the inter-contract stage, the land trust could walk away, knowing that it would recover its initial investment through the landowner's payments on the mortgage—or, were the landowner not to pay, through foreclosure. Professor Watts, himself a rancher, suspects that rural landowners generally would prefer to guarantee land trusts' specific investments with mortgages, a known and finite liability, rather than to bind themselves to the uncertainties of a long-term, open-ended contracting framework (the liability-rule easement) in which third parties determine price.

Yet there remains a question as to whether "green" conservation organizations could afford the reputational risk (of appearing to be "dark green") that foreclosing on such mortgages might entail. In the uncertain world of adaptive management contemplated by this article, many restoration projects will fail through no fault of the landowner (or the land trust). If the land trust is to recover the cost of its specific investments through mortgages, rather than by recouping a "conservation rent" from the projects that succeed, the burden of unsuccessful investments will fall to the unlucky landowners on whose properties the trust's investments fail. Some of these landowners will find themselves unable to make their mortgage payments to the land trust, absent the stream of conservation-contract payments on which they had counted. As in the active management hypothetical, then, the land trust will face, as a necessary price of its conservation enterprise, the unhappy prospect of forcing farmers and ranchers out of business.

Thus, while the mortgage solution is at once intriguing and comfortingly familiar, its domain of application may be limited to situations where (a) landowners do not doubt the land trust's bona fides

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49. Professor Watts made this suggestion to the author during a roundtable discussion of this article at the PERC 2002 Political Economy Forum in Big Sky, Montana.

50. These short-term contracts would result in payments from the land trust to the landowner.

or (b) the ecological payoff from the land trust's specific investment is a near "sure thing" rather than a highly uncertain gamble.<sup>51</sup>

### *8. Temporal Opportunism: Conclusions*

Organizations that make ecological investments on other people's land must deal with intra- and inter-contract opportunism. Would-be intra-contract opportunists may be swayed by the prospect of punishment or reward in subsequent contracting periods. Inter-contract opportunism is the more difficult problem and, other things equal, militates in favor of long-term "governance" relationships between landowner and land trust, based on very general ecological goals and standards of conduct. Yet landowner fears of the lurking "dark greens" press in the opposite direction: toward short-term contracts that spell out landowner rights with specificity.

Landowner opportunism over the course of a sequence of short-term ecological investment contracts might be controlled by a combination of (a) open-space easements negotiated at the time of the first ecological investment and (b) the land trust's cultivating of a reputation for never making landowner-favoring concessions at the inter-contract stage. This would come at a cost, however: some contracting relationships would collapse, as when the landowner discovers that her (subjective) cost of compliance is greater than she first anticipated, and that she prefers no contract at all to recontracting at the original price. Alternatively, the land trust might purchase liability-rule conservation easements, which would give the grantee great leeway to restrict land use upon paying a third-party-determined price. This would seem to have the advantage over the largely reputation-dependent alternative of inducing the landowner to reveal her private information *ex ante* (in virtue of the land trust's credible threat not to indulge hold-ups at the inter-contract stage) without sacrificing restoration projects whenever the landowner's preferences turn out to be "browner" than initially expected.

Finally, the land trust might try to protect its specific investments with mortgages. Mortgages could make short-term conser-

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51. There is one further consideration that may counsel in favor of liability-rule easements rather than mortgages: insofar as the land trust has better information than the landowner, *ex ante*, on the likely conservation gains from a particular course of investment, the liability-rule easement can enable the land trust to "lock in" a portion of the conservation rent. Short-term contracting backed by mortgages would protect the land trust's site-specific investments but would not keep the landowner from pushing for higher payments (at the inter-contract stage) if the ecological investment turns out to be a marvelous success.

vation contracts viable, but mortgages would also place the land trust concerned about its "green" reputation in an uncomfortable position when, because its conservation investments have failed, the land trust decides not to renew its short-term contract with the landowner. Without the stream of conservation payments she initially anticipated, the landowner may be unable to meet her mortgage obligations. The land trust would have to foreclose, which may feed fears of a "dark green" land grab.

