Today’s rapidly expanding market for wood-based bioenergy is creating new opportunities for sustainable forest management. The increasing market value of woody biomass from what until recently has been considered byproducts and waste materials is injecting new capital into the sustainable forestry equation, and enabling forest managers on both public and private lands to address longstanding needs for better forest protection from insects, disease and wildfire, and for overcoming poor forest practices such as “high grading” that degrade forests for a variety of economic, social and ecological values. Although the prices being paid for woody biomass for energy uses still can seldom compete with land prices offered by developers, the positive economic effects of biomass markets are creating new options for many private forest owners—allowing them to decide to continue conserving their land as forest, and managing it sustainably.

Policy goals for renewable energy development

The expanding markets for wood-based bioenergy are part of the larger national thrust toward renewable energy development driven by record oil prices and national security concerns. World oil prices reached a peak of more than $77 per barrel in July 2006, deepening concerns over inflation and other potential impacts on the US economy (Swanson 2006). Although energy prices moderated somewhat during September, even the leading energy experts are unable to agree whether in six months the US will be paying less than $50 per barrel or over $100 (Reed and Coy 2006). This uncertainty has not diminished the current national policy emphasis on maximizing US energy independence, and increasing renewable energy production as a significant component of total US energy production.

A more immediate factor behind the expanding market for wood-based bioenergy production is the recent flurry of state-level legislation that requires energy producers to provide a significant and steadily increasing proportion of their power from renewable energy sources. Thus far, 23 states have enacted “renewable portfolio standards” (RPS) requiring as much as 25 percent of a state’s energy production to come from renewable sources by 2025; the targets and timetables vary from state to state (see Figure 1).

In many regions of the country, economically feasible opportunities for wind and solar power will meet only a small part of these renewable energy goals. Corn-based ethanol has received a great deal of attention and support, in spite of the fact that the process uses more energy than it produces, and probably will not be economically feasible without continued federal and state subsidies (Hammerschlag 2006). Cellulosic ethanol (from agricultural plant waste and woody plants) is widely regarded as having the greatest potential for meeting energy needs (Wyman 1995), particularly in the liquid-fuel transportation sector, but commercially feasible technologies are still under development (Wallace, Ibsen, McAloon and Yee 2004).
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Recognized as a leader in forest conservation thought, policy and action, the Pinchot Institute for Conservation was dedicated in 1963 by President John F. Kennedy at Grey Towers National Historic Landmark (Milford, PA)—home of conservation leader Gifford Pinchot. The Institute is an independent nonprofit organization that works collaboratively with all Americans nationwide—from federal and state policymakers to citizens in rural communities—to strengthen forest conservation by advancing sustainable forest management, developing conservation leaders, and providing science-based solutions to emerging natural resource issues. Further information about the Pinchot Institute’s programs and activities can be found at www.pinchot.org.

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In the near term, wood fiber-based technologies involving direct combustion, and possibly liquid biofuel derivatives from the chemical byproducts of pulp and papermaking processes, have perhaps the greatest potential for increasing renewable energy production (Benjamin 1997).

Opening new doors for sustainable forest management

Commercial energy generation from wood is hardly new to the forest products industry, which already meets more of its own internal energy needs from renewable sources than any other major industry in the US (Nilsson et al. 1996). What is new is the rapidly growing demand for this energy outside the forest sector, and the value that this new demand is creating for woody biomass that until recently was considered a byproduct or waste material of little or no value.

Forest products processing facilities of all sizes have long utilized waste materials such as sawdust, slabs and edgings, which are burned in boilers to co-generate steam and electrical power for their own processes. There was little incentive to generate power that was excess beyond these internal needs. In many cases, additional capital investment in equipment such as transformers is needed to enable facilities to generate a net excess of power into the regional electrical power grid. In most states, there was no legal requirement for utilities to pay for this power.

Wood-fired power plants have been built in places where a local concentration of wood processing facilities could reliably produce wood waste on a scale sufficient to economically operate such a power plant. For example, Shasta Energy operates a 50MW power plant in Anderson, California that was established when there were seven large sawmills in the vicinity (Jolley 2006). With the local decline in timber harvesting in the 1990s, only two mills continued to operate, drastically reducing the supply of waste wood and nearly forcing the shutdown of the power plant. Early experiments with trucking loads of woodchips from thinning operations on nearby forests were short-lived when it became clear that the price the power plant was able to pay for delivered chips was less than the cost of harvesting, loading and trucking them to the plant.

That situation has now begun to turn around. In 2002, the California legislature established an RPS requiring 20 percent of the state’s power to come from renewable sources by 2017 (State Environmental Resource Center 2006). Prices for wood chips are up more than 30 percent from a decade ago, as competition for woody biomass increases. This woody biomass is starting to “pay its way out of the woods,” and helps cover the cost of thinning and hazardous fuels treatments designed to improve the health and productivity of the forests themselves.

Improving forest practices

One of the most persistent and troublesome challenges in
promoting ecologically sound and sustainable forest management practices is that there is little or no market for the smaller diameter, lower quality materials from ecological restoration, silvicultural thinnings, or forest protection activities aimed at reducing the risk of insect or disease infestations or wildfire.

Timber harvesting often focuses only on the largest and most valuable trees, leaving the smallest and least valuable trees to serve as the seed source for regeneration following harvest. This practice, known as “high grading,” significantly degrades the forest for a variety of ecological, economic and social values—wildlife habitat, water quality, recreation, aesthetics, and future wood production to name a few. Although many forest owners fully recognize the effect of high grading, they often feel they have no economic alternative.

