
National Forest Certification Studies

An Evaluation of the Applicability of Forest Stewardship Council (FSC) and Sustainable Forest Initiative (SFI) Standards on Five National Forests

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Foreword

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Managers of public forestlands in the United States have had a tough couple of years—several decades, in fact. Once highly regarded by the general public as firefighting heroes and conservation leaders, managers of public forests started taking heat themselves in the 1960s and 1970s over issues such as clearcutting, herbicide use, and wilderness protection. In the 1980s and 1990s, a string of lawsuits over impacts on endangered species and old-growth forests brought timber harvesting to a virtual standstill on many public forests in the US.

Some of the highest profile controversies focused on the National Forests, a century-old, 193 million acre system of federal forest reserves managed by the US Forest Service. Public trust in forest managers hit an all-time low, and there were few proposed timber harvests or other management activities that were not halted or delayed by administrative appeals and citizen lawsuits.

Meanwhile, worldwide concern over large-scale deforestation in the tropics prompted the development of programs for independent third-party certification of wood produced from sustainably managed forests. The objective was to enable consumers, especially in tropical wood-importing nations, to consciously choose wood products that would not contribute to further exploitation and unsustainable management of tropical forests. With cooperation from leaders in forest industry as well as conservation organizations, forest certification programs were developed to (1) create a list of criteria for sound forest management, (2) establish independent audit processes to determine in the field whether a given forest management enterprise is following these criteria, and (3) provide a mechanism for tracing products from a certified forest through manufacturing and distribution all the way to the consumer, so the consumer can be certain that that wood or paper product they are purchasing did indeed come from a sustainably managed forest.

This represented an important breakthrough in the contentious arena of forest conservation. No longer were forest industry and environmental activists simply locked in a legal and policy stalemate over *whether* timber harvesting could take place, but *how* it could take place while ensuring that it is ecologically sound, economically viable, and socially responsible. These developments also held out the promise of calming some of the public controversy around forest management, by providing citizens with credible assurances that the forests in question were not being overexploited, and adequate protection was being provided for forest areas of exceptional importance for conservation values such as biodiversity, wildlife habitat or water quality.

In his best selling book *Collapse: How Societies Choose to Fail or Succeed*, Pulitzer Prize-winning author Jared Diamond writes that “the essence of [certification] is that consumers can believe it, because it is not an unsubstantiated boast by the company itself but the result of an examination, against internationally accepted standards of best practice, by trained and experienced auditors who don’t hesitate to say no or to impose conditions.”

In 1996, the Pinchot Institute embarked on a long-term research project to see whether certification programs—originally developed to guide forest management and timber harvesting by private companies—could also help improve forest management on public lands designated to protect a wider array of natural resource and environmental values. The first major project involved the independent audit of the entire 2.1 million acre state forest system in Pennsylvania. Based on this evaluation, some important corrective actions were needed, and the necessary actions were taken. Today, Pennsylvania’s state forest lands are the world’s largest single body of certified forest—more than 3,000 square miles (8,400 square kilometers). More importantly, it is widely acknowledged by conservation organizations, forest industry, and state forestry agency officials themselves that these public forests are being better managed now, and much of the past legal and policy controversy has subsided.

This report describes the results of independent audits of five units of the National Forest System ranging from 500,000 to 1.5 million acres in size. These case studies are the culmination of what has become a ten-year research project that ultimately involved forest certification audits on state forestlands in seven states, 30 areas of Native American tribal forestlands, and one national park. It should be noted that, in each case, the independent audits identified needs for corrective actions, and in each case these were successfully addressed by the agencies’ forest managers. A general conclusion among the agencies themselves is that the reduction in costs associated with public controversy and legal challenges—not only on agency budgets but on the spirit and morale of their forest managers—more than offset the time and expense associated with the certification process.

Whether this will be true of the U.S. national forests, only time will tell. Decades of often bitter controversy are not easily forgotten or set aside. Nevertheless, there now begins what we hope will be a positive, constructive and genuinely productive national dialogue on the potential value of forest certification on public forest lands—for improving the protection and sustainable management of these lands for a variety of values and uses, and for making them models of sound forest management to guide and inspire managers of other types of forest throughout the country and around the world.

It is our hope that the results of this study and the analysis contained in the report will inform and enrich that national dialogue, and help lead to a stronger broad-based consensus on the conservation and sustainable management of America’s public forests.

ii. Acknowledgements

The Pinchot Institute project team would like to express our gratitude to all the individuals who participated in these National Forest Certification Case Studies. First and foremost we are grateful for the dedicated efforts and professionalism of the coordinators on each of the national forests: Geoff Chandler of the Chequamegon-Nicolet NF (CNNF); Lois Demarco of the Allegheny NF (ANF); Jerry Haugen of the Lakeview Federal Stewardship Unit (LFSU); Nancy Lankford and Lisa Norris of the Mt. Hood NF (MHNF); and Carl Petrick and Richard Shelfer of the National Forests in Florida (NFF). Their attention to this project and able coordination of the many staff and auditors involved was remarkable.

The auditors performed admirably in carrying out evaluations of unprecedented scope and scale. We commend the expert and quality jobs done by each of the audit teams, and the leadership provided by each of the Lead Auditors, including: Mike Ferrucci (NSF International Strategic Registrations), Robert Hrubes (Scientific Certification Systems), Chris Nowak (SmartWood), Dan Pubanz (SmartWood), Dan Simonds (SGS Systems and Services Certification, Inc), and Don Taylor (PricewaterhouseCoopers). We also appreciate the efforts of Dave Bubser of SmartWood and Dave Wager of SCS who helped orchestrate four of the five audit reviews.

We appreciate the fortitude of each of the National Forest Supervisors, who were willing to dedicate their staff and resources to take part in the study. They include: Ann Archie of the CNNF, Gary Larsen of the MHNF, Kathleen Morse of the ANF, Marsha Kearney of the NFF, and Karen Shimamoto of the LFSU. Their leadership and the leadership provided by Forest Service Deputy Chief Sally Collins and her staff at the Washington Office made this study happen.

Finally, we are grateful for the thoughtful advice and guidance provided by Doug MacCleery who helped shepherd this project through every stage.

iii. Executive Summary

Over the last two years the Forest Service has worked in partnership with the Pinchot Institute for Conservation to study the applicability of independent third-party certification for several national forests. This study evaluated the management of five national forest units using standards developed by the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI), two major forest certification programs currently operating in the United States. The Forest Service has considered the prospect of certification for many years, and supported and encouraged the growth of certification domestically and internationally. This study is the first comprehensive in-field evaluation of national forests using FSC and SFI standards.

