



Comparing Forest Certification Standards in the U.S., Part I: How Are They Being Implemented Today?

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Executive Summary

We conducted research on how alternate forest certification systems could impact timberland economics in the United States. The three programs evaluated included the American Tree Farm System (ATFS), the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI). We focused on the U.S. South and Pacific Northwest, the two largest timber-producing regions in the country. As we outlined the modeling parameters, we found that programs were ambiguous, particularly FSC, with respect to certain certification criteria. To better understand how the programs implement standards on the ground, we conducted nearly two dozen interviews with timberland owners, managers, and auditors. We found that in the United States, forest owners have wide latitude to develop management plans that conform to responsible forest management.

This paper documents our understanding of how forest certification programs currently implement standards, as the criteria and expectations have changed over time and sometimes lack specificity or clarity as written. In addition, we highlight alternate ways that certification programs approach forest management guidelines. The three programs differ both among themselves and between regions on the criteria of harvesting adjacent stands and harvest size restrictions. The programs differ in their written requirements about managing forest plantations, and some FSC auditors are currently interpreting little if any U.S. forestry as plantation management. In contrast, the certification programs, as applied today, have similar impacts on forest management regarding use of chemicals and the maintenance of streamside vegetation. Table 1 summarizes the research findings for ATFS, FSC and SFI.

Stakeholders and consumers should recognize that forest certification programs handle operational issues distinctly, providing significant flexibility, in cases, to landowners and auditors. Understanding how these programs function extends beyond reading pamphlets, brief summaries or even the text of the standards. Customers of forest certification should recognize how programs actually operate and question specific claims related to forest management. All three forest certification programs in the U.S. symbolize responsible forest management; however, adherence to a given certification program does not necessarily confirm specific forest management practices or restrictions. As we learned during this research, even auditors responsible for verifying landowners' compliance with certification programs acknowledge how some standards, even if explicit, remain subject to interpretation in implementation.

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Table 1. Comparison of ATFS, FSC and SFI Standards and Implementation

	ATFS in Practice	SFI In Practice	FSC In Practice
Plantations vs. Natural Stands	Same as standard: does not distinguish between plantations and natural stands	Same as standard: does not distinguish between plantations and natural stands	Relaxed classification of plantations in U.S. Auditors now classify planted stands of native species (traditionally thought of as plantations) as “semi-natural” forests
Green-up Intervals: Restrictions or period of time between harvests of adjacent stands	Same as standard: no specified green-up interval	Same as standard: South: 3 years old or 5 feet tall Pacific NW: 3 years old or 5 feet tall or State BMPs	South: standard does not have green-up rules; defaults to auditor interpretation and guidance; state BMPs if available; some timberland owners use SFI guidelines Pacific NW (Plantations): same as standard. Advanced successional habitat, 10 feet high, or canopy closure of at least 50% at perimeter Pacific NW (Natural Stands): Same as standard 3 years old and 5 feet tall
Pest and Competition Control with Chemicals	Same as standard: does not regulate the use of specific chemicals beyond compliance with U.S. law. Requires landowners to consider integrated pest management and alternatives to chemical use.	Same as standard: does not regulate the use of specific chemicals beyond compliance with U.S. law. Requires participants to minimize chemical use and to use integrated pest management where feasible.	Same as standard but with an exception (“derogation”) process: requires adherence to a banned chemicals list; however, chemicals commonly used in forest management are either not on list or are allowed through exceptions.
Harvest Size Requirements	Same as standard: does not have a harvest size restriction	Same as standard: 120 acre average for both the South and the Pacific NW. No binding maximum unless under state forest practices rules; landowners use 250 acres in cases.	Plantations: same as standard: 40 acre average and 80 acre maximum. Natural stands: South: no binding standard; landowners use 80-100 acre average in cases Pacific NW: same as standard: 40 acre average; 60 acre maximum
Retention In Harvest Openings	Same as standard: does not have a specific retention requirement. Requires that forest management activities maintain or enhance habitat for threatened or endangered communities and species.	Same as standard: landowners leave small patches of unmerchantable trees for wildlife in addition to RMZs and specific management plans for threatened and endangered species.	South: retention implementation left up to auditors, often mirrors that of SFI. Pacific NW (Natural Stands): standard allows some flexibility: Landowners managing to longer rotation ages implement 10-15% retention, sometimes including RMZs

