



**A Stewardship Primer,
with Philanthropic Considerations**

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Front and back covers: The Cedar Branch site in Jackson Township (Ocean County) NJ, where Trust for Public Land is conserving 300 acres that include headwater tributaries to the Toms River.

During the past decade, environmental nonprofits concerned with land conservation have begun experiencing a shift in emphasis from the race to acquire remaining open space to investing in ongoing stewardship of conserved land. Thus, it is timely for philanthropic foundations to consider how best to respond and support evolving land trusts as their stewardship activities grow. In this white paper, I hope to accomplish three objectives. **First**, readers will become acquainted with stewardship generally: what it means, why it's important, and how it's done. **Second**, narrowing the focus, the leading stewardship challenges facing New Jersey's nonprofit environmental sector will be described, and favored solutions discussed. **Third**, in the final section, several possible philanthropic approaches will be suggested.



“STEWARDSHIP” DEFINED

“Stewardship” is a broad term that goes beyond “management” (traditionally associated with farming and forestry operations) to encompass an *environmental ethic*: the land trust’s ongoing responsibility—in perpetuity—to supervise, enhance, maintain, and defend its properties.

WHY STEWARD CONSERVED LAND?

Experience has shown that the work and resources invested in acquiring land may be wasted if the property is not managed to maintain its conservation values. Absent strong stewardship, sites can become degraded to a point where the land trust’s original conservation goals are no longer met. Responding to this reality, the national *Standards and Practices* promulgated by the Land Trust Alliance include two over-arching Standards respecting stewardship of lands owned in fee and conservation easements, respectively: “The land trust has a program of responsible stewardship for the land it holds in fee for conservation purposes” (Standard 12) and “The land trust has a program of responsible stewardship for its easements” (Standard 11). In order for any land trust to become accredited by the Land Trust Accreditation Commission, it must demonstrate the capacity to fulfill these requirements. (Relevant excerpts from the Standards and Practices are set forth at length in Appendix A.)

STEWARDSHIP FUNDAMENTALS: BEST PRACTICES¹

Ideally, even before a property is acquired, the land trust’s project planning should encompass stewardship concerns, namely: identification of the property’s conservation values; identification of potential threats that could significantly impair those values; and a financial assessment of future

stewardship costs. *Conservation values* include preserving and enhancing water quality, biological diversity (plant and animal), public access for passive recreation (e.g., hiking, canoeing), environmental education, and the like. *Conservation threats* may be either natural (e.g., overgrazing by deer or other herbivores, fire, plant diseases, invasion of exotic species that outcompete and threaten native species, etc.) or human misuses (e.g., trespass, encroachment, trampling of plants and soil compaction by off-road vehicles, etc.).

A top priority following acquisition is development of a written *management plan*, based on the characteristics of the property and the conservation goals. For example, a plan to manage wooded uplands will be different from a plan to manage wetlands, which will be different from managing agricultural lands, and so on. A large property with varied terrain calls for a multi-layered approach, weaving together the requirements of differing ecosystems within the tract. At a minimum, a management plan should: describe the resources/conditions at the site (an inventory); identify the land trust’s conservation goals for the property; identify any threats (whether natural or human); and present an action plan to implement stewardship. In addition, consistent with widely accepted principles of adaptive management, the plan should include an ongoing monitoring program to assess the impact of stewardship activities, thus enabling the land trust to make necessary adjustments over time.

Some properties require very *active management*, that is, intensive intervention through restoration or rehabilitation activities. For example, rehabilitating a degraded landscape may be aimed at reestablishing healthy, productive plant and animal communities, or restoring natural hydrology that had been disrupted by development or farming. Such projects require a significant initial investment. Other properties, acquired in good condition, require only *passive management*

1. The content concerning Stewardship Fundamentals is drawn from educational workshops offered by the Land Trust Alliance and two textbooks from its Standards and Practices curriculum: *Caring for Land Trust Properties* by Hugh Brown and Andrew Pitz; and *Managing Conservation Easements in Perpetuity* by Leslie Ratley-Beach. These resources are highly recommended.

to preserve existing conditions. At a minimum, such sites should be monitored annually,² that is, inspected visually (especially along the boundaries) for any damaging human activities such as trespass, encroachment, removal of trees, or littering. This can be done by trained staff or volunteers, and the land trust can then ramp up its efforts if some harm is detected. Ideally, a land trust should also complete a *baseline biological inventory* shortly after acquisition (typically requiring professional services), so as to conduct more scientific monitoring over time and adapt the management plan as needed.

Recordkeeping and administration are critical elements for long-term stewardship because land trusts must maintain information in an organized, legally defensible condition. Every land trust should adopt policies—and implement conforming practices—that identify what documents are to be maintained, how they are to be stored and used, and who is responsible for creating and retaining records. A land trust must also maintain financial records for each property, and budget for both start-up and long-term stewardship expenses. Examples of start-up capital costs include: building construction or demolition; fencing; adding trails/boardwalks, informational signage, and parking lots for public access. Ongoing annual costs include: property taxes;³ insurance; staff time plus other professional services; annual or more frequent monitoring; materials and equipment; and maintenance of facilities.

STEWARDSHIP FUNDAMENTALS: CONSERVATION EASEMENTS

Conservation easements are legal agreements between a landowner and a land trust (or governmental agency) typically restricting development and commercial/industrial uses; they are usually perpetual, binding all future owners. There are three broad categories of additional stewardship activities for land trusts that hold such restrictive easements: enhanced recordkeeping; amendments; and enforcement. Each involves additional effort and expense.

First, records must be kept so that in 50 or 500 years people managing easements will have the information they need to make informed decisions. The best way to track all essential information—especially for land trusts with a sizable portfolio of conservation easements—is to establish and maintain a database. It should contain: changes in the underlying land ownership and current contact information for all owners; easement amendments; requests for interpretation and/or approvals for the exercise of reserved rights; violations and resolutions; and monitoring assignments and reports.

Second, because legal minds cannot predict all the circumstances that may arise in the distant future, an

amendment to the easement may occasionally be sought, typically by a successor owner of the underlying fee title. Responses can range from the most restrictive (“just say no”) to the least restrictive (amendments at will in the parties’ discretion). Thus, it is important that the land trust adopt a written policy ensuring that amendment requests are addressed consistently. Notably, New Jersey is one of just four states where the conservation easement enabling statute requires the consent of a public authority (in New Jersey, the Commissioner of Environmental Protection, following a public hearing) before a land trust may modify or release a conservation easement (the NJ Conservation Restriction and Historic Preservation Restriction Act, adopted 1979, at N.J.S.A. 13:8B-1).