CERTIFICATION TRENDS IN THE U.S.

The area of forests in the U.S. certified by FSC and SFI has increased from virtually none in 1998 to over 60 million acres today.¹ These standards were first applied on private forestlands to meet the increasing global demand for certified products. Benefits of certification to public landowners extend beyond providing certified wood to the marketplace. States such as North Carolina, Michigan, Maryland, Pennsylvania and Minnesota have achieved certification under both systems. These states have reported increased public engagement, improvements in administration and ongoing improvement in forest practices as a result of certifying their forest lands.² Over 14 million acres of public

land has been certified in the U.S., most under both the FSC and SFI systems.

CURRENT POLICY SETTING

The Forest Service, U.S. Department of Agriculture, first considered testing certification in 1997, on the Lakeview Federal Stewardship Unit, a portion of the Fremont-Winema National Forests. At that time, FSC auditors had little experience on public lands, and SFI had not yet launched a third-party certification program. Based on the questions raised both inside and outside the agency on how certification could apply to the National Forest System, the Forest Service decided to institute a policy that no national forest would seek certification for the time being. However, the policy did allow for an outside organization to independently conduct an evaluation relative to certification standards, with willing participation of a national forest.

The certification programs differ in how their policies regard the certification of national forests, and prior to this project there was little information on conflicts that may exist between the requirements of the standards, and the mandated mission of the Forest Service.

The SFI Program has no policy expressly prohibiting the application of SFI certification of federal lands--and in fact, has formally expressed willingness to certify a national forest should it be recommended based on an accredited SFI audit. The SFI Standard presently includes specific requirements for public land management organizations, which apply to any national forest.

The FSC US has a formalized Federal Lands Policy, which imposes three conditions that must be met before any federal lands can be offered certification. There first needs to be a willing landowner (1); then public consensus (2); and, finally a set of FSC standards developed specifically for the Forest Service (3). These conditions apply to any new type of

¹ Currently, 23.1 million acres have been certified to FSC standards in the U.S. and 53.7 million acres have been certified to SFI standards. About 14 million acres of public lands have been certified to both FSC and SFI standards. Much of the public land base certified by the two programs is owned and managed by state agencies. FSC website can be viewed at: www.fscus.org. The SFI website is at: <http://www.sfi-program.org>.

² Lister, J. 2007. *The Certification of U.S. State-Owned Forestland*. Institute for Resources, Environment & Sustainability. University of British Columbia. Vancouver, B.C. 111p.

federal land management agency. To date, FSC has approved federal land standards for only the U.S. Department of Defense and the U.S. Department of Energy³. The three pre-conditions that must be resolved before a national forest unit can seek certification have not yet been met.

STUDY OBJECTIVES

The Pinchot Institute’s decade of experience with certification study projects on public lands—many of them managed under laws, policies and land management planning processes similar to those used by the Forest Service—has helped guide the design several case studies exploring potential applicability of certification on units of the National Forest System. The National Forest Certification Case Studies are explicitly designed to:

1. Evaluate potential benefits and costs of third-party certification of national forests and grasslands;
2. Provide the Forest Service a better understanding of how national forest management practices align with SFI and FSC standards; and,
3. Study the lessons learned as a basis for determining what policy and management direction may be needed in the event forest certification were pursued in the future.

Actual certification by FSC or SFI *is outside* the scope of these evaluations and *was not* a possible outcome on any of the study units.

STUDY SETTING

The National Forest System (NFS) management units participating in the study were selected by the Forest Service. They considered willingness, readiness, geographic representation, and the representation of a variety of resource management issues, among other factors. Prior to the case studies, the Institute performed a “crosswalk analysis” of

the current management systems of six national forests, looking at the alignment of the FSC and SFI standards with statutory requirements, system-wide directives that guide operations, management planning, and other supporting documentation used by each forest. Four of the forests in the case studies had participated in this initial review. The five case study forests that underwent FSC and SFI evaluations as part of this study were:

- *Allegheny National Forest* (ANF) in Pennsylvania;
- *Lakeview Federal Stewardship Unit* (LFSU) on the Fremont-Winema National Forests (LFSU) in Oregon;
- *Chequamegon-Nicolet National Forest* (CNNF) in northern Wisconsin;
- *Mt. Hood National Forest* (MHNF) in Oregon; and,
- *National Forests in Florida* (NFF), which include three national forest units managed under one forest plan. They are the Appalachian National Forest, the Ocala National Forest, and the Osceola National Forest.

STUDY DESIGN

The case studies were designed to closely approximate the process that a forest would undergo were they actually seeking certification. To this end the selected firms and audit teams were required to use the same approach they would for an actual certification assessment, as accredited by the FSC and SFI certification programs. The format of the findings was also intended to emulate actual certification reports.

The SFI evaluations used the 2005 – 2009 Sustainable Forestry Initiative Standard (SFIS). The SFIS is being widely applied on both public and private lands and has

³ Presently there are no Department of Energy lands that have sought FSC certification.

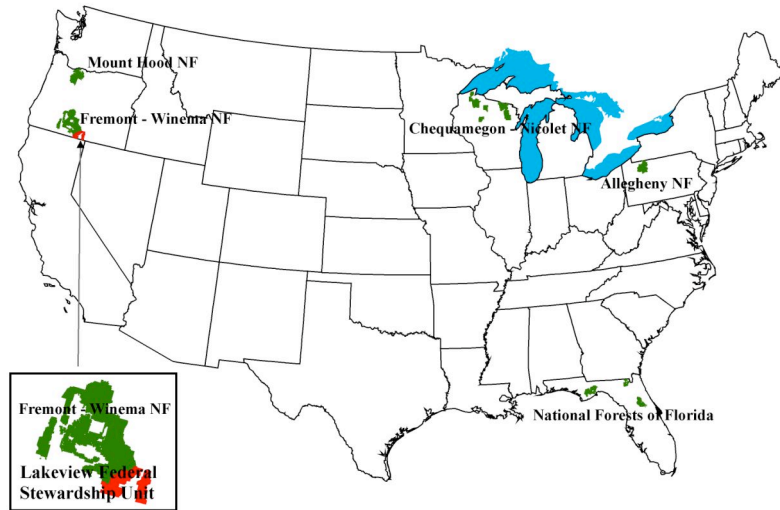


Figure. Five National Forest System units participating in the National Forest Certification Case Studies

requirements specific to public lands built into the standard. The FSC evaluations for the five case studies employed the FSC Regional Standards for the appropriate region, the DoD/DoE National-Level Indicators, and a set of *Additional Considerations* developed specifically for this project. The regional standards used in the study included the:

