

# COST-EFFECTIVE STRATEGIES FOR CONSERVING PRIVATE LAND

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AN ECONOMIC ANALYSIS FOR LAND TRUSTS AND POLICY MAKERS

Dominic P. Parker

## INTRODUCTION

Land trusts that acquire and hold property rights operate much like businesses. They *produce* products (environmental amenities), such as wildlife habitat and scenic views, which are *consumed* (enjoyed) by land trust donors and the general public (customers). It is easy to think of amenity enhancement as a production process. Inputs, such as labor, land, seed, and fencing, must be employed, and there is a cost for the use of each. Amenity preservation can also be analyzed as a production process (although doing so is less intuitive). Land must be employed as an input, and it is costly to acquire.

Like private businesses, land trusts with a genuine interest in succeeding have incentives to keep their production costs low. High costs limit the amount of amenities land trusts can afford to produce. Conservation easements arose because the incentive to keep costs low encouraged early conservationists to think of innovative ways to preserve and enhance amenities. The pioneers of conservation easements recognized that specific land rights can be acquired and used as inputs in the production process. By acquiring only the relevant land rights, such as the right to restrict development or allow public access, land trusts can reduce their up-front costs. Thus, conservation easements can enable land trusts to produce more and better amenities with their limited budgets.

Another more subtle force also affects costs. Property rights economists have long recognized a concept called transaction costs (Coase 1937, 1960; Barzel 1997). Transaction costs are the costs of specifying, monitoring, and enforcing property rights or contracts. They are ubiquitous, and examples abound. For example, firms monitor the performance of their employees to be sure they do not shirk—but this can be costly. It is also costly to control non-labor inputs, for example by ensuring that computer networks are safe from hackers and viruses. The key point is that monitoring and enforcing raise production costs.

While transaction costs are inevitable, they increase when a firm shares ownership of its inputs with another party. Divided ownership increases the need for the parties to clearly specify, monitor, and enforce their property rights (Barzel 1997). Consider, as an example, the transaction costs that arise when a law firm and an accounting firm share the use of a conference room. Because both firms work on time-sensitive projects that arise on short notice, they may often want the conference room at the same times. In addition, conflict might arise because the law firm habitually leaves trash in the room or because the accounting firm chronically removes audio and visual equipment. The firms can work to structure an agreement that will make the shared arrangement run smoothly, but the agreement will be costly to specify, monitor, and enforce.

These ideas can be applied to land trusts. Transaction costs inevitably raise their costs of providing environmental amenities because land trusts must monitor their employees and enforce their property rights to land. The extent of the transaction costs depends critically on whether land trusts control land rights through fee-simple ownership or with conservation easements, which divide ownership.

While the “transaction costs” jargon is not widely used in the land trust community, the concept—commonly referred to as stewardship costs—is one that practitioners are well aware of. Practitioners stress the importance of drafting easement provisions that are enforceable in court and readily monitored. Andrew Dana, an attorney who drafts conservation easements, for example, argues for painstaking clarity and simplicity in conservation easement deeds. The point is to avoid language that is ambiguous or leaves “muddled middle ground in which an indecisive judge can wallow” (Dana 1999, 10). Reports published by the Bay Area Open Space Council (Guenzler 1999) and the Conservation Resource Center (Pentz 2001) recommend that land trusts develop and adhere to rigorous monitoring and baseline

documentation programs. They provide suggestions for what such programs should include and how they might be established. Darla Guenzler (1999, 30), for example, states that “an organization needs a clear and consistent record-keeping system which encompasses all the correspondence, monitoring, and other activities relevant to each easement.” Efforts such as these and many others endorsed by the Land Trust Alliance (LTA) have proposed ways in which to mitigate stewardship costs (e.g., Diehl and Barrett 1988; Lind 1991, 2001; Lind and Zeller 2002).

This report examines ways of mitigating stewardship or transaction costs associated with conservation easements. It complements studies conducted by the land trust community and is intended to help land trust practitioners refine and streamline their practices. In addition, this report explains how politicians and governmental agencies can help them do so. Using data collected from sources such as the Land Trust Alliance’s *National Directory of Conservation Land Trusts* and a PERC survey, the report discusses the conditions under which conservation easements are more cost-effective than fee-simple ownership and identifies how the purposes and enforcement of easements affect stewardship costs. Finally, the report recommends a methodology for predicting how much different provisions in conservation easements will cost to steward. The information should help land trusts determine appropriate stewardship endowments and decide whether to agree to certain provisions.

The report is structured as follows. The next section, “A Primer on the Land Trust Movement,” provides background information for the policy maker audience. It summarizes land trust growth trends, legal aspects of conservation easements, and various tax incentives for donating easements. (Land trusts intimate with conservation easements can skip this initial section without missing the crux of this report). The other sections of the report explain ways in which land trusts can and do economize on stewardship costs. The main policy implication is that legislators and regulators should give land trusts the flexibility to provide environmental amenities in cost-effective ways. Agents administering public bond money, for example, should not mandate that the money be spent only on conservation easements nor should they mandate that easements include specific provisions.

## A PRIMER ON THE LAND TRUST MOVEMENT

The Land Trust Alliance defines a land trust as a “nonprofit organization that, as all or part of its mission, actively works to conserve land by undertaking or assisting direct land transactions—primarily the purchase or acceptance of donations of land or conservation easements” (LTA 2001a). Land trusts can and do influence land use by lobbying for zoning regulations or brokering land sales to government agencies. But, as the latter part of the definition suggests, most land trusts conserve private land by acquiring property rights.<sup>1</sup>

This preponderant subset of land trusts resemble charitable trusts in many respects.<sup>2</sup> Most enjoy charitable status and exemption from federal and state income taxes. In addition, most are governed by an unpaid board of trustees charged with the responsibility of managing land trust assets. Trustees cannot enrich themselves with trust assets and are supposed to manage trust assets for its beneficiaries.<sup>3</sup> In the broadest sense, land trust beneficiaries are the general public. The most conspicuous beneficiaries, however, are those who materially enjoy the amenities that a land trust provides. These beneficiaries reside in the region in which a land trust operates and might include people who fish, hunt, or hike on trails provided or who have regular scenic access to property rights controlled by the land trust.

### Land Trust Growth Trends

The first land trust was probably the Massachusetts Trustees for Reservation, which emerged in 1891. The motivation for the trust was to “establish an organization with a board of trustees that would have power to hold lands free of taxes . . . for the use and the enjoyment of the public” (Abbott 1982, 150). Other organizations with similar doctrines, such as the Block Island Land Trust in Rhode Island (1896), and the Society for the Protection of New Hampshire Forests (1901) emerged shortly thereafter (LTA 1998). As shown in Table 1, fast growth in the number of land trusts, however, did not begin until the second half of the twentieth century. There were approximately 53 land trusts in 1950; 308 in 1975; 867 in 1990; and 1,263 in 2000 (LTA 2001a). Of the 1,263 local and regional land trusts identified, most are located in the Northeast (39 percent), Midwest (15 percent), and the Mid-Atlantic regions (14 percent). From 1990 to 2000, the greatest percentage increase in the number of land trusts occurred in the South Central (127 percent) and Southwest (119 percent) regions (LTA 2001a).

The growth in the number of acres controlled by state and local land trusts is also impressive.<sup>4</sup> The number of acres held in fee-simple and conservation

easements increased from approximately 350,000 in 1981 to almost 866,000 in 1990 and up to 3.8 million acres by 2000 (Bremer 1982; LTA 2001a).<sup>5</sup> State and local land trusts in the Northeast region control the most acres (1.4 million) and land trusts in the South Central region control the least (72,356). The greatest percentage increase in acreage controlled has occurred in the Southwest, Southeast, and South Central regions (LTA 2001a). On a statewide basis, land trusts in Montana and New York control the most acres with 454,689 and 416,194 respectively. Land trusts in Hawaii and Arkansas control the least amount of acres with 8 and 953 respectively. From 1990 to 2000, the most rapid growth in acres controlled by state and local land trusts occurred in South Dakota (803,900 percent) and Nevada (53,207 percent).

