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Conservation Easement Policies Across New England

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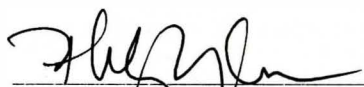
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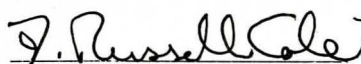
Conservation Easement Policies Across New England


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A thesis submitted to the faculty of the Environmental Studies Program
in partial fulfillment of the graduation requirements for the Degree
of Bachelor of Arts with honors in Environmental Studies


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ABSTRACT

This thesis examines conservation easement policies across the New England states. Conservation easements are legal agreements through which landowners donate or sell some or all of their properties' development rights to conservation entities, typically government entities or land trusts. I specifically ask: How do conservation easement policies compare across the New England states? How can conservation easement policies be reformed to enhance the use of easements as a conservation tool? Although easements allow conservation entities to conserve more land for less money, the ecological and social implications of the increased use of easements have been debated.

I evaluate data availability, predominant holder types, secondary holders, size and distribution, funding mechanisms, stewardship, public access, and amendment and termination procedures for easements in each of the New England states. My findings suggest that data availability is extremely poor across the six states. I also find that state and private entities are the predominant easement holders. Data on secondary holders are limited, but more than 1,000 easement tracts in Vermont have at least one secondary holder. Secondary holders become involved either because they have financed the easement or to ensure the easement's perpetuity. Average conservation easement tract size is largest in Maine and smallest in the southern New England states. Conservation easements are significantly clumped across the states. There is evidence of decreased funding for conservation in most of the states. Conservation entities tend to draw funding from many sources in order to finance the acquisition of large easements, and large land trusts and land trust coalitions support the activities of smaller land trusts. There seems to be increased focus on easement stewardship and on amendment and termination frameworks across the New England states. The status of public access remains uncertain.

I conclude that moving forward, one of the greatest priorities for conservation easement policy should be improvement of easement data. It seems likely that land trusts and private entities will have to continue to play a leading role in improving conservation easement policy and stewardship. This thesis identifies future research directions, such as characterizing: the clumping of conservation easements; the cost-effectiveness of having an overarching government stewardship body for monitoring state-held easements; and, the efficacy of recently implemented easement amendment and termination procedures.

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INTRODUCTION

The last 40 years have seen a dramatic increase in the use of conservation easements in the United States (Morris 2008, Pidot 2011, NCED 2013). Conservation easements are legal agreements through which landowners donate or sell some or all of their properties' development rights to conservation entities, typically governments or land trusts, which become the holder(s) of those rights (Beck et al. 2012). There is no uniform template for activities that conservation easements must prohibit, although state governments may set minimum requirements. Easements aim to prevent destructive land uses while allowing properties to remain under private ownership.

This strategy of using easements as a conservation tool has been extremely attractive in the context of the increasing decentralization and privatization of conservation efforts that has occurred in the United States. American enthusiasm for government entities as agents of conservation first began to temper in the 1970s (Brewer 2003). The Reagan administration in the 1980s and "Republican Revolution" in the 1990s further weakened federal financial and popular support for federal conservation activities, pushing conservation efforts into the local and private arenas. Morris (2006) describes the increased use of conservation easements as a reflection of neoliberalism ideology in the United States, yet also as a strategy employed by conservation entities to fill regulatory gaps left by neoliberalism and decentralization.

In this thesis, I examine conservation easement policies across New England. Although the six New England states have similar conservation histories and natural resource-based ethos, their frameworks for the acquisition and management of conservation easements are heterogeneous. I explore the questions: How do conservation easement policies compare across the New England states? How can conservation easement policies be reformed to enhance the use of easements as a conservation tool? I begin by giving a brief history of the use of conservation easements in the United States, explaining the criticism of conservation easements, and providing background on the conservation history of New England.

History of Easements

American planners first began to use conservation easements in the 1880s, to protect parkways in the Boston area that had been designed by Frederick Law Olmstead (Gustanski and Squires 2000). Easements remained an obscure tool until 1959, however, when William H. Whyte wrote an educational bulletin for the Urban Land Institute promoting the use of easements (Gustanski and Squires 2000). This sparked the interest of the Conservation Research Foundation, which launched a study to investigate the legality of conservation easements (Foster 2009). The study did not identify any particular barriers to the use of easements for conservation (Brenneman 2009).

In the years that followed, a number of states, including all of the New England states, adopted enabling statutes to establish the enforceability of conservation easements within those states (Gustanski and Squires 2000). The National Conference of Commissioners on Uniform State Laws accelerated this process in 1981 by crafting the Uniform Conservation Easement Act as a framework for easement enabling statutes that states could choose to adopt (Gustanski and Squires 2000).

The number of easements currently in existence is ambiguous because most states do not require the submission of easement information to the government. The National Conservation Easement Database (2013) estimates that there are 95,448 conservation easements in the U.S., conserving more than 18 million acres. On a nation-wide level, acquisition of easements began ramping up in the 1970s and has spiked dramatically through the 2000s (NECD 2013). The National Conservation Easement Database (2013) is an initiative of the U.S. Endowment for Forestry and Communities that is led by the following organizations: Conservation Biology Institute, Defenders of Wildlife, Ducks Unlimited, NatureServe, and The Trust for Public Lands.

Increasing use of conservation easements has been driven in part by the concurrent growth in the number of land trusts (Campopiano 2006). A land trust is a nonprofit organization seeking to conserve land through acquisition of properties or conservation easements, through assisting other entities in acquisition, or through stewardship of lands or easements (LTA 2012a). Establishment of land trusts began to accelerate in the mid-1970s, in keeping with the movement toward decentralized, private modes of conservation. This growth burgeoned in the 1980s and 1990s; an average of one

land trust per week was established between 1986 and 1995 (Brewer 2004). Before 1985, the US was home to fewer than 500 land trusts protecting less than 300,000 acres (Campopiano 2006). According to the Land Trust Alliance, there are now about 1,723 land trusts in the US that collectively conserve 47 million acres (Chang 2010).

Numerous federal laws have incentivized the establishment of conservation easements (McLaughlin 2007, Richardson 2011). The 1976 Federal Tax Reform Act was the first law to provide federal income tax deductions for conservation easements. The Tax Treatment Extension Act (1980) permanently authorized income tax deductions for qualified conservation contributions, with the deductions contingent on easement perpetuity. The 2006 Pension Protection Act's Enhanced Easement Incentive elevated benefits for qualified conservation easements by raising the cap and extending the carryover period of income tax deductions. This incentive expired on December 31, 2011 but was renewed for tax years 2012-13 as part of the "fiscal cliff package" (LTA 2013a). Since the 1997 Taxpayer Relief Act, the federal government has also provided estate tax deductions for conservation easements (Beck et al. 2012).

Other funding sources for conservation easements include the 2008 Food, Conservation, and Energy Act, also known as the Farm Bill; the USDA Forest Service's Forest Legacy Program; and state-level incentives. A number of Farm Bill programs, such as the Farm and Ranch Lands Protection Program and the Wetlands Reserve Program, support the use of easements as a conservation tool (LTA 2012b). The Forest Legacy Program, established by the 1990 Farm Bill, has been an important source of funding for the acquisition of conservation easements in the Northern Forest, which spans northern Maine, New Hampshire, Vermont, and New York. State incentives for conservation easements vary. Some common incentives include property tax deductions, income tax deductions, and grants from state conservation funds. The economic downturn of the 2000s has presented funding challenges and generated anxiety over the continuation of adequate conservation funding (Levitt and Chester 2011).

Criticism of Conservation Easements

The actual efficacy of easements as conservation tools has been subject to debate. Acquiring conservation easement is less expensive than buying the land outright and thus

allows conservation entities to preserve more land for less money (Byers and Ponte 2005, Kathy Eickenberg, pers. comm.). That easements adequately protect the ecological integrity of the lands they encompass is not a given, however. A study by Rissman et al. (2007) finds that conservation easements established by The Nature Conservancy allow for a wide range of land uses that may lead to habitat degradation. For example, 56% of 119 sampled easements allowed additional construction on the property (Rissman et al. 2007). Another concern is that tax benefits based on property value encourage establishment of easements on more expensive properties, as opposed to lands with high ecological value (Richardson 2011). Most easements are defined in terms of which kinds of development are prohibited or allowed, but a study of forestlands under conservation easement by Hagan et al. (2005) suggests that only easements that include biodiversity stipulations lead to "stronger biodiversity practices."

The societal implications of placing land under conservation easements are also uncertain. A study by Daigle et al. (2012) suggests that timber companies and Real Estate Investment Trusts (REITs) owning land in the Northern Forest allow more public use of their land than do owners managing for conservation. The Northern Forest is the expansive forest of the Northern Appalachian/Acadian ecoregion spanning northern New York, Vermont, New Hampshire, and Maine, up to southern Canada. The issue of public access is important considering the connections that people living in the Northern Forest have historically had to the land, both for employment and recreation (Harper et al. 1990). More generally, Olmsted (2011) argues that since "the creation of a conservation easement is always, to some extent, subsidized by public funds," it is troubling that "though there is no hard data, it appears that most lands encumbered by conservation easements are not open to the public."

Major concerns related to easement perpetuity have also been raised. Income tax incentives encourage the establishment of perpetual conservation easements, but some critics argue that perpetuity may not be desirable (Owley 2011, Rissman 2011, Richardson and Bernard 2011). To begin with, land use circumstances in the areas surrounding the easements may change such that development in the protected space may become desirable (Rissman 2011). If broader land use planning was employed in the first place to determine which lands should be conserved, properties protected under easement

may not actually be the optimal areas to set aside from development. Conserving this land may increase the likelihood that more ecologically valuable lands will be developed instead. Richardson and Bernard (2011) argue that establishment of conservation easements has not been adequately integrated with town zoning. Owley (2011) characterizes the use of easements as a “haphazard endeavor,” writing that: “renewable terms of conservation easements remain superior to the perpetual conservation easements because they accommodate the incorporation of adaptive management principles.”

Whether perpetual conservation easements are truly perpetual is also subject to question. A perpetual easement could be lost if the primary holder of the easement were dissolved (Morris and Rissman 2009; Pidot 2005). The extent to which conservation easements can be amended or terminated under particular circumstances also factors significantly into the meaning of perpetuity. The legal frameworks for amending or terminating conservation easements vary between states, but few state enabling statutes include provisions outlining amendment and termination procedures (Pidot 2011).

The legacy of increased use of easements for conservation may be complicated by limited easement data. Pidot (2011) warns: “without sufficient legal mechanisms to govern conservation easements, future generations may not thank us for an unmanageable legacy of untold thousands of easements whose terms, holders, and locations may be difficult to determine, and whose public benefits ultimately could be lost.” Inadequate record of conservation easements undermines land use planning and increases the likelihood that the easements will be lost.

Although numerous studies have emphasized the potential shortcomings of easements as a conservation tool, easements have played an important role in preventing development just by virtue of existing. This is particularly evident in northern Maine, where more than 1 million acres have been protected from the kind of vacation home development that has been approved for the Moosehead Lake region and part of the Plum Creek Plan. Furthermore, the Land Trust Alliance (LTA) has asserted that there is some indication that monitoring and stewardship of lands under easement may be improving: according to LTA’s 2010 National Land Trust Census Report, the amount of funding that state and local land trusts devote to monitoring and stewardship increased 72% between 2005 and 2010 (Chang 2010). The report also finds that designated funding for legal

defense and enforcement by state and local land trusts has increased 178% during that time period, stating that: "With the high potential costs of defending protected lands in court, this type of funding is crucial for land trusts to ensure the permanence of protected land as easements under their care" (Chang 2010).

What remains to be determined is ways in which conservation easement policies can be reformed to better address the concerns discussed. To explore potential reforms for conservation easements, I focus on New England states as a case study.

The Context: New England

New England presents an interesting case study considering the early use of conservation easements in this region (NCED 2013), as well as its collective, natural resource-based identity (Harrison and Judd 2011). The history of natural resource use and conservation in New England can be considered in two parts: the history of the Northern Forest and the history of the more suburbanized, fragmented landscape found in Massachusetts, Rhode Island, and Connecticut and in the southern portions of Maine, New Hampshire, and Vermont.

Timber harvest in the Northern Forest, a 26-million acre region, has historically served as an important economic hub for the New England states. Beginning in the late 1980s, however, large paper companies began to divest themselves of their lands. Collapsing timber prices and rising oil prices spurred this transition, as did the 1986 Tax Reform Act, which almost doubled the effective tax rate for corporate timberlands (Wolf and Klein 2007, Lilieholm et al. 2010). Forest products companies began to shift investments to countries with more favorable regulations (Hagan et al. 2005). In 1988, Diamond International Corporation put nearly 1 million acres of Northern Forest land on the market (Northern Forest Lands Council 1994), jolting the conservation community, which feared the onset of a period of rapid development (Levitt 2003, Clark and Howell 2007, Wolf and Klein 2007).

Between 1980 and 2005, 23.8 million acres changed hands in the Northern Forest (some of which were the same acres that changed hands multiple times) (Hagan et al. 2005). Ownership of large forest tracts shifted from paper companies to Real Estate Investment Trusts (REITs), Timber Investment Management Organizations (TIMOs), and

conservation entities. According to Hagan et al. (2005), the transition is now nearly complete: industrial ownership in the Northern Forest has decreased from 60% in 1994 to 15.5% in 2005. Efforts to conserve the Northern Forest in the face of changing land ownership have helped drive the growth in the number of conservation easements located in northern New England (Levitt 2003, Clark and Howell 2007, Lilliehom et al. 2010).

Southern New England has experienced periods of rapid deforestation, industrialization, and development. Deforestation for agriculture prevailed from the colonial period through the mid- to late 1800s. During the latter half of the 19th century, the industrial revolution led to increased manufacture and pollution (Harrison and Judd 2011). The decline of the farming then manufacturing sectors in the late 1800s to early 1900s and consequent reforestation of the region gave rise to the romantic, nostalgic image of New England that prevails today. The 1900s have been characterized by suburbanization, sprawl, and tourism that fragment landscapes and threaten rural character (Harrison and Judd 2011). This description is extremely generalized but loosely characterizes the natural resource histories of southern New England.

Objectives and Methods

Meaningfully evaluating the efficacy of easements as conservation tools and identifying potential reforms for conservation easement policies remains a difficult task. Maine appears to be the only state in the US that requires submission of monitoring data for easements, and this information is not currently in an accessible format (Ms. R. Collin Therrien, pers. comm.). Even if the monitoring data were later organized, it is questionable whether they would or should be publically available due to privacy concerns. deGooyer (2004), Rissman et al. (2007), and Roche (2008), and others have surveyed easement holder in order to assess and critique conservation easement stewardship and management practices, but there are no centralized, public databases of stewardship information or the ecological metrics associated with easement properties.

In contrast to stewardship survey approaches, I more generally compared conservation easement policies across the New England states. I examined existing literature, as well as reports produced by land trusts, government agencies, and other

conservation entities. I also conducted interviews with conservation practitioners in each state and analyzed government data using Microsoft Excel and ArcMap 2010.

The next six sections are dedicated to examining conservation easement policies in each of the New England states. I begin each section by discussing some of the specifics of the state's conservation history. I then examine data availability, predominant easement holders, secondary holders, easement distribution, funding mechanisms, stewardship, public access, and amendment and termination procedures for easements.

Each of these factors has figured prominently into the current debate over the efficacy of easements as a conservation tool. Lack of data availability may undermine both the perpetuity of conservation easements and land use planning. Identifying predominant easement holder by state sheds light on which entities are responsible for managing easements. For a given easement, the primary easement holder is responsible for stewarding the easement, and thus plays a central role in determining the ecological quality of the conservation easement. The existence of secondary holders is worthy of consider because these holders would become responsible for managing and stewarding a given easement if the primary holder were dissolved; the existence of secondary holders may help ensure easement perpetuity. Examining easement distribution allows for characterization of differences in the use of easements as a conservation tool within each state. The status of funding mechanisms available for the acquisition and stewardship of easements has important implications for the management of easements moving forward, as do trends in stewardship activities. The extent to which the establishment of easements may undermine public access has been a concern of conservation easement critics given community ties to the working landscapes and public investment in easements. Finally, the status of amendment and termination frameworks for conservation easements will have implications for the perpetuity of easements, as well as for the ecological and legal costs associated with trying to better integrate conservation easements with land use planning moving forward.

In the discussion section of my paper, I evaluate policy trends and innovations among the states, as well as the implications of these trends and implications. I conclude the thesis with policy recommendations and suggestions for future research.