- *FSC Pacific Coast (USA) Regional Forest Stewardship Standard, v9.0* - Mt. Hood NF & Lakeview Federal Stewardship Unit
- *FSC Appalachia (USA) Regional Forest Stewardship Standard, v4.6* - Allegheny NF
- *FSC Lake States-Central Hardwoods (USA) Regional Forest Stewardship Standard, v3.0* - Chequamegon-Nicolet NF
- *FSC Southeast (USA) Regional Forest Stewardship Standard* - National Forests of Florida

Pursuant to the FSC Federal Lands Policy discussed above, the FSC national standards setting body (FSC-US) would need to develop and approve an additional set of standards specific to NFS management in order to reflect a broader set of management objectives than is

typically found in private forestry enterprises. As part of the study, each audit team developed Additional Considerations to be used in concert with existing FSC standards. The three FSC audit firms taking part in this study developed these supplementary indicators through a peer review and public participation process prior to each field evaluation. Findings relative to the Additional Considerations will hopefully help inform the dialogue on what additional requirements would be considered for the National Forest System. However, It is important to note that FSC-US would undergo its own separate process to develop standards specific to federal ownerships if the Forest Service were to seek certification.

FSC and SFI audit firms for each of the case studies were chosen through a competitive bid process. Two evaluations were conducted by a joint FSC/SFI team formed by SmartWood and PricewaterhouseCoopers. Two were conducted by another joint FSC/SFI team formed by Scientific Certification Systems and NSF International Strategic Registrations (NSF-ISR). The FSC/SFI evaluation for the

National Forests of Florida was conducted by SGS Systems and Services Certification, Inc.

The audit teams on each forest included five to six qualified individuals, representing a broad range of expertise. The teams typically included a lead auditor, forester, wildlife biologist, forest ecologist, hydrologist, and a social scientist and/or economist. A portion of the team spent 2-3 days with the forest staff during an initial onsite preliminary review. Two to four months later the full team spent at least a week on the forest, conducting a broad-based management review.

A key value of these case studies is the information they provide to the Forest Service, the certification programs, and other interested parties. The coordination teams for each national forest helped the Pinchot Institute better understand their experiences with the certification evaluations by completing a questionnaire and participating in follow-up interviews. The questions included an inquiry into their perspectives on the certification process, the value and scope of the audits, and type of value certification may offer national forests.

Follow-up interviews were also conducted with each lead auditor from the five participating audit firms to gather feedback on their experience. These interviews helped capture their insights on the applicability of FSC and SFI standards on national forests and the most effective manner by which the Forest Service should undergo an assessment should they wish to become certified.

FINDINGS

During the course of their review, the auditors commended the case study national forests for meeting the requirements of the FSC and SFI standards in many areas such as:

- *Forest Planning and In-field Implementation.* Auditors noted the detailed planning processes and assessments employed on each forest.

- *Stakeholder Consultation.* The way in which local communities and other affected stakeholders are apprised (e.g., presentations, email, websites, broadcast and print media, etc.) of upcoming forest management activities was described as “extensive” and “exemplary” by auditors.
- *Coordination with First Nations.* The proactive communications with local tribes has facilitated the protection and management of culturally significant sites.
- *Protection of Threatened and Endangered Species.* Auditors commended the process used by the case study forests to identify rare species presence and sensitive habitat features and incorporate this information into all phases of management activities.
- *Control of Invasives and Exotics.* The procedures to aggressively limit the introduction, impact and spread of invasive species was referred to as “outstanding” by some auditors during the certification evaluations.

Many of the non-conformances are based on the fact that the national forests are not actually seeking certification at this time and so are essentially not applicable in the context of these studies. This being the case many of programmatic or “technical” requirements were not met. These technical gaps include requirements such as statements of commitment to the programs, formal reporting to FSC and SFI, and related issues.

Other reported non-conformances related to “non-technical” aspects of sustainable management. In many cases, these “substantive” non-conformances forests were well known to NFS staff. In fact, the attention to the particular issue was often partially driven by the staff’s own concerns expressed through the stakeholder consultation process and other phases of the project. Findings of non-conformance were also informed by the stakeholder consultation process, carried out

through onsite meetings and one-on-one interviews. In total, close to 500 individuals, not including many of the NFS staff, provided input to the auditors through the course of the five evaluations. The input from external stakeholders constituted a substantial portion of the findings reported for the FSC evaluation process. Comments from stakeholders were referenced in numerous instances--cited as evidence on relations with stakeholders and as direction to resource management issues auditors pursued in the field.

Examples of non-conformances reported for more than one unit included:

- *Old-growth protection and management issues.* All five case study national forests addressed or exceeded the old-growth requirements under the SFI standard. The FSC regional standards addressing identification of, and/or entry into, old-growth forests posed conformance issues for some participating NFS units.
- *Forest health issues arising from backlogged management activities.* Consistent delays or backlogs in meeting stated harvest objectives led auditors to find most case study forests falling short of their stated economic, ecological, and social goals. FSC and SFI auditors suggested the backlog in harvest treatments and persistent lack of funding has exposed forests to increased risk of disease, insect outbreaks, stand-replacing wildfires, and in some cases, being unable to provide key habitat features for certain endangered species.
- *Monitoring of non-timber forest products.* The certification evaluations determined that the management of NTFPs on each case study national forest met the requirements of the SFI standard. FSC auditors, however, found needed improvements in NTFP permitting and monitoring of removals (all units except NFF).

- *The backlog of road maintenance and decommissioning.* The road maintenance backlog is noted as a potential problem under both SFI and FSC. On all units except the NFF and CNNF there are either some or, in other cases, numerous inadequately maintained roads, many of which are no longer needed for land management.
- *Monitoring compliance with contractor worker safety requirements and training.* The NFS outlines all USFS regulations and BMPs in all timber sale contracts. This fell short of both standards' requirements as FSC and SFI auditors on all five certification evaluations failed to identify any evidence of a mechanism for evaluating and ensuring contractor training and education.

Feedback from Case Study Participants

Most of the NFS study coordinators felt that the certification evaluations provided a comprehensive review, which looked at the many integrated management activities occurring on the forest. NFS study coordinators suggested that the difference between the agency's internal audits focusing on a particular management function (e.g., timber sale program), and the more holistic integrated certification review was complementary, and could help identify potential issues needing consideration during their forest plan revision process.