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Introduction

The primary programs considered by industrial forestland managers in the United States – American Tree Farm System (ATFS), the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI) – started from different contexts. A group of environmental groups, businesses, and social activists formed FSC in 1993 after the 1992 Earth Summit in Rio did not produce a global forest practices agreement. FSC founders prioritized environmental and social interests; they designed FSC as a global forest certification program.

At the same time, in the U.S., the American Forest and Paper Association (AF&PA) created SFI as a code of conduct for its members. Control of the program moved to an independent board and SFI added a third-party certification element and product label in 2002. The Programme for the Endorsement of Forest Certification (PEFC) endorsed SFI in 2005, giving it international recognition. In 2007, SFI became fully independent from AF&PA.

The American Tree Farm System (ATFS) dates from the 1940s. It provides a “family forest” certification system in the U.S. oriented towards smaller landowners. It includes a third-party verification system and endorses sustainable forest management. Participants implement written management plans that are subject to audits, and also follow state forest practice laws or voluntary best management practices (BMPs).

Although all are market-based tools as opposed to traditional government regulation, the certification programs differ in strategy and orientation. In 2001, the Meridian Institute facilitated and published a comparison of FSC and SFI that summarized their general strategies. SFI encourages a “rising tide lifts all boats” approach to advancing sustainable forestry. It establishes baselines of performance that build on widely accepted concepts of sustainable forest management while leveraging existing state regulations and voluntary BMPs. FSC developed a strategy intended to drive change through financial rewards in the marketplace. The mechanism includes labeling forest products to differentiate these goods as coming from lands complying from a superior set of criteria and principles. SFI’s focus on widely accepted criteria differs from FSC’s approach of emphasizing superior criteria.

What effects do these competing approaches have on the economics of landowners? We conducted research on how alternate forest certification systems could impact timberland economics in the United States. The research modeled certification impacts for large blocks of timberland in the South (Arkansas) and the Pacific Northwest (Oregon). These scenarios comprise the most economically sensitive criteria: those related to clear cut size, land set-asides, adjacency (“green-up”), streamside management zones and the use of chemicals. The standards reflect criteria from ATFS, FSC, and SFI.

As we outlined the modeling parameters, we found the programs were ambiguous, particularly FSC, with respect to certain certification criteria. To better understand how the programs implement standards on the ground, we conducted nearly two dozen interviews with timberland owners, managers, and auditors. We found that in the United States, forest owners have wide latitude to develop management plans that conform to responsible forest management.

This paper documents our understanding of how forest certification programs currently implement standards, as the criteria and expectations have changed over time and sometimes lack specificity or clarity as written. In addition, we highlight alternate approaches to how certification programs approach forest management guidelines. The three programs differ both among themselves and between regions on the criteria of harvesting adjacent stands and harvest size restrictions. In contrast, the certification programs have similar impacts on forest management regarding use of chemicals and the maintenance of streamside vegetation.

Examples of Differences between Programs

Forest Definitions: Plantations or Natural Stands?

Among the three certification programs, FSC uniquely distinguishes plantations from natural stands. This is important because FSC imposes different forest management standards for each related to permanent set-asides of land that cannot be harvested, how many live trees to leave after a harvest, and requirements related to adjacent stands and harvest areas. Under SFI and ATFS, the same criteria apply to all timberlands, regardless of how they were established.

For plantations, FSC requires that a certain percentage of the total area be restored and maintained as natural or semi-natural cover. In addition, plantations cannot be managed under FSC if they were converted from natural forests to plantations after November 1994. This rule would affect many stands in the U.S., particularly in the South. [Appendix A summarizes the FSC definitions by stand type.]