Increasingly valuable markets for woody biomass for energy purposes offer the prospect of changing this situation for many forest owners, providing an economic outlet for lower quality material and opening the door to better forest management. The combination of high oil prices and new RPS requirements throughout the Northeast has stimulated the development of a diversity of new materials from thinning and other forest management created new and valuable markets for lower quality woody materials from thinning and other forest management activities. Schools and other public buildings are installing sophisticated wood-pellet furnaces and wood chip boilers to replace or augment traditional oil or natural gas heating (Rizzo 2006). Power plants and manufacturers that co-generate much of their own power are investing in the latest combustion technology for co-firing boilers with a mixture of woody biomass and traditional fuels. Greater reliance by individual households on increasingly efficient wood heating may be the most decentralized and smallest-scale of new wood-energy applications, but cumulatively may be the largest impact (Fahrenthold 2005).

Could the increased demand for wood energy have a deleterious effect on forests in the Northeast? Quite possibly, yes. This was a concern to the citizens of Vermont when, during the energy crisis in the 1970s, the Burlington Electric Power Company proposed building an entirely wood-fired power plant. Would this new power plant become a hungry maw whose appetite for wood would devastate Vermont’s forests? The 50 MW McNeil Generating Station in Burlington began service in 1983 (Irving 2006). According to some of Vermont’s leading conservationists, the 30-year track record of the McNeil Generating Station suggests that it has been a highly positive force for sustainable forestry in the region. Harvesting of an average annual 350,000 tons of wood chips used by the power plant is certified as meeting sustainable forestry standards set by the Vermont Public Service Board, and approved by state wildlife biologists to ensure that critical wildlife habitats are not placed at risk.

Paying for hazardous fuels treatments

Where local circumstances permit, the expanding market for woody biomass for energy production could represent an important breakthrough in efforts to reduce hazardous fuels accumulations in both public and private forests. Because the woody materials to be removed have negligible value, they are often left on site or simply piled and burned. Most forest owners cannot afford such a large out-of-pocket expense with no immediate return, even if it promises greater productivity in the future. In many instances, even the thinning operation itself is prohibitively expensive so it is never done, leaving the situation unaddressed and growing worse over time.

The risks of this approach were demonstrated in 2001 when the Rodeo-Chediski wildfire burned 156,000 acres of Ponderosa pine forest in northern Arizona. It was one of the largest and most expensive wildfires in US history. The USDA Forest Service recognized that there were many more acres of overly-dense pine forest in Arizona likely to share the same fate, forests that were once characterized by 40-60 trees per acre and now average more than 400 trees per acre. The Forest Service took decisive action to help avoid this possibility.

In 2004, the Forest Service announced the start of a ten-year contract with a local business partnership to complete hazardous fuels treatments on 5,000 to 25,000 acres per year on the Apache-Sitgreaves National Forest. It was the first agreement of its kind, utilizing new statutory authority for multi-year “stewardship contracts” (see sidebar) focused primarily on “large-scale forest restoration activities that result in healthier forests, enhanced rural development, and the utilization of previously unmarketable small-diameter trees” (USDA Forest Service 2004).

Previous thinning efforts had been at a much smaller scale, and usually resulted in the thinned materials being piled and burned on site. Under the 10-year stewardship contract, the materials will be utilized for local electrical power generation, the manufacture of wood pellets for heat or power generation at more distant locations, and manufacturing of value-added solid wood products.

Economies of scale and the increasing value of wood-based energy contributed to reducing the cost of mechanical treatments for reducing hazardous fuels by half, from an average of $500-600 per acre to an average of $250-300 per acre. Even at this rate, however, treating 25,000
acres will cost the Forest Service nearly $7 million. With an estimated 145 million acres nationwide in need of hazardous fuels treatment, this will still be a major practical and political challenge for the Forest Service.

Fortunately, the increasing importance of renewable energy production—and its ability to attract significant new private investment—offer the possibility of these costs dropping significantly where the circumstances are favorable.

Near the Winema-Fremont National Forest in southern Oregon, Collins Pine Company recently signed a letter of agreement with DG Energy of San Diego to build a 20 MW biomass co-generation plant to be located on-site with Collins’ existing solid wood products manufacturing facility in Lakeview, Oregon. Collins owns 80,000 acres of forest in south central Oregon to support its mill, and can provide 30-35 percent of the needed woody biomass from its own operations.

The Forest Service manages an adjacent 490,000 acres in the Lakeview Federal Stewardship Unit, part of the Fremont National Forest. The Bureau of Land Management oversees another 143,000 of available forests and woodlands nearby. Nearly 70 percent of this land has been designated as highest priority for hazardous fuels treatment (Condition Class 2 or 3). About 250,000 acres is determined to be at high risk for catastrophic fire and is a priority for hazardous fuels treatment. The budgetary requirements are a major problem. The current cost of hazardous fuels treatment (mechanical) is approximately $500-600 per acre. The Forest Service can use prescribed fire on the areas with lower fuels accumulations for $200 per acre, but is cautious of using prescribed fire in the areas of highest risk. This typically leaves the areas at highest risk of catastrophic fire with no treatment at all.

What has been proposed is a 10 year stewardship contract for thinning 8,000-10,000 acres annually, much of it in the areas with the highest fuels accumulations. The woody biomass from these operations would be sufficient to operate the biomass co-generation facility economically—and provide DG Energy the assurance it needs to commit the estimated $30 million capital investment. At the current delivered price of $20 per green ton for woody biomass, Collins estimates that it could do the fuels treatments on federal lands at no net cost to the agencies. The Forest Service and BLM could accomplish their hazardous fuels treatments for essentially little or no cost.

