Case study on Land Protection

Harvard Forest, Harvard University

Harvard is a large and complex university, comprising more than 5,457 acres in holdings ranging from the campuses in Cambridge, Boston, and Allston and an old-growth forest in southern New Hampshire to centers as far flung as Dumbarton Oaks in Virginia, the Villa Tatti in Italy, and the David Rockefeller Program in Santiago, Chile. The university embraces 15,250 graduate and professional students, 6,700 undergraduates, 2,400 faculty, more than 13,000 administrative and other staff, and an alumni base exceeding 371,000 in every corner of the globe. More than 20,000 alums reside in New England, but many more elsewhere remain passionate about the region through ownership of second homes, participation in corporate and non-profit boards, and memories of the regional setting for their college, graduate school, or professional studies. There many resources for ALPINE at Harvard.

One major center for Harvard's conservation and land protection activities lies 65 miles west of Cambridge at the Harvard Forest, the university's 4000-acre laboratory and classroom. The Forest is a separate department in the Faculty of Arts and Sciences, has a permanent staff of just over forty, and is an international center for ecological studies funded by the National Science Foundation, including the Long Term Ecological Research (LTER) program and National Ecological Observation Network (NEON). Founded in 1907 as an unusual full-time base for faculty, staff, and students, the Harvard Forest has maintained its original mission of research, education, and demonstration in forested landscapes, with concentrated effort on Massachusetts and New England. But, since the late 1980s the institute's focus on the integration of ecology, history, and conservation has led to significant efforts in land protection that also serve to advance its programs of research, education, and practice. Local land protection efforts seeking to buffer and expand its diverse range of ecosystems have been extended across the region by Harvard Forest staff and students through collaborative efforts with associates at the Highstead Foundation (Redding, Connecticut), and many academic, non-profit, and public partners in the Wildlands and Woodlands initiative (see Foster et al. 2005, 2010, 2017).

Harvard Forest Lands. Since 1990 the land base of the Harvard Forest has expanded 20% through acquisitions and gifts of land. Many of these new lands were acquired with conservation easements in place, and since 2000 the Forest has begun placing easements on its original land holdings. Conservation easements now cover about 40% of the land (up from <5% in 1990) and the institution has developed a target of somewhat more than 80%, with the remainder encompassing academic and other facilities and accommodating flexibility for future expansion. Harvard Forest lands are zoned into a mixture of wildlands (no harvesting or

destructive research) and woodlands, which may be actively managed for diverse objectives including long-term experiments; forest harvesting of timber and cordwood for internal use and occasional sales; grazing and hay production for about 25 beef and dairy cattle; aesthetics and habitat objectives; and public recreation. Most of the land is open to the public for non-motorized uses including hunting.

The Rationale for Land Acquisition. Much of the new land base was acquired through a two-step process involving initial acquisition by a local land trust (Mount Grace Land Conservation Trust (MGLCT) or East Quabbin Land Trust (EQLT)) that placed a conservation easement on the land when it was sold to Harvard. This procedure strategically reduces the cost of the land, helped to familiarize university deans and attorneys with the rationale behind and function of conservation easements, and allowed Harvard University to become a key partner in region-wide conservation initiatives advanced by the land trusts, State of Massachusetts, and the North Quabbin Regional Landscape Partnership. Funding to acquire these lands and easements came from federal (Forest Legacy Program), state (Large Landscape program, Department of Conservation and Recreation—Watersheds (DCR-W)), and town sources, private foundations, individuals (including alumni), and Harvard University. In the most recent transactions (2015-2016) the Forest received 120 acres through donation and established a conservation easement on 750 acres of its oldest, most scenic, and most studied tracts embracing Tom Swamp and Harvard Pond. The funding received from federal sources for that latter land protection effort was used to establish a new endowment to support student research and education.