## B. The "Landscape" (Multi-Parcel) Case

### 1. *Spatial Opportunism*

The full extent of the land trust's vulnerability to opportunism does not become apparent until one considers its task in the context of a many-parcel "landscape" setting. Because the ecological returns on conservation investments increase more than proportionately with the number of contiguous acres subject to conservation management, the land trust's undertaking is, in part, a land assembly project. Like any other land assembler, the land trust must wrestle with holdouts. The problem of spatial opportunism is substantially more vexing than the temporal opportunism of the single-parcel case.<sup>52</sup> This is so because, other things equal, the spatial opportunist has incentives to make more outlandish demands. And this is so because the other things are not equal: several factors make it more difficult for the land trust to answer the landowner's demands with a resolute "No."

Let's consider first the magnitude of the opportunist's demands. In the landscape case, the land trust's decision to abandon a restoration project on account of holdouts creates a cost—missed contracting opportunities—borne in common by all landowners in the project area. In the single parcel case, by contrast, analogous costs of obstinacy are localized to the hard-bargaining landowner. When a landscape is the land trust's object, it can be individually rational for landowners to escalate their demands even to the point of driving the land trust out of their community. Each landowner thinks, "why should I be the one to offer price concessions, when my neighbors do not." Perhaps the land trust could try to save the landowners from their own too-much by announcing firm offer prices and refusing to budge, much as it might check inter-contract holdups by committing itself never to make financial

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52. Temporal opportunism of course remains a concern in the "landscape case," but I will leave it in the background for now so that we can focus on the spatial issue.

concessions based on a landowner's freshly asserted distaste for the terms proposed in the renewal contract.

Yet in the landscape case, three factors undercut the land trust's threat to hold fast at prices that approximate the expected cost of the conservation project to the landowners.

First, there is the problem of the browns. In the single parcel case, the land trust may endeavor to screen for and then selectively invest in the lands of sympathetic "olive" landowners, whose later hold-up threats, if any, generally would be wanting in credibility.<sup>53</sup> Where blocking up contiguous acreage is the land trust's task, however, the land trust must deal with whatever brown landowners happen to have holdings in the target area. And the land trust must deal with these landowners without having knowledge of their true preferences. (For however stubbornly the land trust may resist *revising* contract terms, this cannot get the browns to reveal, before signing the *initial* contract, how averse they really are to the conservation plan.) The holdout has private information and room to maneuver.<sup>54</sup>

A second factor undercutting the credibility of the land trust's threat not to pay off the holdout is the spatial relationship between ecological investment and development value. Landowner B can demand more and back his demand with a threatened sale for development, insofar as the land trust's ecological investment on neighboring parcel A bears fruit. Pathologically, an open space easement on parcel A, which solves the component of the (intra-parcel) temporal holdup threat that is due to developers' attraction to ecological restoration sites, now would exacerbate the land trust's vulnerability vis-à-vis landowner B.

Third, spatial effects of development on ecological value may weaken the land trust's bargaining position. As the land trust ratchets up its investment in knitting together and restoring the parcels in a neighborhood, the prospective ecological spillover costs (from development of the unprotected parcels) grow commensurately. Quite simply, the land trust has more to lose. Knowing this, each landowner will want to be the last to contract, which makes the land assembly project hard to get started. Farsighted landowners will demand holdout prices from the get-go—unless the land trust is willing to settle for a

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53. We have seen that insofar as the land trust (credibly) projects an uncompromising stance regarding concessions at the inter-contract stage, the land trust, in striking a bargain, obtains useful information about the preferences of the landowner. See *supra* Part III.A.5.

54. Moreover, if the land trust ends up paying higher prices to putative browns than it does to similarly situated olives, this could sow dissension among the olives. Some olives might respond by demanding higher prices on the ground of horizontal fairness.



term-of-years contract, in which case the far-sighted "brown" may pose as olive, initially, only to make wild inter-contract demands once the land trust has assembled the other pieces of the landscape.

Familiarity with spatial opportunism, then, may partly explain the land trusts' obsession with perpetuity.<sup>55</sup> Far better to buy out the holdouts once and be done with it, the thinking goes, than to face periodic holdout eruptions as one or another set of conservation agreements expires. The more interesting implications, though, relate to the kinds of instruments the law should enable for purposes of conservation contracting. Two new devices—what I will call the *terminable conservation easement* and the *special district conservation contract*—would help to mitigate the costs of spatial opportunism.