Third, easement enforcement involves both violation resolution (that is, discovering and resolving violations identified through an effective monitoring program) and easement defense (meaning the land trust responds to a legal challenge brought by a landowner, neighbor, or another third party). Here too, the land trust should have a written policy respecting enforcement to assure that all owners are treated fairly and consistently. Over time, the risk of violations increases as successors become more remote from the original owner who participated in creating the easement. Land trusts need to budget for skilled staff to handle the labor-intensive work of establishing strong relations with each successor owner. Ideally, land trust representatives will visit every parcel every year and meet with the landowner to assure a good, mutual understanding of the easement’s restrictions. If a disagreement cannot be resolved voluntarily, the land trust is faced with potentially devastating litigation costs. Fortunately, the national Land Trust Alliance has responded to this challenge by developing and offering conservation defense insurance.

STEWARDSHIP FUNDAMENTALS: FINANCIAL REQUIREMENTS

From the preceding sections, it should be apparent that the ongoing costs of stewardship can be considerable: writing a management plan; undertaking initial restoration/rehabilitation activities; conducting a baseline biological inventory; making and maintaining capital improvements; implementing an adaptive management plan, with annual (or more frequent) monitoring; paying property taxes; securing insurance (including litigation defense); purchasing materials and equipment; retaining skilled staff and other professional services; maintaining adequate records; and so on.

We saw at the outset that two *Standards* require a land trust to have a program of responsible stewardship for its land held in fee and its conservation easements. In addition, there are

2. This is the standard for accreditation, and is also generally considered a “best practice” even for land trusts not seeking accreditation.

3. Properties held in fee by land trusts are not automatically exempted from local property taxes, but most secure tax exemption through New Jersey’s Green Acres tax exemption program. Where a conservation easement is in place, local property taxes still apply to the underlying fee title, but typically at the much-reduced farmland assessment rate.

three *Practices* respecting adequate stewardship funding. To win accreditation, land trusts are required to have a secure and lasting source of dedicated or operating funds to cover stewardship costs over the long term, including funds for liability insurance, maintenance, improvements, monitoring, enforcement, and other costs. Notably, the *Practices* contemplate the likelihood that a land trust will not have sufficient funds in place at the outset and, in the alternative, accept a board-adopted policy committing the organization to raising the necessary funds. (See *Practices 6G, 11A and 12A* in Appendix A). This reflects the reality that, to date, most land trusts have been scrambling to secure capital funds for acquisition without setting aside resources for stewardship. To pursue accreditation, land trusts must now turn serious attention to raising sufficient funds to support responsible long-term stewardship of their conservation lands and easements.

LEADING STEWARDSHIP ISSUES IN NEW JERSEY: METHODOLOGY

To identify the leading stewardship issues that are currently challenging New Jersey's land trusts, I conducted a series of site visits and interviews in spring 2010 with highly-regarded stewardship directors at several environmental organizations: Tim Morris at New Jersey Conservation Foundation; Troy Ettel at New Jersey Audubon Society; Eric Olsen and Tom Wells at The Nature Conservancy; Jon Wagar at the Schiff Natural Lands Trust (also of Conservation Resources, Inc.); and Michael Van Clef, PhD, of Ecological Solutions, LLC). These are leading players whose names and forward-thinking activities are cited whenever stewardship questions are raised. Many of them participate in an informal "stewardship roundtable" that meets from time to time to exchange information and best practices.

4. Special thanks to Troy Ettel, stewardship director at the New Jersey Audubon Society, who provided much of the information, science, and analysis that form the basis of this section through our interview, subsequent e-mail exchanges, and the March 2005 Policy White Paper that he authored for NJAS titled "Forest Health and Ecological Integrity: Stressors and Solutions."

5. Remarks by Emil DeVito, PhD, manager of science and stewardship at New Jersey Conservation Foundation, made during the September 20, 2006 Stewardship Conference held at the Johnson Education Center. The complete proceedings of the conference have been published as the "Garden State Preservation Trust Stewardship Report."

These organizations speak with a surprisingly unified voice when it comes to the most urgent stewardship issues. Apart from the inevitable financial challenges, the two leading ecological challenges are overabundant white-tailed deer and invasive species, treated in turn below.

ECOLOGICAL CHALLENGES: OVERABUNDANT WHITE-TAILED DEER

The overabundance of white-tailed deer throughout much of New Jersey has devastating impacts on the understory of forests and even the regeneration of the forest itself.⁴ Their preferred forage includes wild flowers and herbs that grow on the forest floor, plus the buds and young shoots of woody shrubs and saplings. This causes severe problems for forest regeneration and structure. The long-term impact is the creation of "deer savannas" where the canopy of mature trees completely lacks an understory, allowing hikers extensive visibility for long distances—an outcome that may be aesthetically pleasing but is biologically destitute. As an example, this accurately describes Jockey Hollow National Park in Morris County, where federal practice dating back to the park's inception permits no activities to control or reduce the deer population. Dr. Emil DeVito of New Jersey Conservation Foundation has characterized the park as "ecological ground zero, a biological wasteland."⁵

Scientific studies have not yet established the effects on water quality of the weakened forest ecosystem that results from deer overbrowse. But stewardship managers tend to believe that healthy forests—with substantial leafy matter at all levels and complex root systems—make stronger contributions to water resources through: enabling water to penetrate and recharge the aquifer below (a key drinking water source); and purifying



A series of 14 frog ponds and vernal pools were created to provide habitat for wildlife and to attenuate water flowing off land that had been cleared for development and is now in the process of being restored by The Land Conservancy of New Jersey at its South Branch Preserve (Mt. Olive, NJ).

water along the way by filtration. There may be more runoff to surface waters absent a healthy understory, creating erosion and sedimentation problems. In the long term, if forests are lost as mature trees die out with no younger growth to take their place, the ecological effects on water quality, biodiversity, and even climate change could be profound.

While white-tailed deer are clearly native to New Jersey, their current level of abundance is not. Before European settlement, deer densities are estimated to have been 5-10 deer per square mile. The pre-settlement landscape included natural predators that are absent today: mountain lion, grey wolf, and bobcat. The increasing suburbanization of New Jersey provides a highly fragmented environment, perfectly suited to an “edge species” like deer, which prefer to browse along the forest periphery. With freedom from predation, ample sources of winter food in suburban plantings, high birth rates, and increased longevity, New Jersey has experienced exponential deer population growth. Deer densities in some regions of New Jersey have been recorded as exceeding 250 per square mile.⁶ The optimal level is thought to be about 20 deer per square mile, but for a forest already devastated by overbrowse, the level would have to drop below 10 to enable recovery.