Relative to fee-simple ownership, conservation easements are increasingly becoming the preferred instrument. From 1990 to 2000, the percentage of land controlled by state and local land trusts held in conservation easements increased from 52 to 68 percent. During the same period, land held in conservation easements increased 475 percent, while fee-simple land increased only 186 percent (LTA 2001a). Land trusts in 6 of the 8 regions now control over half their land with conservation easements and, from 1990 to 2000, the percentage of land controlled with conservation easements increased in 5 of the 8 regions.

These figures illustrate a general trend towards the use of conservation easements, but their prevalence varies across regions and states. The smallest percentage of land controlled by conservation easements occurs in the Midwest (41 percent) and in the Pacific (44 percent) regions. The largest percentage of land controlled by conservation easements occur in the Northwest (96 percent) and the Southeast (77 percent). On average, about 56 percent of land controlled by land trusts in each state is held in conservation easements, varying from 0 percent in Oklahoma, Nevada, and North Dakota to nearly 100 percent in Montana, Minnesota, Louisiana, and Colorado (LTA 2001a).

Land trusts preserve and enhance a variety of environmental amenities on the land they control. More than half of state, local, and regional land trusts report protecting wetlands and river corridors. Over 40 percent report protecting watersheds, farmlands, ranchlands, or endangered species habitat. Fewer than 40 percent report protecting amenities such as scenic views, recreational trails, and timberland (working forests) (LTA 2001a). In addition to controlling land use, many land trusts engage in other activities. In 2000, 72 percent of land trusts said that they provided programs in environmental education and 51 percent said they participate in land-use planning (LTA 2001a). In an earlier study, almost 50 percent

of land trusts reported involvement in ecological restoration, biological monitoring and research, or management activities for rare species (LTA 1998).

### **The Conservation Easement Instrument**

In an analogy often used by attorneys and economists, land is compared to a bundle of sticks. Each stick represents a right to use land, or exclude others from using the land, in a circumscribed manner. Under the auspices of the analogy, a conservation easement simply means that a landowner agrees to cede some sticks from his or her bundle for a specified duration (usually perpetuity). In more technical terms, a conservation easement is “a right, an interest in real property, or an interest in land” (Mayo 2000, 27). A more comprehensive definition is found in the Uniform Conservation Easement Act:

“Conservation easement” means a nonpossessory interest of a holder in real property imposing limitations or affirmative obligations the purposes of which include retaining or protecting natural, scenic, or open-space values of real property, assuring its availability for agricultural, forest, recreational, or open-space use, protecting the natural resources, maintaining or enhancing air or water quality, or preserving the historical, architectural, archeological, or cultural aspects of real property.<sup>6</sup>

Interests conveyed in conservation easements are formally drawn in a legal deed. Although each easement deed is unique and deeds are structured in various ways, they typically contain the following elements (see Diehl and Barrett 1988; Bick and Haney 2001; Boyd, Cabellero, and Simpson 2000):

1. a statement of the property’s “conservation” values;
2. reference to supporting documentation of the property’s legal description and present “baseline” condition;
3. a statement of the purpose of the easement;
4. a description of the affirmative rights granted to the land trust;
5. a list of rights retained by the landowner (permitted land uses) and a description of guidelines governing permitted land uses;
6. a list of prohibited land uses; and
7. miscellaneous provisions including: enforcement or dispute remedies; indemnity and liability disclaimers; procedural directions for notices and approvals; and amendment and extinguishment clauses.

The meat of conservation easement content is contained in elements 3, 4, 5, and 6. The statement of purpose (element 3) describes the amenities the easement is intended to enhance or preserve. The statement of purpose may generically identify amenities such as wildlife habitat or historic ranching practices. Or, the statement of purpose may identify specific plants, animals, views, or agricultural methods or crops.

Affirmative rights granted to land trusts (element 4) always include the right of periodic access to the property in order to monitor compliance, enjoin activity that is inconsistent with the easement, and enforce restoration if a violation has occurred. In fewer cases, easements grant land trusts the right to conduct scientific studies, construct and maintain recreational trails, or actively manage vegetation (Bick and Haney 2001; Parker 2002b).

Conservation easements also prohibit and permit land uses that the landowner may conduct (elements 5 and 6). Most easements prohibit commercial billboards, trash dumping, commercial feed lots, and mineral exploration. Some easements prohibit the construction of buildings, fences, and roads, timber harvest, and subdivision. Even fewer easements prohibit agricultural and recreational use. Permitted land uses are often regulated. For example, a landowner may be permitted the right to build a residential structure, but only of a specified size and in a specified location. Or, a landowner may be permitted to graze livestock, but only as long as such grazing does not significantly impair wildlife habitat.

The rights conveyed in conservation easements “run with the land.” That is, successor landowners (and possibly successor land trusts) are generally bound to the terms of the easement agreed upon by the original parties. As attorney John Walliser (1997, 1) notes, “It is this intention to bind persons succeeding the original landowner that distinguishes conservation servitudes from other contractual arrangements.” This distinction is a reason why conservation easements are property rights, not contractual rights, and is a reason why the enforceability of conservation easements is uncertain under a common law regime (Dana and Ramsey 1989; Walliser 1997).<sup>7</sup>

### **Easement-Enabling Statutes**

Perhaps because of the common law obstacles, most modern conservation easements rely on statutory law.<sup>8</sup> State statutes include basic enforcement provisions that override common-law defenses (Squires 2000). In addition, state statutes delineate the type of amenities easements can protect and the duration of easements along with other provisions (Mayo 2000). In an attempt to standardize easement statutes, the National Conference of Commissioners on Uniform State Laws adopted the Uniform Conservation Easement Act (UCEA) in 1981. According to Mayo (2000), the UCEA

provided a blueprint for how state legislatures could take advantage of the federal tax-code and overcome some of the common-law problems associated with the enforceability of conservation easements.

Since 1981, 21 states have adopted the UCEA—many with local variations (Squires 2000). Most (67 percent) of the UCEA states did not have easement-enabling statutes prior to 1981. A few states, such as Florida, Maine, and Oregon, amended existing legislation to conform to UCEA guidelines after 1981. The statutes in twenty-five states are not modeled on the UCEA. Most (88 percent) of these states had easement-enabling statutes prior to 1981 (Squires 2000). Statutes in states that have adopted the UCEA tend to be much more explicit about what conservation easements are able to protect than statutes in non-UCEA states. In general, the fact that UCEA statutes tend to be more explicit implies that conservation easements in the state tend to be easier to enforce.<sup>9</sup>

### **Tax Incentives for Donating Conservation Easements**

Federal and state tax incentives have almost certainly contributed to the growth in conservation easements in recent years (Small 2000). In all cases, the amount of taxes deductible from conservation easement donations depends (at least in part) on the appraised value of the easement. Although several alternatives exist (Boykin 2000), the most common appraisal methodology is to value conservation easements as the difference between the land's unencumbered ("fair market") value and its encumbered ("current use") value (e.g., Diehl and Barrett 1988; Bick and Haney 2001).

Federal recognition of the deductibility of conservation easement donations began in 1976 with the passage of the Tax Reform Act.<sup>10</sup> The legislation codified the deductibility of historic preservation and conservation easements from federal income taxes. In 1977, as part of the Tax Reduction and Simplification Act, the 1976 Act was amended to require that eligible easements be donated in perpetuity. Finally, as part of the Tax Treatment and Extension Act of 1980, the IRS specified that easements must meet certain conservation purposes to be eligible for tax deductions.<sup>11</sup> The requirements, taken from section 170(h)(4), are as follows:

- i) the preservation of land areas for outdoor recreation by, or the education of, the general public; or
- ii) the protection of a relatively natural habitat of fish, wildlife, or plants, or similar ecosystems; or
- iii) the preservation of open space (including farmland and forest land) where such preservation is: for the scenic enjoyment of the general public; or pursuant to a

- clearly delineated federal, state, or local governmental conservation policy, and will yield a significant public benefit; or
- iv) the preservation of an historically important land area or a certified historic structure.