## 2. Terminable Conservation Easements

In some sense, all conservation easements are terminable. They may be modified or eliminated by, inter alia, judicial action when changed conditions have destroyed their conservation value.<sup>56</sup> But selling a conservation easement to a developer—effectively terminating the easement, in exchange for financial resources that can be invested in other conservation projects—is not an attractive option for the land trust. The reasons are several. State and federal law,<sup>57</sup> the conception of perpetuity fostered by the land trust community,<sup>58</sup> and the economics of transaction costs all may be blamed. Here I want to isolate the last issue and suggest a slightly modified instrument—let's call it the terminable conservation easement—that would have the conservation easement's strengths yet be more readily alienable.

Even with neutral laws and open-minded land trusts, the development rights embodied in a conservation easement would trade at a discount vis-à-vis development rights attached to land, because, in order to make use of the rights ensconced in a conservation easement, a developer must reunite the easement with the servient estate. Recombining these two interests in land entails a costly bilateral monopoly negotiation, quite possibly with a landowner opposed to

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55. Regarding land trusts' attitudes toward perpetuity, see Julia D. Mahoney, *The Illusion of Perpetuity and the Preservation of Privately Owned Lands*, 44 NAT. RESOURCES J. 573 (2004).

56. RESTATEMENT (THIRD) OF PROPERTY: SERVITUDES § 7.11.

57. See BRENDA LIND, *THE CONSERVATION EASEMENT STEWARDSHIP GUIDE* 80–81 (1991) (suggesting a land trust's decision to relax the restrictions in a conservation easement may expose it to liability under IRS rules or state laws regarding conservation easements, charitable trusts, nonprofit corporations, and more).

58. See generally Mahoney, *supra* note 55.

development. If the owner of the servient estate can signal this opposition credibly, she may drive all developers from the market for the severed development rights.

The terminable conservation easement is designed to minimize these bilateral monopoly costs. Formally, it is identical to the conventional conservation easement except in two respects: (1) it may be terminated without penalty by the holder and (2) it is paid for with an annuity rather than a one-shot cash payment or tax deduction. In effect, a terminable conservation easement is a conservation easement subject to a perpetual put option.<sup>59</sup> At any point the holder can "resell" (terminate) the easement to the landowner for the nominal price—the annuity—that was paid for it initially.<sup>60</sup> The holder simply assigns the easement back to the landowner and quits making the annual payment. Of course, if the development rights have escalated in value, the holder will probably find it advantageous to haggle, but the put option will have utility where the holder decides to alienate the easement not long after acquiring it.

Contracting with terminable conservation easements would make the land trust somewhat less vulnerable to spatial opportunism. A terminable easement affords less of an open-space guarantee to neighboring properties precisely because it can be alienated at low cost. The neighboring landowner's development-premised holdout threat becomes commensurately less credible. Furthermore, the low cost of alienating terminable conservation easements makes it more feasible for the land trust to pull out of a locale altogether. To see this, imagine that a land trust has identified a dozen target conservation areas. Long-term conservation gains in any given area depend on a spatially coordinated pattern of conservation investment. Using terminable conservation easements, the land trust could make quick forays into many of these communities at once, do its best to block up development rights, then step back, reassess, and promptly abandon ("put") its easements in the locales where it was least successful.<sup>61</sup> The more credibly the land trust

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59. As defined in the context of stock transactions, a put option is an option "under which [the] buyer...may demand payment by the writer [*i.e.*, the seller of the option] of a fixed price...upon delivery by the buyer of a specified number of shares of stock." BLACK'S LAW DICTIONARY 1237 (6th ed. 1990).

60. It is trivially true that a given annuity is worth less in present-value terms if it begins some time in the future rather than today. So, in this sense, the real price that the land trust receives upon terminating the easement (sometime in the future) is less than the price paid initially—*i.e.*, accounting for the time-value of money, the land trust does not recoup the full value of its initial investment. But if the land trust were to terminate the easement shortly after acquiring it, its loss would not be large.