The Forest Service is currently looking into the possibility of developing a 10 year stewardship contact on the Lakeview Unit, similar to that now operating on the Apache-Sitgreaves National Forest. On the Lakeview, there are the advantages of substantial existing infrastructure and a ready source of new private capital to be invested. For other federal lands with significant needs for hazardous fuels treatments, the cost of accomplishing these under a long-term agreement will vary based on a variety of factors. Along with external contracting costs there are internal cost to be considered, such as NEPA analysis and other aspects of preparing and administering the contract. A further challenge is addressing the “Catch-22” situation in which so much of the Forest Service’s funding gets swept into wildfire suppression that it is difficult to fund land treatment activities that would reduce future fire suppression costs (Lenart 2006).

Nevertheless, the increasing importance of renewable energy production, the availability of technology for utilizing woody biomass for energy purposes at several scales, and the critical importance of hazardous fuels treatments to the future of the forests themselves suggest that these kinds of stewardship contracts will be a high priority for federal land management agencies.

Developing the institutional framework for sustainable energy

Sustainable forest management costs money. When markets are strong and returns to forest management are sufficient, investments can be made that take better care of forests today and help ensure their health and productivity well into the future. Economic pressures on private forest lands often result in unsustainable forest management practices, and contribute to the increasing loss of forest land through conversion and development. Economic pressures on public forest lands often result in deferring basic stewardship responsibilities, sometimes to the point where neglect triggers resource damage and events that are catastrophic for the forests themselves and the communities around them.

The growth of new markets for woody biomass for energy applications, and the availability of significant new private capital for investment in renewable energy production, opens the door to important new opportunities to facilitate improved forest management on both public and private lands. Sustainable forestry in the US is less limited by scientific knowledge than it is by shortcomings in its financial and institutional underpinnings.

Unlike the temporary oil supply shock of the 1970s, the current urgency for national energy independence and increasing energy supplies from renewable sources is not likely to go away soon. Seeing sustainable energy production as one component in the broader concept of sustainable forest management can substantially increase forests’
Using stewardship contracts

In 2004, Congress expanded the statutory authority for both the Forest Service and Bureau of Land management to enter into multi-year agreements for land management services. These “stewardship contracts” are intended to allow federal land management agencies to:

- undertake comprehensive ecosystem treatments in areas where traditional contract mechanisms are insufficient to complete the necessary work;
- combine ecosystem management activities into one contract, resulting in fewer entries into a site and a reduction in adverse environmental impacts;
- increase administrative efficiency and reduce overall costs of contract development and administration; and
- increase opportunities for contractors to expand their range of skills and services and achieve economies of scale.

Features that distinguish stewardship contracts from other kinds of agreements include:

**Exchange of Goods for Services.** The exchange of goods for services provides a means of extending the value of appropriated funds available to help carry out needed ecosystem restoration, maintenance, and improvement activities. This extension occurs by virtue of the fact that some or all of the value of commercial timber products being sold is retained and reinvested on-site as opposed to being returned to the Treasury or deposited in one of the Agency’s special trust funds. The existing financial structure within the Forest Service accounts for the disposal of goods based upon receipts, and the purchase of services based upon expenditures from appropriated and other special funds. A change in this traditional accounting system causes some concern over possible abuse of incentives, thus its use will be closely monitored.

**Receipt Retention.** Through receipt retention, portions of proceeds from the sale of commercial products can be retained at the local level to fund other non-revenue producing activities, however they must be reinvested in the specific pilot project that generated them or by another approved pilot project. Historically, the Agency has had limited authority to retain receipts through the various Forest Service trust funds (e.g., Knutson-Vandenberg Act, the Brush Disposal Act, and the Salvage Sale Fund provisions within the National Forest Management Act). However, in nearly all of these instances, funds from these accounts must be re-applied to those project areas in which commercial material has been extracted and any remaining funds must be returned to the National Forest Fund in the federal Treasury for future Congressional appropriation. There is some public concern over receipt retention due to the potential impact it might have on reducing the income to the Treasury. Additionally, some individuals fear that by allowing maintenance of receipts by the Agency, the public cannot be assured

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Nilsson L., Eric D. Larson, E., Kenneth Gilbreath, K., and
Designation by Description or Prescription. Designation by description or prescription offers a potential way to reduce sale preparation costs and to more fully apply the concept of end-results contracting. Traditionally, the designation, marking, and supervision of timber harvesting activities are conducted by federal employees or service contractors who have no prospective tie to the timber sale, thereby ensuring the accountability for products sold by the government. Under the expanded authority, land managers can provide prescriptions or area designations that clearly describe the silvicultural objective or desired “end results” in replace of federal designation and marking. It should be noted that designation by description has been used in the past under very strict silvicultural prescriptions (e.g., in areas designated for clearcuts, by specific species, by live versus dead material, or by basal area). Because of this historical link to more aggressive management techniques (e.g., clearcuts), some of the public has expressed concern over how to assure purchaser discretion in selecting material to be cut and the proper control of removed property.

Best-value Contracting. Best-value purchasing allows the Forest Service to use other factors in addition to price when making decisions on the award of contracts. These other factors include: past performance, work quality, delivery, and experience. In making award decisions, the Forest Service may, among other techniques, compare offers and hold discussions and negotiations with offerors, and may make awards to a more qualified firm at a higher price. As a result, those vendors who have performed well in the past, provided quality work, complied with wage requirements, and have high standards of workmanship will have a competitive advantage.

Multi-year Contracting. Among the desired goals of stewardship projects is the ability to engage contractors in long-term management services. It has been theorized that operators who provide services within a given management area over a long period are likely to develop a stronger sense of stewardship for that area. Additionally, the use of multi-year contracts may help to provide more stability for the contractor, as well as administrative continuity for the Forest Service contract supervisor. Historically, both timber sales and service contracts operated under specific time limitations. Whereas both can extend beyond the appropriations period during which they were initiated, the National Forest Management Act limits the length of timber sale contracts to 10 years (and restocking efforts in five years) and annual Congressional appropriations limit the length of service contracts. Unlike multiple year contracts, which require the Forest Service to exercise an option for each designated project year, multi-year contracts allow the purchase of more than one year’s requirement of product or service only at the onset of the project.