There are just three categories of intervention: fencing to exclude deer; reproductive control; and permanent removal. Fenced “exclosures” are a limited tool due to the extremely high cost of construction, plus ongoing monitoring and maintenance. Despite the cost, several land trusts have invested in exclosures, typically as part of a site-specific effort to enable native plant species to rebuild their presence. Exclosures, which range in size from less than an acre to 300 acres,⁷ do not offer a landscape-scale or regional solution. Similarly, reproductive control (sterilization, contraception) is of limited utility because, as yet, there is no efficient, cost-effective means of delivering large-scale population control to deer.

Permanent removal of individual deer involves either trapping/relocation or lethal control. Trapping and relocation was

once widely practiced, but is now largely prohibited by state governments to reduce the spread of chronic wasting disease among deer populations.⁸ Currently, the best hope to reduce New Jersey’s overpopulation of white-tailed deer comes down to more effective partnerships with the hunting community. However, just 9.8% of New Jersey’s 1.2 million acres of preserved open space is owned/managed by nonprofit land trusts. Deer move freely—without regard to public or private boundary lines—across open space that is principally held by the state (62%), followed by the counties, municipalities, and the federal government (each about 9%).⁹ Governmental approaches to hunting, ranging from municipal up through federal, reflect a patchwork of varying policies and practices. (For additional information on hunting policies, see Appendix B.) Thus, even the best deer management practices implemented in recent years by land trusts or governmental stewards to maximize safe, effective hunting are “islands of excellence”¹⁰ amidst a sea of overabundant white-tailed deer. Reducing deer populations to levels where forests can thrive and regenerate will require education and policy changes at each governmental level to encourage safe, productive hunting. Importantly, land trusts can have a large impact on policy by taking the lead in demonstration projects that develop best practices for deer management.¹¹

ECOLOGICAL CHALLENGES: INVASIVE SPECIES

As native habitats are denuded of native vegetation by white-tailed deer, opportunities are opened for invasive, exotic plants to fill the gap. The most problematic non-native plant species in New Jersey are unpalatable to deer and therefore spread rapidly and relatively unchecked. This interplay of overabundant deer and invasive plant species are the “one-two punch” that threatens the health of New Jersey’s open space. The dominance of certain invasive species reduces plant diversity, making some conserved land more like a mono-culture, which in turn supports fewer insect, bird,

6. This was recorded by Duke Farms in central New Jersey, before investing heavily in its deer management program. Deer overabundance is not unique to New Jersey; it affects the northeast and middle-Atlantic states generally, extending as far north as southern Vermont and New Hampshire, and as far south as Virginia and even North Carolina.

7. At its 569-acre Apschawa Preserve in the Highlands region (West Milford Township, Passaic County), New Jersey Conservation Foundation is fencing a deer exclosure that encompasses 300 acres, second only to Duke Gardens in size. Having carefully selected an economical and low-impact type of fencing, NJCF is spending \$80,000 to have 15,500 feet of fencing installed. NJCF is also planting native trees and shrubs on the protected acreage, bringing the total restoration project cost to \$125,000. Similarly, on the Rezamir tract at the South Branch of the Raritan River, now known as the South Branch Preserve, The Land Conservancy of New Jersey has fenced 100 acres and planted native vegetation to re-forest roads and building sites that had been clear-cut by a developer.

8. Chronic wasting disease is a transmissible spongiform encephalopathy (TSE) that afflicts white-tailed deer, as well as mule deer, elk and moose. The disease is progressive and always fatal. It is caused by infectious agents known as “prions,” the same kind of agent responsible for the better-known bovine spongiform encephalopathy (or “mad cow disease”). Prions are abnormal forms of a protein most commonly found in the central nervous system.

9. 2009 data on acreage amounts, by owner category, provided by Steven Jandoli, supervising program specialist with the NJDEP, and author of New Jersey’s 2008-2012 Statewide Comprehensive Outdoor Recreation Plan, known as SCORP. The full table of data is set forth as Appendix E.

10. One such “island of excellence” is the Schiff Nature Preserve in Mendham, NJ (Morris County). Michael Catania serves as board president and Jonathan Wagar is director of stewardship. On this 423-acre preserve, Mr. Wagar has developed and implemented an aggressive and innovative deer management program that works closely with selected hunters to promote large harvests. Indeed, Mr. Wagar led an instructional workshop on his successful deer management approach at the 2010 NJCF Land Rally. Both Mr. Wagar and Mr. Catania see Schiff as a demonstration site and share “lessons learned” with the environmental community.

11. For research, resources and sample deer management plans, see www.DeerInBalance.org.

and animal species.¹² New Jersey's Statewide Comprehensive Outdoor Recreation Plan, published by the Department of Environmental Protection in 2007, described the threat as follows:

The control of invasive species, particularly plants, is a major stewardship issue in New Jersey. More than one thousand non-indigenous plant species have become established in New Jersey. Fortunately not all of them have harmful or invasive qualities. But some of the species are very harmful and crowd out native plant species, altering the structure of natural plant communities, disrupting ecosystem functions and degrading recreational opportunities.¹³

Many invasives are so widespread and well-established that eradication is impossible. Instead, land trusts carefully prioritize key segments of their properties for small-scale restoration projects (often with a scientific research component) that involve removing invasive species and restoring the native plant mix. But land trusts acknowledge that, faced with the onslaught of invasive species, these projects feel like "spitting in the ocean."

Faced with this discouraging reality, some land trusts are adopting an "early detection/rapid response" approach developed by Dr. Michael Van Clef, a founder of the New Jersey Invasive Species Strike Team (NJISST).¹⁴ This organization partners with landowners statewide to reduce the spread of invasive plants on public and private lands. Dr. Van Clef points to a whole host of new invasive plants currently migrating from suburban horticultural plantings into the forest, including some that grow to heights between 12 and 20 feet, overcoming the native ecosystem. He has published a Target Plant List (see Appendix C) that highlights the "top 20" most destructive emerging species. New Jersey Conservation Foundation is among those who have embraced his approach; it directs targeted stewardship resources to early detection and eradication of the new threats, before they take hold.

FINANCIAL CHALLENGES

Every land trust feels seriously challenged to find unrestricted resources to support the work of its stewardship staff. Only The Nature Conservancy had the foresight to long insist on raising stewardship endowment funds equivalent to 20% of the fair market value of any land acquisition. It uses a rolling, three-year average to establish the endowment's value (currently about \$10.3 million in New Jersey) and applies 5% to its stewardship operations, representing 21% of its overall



The Schiff Nature Preserve works closely with the New Jersey Forest Fire Service to conduct prescribed burns annually, for both hazard reduction and ecological purposes.
Photo courtesy of the Schiff Natural Lands Trust

New Jersey operating budget. Even with this relative bounty, the funds are inadequate to cover the full cost of TNC's recently expanded stewardship staff of eight. Notably, the staffing increase reflects a shift in emphasis toward managing "whole landscapes," extending even beyond the borders of TNC's own preserves to partner with other regional stakeholders.