An additional tax incentive was introduced in 1997 with the passage of the Tax Payer Relief Act.<sup>12</sup> The act allowed for the possible reduction of federal estate taxes if the taxpayer had donated (or sold) an easement that qualified for an income tax deduction under section 170(h). The 1997 act required that property under easement be either 1) within 25 miles of an area defined by the federal Office of Management and Budget as a metropolitan area; 2) within 25 miles of an area designated as part of the *National Wilderness Preservation System*; or 3) within ten miles of a USDA Forest Service designated *Urban National Forest*. If these requirements were met, the taxpayer was eligible to exempt up to 40 percent of the value of the property encumbered by a conservation easement from the total (unencumbered) estate value.<sup>13</sup> The passage of the American Farm and Ranch Protection Act in 2001 amended the Tax Payer Relief Act. Most notably, the new law waives the geographic requirements for eligibility and provides for an additional estate tax exclusion of up to \$500,000.<sup>14</sup>

In addition to federal tax incentives, many states provide incentives for donating conservation easements. Because a conservation easement lowers property values, landowners may realize property tax reductions after encumbering their land. The actual amount of the reduction depends on state laws and, according to Diehl and Barrett (1988, 9), “personal attitudes of local officials and assessors.” Seventeen states, however, have statutes that require that local assessors reduce property value assessments when a conservation easement encumbers the land. About ten states offer income tax credits for donated easements (Defenders of Wildlife 2002). In Colorado, for example, landowners are entitled to a tax credit equal to the full value of the donation up to \$260,000. Each dollar of donation creates one dollar of tax credit (Colorado H.B. 1090 [2001]).

## CONSERVATION STRATEGIES: OWNERSHIP OR CONSERVATION EASEMENTS?

As the previous section explains, conservation easements are flexible instruments, supported by a myriad of tax incentives, that are becoming a prevalent conservation tool. Conservation easements, however, are not panaceas. Different land trusts use different instruments to provide environmental amenities. Of 774 state, local, and regional land trusts that owned land or held conservation easements prior to 1999, 228 held only fee-simple land, 417 held a mix of fee-simple and easements, and 130 held all easements (LTA 1998).

The fact that different land trusts use different instruments to provide environmental amenities raises the question: What determines whether a land trust controls a parcel of land with a conservation easement or with fee-simple title? In many respects, this question is analogous to one that has long intrigued economists: What determines whether a firm controls its inputs through full ownership or with leases and contracts? What, for example, determines whether the law firm and the accounting firm described in the introduction share a conference room or have their own? What determines whether a farmer owns or leases land and machinery?

### **Cost Tradeoffs in General**

Economists who have extensively studied these issues argue that ownership of inputs will be divided only if the benefits of doing so outweigh the costs. The main costs of divided ownership are those incurred to specify, monitor, and enforce the terms of the lease or contract (Coase 1937; Williamson 1975; Barzel 1997).

The primary benefits of contracting or leasing result from lower up-front costs and gains from specialization (Barzel 1997). Specialization simply means that someone or something is good at performing a specific task or producing a specific output and therefore is a more cost-effective input. Nutrient-rich farmland, for example, is inherently better at producing crops than urban land. Unless a specialized operator (knowledgeable farmer) tills the farmland, however, its agricultural potential will not be reached. But suppose the farmland has another specialized attribute such as harboring spectacular bucolic scenery. Unless the farmland is owned by someone who appreciates the scenery, the value of the scenic attribute of the land is not fully exploited. In such cases, two types of beneficial leasing arrangements can emerge. First, a nonfarming landowner who values the bucolic scenery can own the land and lease the farming rights to a knowledgeable farmer. Second, a knowledgeable farmer can own the land and

transfer some of the scenic rights to another entity via a conservation easement. In either case, the value of the land is higher than under simple, single ownership.

To synthesize these ideas, consider how tradeoffs in transaction costs and specialization influence whether or not productive agriculture land is leased. In an extensive study of modern agriculture, Allen and Lueck (2002) report that 48 percent of about 1,600 surveyed owners of farmland lease out their land. The owners who leased their land tended to not have specialized farming skills. Because such landowners were not adept at farming, they could benefit more from leasing the land to another farmer. In addition, Allen and Lueck find that land used to produce crops that require diligent care for sustained harvest over time tended not to be leased to another party. For example, with fruit orchards, nut farms, and vineyards, pruning is essential for sustaining high quality harvests. But, because it is difficult to specify, monitor, and enforce leases that call for careful pruning, these types of farms tend to be owned and not leased.

### **Cost Tradeoffs in Conservation: Easements Versus Full Ownership**

Conservation easements are similar to leases in that they divide property rights between parties. Thus, advantages of using easements should be greatest when the land is specialized in providing agricultural goods, either because the landowner is particularly adept or the land is particularly suited, and when the easement is easy to specify, monitor, and enforce. On the other hand, the advantages of full ownership should be highest when a conservation easement would be difficult to specify, monitor, and enforce or when the desired land is not specialized for agricultural goods.

Conservation easements should be appealing options for preserving working lands—farms, ranches, and timberland. This land has specialized agricultural attributes and those attributes are most valuable when a skilled operator is working the land. Land trusts are typically not farmers, ranchers, or timber producers, while landowners often have the necessary equipment and experience. Assuming the landowner can easily be monitored, the specialized attributes of working lands tend to be more valuable when the landowner, not the land trust, holds the rights to farm, ranch, or harvest timber.<sup>15</sup>

Consider cases in which conservation easements are relatively easy to monitor and enforce. Monitoring easements that only seek to prohibit conspicuous construction should be a straightforward task. The land trust simply needs to browse the property to make sure that such structures have not been erected. In addition, the per-acre costs of monitoring easements should be lowest when the easement encumbers large parcels under single ownership. Monitoring easements on multiple

parcels involves more time to measure the condition of the separate properties and more time and travel expenses to schedule and conduct periodic visits. Finally, enforcing conservation easements should be easiest when the legal climate under which a land trust operates is most favorable. Myriad factors influence legal climates—including the subjective opinion of judges—but most legal practitioners argue that stronger easement-enabling statutes render conservation easement deeds and provisions easier to enforce (Gustanski and Squires 2000).

Contrast these arguments with cases in which conservation easements are more difficult to specify, monitor, and enforce. Difficulty occurs when the easement seeks to provide recreational access or calls for active land trust management. In the case of recreational access, either the land trust or landowner will need to construct and maintain recreational assets, and such building and maintenance agreements will be time-consuming to specify. In addition, the land trust may have to carefully monitor current and future landowners to ensure that they are providing appropriate access. Most importantly, however, the landowner will need to carefully monitor public use to ensure that his or her property rights are not violated.<sup>16</sup>

Active land management through conservation easements can incur high transaction costs. Active management requires adaptive management agreements with landowners. Forming such agreements requires the creation of standards, monitoring to see if the standards have been achieved, and the modification of management practices in response to new information.<sup>17</sup> Because of the need to form management agreements that can be specified and monitored at a low cost, the agreements will invariably be less flexible than on-the-spot land trust management as the land trust will be constrained in its ability to respond promptly and effectively to unforeseen contingencies and new information.