NFS study coordinators also provided feedback on the comprehensiveness of the standards and the degree to which the certification programs aid in communication with stakeholders. To this end, the study coordinators agreed on the following:

- Both FSC and SFI processes explored a wide range of issues substantially affecting the sustainability of management of the participating National Forests.
- The standards cover an appropriate balance between economic, environmental and social concerns.

- The programs provide a good test of staff ability to perform their responsibilities.
- The evaluations provided opportunities for interest groups to provide input regarding the agency’s commitment to sustainable forestry and identified the concerns of their stakeholders.

Coordinators also reported that the FSC and SFI evaluations provided positive, independent reinforcement of their management activities while identifying those areas where improvements are needed. In many cases, these improvements could not occur without additional funding and/or staff resources. Also, while the coordinators felt the assessment process was valuable as an opportunity to strengthen integrated management functions, most also commented on the additional demands certification could add to full workloads. Overall, participating staff recognized the value of third-parties communicating publicly on the successes and difficulties of national forest management—especially difficulties arising from factors they feel are “beyond their control.”

CONCLUSION

Forest management on the case study national forests met many of the requirements of existing FSC and SFI standards. Where non-conformances were identified, Corrective Action Requests addressing performance gaps between national forest management and the certification standards may be unattainable without fixes that are at least partially addressed by the agency’s Washington Office. Potential policy changes to address the auditors’ suggested improvements include:

- 1) Develop viable strategies, and secure the necessary resources, to substantially improve the condition of overstocked stands and meet desired forest conditions.
- 2) Develop a strategy for reconciling the differences between the old growth provisions of the Northwest Forest plan

and the FSC Pacific Coast Regional Standard.

- 3) Complete forest roads analyses to determine necessary transportation networks essential for management needs while identifying surplus roads ready for decommissioning. Additionally, NFS units would need to pursue strategies to maintain the needed road system to accomplish management activities.
- 4) Develop programs to manage and monitor the abundance, regeneration, habitat conditions and yield of NTFPs that are harvested.
- 5) Require contractors to participate in training or certified logger programs to ensure harvesting operations are completed safely and with the requisite skill levels.

Independent, third party certification is one of the most significant developments in the field of forest management in the last two decades. Its use has expanded dramatically with increasing interest in practical ways to ensure sustainable management practices are being used in forests throughout the world. In the U.S. millions of acres of private and public (primarily state-managed) forests have been certified over the last decade.

Certifying national forests has been debated for many years. It is a sensitive and complex issue—perhaps more so for the National Forest System than any other type of ownership in the U.S. NFS planning is exceedingly complex and management practices and objectives are closely scrutinized by both the public and U.S. Courts. This study was designed to help the Forest Service assess the value and implications of certification. We encourage the Forest Service, and any external parties interested in the management of national forests, to use this information and engage in an active dialogue on whether certification should be a next step for the agency.

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v. Acronyms and Abbreviations

AC	Additional Considerations
ANF	Allegheny National Forest
ASQ	Annual Sale Quantity
ATV	All Terrain Vehicle
BE	Biological Evaluation
BLM	Bureau of Land Management
BMP	Best Management Practice
CAR	Corrective Action Request
CFR	Code of Federal Regulations
CITES	Convention on International Trade in Endangered Species
CNNF	Chequamegon-Nicolet National Forest
CTWS	Confederated Tribes of Warm Springs
CWD	Coarse Woody Debris
C&I	Criteria and Indicators
DOD	Department of Defense
DOE	Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FMU	Forest Management Unit
FSC	Forest Stewardship Council
FSH	Forest Service Handbook
FSM	Forest Service Manual
FSU	Forest Stewardship Unit (referring to the Lakview FSU)
GAO	General Accountability Office
GIS	Geographic Information System
HCVF	High Conservation Value Forest
HRV	Historic Range of Variability
LFSU	Lakeview Federal Stewardship Unit
LRMP	Land and Resource Management Plan
LSOG	Lake Successional Old Growth
MA	Management Area
MHNF	Mount Hood National Forest
MMBF	Million Board Feet
MOU	Memorandum of Understanding
MOA	Memorandum of Agreement
MUSYA	Multiple-Use Sustained-Yield Act
NEPA	National Environmental Policy Act
NFF	National Forests in Florida
NFMA	National Forest Management Act
NFS	National Forest System
NNIS	Non-native Invasive Species
NSF-ISR	NSF-International Strategic Registrations, Ltd.
NTFP	Non-Timber Forest Product

NWFP	Northwest Forest Plan
OFI	Opportunity for Improvement
OG	Old-growth
OGM	Oil, Gas and Mineral Development
OHV	Off-Highway Vehicle
OIG	Office of Inspector General
ORV	Off-Road Vehicle
O&G	Oil and Gas
P.M.	Performance Measure
PSQ	Program Sale Quantity
PwC	PriceWaterhouseCoopers,
P&C	Principles and Criteria
RFP	Request for Proposal
R.O.	Forest Service Regional Office
SCS	Scientific Certification Systems
SFI	Sustainable Forestry Initiative
SGS	SGS Qualifor
SIC	Sustainable Forestry Initiative Stewardship Implementation Committee
SMZ	Streamside Management Zone
S.O.	Forest Service Supervisor's Office
TSI	Timber Stand Improvement
T&E	Threatened and Endangered
USDA	United States Department of Agriculture
USFS	United States Forest Service
W.O.	Forest Service Washington Office

1.0 INTRODUCTION

1.1 Background and History

The National Forest Certification Case Studies, which evaluate the applicability of certification within the National Forest System, continue a decade-long series of similar studies carried out by the Pinchot Institute. The goal of these studies has been to examine the applicability of independent third-party certification programs in new and untested settings. To date, two federal agencies, seven state forestry agencies, 30 tribal forestry agencies, and four universities have participated.

Both of the major forest certification programs currently operating in the United States, the Sustainable Forestry Initiative (SFI) and the Forest Stewardship Council (FSC), were applied first on private forestlands. The area of SFI and FSC certified forests in the U.S. has increased from virtually none in 1998 to over 60 million acres today.⁴ Over 14 million acres of public land has been certified in the U.S., mostly under both the FSC and SFI systems. The Pinchot Institute studies were principally aimed at determining the value and effectiveness of such programs on public lands where forest management policies and practices are determined through law, regulations, and forest management unit (FMU) plans developed with broad public participation.