Land acquisition was a by-product of a larger effort to buffer and connect the four separate tracts of the Forest and was inspired by a local alumnus (John Woolsey) engaging David Foster and advanced through what has become long-term collaborations with local land trusts, state agencies, and land protection experts, especially Keith Ross. Working with these various partners, staff at the Forest reached out to all abutters to encourage them to place conservation easements on their lands. Over time and with funding from federal Forest Legacy grants and state sources, many of these lands (>2000 acres) were protected. A few landowners sought to sell their land, or threatened to develop it. In situations where these parcels represented strategic value for research and education, they were acquired by the Forest. As a consequence, we have added woodlands, swamps, a farm, three houses, a barn, numerous outbuildings, and a nine-hole golf course to our holdings. The Petersham Country Club, launched in 1922 by the Woolsey family< Richard Fisher (the first director of the Harvard Forest) and his wife Georgina, has been turned back into the pastures from which it arose. The old golf course is now the centerpiece of the Harvard Farm, which supports research in conservation grazing as part of the Forest's program in Sustainable Working Landscapes.

Petersham and much of the New England landscape supports ancient woods roads, dirt laneways established in the 18th century that remain official town roads. Despite their benign and often abandoned appearance these roads provide access to distant private lands and thereby represent a threat of future development of rural landscapes. In Petersham, a town-approved effort to inventory and then selectively discontinue these roadways was initiated in the 1970s by Harvard Forest Assistant Director Ernie Gould. After decades of work and

consideration two roads that transect the Harvard Forest have been discontinued and converted to Town Footpaths that provide foot access but eliminate the threat of development.

These local efforts in land protection and a long institutional history of regional land use planning has encouraged Harvard Forest staff to initiate major programs for research, education, and advocacy in conservation and policy.

Harvard Forest Programs Researching and Advancing Land Protection and Conservation. The Program on Conservation Innovation, directed by Jim Levitt in association with his related efforts at the Lincoln Institute of Land Policy, has been instrumental in convening groups to advance the development and application of conservation financing and policy for land protection in New England, nationally, and internationally. Kathy Fallon Lambert serves as the director for the six-member consortium that comprises the Science and Policy Exchange (SPE), which is based at the Forest, and has major thrusts in energy, water, and land. SPE and the Harvard Forest LTER program are advancing a major research effort – *Future Scenarios of the New England Landscape* – that has assessed historical trends in land protection, development, and management (e.g., forest harvesting, agriculture). This project is working with stakeholders across New England to develop plausible scenarios for the future that are then modeled by a group led by Jonathan Thompson in a spatially explicit fashion and assessed in terms of their consequences for many ecosystem services. The Scenarios project connects with policymakers and other stakeholders regionally to encourage science-based planning and land protection efforts advance the Wildlands and Woodlands initiative.

Professors David Kittredge from the University of Massachusetts and Brian Donahue at Brandeis University became Associates of the Harvard Forest in the 1990s and now coordinate programs that focus on private landowners and the study of sustainable working landscapes comprised of forests and farms. Both efforts engage a range of studies, collaborators, outreach efforts, and student internships. For two decades Kittredge and his UMass collaborator Paul Catanzaro have annually led the Keystone program, a four-day course to eduate local conservation leaders in Massachusetts concerning land management, conservation, and land protection. The Harvard Forest Summer Program in Ecology supports 30 student internships for eleven weeks working on all aspects of ecology, conservation, and related studies.

Research by undergraduates, faculty, and senior staff at the Harvard Forest has been instrumental in advancing major conservation initiatives. In 1997, the senior thesis by Alisa Golodetz (Golodetz and Foster 1997) motivated the formation of the North Quabbin Regional Landscape Partnership, an extraordinarily successful Regional Conservation Partnership (RCP) that became a central model for advancing land protection in the Wildlands and Woodlands report in 2005. Through the work of Bill Labich at the Highstead Foundation and conservationists across New England, in 2016 there are now more than 40 RCPs covering more than 65% of New England. The 1999 undergraduate thesis by Mary Berlik developed the concept of the *Illusion of Preservation* that has been widely applied to forests, farms and other landscape in New England and nationally, and has broadened the widespread appeal for protecting and valuing these landscapes.

Regional Land Protection. Harvard Forest has played a role in numerous regional land protection efforts, largely in collaboration with land trusts, state agencies, and RCPs. The Forest's role is multi-faceted: undertaking science that documents the historical changes and importance of forests to the region; conducting GIS analyses that generate maps of land protection needs, plans, outcomes, and consequence; helping partner groups undertake GIS analyses for their regions; hosting meetings and training workshops for many regional partners; actively contributing to grant-writing and other fundraising activities; and contributing its own land protection activities to the larger effort. Major efforts include the Tully Initiative (200x-200y; >7,000 acres; state funding), the Quabbin to Wachusett project (Q2W; 3275 acres; federal funding), and the Quabbin to Cardigan effort coordinated by the Society for the Protection of New Hampshire Forests.