Recently, FSC relaxed its classification of plantations in the U.S. Auditors now classify many planted stands (traditionally thought of as plantations) as natural forests, specifically, “semi-natural” forests. Interviews with timberland owners and auditors confirmed this practice of defining planted forests as “semi-natural” stands. One industrial timberland owner confirmed the FSC guideline as implemented:

FSC gives auditors lots of flexibility to interpret the standard. As written, FSC can't certify plantations that were created after 1994. However, the plantation definition has become more narrow. A typical planted stand in the South is viewed as a semi-natural forest. The fact that it is planted does not make it a "plantation" per se.

As a result, through reclassifying planted forests under FSC in the South, auditors and forest managers can certify forests using criteria that more closely align with current forest management practices. Another timberland owner reiterates the practice:

The way that foresters interpret plantations in the South is not the way FSC defines plantations. FSC has narrowed its definition of plantation: basically, the only plantation in the South would be a Eucalyptus plantation.

Green-up Intervals Vary by Program and Region

Some forest certification schemes require a specific period of time between harvests of adjacent stands. This is referred to as the “green-up interval.” In the South, requirements vary:

- ATFS does not have a specific green-up requirement.
- SFI requires that trees in clearcut areas be at least 3 years old or 5 feet tall before adjacent stands may be harvested.
- FSC does not have a specific green-up requirement for plantations or natural stands in the South. Auditors look to state forest practice laws, or state BMPs, for guidance on green-up. If the state does not have a required green-up period, then there is no FSC requirement.

One auditor stated that their clients in the Southeast are not applying a green-up procedure. One FSC-certified timberland owner in the South disclosed that they use the more stringent SFI green-up rules in their harvest schedule, as FSC does not have a green-up requirement.

In the Pacific Northwest, ATFS and SFI programs mirror green-up policies from the South. For states that require green-up as part of their forest practice laws, they default to those state requirements as minimums. For plantations, FSC requires that the harvested area be of advanced successional habitat or that the trees be 10 feet tall or have canopy closure at least 50% at perimeter before adjacent areas may be harvested. For natural stands, FSC requires that trees be five feet tall and at least three years old in the harvested area before adjacent stands may be harvested.

Retention in Harvest Openings Remains Ambiguous

Retention refers to living vegetation, including trees, left after a harvest. In the U.S. South, the three certification programs provide substantial flexibility:

- ATFS does not have a specific retention requirement, although it does require that forest management activities maintain or enhance habitat for threatened or endangered communities and species.
- SFI requires landowners to implement criteria to retain stand-level wildlife habitat elements, but does not specify exact criteria for doing so. Most landowners that manage timberland under SFI leave small patches of unmerchantable trees for wildlife in addition to RMZs and specific management plans for threatened and endangered species.
- FSC regional variation for the South is not specific in terms of retention for natural stands. Retention does not apply to plantations that have harvest openings smaller than 80 acres with a 40 acre average size. Retention implementation is left up to the auditors.

Specific to FSC in the South, one auditor notes:

There is no specific retention requirement. There is lots of explanation about what retention is (life-boats/live clumps of trees/scattered live and dead trees). Most companies are leaving clumps of unmerchantable trees in scattered areas, usually in riparian areas, draws and inaccessible corners.

The description provided by the auditor also describes practices landowners follow for SFI. In the South, implementing FSC and SFI with respect to retention often mirror each other. In other cases, FSC auditors issued corrective action requests (CARs) against companies for not leaving sufficient in-stand retention. A timberland owner described the FSC retention rules

as “not straight-forward.” The company looks to reduce the uncertainty by working with its auditors to formulate a retention plan.

For the Pacific Northwest, ATFS and SFI guidelines, by incorporating state forest practices rules, require retention of certain numbers of wildlife trees, but are otherwise the same as for the South. FSC guidelines vary for natural stands versus plantations. For natural stands managed under FSC, landowners must retain 10 to 30% of the basal area of the stand after harvest. FSC guidelines state that if timberland owners manage on rotation ages that maximize the long-term yield then they may leave retention in the lower end of the range. Landscape features, harvest age, and harvest size can affect the retention percentage, as well. Average harvest ages to maximize long-term yields can range from 50 – 80 years, depending on species.