### **Statistical Analysis**

Six factors relating to transaction costs and land-use specialization are likely to influence what proportion of acreage of land trust land is held in conservation easements and fee-simple. These are: 1) whether the land trust focuses on providing scenic amenities; 2) whether the land trust focuses on providing recreational amenities; 3) whether the land trust is engaged in active management; 4) whether the land trust preserves working lands; 5) the size of landholdings sought by the land trust; and 6) whether the land trust operates in a state with an easement-enabling statute. Table 2 gives brief definitions and summary statistics for land trusts that held land in fee-simple or easements prior to 1999.<sup>18</sup>

Data summarized in Table 2, when studied through regression analysis, allow us to estimate the percent of land controlled by conservation easements (compared to fee simple) as a function of the factors listed above. Thus, the analysis shows us which factors spur land trusts to use conservation easements rather than fee-simple ownership. Regression analysis enables us to home in precisely on the relationship between each factor and the percent of land controlled by easements. The regression procedure is able to quantify the specific impact of a factor, such as whether a land trust provides scenic amenities, because it takes into account all other factors, such as the median size of parcels in its area of operation, when making the calculation.<sup>19</sup>

### **Primary Findings**

1. **Land trusts providing scenic amenities are more likely to do so with conservation easements than with full ownership.** This means that the 347 land trusts in the sample that provide scenic amenities, such as the Estes Valley Land Trust in Colorado and the Sippican Land Trust in Massachusetts, hold more of their land in easements than they would if they did not consider the provision of scenic amenities an important priority. More generally, the finding implies that these land trusts economize on costs by using easements to provide scenic amenities.
2. **Land trusts providing recreational amenities are more likely to do so with full ownership than with conservation easements.** This means that the 382 land trusts in the sample that provide recreational amenities, such as the Thousand Islands Land Trust in New York and Indian River Land Trust in Florida, hold more of their land in fee-simple than they would if they did not consider the provision of recreational amenities an important priority. More generally, the finding implies that these land trusts economize on costs by using fee-simple land to provide recreational amenities.
3. **Land trusts engaging in active management are more likely to do so with full ownership than with conservation easements.** This means that the 332 land trusts in the sample that manage rare and endangered species habitat or engage in ecological restoration, such as the Swaner Memorial Park Foundation in Utah and the Woodland Dunes Nature Center in Wisconsin, hold more of their land in fee-simple than they would if they did not engage in active management. More generally, the finding suggests that these land trusts economize on costs by fully owning land in which they wish to adaptively manage.

4. **Land trusts preserving working lands are more likely to do so with conservation easements than with full ownership.** This suggests that the 313 land trusts in the sample that preserve working lands, such as the Colorado Cattlemen's Agricultural Land Trust and the Kansas Land Trust, hold more of their land in conservation easements than they would if they did not preserve working lands. More generally, the finding implies that these land trusts recognize that specialized agricultural and timber land tends to be more productive when residual ownership rights remain with separate landowners.
5. **Land trusts operating in regions where private landholdings tend to be large are more likely to hold conservation easements than land trusts that operate in regions where landholdings tend to be small.** This suggests, for example, that land trusts that operate in ranching states like Colorado and Montana hold more of their acres in conservation easements than they would if parcel sizes were similar to those found in states such as Massachusetts and Connecticut. More generally, this finding suggests that these land trusts economize on costs by holding easements on larger parcels.
6. **Land trusts in states that lacked easement-enabling statutes were no more likely to use fee-simple ownership than land trusts in states that had such statutes.** This finding suggests that the 50 land trusts that operated in Oklahoma, North Dakota, Pennsylvania, and Wyoming did not hold fewer acres in conservation easements than they would if their states had easement-enabling statutes prior to 1999. This finding may imply that the costs of enforcing conservation easements was not markedly different in states that lacked easement-enabling statutes.

### Secondary Findings

1. **Land trusts operating under UCEA statutes were slightly less likely to use conservation easements than land trusts in non-UCEA states.** This may suggest that UCEA statutes do not provide stronger enforcement of conservation easements than non-UCEA statutes.
2. **Land trusts in states requiring that conservation easements reduce property tax assessments were more likely to use easements than land trust in other states.** This suggests that landowners are more likely to donate conservation easements when there is a property tax incentive for doing so.

3. **Older land trusts were more likely to hold more of their land in fee-simple than younger land trusts.** This finding suggests that land trusts have become more sophisticated at drafting, monitoring, and enforcing conservation easements over time<sup>20</sup> and that increases in federal and state tax incentives have elicited more donations of easements.
4. **Land trusts preserving or enhancing forests, watersheds/water quality, wetlands, rare species habitat, and historic sites are no more likely to use conservation easements than fee-simple.** This finding suggests that neither instrument has a fundamental advantage in providing the above amenities. More likely, other factors determine whether land trusts use easements or fee-simple to provide these amenities.
5. **Land trusts with larger budgets do not hold a greater percentage of their land in fee-simple or conservation easements.** This suggests that land trusts do not accept or purchase easements because small budgets preclude them from acquiring fee-simple land.

### **Summary Discussion**

While the statistical analysis does not identify every factor, it does reveal several reasons why land trusts hold acres both in conservation easements and in ownership.<sup>21</sup> The findings suggest that land trusts reduce their costs of providing environmental amenities by considering transaction costs and specialization in their decision to own land or hold conservation easements. This is good news for taxpayers who fund conservation easements and for others with stakes in the success of land trusts. Though land trusts are not-for-profit organizations, they face budget constraints that give them incentives to search for ways of reducing costs.

## ANTICIPATING THE COSTS OF STEWARDING CONSERVATION EASEMENTS

If land trusts holding conservation easements want to further reduce costs, they must understand how different easement provisions affect the costs of setting up, monitoring, and enforcing easements. To obtain data that allows us to estimate the impact of easement provisions on stewardship costs, I asked land trusts in Western states to estimate their costs of setting up, monitoring, and enforcing individual conservation easements. Using regression analysis, I correlated their responses with actual terms in the easements to estimate how much easements cost to steward and what factors makes stewarding them most burdensome. This information should help land trusts decide whether or not to undertake conservation easements in particular cases and also what provisions to include in the easement deed.

### Survey Description and Data

In late 2001, the questionnaire (see Appendix A) was mailed to a list of 120 land trusts identified by the Land Trust Alliance's Web site as operating in Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming. The land trusts were asked to select three conservation easements granted to their organization in the past ten years. If applicable, participants were asked to include at least one easement that had been violated (intentionally or unintentionally) by the landowner. Ultimately, 16 land trusts completed the questionnaire (see Appendix B).

### Easement Characteristics

Sample easements were recorded between 1976 and 2001 but most of the sample (56 percent) is concentrated between 1997 and 1999. The total acreage encumbered by the easements ranges from 1 to 28,769. The mean acreage encumbered is 1,573.

Participants were asked to identify the primary purpose or purposes of the conservation easements they submitted. The options from which to choose were open space, wildlife habitat, public access, and working lands. Of the 48 completed questionnaires, 36 indicated that the easement serves multiple primary purposes while 12 noted that the easement serves a single primary purpose. Of the easements that are for a single primary purpose, most (7) are for working lands. Of the multiple-purpose easements, the most common combinations were open space and wildlife habitat (30) and working lands and open space (21).

Easements in the sample can be categorized as either permitting, prohibiting, or remaining silent on specific land rights. An easement is considered “silent” if it leaves open for further interpretation the issue of whether certain land uses will be permitted or prohibited. In such cases, language in other sections of the easement (such as the statement of purpose) might help inform the parties or courts. The term silent is appropriate because such language is more ambiguous than a direct statement of permission or prohibition. Table 3 summarizes permitted, prohibited, and silent provisions for a select list of prominent land uses.<sup>22</sup>

### **Stewardship Costs**

Participants estimated the costs of setting-up, monitoring, and enforcing each easement. Set-up activities occur prior to establishing the easement and include baseline documentation, easement negotiations, appraisals, and recording the deed at a county office. Set-up costs are incurred when land trusts or landowners hire professionals such as attorneys and surveyors or when land trusts use staff or volunteer time.<sup>23</sup> Monitoring activities are conducted during periodic—usually annual—visitations. Sample tasks include preparing written reports, walking the property, onsite photographs, narrative descriptions, aerial photographs, and vegetation measurements (Guenzler 1999). Monitoring costs include fees charged by professionals, such as range management consultants, and staff and volunteer time. Enforcement activities include dispute resolution, going to court to obtain injunctions, restoring property conditions, or simply requesting that the landowner stop engaging in a particular activity. Enforcement costs include fees charged by professionals, such as attorneys and mediators, and the use of staff or volunteer time.

Table 4 shows summary statistics for stewardship costs. In the first two rows of each category, staff and volunteer hours are separated from professional services, travel, and other expenses. In the third rows, the summary statistics for the stewardship costs are calculated by assigning a dollar value (\$20) per hour of staff or volunteer time and adding these time costs to outsourced costs to estimate the total costs for each category.