New England-wide Land Protection. Since initiating the Wildlands and Woodlands initiative with numerous academic collaborators, researchers at the Forest have helped to grow and advance this regional vision for land protection by forming a strong collaboration with Highstead Foundation and a growing group of organizational and agency partners, including the New England Forestry Foundation, Mount Grace Land Conservation Trust, and others. Active collaborations between staff at the Forest and Highstead have helped to advance fundamental research on the drivers, pace, and consequences of land management and conservation, the development and effectiveness of regional conservation efforts, and the policy and financing of regional land protection. These efforts have increased collaborations with Harvard's Kennedy School of Government, Law School, Graduate School of Design, School of Public Health, and Center for the Environment.

ALPINE. The Harvard Forest was instrumental in the formation of Academics for Land Protection in New England and is committed to its growth and success. At Harvard, we seek to engage our students, colleagues, administration, and alumni in discussions of the importance of this effort and its centrality to our mission as an academic institution with a deep history in New England. Through these efforts we hope to motivate many of them in supporting our diverse activities and advancing others across the region.

Lessons Learned

- Deans, university attorneys, other administrators, boards and other decision-makers determining the fate of university lands generally have little experience with land protection and conservation easements. Finding pathways that enable them to gain that experience—such as acquiring land that is covered by an easement or identifying board members or administrators with personal experience with easements – can be a key step in reducing university concerns with permanent protection. The fact that land conservation and a focus on New England may attract a new cadre or level of alumni engagement is another factor that can aid these efforts. As we develop more case studies of land protection by colleges and universities these examples should help other schools

recognize the many ways that conservation can strengthen an institution's educational and research mission.

- Expect the process to take years or decades and possibly require a change in school leadership or economy to allow easements to appear attractive to school administrations. Thus, preparation is essential, including developing a strategy and rationale, preparing background and legal materials including land surveys and clean titles, and forging strong relationships with local land trusts or relevant state agencies in advance. With solid preparation, the case can be pressed over time and can be moved forward when the opportunity arises.

- Develop a knowledgeable advisor, such as an alumnus or acquaintance with deep conservation experience. The Harvard Forest has benefitted from alumni for land protection expertise, local real estate information, donations of land and funds, and introductions to other allies. We also retain an extraordinarily knowledgeable professional conservationist (Keith Ross) as a consultant who regularly assists in our land purchases and easements and as a source of real estate, legal, and conservation insights.

- It is important to develop a strong understanding of your local town and its governing boards; the latter can be a roadblock or a key ally in your land protection and management efforts. Expect these relationships to change over time. Our town has undergone periods when the select board has denied easements and others when it has partnered with us in land acquisition and protection projects.

