Forest Certification Programs

September 8, 2011

Congressional Research Service
https://crsreports.congress.gov
R41992

CRS REPORT
Prepared for Members and
Committees of Congress

Summary

The national forests have been the focus of controversy for many years. Reduced timber harvests, increased wildfire risks, degraded forest health, and disagreements among users and other stakeholders have led to congressional disputes over appropriate management. Some interests have suggested third-party certification of sustainable management of the national forests as a possible solution to many of these difficulties. There are two major certification programs in the United States: the Sustainable Forestry Initiative (SFI) and the Forest Stewardship Council (FSC) program.

The FSC and SFI programs are very similar in many regards. Both programs use a multi-stakeholder approach that balances environmental, social, and economic interests to negotiate broadly acceptable standards of sustainable forest management. Both programs use independent, accredited third parties to verify compliance with the standards. Both programs have stakeholder involvement and public transparency requirements. Within the standards, both programs have similar coverage in terms of requirements for harvest operations, wildlife and habitat management, water and soil protection, and decision-making and management planning.

Despite these similarities, the SFI and FSC programs do have some distinct differences. The programs each emphasize different sustainability objectives: the SFI program emphasizes sustainable timber harvesting, and places forest management as a tool to achieve that objective; the FSC program emphasizes sustainable forest management, and places timber harvests as one tool to achieve that objective. The SFI standard is generally more flexible, while the FSC standard is generally more prescriptive with more on-the-ground performance requirements.

How certification would affect the management of the national forests is uncertain. However, certification could evaluate the extent to which the forest management plans align with the standards of each certification program, and then evaluate the extent to which those forest plans are being implemented. A third-party evaluation of the forest plans, and their implementation, could potentially alleviate—or escalate—stakeholder and congressional disputes over the appropriate management of the national forests.

It is unclear whether the Forest Service has the existing authority to certify the national forests. If Congress chooses to require certification of the national forests, there are other questions to consider, including which certification program(s) to require; what (if any) forest management process requirements (e.g., public involvement standards) might be relaxed; and what would be the impact on timber purchasers of processing certified sustainable wood. Congress may also consider if certification should occur across the entire National Forest System, or at the unit level, and then how many and which units should be certified.

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Introduction

Nearly one-third of the land area of the United States is covered by forest land. The 750 million acres of U.S. forests are owned both privately—by individuals and corporations—and publicly—by federal, state, and local governments. At the federal level, the Forest Service—an agency within the U.S. Department of Agriculture—is the principal forest management agency, charged with managing 193 million acres designated mostly as national forests.[1] The Forest Service manages the forest resources under a multiple use-sustained yield mandate, meaning that the agency must balance uses such as providing recreation opportunities, timber supplies, livestock grazing, watershed protection, and fish and wildlife habitats, in a manner that does not impair the productivity of the land for future resource yields.

The national forests have been the focus of controversy for many years. Reduced timber harvests, increased wildfire risks, degraded forest health, and disagreements among users and other stakeholders have led to congressional disputes over appropriate management. Some interests have suggested third-party certification of sustainable management of the national forests as a possible solution to many of these difficulties.

Sustainable forest certification programs were created in the 1990s as a nongovernmental approach to promote sustainable forest management practices. Sustainable forest management generally requires that the stewardship and use of the forests balance current and future demand for the resources with maintaining ecological, economic, and social functionality. Forest landowners may voluntarily participate in these programs with the goal of gaining a market advantage through independent third-party assessments and product labels to communicate compliance with standards of sustainable management. The standards are developed by different multi-stakeholder groups with little or no government participation. Although initially directed at private forest owners, certification programs have evolved and developed mechanisms to certify public forests.

In 1997, the USDA Forest Service declared it would not pursue certification of any of the national forests. However, the certification of several state, Department of Energy (DOE), and Department of Defense (DOD) forests has raised new questions about this policy. In 2005, the Forest Service sponsored a study evaluating the potential certification of the national forests, but the agency has not issued any changes to its certification policy since the study was released in 2007.

If Congress determines that the national forests should be subject to certification, Congress could direct the Forest Service to pursue certification for some or all of the 105 national forest administrative units. Certifying the national forests as sustainably managed may have many potential benefits. Certification might demonstrate and emphasize that the management of the national forests is held to high ecological, economic, and social standards. Certification might reduce existing conflicts over management decisions for the national forests, and has the potential to streamline the management process. For example, certification programs have requirements for planning, management, and public involvement programs as well as for measurable performances on the ground. While these requirements currently exist in policy, regulations, or statutes, Congress may consider that certification would be sufficient and could replace the existing structure. In addition, certification of the national forests may provide benefits to the private sector. The timber and wood products industries as well as the "green" products industries may benefit from having access to a greater supply of certified materials. Finally, certifying the

[1] For more information, see CRS Report R40225, *Federal Land Management Agencies: Background on Land and Resources Management*, coordinated by Ross W. Gorte.

sustainability of the national forests may complement other sustainability policy directives, such as federal green purchasing and green building policies.

However, certifying the national forests may present some costs, risks, and uncertainties. The certification process would require direct and indirect investments. Direct costs include the initial fee to pay for the audit process, and then whatever annual or semi-annual costs are required to maintain certification. Indirect costs include changes that may be required to earn or maintain certification, such as implementing new monitoring and reporting systems or adjusting harvest levels. These costs may or may not be recovered in improved management, or even in higher stumpage prices for the certified products leaving the national forests. While certification was initially seen as a means to gain market advantages, those expectations have rarely been realized in the domestic U.S. market. In addition, the certification process and maintenance requirements could have the unintended, opposite effect of becoming another layer of administrative complexity for the Forest Service to navigate.

This report outlines the history and development of forest certification as a voluntary, market-based mechanism to promote sustainable forest practices. It then describes, compares, and contrasts the two major certification programs used in the United States based on a broad range of sustainable forest management issues pertinent to the National Forest System.

Background

History and Development of Forest Certification Programs

Sustainable forest certification programs began essentially as outgrowths from failed international negotiations to address global forest degradation issues at the 1992 United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit, in Rio de Janeiro.[2] Amid increasing concern among environmental nongovernmental organizations (NGOs) and other stakeholders about the deforestation occurring in developing tropical countries, the international community met to discuss a legally binding global forest policy. However, developing countries were opposed to any legally binding agreement, based mostly on trade concerns. Instead, the process led to the Statement of Forest Principles,[3] a nonbinding set of general economic, environmental, and development guidelines that was largely considered a disappointment in terms of setting a global forest policy.[4]

In 1995 the Montreal Process[5] convened as an international effort to define measures of sustainable forest management. Participating nations—including the United States—developed national policy-level criteria and indicators as measures of the principles of sustainable forest management. The criteria and indicators included the conservation of biological diversity; maintaining forest and ecosystem productivity; conserving soil and water resources; maintaining global carbon cycles; maintaining long-term socioeconomic benefits; and a legal and institutional framework for sustainable forest management. The Montreal Process, along with the Forest

[2] B. Cashore, F. Gale, and E. Meidinger, et al., *Confronting Sustainability: Forest Certification in Developing and Transitioning Countries* (New Haven, CT: Yale F&ES Publishing Services, 2006).

[3] See http://www.un.org/documents/ga/conf151/aconf15126-3annex3.htm.

[4] G. Auld, L. H. Gulbrandsen, and C. L. McDermott, "Certification Schemes and the Impacts on Forests and Forestry," *Annual Review of Environment and Resources*, vol. 33 (2008), pp. 187-211.

[5] See http://www.rinya.maff.go.jp/mpci/.

Principles, formed a framework of economic, environmental, and social definition and measure of sustainable forest management that was carried forward by the forest certification programs.

The Forest Stewardship Council (FSC) Standard

In the absence of governmental mechanisms, the NGO community turned to private-sector tools to promote sustainable forest management. In 1993, the Forest Stewardship Council (FSC) certification standard was developed by the World Wildlife Fund and other NGOs. As a voluntary certification and labeling system, the FSC standard was intended to leverage the growing consumer demand for sustainable wood products and use market incentives to promote sustainable forest operations. The FSC is registered as a nonprofit organization headquartered in Oaxaca, Mexico. Although the initial impetus for the development of the program was to protect tropical forests, FSC is a global standard that also applies to temperate and boreal forests. As such, the FSC principles of sustainable forest management apply globally, but regional, national, and even subnational standards may be created to adapt to local conditions. In 1995, the U.S. chapter of the FSC was formed in Minneapolis and is responsible for developing and publishing the U.S. standard applicable to the lower 48 states. The FSC-US is further divided into nine regions, with regionally specific guidance built into the standard.

As of July 2011, the FSC had certified 353 million acres of private and public forest land in 79 countries (**Figure 1**), including 33 million acres in the United States (**Figure 2**), as sustainably managed.[6]

The Sustainable Forestry Initiative (SFI) Standard

After 1993, other certification programs soon emerged to compete with the FSC program. In particular, programs emerged from various industry groups. In North America in 1994, the American Forests & Paper Association (AF&PA) established the Sustainable Forestry Initiative (SFI) to focus on sustainable forest production in the United States, and later expanded it to include Canada. The initial SFI program was developed entirely by wood products industry representatives, with no external stakeholder participation.[7] Participation became mandatory for AF&PA members, but firms could self-select which criteria to measure and could self-report compliance. Market pressures have forced the SFI standard to undergo significant substantive and structural changes to compete with the FSC standard.[8] The SFI standard now requires third-party audits, is independent from the AF&PA, and is a registered nonprofit organization headquartered in Washington, DC.

As of April 2011, the SFI had certified 58 million acres private and public forest land in the United States as sustainably managed (**Figure 2**).[9]

Other Certification Programs

Several other certification programs emerged in the 1990s, but competition and consolidation left two global programs—the FSC and its primary global competitor, the Programme for the

[6] http://www.fsc.org/facts-figures.html.

[7] C. Overdevest, "Comparing Forest Certification Schemes: the Case of Ratcheting Standards in the Forest Sector," *Socio-Economic Review*, vol. 8 (2010), pp. 47-76.

[8] C. L. McDermott, E. Noah, and B. Cashore, "Differences That 'Matter'? A Framework for Comparing Environmental Certifcation Standards and Government Policies," *Journal of Environmental Policy & Planning*, vol. 10, no. 1 (March 2008), pp. 47-70.

[9] http://www.sfiprogram.org/files/pdf/SFI_ProgressReport2011_FINAL_spreads.pdf.