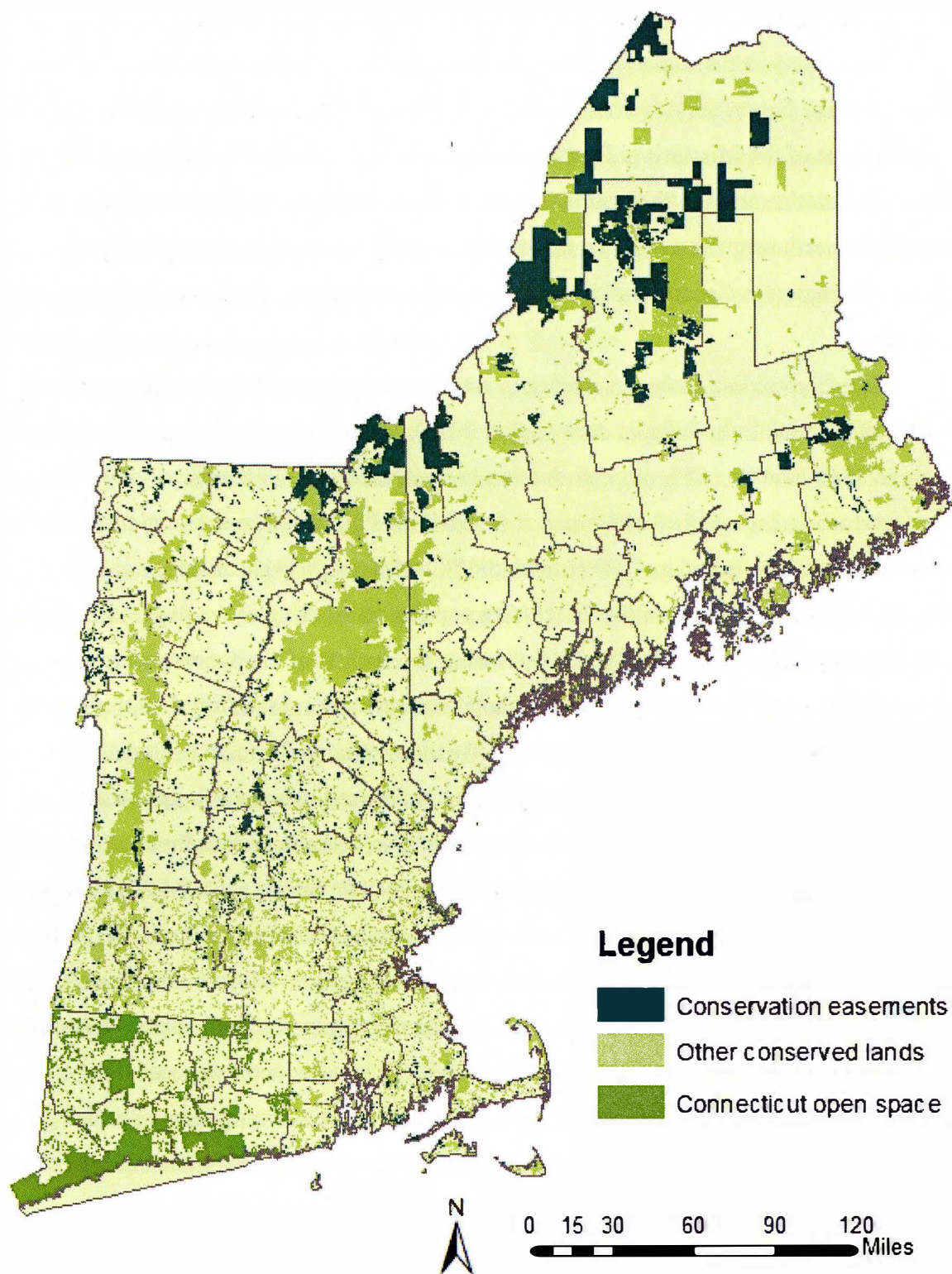


Figure 1. Conservation easements and other conserved lands across New England (Vermont Center for Geographic Information 2009, Connecticut DEEP 2012a, NH Granite State 2012, RIGIS, 2012, Maine Office of GIS 2013, MassGIS, 2013).

STATUS OF CONSERVATION EASEMENT POLICIES: MAINE

Maine plays a particularly important role in regional conservation. Maine is 90% forested (Maine Forest Service 2005) and is home to the largest contiguous block of forestland east of the Mississippi River (Acheson and McCloskey 2010). The majority of Maine's population lives in the southern portion of the state, and the immense forest tracts in the north serve as a corridor between the section of the North Appalachian/Acadian ecoregion in Canada and the section in New Hampshire, Vermont, and New York.

The shipbuilding, fisheries, and pulp wood sectors drove Maine's early economy (Rose 2003, Maine Pulp & Paper Association 2010). Wood pulp was first produced in Maine in 1868, and by 1885, pulp production had increased to 1,036 tons per day and paper production had reached 508 tons per day (Maine Pulp and Paper Association 2010). Lumber production peaked in 1909 (Irland 2000), but paper production continued to increase, with 25% of Maine's manufacturing population working in the paper industry in 1970 (MacDougall and Stevens 2012). Following the decline of the paper companies, conserved land in Maine as a proportion of total state area increased from less than 5% in 1987 (Cronan et al. 2010) to approximately 19% today (Maine Division of Parks and Public Lands 2012) as conservation organizations mobilized to acquire large tracts flooding the market. Investment organizations have also become prominent landowners: REITS and TIMOs own more than half of the Maine North Woods (NRCM 2012).

Conservation entities have been fairly successful at limiting development. At the same time, demand for recreational properties continues to exert substantial pressure (LeVert et al. 2007). One unusual feature of land conservation policy in Maine is the role played by the Land Use Planning Commission (LUPC), a nine-member board that reviews all rezoning applications for Maine's 10.4-million acre Unorganized Territory (UT). The UT consists of townships that have little or no governance or have decided to forego administering regulations for development. LUPC replaced the Land Use Regulatory Commission (LURC) in 2012. The nature of LUPC's role in regulating development moving forward is yet to be determined.

Conserved lands in Maine are predominantly private: 55% of Maine's conservation land is privately held, while the State holds 36%, federal government

entities hold 5%, and municipalities hold 3% (Maine Division of Parks and Public Lands 2012). Mainers have historically resisted government conservation efforts, a sentiment evident in the contention over the potential establishment of a North Woods National Park (Beck et al. 2012). Despite the predominance of private conservation land, state and federal lands have still served as focal points for conservation. Baxter State Park is centrally located in Maine, and the area conserved around Baxter has grown over time (Beck et al. 2012). Acadia National Park is the largest and most frequently visited federally owned protected area in Maine (Beck et al. 2012).

Maine's 2007 Act to Amend the Conservation Easement Laws (or the Reform Act) created a conservation easement registry for the state. All conservation entities are required to register information about their easements, including execution date, acreage, and most recent monitoring data. It is believed that compliance with registration requirements has been fairly high (Pidot 2011). Information on conservation easements is also available in the conserved lands layer provided by the Maine Office of GIS (2013). This layer was last updated in 2013 but does not include all of the easements identified in the registry; about 1.6 million acres are included in the conserved lands layer, as opposed to 2.2 million acres identified in the Registry.

The Maine conservation easement-enabling statute was passed in 1985 (MRS Title 33, Chapter 7, Subchapter-8-A, §476-479). Maine has since pioneered the use of conservation easements. About 53% of acres conserved in Maine are under conservation easement (Maine Division of Parks and Public Lands, 2012), the highest percentage out of the New England states (Beck et al., 2012). Peaks in number of new acres under easement correspond with the establishment of extremely large easements (Figure 2). The peak in 2001 corresponded with the execution of the Pingree easement, the largest conservation easement in the US. The majority of acres under conservation easement in Maine (81%) are held by land trusts. State agencies hold 19% of acres under conservation easements, and federal and municipal bodies hold negligible percentages. According to Kathy Eickenberg, Chief of Planning for the Maine Division of Parks and Public Lands, the State has transitioned from outright purchase of conserved lands to focusing on the acquisition of easements as a less expensive conservation strategy (Kathy Eickenberg, pers. comm.). Since 1995, land managed by the Division of Parks and Public Lands under

conservation easement has increased almost three times as much as land managed by the Division under simple fee ownership (Kathy Eickenberg, pers. comm.).

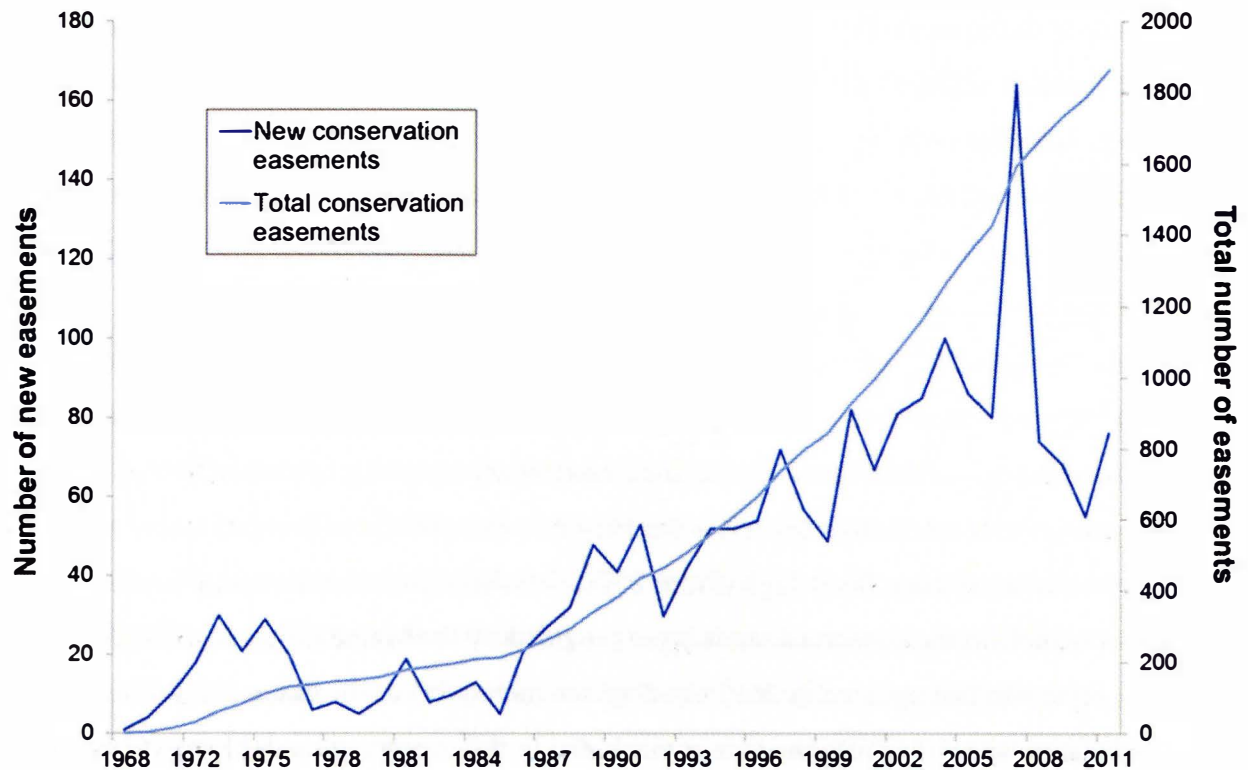


Figure 2. Number of conservation easements in Maine over time (Maine Department of Conservation 2012)

There are little data on secondary holders for Maine. Secondary holders are not included in the Conservation Easement Registry. The dataset from the Maine Office of GIS conserved lands layer only identifies 63 easements as having secondary holders, covering 368,275 acres (Maine Office of GIS 2013). As Pidot (2011) points out, the 2007 Reform Act does not require the designation of a secondary holder for easements. If an easement has a secondary holder, it is presumably less likely that it will cease to exist if the primary holder is dissolved. On the other hand, having many holders may make approval of the easement more cumbersome.

The Pingree Easement conserves about 777,352 acres (Maine Department of Conservation 2012) and arguably helped launch the era of large conservation easements in Maine (Levitt 2003, Clark and Howell 2007, Liliehom et al. 2010). The easement is held by Pingree Forest Partnership, which consists of the New England Forestry

Foundation (NEFF) and Pingree family interests. NEFF employed a collaborative approach leading up to the establishment the easement that involved meeting with other conservation organizations, gaining support from New England Cable News, and soliciting contributions from the public (Levitt 2003). These efforts helped to quash possible opposition to the easement. The conservation role played by NEFF is remarkable given the land trust's size. NEFF employs about ten people (Chris Pryor, pers. comm.). In undertaking the Pingree project, NEFF relied on the assistance of consultants, and particularly on the leadership of Keith Ross of LandVest (Levitt 2003).

The case study of the Plum Creek Concept Plan for Moosehead Lake, approved by LURC in 2009, illustrates some of the decisions that will have to be made regarding tradeoffs between conservation and development in Maine (Beck et al. 2012). The Nature Conservancy (TNC) brokered a deal with Plum Creek, the largest publically held real estate investment trust, to create the 363,000-acre Moosehead Lake Regional Conservation Easement. This will be the second largest conservation easement in Maine and will be held by the Forest Society of Maine. TNC also purchased 15,000 acres for conservation, and the Appalachian Mountain Club bought 29,500 acres (Turkel 2009). Although the Plum Creek Concept Plan has important conservation value, it rezones about 16,000 acres for development, allowing construction of 975 houses and two resorts (Miller 2012). Whether or not conservation organizations should have ultimately cooperated with Plum Creek to acquire conservation land is a point of contention. RESTORE, the Forest Ecology Network, and the Natural Resources Council of Maine opposed the Concept Plan (Beck et al. 2012).

Large conservation easements in Maine are located in the northern part of the state, with many smaller easements distributed throughout the southern portion of the state (Figure 1). Conservation easements have been used to expand pre-existing conserved lands such as Acadia National Park (Beck et al. 2012). Density of conservation easements by township, defined as percentage of land within the township under conservation easements, is the highest in the northern region of the state, corresponding with the sizeable tracts under easement there. There are many towns in southern Maine that have conservation easements but in low densities. These easements do not show up on a map of conserved lands because they are very small. Density of conservation

easements by township can be determined using data in the Conservation Easement Registry (Figure 3). This data is more accurate than the data in Maine's conserved lands GIS layer but which is non-spatial.

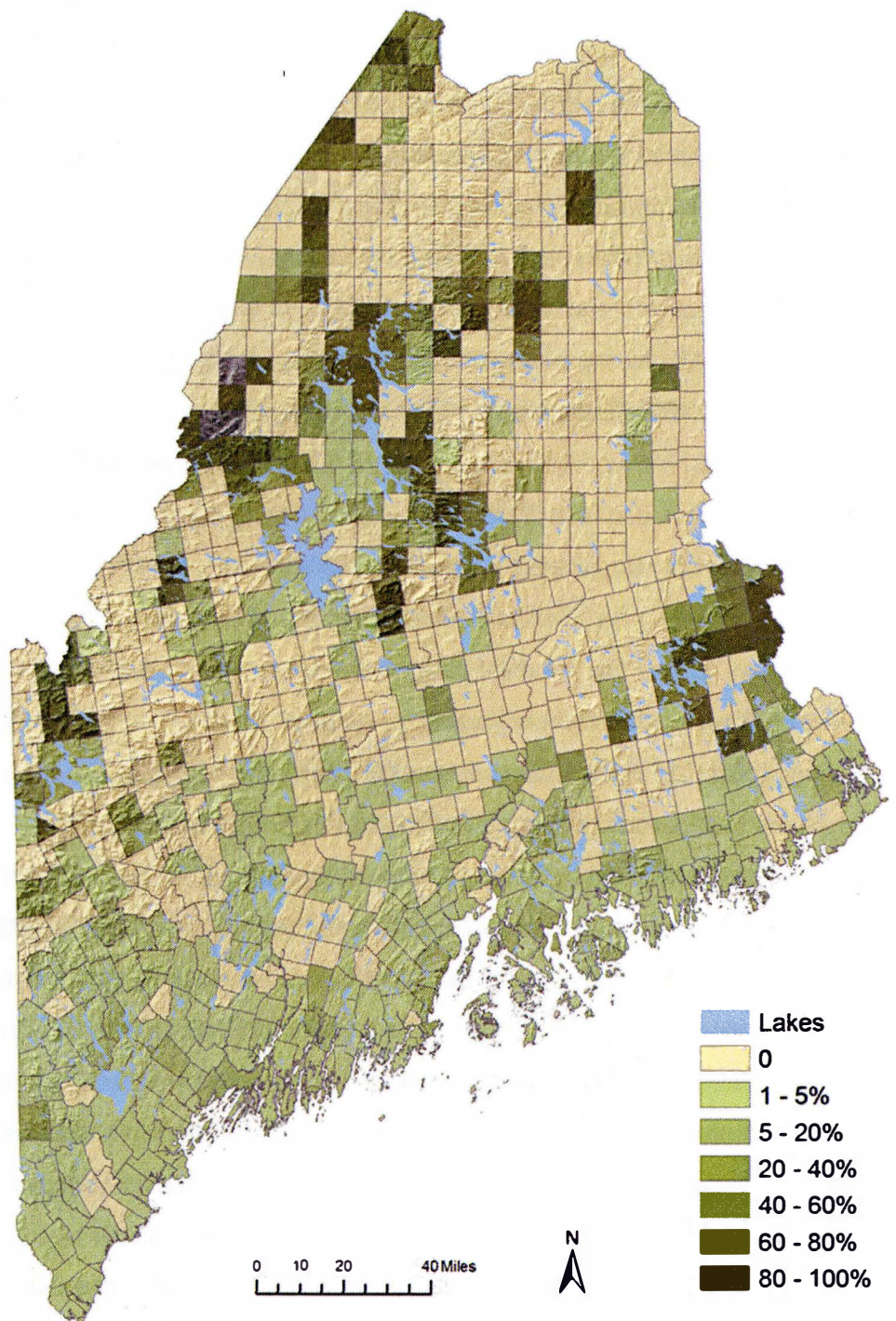


Figure 3. Conservation easement density by town: data presented are land under conservation easement as percentage of total land within each town (Beck et al. 2012).