### **Statistical Analysis**

The general hypothesis is that stewardship costs will be influenced by three categories of factors: acreage, easement provisions, and easement purpose(s). Regression analysis is used to examine the hypothesis and quantify the impact of these factors.

## Findings

1. **Easements that encumber larger parcels cost more to monitor than easements that encumber smaller parcels.** The costs of monitoring each additional acre, however, falls as parcels become larger. An easement that encumbers 1,000 acres, for example, does not cost twice as much to monitor as an easement that encumbers 500 acres. This finding suggests that there are fixed costs of monitoring an easement, such as traveling to the property and renting an airplane, that exist irrespective of the size of the parcel. But, there are additional costs of monitoring the parcel, such as walking the perimeter of the property, that depend on the size of the parcel.
2. **Easements that allow the construction of new residences are more costly to set up than easements that do not.** It is easy to imagine why this is the case. Easements that allow new residences typically require the creation of building envelopes and footprint regulations. Establishing these guidelines lead to higher negotiation, surveying, and baseline documentation costs.
3. **Easements that allow subdivision of the parcel cost more to monitor than easements that do not.** This finding suggests that monitoring separate owners is more costly than monitoring parcels under single ownership. Monitoring separate owners requires more time to build personal relationships and to arrange and make annual visits to the properties.
4. **Easements that allow mineral exploration cost more to monitor than easements that do not.** This finding suggests that it is costly to ensure that mining activities are compatible with the guidelines listed in the conservation easement. More generally, the finding suggests that landowners who are allowed to extract valuable natural resources require more vigilant monitoring.
5. **Easements providing wildlife habitat are more likely to be violated and have higher enforcement costs than easements providing working land and open space.** There are at least two reasons why this is so. First, easements protecting wildlife habitat tend to include more guidelines that regulate permitted land uses than working lands easements or open space easements.<sup>24</sup> It is likely that the complicated nature of wildlife habitat easements increases the likelihood that the landowner will unintentionally violate the easement. Second, land trusts may be more vigilant in enforcing wildlife habitat easements than they are in enforcing

working lands easements. They may be more vigilant because habitat restoration is costly or because substitute habitat is unavailable.

6. **Easements that allow new residences are more likely to be violated or have higher enforcement costs than easements that do not.** There are at least three reasons why this is the case. First, stipulations and ambiguities concerning the extent of the permitted residential structures increase the likelihood that a landowner will unintentionally violate the easement. Second, landowners may have incentives to intentionally violate restrictions on residential structures if building such structures is a lucrative use of the land. Third, violations will be costly to remedy if the residential structure is already constructed.
7. **Easements that allow public access are slightly more likely to be violated or have higher enforcement costs than easements that do not.** This may be the case because public users abuse access privileges<sup>25</sup> or because new landowners resist allowing what they perceive as unfettered access to their property.

### **Summary Discussion**

Given the findings described above, land trusts that hold conservation easements that allow new residences, subdivision, mineral exploration, and public access should consider the funds needed to steward these provisions over time. To minimize stewardship costs, land trusts need to explicitly or implicitly know these relationships. To have the information to do so, they should estimate the costs of stewarding each easement and take note of factors presumed to affect the stewardship burdens. Such factors include those examined here as well as the wealth of the landowner, topographical characteristics of the land, the unencumbered value of the land, characteristics of adjacent landowners, and the specific wording of easement provisions.<sup>26</sup>

## CONCLUSIONS AND RECOMMENDATIONS

Conservation easements enable land trusts with limited financial resources to protect valuable environmental amenities. Because easements divide land interests between parties, however, specification, monitoring, and enforcement costs are necessary expenses. These stewardship costs make creating and holding conservation easements a financial burden and limit the amount of environmental amenities that land trusts can afford to protect. Thus, finding ways to reduce stewardship costs is an important priority for those interested in the success of private land conservation.

The most direct strategy for reducing monitoring and enforcement costs is owning the land outright. There are other costs of doing so, however. Up-front costs can be high and the land trust is often not the best manager of productive farmland, rangeland, and timberland. Cost-effective strategies should weigh these costs of full-ownership against the costs of stewarding conservation easements.

Conservation easements are more cost-effective than fee-simple when land trusts want to preserve open space on large parcels of working lands. Conservation easements may not be cost-effective when the land trust wants to provide recreational access, actively manage the land, or control land use on small parcels. Of course, land trusts interested in acquiring rights on small parcels, providing recreational access, or actively managing land should not unilaterally preclude conservation easements. Rather, they should carefully consider how the costs of stewarding easements on such parcels compares to the costs of fee-simple ownership. If conservation easements are chosen, land trusts should explicitly anticipate stewardship costs when negotiating specific provisions, such as permitted construction, with the landowner.

The key point is that land trusts can mitigate the costs of conserving private land if they can adjust their strategies in response to anticipated stewardship costs and landowner specialization. In order to do so, land trusts must continue to refine their practices. But the onus is also on policy makers to give them incentives and the discretion to do so. Without such discretion, land trusts will be forced into cumbersome conservation strategies.

As a case in point, the Wetlands Reserve Program (WRP) administered by the U.S. Department of Agriculture offers an illustration of how rigidities can hamper the achievement of environmental goals. The objectives of the WRP are to protect, restore, and enhance the functions and values of wetland ecosystems—primarily to attain habitat for wetland-dependent wildlife, protect and improve water quality, attenuate water flows due to flooding, recharge ground water, protect and enhance

open space and aesthetic quality, protect native flora and fauna, and to contribute to educational and scientific scholarship. Yet to achieve this broad range of objectives, the WRP is only authorized to acquire conservation easements, or enter into cost-share agreements with landowners (that is, it cannot own land in fee simple). Moreover, the WRP easements are highly standardized, constraining the parties' ability to adjust the terms to local conditions and thereby save costs. In addition, the WRP easements require provisions that give the U.S. government the right to actively manage wetland resources. But, as the findings here show, easements are not usually the best tool for actively managing resources. The rigid requirements, coupled with the fact that stewardship costs are not part of the criteria used to select eligible WRP easements (National Resource Conservation Service 2002a), means that the WRP can only achieve its mission in a cumbersome manner. A better strategy for conserving wetlands would be to grant the money to land trusts on a competitive basis and allow them the flexibility they need.

The purpose of the above example is not to criticize the WRP but to underscore the fundamental advantages that localized land trusts have in conserving private land. Politicians, governmental agencies, and agents administering public bond money should promote policies that exploit these advantages. They should promote policies that give land trusts incentives to weigh the tradeoffs of fee-simple ownership versus conservation easements and the tradeoffs of including or omitting various provisions in easements. Subtle as this point may seem, its importance should not be understated. Bad land conservation policy will constrain land trusts' ability to minimize costs.

In conclusion, the following recommendations should help land trusts use their funds productively. A further set of recommendations is offered for policy makers, who have power to help or hinder land trusts' achievements of their goals.

### **Recommendations for Land Trusts**

- **Do not accept or purchase a conservation easement without considering whether full ownership is a plausible alternative.** Perpetual easements come with a perpetual stewardship obligation. Easements that are cumbersome to monitor and enforce represent serious future liabilities. Land trusts should consider pooling money with other land trusts so that budget constraints do not foreclose the possibility of full acquisition of land.

- **Set up accounting procedures that track the costs of stewarding individual conservation easements.** Establishing and adhering to such procedures will take time and effort, but the data will enable land trusts to better anticipate their costs of stewarding different easements. In the coming years, land trusts in most regions will acquire numerous conservation easements. The ability to better anticipate the stewardship costs promises to ease the burden of stewarding these easements in the future.
- **Do not agree to easement provisions likely to be costly to monitor and enforce over the long haul.** Pressure to do so might come from a potential grantor with zealous or idiosyncratic conservation goals. While it may seem counterintuitive to refuse such requests, land trusts should be wary of the costs of stewarding the provisions. If the potential grantor threatens to withhold the donation unless the provisions are included, land trusts should be confident that better prospects await.