Endorsement of Forest Certification (PEFC). Numerous other programs operate at national or regional levels. In North America, there are two national programs—one for Canada and the SFI for North America. Smaller programs, such as the American Tree Farm System, also operate in the United States. However, the SFI and FSC programs are the two major certification programs that would apply to the national forests.

The PEFC program is a global umbrella organization for different national certification programs, providing a common label to facilitate trade in a global market. The PEFC is a nonprofit organization headquartered in Geneva, Switzerland. Originating in Europe, the PEFC was first initiated by landowner groups, and now also includes industry interest groups. The PEFC endorses national programs using a third-party verification process based on internationally developed sustainability benchmarks. In 2005, the PEFC endorsed the SFI standard, and the SFI Board of Directors serves as the governing body for the U.S. chapter of the PEFC. As of July 2011, the PEFC had 35 national members, and had certified the sustainable management of 576 million acres (**Figure 1**) through the endorsement of 30 national certification programs.[10] Since the PEFC program works by endorsing other national certification programs, the PEFC program would not apply directly to the national forests.

The other national system operating in North America is the Canadian Standards Association Sustainable Forest Management System (CSA-SFM). Developed in 1996 at the request of the Canadian forest products industry association, the CSA-SFM is Canada's official national standard for sustainable forest management and is endorsed by the PEFC. As of September 2010, the CSA-SFM had certified over 160 million acres in Canada.[11] The CSA-SFM does not apply to forests in the United States.

The American Tree Farm System (ATFS) promotes responsible forest stewardship on smaller, privately owned, nonindustrial forests in the United States. Founded in 1941, the ATFS is the oldest certification system and is a program of the American Forest Foundation, a nonprofit organization headquartered in Washington, D.C. Landowners with at least 10 acres of managed forest land are eligible to participate in the program. Requiring third-party verification, the ATFS is endorsed by the PEFC and accepted by the SFI chain-of-custody requirements. The ATFS has certified over 26 million acres in the United States (**Figure 2**).[12] As a program that targets mostly small landowners, the ATFS would not apply to the national forests.

Elements Common in Certification Programs

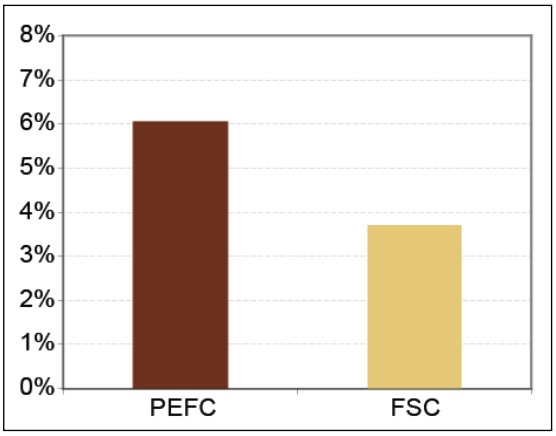
Most certification programs have common elements. Participation is voluntary, but compliance with the standards is mandatory to receive and maintain certification. Most programs are private and nongovernmental, and the governance structure is typically balanced between competing environmental, economic, and social interests. The process of negotiating the standards of sustainable management is also balanced between these competing stakeholder groups to prevent one interest from dominating the process. Most programs use independent, accredited third parties to verify compliance with the standards and have requirements that extend throughout the supply chain to maintain the certified label. In addition, there are monitoring and reporting requirements, as well as re-certification requirements after a specified time frame.

[10] http://www.pefc.org/about-pefc/who-we-are/facts-a-figures.

[11] http://www.csasfmforests.ca/factsheet.htm (2010 is the most recent data available).

[12] http://www.treefarmsystem.org/aboutus.

Figure 1. Percentage of Certified Global Forested Land by Global Certification Program



Sources: CRS, http://www.pefc.org, and http://www.fsc.org.

Notes: PEFC = Programme for the Endorsement of Forest Certification. FSC = Forest Stewardship Council.

Figure 2. Percentage of Certified U.S. Forested Land by National Certification Program

Sources: W. B. Smith et al., *Forest Resources of the United States-2007*; USDA Forest Service; http://www.sfiprogram.org, http://www.fscus.org; and http://www.treefarmsystem.org.

Notes: Includes both public and private forestland. SFI = Sustainable Forests Initiative. FSC = Forest Stewardship Council. ATFS = American Tree Farm System.

Market Forces

Sustainable forest certification is a form of private governance that uses the market to induce and monitor sustainable behavior. Forest operations are evaluated by independent auditors for conformance against negotiated standards of sustainability. The result is an eco-label on forest products leaving the certified forest, which communicates to consumers a responsibly and sustainably produced product. Firms along the entire supply chain must certify their operations to continue to sell the products with the eco-label (this is referred to as chain-of-custody certification).

Demand by wood suppliers has driven the market for certified products more than demand by consumers.[13] For example, in the late 1990s, environmental groups concerned with rapid tropical deforestation began boycotting the Home Depot, one of the largest suppliers of wood products. In response, the Home Depot began carrying FSC-certified wood. Other retailers followed suit, creating a demand for certified wood products. Landowners began certifying their forests and providing certified products to respond to the growing demand. A similar situation occurred for pulp and paper products when Time, Inc., committed to using certified paper sources.[14] The result is that the market for certified products has grown exponentially in under two decades of

[13] C. Overdevest, "Comparing Forest Certification Schemes: the Case of Ratcheting Standards in the Forest Sector," *Socio-Economic Review*, vol. 8 (2010), pp. 47-76.

[14] K. Fernholz et al., *Forest Certification: A Status Report*, Dovetail Partners, Inc., March 2010, http://www.dovetailinc.org.

existence, with nearly a quarter of the world's industrial wood production coming from certified sources.[15]

Supplier demand in the market also drives competition between the certification programs. After the boycotts, the Home Depot initially accepted only FSC-certified wood products, despite pressure from the SFI program and the AF&PA. Environmental groups—who had very successfully boycotted the Home Depot—preferred the FSC program and questioned the validity and rigor of the self-reporting and voluntary SFI program. The Home Depot commissioned a consultant to conduct an independent comparison with participation from both the SFI and FSC programs.[16] The report highlighted a stronger emphasis on ecological protections in the FSC program, and a stronger emphasis on industry concerns and a more lenient verification procedure in the SFI program. Largely in response, the SFI program went through several revisions to become more competitive and comparable to the FSC program, including requiring third-party audits and separating from the AF&PA organization. Competition has also affected the FSC program: it has revised its standard, strengthened its accreditation processes, and created programs for smaller landowners in response to the SFI and PEFC programs.

Market forces continue to influence the development and evolution of the certification programs. Since home building is the largest use of wood products, building codes are critical in determining wood use. This is especially true in the specialized green building market. The U.S. Green Building Council (USGBC) implements the Leadership in Energy and Environmental Design (LEED) program and only awards credit for FSC-certified wood products. The SFI has continued to revise its standards to become more comparable to the FSC standard, gain LEED credit, and subsequently gain greater access to the green construction market. In 2010 there was an unsuccessful movement to add other certification programs—including the SFI standard—to the LEED program. Although the initial reasoning for only allowing FSC certification is unclear,[17] the USGBC membership voted against changing the requirement.

Benefits of Certification

There are generally two reasons why landowners and firms choose to invest in forest certification programs: the potential for a market advantage, and to communicate and be accountable for responsible and sustainable forest operations.

Potential market advantages from certification include price premiums, greater access to niche markets, product differentiation, and customer loyalty. For U.S. forests, the expectations for market benefits appear to be mostly unrealized.[18] The consumer demand for certified products is limited and price premiums have been minor, and have not always offset the costs of certification.[19] Highly specialized markets, however, have realized some market advantages.

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[15] G. Auld, L. H. Gulbrandsen, and C. L. McDermott, "Certification Schemes and the Impacts on Forests and Forestry," *Annual Review of Environment and Resources*, vol. 33 (2008), pp. 187-211.

[16] Meridian Institute, *Comparative Analysis of the Forest Stewardship Council and Sustainable Forestry Initiative Certification Programs Executive Summary*, October 2001. Report is available to congressional clients from author by request.

[17] Yale Program on Forest Policy and Governance, *Assessing USGBC's Policy Options for Forest Certification and the Use of Wood and Other Bio-based Materials*, February 25, 2008, http://www.yale.edu/forestcertification/USGBCFinal.htm.

[18] C. Overdevest and M. G. Rickenbach, "Forest Certification and Institutional Governance: An Empirical Study of Forest Stewardship Council Certificate Holders in the United States," *Forest Policy and Economics*, vol. 9 (2006), pp. 93-102.

[19] A. Tikina, R. Kozak, and B. Larson, "What Factors Influence Obtaining Forest Certification in the U.S. Pacific

Certified wood from tropical countries typically demands higher price points, as do luxury home building products (at least prior to the 2008 real estate crash).[20] Instead of just a market advantage, certification actually may be becoming a market access requirement.[21]

Despite disappointing market performances, forest landowners certified in the United States appear generally satisfied with their decision to certify. This may be because of the accountability mechanisms inherent in certification programs. Certification signals responsible management and behavior. In that sense, certification can be a defensive tool used to avoid any negative publicity similar to the Home Depot boycotts in the 1990s.

How Certification Works

Both the FSC and the SFI programs have two parts: landowner certification to ensure the sustainable management of the land, and chain-of-custody certification to trace the life cycle of wood products originating in a certified forest.

Although certification programs were established to deal with logging and timber products in the marketplace, timber harvesting is not required. Certification evaluates the extent to which forest management is meeting the objectives laid forth in a forest management plan, and then evaluates the extent to which the plan is meeting the standards of sustainable forest management.

On a broad scale, both the FSC and the SFI operate within similar frameworks with similar governance structures, procedures to develop the standards, and accreditation and auditing requirements. System governance and the development of the sustainability standards are balanced among the competing groups interested in sustainable forest management. This forces the environmental, social, and economic/industry groups to work together and negotiate standards that are broadly acceptable measures of sustainability.[22] The certification audit is done by an accredited, independent third party that evaluates the management plan and the on-the-ground activities, and includes conversations with staff as well as with stakeholders. The audit process may find minor or major non-conformances with the standard, which must be remedied prior to or immediately following certification. Upon certification, there are maintenance and re-certification requirements. Each system includes monitoring, consistency, and enforcement provisions.