Payments for Environmental Services: An Alternative Approach to Promoting Stewardship of Private Forest Lands

Stewardship of private forest lands has received increased attention in light of the 2007 Farm Bill and the USDA Forest Service’s comprehensive review of state and private forestry programs. V. Alaric Sample proposes a program that would concretely recognize and reward the public conservation benefits provided by private lands.

Existing programs aimed at improving stewardship on private forests in the US focus on the adoption of particular forest practices, with little subsequent evaluation of whether these forest practices actually produce the desired improvements in water quality, wildlife habitat or other public conservation values. Without a direct link between the investment of public funds on private lands, and the public values derived from those investments, it is unclear what the public is actually getting for its money. There is little factual basis on which to determine program effectiveness, or how program effectiveness might be improved through different prioritization or targeting of expenditures.

The Forest Land Stewardship program proposed here provides for voluntary participation by forest landowners in a system that explicitly recognizes public conservation benefits provided by private lands, and rewards additional efforts aimed at measurably enhancing certain conservation benefits. More effective targeting of scarce public funds to investments will help maximize the public conservation benefits from a given level of expenditures on private forest lands. This direct linkage shifts forest landowner assistance programs to a more performance-based, payments-for-services approach, and away from the general subsidization approach that is less favored in terms of both national and international agricultural and trade policy. It also will enable policymakers and natural resource agencies to better document tangible conservation improvements over time.

Private forest lands have long provided an array of public conservation values, protecting water quality, conserving wildlife habitat, providing outdoor recreation opportunities, and more. Economic pressures are now causing private forest lands in many regions of the US to be converted to development and other non-forest uses at an alarming rate (Stein et al. 2005).

Numerous federal and state programs have been developed to promote improved forest management and land stewardship on private forests (Greene et al. 2006). Most of these programs, however, were designed to address a very different set of needs than those being experienced by private forest landowners today.

This paper presents a different approach to countering the pressures that lead to forest fragmentation and conversion. It provides a framework for more explicitly recognizing important public conservation benefits provided by private forests, and concentrating more targeted public support for measurable, verifiable enhancements in the protection and sustainable management of key natural resources and environmental values on private forest lands.

Matching landowner assistance programs to today’s public goals and private needs

The increasing rate of forest loss is becoming an issue in many regions of the US (Alig and Planting 2004). Current and anticipated economic trends in these regions will continue to increase the direct and opportunity costs of owning forest land—rising land development values, increasing property taxation, increasing costs of regulatory compliance associated with land and resource management activities, and lower returns from wood production.

Many of the existing federal and state landowner assistance programs are designed to encourage and facilitate active forest management to contribute to future wood supply. Financial incentives and cost-share programs seem to be aimed at assisting “land-rich and cash-poor” farmers and other landowners with cash-flow challenges, such as reforestation following timber removal. Much of the private forest land in the US today is owned by individuals and families for whom wood production is a secondary objective, if it is an objective at all (Butler and Leatherberry 2004). Timber harvesting often takes place in a relatively unplanned man-
ner to meet a short-term financial need, often for an extraordinary family expense (e.g., college tuition, medical bills). In the absence of an effective estate plan, state inheritance taxes and federal estate taxes can result in liquidation harvests or subdivision of ownership into several tracts, often leading to forest fragmentation and development.

Federal and state land conservation programs have been developed to purchase conservation easements on critically important forest lands facing imminent threat of development (e.g., the Forest Legacy Program administered by the USDA Forest Service). Despite relatively strong funding support, these programs are seriously limited in the proportion of private forest owners they can reach. Also, on many family-owned lands there may be a strong commitment to sound forest stewardship, but no consensus on a deed restriction that is, in effect, permanent.

Federal and state programs aimed at promoting improved forest management and land stewardship (e.g., the Forest Land Enhancement Program administered by the USDA Forest Service) generally lack the means for ascertaining that the conservation goals of the required forest management plan have actually been met. With little or no means of verifying what if anything the public is getting for its money, funding support has severely limited participation in these programs, and thus rendered them irrelevant to a large proportion of private forest landowners (Greene, et al. 2006).

Recent debates over how best to value “ecosystem services” provided by forests and other natural ecosystems have also surfaced the idea of public support that is directly linked to particular conservation values, and actions taken by private landowners to protect or enhance those values. The Environmental Quality Incentives Program (EQIP) and the Conservation Security Program (CSP), both of which are administered by the USDA Natural Resource Conservation Service, utilize a form of this “payment for services” approach (Natural Resource Conservation Service 2006). Both programs were designed expressly for agricultural lands, rather than private forest lands. EQIP has been amended to allow limited application to private forests. Also, both programs are far more focused on promoting the adoption of certain conservation practices than on verifying any actual improvements in environmental quality stemming from their use.

**Linking conservation payments to conservation performance**

The need that is being expressed by policymakers, forest management agencies, conservationists, and forest landowners alike is for a practical, results-oriented program that: (a) recognizes and acknowledges the array of public conservation values that private forest lands provide; and, (b) provides reasonable financial incentives for the protection and enhancement of these values in ways that can be efficiently measured and verified. In the context of current international trade negotiations related to ending agricultural subsidies and tariffs, shifting to a direct payment-for-services approach has the added benefit of eliminating many of the potential issues associated with traditional cost-share and financial incentives programs.