The same regional trend was identified by New Jersey Audubon Society, which is widening its horizon to focus on the "larger landscapes" of which its holdings are just a small part. This is driven by its concern with protecting habitats for whole populations of birds. In an effort to assure sufficient funds for expanded stewardship activities, NJAS has adopted two new approaches. First, as a matter of board-adopted policy (and following the TNC model), NJAS will seek to raise an additional 20% for stewardship along with any land acquisition. Its current, modest stewardship endowment generates only \$18,000-\$20,000 annually, far below the cost of six full-time stewardship staff members. Second, NJAS has embraced a

12. In addition to invasive plant species, there are also exotic plant diseases that have attacked individual species—notably the American chestnut and American elm—virtually eliminating them from the landscape. Since 1995, Sudden Oak Death (phytophthora ramorum) has been ravaging California oaks; if it spreads into the wild in the eastern United States, consequences for Eastern oak species could be dire. Eastern hemlocks are dying throughout New Jersey, the result of statewide infestation by an exotic insect, the hemlock woolly adelgid (adelges tsugae). See NJ Audubon Society's March 2005 Policy White Paper titled "Forest Health and Ecological Integrity: Stressors and Solutions" at page 11 on invasive organisms.

13. New Jersey's 2008-2012 Statewide Comprehensive Outdoor Recreation Plan (SCORP), p. 85.

14. See www.njisst.org. Dr. Van Clef is also the author of the New Jersey Strategic Management Plan for Invasive Species, issued by the New Jersey Invasive Species Counsel in August 2009 (and including input from the NJDEP). The Plan states: "[O]ur natural and agricultural resources are being damaged by non-native, invasive species which are transforming our resources in undesirable ways. . . . Confronting this challenge will require newly dedicated resources and strong commitment from all stakeholders. We must work together to prevent new invasions and limit the continued spread of invasive species that are already present. We must also control infestations that currently exist and work to restore ecosystems to their natural condition." (Executive Summary at pages vi-vii).

new, entrepreneurial strategy to link open-space protection with private-sector economic profit, such as sunflower seed production and other specialty products.

Friends of Hopewell Valley Open Space is interesting for its model of “cooperative stewardship at scale.” Being a relatively small landholder, it focuses on the entire region to which its parcels belong. Whether called “whole landscapes” (TNC), “larger landscapes” (NJAS), or “cooperative stewardship at scale” (FoHVOS), these approaches illustrate a trend toward a more holistic approach, not limited by property lines, recognizing that regional threats require regional solutions.¹⁵ Partnering with other stakeholders is labor-intensive, driving up stewardship costs beyond the site-specific activities described above.

In general, land trusts report relative ease securing project-specific stewardship funds from a number of known sources. If a site being acquired is known to require significant restoration or rehabilitation, the land trust can look first to the seller, negotiating a contribution or escrow to cover initial, intensive work. In addition, grant funds for

stewardship projects can be secured from numerous well-established governmental programs and from several private funders. (For a fairly complete list of such sources, see Appendix D.) The South Branch Preserve Restoration Project in the Highlands region is a good example of project-specific funding. There, The Land Conservancy of New Jersey is re-foresting and restoring the natural hydrology on a 135-acre tract at the headwaters of the South Branch of the Raritan River, reversing the damaging effects of initial construction work on a planned suburban subdivision. To fully fund that project, it secured \$177,000 placed in escrow by the seller, plus a grant of \$186,750 from the National Forest Foundation.¹⁶

By contrast, land trusts report the most difficulty securing operating support for the day-to-day work of stewardship staff, apart from intensive (funded) projects. And fundraising to build stewardship endowments is a relatively new venture to most, but one that many land trusts will undertake as they seek accreditation. Given the substantial costs of both site-specific stewardship and evolving, regional approaches—and relatively nascent stewardship endowment funds—operating support for stewardship staff will continue to be a primary need for the foreseeable future.

15. Many in the environmental sector are concerned that governmental entities—whether municipalities, counties or the state—have exercised relatively little stewardship over public lands including, notably, very little supervision of conservation easements. As land trusts look beyond their own boundaries, they may consider whether to offer contractual stewardship services on public lands. This is a far-reaching topic for consideration in the future.

16. Another good example: NJCF has undertaken the largest stewardship project in the northeast United States, restoring 1,100 acres of highly modified agricultural area (for cranberry production) in the Franklin Parker Preserve to a natural wetland. This work has been funded by approximately \$1.3 million from the Wetlands Reserve Program of the Natural Resource Conservation Service (within the US Department of Agriculture).

Student volunteers from Kean University helped plant over 30,000 white cedar seedlings at the Franklin Parker Preserve, where New Jersey Conservation Foundation is restoring a highly modified agricultural area to wetlands.



Photo courtesy of New Jersey Conservation Foundation

PHILANTHROPIC CONSIDERATIONS

Based on all of the foregoing, a compelling case can be made that stewardship merits support from private foundations concerned with conservation. Stewardship is:

- > essential to maintain the conservation values of preserved land;
- > labor-intensive and hence costly;
- > an ongoing responsibility of land trusts, in perpetuity; and
- > a key capacity required to secure accreditation.

Historically, there may have been some resistance to funding stewardship activities due to the perceived difficulties of measuring progress and outcomes. But with the explosion of interest in stewardship during the past 5-10 years, sound metrics are being developed to measure forest health, bio-diversity, regeneration of the understory, degree of deer browse and invasive species, and so on. Notably, the William Penn and National Fish and Wildlife foundations have well-developed systems of metrics that they apply to their environmental grantees.

At least three different funding approaches are available for foundation trustees to consider.

First, we have already seen that ample project-specific support is available from well-established governmental sources and certain other known private sources (listed in Appendix D). Thus, while land trusts certainly require resources for substantial restoration and rehabilitation projects, this is a funding niche that has already been largely filled.

