

Forest Certification as a Framework for Teaching Forest and Natural Resource Sustainability

Introduction

Forest sustainability has always been the fundamental focus of forest management. American Forestry developed from a European model that sustained a forest's potential to produce a maximum yield of wood products on a perpetual basis. Today's forest management models still stress that, but for an array of forest outputs that include much more than timber (like wildlife, water quality, recreation, aesthetics, and biodiversity). Forest sustainability is a complex subject that leads to intricate questions on economic, social, and ecological values and includes concepts that must be incorporated into any modern forest or natural resources management curriculum (Davis et al., 2001).

Forest certification appeared in the late twentieth century as a tool to address forest destruction in the tropics and to preserve biodiversity, then morphed into programs to ensure sustainable forest management (SFM) is practiced on all forestland (Rametsteiner and Simula, 2003). It has become increasingly important in defining forest management expectations, with many forest products companies demanding that the wood procured for their operations be properly certified as coming from a source meeting SFM standards (Ice et al., 2010).

The Forest Certification Framework

Forest certification developed as a framework to establish whether forestland is being managed under SFM principles. Currently there are three major forest certification systems in the United States: the American Tree Farm System, Sustainable Forestry Initiative, and Forest Stewardship Council.

A forest certification system or scheme usually is based on a set of forest management principles and objectives. Compliance with these is measured via performance measures, with specific indicators that attest to performance (Fernholz et al., 2011).

For example, a principle in SFM might be that water resources must be protected, and a corresponding objective could be protection and maintenance of water resources (managing the forest to protect the water quality of rivers, streams, lakes and wetlands). A performance measure related to water quality would be meeting or exceeding all applicable federal, state, and local water quality laws. An indicator could be having mapped all the relevant water bodies on a forest property as the first step in addressing those laws.

Forestry students are required to understand the objectives and workings of forest certification systems, but they are not necessarily expected to actually become experts in specific systems. However, if they did, they would gain an enhanced understanding of SFM, with a solid background in on-the-ground verifiable measures that support SFM principles. At Clemson University that just what we accomplished, by actually credentialing students as those kinds of experts.

Clemson Forest Students as Tree Farm Inspectors

The American Tree Farm System (ATFS), a program of the American Forest Association, has been around for over 70 years and is the oldest certification system for SFM in the United States. They certify “tree farms” or small family-owned forests. Their certification system is “accredited” by the relevant international organization and follows the standard format for forest certification.

SFM is usually defined in term of expectations relative to a set of standards. ATFS has a system that uses eight standards that address: (1) commitment to SFM, (2) compliance with laws, (3) reforestation and afforestation, (4) air, water, and soil protection, (5) fish, wildlife, biodiversity, and forest health, (6) forest aesthetics, (7) protection of special sites, and (8) forest products harvesting and other activities (American Forest Foundation, 2015). These represent the criteria that define SFM. Thus, an understanding of the eight standards, how performance of the standards is measured, and what would indicate adequate performance would constitute a thorough understanding of SFM principles. A forest holding that meets the standards is called a “tree farm.”

ATFS has a program to train “tree farm inspectors” who periodically inspect tree farm for compliance with the standards and eligibility to be a tree farm. The training program, designed for practicing foresters, is an all-day affair that covers all aspects of SFM and provides the credential of “tree farm inspector.”

As part of Clemson’s senior-level forest management courses we include a voluntary full-day training session taught by ATFS instructors. ATFS is anxious to provide the training, as it produces a crop of new tree farm inspectors. This training accomplishes two learning objectives. The students become operationally involved with an actual forest certification system, learning the standards in a formal process, and learn the fundamentals of SFM in a very practical sense.

Other natural resource programs have similar certification programs, so this is not limited to forestry. The assessments of the option have been very positive. Since the training is all day, it has to be optional, but virtually all seniors attend. It is taught by practicing professional, so the students like the field-oriented approach and many make professional contacts during the training. It also turns out that today’s seniors are very credential-oriented. It is a very big deal that they earn a tree farm inspector designation, as it can go on their resume or be another “badge” for LinkedIn. Various natural resource certification programs offer an effective tool to teach practical natural resource management principles in a manner that students find to be very attractive.

References

American Forest Foundation. 2015. Standards and Guidance, 2015-2020. Washington, DC: American Forest Foundation.

Davis, L.S., K.N. Johnson, P. Bettinger and T.E. Howard. 2001. Forest management: To sustain ecological, economic, and social values. 4th ed. Long Grove, IL: Waveland Press, Inc.

Fernholz, K., J. Bower, S. Stai, S. Bratkovich and J. Howe. 2011. Differences between the Forest Stewardship Council (FSC) and Sustainable Forestry Initiative (SFI) certification standards for forest management. Minneapolis, MN: Dovetail Partners, Inc.

Ice, G.G., E. Schilling and J. Vowell. 2010. Trends for forestry best management practices implementation. *Journal of Forestry* 108(6): 267-273.

Rametsteiner, E. and M. Simula. 2003. Forest certification—an instrument to promote sustainable forest management? *Journal of Environmental Management* 67(1): 87-98.

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