Once a forest is certified, products leaving the forest may use the system's label. However, a separate, chain-of-custody certification is required in order to use the certification label along the supply chain. The chain-of-custody standard is designed to ensure that certified wood is accounted for as it leaves the forest, and typically includes sourcing, production controls, record-keeping, and documentation requirements. Each producer or vendor along the supply chain must be certified in order to use the label. Both the SFI and FSC programs use a chain-of-custody certification process that is adapted from the landowner certification process described above.

Northwest?," *Forest Policy and Economics*, vol. 10, no. 4 (2008), pp. 240-247.

[20] G. Auld, L. H. Gulbrandsen, and C. L. McDermott, "Certification Schemes and the Impacts on Forests and Forestry," *Annual Review of Environment and Resources*, vol. 33 (2008), pp. 187-211.

[21] G. Auld, L. H. Gulbrandsen, and C. L. McDermott, "Certification Schemes and the Impacts on Forests and Forestry," *Annual Review of Environment and Resources*, vol. 33 (2008), pp. 187-211.

[22] A. Roberge, L. Bouthillier, and J. Mercier, "The Gap Between Theory and Reality of Governance: the Case of Forest Certification in Quebec," *Society and Natural Resources*, vol. 24, no. 7 (2011), pp. 656-671.

Despite their broad similarities within this general framework, the FSC and the SFI each have their own unique attributes at a detailed, specific level. **Table 1** provides a side-by-side comparison.

Table 1. FSC and SFI Structure and Governance Comparison

Comparison Criteria	FSC	SFI
Membership	Global FSC: General Assembly membership open to any individual or organization, except governments. Members organized into 3 chambers (environmental, economic and social) with equal voting. Within each chamber, voting is divided equally between North and South members. FSC-US: Membership consists of global FSC members and U.S. certificate holders.	No members
Board of Directors	Global FSC: Nine Board of Directors, three from each chamber elected by General Assembly FSC-US: Nine Board of Directors, three elected from each chamber from FSC-US members	18 members, with equal representation from environmental, social and industry interests. Nominated & elected by current board Also has the External Review Panel – which is independent from SFI – as an oversight committee
Standards Review	FSC-US: Every five years	Every five years
Standards Revision Process	FSC-US: Conducted by FSC-US working groups	Conducted by a task group appointed by Board of Directors
Latest Standard Released	June 2010	January 2010
Third-Party Certification Required	Yes Third parties must be accredited by ASI, Inc	Yes Third parties must be accredited to ANSI-ASQ National Accreditation Board
Certification Audit Requirements	Audit report must be peer-reviewed Final summary audit report publicly available	Final summary audit report publicly available
Non-conformance	Minor non-conformances must be resolved within three months Major non-conformances must be resolved within one year	Minor non-conformances must be resolved within one year Major non-conformances must be resolved prior to certification
Standards compliance	Mandatory, very limited exceptions	Mandatory, exceptions available
Re-certification	Required every five years	Required every three years
Dispute Resolution	Handled first by the certification body; then FSC-US; then global US	Handled first by implementation committees at the state level, then the External Review Panel

Source: http://www.sfiprogram.org/index.php and http://www.fscus.org/.

Governance and Membership

The two certification programs operate at different levels: the FSC is an international organization with a U.S. chapter and regional distinctions; the SFI is a North American organization that is endorsed by an international certification system. Although they both function at the national, U.S. level, the different scopes do have implications for the governance and membership structures of the programs. Both programs emphasize a balanced governance structure, but take different approaches to specific governance operations, including membership.

Forest Stewardship Council (FSC)

The FSC operates as a global organization[23] with a national chapter in the United States.[24] Globally, the FSC is a multi-stakeholder organization with membership open to individuals and organizations (the General Assembly), with the exception of governments. Governmental agencies may not become members, but may serve advisory or other roles.[25] Members are organized into either the social, environmental, or economic chamber. Emphasizing a balanced approach, each chamber carries the same voting weight, regardless of membership size. Within each chamber, votes are equally divided between northern and southern hemisphere nations, with the goal of creating a balance between the needs of developed and developing nations. The General Assembly elects three members from each chamber to serve on the Board of Directors. General Assembly meetings are held every three years, during which the membership may change the constitution, operation, and structure of the organization with a supermajority (67%) vote.[26] It is also important to note that certification and membership are separate processes; becoming certified does not automatically result in becoming a global FSC member, and not all members are certificate-holders.

FSC-US is the national initiative of the FSC charged with adapting and applying the global FSC principles and criteria to the specific conditions in the continental United States.[27] The U.S. chapter consists of a national board with nine members, which mirrors the structure of the global FSC with balanced social, environmental, and economic chambers. Global FSC members residing in the United States form the membership body and have the opportunity to participate in FSC-US committees and working groups, the standards review and revision process, and elect or may become members of either the U.S. or international Board of Directors. Unlike the global FSC, certificate holders, including governmental agencies, automatically become FSC-US members with voting privileges.[28] Within the U.S. chapter, there are nine regional working groups.[29]

Sustainable Forestry Initiative (SFI)

Although endorsed at the international level by the PEFC, SFI operates entirely at a national level within the United States and extends operations into Canada. The SFI is not a membership-based

[23] http://www.fsc.org/.

[24] http://www.fscus.org/.

[25] G. Auld, L. H. Gulbrandsen, and C. L. McDermott, "Certification Schemes and the Impacts on Forests and Forestry," *Annual Review of Environment and Resources*, vol. 33 (2008), pp. 187-211.

[26] B. Cashore, F. Gale, and E. Meidinger, et al., *Confronting Sustainability: Forest Certification in Developing and Transitioning Countries* (New Haven, CT: Yale F&ES Publishing Services, 2006).

[27] The geographical extent of the FSC-US standard does not include Alaska, Hawaii and the U.S. territories.

[28] http://www.fscus.org/images/documents/FSC_US_Bylaws.pdf.

[29] See FSC-US Forest Management Standard 2010 Appendix B for a map of the FSC-US regions: http://www.fscus.org/images/documents/standards/FSC-US%20Forest%20Management%20Standard%20v1.0.pdf.

organization but has a Board of Directors consisting of 18 members representing a balance of environmental, economic, and social interests. Current board members nominate and elect successive members; the only requirement is knowledge of sustainable forestry. The Board of Directors sets the policies of the SFI organization, elects the executive committee, appoints task groups, and develops the standards, certification, and accreditation procedures. To provide oversight, the External Review Panel—an independent group of experts representing environmental groups, professionals, academics, and public agencies—monitor the development and implementation of the SFI program. The SFI program includes Implementation Committees, which are state or regional-level grassroots organizations that promote the SFI program and sustainable forestry practices as well as respond to local needs. Although membership requirements may vary by committee, generally any SFI certificate holder with operations in that location may participate. As of August 2011, there were 37 Implementation Committees in operation at the state or regional level.[30]

Standards and Standards Development

Both certification programs use a hierarchical standard based on their particular principles of sustainable management at a broad, abstract scale and then progress towards more specific and measurable indicators.[31] The principles are defined and applied differently, largely due to the different geographic scopes of the programs. See **Table 2** for a listing of the principles. Both programs emphasize an open and inclusive process to develop the standards, but there are functional differences that stem in part from the differing governance structures. Both programs released revised standards in 2010.

Table 2. The FSC and SFI Principles of Sustainable Forest Management

FSC Principles	SFI Principles
1. Compliance with Laws and FSC Principles	1. Sustainable Forestry
2. Tenure and Use Rights and Responsibilities	2. Forest Productivity and Health
3. Indigenous Peoples' Rights	3. Protection of Water Resources
4. Community Relations and Workers' Rights	4. Protection of Biological Diversity
5. Benefits from the Forest	5. Aesthetics and Recreation
6. Environmental Impact	6. Protection of Special Sites
7. Management Plan	7. Responsible Fiber Sourcing Practices in North America
8. Monitoring and Assessment	8. Avoidance of Controversial Sources including Illegal Logging in Offshore Fiber Sourcing
9. Maintenance of High Conservation Value Forests	9. Legal Compliance
10. Plantation Management	10. Research
	11. Training and Education
	12. Public Involvement
	13. Transparency
	14. Continual Improvement

Source: http://www.sfiprogram.org/index.php and http://www.fscus.org/

[30] See http://www.sfiprogram.org/sic-maps.php.

[31] B. Cashore, F. Gale, and E.Meidinger, et al., *Confronting Sustainability: Forest Certification in Developing and Transitioning Countries* (New Haven, CT: Yale F&ES Publishing Services, 2006).

Forest Stewardship Council (FSC)

The global FSC standard is based on 10 principles of sustainable forest management which are implemented through 56 criteria. The FSC focuses on promoting forest stewardship, biological diversity, and ecosystem functionality while protecting the land tenure and use rights of indigenous peoples and the health and safety of forest workers. The principles and criteria are globally applicable, and are adapted to local conditions through 192 Indicators set at the national level by the FSC-US standard with specific guidance as needed for the 9 U.S. regions.

The global FSC is currently in the process of conducting the first full revision of the principles and criteria, although the standard has been amended to include plantations and small-scale ownerships. The General Assembly is expected to vote on the revision in late 2011.[32] However, the FSC-US standards, in accordance with the global FSC policy, are reviewed and revised every five years. The revision process is conducted by working groups of FSC members and technical experts, and includes a robust stakeholder consultation process. The FSC-US standards require global FSC approval prior to becoming effective. The latest revision was approved in July 2010. Certificate holders typically have one year to comply with a revised standard.

Sustainable Forestry Initiative (SFI)

The SFI standard is based on 14 principles of sustainable forest management which consist of 20 Objectives implemented through 38 performance measures and 115 indicators. Because the United States has a mature system of laws and regulations that have mostly settled land tenure (ownership), use rights, and rights of indigenous peoples, the SFI principles of sustainable forestry focus more on forest stewardship, biological diversity, and forest operations, although worker safety, training and improvement are also covered. Different objectives apply depending on the type of forest operation (land management or fiber sourcing) and the certification type.[33]

The SFI standard is reviewed and revised every five years. The process is conducted by a task group—with a balanced membership—appointed by the Board of Directors and includes public notice, review, and comment provisions as well as regional stakeholder workshops. In addition, the External Review Panel ensures that public input has been adequately addressed during the revision process. The latest revision became effective with Board of Directors approval in January 2010. Certificate holders typically have one year to comply with a revised standard.