The proposed framework for such a program for private forests borrows elements of programs developed expressly for agricultural lands in the US, such as EQIP and CSP, and from similar programs developed in other countries, such as the Environmental Stewardship program developed in the UK (DEFRA 2006).

The Environmental Stewardship program is voluntary and is aimed at increasing the protection of a variety of natural resource and environmental values on agricultural lands. The UK’s Department of Environment, Food, and Rural Affairs launched the program in 2005. The Environmental Stewardship program has limited application to the management of private woodlands, as it relates to a primarily agricultural enterprise. Landowners applying for participation in the program choose among a list of approximately 50 options for ways they can improve their protection and management of important conservation values and services. These options fall into one of several broad categories:

- Protecting natural resources
- Conserving wildlife habitat and biodiversity
- Maintaining and enhancing landscape quality and character
- Protecting the historic environment
- Promoting public access
- Conserving genetic resources
- Enhancing flood protection

Each option is associated with a number of “points,” and the landowner must commit to actions totaling to a minimum of 30 points in order to enroll in the program. Typically, a landowner following basic, sound land management practices will already qualify for a significant portion of the required 30 points. Further modest efforts will gain an additional number of points. Taking advantage of opportunities to significantly enhance one or more values, such as water quality, will reach the full 30 points. This
qualifies the landowner to receive annual payments of $30 per hectare per year (roughly $22 per acre) over the entire ownership. The contract term is typically five years.

Landowners willing to make a higher-level commitment in critical areas can apply to participate in a second-tier program that provides payments of up to $60 per hectare per year (i.e., $44/acre). This higher-level program is aimed at achieving “significant environmental benefits in high priority situations and areas,” and requires a management plan that contains agreed upon “indicators of success.” Contracts are typically 10 years in length, and periodic checks determine whether the targets are being achieved. Actual performance that falls significantly short of the targets can result in the annual payments being reduced or suspended entirely.

Developing a program along similar lines to augment or even replace existing federal and state forest landowner assistance programs in the US would address current and anticipated needs of both forest landowners and forest management agencies. From the landowner’s perspective, this would provide for clearer mutual understanding of what is expected, how performance will be assessed, and what payments will result. Also, a point system that explicitly recognizes the substantial public benefits that are already being provided by basic, responsible management practices followed by most forest landowners would be a welcome change in public attitudes toward private forests.

From the standpoint of forest management agencies—and indeed the public at large—such a system would target public expenditures to the areas of greatest need, and the greatest opportunities for contributing to the public interest. Payments would be directly linked to measurable, verifiable gains, and progress toward mutually agreed upon objectives, in an entirely voluntary program.

What forest landowners gain in certainty and predictability, the public gains in bona fide performance and demonstrable results.

**Elements of a proposed land stewardship program for private forests in the US**

*Framework.* The Forest Land Stewardship program would be entirely voluntary, application-based, and oriented to the needs and capacity of family forest owners. The program would be administered through the state natural resource management agencies (and associated university extension offices) in cooperation with federal natural resource and environmental agencies. Responsibility and authority for both funding and priority-setting would be shared.

**Approach.** The Forest Land Stewardship program would be designed to be accessible to all family forest owners. Acceptance for participation in the program at the first-tier would be largely assured. Acceptance for participation at the second-tier would be based on priorities established cooperatively by federal and state agencies. The program would center on a menu-based approach, providing multiple opportunities for private forest owners to reach the minimum number of “points” to qualify for consideration. Flat-rate payments for qualified participants would be made for the entire ownership on an annual or semi-annual basis. Higher-level payments would be made available in ecologically critical areas and areas under imminent threat of development. Although these funds would not be used to purchase conservation easements, they could be used in conjunction with conservation easements or transfers of development rights either donated or funded from some other public or private sources.

*Public accountability.* Actual accomplishment of agreed upon goals and objectives would be verified by the state natural resources agency, or through an approved independent auditor. Penalties for sub-par performance would be based on the degree to which actual performance falls short of the agreed upon goals and objectives and may include a reduction or cessation of payments. The contract term for first-tier agreements would be five years, with options to renew the contract for additional periods. The contract term for second-tier agreements would be 10 years, also with the option renew, at the discretion of both parties.

**Conclusion**

Existing programs aimed at improving land conservation and stewardship on private forests in the US have traditionally focused on the adoption of particular forest practices, typically in the context of a multi-year management plan. Generally, there is little if any subsequent evaluation of whether these forest practices actually produce the desired improvements in water quality, wildlife habitat or other public conservation values.

Lacking any direct linkage between the investment of public funds on private lands and the public values subsequently derived from those investments, it is unclear what the public is actually getting for its money. The existing approach lacks accountability, either on the part of private landowners or on the part of public agencies entrusted with the application of substantial but scarce public funds. It also provides little if any factual basis on which to determine program effectiveness, or how program effectiveness might be improved through different prioritization or targeting of expenditures.
The proposed Forest Land Stewardship program provides for voluntary participation by forest landowners in a system that rewards efforts that produce public benefits from private lands. Further, it recognizes and rewards additional efforts aimed at measurably enhancing certain conservation benefits, by private landowners committed to exemplary forest land stewardship.

Over a relatively short period of time, the proposed Forest Land Stewardship program would result in a far more effective targeting of scarce public funds to investments that maximize the public benefits from improved conservation on private forest lands. Proposed accountability measures will gradually shift public funding in favor of the highest performers in terms of actual gains in conservation values and environmental quality. This direct linkage between public payments to private landowners, and the measurable public benefits produced, shifts forest landowner assistance programs to a more performance-based, payments-for-services approach, and away from the general subsidization approach that is less favored in terms of both national and international agricultural and trade policy.