The Land for Maine's Future (LMF) program and Forest Legacy Program (FLP) have been two of the most important funding sources for the establishment of conservation easements in Maine (Beck et al. 2012). The Land for Maine's Future (LMF) program was created in 1987 in response to changing land ownership and to preserve the natural heritage and traditions of Maine (Barringer et al. 2004, Hagan et al. 2005). Voter-approved bonds fund the program (Beck et al. 2012). LMF has conserved 530,000 acres total, 293,000 acres under conservation easement (NRCM 2012b). The program relies on local initiatives and stakeholders to identify potential projects and has garnered high popularity among Maine residents (The Brookings Institution 2012). The latest \$5 million bond passed with 61% approval in the November election. The first two LMF bonds were \$35 million in 1989 and \$50 million in 1999. Voters then passed \$12 million, \$20 million, and \$9.75 million bonds in 2005, 2007, and 2010 respectively (NRCM 2012b). According to *Charting Maine's Future*, a much-discussed report by the Brookings Institution, funding for LMF has not been sufficient (The Brookings Institution 2012). The authors write: "For the most part this funding has been inadequate to keep pace either with national leaders among states employing conservation bonding or demand in a changing state" (The Brookings Institution 2006). Governor Paul LePage has withheld approved LMF bond funding, exacerbating this problem (Cairn 2012).

The Forest Legacy Program, created by the 1990 Farm Bill, aims to prevent conversion of forestland to non-forest uses and provides funding for conservation land for which the State holds the rights, title, or interest. The program has conserved 682,500 acres of forestland in Maine (Maine Department of Conservation 2012). Thirty percent of all land across the United States conserved by FLP is in Maine (Maine Department of Conservation 2012). Forest Legacy Program funds, which have totaled to \$74 million thus far, have been paired with \$78 million from other sources (Beck et al. 2012). LMF funds have helped secure FLP support for conservation projects.

Other funding sources for the creation of conservation easements include property tax incentives and support from the Maine Coast Heritage Trust, through its Maine Land Trust Network initiative. The Current-Use Tax Law and Farm and Open Space Tax Law provide tax breaks for properties placed under conservation easement (Beck et al. 2012). The Maine Coast Heritage Trust provides information to smaller land trusts on regulatory

changes using newsletters, conferences, and workshops (Warren Whitney, pers. comm.). These smaller land trusts might not otherwise have the time or resources to keep apace of shifts in Maine's conservation easement policy framework.

Stewardship of conserved lands is fragmented in Maine. It is supported through various programs, but there is no comprehensive, overarching state stewardship framework. The 2007 Reform Act requires that holders monitor their easements at least once per year and submit monitoring data to the Conservation Easement Registry. The Maine Division of Parks and Public Lands runs the Maine Conservation Corps, which includes an Environmental Stewards section. Environmental stewards serve for a minimum of six months and, among other activities, help federal, state, and non-profit conservation entities implement land management plans and develop relationships with volunteers. The Maine Coast Heritage Trust also provides land trusts with information on stewardship practices. There do not appear to be data on the management of conserved lands in Maine regarding the amount of land under different kinds of management regimes (working forest or other management regimes).

The Pingree easement is one example of an easement held by a land trust that is extensively monitored. According to Chris Pryor, Conservation Easement Monitoring Coordinator for the New England Forestry Foundation, NEFF employs baseline documentation, satellite imagery, aerial photography, and ground visits in stewarding the Pingree easement (Chris Pryor, pers. comm.). Thus far, the Pingree easement landowners have complied with the easement requirements (Chris Pryor pers. comm.). The Pingree easement is managed as a working forest.

The degree of public access for conservation easements in Maine is another area of uncertainty. Maine has a history of open public access, due in part to laws that limit landowner liability (Acheson 2006; Ginger et al. 2012) and also because large paper companies owned much of the Northern Forest during the twentieth century and allowed the public to use their lands. A report from the Maine State Planning Office remarked that: "The Maine tradition of public access to private land is without parallel in the nation" (LeVert 2008). Shifting landownership seems to be decreasing public access, however. Lands in Maine are increasingly characterized by 'No Trespassing' signs (LeVert 2008). This may have less to do with the creation of conservation easements and more to do with

the general transition in land ownership away from the large paper companies. There does not appear to be compiled, accessible data on public access to land in Maine. The National Conservation Easement Database (NCED) (2013) estimates that about 65.9% of lands in Maine under easement are closed access, 20.88% are open access, 1.17% are restricted access, and 12.04% are unknown in terms of public access. Given that the dataset does not include hundreds of thousands of acres listed in the Conservation Easement Registry, such numbers should be considered cautiously.

Perpetuity of conservation easements was partially addressed by the 2007 Act to Amend the Conservation Easement Laws. The law states that: "A conservation easement may not be terminated or amended in such a manner as to materially detract from the conservation values intended for protection without the prior approval of the court in an action in which the Attorney General is made a party" (MRS Title 33, Chapter 7, Subchapter 8-A, §477-A). The section goes on to specify that the court must take purposes expressed in the easement and public interest into account. Furthermore, if the amendment or termination increases the value of the property, the landowner must pay the difference to the easement holder or some other entity specified by the court in order to conserve land in keeping with the purpose that the easement had sought to fulfill.

STATUS OF CONSERVATION EASEMENT POLICIES: NEW HAMPSHIRE

New Hampshire's conservation framework has its roots in a history of forest over-exploitation. In the mid to late 1800s, the White Mountains were New England's most popular mountain tourism destination, yet aggressive over-harvesting of timber in the northern part of the state was leading to increasing erosion, river siltation, and fires (Foster 2009). The Society for the Protection of New Hampshire Forests (The Forest Society), the state's predominant conservation organization, formed in 1901 to protect the White Mountains from clear-cutting (The Forest Society 2013). In the early 1900s, State funding for conservation land was a topic of controversy. Critics argued that residents would gain little benefit after footing the bill for conservation activities (Foster 2009). Efforts to protect Franconia Notch in 1923 and clean up debris after a severe hurricane in 1936 helped foster cooperation between public agencies and private landowners, but the

subsequent establishment of White Mountains National Forest and the state parks still presented challenges (Foster 2009).

Today, New Hampshire faces mounting development pressures but has also achieved extensive conservation relative to other states and leads New England in percentage of state area conserved (Beck et al. 2012). The Good Forestry in the Granite State Steering Committee (2010) emphasized that: "New Hampshire's number one forest management goal is keeping forests as forests." Community master plans and survey results indicate that residents seek to retain their towns' "rural character" (Taylor and Andrews 2010). Of 1,802,924 acres of conserved land in New Hampshire, 24% is federally protected, 17% is State-protected, 17% is privately protected, and 10% is municipally protected (New Hampshire Granite 2012). The sizeable area of federally conserved land in New Hampshire stands out among the New England states. White Mountains National Forest is a prominent component of the state's conserved lands network, protecting almost 800,000 acres (USDA Forest Service 2013).

NH Granite, the state's GIS clearinghouse operating out of the University of New Hampshire, produces a conserved lands data layer that contains a wealth of information. The layer was last updated in November 2012 and includes conserved tracts that are part of a property of at least two acres. Land trusts in New Hampshire have periodically stepped up to help update the data set, and The Nature Conservancy (TNC) was involved most recently (Dorothy Tripp Taylor pers. comm. 2013). Data on conserved lands is submitted to NH Granite voluntarily (NH Granite, 2013). According the Tracey Boisvert, Program Director of the Conservation Land Stewardship (CLS) program in the NH Office of Energy and Planning, the NH Granite data set is fairly complete and is useful for general planning purposes (Tracey Boisvert pers. comm.). Ms. Boisvert and Steve Walker, CLS Stewardship Specialist, also said that the dataset is not entirely complete, however, and that there are some lands in the conserved lands layer that are not actually conserved (Tracey Boisvert, pers. comm.; Steve Walker pers. comm.). The data should be regarded cautiously in terms of use for fine-grained analysis (Steve Walker, pers. comm.).

New Hampshire's first easement was established in 1967, and legislation to enable the creation of enforceable easements was adopted in 1973 (Gustanski and Squires 2000). New Hampshire statute (Title 68, Section 477:45-47) refers to easements as

conservation restrictions. The data from NH Granite suggest that there are about 3,909 conservation easement tracts in New Hampshire that are part of a parcel of at least two acres. If these tracts are aggregated by project name, the total number is reduced to 2,487 easements. The tracts collectively protect about 457,556 acres, 25% of the state's total conserved land (NH Granite 2012). Conservation easements in New Hampshire are predominantly held by state and private entities, which hold about 44% and 39% of the total acres under conservation easement respectively. Municipalities hold about 12% of acres under conservation easement, with federal entities holding a negligible amount. This contrasts with the breakdown of conserved lands generally because the White Mountains National Forest, a fee-purchased property, encompasses such a large area.

Data from NH Granite indicates that there are at least 116 conservation easement tracts with secondary holders in New Hampshire, covering 16,743 acres. The Society for the Protection of New Hampshire Forests works to ensure the perpetuity of conservation easements by serving as the backup interests for easements held by other entities (The Forest Society 2006).

The New Hampshire Department of Resources and Economic Development holds some of the largest easements in the state, including the Connecticut Lakes Headwaters easement in northern New Hampshire (NH Granite 2012). This easement, established in 2003, is the state's largest at 146,468 acres (NH Granite 2012). It is part of a 171,000-acre conserved property that constitutes 3% of the total area of New Hampshire (TPL 2003). The Connecticut Lakes Headwaters Project supports tourism and timber-related employment, as well as protecting endangered species habitat (TPL 2003). Lyme Timber Company manages the property as a working forest (TLP 2003). Trust for Public Lands initially bought the land from International Paper in 2001 to allow the state more time for public hearings and fundraising (TPL 2003).

The Society for the Protection of New Hampshire Forests holds two of the largest easements in New Hampshire. The larger of these two, the Andorra Forest conservation easement, was established in 1990. The Andorra Forest is a particularly interesting example of multi-use land management: the property is managed for timber and recreation but also includes a 2,650-acre section where almost all human activity is

prohibited (The Forest Society 2008). The Andorra Forest is home to moose breeding grounds (The Forest Society 2008).

Although municipalities hold a far lower percentage of acres under conservation easement in New Hampshire than do state or private entities, this percentage is fairly high compared to municipal holdings in the other New England states: it is the second highest percentage in New England after Massachusetts. Unlike in Massachusetts, however, some towns in New Hampshire hold very large easements. It is remarkable that the towns of Randolph and Errol hold easement of 10,352 acres and 7,088 acres respectively (NH Granite 2012).

The establishment of the Randolph conservation easement arose in response to shifting land ownership in the Northern Forest. In the 1990s, the Pond of Safety Forest abutting Randolph changed hands at least four times (Nickens 2001). In 1995, the Hancock Company—the landowner at the time—applied to place most of the land under a Forest Legacy Program (FLP) conservation easement (Wilcox 2005). After a severe ice storm razed the forest's higher elevation trees in 1998, the community mobilized to buy the land (Nickens 2001). FLP did not have money available for the project at the time that this process began, but the Hancock Company application had put the Pond of Safety Forest on the state agenda. To give the town more time to acquire sufficient funds, The Trust for Public Lands initially purchased the property with the support of fundraising conducted by the Randolph Foundation (Nickens 2001). Overall, the process was extremely collaborative and town meeting-based, illustrating the efficacy of coordinated multi-stakeholder approaches (Wilcox 2005).

Conservation easements in New Hampshire are concentrated predominantly in the southern half of the state. The easements in this region are relatively small and dispersed throughout more heavily populated areas. Connecticut Lakes Headwater easement is located at the northern tip of New Hampshire, interspersed with fee-purchased tracts, such as the Connecticut Lakes Natural Area. It is notable that Connecticut Lakes Headwater easement is also near a southwestern section of the Pingree Easement in Maine. Small to mid-sized easements abut the edges of the White Mountains National Forest. As is the case in Maine, easements in New Hampshire have been used to extend existing fee-owned properties.

Conservation in New Hampshire has been supported by multiple statewide funding initiatives. The Land Conservation Investment Program (LCIP) served as an important funding source for the acquisition of easements in the state from 1987 to 1993 (NH Granite 2012). The Land and Community Heritage Investment Program (LCHIP), a matching grant program established in 2000, supports both historic building restoration and perpetual conservation of natural resources by municipalities and nonprofits in New Hampshire (McLear and Taylor 2012). Funding for LCHIP, which has amounted to \$27 million thus far, comes from the Conservation License Plate Program and from fees on documents filed at County Registry of Deeds Offices (McLear and Taylor 2012). Overall, LCHIP has helped conserve 263,000 acres for forestry, farming, recreational, and ecological purposes (McLear and Taylor 2012). Future funding for the program is currently under debate (Steve Walker, pers. comm.). The NH Finance Committee has a history of diverting funds appropriated to LCHIP to balance the state budget: since 2008, more than \$10 million out of \$16 million raised for LCHIP has been diverted (Monadnock Ledger-Transcript 18 March 2013).

Two other important financial mechanisms related to the establishment of conservation easements are New Hampshire's Current Use Program and Conservation Restriction Assessment Program. The Current Use Program encourages the creation of conservation easements indirectly by allowing owners of qualified open space to pay reduced property taxes. Properties under ten acres are ineligible for the Current Use Program but landowners who establish easements can apply for reductions under the Conservation Restriction Assessment.

Like the Maine Coast Heritage Trust, the Society for the Protection of New Hampshire Forests has helped support smaller land trusts in-state. In fact, the Forest Society has specifically aimed to increase New Hampshire's capacity to conserve lands through enhancing the growth of smaller land trusts (Will Abbott, pers. comm.). This has in turn allowed the Forest Society to be more selective in its conservation activities and to prioritize working forestland more than it did 10 years ago (Will Abbott, pers. comm.). The Society for the Protection of New Hampshire Forests headed a Center for Land Conservation Assistance for 10-12 years to support the smaller land trusts. The Center was closed in 2009-10 because the Forest Society felt that the smaller land trusts had

matured enough that they did not need as much assistance (Will Abbott, per. comm.). The New Hampshire Land Trust Coalition also provides workshops and other assistance to land trusts in New Hampshire (NH Land Trust Coalition 2013).

The New Hampshire conservation easement policy framework is unusual in the extent to which it promotes stewardship of easements; in fact, New Hampshire is one of the only states with a state stewardship program, separate from the operations of the individual state agencies (Tracey Boisvert, pers. comm.; Steve Walker, pers. comm.). The Conservation Land Stewardship (CLS) program monitors all conservation easements—specifically easements, not fee-purchased conserved lands—held by the State. It also provides support to participating municipalities for the stewardship of their conservation easements (NH OEP 2013). CLS was founded in 1993, after the conclusion of the land acquisition phase for LCIP and is funded by the LCIP Monitoring Endowment, among other sources (NH OEP 2013). The website for CLS sums up the purpose of this body in describing it as: “an outgrowth of the original LCIP monitoring program due to the efficiency and effectiveness of having one entity handle all aspects of easement stewardship” (NH OEP 2013). Since most of the easements CLS stewards are older, many are changing hands. CLS focuses on working with people who are acquiring land already under conservation easement, so that they understand their responsibilities (Tracey Boisvert, pers. comm; Steve Walker, pers. comm.).

According to Will Abbott, Vice President of Policy and Land Management for the Society for the Protection of New Hampshire Forests, a major conservation trend among New Hampshire land trusts will be a shift of focus for acquisition to stewardship of conserved lands in the near future (Will Abbott, pers. comm.). At the time of writing, the Forest Society was about to launch a major capital campaign for conserved lands stewardship (Will Abbott, pers. comm.). Thus far, stewardship funding for land trusts has come primarily from private sources (Will Abbott pers. comm. 2012). The Forest Society has found that establishing relationships with landowners is extremely important considering the heavy costs of pursuing easement violations in court: one violation cost \$100,000 (Will Abbott, pers. comm.). The Forest Society also established Easement Stewardship Endowment to endow the perpetual monitoring and stewardship of easements (The Forest Society 2006).

The NH Granite dataset (2012) indicates that the majority of acres under conservation easement in New Hampshire are managed as working lands. About 74% of acres under easement fall into the category of: “a tract protected from conversion of natural cover for more than 50% of area, but subject to extractive uses of either a broad-scale low-moderate intensity type (such as timber harvest) or localized-scale high intensity type (e.g., mining)” (NH Granite 2012). This statistic could be considered from two angles. On the one hand, from a conservation perspective, it is fortunate that very few acres under conservation easement in New Hampshire (3%) fall into the highest-exploitation management category: “a tract with more than 50% of area unprotected from conversion of natural cover or planned or in use for agriculture or for active recreation purposes (e.g. ball fields, golf courses)” (NH Granite 2011). On the other hand, that so many acres of under easement are working lands highlights the importance of stewardship in New Hampshire to ensure that ecosystems are functionally protected.

Data from NH Granite indicates that at least 27% of acres under conservation easement are accessible to the public. Public access is recorded as not allowed for only 4% of acres under easement. The vast majority of acres under conservation easement (63%) are coded as “unknown” or “no response.” It can be determined that at least some of the easements that fall into this category, such as the Connecticut Lakes Headwater easement, do allow for public access. In fact, NH Division of Parks and Recreation manages a Connecticut Lakes Headwaters Working Forest Recreation Program. Property tax incentives in New Hampshire encourage landowners to provide public access; under RSA Title 5, Section 79-B:3, properties must be open for skiing, snowshoeing, fishing, hunting, hiking, and nature observation in order for the owner to receive the 20% recreation adjustment as part of the Conservation Restriction Assessment program. It seems that conservation easements that do allow for public access tend to be smaller than those that do not allow for public access: the average size of easements without public access is about 42 acres, while the average size of easements with public access is 114 acres.