61. The land trust might use option contracts for ordinary conservation easements to similar effect, but the option is a less flexible tool because of its time limitation (the

can threaten to up and leave, the more likely that holdouts demanding a contract price in excess of their true reservation price will submit.

That is an optimist's story. A skeptic might point out, however, that insofar as the land trust succeeds in assembling development rights to most of the properties in a locale or makes large ecological investments, its willingness to abandon the area is open to doubt. Holdouts will know this and bargain hard. Developers will know this and conspire with the holdouts. The land trust will remain as uncertain as ever about the holdouts' idiosyncratic preferences. In short, the terminable easement could help the land trust to salvage resources it otherwise would have tied up in unproductive locales, but it probably will not afford large transaction-cost savings in areas where the land trust has had considerable early success. The more promising institutional innovation, we will see next, is conservation contracting through landowner-controlled special districts.

### 3. *Collective Conservation Contracts: A New Role for Special Districts*

The costs of spatial opportunism may be mitigated by contracts that create certain forms of interdependency among the landowners. This section compares two such devices: the most-favored-nation/all-or-nothing contract and supermajoritarian contracting through special districts. The former is a free-market solution; the latter would require enabling legislation that delegates to landowners limited powers of mutual coercion.

Most-favored-nation contracts are sometimes used where businesses are vulnerable to supplier holdups.<sup>62</sup> A classic example is the fruit and vegetable processing industry, where the processor suffers large losses if it does not receive a regular supply of fruit daily during the harvest season, yet covering transactions are infeasible.<sup>63</sup> The defining feature of the fruit-supply contract is a price-escalator most-favored-nation clause, which obligates the processor to pay (retroactively) to the supplier the highest price that the buyer pays to *any* of its suppliers. The contract thus operates as a hands-tying mechanism,

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expiration date). Terminable conservation easements make lesser demands on the land trust's foresight than do options.

62. See Charles R. Knoeber, *An Alternative Mechanism to Assure Contractual Reliability*, 12 J. LEGAL STUD. 333, 337-42 (1983). Knoeber does not use the phrase "most favored nation" to describe these contracts, but that phrase has become the favored term of art in the law-and-economics literature. See, e.g., Zvika Neeman, *The Freedom to Contract and the Free-Rider Problem*, 15 J.L. ECON. & ORG. 685, 687 (1999) (referencing literature on most-favored-nation clauses).

63. See Knoeber, *supra* note 62.

allowing the buyer to credibly commit not to buy off any given holdup supplier on pain of paying the exorbitant price to everyone. This keeps opportunistic suppliers from free-riding on suppliers who play fair.

In all-or-nothing contracting, each contract takes effect conditional on the buyer signing up all of the sellers in an identified pool. If perceived as credible, all-or-nothing contracting would allow the land trust to bring parcels under contract gradually, yet without raising the development value of holdout tracts. This is because the land trust's rights to make ecological investments on the neighboring parcels would be contingent on the holdout's capitulation.

In theory, then, combining the all-or-nothing and most-favored-nation techniques could allow the land trust to contract with all targeted property owners in a landscape without (i) compensating landowners for the development value that the land trust's own investments create or (ii) paying holdout premiums to get the most recalcitrant landowners to join the conservation plan. In practice, however, this elegant strategy may prove less than effective. The all-or-nothing threat, even if written into the terms of the contracts, sometimes will not be credible. A land trust that, let us say, signs up 90 percent of the landowners in a target locale (the last 10 percent refuse to join) often will be tempted to renegotiate the all-or-nothing contingency and hope for the best with the final 10 percent, much as the land trust that has early land-assembly successes with terminable conservation easements will find it hard to back out later.<sup>64</sup> Partial conservation success on a large scale is far better than none at all. Knowing this, the holdout will be emboldened, and many landowners will compete for that position.

Furthermore, the most-favored-nation strategy requires a standardized way of comparing all of the contracts in the pool, so that a third-party (the courts) can verify whether a relevantly higher price has been paid. This is trivial when each supplier supplies widgets or graded produce. It is more complicated when suppliers supply land management agreements, and the optimal content of those agreements rapidly evolves in line with adaptive management learning. I do not want to make too much of this, however. The contracts themselves could set forth appraisal procedures, and the "price" for purposes of the escalator clause might be defined as the ratio of bargained price to appraised opportunity cost.