Most importantly, this new program will enable policymakers and natural resource agencies to better document gains in natural resource conservation. When asked the questions, “Are we better off for having invested these public funds, and how has the public interest in conservation been advanced?” policymakers in the future will have the tools and information at hand to provide far more detailed and satisfactory answers.

References


The Chesapeake Bay is the largest and was once the most productive estuary in the United States. It has an intricate shoreline that snakes over 5,000 miles in length—more than the shoreline of the entire Pacific coast of the United States. Its watershed is 16 times more expansive (64,000 square miles) giving the estuary the largest land to water volume ratio of any water body on Earth.

The health of this national treasure has been declining for decades. As water flows through the expansive watershed, sediment, nutrients, chemicals, and other substances wash off the surrounding land into streams, and eventually find their way to the Bay. Due to its broad and shallow nature, pollutants easily settle in the estuary and stay for long periods. The build up of these pollutants—especially nitrogen—from development, agriculture, and many other activities on land have dramatically affected water quality. The good news is that actions taken to protect and improve the land and its forests, no matter where they occur, have a cumulative ability to restore the Bay.

Chesapeake forests are crucial to maintaining the water quality of the Bay and its tributaries. Forests act as 'sponges' by capturing rainfall, reducing runoff, maintaining the flow of streams, filtering nutrients and sediment, and stabilizing soils. Riparian forests that buffer streams significantly reduce the amount of excess nutrients that enter the water, sometimes by as much as 30 to 90 percent. Mature trees also provide root systems that hold soils in place, helping to stabilize streambanks and reduce erosion.

Chesapeake forests also safeguard wildlife habitat, contribute billions of dollars annually to local economies, protect public health, provide recreation opportunities, and enhance the quality of life for the watershed’s 15 million residents (the Bay watershed stretches across New York, Pennsylvania, Maryland, Delaware, Virginia, West Virginia, and the District of Columbia.)

Despite these benefits, forests in the Chesapeake Bay watershed are at risk. Since the mid-1980s, the Bay watershed has experienced a net loss of forestland at the rate of 100 acres each day. Chesapeake forests also lack regionally coordinated forestland conservation, restoration, and stewardship plans, making them more vulnerable to fragmentation, haphazard development, and invasive species, as well as less likely to be well managed.

To better understand and address these challenges, The Conservation Fund and the USDA Forest Service partnered to assess and report on the state of Chesapeake forests. This first-of-its-kind report synthesizes more than a decade's worth of data from public and private sources, highlights current forest conditions, forecasts future trends, and outlines key goals and strategies necessary to conserve and restore the forests of the Chesapeake Bay watershed.

The State of Chesapeake Forests can be found at http://www.chesapeakebay.net/stateoftheforests.htm.

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bioenergy is a national issue that will challenge all land management agencies of the federal government to respond across all regions of the United States. This is especially true for our various research and development institutions that are not necessarily tied to the management of federal lands. In the West, the Forest Service and other agencies of the federal government are responsible for the management of more than 70 percent of forest lands, including reducing the fuels that sustain wildfires; suppressing wildfires; and, ultimately, protecting people from wildfires. Emerging energy markets can assist us in accomplishing these management objectives. East of the Mississippi, more than 60 percent of the forest land is owned by families and other private landowners. These forest owners are not necessarily constrained by any national land-use policy. Few have any contractual obligation to forest products companies to supply timber, or manage their land in any particular manner. We can expect many of these independent economic actors to be responsive to new markets.

There is a large untapped potential for renewable energy development from forests and farms, particularly in the eastern US. We find in the East a landscape mosaic where forestry and agricultural land uses are adjacent or intermixed, providing a diversity of potential energy sources to meet rising demand. The farm belt in the eastern US is currently a center for production of ethanol, the only existing biomass-based substitute for our fossil fuel-based transportation fuels. With our improving ability to utilize wood as an ethanol feedstock, the availability of both agricultural and forest-based sources of energy; and the current distribution of installed industrial capability, the East remains the most likely entry point for wood as substitute transportation fuel. An emerging energy market could provide the economic incentive for private woodland owners in the East to implement management practices that improve the condition of their lands while contributing to the resolution of a significant national issue.

Eastern America is far less susceptible to the ravages of wildfire than is the West. Thus, a Forest Service strategy that subordinates the national energy issue to the needs of federal land management will naturally focus on the reduction of fuels in western forests. There is an opportunity, however, for the Forest Service to pursue a broader strategy that focuses first and foremost on maximizing the potential contribution of forests to addressing the national priority for renewable energy development, and doing so in a way that facilitates the sustainable management of all of America’s forests, not just those on federal lands. Promoting the conservation and sustainable management of all the nation’s forests is, after all, the core mission of the Forest Service. The actions of federal, state and private land managers on the forested and agricultural landscapes of the East, and the work of the research and development institutions that inform and support their efforts, can contribute much to addressing these national policy priorities.

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The Pinchot Institute board of directors has named Dr. Clark Shepard Binkley as the Pinchot Distinguished Lecturer for 2007. The lecture will be held on March 2, 2007, at the Cosmos Club in Washington, DC. Dr. Binkley will lecture on the changing investment climate in US forests and how it is affecting sustainable forest management. Dr. Binkley is the president of International Forestry Investment Advisors in Cambridge, MA. His previous positions include Managing Director and Chief Investment Officer at Hancock Timber Resources Group and Dean of the Faculty of Forestry at the University of British Columbia. Dr. Binkley also serves on the boards of several publicly traded forest products companies and private timberland ventures and as an advisory council member for Ecotrust Canada. For more information on the Distinguished Lecture, please visit www.pinchot.org.