Finally, it is important to examine the issue of perpetuity as it relates to conservation easements in New Hampshire. New Hampshire adopted the Uniform Trust Code in 2004, meaning that conservation easement amendment or termination must take

charitable trust principles into consideration, as such actions could constitute a breach of trust (Doscher et al. ND). Although there is not much of an explicit legal framework for amendment and termination of conservation easements within New Hampshire statute, the state's Attorney General, Director of Charitable Trusts, and prominent easement holders recently established administrative rules based on existing laws (Jay 2012). Under these rules, the Attorney General and Director of Charitable Trust oversee almost all amendment proposals (Jay 2012).

STATUS OF CONSERVATION EASEMENT POLICIES: VERMONT

Vermont has experienced substantial landscape transformation over the past 200 years. The number of farms in the state peaked in 1880, but the agricultural sector began to decline dramatically in the late 1800s (Albers 2000). By 1930, manufacturing employment had surpassed agricultural employment, and logging and marble production had become particularly lucrative industries (Albers 2000). Vermont never developed large urban areas, however, because industry ultimately remained limited (Albers 2000).

In the early 1900s, Vermont began to reframe itself as a tourist destination (Harrison and Judd 2011). The state did not offer New Hampshire's grandiose mountain scenery, but towns appealed to out-of-staters by marketing their pastoral atmospheres (Harrison and Judd 2011). By the mid-1900s, the tourism industry had begun to exert intensive pressure on Vermont's ecosystems. The completion of Vermont Interstate Highway 89 and the portions of I-91 located in southern Vermont helped set the stage for the rapid development of ski resorts and growth of recreational subdivisions, which were particularly problematic as far as land conservation is concerned (Sanford and Stroud 2000; State of Vermont Natural Resource Board 2006).

The Vermont 1970 Land Use and Development Law, also known as Act 250, helped set the stage for land conservation in the state. Act 250 established a system in which nine District Environmental Commissions, consisting of layperson members, review development and subdivision plans according to ten criteria (State of Vermont Natural Resource Board 2006). The Land Use Panel of Vermont's Natural Resources Board oversees this program (State of Vermont Natural Resources Board 2006). Critics argue that Act 250 has not lived up to its potential in terms of effectiveness, considering

the continued rapid pace of development in Vermont (Sanford and Stroud 2000). The state population grew by more than 10% between 1980 and 1990, while development increased from 0.5 acres per person to 2 acres per person during that time period (Sanford and Stroud 2000). About 48,000 acres of land in Vermont was developed between 1997 and 2007 (State of Vermont 2013).

The Vermont Center for Geographic Information provides public and private conserved lands data for the state. The data were last updated in 2009 but have not been fully updated since 2004. This is due to lack of funds for the Vermont Conserved Lands Database, the GIS project that collected the data (David Capen, pers. comm.; Sean MacFaden, pers. comm.). The project aimed to facilitate conservation planning within Vermont (UVM Spatial Analysis Laboratory 2002). The conserved lands layer produced by the Vermont Conserved Lands Database and available through the Vermont Center for Geographic Information for the most part contains only land parcels that are at least two acres. There are a few exceptions; for example, smaller access areas for fishing that are owned by the State are included (UVM Spatial Analysis Laboratory 2002). According to Kris Hammer, Conservation Stewardship Director for VHCB, the Vermont Center for Geographic Information convened a meeting with Vermont's large conservation stakeholders this spring (spring 2013) to formulate a plan for systematically keeping up with conserved lands data by the summer (Kris Hammer, pers. comm.). Mr. Hammer said that: "everybody realizes that this [the current dearth of a centralized, public conserved lands database] is not adequate" (Kris Hammer, pers. comm.).

Vermont's easement-enabling statute went into effect in 1978. Conservation easement policy in Vermont has an unusual history linked with affordable housing easements. In 1987, the State created the Vermont Housing and Conservation Board (VHCB) and the Vermont Housing and Conservation Trust Fund with "the dual goal of creating affordable housing for Vermonters, and conserving and protecting Vermont's agricultural land, forestland, historic properties, important natural areas, and recreational lands" (Title 10, Ch. 15, § 302). The legislation stated that affordable housing and conservation are both "of primary importance to the economic vitality and quality of life of the state" (Title 10, Ch. 15, § 302).

The nation-wide affordable housing crisis of the 1980s placed affordable housing on Vermont's agenda, and an alliance between affordable housing advocacy organizations and conservation organizations helped conservation efforts gain salience within the state (Libby and Bradley 2000). In addition to stimulating land development, Vermont's tourism and second home market inflate housing prices, which in turn diminish the state's affordability for locals (Briechle 2006). Vermont's linking of conservation and affordable housing policy is unusual: before the 2000 Massachusetts Community Preservation Act, Vermont was the only state that had a combined funding mechanism for these two issue areas (Briechle 2006).

In contrast to owner/ holder distribution for conserved lands overall, the majority of conservation easements and acres under easement in Vermont appear to be held by private entities, and mostly by the Vermont Land Trust (VLT). Out of a total of 3,343 conservation easement tracts (covering 360,630 acres) recorded by the Vermont Center for Geographic Information, about 3,323 (89% of acres under easement) are held by private entities and 3,061 easement tracts (85% of acres under easement) are held by VLT specifically (Vermont Center for Geographic Information 2009). The State holds about 10% of acres under conservation easement (VT Center for Geographic Information 2009). The Vermont Department of Forests, Parks, and Recreation holds easements acquired under the Forest Legacy Program, while the Vermont Agency of Natural Resources (ANR) holds easements that developers have been required to establish under Act 250 and other state regulations (Klein 2013).

The conservation easement holder statistics highlight a problem with the Vermont data set: separate tracts under easement are listed as separate easements, even though multiple tracts may be part of one project and may thus be considered as one easement. Unfortunately, project name is not listed in the conserved lands GIS layer, so the tracts cannot be dissolved within GIS by project name (in other words, tracts of the same project cannot be grouped together). According to the Dennis Shaffer, Vice President of Conservation Stewardship with the Vermont Land Trust, VLT has acquired almost 1800 conservation easements, not 3,061 (Dennis Dhaffer, pers. comm.). There are differences in terms of which tracts are counted as separate easements.

Although private land conservation is dominant in Vermont, the state government acts as a secondary holder for many conservation easements within the state. About 31% of tracts (1,081) listed as under conservation easement by the Vermont conserved lands layer have at least one secondary holder (keeping in mind the caveats concerning the need to update this information and the differentiation between tract versus actual easement). The most common first secondary holder is the VHCB, which is recorded as acting as the first secondary holder for 827 easement tracts. According to Kris Hammer, VHCB Stewardship Coordinator, VHCB currently co-holds between 700 and 800 conservation easements (easements not easement tracts) (Kris Hammer, pers. comm.). There are 828 easement tracts that are recorded as having a second secondary holder. The Vermont Department of Agriculture, Food, and Markets is the most common second secondary holder, acting as the second secondary holder for 670 easement tracts. There are 361 easement tracts that are recorded as having a third secondary holder. Natural Resource Conservation Services (NRCS) in the US Department of Agriculture is the most common third secondary holder for conservation easements in Vermont, filling this role for 311 easement tracts. In Vermont, secondary holders typically become holders because they have provided funding for the easement projects (Jon Binhammer, pers. comm.). Almost all of the conservation easements with many holders are farmland easements (Jon Binhammer pers. comm., 2013). Other easements typically do not have many holders because it becomes unwieldy to run the approval language by three or four holders (Jon Binhammer, pers. comm.).

The Vermont Land Trusts holds many of the largest conservation easements in Vermont. The Vermont Agency of Natural Resources holds the large easement protecting the Kingdom State Forest. The 1999 Champion lands deal, the largest conservation project in Vermont, is one example of an agreement that included multiple conservation entities holding multiple easements across a large swath of forestland (VLT 2013b).

The 1999 Champion lands deal conserves 132,000 acres of forestland previously owned by Champion International Paper Company. Out of this total, the US Fish and Wildlife Service manages 26,500 acres as part of the Silvio O. Conte National Wildlife Refuge, and 22,500 acres were placed under easement to establish the West Mountain Wildlife Management Area (3 V.S.A App. §10-29 (No. 12-02)). The Vermont Fish and

Wildlife department primarily manages this Wildlife Management Area, and VHCB and The Nature Conservancy hold the easements for this land (VLT 2013b). The West Mountain Wildlife Management Area is home to 36 rare or uncommon plant species, 23 rare or uncommon invertebrate species, and 10 rare or uncommon bird species (Vermont Agency of Natural Resources 2002). The remaining lands included in the deal, constituting 84,000 acres, are owned by Plum Creek Timber Company for sustainable forestry purposes. They are protected through a conservation easement held by VLT and VHCB and a public access easement held by the Vermont Agency of Natural Resources and VHCB (VLT 2013b). Major project funders include Essex Timber Co. and the U.S. Fish & Wildlife Service, and the State of Vermont (Vermonters For a Clean Environment). According to Jon Binhammer, Protection Director for TNC Vermont, the Champion project was a huge undertaking, but it was also a thoughtful process that happened relatively quickly. This was in part because it was a “once in a lifetime thing for Vermont,” and many people had been talking about the possibility for years and wanted to be a part of it (Jon Binhammer, pers. comm.).

VHCB administers the Vermont Housing and Conservation Trust Fund, which primarily supports easement acquisition. The Board acts as co-holder for the conservation easements acquired with these funds (VHCB 2011). Recipients include municipalities, state agencies, nonprofit organizations that qualify under Section 501(c)(3) of the Internal Revenue Code, and cooperative housing organizations. The Fund is supplied by 50% of the revenue of the property transfer tax as well as by appropriations from the government and private entities, and it also serves as a conduit for federal funds. If more than 70% of Trust Fund monies are allocated to either housing or conservation in a given year, the Board must explain why the distribution was so inequitable. Since 1987, VHCB funds have contributed to conservation of 252,700 acres of natural areas and recreation lands (VHCB 2013).

Initially, VHCB sought to pursue projects that incorporated both land conservation and affordable housing goals (Briechele 2006). Indeed, the statute outlining the VHCB Fund indicates that funding priority will be given to “projects which combine the dual goals.” It is now extremely rare that projects include both affordable housing and conservation; areas to be protected for affordable housing and conservation are most

often physically removed from each other (Kris Hammer, pers. comm.; Briechele 2006). The Fund is getting to the point where it allocates more money for housing (about 55%) than for land conservation (Kris Hammer, pers. comm.). Most of the funding for nature-based projects goes toward farmland conservation, and VLT is the primary recipient (Jon Binhammer 2013). Almost all easements purchased for conservation by VLT at this point are working farms, with some working forests (Dennis Shaffer pers. comm.). The VLT website characterizes VHCB as “one of the most successful programs in Vermont’s history” (VLT 2013a).

Other funding sources for conservation easements in Vermont include the Farm Bill, Local Conservation Grant Program, the Migratory Waterfowl Fund, and the Landowner Incentive Program. VHCB acts as a conduit for Farm Bill funding (Kris Hammer, pers. comm.). The Local Conservation Grant Program supports the acquisition of conserved lands for which applicants have raised 33% or more of the total project costs (TPL 2013b). The Migratory Waterfowl Fund (Duck Stamp Fund) supports the acquisition of wetland areas (TPL, 2013b), while the Landowner Incentive Program (LIP) provides funds to protect habitats for at-risk species (Vermont Fish & Wildlife Department 2013).

The Vermont Housing and Conservation Board prefers to have partners for conservation projects so that the partners can take on the stewardship responsibility (Kris Hammer pers. comm. 2013). VHCB delegates its easement stewardship responsibilities to a number of land trusts. The Board approves organizations for co-holding and stewardship of VHCB easements according to a set of criteria that include compliance with standards 11 and 12 of the 2004 Land Trust Alliance Standards and Practices (VHCB 2005). This track record includes established policies concerning easement amendments and monitoring, as well as management of endowments (VHCB 2005). Among the land trusts that act as stewardship partners to VHCB are VLT, Green Mountain Club, Lake Champlain Land Trust, TNC Vermont, Preservation Trust of Vermont, Stowe Land Trust, and Upper Valley Land Trust (VHCB 2005). VHCB stewardship partners seem to spend a lot of time getting to know the landowners, and the easement violation rate is only 1-2% of VHCB’s portfolio (Kris Hammer, pers. comm.).

The Vermont Land Trust employs seven regional stewardship managers, each responsible for 200-250 properties (Dennis Shaffer, pers. comm.). The VLT staff members make an effort to get to know property owners early on and also advise landowners on issues such as trespassing and endangered species (Dennis Shaffer, pers. comm.). In particular, VLT staff members prioritize spending time with buyers and successor landowners for properties already under easement to make sure that they understand what they are getting themselves into and clarify expectations (Dennis Shaffer, pers. comm.).

Data from the VT Center for Geographic Information indicates that the vast majority of properties under conservation easement and acres under conservation easement in Vermont are managed as working lands or for non-conservation purposes. About 65% of acres under easement are: "lands managed in ways that may prevent the holistic maintenance of native plant and animal assemblages," with provided examples including: "state school lands, Department of Defense land, or privately owned land not having deeded covenants for biodiversity conservation or not owned by organizations having a principal charter to manage those lands for the long-term maintenance of native biological diversity" (VT Center for Geographic Information 2004). About 34% of the lands under conservation easement constitute: "an area for which legal mandates prevent permanent conversion, but which is subject to extractive uses" (VT Center for Geographic Information 2004). Even though the information provided by the Vermont Center for Geographic Information is incomplete, it is unlikely that the composition of lands under conservation easement has shifted so much that working lands, or lands not managed for conservation, no longer predominate. Interviews indicate that that the majority of lands under conservation easement in Vermont are working lands (Jon Binhammer, pers. comm.).

The status of public access to lands under conservation easement in Vermont is uncertain. The Vermont Center for Geographic Information does not contain any data on public access. The National Conservation Easement Database (2013) suggests that public access is unknown for 90.46%, open for 2.78%, closed for 6.33%, and restricted for 0.43% of acres under conservation easement in Vermont. About 8% of the acres under easement recorded in the Vermont Conserved Lands Database are classified as "privately

owned land with conservation easements allowing public access” (VT Center for Geographic Information 2009). It is notable that all conservation easements funded by VHCB that are not farms are required to include public access.

Amendment and termination of conservation easements in Vermont is a topic that has recently garnered increased attention. In 2012, S.179 established a working group to examine the amendment of perpetual conservation easements. The VHCB provides administrative and technical assistance to the working group (Klein 2013). Vermont law does not currently provide clear guidelines for the amendment of perpetual conservation easements. Easement amendments in Vermont have thus far generated little controversy, however (Klein 2013).

Bill S. 119, drafted for the 2012 legislative session, would add a subchapter to the state’s easements statute that would make easements more difficult to dissolve. It would state that: “If a holder of a conservation easement is or becomes the owner in fee simple of property subject to the easement, the easement shall continue in effect and shall not be extinguished.” It would also state that: “Conservation rights and interests shall not be affected by any tax lien which attaches to the subject property under 32 V.S.A. § 5061 subsequent to the recording of the conservation rights and interests in municipal land records.” The bill also creates guidelines for the amendment of conservation easements. It would establish an Easement Amendment Panel that would have the power to allow inspection of conservation easements and to review amendments. Bill H.553 is a companion bill that was also drafted for the 2012 legislative session. The Conservation Easement Working Group is evaluating the changes that the bills would produce. No formal action has yet been taken by the House Judiciary Committee (Klein 2013).

Whether or not this legislation is adopted will likely have substantial implications: according to Dennis Shaffer, Vice President of Conservation Stewardship for the Vermont Land Trust, VLT is receiving more requests for easement changes than it ever foresaw (pers. comm. 2013). Mr. Shaffer said that he is hopeful about the legislation (Dennis Shaffer, pers. comm.).

STATUS OF CONSERVATION EASEMENT POLICIES: MASSACHUSETTS

Massachusetts has been a state of firsts. Francis Cabot Lowell invented the power loom, and the mill city of Lowell became known as the birthplace of the industrial revolution (MA EOEA 2005). Massachusetts is also home to the nation's first land trust, The Trustees of the Reservations, which was founded in response to rapid development around Boston (MA EOEA 2005). The state's 1957 Conservation Commission Act allowed for the establishment of the first conservation commissions in the US (MA Association of Conservation Commissions 2013).

Like the other southern New England states, Massachusetts has transitioned through phases of agriculture, industrialization, reforestation, and development pressure. Suburbanization continues even as the total state population decreases (MA EOEA 2005). According to the 2005 Massachusetts Comprehensive Wildlife Conservation Strategy: "direct loss of habitat due to development, combined with the effects of habitat fragmentation due to increased transportation infrastructure, has created a threat to wildlife not seen since the early days of the 19th century when the state was largely deforested" (MA EOEA 2005). The majority of development has occurred in the eastern portion of the state. Remaining tracts of old growth forest are located in the Berkshire Hills and Taconic Mountains (D'Amato et al. 2006).

It is interesting that many of the acres under conservation in Massachusetts have an unknown owner (for fee-purchased lands), according to Mass GIS (2013). For about 29% of conserved acres the owner is unknown. About 13% are conserved by private entities, 36% by the State, 3% by the federal government, 18% are conserved by municipalities, and less than 1% by other types of entities (for example, counties and public nonprofits).