According to a timberland manager in the Pacific Coast region, managing to the minimum standard is rarely sufficient. This firm manages to a 15% retention level to mitigate risk in the audit process. In cases, RMZs can count towards retention. The range of rotation ages, the issues with what portion of the retention range is acceptable, and variance with respect to RMZs counting toward retention highlight the ambiguity and uncertainty of the FSC retention policy in the Pacific Northwest.

Harvest Size Requirements Vary by Program and by U.S. Region

Harvest size restrictions limit the area of harvest activity within harvest blocks. The requirements vary across programs in the South:

- ATFS does not have a harvest size restriction.
- SFI requires that average harvest size not exceed 120 acres. While SFI does not specify a maximum harvest size, the timberland owners we spoke to define a maximum harvest size of 250 – 350 acres.
- For FSC plantations there is a strict opening size limit of an 80 acre maximum and a 40 acre average. For natural stands, FSC has a non-binding guideline of an 80 acre maximum and 40 acre average. According to one auditor interviewed, some FSC certified landowners in the South manage to 80 to 100-acre average block sizes.

On the Pacific Coast, ATFS and SFI have identical requirements. States have harvest size restrictions in their forest best practices laws and ATFS and SFI default to state requirements where applicable. Oregon, for example, limits harvest openings to 120 acres.

The FSC plantation restriction of an 80 acre maximum and average of 40 acres applies to plantations on the Pacific Coast. For natural stands, the FSC regional variation for the Pacific Coast requires an average of 40 acres or less and a maximum clearcut size of 60 acres.

Examples of Similarities between Programs

While differences exist across the programs and by region, they also have areas of alignment. In cases where programs align, these appear to reflect convergence over time with existing forest management practices in the U.S.

Since 2007, All Programs Permit Pest and Competition Control with Chemicals

In practice, little variance exists across the three forest certification programs with respect to chemicals use in forest management; all allow chemical-based silviculture treatments. In addition, all three programs support and encourage integrated programs that reduce chemical use over time:

- ATFS does not regulate the use of specific chemicals. ATFS requires landowners to consider integrated pest management and to evaluate alternatives to chemical use.
- FSC requires adherence to a “banned” chemicals list; however, the list does not include the chemicals most commonly used in forest management. FSC’s banned chemicals list has changed since 2007 to the point where, as of 2012, it has minimal impact on current practice for timberland owners in the U.S. South.
- SFI does not regulate the use of specific chemicals other than limiting use to those approved by EPA. SFI requires participants to minimize chemical use and use integrated pest management where feasible.

Some timberland managers we interviewed thought that FSC significantly restricts forest management in the U.S. with respect to chemical use; this is no longer the case. For example, imazapyr (trade names Arsenal and Chopper) appeared on the FSC banned list but was removed in 2007. Landowners may now use imazapyr under the FSC program. This represented a major change as imazapyr is a common chemical for site preparation and weed control in the South. Thus, FSC appears to have little or no material daily impact on forest management strategies with respect to chemical use today.

According to one FSC auditor interviewed in the South, most U.S. companies do not use chemicals on the highly hazardous list so FSC’s pesticides policy does not impact them. An FSC-certified timberland-owning firm did cease to use two chemicals under FSC: hexazinone and fipronil, although other firms are allowed to use these chemicals under FSC’s exception process. In addition, the firm continues to reduce and document the amount of chemical used.

All Certification Programs Approach Managing Streamside Forest Activities Similarly

Forest best management practices (BMPs) provide guidance on mitigating the impact of forest activities on streams and waterways. The strategies focus on defining buffers adjacent to streams in which vegetation is maintained or managed to protect water quality. These buffers are called streamside management zones (SMZs) or riparian management zones (RMZs). While the approach to managing this issue is consistent, the width of RMZs varies by state, by U.S. region, and across forest certification programs. Landowners usually may remove some trees from SMZs as long as the stream bed is not disrupted and sufficient vegetation remains to protect water quality.