In each of the studies completed to date, a general finding was that the forest management standards and requirements in both the SFI and FSC programs strongly overlapped with the existing forest and land management direction developed through public policy and planning processes. In each instance, the independent third-party assessments were found to reinforce much of the existing management direction; there is no known instance in which the SFI or FSC certification program requirements ran counter to any management direction in existing public policy or planning processes in the United States.

An important piece of the Pinchot Institute studies was to document the perspectives of public land managers, and for this purpose agency officials from the field to the policy level were asked to evaluate the usefulness of the certification process to them in achieving the mission and goals of their agency. These “reverse evaluations” were almost entirely positive, and both field managers and policymakers indicated that the process was useful in identifying and addressing opportunities for substantive improvements in forest management. Further, the independence, openness and transparency of the process helped address a variety of stakeholder concerns, and several participating agencies have indicated a noticeable decline in public challenges to land and forest management decisions.

National Forest Certification Case Studies

A decade of experience with certification study projects on public lands--many of them managed under laws, policies and land management planning processes similar to those used by the Forest Service--provided a foundation for designing several case studies to explore the potential applicability of certification programs on units of the National Forest System. The goal of the study was to examine the consistency of current land and resource management activities on National Forests in addressing the requirements of the two major forest certification programs now operating in the United States, utilizing independent third-party assessments to examine

current management standards, and the application of these standards in the field. *Actual certification by FSC or SFI is outside the scope of these evaluations and was not a possible outcome on any of the study units.* However, this study will provide the Forest Service a better understanding of how national forest management practices align with SFI and FSC standards.

Prior to this case study, the Pinchot Institute completed a detailed analysis of the current management policies and plans for National Forests, in comparison with the current standards in both the SFI and FSC certification programs. The analysis included all laws, regulations and agency policies at the national level. Because additional guidance on forest management is developed at the regional and forest levels, the Institute also conducted a detailed analysis of forest management objectives and guidance in the land and resource management plans for individual national forests. With just a few exceptions, the standard to which the case study national forests are being managed closely align with existing standards for the SFI and FSC forest certification programs.

The results of the crosswalk analysis initiated interest among several national forest managers in participating in an independent third-party assessment similar to those conducted by the Institute on state and tribal forestlands. State forestry agencies, conservation organizations, local industry and other stakeholder interests expressed similar support for undertaking these case studies.

1.2 Current Policy Setting

Policy of the Forest Service on Certification

Over the past 15 years, the Forest Service has been approached by various outside organizations and communities about carrying out pilot tests of certification on national forest lands. Current Forest Service policy is not to seek certification. However, the Forest Service will cooperate with outside parties who wish to review management practices on national forests. In the fall of 2000 the agency revisited its policy on certification of NFS lands. The strong consensus arising out of these discussions was that independent third-party environmental audits could have some significant benefits to the agency and the public.

Policy of the Forest Stewardship Council on the Certification of National Forests

The FSC Federal Land Policy imposes several conditions that must be met before any national forest can be certified. First there must be a willing landowner; second, public consensus; and, third the development (by FSC) of a new set of standards specific to the Forest Service. This FSC Federal Lands Policy (2003) provides additional guidance on the meaning and thresholds for these conditions, but ultimately the decision on whether the conditions have been met rests with the Board of FSC-US. To date, one set of federal land standards has been developed for the Department of Defense (DOD) and the Department of Energy (DOE), for certification of the forests of the Fort Lewis military installation in Washington State.

A request from the Forest Service to seek certification would presumably induce a board-level process involving extensive interaction with FSC members and other stakeholders. The second criterion, concerning public consensus, would likely involve discussions among FSC members and constituents to gauge the level of support they would have to offer certification to the Forest Service, and with what changes to existing standards. The third criterion involves the

development and board approval of national level indicators that would address the *special resource management, legal, technical, procedural, and governance issues* facing the Forest Service (FSC Federal Lands Policy 2003). Because the Forest Service has not determined whether it will seek certification, FSC has not yet determined how and when they will address these criteria for the Forest Service.

Policy of the Sustainable Forestry Initiative on the Forest Service

Members of the Sustainable Forestry Board, and SFI program participants in general, have no standing policy on SFI certification of federal lands. In fact, SFI has formally expressed willingness to certify a national forest should it be recommended based on an accredited SFI audit. Findings in the study highlight a number of issues that would need to be discussed with SFI, were the Forest Service to seek certification. For instance, a landowner seeking SFI certification must formally commit to reporting and management measures specific to the SFI Program. How and whether the Forest Service could make these commitments would need to be determined. Certain requirements of adopting a formalized certification program have been waived for other public land management agencies, but have been addressed on a case-by-case basis.

1.3 Study Setting—Participating Forests

Full certification study evaluations were completed on all units participating in the study, including the Lakeview Federal Stewardship Unit (Lakeview FSU or LFSU) and Mt. Hood NF (MHNF) in Oregon, Allegheny NF in Pennsylvania, Chequamegon-Nicolet NF (CNNF) in Wisconsin and the National Forests of Florida (NFF).

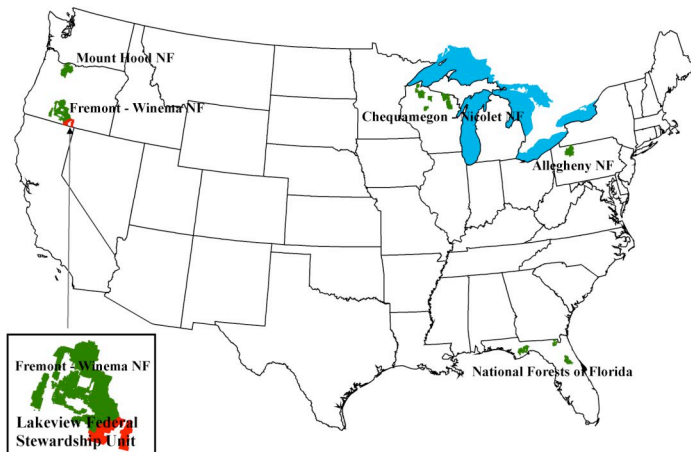


Figure 1. Location of case study National Forests.