Second, we have seen that land trusts will have to build stewardship endowments to secure accreditation. The Nature Conservancy has long raised stewardship endowment funds equivalent to 20% of the fair market value of any land acquisition, and New Jersey Audubon Society is adopting the same practice. Others will likely follow suit. Many private foundations decline to make endowment grants; more typically, endowments are built up over time by bequests from individual donors. But I would encourage foundation trustees to consider the wisdom of The Nature Conservancy's model, which closely links stewardship endowment support to capital fundraising for land acquisition. I recommend that, on any occasion when foundation trustees consider a capital land acquisition grant to a land trust that is also building a stewardship endowment, they consider the suitability of a related endowment award to the stewardship fund. The amount of such an award could be calculated as a fraction (say, up to 20%) of the capital award. Further, I recommend that the endowment component be a challenge grant—an approach actually sought by land trusts—to assist in attracting hard-to-raise endowments funds. In this way, philanthropic foundations would significantly enhance their commitment to land conservation, assuring the protection of conservation values well into the future.



At the Schiff Nature Preserve (Mendham, NJ), Dr. Michael Van Clef of Ecological Solutions (bending) examines the degree of deer browse in a designated browse plot that is measured annually to assess the degree of pressure from over-abundant deer and the effectiveness of deer management activities.

Photo courtesy of the Schiff Natural Lands Trust

Of course, an incremental award to endowment is not suitable in every case. For example, some land trusts (notably Trust for Public Land) facilitate the acquisition of open space by other—typically governmental—owners, and have no ongoing stewardship responsibilities. The particulars of each transaction merit case-by-case evaluation to assess the appropriateness and likely effectiveness of an endowment award.

As a slight aside, I would recommend that foundation staff adjust their “due diligence” practices accordingly: whenever considering a capital land acquisition grant, staff should base their recommendations not only on the conservation values of the target parcel, but also on an evaluation of the applicant's capacity to steward the property, once acquired, including existing (or planned) financial resources to support stewardship.

Third and finally, so long as the costs of stewardship staffing and activities exceed the revenues generated by stewardship endowments, land trusts will need operating support that is either directed to stewardship, or unrestricted and available for stewardship. Many foundations favor programmatic support; their funding policies do not adequately recognize the importance of sustained, unrestricted operating support. As the economy recovers and foundation assets rebound, I would encourage foundation staff and trustees to consider more generous operating awards to environmental grantees that own and steward land. In this way, the private philanthropic sector will assist land trusts not only in acquiring land, but in stewarding it to the high standards of accreditation, thus assuring healthy, productive open space in perpetuity.

Appendix A

Relevant Excerpts from Land Trust Standards and Practices (revised 2004)

Practice 6G: Funds for Stewardship and Enforcement

The land trust has a secure and lasting source of dedicated or operating funds sufficient to cover the cost of stewarding its land and easements over the long term and enforcing its easements, tracks stewardship and enforcement costs, and periodically evaluates the adequacy of its funds. In the event that full funding for these costs is not secure, the board has adopted a policy committing the organization to raising the necessary funds.

Practice 8F: Documenting Conservation Values

The land trust documents the condition of the important conservation values and public benefit of each property, in a manner appropriate to the individual property and the method of protection.

Practice 8G: Project Planning

All land and easement projects are individually planned so that the property's important conservation values are identified and protected, the project furthers the land trust's mission and goals, and the project reflects the capacity of the organization to meet future stewardship obligations.

Practice 9F: Documentation of Purposes and Responsibilities

The land trust documents the intended purposes of each land and easement transaction, the intended uses of the property and the roles, rights and responsibilities of all parties involved in the acquisition and future management of the land or easement.

Practice 9G: Recordkeeping

Pursuant to its records policy, the land trust keeps originals of old irreplaceable documents essential to the defense of each transaction (such as legal agreements, critical correspondence and appraisals) in one location, and copies in a separate location. Original documents are protected from daily use and are secure from fire, floods and other damage.

Standard 11: Conservation Easement Stewardship: The land trust has a program of responsible stewardship for its easements.

Practice 11A. Funding Easement Stewardship.

The land trust determines the long-term stewardship and enforcement expenses of each easement transaction and secures the dedicated or operating funds to cover current and future expenses. If funds are not secured at or before the completion of the transaction, the land trust has a plan to secure these funds and has a policy committing the funds to this purpose.

Practice 11B. Baseline Documentation Report

For every easement, the land trust has a baseline documentation report (that includes a baseline map) prepared prior to closing and signed by the landowner at closing. The report documents the important conservation values protected by the easement and the relevant conditions of the property as necessary to monitor and enforce the easement. In the event that seasonal conditions prevent the completion of a full baseline documentation report by closing, a schedule for finalizing the full report and an acknowledgement of interim data [that for donations and bargain sales meets Treasury Regulations §1.170A-14(g)(5)(i)] are signed by the landowner at closing.

Practice 11C: Easement Monitoring

The land trust monitors its easement properties regularly, at least annually, in a manner appropriate to the size and restrictions of each property, and keeps documentation (such as reports, updated photographs and maps) of each monitoring activity.

Practice 11D: Landowner Relationships

The land trust maintains regular contact with owners of easement properties. When possible, it provides landowners with information on property management and/or referrals to resource managers. The land trust strives to promptly build a positive working relationship with new owners of easement property and informs them about the easement's existence and restrictions and the land trust's stewardship policies and procedures. The land trust establishes and implements systems to track changes in land ownership.

Practice 11E: Enforcement of Easements

The land trust has a written policy and/or procedure detailing how it will respond to a potential violation of an easement, including the role of all parties involved (such as board members, volunteers, staff and partners) in any enforcement action. The land trust takes necessary and consistent steps to see that violations are resolved and has available, or has a strategy to secure, the financial and legal resources for enforcement and defense.

Practice 11F: Reserved and Permitted Rights and Approvals

The land trust has an established procedure for responding to landowner required notices or requests for approvals in a timely and consistent manner, and has a system to track notices, approvals and the exercise of any significant reserved or permitted rights.

Practice 11G: Contingency Plans/Backups

The land trust has a contingency plan for all of its easements in the event the land trust ceases to exist or can no longer steward and administer them. If a backup grantee is listed in the easement, the land trust secures prior consent of the backup grantee to accept the easement. To ensure that a backup or contingency holder will accept an easement, the land trust has complete and accurate files and stewardship and enforcement funds available for transfer.

Practice 11H: Contingency Plans for Backup Holder

If a land trust regularly consents to being named as a backup or contingency holder, it has a policy or procedure for accepting easements from other land trusts and has a plan for how it will obtain the financial resources and organizational capacity for easements it may receive at a future date.

Practice 11I: Amendments

The land trust recognizes that amendments are not routine, but can serve to strengthen an easement or improve its enforceability. The land trust has a written policy or procedure guiding amendment requests that: includes a prohibition against private inurement and impermissible private benefit; requires compliance with the land trust's conflict of interest policy; requires compliance with any funding requirements; addresses the role of the board; and contains a requirement that all amendments result in either a positive or not less than neutral conservation outcome and are consistent with the organization's mission.