Accreditation

The certification audits are not conducted directly by FSC or SFI, but are conducted by independent third-party organizations ("certification bodies") that must be internationally accredited. The accreditation process ensures these certification bodies are knowledgeable about sustainable forest management and can objectively and credibly evaluate conformance with the standards. The certification bodies may be for-profit and not-for-profit organizations. Both programs have conflict-of-interest policies to maintain the credibility and impartiality of the certification bodies. Both programs require annual audits of the certification bodies to maintain their accreditation. Many certification bodies are accredited to certify both SFI and FSC programs.

[32] See http://www.fsc.org/pcreview.html.

[33] SFI Objectives 14-20 apply to all forest operations; 1-7 apply only to forest landowners; and 8-13 apply only to fiber sourcing operations.

Both programs draw from the International Standards Organization[34] (ISO) 9000 and 14000 standards series. The ISO is an international standards setting organization of 146 countries and publishes standards for a variety of products and services. The ISO 9000 standard focuses on quality management process to achieve customer and regulatory requirements and includes requirements for auditors. The ISO 14000 standard focuses on the development of an environmental management process.

Forest Stewardship Council (FSC)

The FSC developed its own accreditation process and organization—Accreditation Services International (ASI)—instead of relying solely on ISO standards. Initially part of FSC, in 2006 ASI became an independent organization and currently certifies other sustainable resource management programs. In addition to ISO requirements, the FSC has specific training and education requirements for lead auditors and requirements for the composition of multi-disciplinary audit teams.

Sustainable Forestry Initiative (SFI)

The SFI program requires accreditation by the American National Standards Institute (ANSI) National Accreditation Board,[35] the U.S. accreditation body for the ISO standards. The SFI program also has specific qualification requirements for the lead auditor, as well as for all members of the audit team.

Certification Audit, Monitoring, and Complaints

The certification audit typically includes a review of the operating plans and procedures and other supporting documents, staff consultations, on-the-ground field inspections, and stakeholder consultations conducted by the certification body.[36] The certification body then issues a report identifying any potential minor or major non-conformances and corrective actions required to achieve certification. The final certification assessment—or a summary—is made publicly available on the system's website. Once certified, there are monitoring and recertification requirements that vary by system, as well as procedures for handling complaints.

Forest Stewardship Council (FSC)

The audit requires specific stakeholder consultations. The audit report must be peer-reviewed by at least one independent and qualified expert. Minor non-conformances must be resolved within three months of certification, major non-conformances within one year, or certification may be revoked. Annual monitoring and maintenance requirements include a surveillance audit that may be conducted on-site. Some documents must be made publicly available. Re-certification is required every five years. Compliance with all indicators is mandatory, with very limited exceptions under very specific circumstances. The FSC has a dispute resolution process (FSC-STD-01-005) to handle complaints and appeals brought against the FSC, an accredited certification body, or a certificate holder.[37] The process generally proceeds at the lowest level

[34] See http://www.iso.org.

[35] See http://www.anab.org/.

[36] G.Auld, L.H. Gulbrandsen, and C.L. McDermott, "Certification Schemes and the Impacts on Forests and Forestry," *Annual Review of Environment and Resources*, vol. 33 (2008), pp. 187-211.

[37] See FSC Dispute Resolution System, FSC-STD-01-005, available online at http://www.fsc.org/accreditation_docs.html.

possible, with the certification body being the first level of response. If the dispute is not resolved, it then proceeds to the FSC-US level, and then the global FSC level.

Sustainable Forestry Initiative (SFI)

The audit requires stakeholder consultations as appropriate. Minor non-conformances must be resolved within one year of certification; major non-conformances must be resolved prior to certification. Annual monitoring and maintenance requirements include publicly available annual summary audit and progress reports. Re-certification is required every three years. Compliance with all indicators is mandatory, but the indicators may be substituted or modified based on local conditions, supported with a thorough analysis and adequate justification, and with the certification body ensuring consistency with the spirit of sustainable forestry. The SFI has a dispute resolution process to handle inquiries, complaints or challenges about inconsistent practices, the validity of a certification, or SFI label use. The process operates mostly through the state or regional Implementation Committees but may also proceed through the External Review Panel.

Policy on Public Federal Lands

The SFI does not have a policy preventing the certification of federal lands, and there are specific requirements for public lands incorporated into the standard.

The FSC standard also has some specific requirements for public lands incorporated into the standard. However, the FSC-US has a Federal Lands Policy that would apply to any federal government agency wishing to pursue certification.[38] The policy identifies three threshold standards that must be met prior to certification. The first threshold is a willing landowner (e.g. the Forest Service), the second threshold is public consensus regarding the management of the National Forest System, and the third threshold is the development of specific FSC standards applicable to the federal agency. The FSC applied the Federal Lands Policy when certifying DOD and DOE lands in 2004.[39] However, prior to issuing their certification, the FSC-US expressed concern about the ability of other federal forests to meet the threshold requirements.

Costs of Certification

There are direct and indirect costs associated with certification. Direct costs include the initial certification fee, and then may include annual maintenance fees, and after a specified time period, a re-certification fee. The initial certification fee covers the cost for the third-party audit, which includes the time and travel cost for a team site visit that may last up to a week, and time for reviewing plans, writing reports and issuing the certification. The certification cost may vary widely depending in part on the size of the land being certified; estimates range from less than ten cents per acre to hundreds of dollars per acre.[40] This initial investment tends to be easier for larger landowners to absorb. To encourage broader acceptance of certification across the landscape, both the SFI and FSC programs have created programs to help offset the costs of certification for

[38] See http://www.fscus.org/images/documents/revised_fed_land_pdfs/FL_Policy_Final.pdf.

[39] CRS was unable to verify the certification status of the DOD and DOE lands as of August 2011.

[40] R. Fletcher, M. Rickenbach, and E. Hansen, *Forest Certification in North America*, Oregon State University Extension Service, EC1518, December 2002, http://extension.oregonstate.edu/catalog/.

smaller landowners. In terms of direct fees, the SFI and FSC programs appear to have comparable costs.[41]

The indirect costs of certification are the management and operation costs required to achieve and maintain certification. The certification audit may reveal operational practices that need to be changed, such as investment in different equipment, technologies, training, or management practices. Certification may require management investments, such as developing and implementing a monitoring and record-keeping program, or a product-tracking program for the chain-of-custody requirements, or non-commercial thinning to improve forest health in overstocked stands. In addition, certification may require planned harvest levels to be adjusted in both the short and long term, potentially affecting income generation.

SFI and FSC Program Comparisons

There are relatively few reports that directly and objectively compare the SFI and FSC programs, the two primary certification programs for large landowners in the United States.[42] Several reports claim objectivity, but actually were published by FSC, SFI, or one of their partners. In addition, many of the comparisons are based on previous versions of both the SFI and FSC standards and are no longer relevant.

One of the first objective comparisons was the report commissioned by the Home Depot in 1999, which included participation from representatives of each program. The comparison process and publication of that report in 2001 were a catalyst for significant changes in the SFI program.[43] In 2008, the Yale Program on Forest Policy and Governance compared the programs for the USGBC, but that comparison is based on outdated versions of the standards.[44] Most recently, the Dovetail Partnership, Inc., an environmental NGO that appears to have no ties to either program, released the only comparison based on the current standards.[45]

Among the few objective comparisons, the general consensus is that structurally the programs are now very similar. The FSC standard is more prescriptive while the SFI standard allows more flexibility. Each program has different strengths and weaknesses that relate to their different ideas about sustainability. The SFI program emphasizes sustainable timber harvesting, and places forest management as a tool to achieve that objective. The FSC program emphasizes sustainable forest management, and places timber harvests as one tool to achieve that objective. Overall, the strengths and weaknesses in each program are complemented by the strengths and weaknesses in the other program, and dual certification from both programs is relatively common, especially for public forests.

[41] J. Howe et al., *A Land Manager's Guide to FSC & SFI,* Dovetail Partners, Inc, September 15, 2004, http://www.dovetailinc.org.

[42] C. Overdevest, "Treadmill Politics, Information Politics, and Public Policy," *Organization & Environment*, vol. 18, no. 1 (March 2005), pp. 72-90.

[43] C. Overdevest, "Comparing Forest Certification Schemes: the Case of Ratcheting Standards in the Forest Sector," *Socio-Economic Review*, vol. 8 (2010), pp. 47-76.

[44] See http://www.yale.edu/forestcertification/USGBCFinal.htm.

[45] K. Fernholz et al., Differences Between the Forest Stewardship Council and Sustainable Forestry Initiative Certification Standards for Forest Management, Dovetail Partners, Inc., March 28, 2011, http://www.dovetailinc.org/content/dovetail-reports-certification.

Comparison Challenges

Directly comparing the SFI and FSC programs is challenging, mostly because the programs have different targets. The FSC program mostly uses performance-based targets, whereas the SFI program uses both performance- and systems-based targets. Performance targets are focused on the goals of the standard, or achieving some desired objective or condition, such as minimizing ecological damage. System targets are focused on developing a process to achieve the desired outcome, such as developing a program to minimize ecological damage. One useful way to understand the difference is that performance-based targets are generally evaluated in the field, while systems-based targets are generally evaluated in an office.[46]

Performance-based standards are more prescriptive, but attempt to ensure that the desired objectives are realized. Systems-based standards are often more flexible, which allows participants to adapt to their own particular situation, but may lack the mandatory mechanisms that ensure the desired objectives are actually realized.

National Forests Pilot Certification Study

In 2005, the Forest Service sponsored a pilot certification study on the national forests; the Pinchot Institute for Conservation evaluated the certification process for both the FSC and SFI programs on five different national forests (see http://www.pinchot.org/gp/National_Forest_Certification). The study included hiring accredited third parties to conduct certification audits and issue reports, and interviewing Forest Service staff about the process. The study was completed using the then-current, 2005 versions of each standard; both standards have since been updated. The results indicate that the planning and management requirements of the national forests lend themselves easily to certification. However, there may be some substantive requirements in both the SFI and FSC standards that may be of concern. This includes contractor safety training issues, monitoring of non-timber forest products (NTFPs), and conflicting old-growth provisions. For example, while the FSC standard prohibited old-growth harvests on any public lands, old-growth harvests were not prohibited in the relevant forest plans. In addition, the audits found areas—especially vegetation management and road maintenance or decommissioning—where lack of project implementation was preventing the forests from achieving their stated goals, which may affect certification.

