

The Chesapeake Forest Project: An Experiment in Sustainable Forest Management¹

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Abstract

On December 21, 2000, The Conservation Fund, acting on behalf of the Richard King Mellon Foundation, transferred some 29,000 acres of former industrial forest land on Maryland's Eastern Shore to the State of Maryland. What made the gift unique was that TCF also presented the State with a sustainable management plan designed to meet environmental goals while continuing to contribute to local economies. In addition, they had entered into a 3-year contract with a private land management firm to carry out day-to-day management and implementation of the plan, and that contract was also conveyed with the land. The result is state-owned public forest, managed on a daily basis by a private forestry firm, carrying out a conservation-oriented sustainable forestry plan. The unusual arrangement has created new challenges and opportunities for the Maryland Department of Natural Resources (DNR) Forest Service, and the lessons being learned may transfer well beyond these forests.

Introduction

The Chesapeake Forest Project consists of 58,000 acres of forest land owned by the State of Maryland. The lands were part of a 1999 divestment by the Chesapeake Forest Products Corporation. At that time, a partnership between the State of Maryland, The Conservation Fund, and Hancock Timber Resources Group moved to purchase the forests. As the project unfolded, the State of Maryland's Department of Natural Resources purchased half of the land directly, while The Conservation Fund, on behalf of the Richard King Mellon Foundation, acquired the other 29,000 acres with the intention of transferring them to the State at a later time.

The goal agreed upon by the partners at that time was to demonstrate an economically sustainable forest management system that could achieve several objectives important both to local communities and the broader conservation goals of the State. The specific objectives included:

- Providing a steady flow of economic activity and employment to support local businesses and communities;
- Preventing the conversion of forested lands to non-forest uses in a region where the forests were already heavily fragmented by agricultural and urban uses;
- Contributing to improvements in water quality, as part of the larger Chesapeake Bay restoration effort;
- Protecting and enhancing habitat for threatened and endangered species;
- Maintaining soil and forest productivity and health; and,
- Protecting visual quality and sites of special ecological, cultural, or historical interest.

Prior to presenting the second half of the land to the State in 2000, The Conservation Fund took several actions that have contributed to the unique manner in which these lands are managed. First, they commissioned the preparation of a sustainable forest management plan for the land to be transferred. Then, they contracted with a private land management firm, Vision Forestry LLC, to implement the plan for a transition period of three years, with the opportunity

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for that management contract to be extended. The land, complete with the management plan and contract, was given to the State in December of 2000.

The transitional management period is now under way, providing practical field experience in a different approach to the management of public forests. The question is not whether public or private land management is best. What we realize is that both have distinct advantages, and that a public-private partnership has the opportunity to maximize the combination as it seeks to provide the full range of sustainable benefits in the forests.

The Land

The Chesapeake Forest Project consists of 58,172 acres divided into 238 separate parcels distributed across five counties. In spite of this scattered character, the forests include some of the last large segments of unbroken forest in a region that is largely agricultural in nature. The CFP lands include more than 4,000 acres of wetlands and comprise portions of 23 separate watersheds, many of which have been given a high priority for conservation action under the Maryland Clean Water Action Plan. They contain established populations of threatened and endangered species, including the Delmarva fox squirrel (*Sciurus niger cinereus*), bald eagle, and some 150 other species that have been identified as rare, threatened, or endangered in the region. Abundant populations of deer, turkey, and waterfowl create the basis for a major hunting opportunity on the land, and the sale of licensed hunting concessions provided a significant revenue source in the past. Whether or not those hunting arrangements will continue in the future is a matter of policy that the State of Maryland is currently studying. Many other public recreational opportunities are available as well.

Prior to the purchase of the lands, the private owners paid about \$85,000 in annual property taxes to county governments and produced approximately 15-20% of the fiber utilized by the local pulp and timber mills. The forest products industry on the Eastern Shore is fairly isolated, in both geographic and economic terms, so the potential impact of changing the timber program on the Chesapeake Forests significantly was a major concern voiced in the local communities during the transfer of the land to State ownership.