Data on conservation restrictions in Massachusetts are available in the open space layer provided by the Massachusetts Office of Geographic Information (MassGIS). The layer was last updated in 2013. Massachusetts additionally keeps a separate registry of conservation restrictions, but this does not appear to include more acres for conservation restrictions than does the open space GIS layer. It also seems to be under construction. The MassGIS "Note on Appropriate Use of Data" for the open space layer states that the data are "very useful for most statewide and regional planning purposes" but that: "they

are not a legal record of ownership, and the user should understand that parcel representations are generally not based on property surveys” (MassGIS 2013). In other words, the level of accuracy is high enough for the data to be useful, but the data set is not totally complete or exact. It is notable that MassGIS defines open space very broadly as including: conservation land (habitat protection with minimal recreation, such as walking trails), recreation land, town forests, parkways, agricultural land, aquifer protection land, watershed protection land, cemeteries (if a recognized conservation or recreation resource), and forest land (if designated as a Forest Legacy Area). Just including “conservation land” in conserved land calculations would be misleading because the other categories are also forms of land protection, and other states consider conserved working lands as conservation lands. The overall statistics for Massachusetts conserved land provided above include all open space and thus possibly overestimate the amount of conserved land in the state.

In Massachusetts, conservation easements are referred to as conservation restrictions. The Massachusetts conservation restriction-enabling statute was established in 1969 (MGL Title I, Chapter 184, §31-33). Massachusetts has one of the most stringent conservation restriction approval processes in the U.S. (Levin 2010). The Massachusetts Executive Office of Energy and Environmental Affairs (MA EOEEA) must approve all conservation restrictions to be held by the state or by a city, town, or commission thereof, while the MA EOEEA, mayor or town administrator, and city council, selectmen, or town meeting must approve all conservation restrictions to be held by a charitable corporation or trust. This approval process for conservation easements places a heavy emphasis on “public interest.” According to Levin (2010), the approval process has been “overwhelmingly well regarded by those in the Massachusetts land trust community.” Andrew Bentley, Conservation Restriction Specialist for the Trustees of Reservations, and Chris Rodstrom, Deputy Director of Land and Community Conservation for the Trustees of Reservations, said that the stringency of the approval process is “overall a good thing” because it provides a high level of transparency (Chris Rodstrom, pers. comm.).

MassGIS data indicate that there are about 6,568 tracts or about 2,685 projects (“sites”) under conservation restriction in Massachusetts, protecting 178,085 acres.

Approximately 41% of the acres under restriction are held by the State, 41% by land trusts, and 16% by municipalities. Holders of the largest conservation restrictions in Massachusetts include the MA Department of Fish and Game, the Department of Conservation and Recreation—Division of State Parks and Recreation, the Trustees of Reservations and the Berkshire Natural Resources Council. As is the case in New Hampshire, towns in Massachusetts hold a high percentage of acres under conservation restriction, although no municipality holds a conservation restriction tract larger than 352 acres (MassGIS 2013).

About 611 tracts under conservation restriction in Massachusetts are listed as having secondary holders, which amounts to a far lower percentage of total tracts under conservation restriction than in Vermont. There does not appear to be an entity that is clearly the most common secondary holder for conservation restrictions. Secondary holders become involved both because they have played a role in financing the easements and in order to ameliorate perpetuity concerns (Andrew Bentley, pers. comm.; Chris Rodstrom, pers. comm.).

The MA Department of Fish and Game holds one of the state's largest conservation restrictions, the Paul C. Jones Working Forest located in Leverett and Shutesbury. The restriction was established in 2011 and covers about 3,525 acres (MassGIS 2013). The Paul C. Jones Working Forest is the Commonwealth's largest conservation deal for private land since the 1920s (Lederman 2012). It allows for sustainable forestry but prohibits motorized vehicle use and the construction of new buildings (WD Cowls, Inc. 2012). The land is also open for public use, including hunting, fishing, and hiking (Paul C. Jones Working Forest Public Access Plan 2012). Many sources funded the project: FLP contributed \$5 million, the State contributed \$3 million, and the Open Space Institute contributed \$839,600 (Lederman 2012). This case study highlights the important role played by land trusts as facilitators of conservation agreements: Kestrel Land Trust of Amherst and Franklin Land Trust of Shelburne Falls led community negotiations and helped secure federal and foundation funding (Lederman 2012).

Like Vermont, Massachusetts does coordinate funding for conserved land and affordable housing initiatives to some degree. The 2000 Massachusetts Community

Preservation Act (CPA) allowed communities to create Community Preservation Funds and established a statewide matching grant fund in order to enhance open space conservation, historic preservation, and affordable housing protection (EOEEA 2013). The amount of matching grant fund money distributed has decreased since the early 2000s, while the number of communities receiving matching funds has increased (Figure 4).

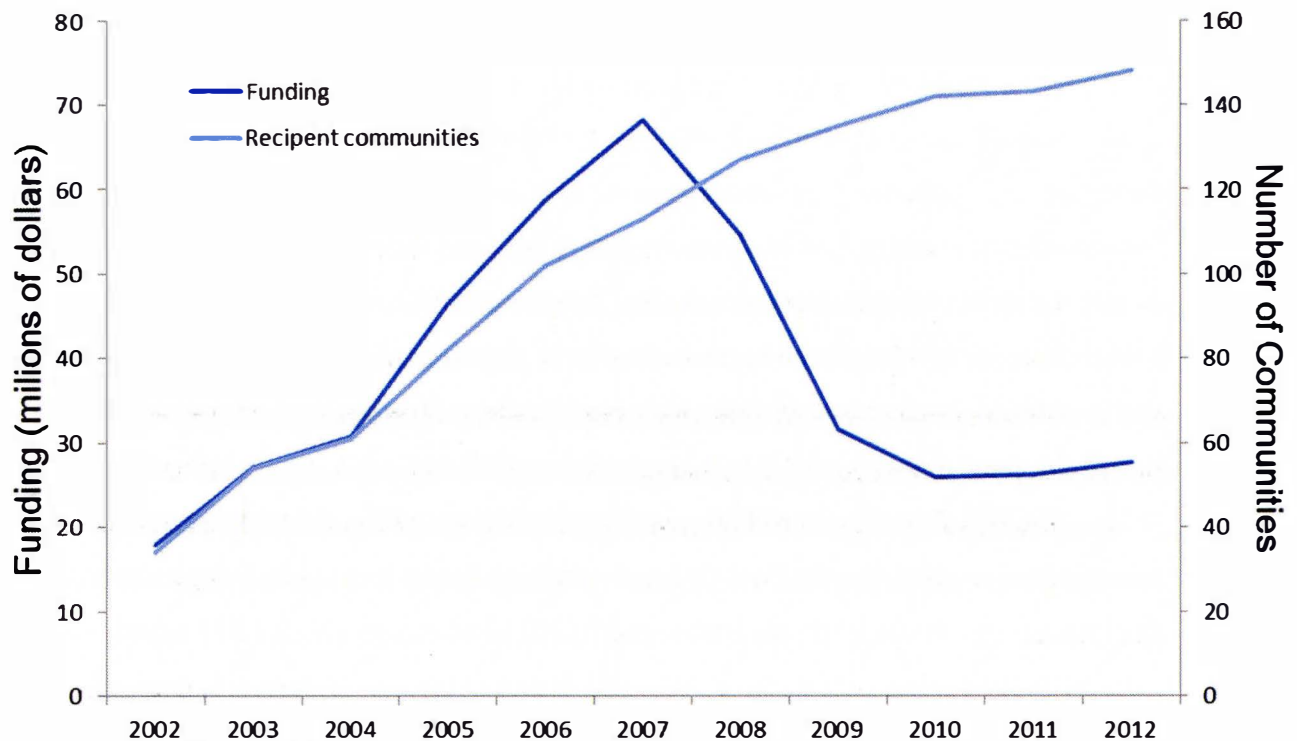


Figure 4. Community Preservation Act State Matching Fund allocations, showing total funding and number of recipient communities (MA DOR 2013).

There are many other programs for funding conservation activities in Massachusetts, such as the Massachusetts Conservation Partnership Grant Program and the Massachusetts Land and Water Conservation Fund. Overall, funding conservation activities has been a struggle for Massachusetts in recent years: for example, funding for the Massachusetts Department of Conservation and Recreation decreased by 30% between 2009 and 2012 (Lee 2012).

Property taxes incentivize the establishment of conservation restrictions to varying degrees across Massachusetts. According to Stockford (1990), downward

reassessments of property in Massachusetts have ranged from 13% to 95%. There do not appear to be any recent studies summarizing the current variances in property tax deductions.

The Conservation Land Tax Credit (CLTC), an income tax credit program launched in 2011, provides a credit of 50% of a donated conserved land or conservation restriction's appraised value, up to \$50,000. Lands identified by the MA Executive Office of Energy and Environmental Affairs (EOEEA) as "ideal" for the tax credit include those characterized by: "drinking water supplies, wildlife habitats and biological diversity, agriculture and forest production, recreational opportunities" or "scenic and cultural values" (MA EOEEA 2012). In 2012, the Program provided \$1,769,671 for 50 projects covering 2,634 acres. This was an increase in funding and acreage from 2011, when the program provided \$975,725 for 31 projects covering 915 acres (MA EOEEA 2012).

The Massachusetts Land Trust Coalition—an association of more than 130 land trusts, watershed associations, open space committees, and advocacy groups—also provides technical assistance and other resources to land trusts within the state (MA LTC 2013). The Coalition aims to improve the capacity of land trusts to manage their lands by creating a "repository of funding sources and funding methodologies for land trusts" (MA LTC 2013).

In Massachusetts, an overarching stewardship body spearheads conserved land stewardship for the State, while a number of land trusts collaboratively work to advance stewardship activities among both State and private entities. The Massachusetts Department of Conservation Resources (DCR) Stewardship Council, which first met in 2004, works with the DCR to maintain effective stewardship of open spaces and recreational facilities (MA DCR Stewardship Council 2013). Meanwhile, private entities have worked to disseminate information about restriction stewardship. In 2003, the Massachusetts Land Trust Coalition convened the Massachusetts Easement Defense subcommittee, which produced recommendations to improve conservation restriction stewardship by government agencies and land trusts (MA Audubon Society 2006). In 2006, Massachusetts Audubon Society, endorsed by the Massachusetts Association of Conservation Commissions, published a Massachusetts Conservation Restriction

Stewardship Manual to provide the state's land trusts and conservation commissions with guidelines for stewardship and monitoring of easements (MA Audubon Society 2006).

Data from MassGIS suggests that the majority of lands under conservation restriction in Massachusetts are managed for conservation. "Conservation" is the primary purpose of about 81% of lands under conservation restriction in Massachusetts, and "recreation and conservation" is the primary purpose of about 16% of lands under conservation restriction. Other conservation restriction purposes included agriculture, recreation, and habitat protection but these were identified as the primary purpose for a negligible amount of acres under conservation restriction. This makes sense considering the separate legal category for agricultural protection interests.

Data from MassGIS indicates that there is a lot of land under conservation restriction in Massachusetts that is open for public access. This may be in part because Massachusetts law negates landowner liability for allowed public use of land "in the absence of willful, wanton, or reckless conduct by such person [landowner]" (MGL, Chapter 21, §17C). Data from MassGIS indicates that about 85,205 acres under conservation restriction, about 48% of the total, are open for public access. About 30% are closed for public access, and about 14% have unlimited public access. For 7% of the land area under conservation restriction, the status of public access is unknown (MassGIS 2013). In considering the degree of public access in Massachusetts, it is important to differentiate based on the size of the area covered by the restriction. Most of the largest conservation restrictions in the state are open to the public. On the other hand, for conservation restrictions covering tracts less than 10 acres, only 23% of the total acres are open for public access, while 46% have no public access and 19% have limited public access (MassGIS 2013). The average size for conservation restrictions with public access is 46 acres, while the average size for restrictions with no public access is 19 acres.

Massachusetts law outlines amendment and termination procedures for restrictions. Under MGS, Title I, Chapter 183, §32, restrictions may be partially or wholly released:

only after a public hearing upon reasonable public notice, by the governmental body holding the restriction or if held by a charitable corporation or trust, by the mayor, or in cities having a city manager the city manager, the city council of

the city or the selectmen of the town, whose approval shall be required, and in case of a restriction requiring approval by the secretary of environmental affairs... only with like approval.

Thus, a multi-party approval process protects the perpetuity of conservation restrictions in Massachusetts. Landowners whose restrictions were purchased with State funds must also repurchase the restrictions at their fair market value in order to reclaim development rights. It remains to be seen how the State would manage substantial conflict over amendment and termination of conservation restrictions (Tad Ames, pers. comm.).

STATUS OF CONSERVATION EASEMENT POLICIES: RHODE ISLAND

Although Rhode Island now has the second greatest percentage of its total land area conserved out of the New England states (Beck et al. 2012), its progressive conservation initiatives have been a response to a history of extremely severe environmental degradation. As Peter Lord writes in a chapter of *Twentieth Century New England Land Conservation*: “It is difficult to explain to someone today just how stressed the Rhode Island landscape was at the turn of the [twentieth] century” (Foster 2009). The state had lost about 75% of its forestland to colonial agriculture by 1767 (Johnson and Sawyer 1994). Beginning in the late 1700s, industrialization led to the conversion of Rhode Island’s water bodies into sewers, the filling of salt marshes and swamps, and the acute degradation of the Narragansett Bay (Johnson and Sawyer 1994). Pollution pressure slackened in the 1900s, but the state experienced a surge of haphazard, sprawling development in the 1980s (Johnson and Sawyer 1994). The value of new housing unit permits increased from \$44 million to \$95 million between 1982 and 1987 before the housing bubble burst in the late 1980s (Johnson and Sawyer 1994).

Conservation forces in Rhode Island had begun to mobilize in the mid-1900s, with the state’s first land trusts established in 1972. Most of the state’s development has been contained to the Narragansett Bay area, thus: “despite its high population and rapid growth, Rhode Island still as made great strides in preserving its rural character, water resources, open spaces and forests, and farmland” (Sheehan and Logan 2011).

Data from Rhode Island Geographic Information System (RIGIS) indicate that there are approximately 163,885 acres conserved in Rhode Island, with the majority

(62%) held by the state. About 18% of conserved land is privately held, while municipalities hold 15% (RIGIS 2011). The federal government holds 4% of conserved land (RIGIS 2011).

There are two conserved land data layers for Rhode Island. The Conserved Lands: State of Rhode Island layer contains: “approximate edges of Conserved Lands protected by the State of Rhode Island through Fee Title Ownership, Conservation Easement, or Deed Restriction.” The Conserved Lands: Municipal and NGO layer contains: “real property permanently protected from future development by recognized land protection organizations other than the State of Rhode Island.” There is overlap between these layers. The two layers were last updated in 2011. RIGIS provides a disclaimer as to the accuracy of the data:

These data were created by RIDEM for informational, planning and guidance use only. They are meant for use as a general reference, not a legally authoritative source for the location of natural or manmade features. Proper interpretation of this data may require the assistance of appropriate professional services. Facility locations have not been verified by a RI Registered Professional Land Survey and are not intended to be used in place of a survey. RIDEM makes no warranty, express or implied, related to the accuracy, reliability, completeness, or currentness of this map. (RIGIS, 2013)

The RIGIS dataset is not complete.

Rhode Island law refers to conservation easements as conservation restrictions. The Rhode Island legislature established the enabling statute (Rhode Island General Statutes, Title 34, §34-39-1 to §34-39-5) for conservation restrictions in 1976. RIGIS data indicates that there are 31,509 acres under conservation restriction in Rhode Island. The State takes the leading role, holding about 60% of the acres under restriction (RIGIS 2011). Private entities hold 16%, federal entities hold 16%, and municipalities hold 5% (RIGIS 2011).

Rhode Island residents have historically supported large bonds to fund conservation activities. The state passed green acres and reservoir land acquisition bonds in the 1960s (Johnson and Sawyer 1994). Recent bonds approved through referendum have included a \$14.7 million bond to protect specific properties in 2010, a \$2.5 million

Open Space and Recreational Development bond in 2008, and a \$70 million Open Space, Recreation, Bay, and Watershed Protection bond in 2004 (Rhode Island Land Trust Council 2011). In 2012, Rhode Island passed by 68% a \$20 million bond to protect farmland and open space, restore Narragansett Bay, and create parks (Rhode Island Land Trust Council 2011).

The State Land Conservation and Acquisition Program works to acquire lands in order to conserve environmentally sensitive areas and farms and to provide recreational opportunities (RI DEM 2013). It also coordinates conservation activities across the state (RI DEM 2013). The program is under the Rhode Island Department of Environmental Management and is overseen by the Land Acquisition Committee. Open Space bonds, land trusts, the Forest Legacy Program, State Wildlife Grant, and Land and Water Conservation Fund support the program, among other funding sources (RI DEM 2013). In the Land Conservation and Acquisition Program FY2011 Annual Report, Sheehan and Logan (2011) note that Rhode Island is facing: "a combination of record low real estate prices for farmland and open space but significantly reduced state budgets." The authors say that "finding great deals on important open space is much easier, but finding the money to buy the land is much more difficult" (Sheehan and Logan 2011). They recommend continued leveraging of federal dollars and collaboration between the various conservation entities within the state in order to meet conservation goals.