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64. Each landowner would have an interest in renegotiating this contingency, because under all-or-nothing contracting the 90 percent of the landowners that initially signed up would receive no payment unless the final ten percent join in. The landowners that signed up initially may not, however, be willing to give up the most-favored-nation clause.

The final problem is more fundamental: under most-favored-nation pricing, heterogeneous landowner preferences generally will cause the price of the conservation investment to exceed its true social cost. For example, assume there are 20 landowners in the land trust's target zone. Each owns 1000 acres. Absent market power, olive landowners would sell an open space easement at any price above \$100/acre, whereas browns would demand \$300. The target zone contains 15 olives and 5 browns. If the land trust employs a most-favored-nation strategy, each landowner will receive no less than the brown reservation price, \$300/acre. This means that the land trust will only strike a deal if the expected conservation value of the open space easements (their direct value plus whatever they enable by way of ecological investment) exceeds \$6,000,000. Yet the aggregate cost of the easements to the landowners is only \$3,000,000. No deal will occur if the value of the conservation easements lies between \$3 million and \$6 million, even though the deal would have been Kaldor-Hicks efficient.

Notice that this problem results from the ecological and economic significance of contiguity and the existence of heterogeneous landowner preferences for ecological restoration. If contiguity did not matter and the land trust simply needed to secure 20,000 total acres (much as efficient operation of a fruit-processing plant requires that the operator secure a certain amount of fruit per day), the land trust would have had little reason to sign \$300 contracts. Instead, it would have sought olive suppliers (\$100) from a much larger pool of landowners, and the most-favored-nation price would have equaled the per-landowner cost of supply. Of course, if the distribution of landowner preferences is such that the land trust faces an upward sloping supply curve to get 20,000 "anywhere acres," then the most-favored-nation price would overestimate the marginal cost of supplying a conservation "unit" (20,000 dispersed acres). Still, the overshoot generally would be much less than if the cost of supply were proxied by the highest cost supplier within any given 20,000-contiguous-acre locales. This is so because when space does not matter, sellers can be sorted according to their costs of supply (yielding a supply curve that gently slopes upward), whereas when contiguity counts, whoever happens to own land in the target area is a supplier with whom the buyer must bargain.

Notice further that if it were possible to verify the net cost to the landowner of supplying the conservation input, the pricing problem could be solved by writing the escalator clause in terms of the ratio of price to cost-of-supply. The early \$100 supplier would receive, for example, a \$25 bonus if the land trust later negotiated a \$125 contract with a \$100 supplier, or a \$375 contract with a \$300 supplier, but would receive no bonus if the later contracts were simply \$300 contracts with

\$300 suppliers. Asymmetric information is once again the stumbling block.

There may be some circumstances in which information asymmetries are minor. Consider, for example, a landscape where most of the targeted land is held by publicly traded timber companies, and the proposed contract involves the sale of housing development rights. The landowners here all have the same objective—maximizing profits—and none is likely to have private information on the housing-development value of its tracts. An independent appraiser's judgment of the value of foregone development rights could reasonably well approximate the timber company's own assessment. Things get a little more complicated if the proposed contract impinges on the use of the land for growing timber. Some timber companies may have specific investments or private knowledge that makes it unusually cheap or costly for them to comply with the conservation contract, and this information they may wish to keep secret from their competitors.<sup>65</sup>

I suspect, though, that the private-information problem will be most intractable where land is held by individuals or family corporations. Here the issue is not just private information on how to turn dollars off of land but also that the landowners' objectives, and their expectations about land-trust behavior, are so varied. For olives, the many conservation investments will have "consumption" value. For these landowners, the net cost of accommodating the conservation investment will be smaller, perhaps much smaller, than the objective cost (the present value of foregone income or the diminution in land value). For browns, the net cost will exceed the objective cost. This may be so because the brown landowner takes pleasure in snubbing environmentalists; or, more innocuously, because he attaches positive value to his independence, his ability to work his land by his own lights; or because he is particularly afraid that the contract will turn out to be a surreptitious power play by which the dark greens wrest control of his land.