The Sustainable Forest Management Plan

The plan for the Chesapeake Forests was prepared by a 10-person technical team assembled by The Sampson Group, Inc. Providing oversight and decision making was a Steering Committee composed of representatives of Maryland DNR, The Conservation Fund, the Chesapeake Bay Foundation, and the local forest industry. There were substantial challenges in the planning, including:

- The plan's management guidelines were contractually connected to the 29,000 acres being given to the State by the Mellon Foundation, but needed to operate within the context of the entire 58,000-acre forest as part of the long-term objective to develop a management system for the forest as a whole.
- The forests were composed primarily of loblolly pine plantations, with over 50% being 15 years old or younger and two-thirds less than 25 years of age. Plantations of merchantable age were virtually absent, as were large areas of older mixed pine-hardwood forests. The result was a short-term absence of timber harvest opportunities, coupled with the need to conduct a large thinning operation to prevent the dense young stands from developing stress-related insect and disease problems.
- There was significant concern in the local communities regarding the ability of the state to manage such a large and complex project while continuing to produce a flow of timber and economic activity in the region. The fear was that the land would be taken over by political decisions forced by larger constituencies that would result in the loss of

management options. (There is, for example, an ongoing political movement attempting to eliminate all timber harvesting on state lands in Maryland.)

- The time available for developing the plan was short, and the data available were limited in important ways, including the lack of a complete stand-by-stand forest inventory and the existence of a modern soil survey in only two of the five counties.

On the other hand, the planning team had several advantages that helped it achieve its task, including:

- The existence of a GIS-based data set that had been developed and maintained by the former owners;
- An extensive GIS-based resource data library for the region, developed and maintained by Maryland DNR;
- The experience and counsel of the foresters who had managed the lands for the Chesapeake Forest Products Company for over two decades. (The former company's forestry staff was contracted by The Conservation Fund during the planning process to continue day-to-day management of the lands.)
- Access to the extensive technical staff resources in Maryland DNR, the U.S. Fish and Wildlife Service, and the expertise of local people.

The resulting management plan has been called "visionary, comprehensive, and likely to meet its stated objectives of wildlife habitat protection, soil and water quality protection, special sites preservation, and healthy economic benefits," by a 10-person Advisory Panel commissioned by The Conservation Fund in 2001 to assess the plan and its initial implementation work. It contains an extensive resource assessment of the entire 58,000 acres, including attention to landscape and regional issues that provide important context for the management of these lands. It is an outcome-based plan, establishing specific objectives for management while leaving out rigid prescriptions.

One example is the treatment of stream and wetland buffers. While recognizing the need to meet or exceed Maryland State BMP guidelines, the plan avoids single-width prescriptions. Buffers are to be established in the field, using hydrological and ecological features while recognizing state-mandated minimum widths. In general, the plan calls for wider buffers than are required under BMP's, as a way of improving interior forest habitats in these biologically critical areas. Management activities, including thinning and timber harvest, are allowed so long as the primary management objective is the protection of water quality and wildlife habitat. A dense young pine plantation may, for example, be thinned more heavily in the expanded buffer zone to facilitate the development of a shrub and hardwood component. Field foresters are responsible for identifying and marking buffers, designing appropriate management activities, and overseeing operations so that water quality and wildlife goals are met.

The management plan presented by The Conservation Fund as part of the land gift was accepted by Maryland DNR as an acceptable guide to the management of all 58,000 acres of the Chesapeake Forest Project during the interim period while a formal state planning process was undertaken and a final state management plan completed. That process, now under way, should be completed in late 2003.

The Transition Period

One of the major challenges of sustainable forest management is the integration of an effective monitoring and feedback system into field management activities. In the transition period, Vision Forestry is designing and implementing such a system, in close collaboration with Maryland DNR staff. Field data are gathered and integrated into the spatial data system. That system is then used to evaluate the impact of management activities and identify areas where activity is likely to be needed in the near future. Lists of potential sites for future thinning or

other mid-rotation management provide field foresters with check lists of stands to evaluate as part of their regular fieldwork and travel.