Comparing the SFI and FSC Standards for the National Forests

Using the 2010 versions of both standards, this section evaluates both the FSC and SFI standards across a broad range of issues pertinent to the certification of the U.S. national forests. A more detailed, side-by-side comparison is provided in **Appendix**. The comparison uses the standards and criteria from the Montreal Process and issues relevant to public lands management.

The comparison is organized into six broad categories:

- Forest management
- Wildlife and habitat management
- Water and soil resource management
- Other forest uses and values
- Decision-making and management planning
- Miscellaneous

Overall, the SFI and FSC certification programs have similar coverage in these categories. The programs each emphasize different sustainability objectives: the SFI program emphasizes

[46] C. Overdevest, "Treadmill Politics, Information Politics, and Public Policy," *Organization & Environment*, vol. 18, no. 1 (March 2005), pp. 72-90.

sustainable timber harvesting, and places forest management as a tool to achieve that objective; the FSC program emphasizes sustainable forest management, and places timber harvests as one tool to achieve that objective.

The SFI standard is generally more flexible, and includes more stringent worker safety requirements and provisions for continual improvement. The FSC standard is generally more prescriptive, and includes more stringent ecological protections. In addition, the FSC program is more detailed and complex, as shown by the comparative difference between the size of standard documents. The FSC standard is described in 75 pages, with references to several other policy documents. In comparison, the SFI standard is described in 14 pages. However, this level of detail may be a result of the global focus of the FSC program, as it also applies to countries that may not have comparable environmental and social regulations as the United States. Given the relative similarities between the FSC and SFI programs, what may actually drive any differences between the programs is the rigor and quality of the audit process.

Forest Management

The forest management category covers mostly silvicultural activities specifically related to the growth and cultivation of trees, such as harvest operations, roads management, fire and fuels management, insect and pest management, and economic considerations. Harvest operations within sustainable forestry balance forest productivity and economic benefits while limiting ecosystem impacts and resource damage. Sustainable harvest operations also have implications for biodiversity, depending on how the forest is regenerated. Regeneration may be done naturally by allowing the remaining trees to serve as seed sources, or regeneration may be done manually by planting saplings of the desired species. Both require carefully planned and executed pre- and post-harvest activities such as site preparation and rehabilitation. Road-building activities should generally minimize habitat fragmentation and erosion and sedimentation concerns. Active forest management should emphasize restoring natural disturbance regimes, including wind, fire, and pest occurrences. This category also includes the definitions and harvest prescriptions for old-growth trees.

The SFI and FSC programs have many similar forest management provisions. Both programs emphasize healthy, functioning ecosystems and allow for site-specific fuel management strategies to restore natural disturbance regimes. In addition, both programs discourage the use of chemical pest control methods. Both programs have provisions to minimize the damage from road building activities. Both programs encourage stand biodiversity and the utilization of woody biomass, and discourage excessive harvest waste.

Despite these similarities, there are some differences between the forest management provisions in the FSC and SFI programs. While they both call for the calculation of a sustainable harvest level, the FSC requires a specific calculation method and requires harvest levels to remain below the projected growth level. The SFI does not define sustainable harvest levels or specify a calculation method. The FSC program has regionally specific guidance regarding the size of clearcut harvests while the SFI program has one size limit that applies nationally. The SFI program calls for specific reforestation time frames depending on the site regeneration method; the FSC does not have any specific reforestation time frames. While the FSC program prohibits harvesting old growth on public lands, the SFI program does not have any similar harvest prohibitions.

Wildlife and Habitat Management

The wildlife and habitat management category covers activities and impacts related to the entire ecosystem, such as endangered species and habitat protections, biodiversity requirements, exotic and invasive species controls, and wilderness or special places designations. As central tenets for sustainable forestry, biodiversity and forest ecosystem health and function are inter-related. Biodiversity can be evaluated across landscapes, specific sites, or within the genetic structure of the same species.[47] Increasing biodiversity helps the forest ecosystem withstand and adapt to various disturbances and maintain functionality. Protecting endangered species and their habitats is in part related to biodiversity conservation. Preserving landscapes through wilderness or other special designations is also related to conserving biodiversity, but also reflects other cultural and spiritual values and uses for the forest ecosystem.

The SFI and FSC programs have a few, broadly similar wildlife and habitat management protections such as promoting stand and landscape biodiversity, controlling exotic and invasive species, and allowing the use of hybrids and clones.

Although both programs have species and habitat protections and special places designations, there are differences within the particular provisions. The FSC program has more stringent protections that extend to a broader classification of rare, threatened, and endangered species and habitats and encourages directed protection to ensure activities like habitat connectivity. The FSC also calls for a precautionary approach when evaluating actions that can affect those species, while the SFI does not specify a similar precautionary approach. The FSC program has a broader definition of special places that include more stringent protection requirements. In addition, the FSC has more stringent protections for old growth by prohibiting any harvest on public lands. The SFI program encourages conserving old growth, but does not prohibit old-growth harvests. Finally, the FSC program explicitly prohibits the use of genetically modified organisms (GMOs), while the SFI program allows for their use as long as all applicable laws and regulations are followed.

Water and Soil Resource Management

The water and soil resource management category covers activities that may impair those resources, and the health and productivity of the forest ecosystem. Forest ecosystems often contain the headwaters for water bodies that serve multiple interests, such as recreation or municipal water supply sources. Within the forest ecosystem, erosion and sedimentation are the primary impairments to water quality, and are often associated with harvest operations. Harvest operations may also impair the soil resource. Soils that have been eroded, compacted, or depleted of nutrients may impair the ability of the soil to support vegetation and degrade the productivity of the ecosystem.

The water and soil resource management provisions with the SFI and FSC programs are fairly similar. Harvest operations within both programs are to meet or exceed the best management practices (BMPs) for erosion and sedimentation control and water quality specified for that region. Both programs have protections and guidelines for water bodies, including riparian zones and wetlands.

The primary difference between the programs water and soil resource management provisions is that the FSC explicitly calls for the consideration of soil productivity when planning multiple harvests on the same site, and the SFI is silent on this topic.

[47] See CRS Report R41691, *Forest Management for Resilience and Adaptation*, by Ross W. Gorte.

Other Forest Uses and Values

The other forest uses and values category covers issues mostly related to the multiple-use mandate of the national forests. The Multiple Use-Sustained Yield Act of 1960 (P.L. 86-517) directed the Forest Service to manage the national forests for the uses of range (livestock grazing), recreation, timber, wildlife, and water supply. While these apply to surface use, there is also interest in the subsurface use of the national forest land, which is typically managed and administered in conjunction with other federal agencies. Also covered in this category are aesthetic and visual impacts and climate change concerns related to the forest ecosystem's role in the carbon cycle.

The FSC and SFI programs treat other forest uses and values differently. The SFI program has more prescriptive requirements for mitigating visual and aesthetic impacts from harvest operations, but is largely silent on grazing and mineral development. The FSC program has more prescriptive requirements for grazing, mineral development, and carbon storage. For grazing and mineral development, the FSC calls for those uses to minimize ecological damage. However, the FSC's focus on land tenure and user rights tends to discourage landowner infringement on use rights associated with mineral development and grazing leases. While the SFI program calls for increasing research and knowledge about climate change impacts, the FSC standard is more prescriptive and essentially calls for no net loss of carbon storage capacity.

Decision-Making and Management Planning

The decision-making and management planning category covers activities related to the legal and institutional framework for sustainable forestry, as well as stakeholder input and public transparency issues. Sustainable forestry, in many ways, relies on careful planning to be successful. Management planning includes assessing the current conditions of various resources, understanding the implications different management options will have on the future conditions of those resources, selecting a management option that achieves the desired future conditions, and then monitoring the implementation of the management option and its impacts. While public involvement and transparency are important considerations for the management of the national forests as a public resource, it is also an important consideration for certification programs as market mechanisms. Planning, public involvement, and decision-making for the national forests are governed by several intersecting laws, including the National Forest Management Act (P.L. 94-588), the National Environmental Policy Act (P.L. 91-190), and the Administrative Procedures Act (P.L. 79-404).

The decision-making and management planning provisions within the SFI and FSC programs are similar in many regards. Both programs call for compliance with all laws and regulations. Both programs call for the development of management plans. The management plans include the collection of a range of data and maps, and specify target harvest areas and levels. Both programs have annual reporting requirements that include making a summary report available to the public.

Despite these similarities, there are some differences within the decision-making and management planning provisions with the two programs. The FSC has a more stringent requirement for updating the management plans. The SFI has a more stringent worker safety requirement that extends to contractors. The remaining differences, although distinct when comparing the two programs together, lose their distinctions when applied to the national forests and the mandates of various U.S. laws and regulations.

Miscellaneous

The miscellaneous category captures areas that are not relevant to the other categories but may still be of interest to Congress. Included in this category are the requirement from both certification programs for an official commitment to the program and requirements for public federal land standard compliance. Specific chain-of-custody requirements are not covered in this report.

Observations

Although initially directed at private forest owners, forest certification programs have become increasingly used by public forest management agencies. In the United States, several state and county forests have become certified, including but not limited to the Michigan Department of Natural Resources, the Minnesota Department of Natural Resources, the New York Department of Environmental Conservation, the Pennsylvania Department of Conservation and Natural Resources, the Wisconsin County Forests and the Wisconsin Department of Natural Resources, and the Washington Department of Natural Resources. Instead of choosing just one program, most of these public forests opted for dual certification and became certified by both the SFI and FSC programs. There are no standard metrics to evaluate the benefits and costs of the state certification programs.

While the SFI program has stated that it is ready to certify the national forests, the FSC program is likely several years away from having procedures that would address a national forest certification process. Prior to certification, the FSC program would need to determine if the national forests meet the three threshold requirements set forth in its Federal Lands Policy. Then, if the national forests meet the threshold requirements, the FSC would have to develop and approve a standard specific for the national forests.

It is not clear how certification would affect the management of the national forests. However, certification could evaluate the extent to which the forest management plans align with the standards of each certification program, and then evaluate the extent to which those forest plans are being implemented. The results of these third-party evaluations of the forest plans and their implementation could potentially alleviate—or escalate—stakeholder and congressional disputes over the appropriate management of the national forests.

It is unclear whether the Forest Service has the existing authority to certify the national forests. If Congress chooses to require certification of the national forests, there are other questions to consider, including which certification program(s) to require; what (if any) forest management process requirements (e.g., public involvement standards) might be relaxed; and what would be the impact on timber purchasers of processing certified sustainable wood. Congress may also consider if certification should occur across the entire National Forest System, or at the unit level, and then how many and which units should be certified.