2.0 METHODS

2.1 The Role of the Pinchot Institute

Each national forest participated in an independent third-party evaluation under existing SFI and FSC standards and a post-evaluation review in which NFS staff provided feedback regarding the certification evaluation experience. As part of the study, the Pinchot Institute worked with the Forest Service, the certification programs, auditors, and interested stakeholders to ensure the studies were designed to provide as much information as possible on how certification may apply to the National Forest System. Specifically, the Pinchot Institute:

- Consulted with Forest Service officials to identify suitable case study national forests.
- Consulted with state forestry agencies, local communities, conservation organizations, local industry and other stakeholder interests to ensure openness and transparency of the process from the very beginning.
- Retained accredited independent third-party firms to conduct field evaluations using interdisciplinary teams of qualified natural resource management professionals, and providing opportunities for consultation with a diversity of stakeholders.
- Worked with audit teams and local Forest Service officials to ensure timely, efficient field evaluations and gathering of supporting documentation.
- Assisted in the review of separate FSC and SFI draft reports for each case study National Forest by the appropriate Forest Service staff, and the incorporation of Forest Service comments in the production of two final reports for each case study National Forest.
- Carried out post-certification evaluation interviews with Forest Service officials and lead auditors from the certifying bodies participating in the study.

2.2 Project Design

2.2.1 Evaluation Process

All certification study evaluations were conducted by certifying bodies using the same approach they would for an actual certification assessment, as accredited by the FSC and SFI certification programs. The ANF and CNNF evaluations were conducted by a joint FSC/SFI team formed by SmartWood and PricewaterhouseCoopers. The LFSU and MHNF evaluations were conducted by another joint FSC/SFI team formed by Scientific Certification Systems and NSF International Strategic Registrations (NSF-ISR). The NFF joint FSC/SFI evaluation was conducted by SGS Systems and Services Certification, Inc.

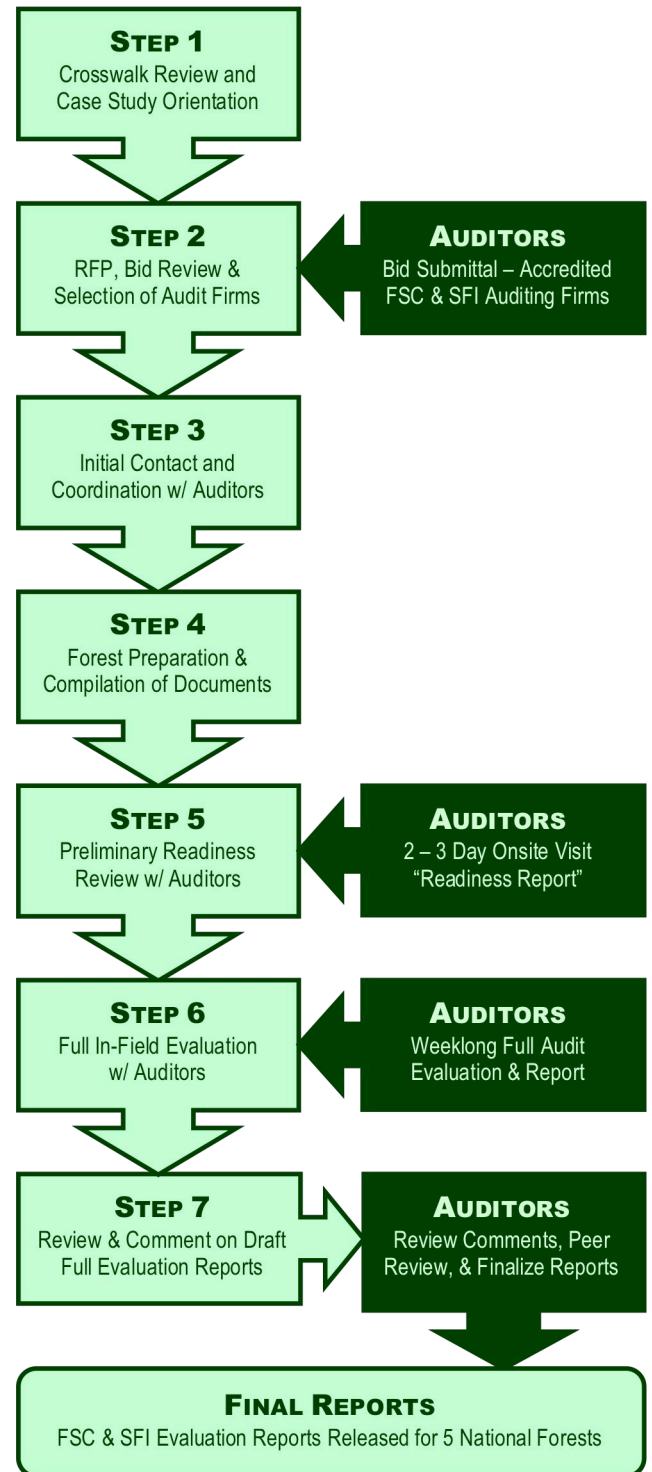
Step 1 - Crosswalk Review and Case Study Orientation. Initial meetings were held on each case study national forest and included NFS staff, WO staff and the Pinchot Institute to discuss the design and expectations for the evaluation process. The meeting also reviewed the project's background including: history of NFS involvement with certification, communication plans; *NFS National Directives Certification Crosswalk* (see discussion on page 15); and forest-level crosswalks (ANF, CNNF, MHNF & NFF).

Step 2 - Bid Review and Selection of Audit teams. Each certification evaluation was conducted by audit teams selected on the basis of a competitive bid process. The Pinchot Institute issued request for proposals (RFP's) which required audit teams to carry out full certification evaluations to determine conformance with the FSC and SFI certification standards. The proposals were reviewed by the Institute in consultation with the Forest Service and selected on the basis of overall quality. The RFP specified a dual evaluation approach, wherein a single team carries out concurrent evaluations using FSC and SFI standards.

Step 3 - Initial Contact & Coordination with Audit Team. Following notification by the Pinchot Institute of the selected audit team, the lead auditor or lead firm contacted the case study forest in order to begin planning the evaluation process. At that time, the lead auditors initiated discussion on the timeline and the requirements for the evaluation.

Step 4 - Forest Preparation. A key initial step to prepare for the certification evaluation included collecting the documentation that would demonstrate conformance with the certification standards. The basic documentation used by the assessors included the resource management plan, monitoring plans, project plans, maps, and other key planning documents and policies guiding forest management. Audit teams often requested existing documentation used in day-to-day operations that demonstrated conformance with the standards. Examples of this type of documentation included: sample contracts (with operators); harvest plans; checklists used in pre and post-harvest inspections; training materials or certificates for handling pesticides and hazardous materials; documents showing instances of, and procedures for, engagement with adjacent landowners and other stakeholders; maps indicating areas (e.g., MA designations) managed for the maintenance of particular ecological attributes; and procedures used to identify the presence of species of concern.