Standard 12: Fee Land Stewardship: The land trust has a program of responsible stewardship for the land it holds in fee for conservation purposes.

Practices 12A: Funding Land Stewardship

The land trust determines the immediate and long-term financial and management implications of each land transaction and secures the dedicated and/or operating funds needed to manage the property, including funds for liability insurance, maintenance, improvements, monitoring, enforcement and other costs. If funds are not secured at or before the completion of the transaction, the land trust has a plan to secure these funds and has a policy committing the funds to this purpose.

Practice 12B: Stewardship Principles

The land trust establishes general principles to guide the stewardship of its fee-owned properties, including determining what uses are and are not appropriate on its properties, the types of improvements it might make and any land management practices it will follow.

Practice 12C: Land Management

The land trust inventories the natural and cultural features of each property prior to developing a management plan that identifies its conservation goals for the property and how it plans to achieve them. Permitted activities are compatible with the conservation goals, stewardship principles and public benefit mission of the organization. Permitted activities occur only when the activity poses no significant threat to the important conservation values, reduces threats or restores ecological processes, and/or advances learning and demonstration opportunities.

Practice 12D: Monitoring Land Trust Properties

The land trust marks its boundaries and regularly monitors its properties for potential management problems (such as trespass, misuse or overuse, vandalism or safety hazards) and takes action to rectify such problems.

Practice 12E: Land Stewardship Administration

The land trust performs administrative duties in a timely and responsible manner. This includes establishing policies and procedures, keeping essential records, filing forms, paying insurance, paying any taxes and/or securing appropriate tax exemptions, budgeting, and maintaining files.

Practice 12F: Community Outreach

The land trust keeps neighbors and community leaders informed about its ownership and management of conservation properties.

Appendix B

Additional Information about Hunting and Policy to Manage Deer Overabundance

Hunting rules in New Jersey are set by the Division of Fish and Wildlife (DFW), which is within the Department of Environmental Protection; it takes direction from the state's Fish and Game Council, which sets hunting policy. While DFW is cognizant of the deer overbrowse issue, it is also concerned with assuring that hunters have reliable access to fairly abundant game and fish. Indeed, DFW's revenue is derived largely from fishing and hunting, and the Fish and Game Council is composed mostly of representatives from the hunting community.

The DFW has divided the state into dozens of zones with differing hunting rules in each, based upon its determination of how many deer should be harvested in each zone. Although the zone rules encourage deer harvesting, they are merely permissive, and more could be done. In September 2010, in the first coordinated action of its kind, more than 40 representatives of diverse stakeholders (nonprofit groups, farmers, foresters, naturalists, gardeners, nurserymen, and sportsmen conservationists) signed a letter to Governor Christie "to offer assistance with the urgent but remediable problem that is degrading forests and farms and reducing their ecological quality and productivity: the severe overpopulation of white-tailed deer."

The largest landholder in New Jersey, by far, is the state itself, but the state's land managers are in a different unit of government from the DFW. On many state-owned properties—other than those managed by DFW—deer management relies on the permissive zone hunting rules, with no active deer management program that goes beyond zone rules to work with hunters and encourage harvests. Counties vary widely in their practices. Essex and Union counties are at the leading edge with aggressive deer management programs that partner closely with hunters. Municipalities also vary in their approaches and face several additional challenges. The relatively small size of municipal open-space holdings presents safety concerns; these can drive costs up, as when a municipality engages paid sharpshooters. In addition, municipalities often encounter local political resistance from the animal rights sector. Surprisingly, federal practice—even within the same federal agency—also varies from one location to the next. While hunting is prohibited in Jockey Hollow National Park, its near-neighbor, the Great Swamp National Wildlife Refuge, is known for doing a great job of managing its deer population.

Land trusts must operate amidst this patchwork of governmental policies and practices, frequently stewarding tracts that abut publicly-owned land. For many years, land trusts saw themselves as protectors of plant and animal life on their sites and typically prohibited hunting. But by the mid-1990s, most began to recognize deer overabundance as a significant threat and reversed policy, developing deer management programs that encourage hunting. The evidence to date suggests that, when the deer population is sufficiently reduced, native plant species can compete effectively and forest regeneration resumes. Another conservation strategy is also desirable: assembling large, non-fragmented tracts or greenways reduces damage because deer are an edge species and skirt around core forest.



Main gate at the 100-acre deer enclosure fenced by The Land Conservancy of New Jersey as part of a restoration project at its South Branch Preserve (Mt. Olive, NJ).

Photo courtesy of The Land Conservancy of New Jersey

Appendix C

New Jersey Invasive Species Strike Team 2011 Target Plant List "Top 20" Priority Species are Highlighted

Scientific Name	Common Name	Current Abundance / Distribution Code	Threat Code
Acer ginnala	Amur maple	Stage 0	Moderate
Acer palmatum	Japanese maple	Stage 2	Moderate
Acer pseudoplatanus	sycamore maple	Stage 0	High
Actinidia arguta	hardy kiwi	Stage 0	Mild
Akebia quinata	chocolate vine	Stage 1	High
Alnus glutinosa	European alder	Stage 0	High
Amorpha fruticosa	desert false indigo	Stage 2	High
Ampelopsis brevipedunculata	porcelainberry	Stage 3	High
Anthriscus sylvestris	wild chervil	Stage 2	Moderate
Aralia elata	Japanese angelica tree	Stage 3	High
Artemisia stelleriana	oldwoman	Stage 0	Moderate
Berberis vulgaris	common barberry	Stage 1	Moderate
Buddleja davidii	orange eye butterflybush	Stage 1	Moderate
Carex kobomugi	Japanese shore sedge	Stage 1	High
Carex macrocephala	big-headed sedge	Stage 1	High
Clematis flammula	fragrant clematis	Stage 0	High
Clematis terniflora	Japanese clematis	Stage 3	High
Conium maculatum	poison hemlock	Stage 1	Moderate
Cornus kousa	Kousa dogwood	Stage 0	Moderate
Cynanchum louiseae	black swallowwort	Stage 1	High
Didymosphenia geminata	rock snot	Stage 0	High
Dioscorea oppositifolia	Chinese yam	Stage 0	Moderate
Dipsacus laciniatus	cutleaf teasel	Stage 1	Moderate
Egeria densa	Brazilian water-weed	Stage 0	High
Eichhornia crassipes	water hyacinth	Stage 0	High
Elaeagnus angustifolia	Russian olive	Stage 0	High
Eleutherococcus sieboldianus	fiveleaf aralia	Stage 0	High
Eragrostis curvula	weeping lovegrass	Stage 1	High
Euonymus europaea	European spindle tree	Stage 1	Moderate
Euonymus fortunei	winter creeper	Stage 2	High
Frangula alnus	glossy buckthorn	Stage 2	High
Glossostigma cleistanthum	mudmat	Stage 0	Moderate
Hedera helix	English ivy	Stage 2	Moderate
Heracleum mantegazzianum	giant hogweed	Stage 0	Moderate
Humulus japonicus	Japanese hop	Stage 3	High
Hydrilla verticillata	hydrilla	Stage 0	High
Hydrocharis morsus-ranae	common frogbit	Stage 0	High
Iris pseudacorus	pale yellow iris	Stage 3	High
Kalopanax septemlobus	castor-aralia	Stage 0	Moderate