Appendix. FSC and SFI Standards Comparison

This table presents a side-by-side comparison of the FSC and SFI standards that would be applicable to U.S. national forests. The comparison criteria categories used were developed by CRS for assessing sustainable forestry, the standards and criteria from the Montreal Process, public forest land management, and other factors. Summaries of the FSC and SFI measures are presented. Several measures are listed more than once if they are applicable to more than one area. However, not all of the SFI and FSC measures are included in the table, as some are not relevant for the sustainable management of federal forests. Each entry identifies the relevant FSC and SFI measures using the numbering system of that program.

Table A-1. FSC and SFI Standards Comparison

Comparison Category	FSC	SFI	Notes
Forest Management			
Harvest Operations	Select harvest operations to minimize adverse environmental and social impacts. Implement written guidelines that meet or exceed established Best Management Practices (BMPs) for site preparation, harvest prescriptions, techniques, timing and equipment. 5.6.c, 6.5.a-c	n/a	FSC places timber harvesting within larger framework of sustainable forest management. SFI places forest management as tool to achieve sustainable timber harvests.
Sustainable Harvest Level	Harvest levels do not exceed growth over successive harvests. Calculate and document the sustained yield harvest level for each harvest area. Rolling 10-year average annual harvest levels cannot exceed the calculated sustained yield level. 5.6.a-b	Recommend sustainable harvest levels for areas available to harvest, document annual harvest trends, and periodically update forest inventory and recalculate harvest levels to account for productivity changes. 1.1.1.g, 1.1.2, 1.1.4	The SFI does not define sustainable harvest levels.
Harvest Waste	Employ management practices to minimize the loss and/or waste of harvested forest products. 5.3.a	Develop a program to minimize waste and ensure efficient use of harvested trees. May include provisions such as exploring alternative use and markets for low-grade materials. Encourages management of harvest residue in respect to economic, environmental and social factors. 7.1.1	Both programs discourage harvest waste; SFI acknowledges the economic potential of harvest residue.
Roads—Transportation system for harvest operations	Design, construct, maintain and/or reconstruct roads – permanent and temporary – to minimize short- and long-term environmental impacts. Extends to skid trails, water crossings and landings. Close and rehabilitate unneeded roads. Limit access to minimize environmental impacts. Meet or exceed BMPs.	Design and construct roads to minimize impacts to soil productivity and water quality. (BMPs for water quality are discussed below.) Minimize skidding and rutting. 2.3.4, 2.3.7	Both programs call for road planning and construction to be done in a manner that minimizes impacts. FSC calls for the closure of unneeded roads.

Comparison Category	FSC	SFI	Notes
	Roads allowed in limited and specific circumstances in some protected areas. (Representative Sample Areas, see Habitat Protection, below, for more information.) 6.5.d, 6.5.b, 6.4.c		
Clearcut Harvesting	Clearcut requirements with regionally specific opening sizes for even and uneven-aged harvests, ranging from 2 to 80 acres to no limit. Minor deviations are permitted under limited situations and with detailed site-specific planning and analysis requirements. 6.3.g.1-2, Appendix C	Average clearcut size is not to exceed 120 acres, with documentation requirements on the process of calculating the size. Exceptions allowed for forest health concerns, other natural catastrophes, and to meet regulatory requirements. Additional restrictions have minimum tree age and size requirement (three years old or five feet high) for areas adjacent to a clearcut harvest. 5.2.1-2, 5.3.1-3	The FSC indicator is based more on ecological characteristics that account for the responses of different forest ecosystems, cover types and natural disturbance regimes. The SFI clearcut requirements are based more on visual impacts than ecosystem responses.
Old-Growth Harvests	On public lands, all old growth is protected from harvesting. 6.3.a.1, 6.3.a.3, 9.1, Definitions, Appendix F	n/a	FSC prohibits the harvesting of old growth on public lands. Although the SFI calls for the conservation of old growth at a landscape level, there is no specific harvesting guidance. The Forest Service definition of old growth is regionally/ecologically specific, which would render the effect of this FSC indicator uncertain.
Site Preparation and Rehabilitation	Use harvesting operations and management activities, including site preparation, harvest prescriptions, techniques, timing and equipment, to protect soil and water resources, avoid erosion, landslides, and significant soil disturbance, and to protect residual trees and other forest resources. Meet or exceed BMPs. 5.3.b, 6.5.b-c	Develop criteria for harvesting operations and site preparation activities to protect soil productivity, retain vigorous trees as applicable, and minimize impacts to maintain site productivity. 2.3.4-6	Both programs have similar provisions, although the FSC is more prescriptive.
Reforestation	Promote natural regeneration methods as a practice to address species diversity.	Designate harvest areas for either natural regeneration or planting. Post-	SFI specifies time frames for reforestation. FSC does not specify

Comparison Category	FSC	SFI	Notes
	Prefer local sources and native species over non-local sources when planting is required for regeneration. 6.3.e-d	harvest deadlines include two years for planting or five years for natural regeneration, with flexibility for environmental or legal reasons. Consider using different species and mixes, and minimize planting exotic species unless research documents minimal risk. 2.1.1-7	reforestation time frames and mostly addresses reforestation through biodiversity requirements.
Stand structure	Maintain, enhance or restore under-represented successional stages, habitat components and associated structures, including large live trees, decaying trees, snags, legacy trees, vertical and horizontal complexity. 6.3.a, 6.3.f	Develop and implement criteria to retain stand-level wildlife habitat elements such as snags, stumps, mast trees, downed woody debris, den trees and nest trees. Assess and account for in planning and management activities, where feasible, the different forest cover types, age or size class and habitats. 4.1.4, 4.1.5	Very similar coverage of habitat elements and site-specific structures, but FSC is more specific at the landscape-level by requiring protection of different and/or under represented successional stages and includes protections for old growth areas.
Biomass and Non-Timber Forest Products (NTFPs)	Calculate a sustained yield harvest when NTFPs are harvested in significant commercial operations. Diversify the economic base of public forests among several uses, including (but not limited to): lesser-used species of trees, grades of logs, and lumber; NTFPs; and emerging markets in new commodities. 5.4.b, 5.6.d	Explore alternative markets for underutilized species and low-grade wood. 7.1.1.d	Both encourage utilization of woody biomass; FSC also addresses NTFPs.
Fire and Fuels Management	Site-specific fuels management practices allowed, based on natural fire regimes, risk of wildfire, potential economic losses, public safety, and applicable laws and regulations. Fuel and fire management activities permitted in limited and specific circumstances in some protected areas (Representative Sample Areas, see Habitat Protection, below, for more information). 6.3.i, 6.4.c	Manage to promote healthy and productive forests and protect from environmentally and economically damaging agents, including wildfires. Develop a program to incorporate the role of prescribed or natural fire where appropriate. Participate in fire prevention programs. 2.4.1-3, 4.1.8	Both programs appear to have sufficient decision-space to create site-specific fuel management strategies.

Comparison Category	FSC	SFI	Notes
Insect and Pest Management Pesticide/Insecticide/Herbicide/Biological Control Agents Use	Promote integrated pest management and other strategies to minimize the use of chemicals. Analyze, develop and implement strategies to promote the use of non-chemical methods over chemical methods. Use the least harmful formulation and application methods to minimize risks to non-target species and sites, specifically related to the choice between aerial and ground application. Monitor and keep strict records. Storage, transportation, disposal and spill response requirements. Use of biological control agents is allowed when supported by scientific evidence and is strictly controlled with documentation and monitoring requirements. Products on the FSC list of Highly Hazardous Pesticides are banned. Pest management activities permitted in limited and specific circumstances in some protected areas (Representative Sample Areas, see Habitat Protection, below, for more information). 6.6.a-e, 6.7.a-c, 6.8.a-c, 6.4.c, definitions, FSC Pesticides Policy 2005a	Manage to promote healthy and productive forests and protect from environmentally and economically damaging agents, including pests. Participate in pest prevention programs. Minimize chemical use required to achieve management objectives and use integrated pest management strategies where feasible. Chemicals used should be the least harmful necessary, for the intended use and in accordance with label requirements, and applied by trained or certified applicators. 2.2.1-2.2.6, 2.4.1-3	Both programs discourage the use of chemical pest control methods. The SFI indicator does not provide specific guidance about biological control agents. FSC is probably more detailed because use of such control agents is generally covered in U.S. environmental laws. Analysis of chemical versus non-chemical use is covered in the NEPA analysis for federal lands.
Economics	Responses to short-term financial factors, such as deferring road maintenance projects, are limited to levels that are consistent with fulfillment of this standard. On public lands, provisions are made to allow small businesses to bid competitively. The economic base of public forests should be diversified among several uses. 5.1.a-b, 5.2.c, 5.4.b	The only direct reference to economics is to protect forests from damaging agents to maintain and improve long-term forest health, productivity and economic viability. Several indicators call for the consideration of economic factors. 2.4	The FSC has a more stringent standard that does not allow management decisions to be changed in response to short-term financial concerns.

Comparison Category	FSC	SFI	Notes
Wildlife and Habitat Management			
Species Protection	Assess, locate, verify, and protect rare, threatened, and endangered (RTE) species that are federally or state protected. Conduct field surveys prior to site-disturbing activities to verify presence or absence of species. Adopt a precautionary management approach that assumes presence until absence is proven. Modify management as necessary to maintain, restore or enhance the extent, quality, and viability of the species and their habitats. Establish conservation zones or protected areas, with active management permitted as appropriate, to maintain or improve species viability. On public forests, design forest management plans and operations to meet species' recovery goals, as well as landscape level biodiversity conservation goals. Hunting, fishing, trapping, collecting and other activities are controlled to avoid the risk of impacts to vulnerable species and communities. 6.1.a, 6.2.a-d	Develop a program to promote conservation of native biological diversity, including species, wildlife habitats and ecological community types. Develop a program to protect federally and state threatened or endangered listed species (G1-G2, S1-S2 species). Develop a program to locate and protect known sites of critically imperiled or imperiled (G1 and G2) species, also known as Forests with Exceptional Conservation Value (FECV). 4.1.1-3	The FSC has a more stringent standard for species protection than the SFI, first by extending protections to species that are listed as rare, then by requiring the maintenance, restoration or enhancement of the quality and viability of the species and their habitats, and by requiring a precautionary approach that directs management to assume the species is present until proven absent. The stringency may be a result of the relatively strong protection of the Endangered Species Act (ESA, P.L. 93-205) in the United States, but it appears to go beyond the ESA requirements.
Habitat Protection	Establish conservation zones or protected areas for rare ecological communities or those that support RTE species, with active management permitted as appropriate, to maintain or improve habitat conditions and species or community viability. Modify management as necessary. Designate Representative Sample Areas (RSAs) to establish or maintain ecological reference conditions, create or maintain under represented ecological conditions, or serve as a set of protected areas for species, communities, and community	Program to promote conservation of native biological diversity, including species, wildlife habitats and ecological community types. Program to locate and protect known sites of critically imperiled or imperiled (G1 and G2) species, also known as Forests with Exceptional Conservation Value (FECV). Collect information on FECV and other biodiversity data through forest inventory processes and have a program or methodology to incorporate forest inventory and research results into forest management decisions to manage	The FSC standard is more stringent than the SFI on habitat protection, first by extending protection for rare species habitat, while the SFI protects threatened and endangered species habitat. The FSC allows some management activities in protected areas. The FSC also has requirements for protecting underrepresented ecosystems and ensuring habitat connectivity.