A more promising means of corralling spatial opportunism is the special district. Imagine that a state statute authorizes "special nature districts" to be formed by a two-thirds vote of the landowners in the would-be district. The district, in turn, would have authority to compel its members' participation in district-negotiated conservation contracts. In a community of 20 landowners, 14 would have to assent in order to form the district. Continuing the previous example, the 15 olives would constitute a winning coalition and could sell a collective open space

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65. Cf. Ben-Sharar & Bernstein, *supra* note 43.

easement for \$100/acre. The resulting price, \$2,000,000 for all 20,000 acres, is too low if the goal is to mimic a perfectly lubricated market exchange. But it is much closer to the "right" price (\$3,000,000) than is the threshold price (\$6,000,000) compelled by the most-favored-nation arrangement. As this example illustrates, though there is no assurance that the supermajority's price will equal the efficient price (average reservation price), it is surely a far better proxy than that implicit in the most-favored-nation method, *i.e.*, the most adverse landowner's price.<sup>66</sup>

The reader may object that this argument for the superiority of special district contracting overlooks the efficiency gain from marginal adjustments to the chosen acreage. On this view, only the most-favored-nation approach gives the land trust an incentive to work around the brown landowner on the edge of the project area who (let us suppose) strongly disvalues participation and whose land does not add much to the conservation value of the project.<sup>67</sup> This objection underappreciates the possibility of bargained-for variances in the aftermath of the supermajoritarian agreement. If the peripheral brown really values her independence more than the land trust values her participation, the land trust may let her buy her way out, in whole or in part, from the collective contract.<sup>68</sup> In this negotiation, the landowner acts as bidder rather than holdout and thus has no incentive to exaggerate her aversion to the conservation plan.<sup>69</sup>

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66. Of course, there is no assurance that the landowners will bid their true reservation prices. Insofar as there does not exist a competitive supply of ecological investment opportunities (*i.e.*, insofar as the target landscape is somehow "unique," such that the land trust's dollars would not reap so large a return, were they invested elsewhere), the landowners have some bargaining power vis-à-vis the land trust and may appropriate some of the "conservation rent." Uniqueness may, of course, result from the land trust's own specific investments, as is suggested by Part III.A of this article.

67. Majoritarian decision rules give short shrift to minority preferences, at least where there are few issues on the agenda and hence little room for horse trading. See ROBERT D. COOTER, *THE STRATEGIC CONSTITUTION* 120-24 (2000).

68. At least this is possible in principle. Whether it is possible in fact depends, of course, on whether it is authorized by the state enabling legislation that structures the creation of "conservation contracting districts."

69. Another possible objection, raised by Susan French, is that landowners may not be willing to "give up their ability to negotiate individually." While every dollar-hungry landowner would like to be a keystone holdout, the land trust can induce landowners to form special districts by refusing to negotiate otherwise, or by offering higher payments to landowners who form such districts (enabled by the transaction-cost savings that the land trust realizes by bargaining with landowner collectivities rather than individual property holders). Moreover, once a community of landowners appreciates how their individual self-seeking can lead to collective hardship by driving the land trust out of the community, see *supra* Part III.B.1, they will see collective contracting as very much in most landowners' pecuniary self-interest.

Some other advantages of conservation contracting via special districts should be noted.<sup>70</sup> First, the special district's power to coerce dissenters means that the land trust does not have to worry about whether it can credibly commit to abide by the all-or-nothing norm. When special districts are part of the game, it often will be cheaper for the land trust to gain control over "all" of the relevant resources (by contracting with the district) than to control "most" of those resources (by contracting with individual member landowners). Furthermore, the presence of a special district in community B weakens the position of holdouts in community A, even if the landowners in A decline to form a district, for the land trust has no reason to pay off the holdouts in A if it can realize greater conservation value for its dollar in B.

What remains to be considered is the effect of special district contracting on *temporal* opportunism. At first glance, it may appear that the land trust's exposure to temporal opportunism is essentially the same, whether the party on the other side of the contract is an individual landowner or a special district. Yet there is reason to believe that special district contracting, while conceived initially as a solution for spatial opportunism, will also prove less vulnerable to inter-contract (temporal) opportunism. Compared to the individual landowner, the special district seems not as well equipped to behave strategically on the basis of private information about allegedly idiosyncratic landowner preferences. Two factors account for this.