The key to the management strategy is the annual work planning process. Using the overall management plan as a guide, the managers prepare an annual work plan that lays out specific activities to be carried out on the land. The work plan goes to an Interdisciplinary (ID) Team formed of DNR experts. At the manager's request, or on tracts where questions are raised by DNR, the ID Team and the managers conduct field visits to establish specific guidelines for the activities. When the plan has been accepted by all parties, it is taken to the Maryland Board of Public Works for final approval.

The advantages of having official approval for a year's work over needing BPW approval for each timber sale are significant. One of the most difficult aspects of forest management on the Eastern Shore is the limited number of contractors available to do the work, coupled with forested soils that can be damaged by machinery during wet weather. This requires the managers to be very flexible in scheduling field work, moving contractors from wet to drier sites where possible, and constantly searching for better and more efficient ways to achieve the desired results. With a full year's activity in front of them, the flexibility to match available resources to the right job, or to respond to weather changes, is maintained.

Another advantage arises in the ability to do flexible merchandising of the wood produced on these lands. Almost all of the wood comes from first and second thinning of young pine plantations. Instead of facing the difficulty and expense of marking every thinning sale, Vision Forestry hires and trains skilled thinning operators who can produce the desired residual stand. The result is good silviculture, but a difficult challenge in estimating the quantity and quality of the material that will be produced. This makes lump-sum sales very problematic.

Vision Forestry is able to approach this challenge by conducting sales on a delivered-unit basis. Mills bid a per-ton price for delivered pine sawlogs and pulpwood. In some instances, the two products go to different mills. Vision Forestry foresters then oversee the thinning process, select logging contractors who have the equipment and skills matched to the different land conditions and desired final situation, guide the logging contractors in selecting, sorting, and cutting sawlogs to the specifications in the sale, and delivering to the proper mills. The logging contractors receive a bonus for the extra work involved in the deck-sorting process.

The result has been a significant increase in the revenues received by the State from these forests. For pine pulpwood, the dominant product from the thinning operations, the average price received per ton has increased about 75% from the fiber supply agreement in effect when the land was purchased by The Conservation Fund. At that time, virtually all of the material harvested was used for pulpwood. If sawlogs were involved, they were often sorted out at the mill, and the mill realized the value rather than the landowner. By selling at the mill on a delivered price, then negotiating contracts for product separation with the thinning contractors, Vision Forestry has been able to realize a 7% sawlog return on first thinnings and 23% sawlogs from second thinnings. Since sawlogs net roughly 6-8 times as much for the landowner, the result has been a major increase in economic return to the State of Maryland. This type of merchandising would be extremely difficult, if not impossible, under current state regulations for public timber sales coupled with the reduced work force within the Maryland DNR Forest Service.

A significant environmental advantage comes from having the managing foresters, rather than the purchasing mills, hire and direct the logging contractors. By matching the type of machinery and skills of the contractor to the specific land involved, Vision Forestry is able to carry out thinning projects in sensitive areas with excellent results. Rather than being guided by the incentive to get the wood out as rapidly and cheaply as possible, these contractors are able to concentrate on the end results, knowing the quality of their work and subsequent merchandising are what affect their financial returns.

The annual work planning process demonstrates other advantages of the public-private cooperative approach. The private managers, with a small staff of foresters who work the lands

on a daily basis, can identify activities that are responsive to field conditions. Under the general plan, with its adaptive management philosophy, they can utilize the spatial data system to assure that not only are the needs of the land considered, but also the achievement of the larger and longer-term objectives in the management plan. Their recommendations reflect not only the situation on the land, but the current market and labor conditions in the local area. By matching contractors and equipment to specific activities, and by taking advantage of rapidly-changing local market situations, they gain maximum net economic return for the amount of wood produced.

The Maryland DNR, with its extensive multi-disciplinary knowledge and responsibility for achieving the broad conservation goals of the State, can provide insight, expertise, and training to both private land managers and state employees using practical field-based information. Special skills can be made available to help design and implement ecosystem restoration and watershed improvement projects. Large work forces with special equipment can be marshaled to conduct activities such as wildfire suppression or prescribed fires. Security is provided by the Maryland DNR's Natural Resource Police. In addition, the State can reach out to broader publics with an information and education program that illustrates the challenges and benefits in the sustainable forestry effort.