Each year the Pinchot Institute awards the 101 Conservation Scholarship to a student who is pursuing a graduate or undergraduate degree in natural resource management. The recipient must be the son or daughter of a current or retired USDA Forest Service employee. The Institute invites students meeting these criteria to apply for the 2007 scholarship by January 31, 2007. Application information is available at www.pinchot.org.

For nearly two decades the 101 Scholarship been funded entirely by contributions from Forest Service employees—it was named the 101 Scholarship to signify the way that Forest Service personnel have always given “101 percent” in everything they do. Any Forest Service employees wishing to contribute to the scholarship fund may do so by mailing a donation to the Institute, or online at www.pinchot.org (please specify that your donation is for the 101 Scholarship fund). Donations are fully tax deductible.

Richard H. Phillips, Regional Economist with the USDA Forest Service (Region 6), has been appointed as the first Edgar Brannon Conservation Fellow. The Edgar Brannon Conservation Fellows Fund was established in 2004 to support short-term independent study sabbaticals for public sector conservation professionals. Mr. Phillips’ sabbatical project will evaluate the cultural, social, and fiscal impacts of developing and using environmental management systems on National Forests.
When we contribute to the Pinchot Institute for Conservation and other favorite causes, most of us go the easiest, most familiar way and simply write checks or use credit cards. We receive income-tax deductions, and the charities receive money.

Benefactors who intend to make major gifts should become knowledgeable about other ways to give away their money besides just sending checks. For instance, donors can reap better tax breaks with contributions of appreciated properties that have been owned for more than 12 months and would be taxed as long-term capital gains were they to be sold. Some examples are shares of individual stocks, mutual fund shares, bonds and real estate.

Donating appreciated property is a worthwhile strategy. The measure of the charitable deduction is the asset’s appreciated value on the donation date, undiminished by the federal and state taxes that become due on the profit if you sell the property, effectively decreasing the contribution’s cost. The IRS siphons off a maximum of 15 percent of gains from sales of investments, a levy that drops to 5 percent for someone in the two lowest income-tax brackets of 15 and 10 percent. Add to Uncle Sam’s take whatever his nephews and nieces exact for taxes at state and local levels.

The Wall Street Journal of Nov. 22, 1991, notes that “This tax-saving strategy is immortalized in the 1959 film ‘The Young Philadelphians,’ starring Paul Newman” as an ambitious attorney involved with the elite of The Main Line. The Newman character’s “suggestion of giving appreciated stocks to the local Society for the Prevention of Cruelty to Animals helps him win the business of Mrs. J. Arthur Allen, an eccentric millionaire, who arrives at his office with her precious pooch Carlos in her arms.” Mrs. Allen was played by Billie Burke, best known to television audiences as Glinda the Good Witch of the North, in “The Wizard of Oz.”

While giving appreciated assets might seem to be an appropriate technique only for Mrs. Allen and her well-heeled acquaintances, it can make sense for people of far more modest means. Let’s say you intend to fulfill a $10,000 pledge to the Pinchot Institute. Your long-term holdings include some shares of stocks that you acquired for $4,000 and are about to unload for $10,000. To reap a perfectly legal double benefit, contribute stock worth $10,000, rather than the same amount of money. Going the stock route makes no difference to the Institute, a tax-exempt entity that incurs no taxes when it sells the shares and ends up with close to the same amount of money. But it does make a decided difference in the size of your tax tab. Assuming you are in a combined federal and state bracket of 30 percent, a charitable-gift deduction of $10,000 cuts taxes by $3,000. In addition to that, you sidestep the taxes that are due on the $6,000 gain if you sell the stock—a federal levy of as much as $900 and whatever your state exacts.

Forget about any additional tax break for donations of shares owned less than 12 months. The IRS restricts write-offs to what you paid for them or their current value, whichever is less.

If you are unsure whether to relinquish your position in some appreciated stock, donate the stock and use the money that you would have otherwise donated to buy back the shares for their current market price. That way, tracking the numbers in the example, you preserve a contribution deduction of $10,000, as well as dodging tax on
the $6,000 gain. Moreover, brokerage commissions aside, a repurchase of the stock makes it possible for you to measure any gain or loss on a subsequent sale against the new, higher cost of $10,000, not the original one of $4,000.

Gifts of stock or other property count as deductions for this year only if you complete them by Dec. 31, and it can take time to do the legal paperwork. If you unconditionally deliver or mail a properly endorsed stock certificate to the Institute, the donation is considered completed on the date of delivery or mailing, provided the certificate is received in the ordinary course of the mails. (It is advisable to use certified mail and request a certified mail receipt.) A different rule applies if you deliver the certificate to your bank or broker or to the issuing corporation as your agent for transfer into the name of the Institute. The donation is not completed until the date the stock is transferred on the corporation’s books — a process that could take quite a while.

The need to monitor the calendar carefully was made expensively clear to Joseph Alioto, a lawyer and former mayor of San Francisco, who donated real estate. The United States Tax Court held that he did not complete his donation by Dec. 31 of the year under review. While the deeds were executed in Dec., they were not recorded until well beyond the close of the year, and the recording date constituted the delivery date.

It’s a good idea to check with a tax expert before you make sizable contributions, especially if you plan to donate appreciated property. The IRS wants a written appraisal if you claim a deduction of more than $5,000 for any gift of property (over $10,000 in the case of a stock in a closely held company). But it does not ask for an appraisal of shares of publicly traded companies. Stock markets determine their value daily.

The tax code clamps some ceilings on the deductions available for contributions. In general, you can deduct up to 50 percent of your adjusted gross income for gifts of cash to most charities, such as churches and schools. But there can be limitations of 30 percent or even 20 percent of your adjusted gross income on the amount you can claim for contributions of appreciated investments. Any gifts in excess of the limits cannot be claimed on this year’s return, although they can be claimed during the next five years, subject to the annual limits. Five years should be sufficient time unless you make substantial future donations or your income nose-dives.