### Recommendations for Policy Makers

- **Politicians should not promote incentives that blatantly favor conservation easements over fee simple or vice versa.** Income, estate, and other tax incentives offered to landowners who donate easements should be commensurate with those offered to landowners who donate fee-simple land. In other words, tax benefits for a conservation easement appraised at \$100,000 should be approximately the same as tax benefits offered for fee-simple land appraised at \$100,000. North Carolina's income tax credit, for example, offers such parity.<sup>27</sup> If it did not, landowners and land trusts in North Carolina would be more apt to discount the long-term costs involved with owning land or holding conservation easements in order to take advantage of the tax incentive.
- **Government agencies authorized to purchase rights on private land should appropriate those funds to land trusts on a competitive basis.** South Carolina's new Conservation Bank Act provides a good example. Land trusts in the state are able to compete with government agencies for the \$8 to \$10 million of public funds. The "best lands and best projects are selected."<sup>28</sup> Land trusts in Minnesota, however, can not bid for public monies spent through the Reinvest in Minnesota Program managed by the Board of Water and Soil

Resources. Only a state agency can hold land rights purchased with program funds.<sup>29</sup> The research presented here suggests that taxpayers will get more bang for their buck if land trusts, not agencies, identify and hold conservation rights to land. Relative to bureaucratic agencies, land trusts tend to have more flexibility and discretion and better local information. Thus, they are generally better able to reduce costs.

- **Governmental agencies should not appropriate competitive funds to land trusts based primarily on how many acres of land they control.** For example, the Farmland Protection Program (FPP) authorizes the USDA to allocate funds to non-governmental agencies to hold conservation easements. To be eligible, land trusts must “demonstrate the capability to acquire, hold, manage, or enforce conservation easements or their equivalent; and have staff capacity or formal agreement with other entities dedicated to monitoring and easement stewardship” (National Resource Conservation Service 2002b). The FPP should not assess compliance to these criteria based on a simple measure of total acreage held. Such criteria would give land trusts incentives to bolster their holding of easements—perhaps by downplaying the benefits of fee-simple acquisition or being less selective in targeted easement provisions.
- **Agents managing public bond monies should not succumb to public pressure to mandate specific provisions in easements.** From 1998 to 2001, voters in statewide and local districts approved 529 measures that will appropriate \$19.3 billion for private land conservation (LTA 2002b). In many cases, agents will be pressured to spend the money on provisions demanded by vocal interest groups. Instead of succumbing to such pressures, they should work with land trusts to achieve their mandates in a cost-effective manner. For example, in Bozeman, Montana, \$10 million of bond money has been allocated for the provision of open space. To date, the Gallatin County Open Space Land Board has approved the money to pay for four conservation easements. Some vocal opposition exists, however, because the easements do not provide public access (*Bozeman Daily Chronicle*, June 30, 2002). But if the board has been commissioned to primarily provide open space, its decision to not require public access is tenable.

## NOTES

1. Of the 797 land trusts that had conserved acres by 1998, only 71 (9 percent of the total) had transferred more than 50 percent of their land to government agencies. And 586 land trusts (74 percent of the total) had not transferred any land to government agencies.

2. The term “land trust,” however, is somewhat of a misnomer. In their book, *Conservation Trusts*, Fairfax and Guenzler (2001, 21) note the following. “Because land trusts hold land or easements that are generally intended to benefit the public, critical elements of a fiduciary relationship are apparent. However, not many [land trusts] are structured as true trusts or even operate under any semblance of trust principles.”

3. Readers interested in a more detailed description of charitable conservation trusts should consult Fairfax and Guenzler (2001).

4. Land that is “controlled” by land trusts excludes the 2.3 million acres of land that has been transferred to government agencies (LTA 2001a).

5. For perspective, consider that 3.8 million acres is larger than three states—Connecticut, Delaware, and Rhode Island. This acreage, however, does not include at least 1.75 million acres of land controlled by national land trusts such as The Nature Conservancy and Ducks Unlimited (LTA 1998).

6. Uniform Conservation Easement Act, 12 U.L.A. 60 (West Supp. 1988).

7. If courts think that conservation easements more closely resemble covenants than traditional easements they are less likely to enforce restrictions on successive landowners. Traditional courts may be reluctant to enforce restrictions on successive landowners even if they view a conservation easement as a negative easement (instead of a covenant). For a more detailed discussion see Dana and Ramsey (1989) or Walliser (1997).

8. There are notable exceptions. Pennsylvania, for example, had not enacted easement-enabling legislation until 2001 (LTA 2001b; Squires 2000). Yet, in 1998, 71 percent of land trust land in Pennsylvania was held in conservation easements (LTA 1998).

9. It is worth emphasizing that this is not necessarily always the case. In northeastern states, for example, case law has been used to strengthen easement statutes that are not explicit relative to UCEA statutes (Marchetti and Cosgrove 2000).

10. Tax Reform Act, Section 170(f)(3)(b)(iii).

11. Tax Treatment and Extension Act of 1980, Section 170(h).

12. Tax Payer Relief Act, Section 2031(c).

13. The amount that could be excluded, however, was capped. For more details, see Small (2000).

14. American Farm and Ranch Protection Act, section 551.

15. Of course, land trusts could acquire the land outright and then lease the land to an agricultural operator. In this scenario, however, the land trust would need to spend time and effort grappling over the design of the lease. How many years should it be? What is the right price? And, the land trust would need to monitor the operator to make sure that his or her practices are not causing long-term damage of soil, water, wildlife forage, or other natural resources.

16. Transaction costs beleaguer divided ownership arrangements no matter who bears them. If the landowner bears much of the costs of allowing recreation access, he or she will be less willing to agree to a conservation easement requiring public access.

17. According to ecologist George Wilhere (2002, 20), "adaptive management can be defined as the systematic acquisition and application of reliable information to improve management over time."

18. The sample excludes land that was transferred to government agencies because it is no longer controlled by the land trust. Specialization and transaction costs are less likely to influence the decision to own land or conservation easements when the plan is to transfer the interests in land to governmental agencies.

19. Readers interested in more details about the dataset or statistical procedures should consult Parker (2002a).

20. Seminars, conferences, and guidebooks (e.g., Rushmore, Swaney, and Spader 1982; Diehl and Barrett 1988; Guenzler 1999; Pentz 2001; Lind 2001; Lind and Zeller 2002) promoted by the Land Trust Alliance over the years have no doubt helped land trusts become more sophisticated.

21. Factors that are difficult to quantify are likely to be important. In some regions, for example, people may be resistant to land trusts fully owning land. They may be concerned about taking productive land off the tax rolls or have negative perceptions about land trust ownership of land.

22. Readers interested in a full summary of provisions from the sample should consult Parker (2002b).

23. Landowner expenses and land trust volunteer time are counted because the study focuses on the total resources needed to steward conservation easements regardless of who bears the costs. This approach seems more prudent than assuming that landowners will always cover their expenses or assuming that volunteer labor will be available indefinitely.

24. An easement that protects wildlife habitat, for example, is likely to regulate building and agricultural locations (e.g., near sensitive riparian areas) and agricultural and recreational intensity (e.g., AUMs and ORV use). In contrast, working lands easements tend to not govern specific management

practices so there are usually fewer guidelines to violate (Lind and Zeller 2002).

25. In an *Exchange* article, Slee (2002) elaborates on the difficulties of stewarding privately owned preserves that allow for public access.

26. For example, it may be worth examining whether a difference in stewardship costs exist between provisions that hold the landowner accountable to a rule and provisions that hold the landowner accountable to a standard. With regard to grazing practices, rules might spell out the allowable number of AUMs or mandate specific grazing zones and seasons. Standards, on the other hand, might state that grazing is allowed as long as certain riparian and forage resources aren't impaired.