The private managers can be flexible in their staffing, as they are able to expand and contract staff resources on the project as conditions or workloads change. The Maryland DNR lacks this flexibility, being locked into state budgets and personnel ceilings that have, for example, meant that the agency has only been able to hire 20% of the staff it requested to manage the original 29,000 acres it purchased. With formal state contracting procedures and requirements, it is difficult for the state agency to respond to rapid changes in labor requirements.

The contract between the state and the private manager is based on an annual per-acre fee for basic management services, with the ability to supplement the contract for additional or unforeseen needs. The managers are responsible for sub-contracting all fieldwork, and paying all sub-contractor bills out of revenues from the forest. Maryland law requires the state agency to share 15% of its sale revenues with the local counties, so the managers are responsible for providing that payment as well. Only when those two obligations have been met are the managers able to collect their management fee. Finally, any net revenues remaining are paid to the state. All of this provides a strong economic incentive to keep the project economically self-supporting.

The private contractors engage an independent bookkeeping and auditing firm to handle the accounts, providing a fully accessible and transparent accounting system open to state review at any time. No state funds are co-mingled with the funds of the contractor, or with funds belonging to other clients. A quarterly activity report, combined with a financial summary, gives state agency managers a current sense of the project's status. An independent annual audit provides an additional layer of third-party review of the financial aspects of the project. Forest certification under the SFI program is planned for the coming year, and dual SFI-FSC certification is contemplated as soon as it can be arranged.

Challenges For The Future

In forestry, as in business, nothing succeeds like success. For the Chesapeake Forest Project to fulfill its goal of long-term sustainability, success demands several important achievements. Perhaps the most important, and difficult, is to convince local people that the management activities are maintaining environmental quality while producing economic results. In the near term, this is made more difficult in terms of economic results by the preponderance of young plantations that produce a high proportion of lower-value pulpwood as they are thinned. On the other hand, thinning done by experienced contractors with modern equipment results in minor environmental or visual impacts while hastening the development of large, healthy stands that are prized for many reasons. Public controversies over options such as 35-year versus 50-

year rotations, or clear cutting versus selection harvesting, are many years in the future, so can be avoided today.

One of the most difficult political issues to be addressed by the state as it conducts the formal planning process on the project is that of public hunting versus limited-access hunting on the forests. There are strong constituencies and feelings on both sides, and solutions will not come easily. Now that the lands are in public hands, there are many who feel that the public should have free hunting access. At this point in the development of these forests, while most of them are many years from harvest age, the financial support from hunt club revenues is a significant contributor to the overall financial sustainability of the project. In FY 2002, for example, hunting revenues made up almost one-third of the entire revenue stream to the State.

While the Maryland DNR was conducting studies and criteria to identify those areas best suited to public hunting, the state legislature passed legislation requiring that half the land be turned over to public hunting by 2005. While that goal is probably reasonable in light of the feelings on both sides of the issue, the decision was made politically rather than as a result of considered study, and provides an object lesson as to how future political decisions could affect these forests and their management. Where possible, it would be advantageous to limit these kinds of actions in the future, but it is not clear how this will be achieved.

Equally important will be the development within Maryland DNR of the capability to manage these lands under a conservation-oriented sustainable management plan in the future. This will require the agency to develop the ability to carry out adaptive forest management using sound science in a manner that responds to public opinion and values without being continuously disrupted by short-term political decision making. This is not a matter of competence – it is a matter of being tied to fairly rigid procedures and rules that may prevent rapid response, while also being subject to budget, staffing, and management decisions made for reasons far removed from forest sustainability or local conditions.

These are problems commonly to most public land management agencies, and Maryland is no exception. What may be exceptional, however, is the unique public-private partnership being tested on the Chesapeake Forest Project. Hopefully, this practical learning laboratory can illustrate ways to capture both the flexibility and professionalism of private foresters and the scientific capacity of the state agency to maximize sustainable public benefits from these forests.