On no account should you donate stocks or other investments that have dropped in value since their purchase. Their donation-date value determines the amount of your charitable deduction. Worse still, you cannot write off the losses. Instead, sell the investments and donate the proceeds, a tactic that allows you to deduct the contributions and claim capital losses that reduce or even erase taxes on capital gains or ordinary income — salaries, business profits, pensions and interest, for instance.

Let’s say your long-term investments include some shares you bought for $15,000 that are now worth $10,000. If you donate the shares, $10,000 is the cap on your charitable deduction. If you sell the shares and donate the proceeds, you are able to deduct the $10,000 and claim a long-term capital loss of $5,000.

What if sales of investments result in no gains or they are less than losses? Then use excess losses to offset as much as $3,000 ($1,500 for married couples who file separate returns) of ordinary income. Any unused capital losses above $3,000 for 2006 can be carried forward into 2007 and beyond, should that prove necessary.

Julian Block is an attorney and syndicated columnist based in Larchmont, N.Y. He has been cited by the New York Times as a “leading tax professional” and by the Wall Street Journal as an “accomplished writer on taxes.” For more of his articles, go to www.julianblocktaxexpert.com.
Two new leadership development programs conceived by the Forest Service staff at Grey Towers and being offered for the first time this year have met with excellent response. Plans are underway to offer the programs again in 2007.

The Leadership Legacy: Yesterday until Tomorrow, is designed to assist the growing number of Forest Service staff coming into the agency in leadership positions from other agencies. Offered for the first time in October 2006, the Leadership Legacy program utilizes the unique historical connection at Grey Towers to provide a view into Forest Service leadership roots, a connection to present day agency leadership issues and an invitation to create a personal leadership legacy.

Presenters at the October session included Dr. Char Miller, Historian at Trinity University, Senior Fellow of the Pinchot Institute for Conservation, author and renowned expert on Gifford Pinchot; Edgar Brannon, Forest Service Historian, former Director of Grey Towers National Historic Site, Senior Fellow of the Pinchot Institute for Conservation; Peter Pinchot, Director of Milford Experimental Forest, Senior Fellow for Pinchot Institute for Conservation; Lynda McLyman and Daniel Leete of Progress Associates, senior-level training, development and management consulting; Amy Gilburg of the Gilburg Leadership Institute, specialized consultant devoted to the development of leaders; and Dr. Richard Paterson, Director, Grey Towers National Historic Site, former Director of the Forest Service Leadership Succession Program.

Also new this fall is the Management and Leadership Development Program for Forest Staff Officers. The first class filled quickly with 20 participants and there is a waiting list of another 20 for future classes.

This four-day leadership development program is designed to meet the professional development needs of employees who are currently working as forest staff officers. Participants learned how to improve decision-making and problem-solving skills, and interpersonal communication, collaboration and partnership skills. Participants also gained an understanding of the basic principles of emotional maturity as they apply to leadership and an understanding about managing others during times of change.

The program combines theoretical and practical skills as participants learn a series of skills and then apply these skills to real world problems, issues, or decisions. The instructors lead the participants through processes that allow the participants to practice their newly acquired skills with an appropriate amount of coaching. There is time for self-reflection work as well as time to experience and enjoy the Grey Towers site.
New Visitor Pavilion Opens at Grey Towers

A new Visitor Pavilion, parking lot and pedestrian walkways have opened this summer for public use at Grey Towers. This fourth phase of the ongoing restoration and renovation of Grey Towers focused on visitor safety, service and security as its primary focus. The improvements will now enable Grey Towers to fully serve the public as it was originally intended.

Michael DiBerardinis, Secretary of Pennsylvania’s Department of Conservation and Natural Resources, was on hand for the ribbon-cutting, as were representatives from Congressman Donald Sherwood’s office and PennDOT, which provided some funding for the project.

The Visitor Services area can accommodate increased and simultaneous site use by visitors, conference attendees, program participants and others; eliminates unsafe parking; provides expanded use of the site through improved pedestrian access; improves visitor orientation to the site, and provides new restroom facilities.

The Visitor Pavilion blends into the landscape and is constructed of natural materials or materials that are consistent with the other structures on the site. It is set into the contours of the land so that it is partly concealed and does not intrude on the historic landscape. The first level includes the restrooms; the second level, an open-air deck.

The parking lot will serve as a demonstration area. Designed to mitigate runoff, it is terraced and broken up into cells, instead of one large paved area. Porous paving and separate aquifer recharge basins installed under each cell also will address runoff. Extensive landscaping addresses erosion, solar reflection and aesthetics of the site.

The project was funded as a 50/50 cost-share between the federal government and the Commonwealth of Pennsylvania, through the Governor’s Capital Budget Redevelopment Program.
FEDERAL EMPLOYEES—CHOOSE 2396

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Don’t forget to designate the Pinchot Institute on your Combined Federal Campaign (CFC) pledge card. Contributions from the CFC are an important part of the Pinchot Institute’s funding. These generous gifts enable us to carry out independent, innovative research into sustainable forest management and issues affecting natural resource policy.

The Combined Federal Campaign (CFC) is the largest workplace-giving program in the world—for employees of the federal government, the postal service, and the uniform services. If you are a federal government or military employee and would like to support the Pinchot Institute through the CFC, please enter CFC code #2396 on your pledge card during the next campaign. This year we are listed as the Forest Conservation Institute (Pinchot Institute for Conservation).

For more information on how to contribute through the CFC or to set up an independent, workplace giving campaign at your corporation, please call (202) 797-6580 or pinchot@pinchot.org.

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