Comparison Category	FSC	SFI	Notes
	types not captured in other criteria. Management activities within RSAs are limited. Establish and maintain a network of protected areas sufficient in size to maintain species dependent on interior core habitats on large, contiguous public forests. Minimize impacts of transportation programs on wildlife habitat, migration corridors, and habitat fragmentation. Additional habitat protection provisions for High Conservation Value Forests (HCVFs) included in the Wilderness/Special Places section below. 6.2.b, 6.3.a.2, 6.3.b, 6.4.a-c, 6.4.e, 6.5.d	wildlife habitat and contribute to the conservation of biological diversity. Identify, map, catalog and appropriately manage ecologically, geologically or culturally unique special sites. 4.1.1, 4.1.3, 4.2.1-2, 6.1.1-2	
Biological Diversity	Use an integrated approach to manage for genetic, species, and ecosystem biological diversity at the stand and landscape levels. At the stand level, promote plant species diversity, maintain a full range of tree sizes and stand-level habitat elements, use local seed sources, control invasive species, and promote natural cycles through fuels management as necessary. Maintain, enhance, and/or restore underrepresented successional stages, rare ecological communities, and riparian management zones at the landscape level. 6.2.c, 6.3.a-i	Develop a program to promote conservation of native biological diversity, including species, wildlife habitats and ecological community types at the stand and landscape levels. Develop and implement criteria to retain stand-level wildlife habitat elements. Collect biodiversity data through forest inventory processes and have a program or methodology to incorporate forest inventory and research results into forest management decisions to manage wildlife habitat and contribute to the conservation of biological diversity. 4.1.1-4, 4.2.2	Both programs promote biological diversity at the stand and landscape levels, although the FSC program is more prescriptive.
Genetically Modified Organisms (GMOs)	The use of GMOs is strictly prohibited, but the use of genetically improved organisms, including hybrids and clones, is allowed. 6.8.d, FSC GMO Policyb	Research on genetically engineered trees must adhere to all applicable federal, state, regulations and international protocols. Program for the appropriate research, testing, evaluation and deployment of improved planting stock,	While the FSC prohibits the use of GMOs, the SFI states that research must follow all laws, thus potentially allowing for the use of GMOs. Both programs allow for the use of varietal seedlings.

Comparison Category	FSC	SFI	Notes
		including varietal seedlings (hybrids and clones). 15.1.2, 2.5.1	
Exotic and Invasive Species	Develop and implement a strategy to prevent or control invasive species. Use exotic species, including seed mixes for erosion control, only when scientific evidence indicates a low risk to native biodiversity. Monitor and address impacts. 6.3.h, 6.9.a-c	Minimize the use of exotics during reforestation, unless scientific evidence documents minimal risk to native biodiversity. Manage to promote healthy and productive forests and protect from environmentally and economically damaging agents such as invasive species. Participate in programs to limit the introduction, impact and spread of invasive exotic species. 2.1.4, 2.4.1-2, 4.1.7	Both programs call for the protection from and eradication of invasive exotics, and minimizing the use of exotics except when their use is documented as low-risk.
Wilderness and/or Special Places	Defines High Conservation Value Forests (HCVFs) in part as containing globally, regionally, or nationally significant ecosystems, species, or other biodiversity values or providing critical services to local communities. Guidance is regionally specific, but old growth, primary forests, and roadless areas greater than 500 acres are included as HCVF areas. HCVFs are managed to protect and maintain their high conservation value attributes. Permitted management activities vary by HCVF objective, but management decisions shall always follow a precautionary approach to protect conservation values. Identify, delineate, and designate HCVFs, with stakeholder input and public review. Management activities maintain or enhance the values and extent of the HCVF, with the necessary strategies described in the management and operation plans. Active management may or may not be appropriate, depending on the values of the HCVF. Requires the	Defines Forests with Exceptional Conservation Value (FECV) as having critically imperiled and imperiled species and ecological communities. Develop a program to locate and protect FECV sites with viable occurrences of critically imperiled and imperiled species and communities. Collection of information on FECV and other biodiversity related data through forest inventory process, mapping or participation in external programs. Such participation may include providing non-proprietary scientific information, time and assistance by staff, or in-kind or direct financial support. Identify, map, catalog, and appropriately manage ecologically, geologically or culturally unique special sites. 4.1.3, 4.2.1, 6.1.1-2	Areas designated wilderness within the national forests would be considered HCVF under the FSC standard, and may be considered FECV under the SFI standard. These extend protections beyond designated wilderness areas, if they fit the HCVF or FECV criteria and process. However, note that HCVF or FECV designation does not mean the same as a wilderness designation. FSC has a much broader and more inclusive definition. The SFI special sites section is sufficiently open to include many of the same areas, but their inclusion is not mandatory. It's not clear how the wilderness designation process fits with the FSC HCVF requirements. In the United States, wilderness can only be designated by an act of Congress. This may be an area addressed by the FSC if/when they choose to develop a standard specific for the national forests.

Comparison Category	FSC	SFI	Notes
	consideration of HCVFs adjacent to and beyond the boundaries of ownership. Monitoring requirements with an adaptive management strategy. 9.1.a, 9.2a-b, 9.3.a-c, 9.4.a-b, Definitions, Appendix F		
Old Growth	Specifies two types and levels of protection for old growth. However, on public lands, all old growth is protected from harvesting and other timber management activities with some exceptions for restoration activities. Old-growth areas are normally designated as HCVFs. When old-growth communities are underrepresented in the landscape, a portion of the forest is managed to enhance and/or restore old-growth characteristics. Type 1: ≥3 acres that have never been logged and display old growth characteristics. Protected from harvesting and road construction. Type 2: ≥20 acres that have been logged, but which retain significant old growth structure and functions. Protected from harvesting. 6.3.a.1, 6.3.a.3, 9.1, Definitions, Appendix F	Support of and participation in plans or programs for the conservation of old-growth forests in the region of ownership. 4.1.6	The FSC has more stringent protections for old growth. The SFI encourages the conservation of old growth on a landscape level, on neighboring or nearby forests, without specifying protections for old growth on the certified forest. FSC prohibits the harvesting of old growth except in limited situations. Old-growth areas are protected, either as HCVFs or RSAs, with some management activities permitted as necessary. The Forest Service definition of old growth is regionally/ecologically specific, rendering the effect of this FSC indicator uncertain.
Water and Soil Resource Management			
General	Develop and implement management approaches and field prescriptions that avoid or minimize negative short- and long-term impacts, and maintain or enhance the long-term ecological viability of the forest. Develop and implement appropriate measures for maintaining and/or enhancing forest services and resources that serve public values. Management operations should not have	n/a	FSC has a policy to avoid or minimize impacts to ecological functions in general and those that provide public services. SFI does not have the same stated policy but has indicators to the same effect.

Comparison Category	FSC	SFI	Notes
	a significant, long-term damage to these services and resources. Measures should be taken to restore any adverse impacts resulting from past management. 6.1.c, 5.5.a-b		
Water Quality	Prepare and implement written guidelines – including to meet or exceed all BMPs – for water quality, erosion control, road construction and all other mechanical disturbances. Assess water resources and hydrologic functions. Management activities are selected and used to protect water resources. 6.5.a-c, 6.1.a	Meet or exceed all water quality laws and U.S. EPA approved water quality BMPs. Program to implement and monitor BMPs, with contractor provisions. Plans address wet-weather events and operating conditions. Develop appropriate protection measures where BMPs do not exist. 3.1.1-4, 3.2.5	Both programs require that water quality BMPs are met.
Riparian Zones	Implement regionally specific Streamside Management Zone (SMZ) buffer guidelines that meet or exceed BMPs, including protected vegetative buffer areas and guidance for harvest and road construction. Minor variations permitted. Crossings are avoided when possible and, when necessary, do not impede the movement of aquatic species and temporary crossings are restored. 6.5.e.1-2, 6.5.f	Develop a program addressing management and implementing protection of rivers, streams, lakes and other water bodies and riparian zones. Map and identify water bodies as specified in BMPs and where appropriate. Develop appropriate protection measures where BMPs do not exist. 3.2.1-5	FSC has specific guidance directed at harvest operation activities.
Wetlands	Wetlands protections are included in the SMZ (riparian zone) guidelines. 6.5.e.1-2, 6.5.f	Identify and protect non-forested wetlands of ecological significance. 3.2.4	Both programs have protections for wetlands.
Erosion and Sedimentation Control	Management activities – including the transportation system – are selected and used to protect soil and water resources and to avoid erosion, landslides, and significant soil disturbance. Regionally specific guidance for slopes and landslide prevention, including no logging activities allowed on areas at high risk for landslides. 6.5.a-d	Use erosion control measures to minimize the loss of soil and soil productivity. 2.3.3	Both programs call for erosion and sedimentation control, although the FSC program is more prescriptive and includes regionally specific guidance.