Scientific Name	Common Name	Current Abundance / Distribution Code	Threat Code
<i>Lespedeza cuneata</i>	Chinese bushclover	Stage 3	High
<i>Lonicera caprifolium</i>	Italian honeysuckle	Stage 0	Moderate
<i>Lonicera fragrantissima</i>	fragrant honeysuckle	Stage 0	Moderate
<i>Marsilea quadrifolia</i>	European waterclover	Stage 0	High
<i>Miscanthus sinensis</i>	Chinese silvergrass	Stage 2	High
<i>Myriophyllum aquaticum</i>	parrot feather	Stage 0	High
<i>Oplismenus hirtellus</i>	wavy-leaf basket grass	Stage 0	High
<i>Parthenocissus tricuspidata</i>	Boston ivy	Stage 1	High
<i>Perilla frutescens</i>	beefsteakplant	Stage 1	Mild
<i>Phalaris canariensis</i> L.	annual canarygrass	Stage 2	High
<i>Phellodendron amurense</i>	Amur cork-tree	Stage 0	Moderate
<i>Photinia villosa</i>	Oriental photinia	Stage 2	High
<i>Pistia stratiotes</i>	water lettuce	Stage 0	Mild
<i>Polygonum orientale</i>	kiss me over the garden gate	Stage 0	Moderate
<i>Polygonum perfoliatum</i>	mile-a-minute	Stage 3	High
<i>Polygonum sachalinense</i>	giant knotweed	Stage 0	High
<i>Pueraria montana</i>	kudzu	Stage 1	High
<i>Pyrus calleryana</i>	Callery pear	Stage 2	High
<i>Rhamnus cathartica</i>	common buckthorn	Stage 2	High
<i>Rhamnus davurica</i>	Dahurian buckthorn	Stage 0	High
<i>Rhodotypos scandens</i>	jetbead	Stage 2	High
<i>Ribes rubrum</i>	garden red current	Stage 1	Moderate
<i>Robinia hispida</i>	bristly locust	Stage 0	Moderate
<i>Rosa canina</i>	dog rose	Stage 1	Moderate
<i>Rosa rugosa</i>	rugosa rose	Stage 1	High
<i>Rubus discolor</i>	Himalayan blackberry	Stage 0	Moderate
<i>Rubus laciniatus</i>	cutleaf blackberry	Stage 2	Moderate
<i>Styrax japonicus</i>	Japanese snowbell	Stage 0	Moderate
<i>Trapa natans</i>	water chestnut	Stage 2	High
<i>Ulmus parvifolia</i>	Chinese elm	Stage 0	High
<i>Ulmus procera</i>	English elm	Stage 0	High
<i>Ulmus pumila</i>	Siberian elm	Stage 2	High
<i>Viburnum dilatatum</i>	linden viburnum	Stage 3	High
<i>Viburnum lantana</i>	wayfaring tree	Stage 0	High
<i>Viburnum plicatum</i>	doublefile viburnum	Stage 0	High
<i>Viburnum setigerum</i>	tea viburnum	Stage 0	High
<i>Viburnum sieboldii</i>	Siebold's viburnum	Stage 2	High
<i>Wisteria floribunda</i>	Japanese wisteria	Stage 2	High
<i>Wisteria sinensis</i>	Chinese wisteria	Stage 3	High
<i>Zelkova serrata</i>	Japanese zelkova	Stage 0	High

Current Abundance/

Distribution Code

Description

Stage 0	Absent or very rare; < 10 NJISST detections
Stage 1	Rare (may be locally common); 11-100 NJISST detections
Stage 2	Uncommon (may be regionally common or abundant); 101-500 NJISST detections
Stage 3	Common (may be regionally abundant); 501-1000 NJISST detections

Appendix D

Funding Sources for Restoration/Rehabilitation Projects

<u>Source</u>	<u>Administering Organization</u>
Bring Back the Natives	U.S. Fish and Wildlife Service National Fish and Wildlife Foundation Trout Unlimited
CRI Regulatory Contributions and Small Grants	Conservation Resources, Inc.
Emergency Watershed Protection Program	Natural Resources Conservation Service
Environmental Quality Incentive Program	Natural Resources Conservation Service
Grassland Reserve Program	Natural Resources Conservation Service
Healthy Forest Preserve Program	Natural Resources Conservation Service
Local Government Greenhouse Gas Reduction Grant Program	NJDEP Office of Climate and Energy
National Fish and Wildlife Foundation	National Fish and Wildlife Foundation
National Forest Foundation	National Forest Foundation
NJ Forest Stewardship Act	NJ Forest Service – NJ Division of Parks and Forestry
Partners for Fish and Wildlife	U.S. Fish and Wildlife Service
Recreational Trails Program	NJ Department of Environmental Protection
Raritan Piedmont Wildlife Habitat Partnership Stewardship Funds	Conservation Resources, Inc.
Wetlands Reserve Program	Natural Resources Conservation Service
Wildlife Habitat Incentive Program	Natural Resources Conservation Service

Dr. Michael Van Clef of Ecological Solutions (on right) leads a daylong workshop teaching staff and volunteers at the Schiff Nature Preserve (Mendham, NJ) to remove emerging non-native invasive species (here, photinia villosa).