27. North Carolina General Statutes, 105-151.12.

28. South Carolina S.B.297.

29. Minnesota Statutes, Section 103F.515.

## REFERENCES

- Abbot, Gordon. 1982. Historic Origins. In *Private Options: Tools and Concepts for Land Conservation*, ed. Barbara Rushmore, Alexandra Swaney, and Allan D. Spader. Covelo, CA: Island Press, 150–52.
- Allen, Douglas W., and Dean Lueck. 2002. *The Nature of the Farm: Contracts, Risk, and Organization in Agriculture*. MIT Press, forthcoming.
- Barzel, Yoram. 1997. *Economic Analysis of Property Rights*. Cambridge: Cambridge University Press.
- Bick, Steven, and Harry L. Haney Jr. 2001. *The Landowner's Guide to Conservation Easements*. Dubuque, IA: Kendall-Hunt Publishing Company.
- Boyd, James, Kathryn Cabellero, and R. David Simpson. 2000. The Law and Economics of Habitat Conservation: Lessons from an Analysis of Easement Acquisitions. *Stanford Environmental Law Journal* 19(January): 209–55.
- Boykin, James H. 2000. Valuing Scenic Land Conservation Easements. *Appraisal Journal* (68)4: 420–27.
- Bremer, Terry. 1982. A Review of the 1981 National Survey of Local Land Conservation Organizations. In *Private Options: Tools and Concepts for Land Conservation*, ed. Barbara Rushmore, Alexandra Swaney, and Allan D. Spader. Covelo, CA: Island Press, 177–83.
- Coase, Ronald. 1937. The Nature of the Firm. *Economica* 4(3): 386–405.
- . 1960. The Problem of Social Cost. *Journal of Law and Economics* 3(3): 1–44.
- Dana, Andrew C. 1999. The Silent Partner in Conservation Easements: Drafting for the Courts. *The BackForty* 8(1): 1–13.
- Dana, Andrew C., and Michael Ramsey. 1989. Conservation Easements and the Common Law. *Stanford Environmental Law Journal* 8(2): 2–45.
- Defenders of Wildlife. 2002. *Conservation in America: State Government Incentives for Habitat Conservation*. Washington, DC: Defenders of Wildlife.
- Diehl, Janet, and Thomas S. Barrett. 1988. *The Conservation Easement Handbook: Managing Land Conservation and Historic Preservation Easement Programs*. Washington, DC: Land Trust Alliance.
- Fairfax, Sally K., and Darla Guenzler. 2001. *Conservation Trusts*. Lawrence, KS: University of Kansas Press.
- Guenzler, Darla. 1999. *Ensuring the Promise of Conservation Easements*. San Francisco, California. Bay Area Open Space Council.

- Gustanski, Julie Ann, and Roderick H. Squires, eds. 2000. *Protecting the Land: Conservation Easements Past, Present, and Future*. Washington, DC: Island Press.
- Land Trust Alliance. 1998. *1998 National Directory of Conservation Land Trusts*. Washington, DC.
- . 2000. *Voters Invest in Open Space: 2000 Referenda Results*. Washington, DC.
- . 2001a. *2001 National Land Trust Census*. September 21. Online: <http://www.lta.org/newsroom/census2000.htm> (cited November 7, 2001).
- . 2001b. Pennsylvania Passes Easement Enabling Legislation. *Exchange* (20)4: 23.
- . 2002a. Find a Land Trust. Updated October 18, 2002. Online: <http://www.lta.org/findlandtrust/index.html>.
- . 2002b. *Land Vote 2001*. Washington, DC.
- Lind, Brenda. 1991. *The Conservation Easement Stewardship Guide*. Washington, DC: Land Trust Alliance.
- . 2000. *How Strong Are Our Defenses: The Results of the Land Trust Alliance's Northern New England Conservation Easement Quality Research Project*. Washington, DC: Land Trust Alliance.
- . 2001. *Working Forest Conservation Easements*. Washington, DC: Land Trust Alliance.
- Lind, Brenda, and Marty Zeller. 2002. *Working Ranchland Conservation Easements*. Washington, DC: Land Trust Alliance.
- Marchetti, Karin, and Jerry Cosgrove. 2000. Conservation Easements in the First and Second Federal Circuits. In *Protecting the Land: Conservation Easements Past, Present, and Future*, ed. Julie Ann Gutanski, and Roderick H. Squires. Washington, DC: Island Press, 78–102.
- Mayo, Todd D. 2000. A Holistic Examination of the Law of Conservation Easements. In *Protecting the Land: Conservation Easements Past, Present, and Future*, ed. Julie Ann Gutanski, and Roderick H. Squires. Washington, DC: Island Press, 26–54.
- Natural Resource Conservation Service. 2002a. Conservation Programs Manual: Wetlands Reserve Program. Online: [http://policy.nrcs.usda.gov/scripts/lpsiis.dll/M/M\\_440\\_514.htm](http://policy.nrcs.usda.gov/scripts/lpsiis.dll/M/M_440_514.htm) (cited October 13, 2002).
- . 2002b. Conservation Programs Manual: Farmland Protection Program. Online: [http://policy.nrcs.usda.gov/scripts/lpsiis.dll/M/M\\_440\\_519.htm](http://policy.nrcs.usda.gov/scripts/lpsiis.dll/M/M_440_519.htm) (Cited on October 13, 2002).

- Parker, Dominic P. 2002a. Land Trusts and the Choice to Control Land Use with Full Ownership or Conservation Easements. Working paper 02-09. PERC, Bozeman, MT.
- . 2002b. Estimating the Costs of Stewarding Disparate Conservation Easements: A Case Study of Western Land Trusts. Working paper 02-08. PERC, Bozeman, MT.
- Pentz, Debra J. 2001. *Planning for Perpetuity: A Study of Colorado Conservation Easement Practices*. Boulder, CO: Conservation Resource Center.
- Rushmore, Barbara, Alexandra Swaney, and Allan D. Spader. 1982. *Private Options: Tools and Concepts for Land Conservation*. Covelo, CA: Island Press.
- Slee, Kendall. 2002. Partnerships are Key to Stewarding Preserves with Public Access. *Exchange* 21(3): 5–10.
- Small, Stephen J. 2000. An Obscure Tax Provision Takes Private Land Protection into the Twenty-First Century. In *Protecting the Land: Conservation Easements Past, Present, and Future*, ed. Julie Ann Gutanski, and Roderick H. Squires. Washington, DC: Island Press, 55–66.
- Squires, Roderick H. 2000. Introduction to Legal Analysis. In *Protecting the Land: Conservation Easements Past, Present, and Future*, ed. Julie Ann Gutanski and Roderick H. Squires. Washington, DC: Island Press, 69–77.
- U.S. Department of Agriculture. 1997. *Census of Agriculture*. Washington, DC: USDA, National Agricultural Statistics Service.
- Walliser, John. 1997. Conservation Servitudes. *Journal of Natural Resources and Environmental Law* 13(1): 47–121.
- Wilhere, George F. 2002. Adaptive Management in Habitat Conservation Plans. *Conservation Biology* 16(1): 20–29.
- Williamson, Oliver E. 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: Free Press.

**Table 1**  
**State, Local, and Regional Land Trust Trends**

Geographic Region	Total Number of Land Trusts					Amount of Acres Controlled			% of Acres Controlled with Easements	
	1950	1975	1990	2000	% Growth 1990-2000	1990	2000	% Growth 1990-2000	1990	2000
<b>United States</b>	53	308	867	1,263	46%	865,907	3.8 million	343%	52%	68%
Northeast			433	497	15%	476,073	1.4 million	196%	42%	66%
Mid-Atlantic			105	174	66%	134,801	423,514	214%	71%	75%
Southeast			62	115	46%	41,617	221,680	433%	35%	77%
Midwest			119	186	56%	61,731	218,958	255%	12%	41%
South Central			11	25	127%	7,176	72,356	908%	85%	75%
Northwest			50	69	38%	103,315	536,244	419%	84%	96%
Southwest			26	57	119%	18,134	601,873	3,219%	71%	61%
Pacific			79	139	76%	43,842	367,398	738%	58%	44%
<b>Individual States</b>										
Maximum				143 MA		157,117 NH	454,689 MT	803,900% SD	100% LA, MS, SD	99.9% MN
Median				15 OR, TN		5,657 IA, TX	22,432 ID, DE	293% NJ, RI	22% CT, NJ	61% FL, HI
Minimum				1 4 States		0 8 States	8 HI	-60% AL	0% 5 States	0% NV, ND, OK

Sources: Land Trust Alliance (1998, 2001a).