In the South, all three certification systems defaulted to state BMPs for the width of RMZs. In the Pacific Northwest, SFI and ATFS also default to state BMPs. The FSC regional variation for the Pacific Coast outlines specific RMZ widths, which are 30 – 50 feet wider on each side than the Oregon state forest practice rule requirements. Regarding SMZs, we found that all programs were consistent and that the implementation of the SMZ buffers was straightforward.

Conclusion: Forest Certification Implementation Varies

While FSC, SFI and ATFS differ in origin, over time FSC has modified its standards to address business concerns while SFI has expanded its program to address broader environmental objectives and international concerns. These changes have led some to believe that the programs are now similar in nature. Still, many environmental groups remain FSC loyalists and refuse to accept SFI or ATFS as a credible certification program. Likewise, many forest landowners refuse to consider FSC as a viable alternative for their businesses. The programs have different approaches among themselves and between regions on harvesting adjacent stands and harvest size restrictions. The programs differ in their written requirements about managing forest plantations, and some FSC auditors are currently interpreting little if any US forestry as plantation management. The certification programs have similar impacts on forest management regarding chemicals and maintaining streamside vegetation.

We recognize that variance always exists in measuring standards and evaluating compliance. However, our research in comparing forest certification programs indicates that these variances are magnified because of differences in how standards are audited, enforced and implemented. In addition, the forest certification standards continue to change over time. While evolving standards remain essential as they can signal improvement and alignment, they also raise the question of what forest certification programs communicate today to consumers.

Forest certification programs – including ATFS, FSC and SFI – advance responsible forest management activities. Timberland owners enrolled in third-party certification programs adhere to program standards and are subject to confirmation by third-party auditors. However, forest certification rarely guarantees that landowners adopt (or avoid) specific management prescriptions. Certification programs all address management activities including chemical use, adjacency, harvest area, and water quality protection. Actual implementation varies on the ground subject to the region, site conditions, management history, auditors and other factors. To account for potential uncertainty, those who seek certification should understand the widespread variations in the application of these guidelines.

Stakeholders and consumers should similarly recognize that forest certification programs handle operational issues distinctly, providing in cases significant flexibility. Understanding how these programs function extends beyond reading pamphlets, brief summaries, or even the text of each program. Customers of forest certification should recognize how programs actually operate and question specific claims related to forest management. All three forest certification programs in the U.S. symbolize responsible forest management; however, adherence to a given certification program does not necessarily confirm specific forest management practices or restrictions. As we learned during this research, even auditors responsible for verifying landowners' compliance with certification programs acknowledge how some standards, even if explicit, remain subject to interpretation for implementation.

Appendix A: FSC Definitions for Plantations and Natural Stands

From FSC-US Forest Management Standard (v1.0), Appendix A:

Plantation: forest areas lacking most of the principal characteristics and key elements of native ecosystems as defined by FSC-approved national and regional standards of forest stewardship, which result from the human activities of either planting, sowing or intensive silvicultural treatments... Except for highly extenuating circumstances the following are classified as plantations:

- Cultivation of exotic species or recognized exotic sub-species;
- Block plantings of cloned trees resulting in a major reduction of within-stand genetic diversity compared to what would be found in a natural stand of the same species;
- Cultivation of any tree species in areas that were naturally non-forested ecosystems.

Semi-natural forest: a forest ecosystem with many of the characteristics of native ecosystems present. Semi-natural forests exhibit a history of human disturbance (e.g. harvesting or other silvicultural activities), are very common in the United States, and include a considerable amount of unmanaged and most of the managed forest land other than plantations.

Natural forest: natural forests include old growth and primary forests as well as managed forests where most of the principle characteristics and key elements of native ecosystems such as complexity, structure, wildlife and biological diversity are present.

From the FSC-US Forest Management Standard (v1.0), Appendix G:

Therefore, a "planted forest" is not necessarily a "plantation" (as defined in this standard) since it may have most of the principle characteristics and key elements of native forest ecosystems indigenous to an area.