Photo courtesy of the Schiff Natural Lands Trust

Appendix E

SCORP Table 14: New Jersey Preserved Recreation Land and Open Space (in acres)

County	Federal Recreation Open Space Areas	Interstate and Regional Areas	State Parks and Forests*	State Wildlife Management Areas	New Jersey Natural Lands Trust	New Jersey Water Authority	State Subtotal	County Parks	Municipal Parks	Total Public Recreation Open Space	Nonprofit Preserved Open Space	Total Preserved Open Space
Atlantic	20,224		14,570	48,296	5,159		68,025	6,212	3,827	98,288	1,658	99,946
Bergen	0	2,452	3,310	208	10		3,528	8,102	5,557	19,639	841	20,480
Burlington	2,572		139,444	5,215	3,309		147,968	2,612	10,336	163,488	17,108	180,596
Camden	0		14,850	4,702	520		20,072	2,354	3,046	25,472	94	25,566
Cape May	11,148		23,836	31,894	479		56,209	2,596	4,563	74,516	2,672	77,188
Cumberland	0		7,023	68,646	175		75,844	165	2,470	78,479	27,865	106,344
Essex	21		208	0	2		210	5,995	2,338	10,317	297	10,614
Gloucester	0		2	9,184	876		10,062	1,578	4,091	15,731	1,002	16,733
Hudson	45		1,213	519	0		1,732	659	605	3,041	15	3,056
Hunterdon	0		10,050	4,977	1,260	108	16,395	7,663	7,507	31,565	5,646	37,211
Mercer	0		3,984	1,547	231		5,762	8,879	8,953	23,594	7,746	31,340
Middlesex	0		3,760	0	135		3,895	9,091	5,581	19,567	82	19,649
Monmouth	1,733		5,820	8,985	91	1,779	16,675	13,074	13,031	44,513	667	45,180
Morris	9,175		17,666	12,606	552		30,824	14,289	15,728	70,016	8,001	78,017
Ocean	23,693		31,448	72,675	4,235		108,358	9,370	6,829	148,250	27,400	175,650

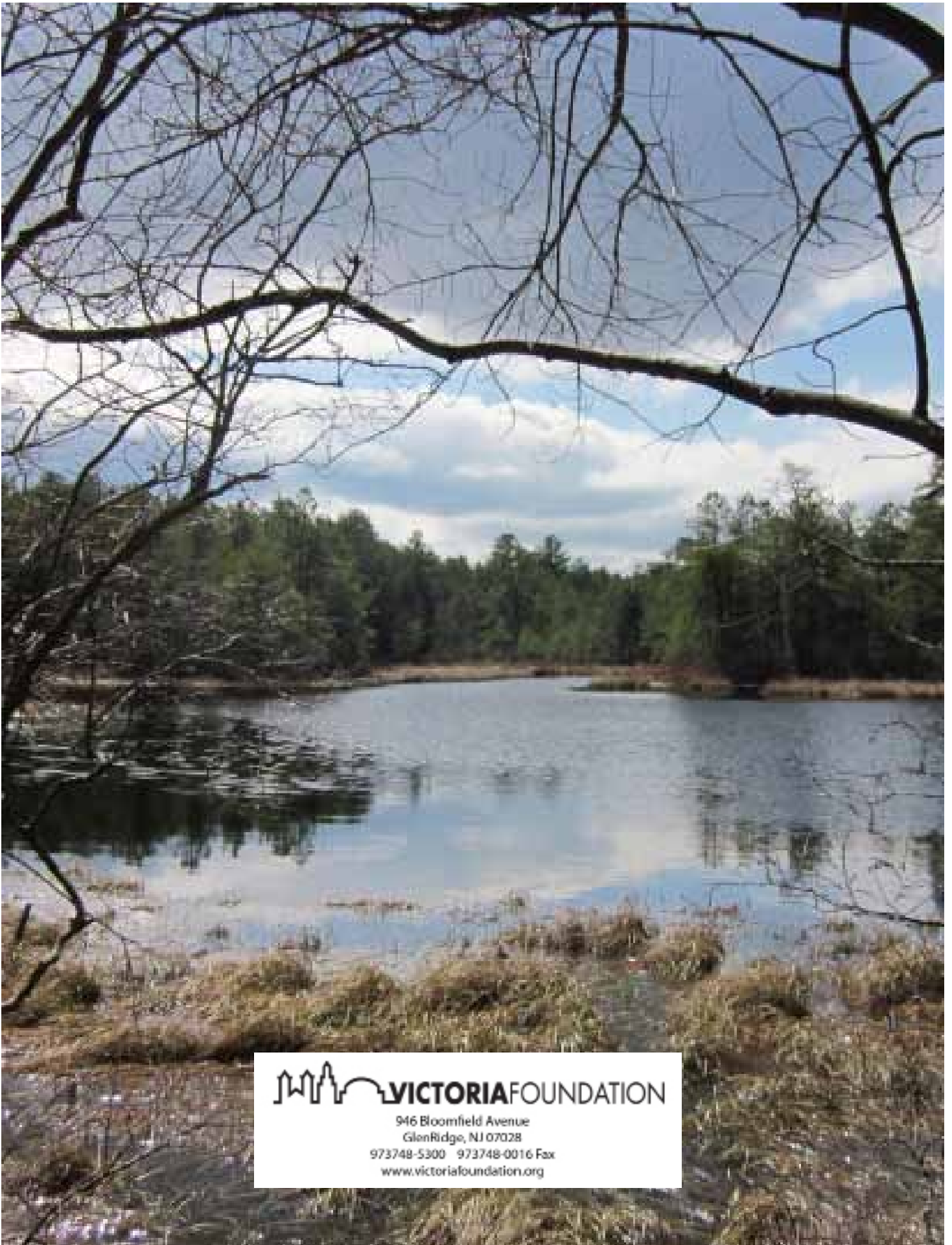
County	Federal Recreation Open Space Areas	Interstate and Regional Areas	State Parks and Forests*	State Wildlife Management Areas	New Jersey Natural Lands Trust	New Jersey Water Authority	State Subtotal	County Parks	Municipal Parks	Total Public Recreation Open Space	Nonprofit Preserved Open Space	Total Preserved Open Space
Passaic	26		46,763	2,320	1,057		50,140	4,068	2,871	61,063	1,929	62,992
Salem	3,745		2,130	17,416	393		19,939	274	1,868	25,826	2,835	28,661
Somerset	188		6,022	423	19	152	6,616	9,744	8,000	24,548	2,287	26,835
Sussex	30,710		72,702	20,125	3,076		95,903	1	5,981	132,595	7,018	139,613
Union	0		1	0	0		1	6,554	1,391	7,946	151	8,097
Warren	9,223		18,194	10,209	1,137		29,540	1,616	3,947	44,326	4,570	48,896
Total Acreage	112,503	2,452	422,996	319,947	22,716	2,039	767,698	114,896	118,520	1,122,780	119,884	1,242,664

* Includes recreation areas, natural areas, marinas, historic sites, reservoir sites and conservation easements. Acreage of State Parks and Wildlife Management Areas as of July 1, 2007. All other acreages as of January 1, 2007.



Earth movers dig up old cranberry bogs to create hummocks and depressions for wetlands restoration in the Franklin Parker Preserve, where New Jersey Conservation Foundation is restoring a highly modified agricultural area to wetlands.

Photo courtesy of New Jersey Conservation Foundation



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