Notes: Northeast States: CT, MA, RI, ME, NH, NY, PA, VT; Mid-Atlantic States: DE, NJ, WV, VA, MD; Southeast States: AL, TN, FL, KY, NC, GA, SC, MS; Midwest States: IN, IA, ND, NE, MO, WI, MI, IL, OH, KS, SD, MN; South Central States: AR, OK, TX, LA; Northwest States: AK, WA, ID, WY, OR, MT; Southwest States: NM, AZ, UT, CO; Pacific States: CA, HI, NV.

**Table 2**  
**Statistical Summary of Key Factors**

<b>Key Factors</b>	<b>Brief Description</b>	<b>Land Trusts</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Yes</b>	<b>No</b>
<b>Percent of land held in easements</b>	Acres in easements divided by acres in easements and ownership	774	0.00	1.00	0.43	---	---
<b>Scenic amenities</b>	Land trust focuses on providing scenic views or scenic roads	790	---	---	---	347	443
<b>Recreational amenities</b>	Land trust focuses on providing trails, greenways, parklands, or community gardens	790	---	---	---	382	408
<b>Active management</b>	Land trust is engaged in ecological restoration or managing rare or endangered species habitat	790	---	---	---	332	458
<b>Working lands</b>	Land trust focuses on preserving farms, ranches, or timberland	790	---	---	---	313	477
<b>Median size of parcel</b>	Median size of private parcels in region of land trust operation (acres)	702	1	844	70	---	---
<b>Enabling statute</b>	Land trust operates under an easement-enabling statute	797	---	---	---	747	50

Sources: Gustanki and Squires (2000); Land Trust Alliance (1998); U.S. Department of Agriculture (1997); Stephen Outlaw, information service associate, Land Trust Alliance, Washington, DC, e-mail correspondence, October 24, 2001.

**Table 3**  
**Summary of Sample Conservation Easement Provisions**

<b>Specific land use</b>	<b>Permitted</b>	<b>Prohibited</b>	<b>Silent</b>
New residential buildings	21	21	0
New fences	33	9	0
New roads	33	8	1
Subdivision	18	24	0
Commercial timber harvest	15	12	15
Mineral exploration	11	30	1
Agricultural use	33	8	1
Public access	6	31	5

**Table 4**  
**Summary Statistics for Stewardship Costs**  
(in dollars)

	<b>Minimum [count]</b>	<b>Mean</b>	<b>Maximum</b>
<b>Set-up costs</b>			
Outsourced services	0 [1]	\$ 4,775	\$ 26,650
Staff and volunteer hours	0 [4]	63	300
Estimate of total costs	0 [1]	\$ 5,985	\$ 28,850
<b>Annual monitoring costs</b>			
Outsourced services	0 [12]	\$ 317	\$ 3,682
Staff and volunteer hours	0 [4]	11	120
Estimate of total costs	0 [1]	\$ 555	\$ 4,200
<b>Enforcement costs</b>			
Outsourced services	0 [39]	\$ 6,135	>\$ 100,000
Staff and volunteer hours	0 [38]	6	50
Estimate of total costs	0 [37]	\$ 6,248	> \$ 100,000

*Note:* The number of responses used to calculate the annual monitoring cost statistics is 45. The number of responses used to calculate contracting and enforcement costs is 48. One participant did not report the year and month in which its easements were recorded.

# APPENDIX A

## EASEMENT QUESTIONNAIRE

*Please provide the most accurate information possible. If you do not have precise figures, provide your best estimate. If a question is not applicable, or cannot be answered, please proceed to the next question.*

**PLEASE RETURN BY NOVEMBER 30, 2001**

*The information provided below pertains to the easement contract labeled (please circle): 1 2 3*

Survey Contact \_\_\_\_\_

Phone Number \_\_\_\_\_

Email Address \_\_\_\_\_

### I. GENERAL INFORMATION

1. In what state and county is the encumbered property located? \_\_\_\_\_
2. Was the grantor a commercial or residential entity? \_\_\_\_\_
3. What generation landowner currently owns the property? \_\_\_\_\_
4. How many acres is the encumbered property? \_\_\_\_\_
5. What is the primary purpose of the easement (check all that apply)?  
Open space    Wildlife habitat    Public access    Working lands (e.g., agricultural or forest)  
Other (please explain) \_\_\_\_\_

### II. EASEMENT COSTS

1. Approximate the contracting costs your organization incurred to establish the easement. Include all costs that you are aware of even if the expenses were billed to the landowner.

	Cost of supplies and professional services (\$'s)	Hours of staff time (include volunteer time)	Staff travel expenses (\$'s)	Other (\$'s)
Baseline documentation				
Easement negotiations				
Appraisal costs				
Recording fees				
Other				

2. In comparison with other easements your organization holds of similar size, purpose, and location, were the contracting costs of this easement?    More    About the Same    Less    NA
3. Approximate the costs your organization has incurred to monitor, enforce, and interpret the easement. Include all costs that you are aware of even if the expenses were billed to the landowner.

	Cost of supplies and professional services (\$'s)	Hours of staff time (include volunteer time)	Staff travel expenses (\$'s)	Other (\$'s)
Monitoring				
Interpreting				
Enforcement				

## APPENDIX A

### EASEMENT COSTS cont'd

4. When averaged on an annual basis, in comparison with other easements your organization holds of similar size, purpose, and location, are the combined monitoring, interpreting, and enforcement costs of this easement?      More      About the Same      Less      NA
5. Have any attributes of the land, details of the easement, or desires of the landowner made the terms of the easement particularly difficult to monitor, interpret, or enforce? If so please explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. Has your organization detected a violation of the terms of the easement?      Yes      No
7. If the easement was violated, was litigation required?      Yes      No

### III. EASEMENT VALUE

1. What was the appraised value of the easement? \$ \_\_\_\_\_
2. How was the easement acquired?      donated      purchased      partially donated and purchased
3. If the easement was purchased, what price was paid? \$ \_\_\_\_\_

### IV. CONSERVATION VALUES

1. How does your organization measure the success of this easement? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. By the above criteria, how successful has the easement been thus far?  
Very successful      Quite successful      Somewhat successful      Not successful at all

**Thank you for taking the time to complete this questionnaire. Please attach this form to the associated easement and mail in the enclosed envelope.**

**APPENDIX B**  
**Survey Participants**

<b>Participating Land Trust</b>	<b>Headquarters</b>	<b>Year Founded</b>	<b>Number of Easements (by 2000)</b>	<b>Acres in Easements (by 2000)</b>
Bitter Root Land Trust	Montana	1998	3	440
Cascade Land Conservancy	Washington	1989	3	3 70
Colorado Cattlemen's Agricultural Land Trust	Colorado	1995	40	75,281
Chehalis River Basin Land Trust	Washington	1994	5	100
Colorado Open Lands	Colorado	1982	42	22,754
Columbia Land Trust	Washington	1990	9	54
Crested Butte Land Trust*	Colorado	1991	8	1240
Five Valleys Land Trust	Montana	1989	41	13,060
Jackson Hole Land Trust	Wyoming	1980	53	10,664
Middle Park Land Trust	Colorado	1995	7	522
Montana Land Reliance	Montana	1978	386	405,000
North Olympic Land Trust	Washington	1992	6	350
Rocky Mountain Elk Foundation	Montana	1984	23	38,354
San Isabel Foundation	Colorado	1995	5	3,377
The Nature Conservancy, Montana Field Office	Montana			
Wood River Land Trust	Idaho	1994	13	3,296

Sources: Land Trust Alliance (2001a, 2002a); Parker (2002b); Stephen Outlaw, information service associate, Land Trust Alliance, Washington, DC, e-mail correspondence, June 11, 2002.

\*A previous version of this table mistakenly stated that Crested Butte Land Trust had 0 easements and 0 acres.