First, where there exists a broad spectrum of landowner preferences, special districts will tend to mute the most idiosyncratic. The districts generally will express mid-range preferences, not the extremes, because only rarely will landowners with outlier preferences be numerous enough to form a controlling voting block within any given sample of landowners. This strengthens the land trust's bargaining position against self-professed "outlier districts," both initially and at the contract renegotiation stage.

Second, while an individual landowner might pull off a plan of deception, posing as a friend of conservation (olive) initially and later on trying to extract rents following large specific investments by the land trust, this ploy would seem more difficult for a group of landowners. Hatching a group plan would involve lots of chatter (the strategic brown

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70. As this short article is intended only as a theoretical overview of the conservation contracting problem, I will not delve into the many practical questions related to the design of enabling legislation for conservation contracting districts. This is a hugely important inquiry, however, and much may be learned from the experiences of various agricultural special districts. For more on special districts for habitat conservation and their agricultural predecessors, see Elmendorf, *supra* note 1, at 473-90.



landowner has to explain to her less conniving compatriots that she is not selling them out), some of which may filter back to the land trust courtesy of true conservation sympathizers among the landowners.

#### IV. CONCLUSION

This article has in a very rudimentary manner identified the spatial and temporal vulnerability of a land trust's investments in the ecological rehabilitation of other people's lands. There is a fundamental tension where landowners suspect environmentalists of ill motive: the land trust wants perpetual or long-term contracts in view of temporal and spatial opportunism, but many landowners seek short-term commitments so as to limit their exposure to a feared "dark green" land-grab. My analysis suggests that land trusts may defend their investments against certain forms of temporal opportunism by tying up development rights with open-space easements before they sink resources into ecological restoration projects, and, more generally, by investing in their own reputation as non-conciliatory "inter-contract" bargainers. The prospect of temporal opportunism also commends the "liability-rule conservation easement," whereby the land trust contracts for the right to make ecological investments at a third-party-determined price. The liability-rule easement is particularly valuable where information asymmetries make it hard for the land trust to distinguish cases of (inter-contract) landowner posturing from cases in which the landowner's reservation price has actually increased.

Spatial opportunism appears less amenable than temporal opportunism to solutions that depend on the consent of all, though land trusts might improve their position vis-à-vis holdouts by blocking up development rights with "terminable conservation easements" rather than conventional, harder-to-alienate conservation easements. A more promising response to spatial opportunism is collective contracting via landowner-controlled, supermajoritarian special districts. The special district solution largely reduces the "landscape" contracting problem to that of a single-parcel case, where temporal opportunism is the only concern. Less obviously, the choice to contract through special districts may also reduce the land trust's exposure to temporal opportunism. This follows because the land trust's vulnerability to temporal opportunism results, in large measure, from the organization's uncertainty as to the landowner's true preferences and her costs of abiding by the proposed conservation contract. Special districts may reduce the information asymmetry, in part because they "average out" idiosyncratic landowner preferences, and in part because they require landowners to make *collective* choices, and in so doing landowners are likely to chatter about

strategy and in the process to disclose private information that may filter back to the land trust.

This article invites several lines of follow-up research. One inquiry would attempt to refine and perhaps formalize the conservation contracting game, in the hopes of replacing the rough conjectures advanced here with more precise insights. A second path would attempt to verify, rebut, or refine the conjectures by studying the practices of conservation organizations and government agencies that have begun contracting with private landowners for ecological services.

Two policy-oriented tacks also seem valuable. One would consider and critique the current public policy of privileging a single instrument for conservation contracting (the perpetual conservation easement), and a peculiar means of financing it (tax incentives). This article shows that a wide variety of instruments may have distinctive roles to play in securing, and thus enabling, ecological investments on other people's land. As such, it may afford some reason to question public policies that differentially subsidize the permanent conservation easement. A second policy-oriented project would focus on how best to design special districts for conservation contracting, and take up the question of whether and how special district discretion should be limited by oversight institutions, judicial or otherwise.