Figure 2. National Forest Certification Case Studies project steps & timeline



Step 5 –Preliminary Readiness Review. Typical certification evaluations, especially for larger landowners, include an onsite pre-evaluation or scoping visit by the lead assessor(s). The scoping visit involved 2-3 auditors and focused on:

- Developing a field evaluation schedule.
- Compiling necessary documentation: management and operational planning documents organized according to the major topic areas of the certification standards; a list of key stakeholders; and lists and maps of recent management activities (to be used by auditors for prioritizing site visits). The provided lists included a full range of operations occurring during the last several years (e.g., road-building, harvesting, TSI, fuels reduction, prescribed use of fire, site-preparation, reforestation, livestock grazing, recreation and ORV use, and wildlife management).
- Briefing forest staff on certification.



Photo. Briefing of ranger district staff by Forest Service coordinator and the SCS/NSF-ISR audit team on day three of the Mt. Hood National Forest evaluation. (photo credit – D. MacCleery)

Step 6 - Full Evaluations. The full evaluations occurred one to three months after the scoping. This portion of the auditing lasted several days, starting in the office, but spending most of the time in the field:

- *Office Meeting and Planning Review:* Auditors investigated all aspects of planning and implementation, followed up on gaps identified during the preliminary review, solicited additional information, and reviewed management information systems housed onsite. Staff demonstrated onsite information management systems such as GIS and electronic databases used in inventory and monitoring.
- *Stakeholder Consultation Meetings (FSC):* FSC audit firms carried out stakeholder consultation meetings during the same time period as the field visits. Any interested stakeholder was provided an opportunity to learn more about the certification process in each case study area and comment on the management of the national forests. Individuals and organizations affected by, or otherwise interested in the management of the forest undergoing evaluation were notified through advertisements in local papers, and/or through direct phone calls.

- *Field Evaluation:* Assessors requested opportunities to visit not only previously-selected sites, but also any operations active during the days of the evaluation, and if possible asked questions of contractors. Assessors requested unplanned stops during travel to field sites to investigate issues that may have surfaced during the evaluation.
- *Post Evaluation Discussion & Exit Meeting:* Following the field evaluation, the assessors met with the NFS staff to discuss initial findings, including those that could lead to requests for corrective actions. During this meeting the audit teams pursued additional information that may influence the evaluation findings. Also, at the closing meeting, auditors often presented a timeline and plan for the final steps of the evaluation process (i.e. follow-up information, and the review and completion of evaluation reports).

Step 7 - Review and Comment on Draft Reports. The draft FSC and SFI reports delivered to the five national forest units, read like other certification reports. They include a summary of the management setting, stakeholder feedback, findings of non-conformance (major and minor), and issuance of corrective action requests (CARs). Each case study forest was provided a draft version of the evaluation reports for review and comment as would occur in an actual certification process. This was a critically important step for each forest allowing NFS staff to consider the accuracy of the findings and respond to the auditors' interpretation of field evidence.

2.2.2 Development of Additional Considerations

To date FSC has approved federal land standards for only the U.S. Department of Defense and the U.S. Department of Energy. Such FSC federal lands standards have been applied only to the Fort Lewis military installation in Washington State. For the purpose of this study, the DoD/DoE standards were accompanied by the regional FSC standards. The six certifying bodies taking part in this study developed a set of *Additional Considerations* designed to address requirements befitting the unique mission and scope of NFS management, which could help inform discussions were the Forest Service to actually seek FSC certification. These ACs were developed through a peer review and public participation process prior to each field evaluation. They were intended to address any existing gaps or limitations in the FSC regional and existing DoD/DoE National-Level Indicators. The AC development as part of this study was not intended to simulate or predict the outcome of an FSC-US process to develop a standard for the Forest Service. The approaches used to develop the ACs varied and were constructed with the help of key stakeholders for each participating national forest.

Lakeview FSU and Mt. Hood NF. Scientific Certification Systems (SCS) conducted the first certification evaluation on the LFSU and was the first certifying body to develop a set of ACs for this study. SCS began by gathering background information from LFSU staff and through stakeholder consultation during the scoping visit. SCS used this information along with its own expertise to draft an initial set of ACs. After incorporating edits from peer-reviewers, SCS collected public comment by posting the ACs on the internet and through telephone interviews with targeted stakeholders. Their input was the last step before finalizing the 18 ACs used during the field evaluation. SCS replicated the AC development process on the MHNF certification evaluation by building off those developed for the LFSU. The development process on the MHNF yielded 22 ACs that were employed during the field evaluation.

Allegheny NF. SmartWood developed ACs through surveys sent to local, regional and national stakeholders with an interest in the ANF, NFS or both. Through the survey, stakeholders highlighted areas where they perceived shortfalls in the applicability and adequacy of the FSC standards relative to the NFS broadly or the ANF management protocols more specifically. In addition to stakeholder input, SmartWood considered those ACs developed for the LFSU certification evaluation. It was from these sources which SmartWood drafted an initial set of 17 ACs. The draft ACs were reviewed internally by SmartWood staff and their auditors (including the SFI team lead from PwC) before incorporating into the full field evaluation.

Chequamegon-Nicolet NF. The 17 ACs applied during the ANF evaluation provided SmartWood a foundation to develop supplemental indicators for the CNNF evaluation. SmartWood forwarded the ACs used on the ANF to six resource professionals familiar with the region surrounding the CNNF. This expert review identified limitations of the existing FSC regional and federal land standards and the 17 ACs used on the ANF for evaluating the CNNF management and planning processes. After incorporating comments from the expert panel, SmartWood surveyed 104 local, regional and national stakeholders to assess whether their key concerns with the NFS and/or the CNNF were addressed by the FSC standard and ACs. Feedback from the surveys provided the basis for a third draft of ACs sent to SmartWood staff and auditors for final internal review. In total, 19 ACs were developed and applied during the CNNF certification evaluation.

National Forests of Florida. SGS solicited input for AC development during the stakeholder consultation phase of the NFF certification evaluation. Additional Considerations were also assembled from input provided from NFF staff. The feedback provided to SGS by the NFF and their stakeholders suggested the existing FSC standards well-addressed the significant issues faced by the forest. The three ACs employed during the NFF certification evaluation were based on the observations and perspectives of the SGS audit team.

