8.4 ECOSYSTEM SERVICES AS AN EMERGING MARKET

BACKGROUND

Compensation for ecosystem services provided by the forest may some day provide income and thus an incentive to participate in ecosystem-services markets.

Forests provide a myriad of public benefits to human welfare and the overall health and sustainability of the biosphere. Known as "ecosystem services" these benefits include wildlife and pollinator habitat, improved water quality, groundwater recharge, storage and regulation of storm flows, decomposition of organic debris, soil creation and maintenance, erosion control, sediment retention, carbon storage, recreation, and aesthetics. These public benefits are provided by the thousands of private landowners who keep their forest as forest. Once forests get converted to other land uses many of these natural services diminish or disappear.

Historically, economists and policy makers haven't assigned a dollar value to ecosystem services, but this is changing. Scientists and policy makers have begun proposing and implementing programs to compensate landowners for the services their lands provide. The intention of these programs is to provide landowners with incentives to keep their land in forest. Though current use assessment (RSA 79-A) doesn't explicitly talk about ecosystem services, it is an example of the State Legislature recognizing private landowners for preserving open space, "...thus providing a healthful and attractive outdoor environment for work and recreation of the state's citizens, maintaining the character of the state's landscape, and conserving the land, water, forest, agricultural and wildlife resources."

Carbon storage is one of the most developed ecosystem services markets. Although the existence of a market for carbon doesn't mean it is the most important ecosystem service. Work and research continues on the valuation of other services. New markets for ecosystem services may emerge as the public becomes more aware of their importance. Wetlands banking, conservation banking, and other large-scale efforts to protect the values and services provided by natural landscapes are already established in regions around the nation. Private landowners stand to benefit from growing markets for ecosystem services.

Carbon Sequestration Markets (Carbon Offset Markets)

All forests store carbon. The rate and quantity of carbon stored varies by forest type, age, and structure. Carbon markets, which provide credible standards by which carbon storage is measured and verified, are developing and give forest landowners an opportunity to measure and monitor the carbon stored in their forests and sell credits on an open market. Carbon emitters seeking to offset their carbon emissions purchase carbon credits. Currently these markets within the United States are entirely voluntary, though the development of a mandatory national carbon "cap-and-trade" system would change this situation.

Carbon-credit transactions may be private transactions between parties or coordinated through centralized registries or exchanges. There are several registries for forest carbon-offset credits. The Climate Action Reserve (CAR) is one example.

Developing a carbon-offset project is complex and expensive, involving inventory, monitoring, and verification costs above and beyond what is necessary for a normal forest management plan. Currently, participation in these markets is only feasible for large landowners, though some carbon-offset project-development companies are developing programs to aggregate multiple smaller landowners. Participation in these markets imposes long-term commitments and expenses.

Other Markets

Other models exist for compensating landowners for their good stewardship to ensure their forests provide ecosystem services. Wetland-mitigation banking and conservation banking for endangered species mitigate unavoidable impacts on aquatic resources and endangered species from development or other activity. The "bank" is a restored, enhanced or conserved area maintained to specific contractual standards by the bank owners. The banks are subject to regulatory review. Mitigation or conservation credits, which provide a specific ecosystem function, are sold to companies whose projects have an unavoidable impact on a similar resource. For example, if a project impacts a specific endangered species habitat, the purchased credit must support that same species habitat in the bank. New Hampshire has no mitigation banks, but states such as California and Florida have used them for decades.

OBJECTIVE

Be aware of new and emerging markets.

CONSIDERATIONS

- Protecting forest land in perpetuity with a conservation easement is one way to ensure that forests continue to provide ecosystem services.
- Selling carbon credits comes with encumbrances. If you sell carbon credits, you may not be able to sell other services, or sell or harvest forest products in the future.
- Voluntary carbon markets and standards by which carbon is measured and traded continue to develop and change. It has yet to be proven whether participation in carbon-exchange programs will be successful at providing an income stream and an incentive for landowners to participate in this market.
- As with any new economic activity, existing contract and tax law applies. The *National Timber Tax* website provides guidance for treating the costs and income associated with carbon contracts for federal income tax purposes.
- Landowners interested in participating in carbon markets will need to establish a baseline inventory of their woodlot using required protocols for carbon inventories.
- Managing for a diversity of species, structure and size classes, keeps options open in the event you wish to participate in an ecosystem-services market.
- Federal farm bill programs may provide financial assistance to landowners to participate in emerging environmental services market.
- Human-engineered systems that replace ecosystem services lost through forest conversion generally are expensive, require technology not yet developed or perfected, and aren't as efficient or cost-effective as what a natural ecosystem provide.

RECOMMENDED PRACTICES

- ✓ Discuss your interest in ecosystem services with your forester. Consider emerging ecosystem services markets when developing your forest management plan. Establish a baseline inventory of your woodlot using required protocols.
- ✓ Participate in a forest certification system, such as the American Tree Farm System, Forest Stewardship Council, or the Sustainable Forestry Initiative. This may be required to participate in carbon markets and is likely to be required as markets for other ecosystem services are created.

- ✓ Identify aggregators (organizations that put together the carbon stocks from several landowners in their state or region). Private forest landowners will need to work with aggregators to participate in carbon trading.

CROSS REFERENCES

1.2 Setting Objectives; 1.3 Forest Management Planning.

ADDITIONAL INFORMATION

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