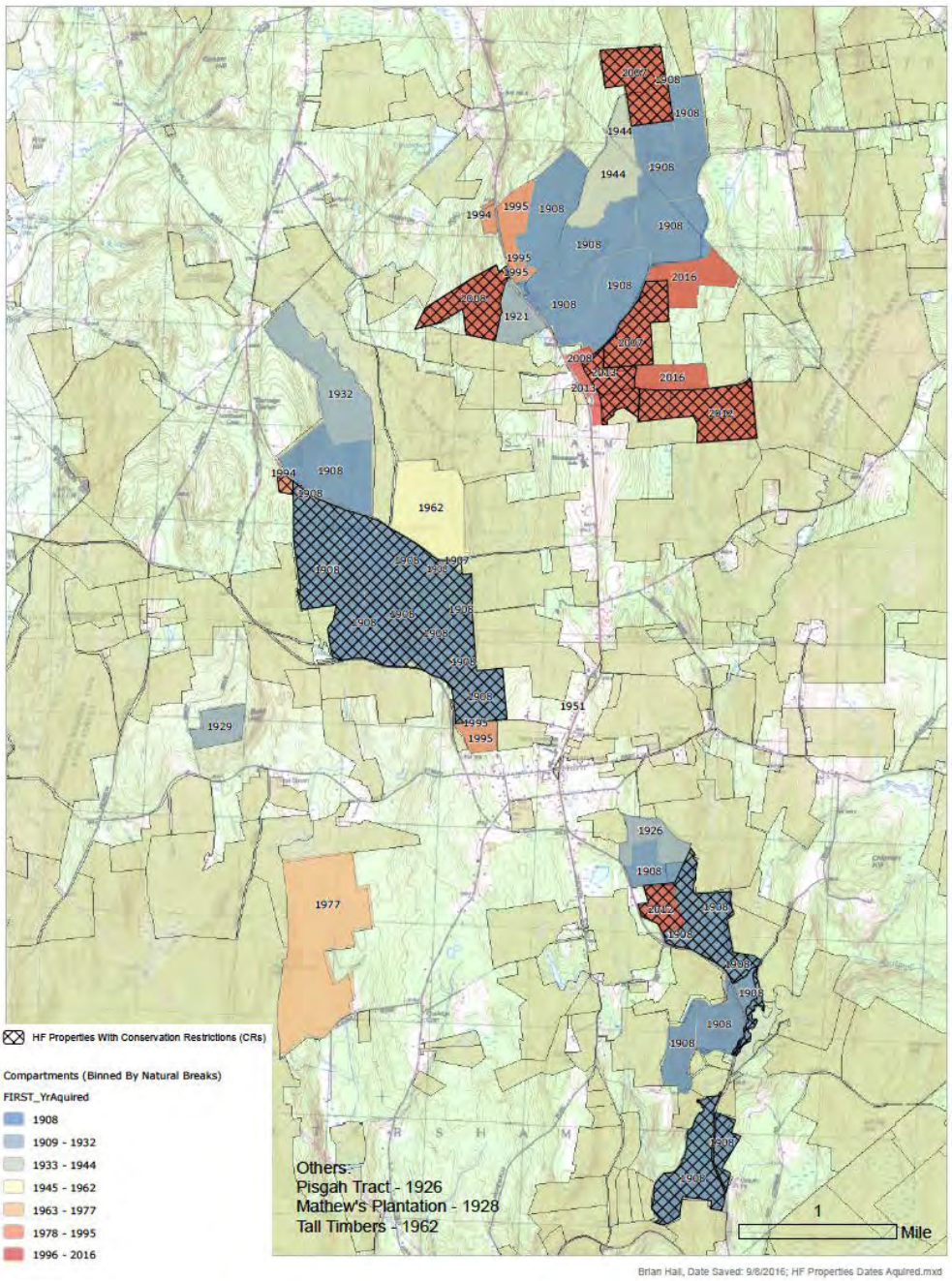
- Use the informational and professional resources of your institution. We have developed a strong relationship with university attorneys and assistant deans and have used the Harvard Law School clinic to examine opportunities such as the potential to sell or utilize carbon credits from our forests.

- Make land protection and other conservation activities part of your research and educational mission and features of your department that distinguish you from the rest of the institution and generate awareness and interest among the public, alumni, and administration. Land protection as a part of your identity can be a powerful asset.

- Easements vary greatly and are strongly determined by the organizations involved and the sources of funding (e.g., different federal or state agencies, foundations, individuals). Therefore, it is critical to develop the right partners, a compatible holder (and future monitor) of your easement, and easement language that is appropriate for your mission and activities.

- The process of undertaking the "due diligence" (i.e., the background legal and survey work) required to place an easement on college land may turn up surprises. Title may be uncertain, boundary lines may differ from what has been traditionally understood, there

may be existing legal or donor constraints on the use of the land that were unrecognized, and new environmental and other regulatory constraints on your activity may have developed over the years. Conservation planning involves a considerable amount of research and knowledge-building concerning your property that a responsible landowner should undertake under any circumstances.



Major tracts of the Harvard Forest showing acquisition dates and protection status

Relevant Literature

- Berlik*, M. M., Kittredge, D. B., Foster, D. R. 2002. **The illusion of preservation: a global environmental argument for the local production of natural resources**. Journal of Biogeography 29: 1557-1568.

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