Two other funding sources for conservation are the Local Open Space Grant Program and the Agricultural Land Preservation Program. The Local Open Space Grant Program channels funding from State Open Space Bonds to municipalities, land trusts, and nonprofits seeking to conserve lands that have been locally identified as priorities (Sheehan and Logan 2011). The Program provides up to 50% of funding for a given project (Sheehan and Logan 2011). The Agricultural Land Preservation Program supports the acquisition of farmland easements. It is funded by the Open Space Bond, The Nature Conservancy, USDA Farm and Ranch Lands Protection money, and money from land trusts and municipal funds (Sheehan and Logan 2011).

Rhode Island Land Trust Council (RILTC) and the Narragansett Bay Estuary Program head the Rhode Island Land and Water Partnership, which works to build the capacity of land trusts, watershed organizations, and conservation commissions to acquire

and steward easements. Such efforts are important considering that only about seven land trusts in Rhode Island have staff (RILTC 2011). The Partnership's resource library includes information on easement monitoring and funding for stewardship activities.

The Audubon Society of Rhode Island, The Nature Conservancy of Rhode Island, RILTC, University of Rhode Island, Rhode Island Natural History Survey, Rhode Island Department of Environmental Management, and US Fish and Wildlife Service formed the Rhode Island Conservation Stewardship Collaborative (CSC) in 2006 to improve stewardship of the state's conserved lands, both fee-purchased and under conservation easement. CSC specifically looks to advance monitoring approaches that are applicable and replicable for other organizations (CSC 2013). An example of a recent project undertaken by CSC was to update Rhode Island's conserved lands database, which had not been updated since 2006 because Rhode Island DEM did not have the resources to do so (CSC 2013). More general activities include developing monitoring practices and training stewards (CSC 2013).

Rhode Island also provides examples of land trusts that have developed extensive frameworks for conservation easement monitoring. The South Kingstown Land Trust (SKTL), which has a membership of about 700 families and individuals, monitors its 150 easement and fee-purchased properties with the help of volunteer monitors (Collins 2013). Each of the properties are monitored at least once per year, and a "Monitoring Blitz" with 30-40 volunteers is held every spring to try to get a chunk of the monitoring requirements accomplished at one time (Collins 2013). According to Clarkson Collins (2013), SKLT has discovered very few easement stewardship violations on its 50 properties under easement; the most common violations have been using dirt bikes, dumping leaves, and leaving trash along roads.

The status of public access for conservation easements is ambiguous. RI GIS data (2011) indicates that at least 5,000 acres are open for public access.

Since 2011, Rhode Island statute has included a framework for releasing or amending conservation restrictions. Parts of this language were copied from Maine's 2007 Act to Amend the Conservation Easement Laws. The framework for restriction release or amendment requires court approval, with the attorney general made party. Any resulting increases in the value of the landowner's estate must be paid to the holder, or to

another entity designated by the court, for conservation activities consistent with the purpose of the original restriction. Some land trusts such as Aquidneck Land Trust (ALT) have formulated additional guidelines for amendment or termination of the easements they hold. ALT will only consider modification of easements under the circumstances of: “prior agreement, correction of an error or ambiguity, settlement of condemnation proceedings, or minor modifications consistent with conservation purposes” (Clement 2010). The approval process includes ALT’s Stewardship Director, Executive Director, Easement Amendment Panel, and Board of Trustees (Clement 2010).

STATUS OF CONSERVATION EASEMENT POLICIES: CONNECTICUT

Connecticut has a history of high population density, industrialization, and development in the Coastal Slope and Central Valley (Bell 1995). Industrialization and population growth increased rapidly from the late 1800s through 1945, while agricultural land declined (Bell 1995; Glaser 2013). The dumping of waste and sewage into rivers fouled Long Island Sound (Harrison and Judd 2011, Glaser 2013), and fires and overharvesting degraded the state’s forests (Glaser 2013). After World War II, suburbanization and sprawl accelerated, with the populations of some towns like Simsbury and New Fairfield increasing by five-fold or more and the populations of urban centers like Hartford and New Haven decreasing (Bell 1995). In the late 1900’s, sprawl moved into the Uplands, which had previously experienced little development (Bell 1995). Under CGS, Title 23, Chapter 447 §23-8(b) Connecticut adopted the goal of protecting 21% of the state’s land area, with the deadline for that goal set at 2023 by the 2007-2012 Green Plan: Guiding Land Acquisition and Protection in Connecticut, produced by the Connecticut Department of Environmental Protection (Council on Environmental Quality 2012). The statute also established a goal for the State government of achieving protection of 10% of Connecticut’s land area through State ownership of parks, forests, and wildlife areas (Council on Environmental Quality 2013). Non-state entities have factored prominently into conservation efforts in Connecticut. Conservation commissions have played an important role due to historic resistance to State and Federal government intervention (Bell 1995). As of 2010, Connecticut had third greatest number of land trusts out of all the states in the US despite its small size, with

137 land trusts (Chang 2010). After the last couple of building booms, residents became frustrated with development in Connecticut, and accordingly, public support for land trusts is quite robust (Chris Martin, pers. comm.).

There are some data on conservation land in Connecticut protected by the state but no reasonably accurate, centralized data source for conserved lands that are held by private or municipal entities. As of 2012, the State had conserved 255,030 acres. This amount, according to a report released by the Council on Environmental Quality (2013), is “not on track” to meet the 10% goal by 2023 (320,576 acres). The Council decries the lack of data on privately and municipally conserved land, stating: “The absence of an accurate inventory of protected land in Connecticut is a serious deficiency” (Council on Environmental Quality 2013). The Connecticut Department of Energy and Environmental Protection (DEEP) has collected protected open space data for 129 towns since 2005 through the Protected Open Space Mapping (POSM) project. CT DEEP acknowledges that the information it has collected is not complete. The Council on Environmental Quality (2013) notes that: “DEEP has been collecting data from municipal records in a sequential fashion for 12 years; if that effort is ever completed, the earliest-collected data will be well out of date.”

Data on conservation restrictions in Connecticut are almost nonexistent. The conserved lands data that do exist in the POSM layer do not indicate whether lands are held in fee or under conservation restriction. There is some non-spatial data available on conservation restrictions held by State entities. Connecticut statute requires that municipalities keep in their land records descriptions of restrictions placed on the lands they acquire. Thus, data on conservation restrictions within each municipality should be obtainable through that municipality.

In Connecticut, conservation easements are referred to as conservation restrictions, and the conservation restriction enabling statute (CGS, Title 47, Chapter 822, §47-42a) was enacted in 1971. One unique component of Connecticut’s conservation restriction statute is that it requires that landowners with conservation restrictions notify the restriction holders prior to obtaining land use permits (Levin 2010). This may not be a particularly meaningful stipulation. In other states, landowners would have to notify

holders of any potential land use changes that might conflict with the terms of the easement; otherwise, they would risk violating the easement.

The DEEP Division of Forestry holds 7,343 acres under Forest Legacy Program (FLP) conservation easements (Christ Martin pers. comm. 2013; Hochholzer 2010). The Farmland Preservation Division under the Connecticut Department of Agriculture had acquired the development rights to 37,262 acres of farmland as of 2011 (Dippel 2011). There is indication that at least some of the state's land trusts have begun to shift their focus from acquiring fee-purchased conserved lands to lands under conservation easements/ restrictions. According to the Connecticut Land Trust Council (CLTC) (2002), the state's land trusts increased their holdings of fee-purchased lands by 103% between 1990 and 2000, whereas they increased their holdings of lands under conservation restriction by 232% during this time period.

The primary funding mechanisms that support the establishment of conservation restrictions in Connecticut are the Open Space and Watershed Land Acquisition Grant Program and the Recreation and Natural Heritage Trust Program. The former assists nonprofit conservation organizations and municipalities in acquiring conservation land and water supply properties, with ecological, recreational, and cultural value taken into account in determining worthy land purchases. In addition, Connecticut statute indicates that connectivity, multi-town projects such as greenways, and projects that comply with local and regional land-use plans should be favorably considered. Bonds and funds collected under the Community Investment Act (CIA) are the primary sources for the Grant Program (McCarthy 2007). Between 1998 and 2008, the Grant Program provided \$89,503,257 to protect about 1,857 acres (Conservation Almanac 2013). Funding for the Program peaked in FY2002. It has since declined and "may continue indefinitely due to the current economic situation within the state" (Hochholzer 2010).

The Recreation and Natural Heritage Trust Program is the primary program through which the Connecticut Department of Energy and Environmental Protection acquires open space (CT DEEP 2011b). Properties are selected according to the recreational opportunities they would provide or according to their cultural or ecological value (CT DEEP 2011b). Contiguity with other conserved lands is also taken into account (CT DEEP 2011b). The program is funded through state bonds. Between 1998 and 2008,

it provided \$187,322,315 to protect about 35,587.5 acres (TPL 2013a). Funding for the Recreation and Natural Heritage Trust Program peaked in FY2002 and has since declined (Hochholzer 2010).

Under the Farmland Preservation Program, the Connecticut Department of Agriculture obtains easements to preserve farmland and some forestland (Hochholzer 2010). As of 2011, 283 farms covering 37,262 acres had been acquired under the program (Dippel 2011). The Farmland Preservation Program aims to achieve acquisition of 85,000 acres of cropland and 13,000 acres of farmland (Dippel 2011). It prioritizes active farms with a high percentage of prime farmland soils that are clustered with other farms (CT Farmland Preservation Program 2010). Money for the Program comes from state bonds, Community Investment Act Funds, the Farm and Ranch Lands Protection Program, and local partners (CT Farmland Preservation Program 2010). Two \$5 million bonds were authorized in 2010, and towns and Connecticut Farmland Trust contributed \$1,348,957 (CT Farmland Preservation Program 2010).

Through the Connecticut Land Trust Fund, LTA and the Connecticut Land Trust Council (CLTC)—a coalition of land trusts, conservation and advocacy organizations, municipal commissions, garden clubs, and individuals—provide grants to other land trusts, up to \$10,000 for one land trust or up to \$20,000 for joint projects (CT LCC 2011). CLTF also provides technical assistance and training to land trusts and other organizations in Connecticut (CT LCC 2013). The wide range of conservation entities represented in CLCT (as opposed to a land trust coalition) appears to be unusual across the New England states.

In addition, the Connecticut state corporate income tax credit allows up to 50% deduction and 10-year carry forward period for conservation restriction donations made by corporate entities (LTA 2013b). According to Young (2008), Connecticut limits “the credit to corporate (as opposed to individual) taxpayers because they are most likely to hold the large parcels of land that are important for this kind of conservation,” meaning larger-scale projects to “conserve privately-owned timber, maintain a rural landscape, or assemble a migratory bird corridor.”

Under public law 490, the state also provides tax breaks for the preservation of farm, forest, or open space land. The law allows landowners to pay current use tax value for their land rather than highest value (CT Farm Bureau Association, Inc. 2010).

The State of Connecticut has recently increased its focus on monitoring. Under the 2007 Green Plan, new funds will be set aside for stewardship of lands acquired by the DEP. The Green Plan acknowledges, however, that: "There is currently no specific funding source identified that we can offer to our partners [partner conservation organizations] for open space planning, management and long-term stewardship" (McCarthy 2007). CGS Title 23, Chapter 452, §23-79, effective as of 2006, sets high penalties for encroachment on open space and land under conservation easement, up to five times the restoration cost for that land (McCarthy 2007). Connecticut Land Conservation Council (CLCC) and Connecticut's Conservation Districts also work to improve the stewardship of conserved lands within the state.

There does not appear to be data on the status of public access to conserved lands in Connecticut. The Open Space and Watershed Land Acquisition Grant program does specify that easements acquired under the program: "will include a requirement that the property be made available to the general public for appropriate recreational uses," although exceptions can be made for cases in which public access would be disruptive to agricultural activity.

In regards to perpetuity, Connecticut General Statutes also do not include a framework for procedures for the release and termination of conservation restrictions.

DISCUSSION AND COMPARISON

The six preceding sections have examined conservation easement policies in terms of data availability, predominant easement holders, secondary holders, easement distribution, funding mechanisms, stewardship, public access, and amendment and termination procedures for easements (Table 1). I will now discuss trends related to these factors across the New England states and implications for conservation easement policy and management moving forward.

Table 1. Summary of conservation easement policy components across the New England states

State	ME	NH	VT	MA	RI	CT
Easement data available	Yes	Yes	Yes	Yes	Yes	No
Mandatory data submission	Yes	No	No	No	No	No
Easement registry	Yes	No	No	Yes	No	No
Conserved lands GIS layer last updated	2013	2012	2009	2013	2011	2011
Comments on conserved lands GIS layer	Does not include all registry data		Not fully updated since 2004		Overlapping conserved lands layers confusing	Sequentially updated since 2005
Predominant easement holder	Private	State	Private	Private/ State	Private	State
Easement tracts listed with secondary holders	63 tracts	116 tracts	1,081 tracts	611 tracts	No data	No data
Average easement tract size	1,322 acres	117 acres	105 acres	27 acres	21 acres	No data
Easement distribution	Clumped	Clumped	Clumped	Clumped	Clumped	No data

Table 1. (Continued)

State	ME	NH	VT	MA	RI	CT
Indication of restricted government funding for conservation activities	LMF funds inadequate/ withheld	LCHIP appropriations diverted for budget deficit	VHCB is strong funding source, although more focused on housing now	Declining Community Preservation Act funds; reduced funding for MA DCR	Reduced state budget for conservation	Decline in funding for Recreation and National Heritage Trust Program
Financial/ technical support to smaller land trusts	Maine Coast Heritage Trust	Society for the Protection of New Hampshire Forests	Vermont Land Trust	Massachusetts Land Trust Coalition	Rhode Island Land and Water Partnership	Connecticut Land Trust Council
Overarching stewardship body for state holdings	No	Yes: specifically stewards state-held easements	No	Yes: stewards state-held conserved lands more generally	No	No
Private stewardship initiatives				Massachusetts Land Trust Coalition and Mass Audubon created stewardship guidelines	Rhode Island Conservation Stewardship Collaborative advances replicable monitoring approaches	Connecticut Land Trust Council works to enhance stewardship by land trusts
Public access	No state data	At least 124,000 acres	No data	At least 85,000 acres	At least 5,000 acres	No data
Amendment and termination	Legislation	Admin rules	Legislation under consideration	Legislation	Legislation	None

Data Availability

Keeping up-dated information on conservation easements is important for reasons related to perpetuity, transparency, accountability, and planning. One danger of not maintaining conservation easement data is that the easements may be more likely to become lost if the holder entity is dissolved (Pidot 2005). A Land Trust Alliance study conducted between 2004 and 2005 found that more than 80% of land trust representatives surveyed thought it likely that at least some of their holdings would cease to be protected within the next 100 years (Pidot 2011). The land trusts identified their own inability to uphold and steward their easements as foremost threats to those easements (Pidot 2011). It seems likely that conservation entities will be unable to effectively prevent the loss of conservation easements if there are no complete datasets of easements within each of the states. Conservation easements are a public interest in the sense public funding has supported the establishment of easements (McLaughlin 2008, Olmsted 2011). Losing conservation easements would be a waste of scarce conservation resources and would undermine public investment and trust. Even if easements are not being lost, lack of information availability could still reduce confidence in easements as a conservation tool and make land use planning more difficult. Maintaining conserved lands data would increase transparency and enhance planning efforts.

Centralized data sources on conservation easements and conserved lands are of generally low quality across the New England states. Maine has by far the best data source for conservation easements in New England. The state not only has a separate database for conservation easement information but is also the only New England state that legally mandates the submission of easement data to a Conservation Easement Registry. The Registry is well organized, and it is believed that compliance with the submission requirement is high (Pidot 2011). The submitted monitoring data are not currently in an accessible form (Ms. R. Collin Therrien, pers. comm.), but it is questionable whether this information should be made publically available anyway given privacy concerns. Some of the information in the Maine Registry is not yet available in the Maine Office of GIS conserved lands layer.

Massachusetts and New Hampshire have the next best conservation easement data sources in New England. Massachusetts is the only other New England state besides

Maine with a separate easement registry, but this registry is most likely less complete than the Maine registry because submission of monitoring data is not legally mandatory. The Massachusetts registry also seems to be more of a work in progress. Some of the data are mis-entered; it seems that the data entry still needs to be completed and reviewed. There are approximately the same number of acres under easement listed in the separate database and the MassGIS conserved lands layer suggesting that almost all available data for Massachusetts has been entered into the GIS layer. The New Hampshire GIS layer was updated in 2012, and state conservation practitioners describe it as comprehensive enough for basic planning purposes.

Connecticut, Rhode Island, and Vermont are positioned at the other end of the data accuracy spectrum. There is very little conservation land data to speak of for Connecticut; conserved lands data has been gathered sequentially over the last 12 years and is not differentiated by type (easement versus fee-purchased). Information that does exist on easement acquisition supported by State or federal government agencies or programs is not readily accessible. For example, the number of acres acquired under conservation easement as part of the Forest Legacy Program is buried in the middle of a 285-page report published in 2010, "Connecticut's Forest Resource Assessment and Strategy." Rhode Island Geographic Information System conserved lands layers were last updated in 2011 but sorting through the information in these multiple layers is also extremely confusing because of how they overlap with each other. The Vermont Center for Geographic Information conserved lands data layer has not been fully updated since 2004. Connecticut, Rhode Island, and Vermont put little priority on maintaining up-to-date conservation easement and conserved lands information.