Comparison Category	FSC	SFI	Notes
Soil Quality/Productivity	Assess soil resources. Management activities are selected and used to protect soil and water resources and to avoid erosion, landslides, and significant soil disturbance. To protect soil productivity, function and habitat, topsoil disturbance is limited, rutting and compaction is minimized and other issues such as multiple harvest rotations are addressed. 6.1.a, 6.5.c	Develop criteria that address harvesting, site preparation and post-harvest conditions to protect soil productivity. This includes a process to identify vulnerable soils, design and construct transportation system to minimize rutting and skid trails, and retain vigorous trees during partial harvesting. Use soil maps where available. 2.3.1-7	The FSC directly calls for the consideration of soil quality over multiple harvest rotations; this is captured indirectly in the SFI program through considerations of site productivity changes (1.1.1.4). The SFI does not say anything directly about landslides like the FSC does, but the language is sufficiently broad to allow for similar landslide protections.
Other Forest Uses and Values			
General	Identify, define, and implement appropriate measures for maintaining and/or enhancing forest services and resources that serve public values, including municipal watersheds, fisheries, carbon storage and sequestration, recreation and tourism. Management operations should not have significant, long-term impacts on these services and resources. Measures should be taken to restore any damage resulting from past management. 5.5.a-b	n/a	
Livestock Grazing	Allows for tenure and use rights, as established by law or regulation, to continue and management activities should not impact the benefits of such rights. When there is a conflict between the use of such rights and the conservation of forest resources, it is brought to the attention of the certifying body. Livestock grazing is controlled to protect in-stream habitats, water quality, riparian vegetation, and the banks of the stream channel from erosion. Location, intensity	n/a	In the FSC program, livestock grazing is not specified as a use right, although it should fall in this category as a long-term lease. The use rights provisions in the FSC are intended to protect the rights of indigenous people, but as written appear to apply to long-term leaseholders such as those for livestock grazing and mineral development. This may be an area addressed by the FSC if they choose to develop a standard specific for the national forests.

Comparison Category	FSC	SFI	Notes
	and season of use should be managed to avoid adverse impacts. 2.2.a-b, 6.5.h		
Minerals Development & Extraction	Allows for tenure and use rights, as established by law or regulation, to continue and management activities should not impact the benefits of such rights. When there is a conflict between the use of such rights and the conservation of forest resources it is brought to the attention of the certifying body. Identify areas and facilities associated with subsurface mineral and gas rights. Control the surface disturbances to the extent allowed to minimize adverse environmental and social impacts. 2.2.a-b, 6.10.f	n/a	It is not clear how the FSC would treat the separate ownership of sub-surface mineral rights (split estates). This was identified as an issue for each of the five national forests in the pilot certification study. This may be an area addressed by the FSC if/when they choose to develop a standard specific for the national forests. On federal lands, administration of mineral exploration and development is complicated by the involvement of many federal agencies, including but not limited to the land management agency.
Recreation	Recreation use is managed to avoid damage to soils, water, plants, wildlife and wildlife habitats. Recreational trails and off-road travel are controlled to minimize impacts. 6.5.d, 6.5.g	Support and promote recreational opportunities for the public. 5.4.1	FSC has more prescriptive requirements for minimizing the damage to ecological functions from recreation.
Visual Impacts	Incorporate an understanding of the likely social impacts, including aesthetic considerations, of management activities into management planning and operations. 4.4.a	Develop a program to address visual quality management that incorporates aesthetic considerations in harvest, road, and landing design and management, and other management activities where visual impacts are a concern. Also to address visual concerns, areas adjacent to a clearcut harvest must meet a minimum tree age and size requirement (three years old or five feet high). 5.1.1-2, 5.3.1-3	SFI has more prescriptive requirements for visual and aesthetic impacts.
Climate Change/Carbon Sequestration	Identify, define and implement appropriate measures for maintaining and/or enhancing forest services and	Monitor information from regional climate models on long-term forest health, productivity and economic viability. Gain knowledge about climate	The FSC standard is more prescriptive.

Comparison Category	FSC	SFI	Notes
	resources, including carbon storage and sequestration. 5.5.a-b	change impacts on wildlife, wildlife habitats and conservation of biological diversity. 15.3.1-2	
Decision-Making and Management Planning			
Regulatory Compliance	Comply with all federal, state, and local laws and regulations, including relevant provisions of all applicable binding international agreements. Ensure that employees and contractors are duly informed about applicable laws and regulations. Meet or exceed all applicable laws and regulations covering the health and safety of employees and their families. 1.1.a-b, 1.2.a, 1.3.a, 4.2.a-b	Comply with applicable federal, state, and local laws and regulations pertaining to forestry and related social issues, as well as international protocols related to research on genetically engineered tress. Meet or exceed all water quality laws. 14.1.1-3, 14.2.1-2, 15.1.2, 3.1	The FSC considers the number, severity and temporal pattern of legal/regulatory violations and complaints for the five years prior to certification assessment. If laws prevent compliance, not obtaining certification is possible.
Management Plans	Develop a management plan that describes historic, current and desired future conditions and includes the collection of a range of ecological, aesthetic, cultural, and socioeconomic data and maps. The management plan also describes management objectives required to achieve desired future conditions, monitoring requirements and stakeholder involvement. The management plan is reviewed and updated as necessary, but at least every 10 years. Significant plan or land ownership changes are disclosed to the FSC within 90 days. 7.1.a-r, 7.2.a, 6.4.a-b,1.6.c	Develop a forest management plan that includes the collection of a range of ecological data, such as a forest inventory, long-term resource analyses, land classifications, soils inventories and maps, growth-and-yield models, recommended harvest levels, and a review of non-timber issues. 1.1.1, 4.1.5	Both programs have management planning requirements that fall within the mandated land and resource management plan requirements of National Forest Management Act (NFMA, P.L. 94-588). The FSC requirements include the collection and assessment of a comprehensive range of ecological and social issues; whereas the SFI management planning requirements are mostly focused around ecological issues. The FSC management plan requires updates every 10 years. NFMA mandates plan updates every 10-15 years, although some updates have taken longer. The SFI does not specify plan updates or a time frame for their completion.
Sustainable Harvest Plans	Calculate the sustained yield harvest level for each planning unit and consider the impact of repeated harvests. Rolling 10-year average annual harvest levels	Recommend sustainable harvest levels in the management plan and document annual harvest trends in relation to plans. 1.1.1.g, 1.1.2	The FSC has a more stringent requirement.

Comparison Category	FSC	SFI	Notes
	cannot exceed the calculated sustained yield level. 5.6.a-b		
Impact Assessment	Analyze the potential short- and long-term social and environmental impacts of management actions prior to conducting any site-disturbing activities. Management actions and field prescriptions are developed and implemented that avoid or minimize possible damage. 4.4.a, 6.1.a-d	n/a	This is mostly covered by the impact assessment requirements of NEPA. One area of concern is that the FSC standard requires avoiding or minimizing damage, which is not required by NEPA.
Implementation, Monitoring & Evaluation	Develop and implement a regular and comprehensive monitoring protocol and record-keeping system to evaluate various forest statistics, the environmental and social impacts of harvest and management operations, the impacts of the transportation system, stakeholder responses, and the costs, productivity and efficiency of forest management. Evaluate the extent site-specific plans achieve management objectives and minimize environmental impacts. Evaluate the extent the management plan is achieving management objectives and adapt as needed. Reports available to the public. 8.1.a, 8.2.a-e, 8.3.a, 8.4.a-b, 8.5.a	Develop and implement a record-keeping system to provide annual progress reports to SFI and the public. Develop and implement a monitoring and feedback system to continually evaluate and improve conformance to the standard. 19.1-2, 20.1.1-3	Both programs have annual reporting requirements, which is currently not required of the national forests.
Worker Safety, Education & Training	Provide sufficient training, guidance and supervision for all forest workers. Include safety requirements in contracts or other written agreements. Employees and contractors demonstrate a safe working environment. 7.3.a, 4.2.b	Provide sufficient education and training for employees and contractors. Develop a program for the use of certified or qualified logging professionals. 16.1.2-5	SFI has requirement that all loggers undergo safety training, which is not a current requirement for Forest Service contracts. Identified as a concern in the five pilot forests.
Community Outreach, Education, & Research	Participate in local outreach, educational, economic development and civic activities.	Participate or support a variety of outreach, education, and research programs.	

Comparison Category	FSC	SFI	Notes
	4.1.f-g	4.1.7, 15.1.2, 15.2.1, 16.2.1-2, 17.1.1-5, 17.2.1	
Community/Public Involvement			
Stakeholder Input	Seek, consider, and address stakeholder input in management planning and for site-specific management activities. For public forests, have clearly defined methods of public participation, including notice, review, comment and appeals processes. 4.4.a-d, 7.4.b	For public forests, involve the appropriate governmental entities and the public in planning and management activities. Develop a process to receive and respond to public inquiries. 18.1.1-2, 17.3.2	Covered through various National Forest Management Act, National Environmental Act, and Administrative Procedures Act requirements.
Transparency	Make summary audit, impact assessments, management plans, harvest plans, monitoring results and other documents available for public review. 6.1.d, 7.1.q, 7.4.b, 8.5.a	Provide a summary audit report to be posted on the SFI website for public review 19.1.1	Covered through various National Forest Management Act, National Environmental Act, and Administrative Procedures Act requirements.
Miscellaneous			
Statement of Commitment	Publish a statement of endorsement of and commitment to the FSC Principles. 1.6a-b	Publish a statement of commitment to the SFI 2010-2014 Standard. 16.1.1	Endorsement of the certification program by Congress, the Forest Service, or the unit would be necessary.
Indigenous People	Specific requirements for working and consulting with indigenous people. Principle 3	Communicate with affected indigenous peoples, identify and protect important sites, and address the use of NTFPs. 18.2.1	Covered through various laws and regulations related to tribal rights, uses, and consultation.
Hazardous materials storage & disposal	Storage, disposal and spill response guidelines for chemicals, containers, liquid and solid non-organic wastes including fuel and oil. 6.7a-c	n/a	The FSC has a more stringent standard about hazardous waste storage, transport, and disposal while the SFI is silent on this issue.
Requirements for public lands	Must meet three threshold requirements: 1) willing landowner; 2) public consensus about management of national forests; 3) development of specific standards, indicators and guidance. Several requirements specific	Several requirements specific to public lands written in to the standard.	The SFI program is ready to certify the national forests, while the FSC program would have to develop another standard prior to certifying the national forests.

Comparison Category	FSC	SFI	Notes
	to public lands written in to the standard. FSC-US Federal Land Policyc		

Sources: http://www.sfiprogram.org/index.php and http://www.fscus.org/.

a. FSC Pesticides Policy 2005 (FSC POL 30-001), available at http://www.fsc.org/policies.html.

b. FSC GMO Policy 2000 (FSC POL 30-602), available at http://www.fsc.org/policies.html.

c. FSC-US Federal Land Policy 2003, available at http://www.fscus.org/documents/.

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