The National Conservation Easement Database (NCED) provides estimates for acres under conservation easements and number of conservation easement tracts in each state. The NCED severely underestimates the number of easement tracts and acres under easement for Maine, the state with the by far the most complete data set for conservation easements. It estimates that there are about 1.3 million acres under easement in Maine, as compared to the 2.2 million acres listed in the Conservation Easement Registry and 1.6 million acres listed in the Maine Office of GIS conserved lands layer. On the other hand, finds high estimates for number of acres for the other states (Table 2). This may suggest

that state-level data for New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut are actually more inaccurate than it might initially appear, or than state conservation bodies describe it as being.

Table 2. Acres under conservation easement and number of conservation easement tracts by state and data source.

State	Acres (State data)	Acres (NCED data)	Number of easement tracts (State data)	Number of easement tracts (NCED data)
ME	2,042,126	1,356,397	2,106	836
NH	457,556	592,542	3,909	3,499
VT	360,630	575,538	3,343	4,475
MA	178,085	220,082	6,568	6,161
CT	Unknown	116,144	Unknown	2,414
RI	31,509	74,595	3,509	1,766

Examining differences in the breakdown of conservation easements by holder type may provide some indication of where data are missing. It would seem logical that the percentage of acres held by private entities would be lower for State estimates, with land trust data missing from the records. This is the case for Massachusetts, but for New Hampshire, Vermont, and Rhode Island, the privately held acres as percentages of the totals are actually higher, while State-held acres as percentages of the state totals are lower. This (oddly) could suggest that data for easements held by State conservation entities are missing from centralized state data sources.

Table 3. Percent of total acres under conservation easement by holder type, state, and source.

State	Private (State)	Private (NCED)	State (State)	State (NCED)	Federal (State)	Federal (NCED)	Municipal (State)	Municipal (NCED)
ME	81%	65%	9%	31%	<1%	2%	<1%	<1%
NH	39%	29%	44%	53%	5%	9%	12%	9%
VT	89%	82%	10%	15%	<1%	2%	<1%	<1%
MA	41%	75%	41%	5%	<1%	1%	16%	10%
CT	NA	55%	NA	29%	NA	4%	NA	<1%
RI	16%	10%	60%	73%	16%	9%	5%	3%

In sum, examination of state-level data and NCED data indicate that both of these data sources are inaccurate. Data are not only missing for land trusts but also for State conservation entities. This fact is significant given implications for perpetuity, transparency, and accountability. It seems likely that compiling a relatively up-to-date national conservation easement database will be an infeasible undertaking until state governments compile more complete data sets and a system is established to rapidly and regularly solicit these data.

Predominant Holder Type

State and private entities lead in number of acres held under conservation easement across the New England states. Private entities are the largest easement holders in Maine (holding 81% of acres, according to state data), Vermont (holding 89% of acres according to state data; 82% according to NCED data), and Connecticut (holding 55% of acres, according to NCED data). State data indicate that State and private entities are roughly equal in easement holdings for Massachusetts (41% each), while NCED data indicate that private entities take the lead (75%). Both data sources suggest that State entities are the predominant easement holders in New Hampshire and Rhode Island. Given the flaws in the available data sets, these statistics should be interpreted as suggestive rather than in any way definitive. They indicate that in some cases, the increased use of easements as a conservation tool has been driven by private entities, while in others the State has also been a major player in this regard. This finding is interesting in that the rise of conservation easements has been in part attributed to the concurrent increase in the number of land trusts (Campopiano 2006). The implication is that examination and reform of the ways that state governments manage conservation easements is important; the focus should not fall exclusively on land trusts and other private conservation entities.

Secondary Holders

Entities become secondary holder for easements both because of their roles in financing acquisition or stewardship of the easements and also to try to ensure easement perpetuity. Vermont stands out across the New England states as having a large number

of easement tracts with secondary holders indicated in its conserved lands GIS data layer. In Vermont, entities seem to become secondary holders primarily because they have played some kind of a role in financing the acquisition or stewardship of the easement (Jon Binhammer, pers. comm.; Kris Hammer, pers. comm.). This is particularly true in the case of easements protecting agricultural properties (Jon Binhammer, pers. comm.; Kris Hammer, pers. comm.). Perpetuity does not seem to be a driving reason for the involvement of secondary holders, but it is a factor in some cases. The Trustees of Reservations serves as a secondary holder for some land trusts because the Trustees been approached and asked to do so due to perpetuity concerns (Chris Rodstrom, pers. comm.; Andrew Bentley, pers. comm.).

Distribution and Size of Easements

Maine contains far more expansive conservation easement tracts than the other New England states (averaging 970 acres). New Hampshire and Vermont contain more mid-sized tracts, while Massachusetts and Rhode Island contain many small tracts under easements. The relative distributions and sizes of easements make sense given population density in each state: the easements in Massachusetts and Rhode Island are scattered within and between relatively high population areas (Figure 5). This presents monitoring challenges for these easements, as there are a greater number of people in the areas surrounding the easements to encroach on them. Although there are no GIS data for conservation easements in Connecticut, any conservation easement tracts within this state would also fall among high population densities.

GIS analysis of the available data indicates that conservation easements are significantly clumped in Maine, New Hampshire, Vermont, Massachusetts, and Rhode Island (with no data for Connecticut). To examine clumping, I generated centroids of the conservation easement polygons in each of the states with easement GIS data (Maine, New Hampshire, Vermont, Rhode Island, Connecticut). I then ran Monte Carlo simulations for each of the states. In each case, I found the average nearest neighbor distance in meters for the centroids of the actual polygons and the average nearest neighbor values for the centroids generated by a random process run 1,999 times. For all five of the states, the actual average nearest neighbor value was lower than all of the

average nearest neighbor values from the random process. Figure 6 shows histograms of the random average nearest neighbor values. The blue line in each histogram represents the average nearest neighbor value for the centroids of the actual conservation easement polygons. Table 4 gives the average nearest neighbor values for the actual centroids in each state. The conservation easement centroids are depicted in Figure 7.

This clumping trend is likely to continue considering that many land trusts and government entities have identified the location of properties relative to other conserved lands as a criteria in selecting land to place under easement. For example, Jon Binhammer (pers. comm. 2013), Protection Director for The Nature Conservancy Vermont, said that his organization seeks to transition to landscape-scale conservation. The ecological benefits of the easement clumping identified here are ambiguous. In theory, clumping could enhance the networking of conserved lands and create habitat corridors. If most of the clumping is occurring with very small easements in suburban areas, however, the ecological payoff may not be very high. Additional research could be conducted on the ecological impacts of easement clumping and also to isolate any additional factors that may be leading to clumping. Additional research could take into account the roles of water bodies or other features that might influence clumping.

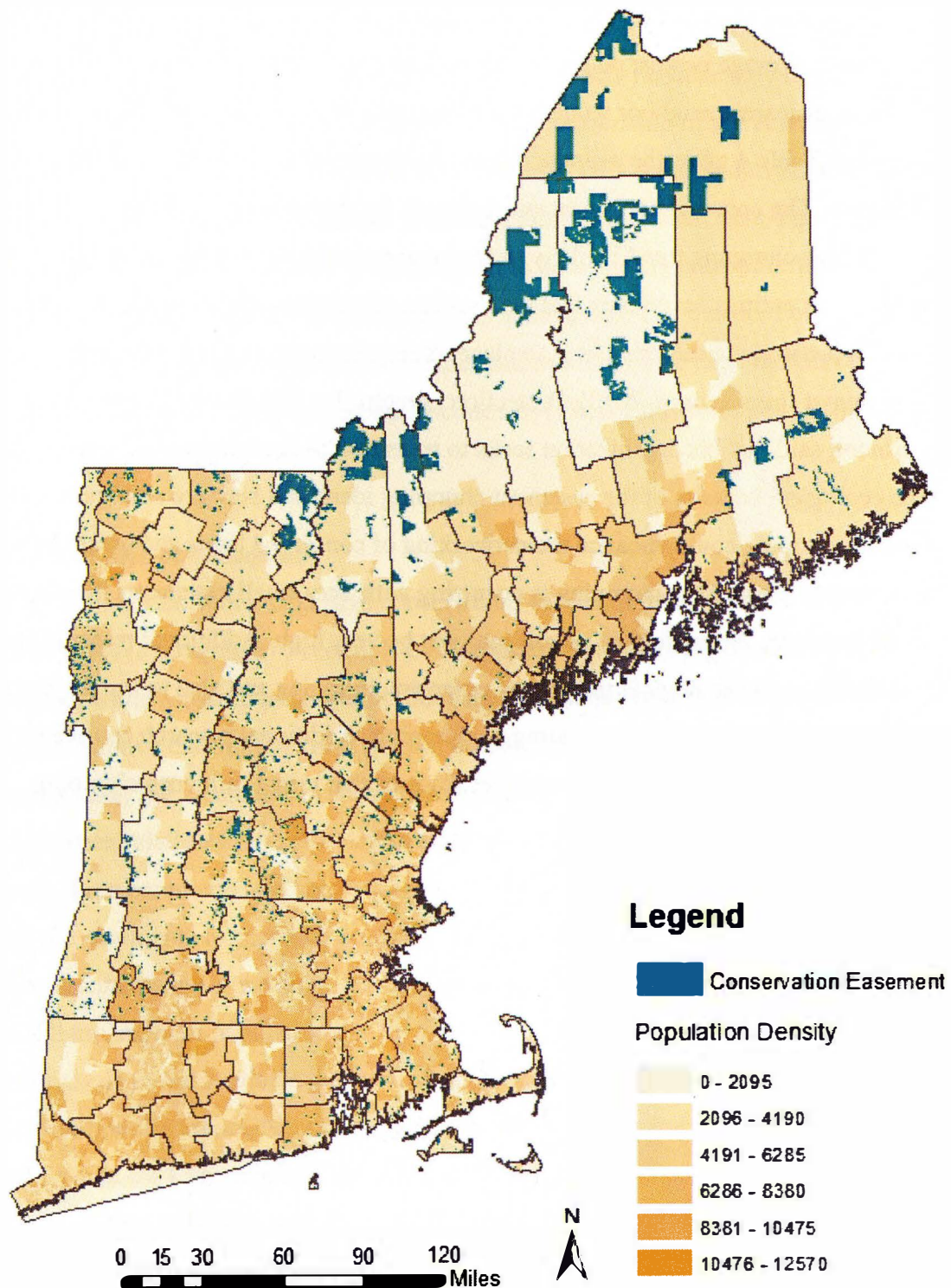


Figure 5. Conservation easements and population density across New England (Vermont Center for Geographic Information 2009, Connecticut DEEP 2012a, NH Granit 2012, RIGIS, 2012, Maine Office of GIS 2013, MassGIS, 2013).

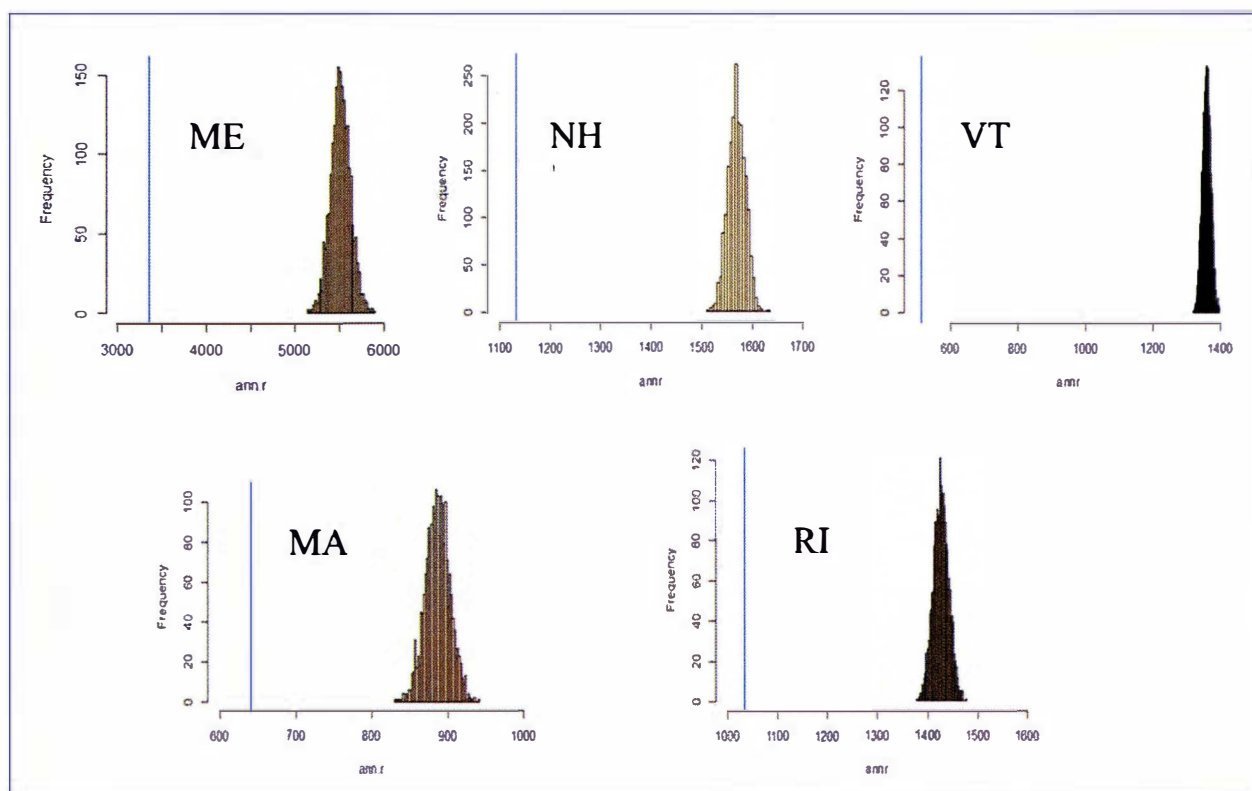


Figure 6. Histograms of average nearest neighbor values for randomly generated centroids in each of the New England states, with average nearest neighbor values for the actual centroids indicated by the blue lines. Top row (left to right): Maine, New Hampshire, Vermont; Bottom row (left to right): Massachusetts, Rhode Island. (Vermont Center for Geographic Information 2009, Connecticut DEEP 2012a, NH Granit 2012, RIGIS, 2012, Maine Office of GIS 2013, MassGIS, 2013)

Table 4. Average nearest neighbor values by state. (Vermont Center for Geographic Information 2009, Connecticut DEEP 2012a, NH Granit 2012, RIGIS, 2012, Maine Office of GIS 2013, MassGIS, 2013)

State	Average nearest neighbor (meters)
ME	3,353
NH	1,133
VT	513
MA	1034
RI	640
CT	No data

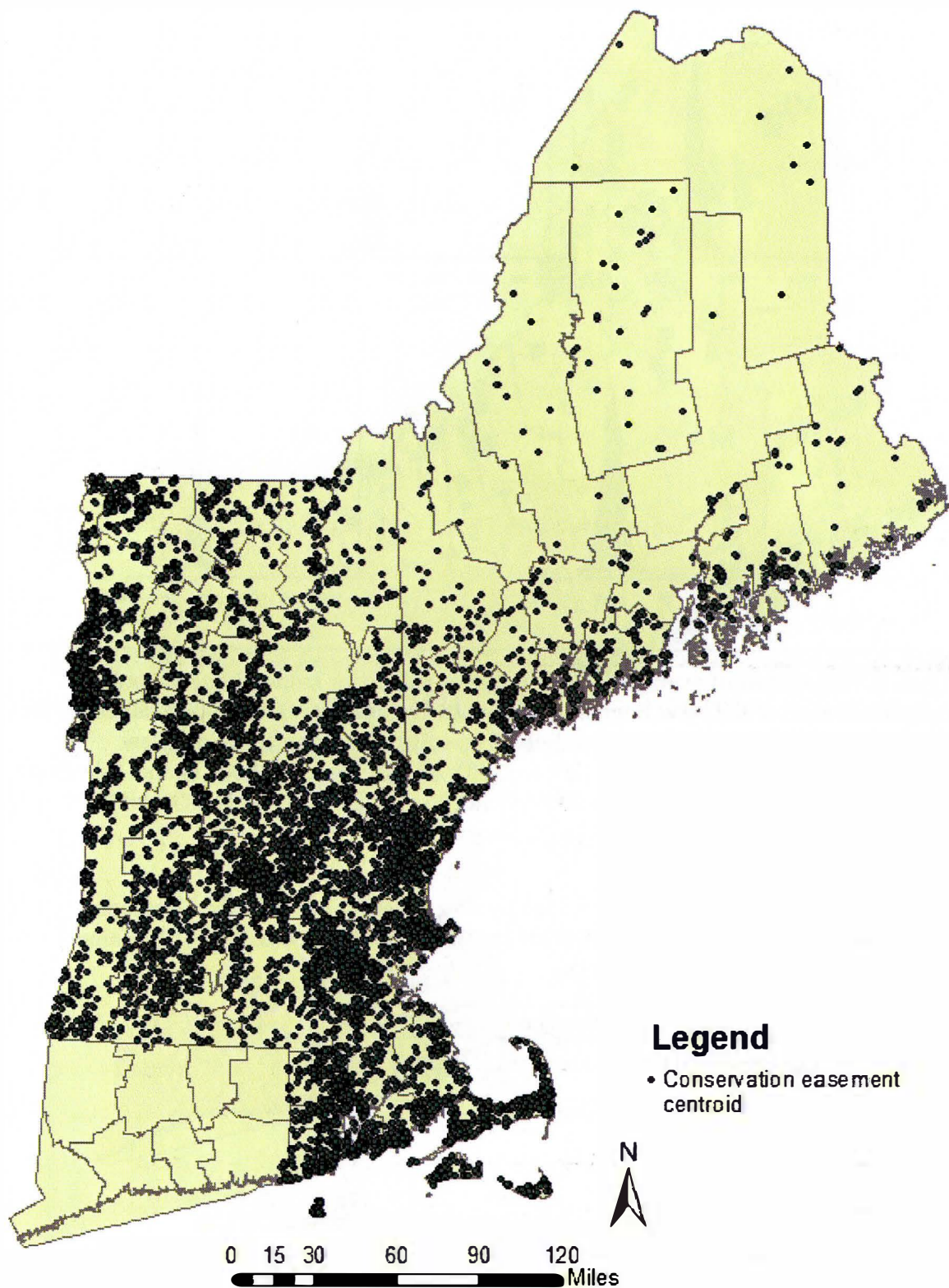


Figure 7. Centroids of conservation easements across the New England states (Vermont Center for Geographic Information 2009, Connecticut DEEP 2012a, NH Granit 2012, RIGIS, 2012, Maine Office of GIS 2013, MassGIS, 2013).

Funding Mechanisms

The states utilize an array of funding mechanisms in supporting the acquisition and stewardship of conservation easements and incentivizing the donation of easements. Funding sources include: federal funding sources such as Forest Legacy Program and Farm Bill money, state bonds, funding channeled through state acquisition and stewardship programs, and property tax deductions. Budgetary strain for conservation activities has been noted at the state level in a number of cases: withholding of funding from Land for Maine's Future Bonds, the reallocation of \$10 million dollars from New Hampshire's Land and Community Heritage Investment Program, decreased funding provided under the Massachusetts Community Preservation Act, and decreased funding for Rhode Island's State Land Conservation and Acquisition Program stand out. Increased recognition of the need to improve stewardship practices presents an additional financial burden that will have to be addressed in the coming years.

In many of the states, larger land trusts provide technical assistance to smaller land trusts. The Maine Coast Heritage Trust serves this function in Maine, the Society for the Protection of New Hampshire Forests serves this function in New Hampshire, and the Vermont Land Trust serves this function in Vermont. Coalitions of land trusts also help to coordinate activities and funding: the Maine Land Trust Network (organized by the Maine Coast Heritage Trust), the Massachusetts Land Trust Coalition, the Connecticut Land Trust Council, the Rhode Island Land and Water Partnership, and the Rhode Island Land Trust Council all work to support land trust activities within their respective states. The Connecticut Land Trust—a coalition of land trusts, conservation and advocacy organizations, municipal commissions, garden clubs, and individuals—works with a nation land trust network, the Land Trust Alliance, to administer the Connecticut Land Trust Fund. Larger land trusts and land trust coalitions provide informational resources that smaller land trusts might not otherwise have the time or money to compile.

Many of the large conservation projects highlighted as case studies have required complex and collaborative funding arrangements. In some cases, land trusts have temporarily purchased properties in order to buy time for other entities to acquire the needed money. For example, in the case of the Connecticut Lakes Headwater Easement, Trust for Public Lands initially bought the land from International Paper in 2001 to allow

the State more time for public hearings and fundraising (TPL 2003). The Paul C. Jones Working Forest in Massachusetts is an example of a conservation easement that was acquired using many funding sources including \$5 million from the Forest Legacy Program, \$3 million from the State, and \$839,600 from the Open Space Institute (Lederman 2012). This case study highlights the important role played by land trusts as solicitors of funding and facilitators of conservation agreements: Kestrel Land Trust of Amherst and Franklin Land Trust of Shelburne Falls led community negotiations and helped secure federal and foundation funding for the project.

Stewardship

There is no public, centralized data source for stewardship activities, and this thesis does not attempt to comprehensively review stewardship studies. In considering general stewardship policies, however, a couple of points come to light. First, it appears that there has been an increased focus on stewardship activities over the past decade. The emergence of initiatives to provide information on effective easement stewardship is indicative of this. Examples include: the stewardship recommendations produced by the Massachusetts Easement Defense subcommittee (convened by the Massachusetts Land Trust Coalition), the Massachusetts Conservation Stewardship Manual produced by the Massachusetts Audubon Society, stewardship resource compilation by the Rhode Island Land and Water Partnership, and stewardship resources gathered by the Rhode Island Conservation Stewardship Cooperative (CSC). All four of these initiatives were launched in the early to mid- 2000s. By providing information regarding stewardship and monitoring techniques, land trusts and land trust coalitions seek to improve knowledge of stewardship practices and on-the-ground stewardship activities across the broad array of conservation easement holders.

Several interviews conducted for this thesis sheds light on stewardship strategies currently being pursued. For example, Will Abbott, Vice President of Policy and Land Management for the Society of New Hampshire Forests (the Forest Society) strongly emphasized that the Forest Society and New Hampshire land trusts in general are reaching a point where they have acquired the land that they need to acquire and are shifting to focusing on land stewardship. Requiring that an easement stewardship

endowment be established with the acquisition of a given conservation easement was one strategy that practitioners discussed for helping to ensure the perpetuity of conservation easement stewardship. The Trustees of Reservations are currently raising money to create stewardship endowments for older easements that do not have endowments (Chris Rodstrom, pers. comm.; Andrew Bentley, pers. comm.). Another strategy has been to focus on new landowners acquiring land already placed under easement, since these landowners may have incomplete understanding of the easement requirements and may be more likely to commit easement violations (Kris Hammer, pers. comm.).

It is not only land trusts that have increasingly focused on stewardship but government bodies as well. For example, although Connecticut is by no means exemplary as far as conserved lands data is concerned, the state government recognized the need for increased stewardship funding in its 2007 Green Plan (Connecticut Council on Environmental Quality 2013).

A second point of note in relation to conservation easement stewardship is that the state governments vary in terms of the structures of their conserved lands stewardship institutions. New Hampshire and Massachusetts are the only two states in New England with a separate government institution to monitor state-held conserved land, and New Hampshire is the only state with a separate body to specifically monitor state-held easements. The Conservation Land Stewardship (CLS) program in New Hampshire and the Massachusetts Department of Conservation Resources Stewardship Council are both programs that were recently launched, with CLS founded in 1993 and the Stewardship Council meeting for the first time in 2004. It is unclear whether centralizing State stewardship activities is actually a more cost-effective model, but this possibility is worthy of investigation.

Public Access

The status of public access for conservation easements is uncertain. States with available data on public access seem to have a fairly large number of acres under easement with public access. Although the vast majority of acres under conservation easement in New Hampshire have unknown public access status, data from New Hampshire Granite indicates that at least 124,104 acres are open to public access. Data

from MassGIS suggests that at least 85,205 acres under easement are open for public access, constituting 48% of total acres under easement recorded in that data set. For both states, numbers of acres open to public access indicated by the state databases exceed number of acres indicated by the National Conservation Easement Database, which records high percentages of “unknown” access.

It is notable that the data for New Hampshire and Massachusetts suggest that conservation easements that allow for public access tend to be larger than easements that do not allow for public access. This may be because many expansive tracts of land have historically allowed for de facto public access, for recreation and other purposes. Even in states other than New Hampshire and Massachusetts, there are many cases in which public access has been an important component of gaining public support for approval of large conservation projects. According to Kris Hammer, Conservation Stewardship Coordinator for the Vermont Housing and Conservation Board (Kris Hammer, pers. comm.), the Champion Lands deal in Vermont would probably have been confronted with opposition if it had not allowed for public access.

There are also funding and acquisition structures that require public access for the easements that they support. These include the Vermont Housing and Conservation Board and the Connecticut Open Space and Watershed Land Acquisition Grant program.

Amendment and Termination

There seems to be an increasing focus on creating statewide frameworks for guiding the amendment and termination of conservation easements. Maine’s framework under the 2007 Act to Amend the Conservation Easement Laws was the most comprehensive process across the New England at the time it was crafted, with the landowner required to pay any increase in property value to an entity specified by the court. Much of the wording from this framework has been copied in the Rhode Island framework. The Massachusetts statute outlines a multi-party approval process including a public hearing and approval by various government bodies. Vermont legislation is under consideration and would, among other measures, would establish an Easement Amendment Panel to review amendments. There is no statute for procedures to amend or

terminate conservation easements in Connecticut or New Hampshire, although New Hampshire has developed administrative rules.

It is still too early to determine the effectiveness of conservation easement amendment and termination frameworks, but the existence of these frameworks will most likely be important in determining the efficacy of easements as a conservation tool. The increasing turnover of lands from the owners who placed their properties under easement to new owner may lead to increasing incidence of landowners wishing to amend or terminate their easements. According to Andrew Bentley and Chris Rodstrom (pers. comm.) of The Trustees of Reservations, land trusts amend or terminate conservation easements "at their own peril," as this subjects them to scrutiny, including scrutiny by the IRS. Standardizing procedures for amendment and termination may allow for more sound conservation practices and relieve conservation entities from public and legal criticism.

RECOMMENDATIONS

Based on my findings, I have identified a number of recommendations and research questions to consider for conservation easement policies. Although much has been written about conservation easements, broader discussion of which subject areas should be focused on moving forward has been lacking. This section seeks to provide direction in this regard.

Data Availability

Improve data availability, with Maine as a model. Overall, the maintenance of conservation easement and conserved lands data sets does not seem to be a priority for any of the six New England states, and data maintenance should be improved upon. Maine has been an innovator in mandating submission of data to its Conservation Easement Registry, and this requirement should be implemented in other states as well. New Hampshire is an example of a state where NGOs have taken the initiative to periodically help update the state's conserved land GIS layer (Tracey Boisvert, pers. comm.). Most recently, the Nature Conservancy updated New Hampshire Granite a year to a year and a half ago (Tracey Boisvert, pers. comm.). Given scarce resources and strained budgets in some states, land trusts may have to spearhead data compilation for

this goal to actually be accomplished. Some land trusts, such as the Vermont Land Trust, employ sophisticated GIS systems to keep track of their conserved lands (Gil Livingston, pers. comm.), or, in the case of the Society for the Protection of New Hampshire Forests, of other conserved lands across the states as well (Will Abbott, pers. comm.). Such efforts could be more extensively coordinated within and across states and also between private conservation entities and state governments. Once more comprehensive state conservation easement databases have been compiled, this information should be periodically submitted to the National Conservation Easement Database so that national trends can be tracked.

Predominant Holder Types

Focus analysis of conservation easement management practices on both private and state entities. Efforts to evaluate easement management efficacy and to improve easement stewardship practices should focus on both State and private entities. Although land trusts have played an important role in driving the increased use of easements as a conservation tool, state entities have also been important in this regard.

Secondary Holders

Gather information on the status of secondary holders for conservation easements and encourage the inclusion of secondary holders for new easements and easements that do not have secondary holders. The existence of secondary holders can help ensure the perpetuity of easements in the case that the primary holder is dissolved, and secondary holders have been discussed in these terms. Although Pidot (2011) criticizes the Maine 2007 Act to Amend the Conservation Easement Laws for not requiring a secondary holder, there is probably a need to consider the balance between the inconveniences caused by the need to get holders to agree on easement terms and benefits this would add in helping to ensure perpetuity. To the extent that inconvenience costs are not a major impediment, it would probably be beneficial for the State or large land trusts to act as secondary holders, not only in the cases of easements protecting agricultural lands but also for forestry and nature lands easements.

Distribution and Size of Easements

Encourage the coordination of conservation activities and conduct further research to characterize easement. Updating conserved lands databases could assist efforts for strategic easement acquisition planning. Forums for coordinating conservation activities, provided to some degree by land trust coalitions, should also be improved to encourage further collaboration between private and state conservation entities. In the future, the ecological and social implications of easement distribution and clumping should be further researched. Analysis by Lilieholm et al. (2010) suggests that conserved lands in Maine are still too small and isolated to counterbalance the negative effects of habitat fragmentation, with a high percentage of ecologically valuable lands falling outside of conserved areas. This thesis does not attempt to characterize the ecological dynamics of easement clumping and does not address the question of whether conservation easements in more populated areas are more likely to be located in higher income areas as opposed to lower income areas. Since conserved land has aesthetic social value, this question has social justice implications.

Funding Mechanisms

Given funding restraints, conservation entities will likely need to continue to seek creative and collaborative funding arrangements moving forward. Vermont provides an unusual example where conservation and affordable housing interests were paired in creating the Vermont Housing and Conservation Board. Increasing development threatened both open space and affordable housing, and advocating for protection of both helped funding for conservation land gain political salience. While this particular type of arrangement may not make sense for other states, conservation entities should consider new types of partnerships and new directions from which to approach conservation. Larger land trusts and land trust coalitions will need to continue to provide leadership and support, particularly moving into a period of increased focus on funding for stewardship.

Stewardship

Promote continued focus on easement stewardship and conduct additional research on: the needs of small land trusts, the integration of easements with town-scale

land use planning, and the efficacy of different types of stewardship bodies for state-held easements. It is encouraging that the land trust community is increasingly focusing on conservation easement stewardship. It is also promising that a number of prominent land trusts focus on landowner turnover, targeting landowners who have newly acquired properties already under easement in disseminating information and building relationships. The extent to which small land trusts are engaging new landowners and the extent to which they rely on larger land trusts for informational and technical support is unclear and would be worthy of further research. It may be that more formalized assistance to smaller land trusts would not only benefit the stewardship of their lands but also enhance efforts to keep track of existing easements. Ways in which the establishment and stewardship of easements can be integrated with town-scale land use planning and zoning have been little examined and are also worthy of further research.

As far as state stewardship of easements is concerned, New Hampshire and Massachusetts stand out as having separate bodies for monitoring State easements. It would be worth analyzing whether these bodies have actually allowed for more efficient use of state conservation funding. If so, the other New England states should consider whether establishing separate monitoring bodies would be a feasible and effective option for improving the stewardship of their conserved lands.

Public Access

Conservation entities should continue to push for public access to easements. Overall, conservation entities should continue to push for public access to conservation easements. In cases where public access is not required (under the particular funding mechanism for the easement or otherwise), conservation entities should seek to establish rapport with the landowners in order to better negotiate some kind of a framework for allowed access. Public access is important because lands under easement serve social and cultural purposes as well as ecological ones. Furthermore, public opinion of conservation easements and conserved land in general is probably more likely to be positive if public access is allowed. Exceptions for areas that are extremely ecologically sensitive should be determined on a case-by-case basis.

Amendment and Termination

Further research will be needed moving forward to evaluate the efficacy of variations in conservation easement amendment and termination frameworks. The efficacy of recent and emerging frameworks for the amendment and termination of conservation easements will need to be examined as time passes and these frameworks are put to the test. The ecological and social benefits of amendments and terminations of amendments that do occur will need to be considered, as well as the extent to which the frameworks clarify legal uncertainties. For example, any increases in legal expenses related to easement amendment and termination will need to be evaluated. Identifying components of statutes that are or are not effective in maintaining ecological values and minimizing legal costs will allow for the revision of statutes. In the meantime, New Hampshire and Connecticut should develop legislation of their own to outline amendment and termination procedures so that they will at least have a foundation.

CONCLUSION

Past studies have focused on potential problems related to the increased use of easement as a conservation tool, and specifically on easement stewardship practices. Possibly the most important finding of this research, however, is that the quality of data on conservation easements, and conserved lands more generally, is extremely poor. Moving forward, conservation entities should seek to improve the quality of conservation easement data for reasons related to perpetuity, accountability, transparency, and land use planning. This data collection effort and budgetary constraints for conservation activities will require continued and enhanced collaboration between conservation entities, particularly private entities. There does seem to be an increasing focus on stewardship and amendment and termination procedures across New England. Important research directions moving forward include: the ecological and social implications of conservation easement clumping; the cost-effectiveness of having a separate, overarching government stewardship body for monitoring state-held easements; and, the efficacy of recently implemented easement amendment and termination procedures.

PERSONAL COMMUNICATIONS

Will Abbott, Vice President, Policy & Land Management, The Society for the Protection of New Hampshire Forests

Tad Ames, President, The Berkshire Natural Resources Council

Andrew Bentley, CR Specialist, The Trustees of Reservations

Jon Binhammer, Protection Director, The Nature Conservancy Vermont Chapter

Tracey Boisvert, Program Director, New Hampshire Conservation Land Stewardship Program

Kathy Eikenberg, Chief of Planning, Maine Division of Parks and Public Lands

Monica Erhart, Linkage Coordinator, Staying Connected Initiative

Rupert Friday, Director, Rhode Island Land Trust Council

Kris Hammer, Conservation Stewardship Coordinator, Vermont Housing and Conservation Board

Theresa Kerchner, Executive Director, Kennebec Land Trust

Chris Martin, State Forester, CT DEEP Division of Forestry

Chris Pryor, Conservation Easement Monitoring Coordinator and Forester, New England Forestry Foundation

Chris Rodstrom, CR Program Director, The Trustees of Reservations

Dennis Shaffer, Vice President of Conservation Stewardship, Vermont Land Trust

Peter Stein, Managing Director, Lyme Timber Company

Dorothy Trip Taylor, Executive Director, New Hampshire Land and Community Heritage Investment Program

Ms. R. Collin Therrien, Senior Planner and Administrator, Maine Department of Agriculture, Conservation and Forestry

Wolf Tone, Maine State Director, Trust for Public Lands

Steve Walker, Stewardship Specialist, New Hampshire Conservation Land Stewardship Program

Warren Whitney, Land Trust Manager, Maine Coast Heritage Trust

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