2.2.3 Evaluation of Participant Experiences

The coordination teams for each national forest were asked to complete questionnaires to help the Pinchot Institute better understand their experiences with the certification evaluations. In particular, the questionnaires collected feedback from each participating national forest on the following components of the certification evaluation:

- NFS staff participation in the *pre-evaluation process*
- NFS staff experiences preparing for and participating in the *field evaluation*
- The *certification programs and audit teams*
- Potential *outcomes of certification*

The Pinchot Institute conducted follow-up phone interviews each national forest staff to further investigate their experiences with the evaluation, its findings and any potential outcomes. Phone interviews were also conducted with lead auditors from the six participating audit firms to gather feedback on their experiences participating in the NFS certification study.

2.3 Format of Findings

The case studies were designed to closely approximate the process that a forest would undergo were they actually seeking certification. To this end, the selected firms and audit teams were to meet the requirements for an actual certification assessment. The format of the findings was also intended to emulate actual certification reports. As has been described, the FSC evaluations and the reports integrated several standards, since a federal land standard specific to the Forest Service has not yet been developed. The findings reference a set of integrated standards for the FSC portion of the study. Additionally, all auditing reports clearly stipulate through disclaimers where appropriate, that the audit findings are not formal assessment findings.

Forest Stewardship Council

Each case study forest was evaluated against the FSC Regional Standards for the appropriate region, the DoD/DoE National-Level Indicators, and the ACs. The regional standards used in the study included the:

- *FSC Pacific Coast (USA) Regional Forest Stewardship Standard, v9.0* - Mt. Hood NF & Lakeview Federal Stewardship Unit
- *FSC Appalachia (USA) Regional Forest Stewardship Standard, v4.6* - Allegheny NF
- *FSC Lake States-Central Hardwoods (USA) Regional Forest Stewardship Standard, v3.0* - Chequamegon-Nicolet NF
- *FSC Southeast (USA) Regional Forest Stewardship Standard* - National Forests of Florida

FSC standards are organized into Principles, Criteria, and Indicators. Auditing methodologies include several approaches to determine conformance with the FSC Standards. The auditors review management documentation (e.g. policies, plans, monitoring reports, sample contracts, GIS and other mapping resources, etc.); visit sites in the field; interview personnel and contractors; and consult with outside stakeholders.

The stakeholder consultation process of the FSC auditing procedures is especially comprehensive in a management review for a forest management organization the size of the Forest Service. As part of this process the five audit teams collectively met or consulted with close to 500 individuals, not including many of the Forest Service staff that may have provided input to the auditors through the course of the evaluations. Input was provided by other government agencies at the local, state, and federal levels; private companies working in the forest product sector; conservation groups, recreational user groups and individuals; researchers at academic institutions; and many others. The input from these organizations and individuals was presented as public opinion on the management of the forests, but rather was used across the forests to:

- Understand relationships of the forests with outside stakeholders;
- Understand the impact of the management of the forests on economic, social, and ecological character of the region;
- Supplement information on the forests' performance relative to the FSC standards;
- Identify difficult or controversial forest stewardship issues and gain an understanding of how stakeholders believe issues should be resolved; and,
- Augment the consultation processes used in the development of the Additional Considerations.

Stakeholder information was used in combination with the scoping and full evaluations to determine conformance with FSC standards. The reports provide detailed findings on conformance, by criterion and indicator, as well as summaries of principal strengths and weaknesses. For many landowners that have achieved FSC certification a summary of the audit findings are made publicly available. Since these are case studies involving a public agency the full reports are publicly available.

Reports on conformance to the FSC standards include corrective action requests (CARs) for findings of non-conformance. CARs are not reported for the additional considerations, as these do not represent requirements within existing standards and, as such there is no body of experience to help in rendering judgments. Major CARs represent non-conformance findings that either alone, or cumulatively, result in non-conformance findings at the criterion level (*see* Box 1). Were the Forest Service seeking certification, major CARs would need to be resolved before a certificate could be issued. Minor CARs could be resolved once certified, and later verified through subsequent annual surveillance audits.

Box 1. Definitions for terminology used by auditing firms for gaps relative to the FSC Standard.

Major CARs/Preconditions: *Major non-conformances, either alone or in combination with non-conformances of other indicators, result (or are likely to result) in a fundamental failure to achieve the objectives of the relevant criterion given the uniqueness and fragility of each forest resource. These are corrective actions that must be resolved or closed out prior to award of the certificate. Resolution may include a formal plan to address the issue.*

Minor CARs: *These are corrective action requests in response to minor non-conformances, which are typically limited in scale or can be characterized as an unusual lapse in the system. Corrective actions must be closed out within a specified time period after the award of the certificate.*

Recommendations: *These are suggestions that the audit team concludes would help the landowner move even further towards exemplary status. Action on the recommendations is voluntary and does not affect the maintenance of the certificate. Recommendations can be changed to CARs if performance with respect to the criterion triggering the recommendation falls into non-conformance.*

Sustainable Forestry Initiative

The 2005-2009 Sustainable Forestry Initiative® Standard encompasses a number of environmental, social and economic requirements which are organized into *principles, objectives, performance measures and indicators*. For the evaluations, the SFI lead auditor in coordination with technical experts—all of whom meet the SFI auditor accreditation requirements—reviewed each participating national forest to determine whether their management aligns with the expectations of the SFI Standard.

SFI lead auditors conducted the evaluations much like they would for an actual certification audit with one significant exception. During a regular audit, audit teams can issue a corrective action request (CAR). Issued CARs require SFI participants to respond to non-conformances in a specified period of time before a certificate can be awarded. Certification is not a potential outcome of these case studies, and on this basis the SFI auditors determined they would not issue

formal CARs as part of the evaluation reports. Also, additional considerations were not developed for the SFI evaluations.

If this were an actual audit, certification would only be awarded once all major non-conformances were corrected and a plan to address any minor non-conformances was approved by the lead auditor. The following are NSF-ISR definitions of SFI Major and Minor Non-conformances and opportunities for improvement:

Box 2. Definitions for terminology used by SFI auditing firms to identify performance gaps relative to the SFI Standard.

Major Non-Conformance: *One or more of the SFI standard's performance measures or indicators has not been addressed or has not been implemented to the extent that a systematic failure of a Program Participant's SFI system to meet an SFI objective, performance measure or indicator occurs.*

Minor Non-Conformance: *An isolated lapse in SFI program implementation which does not indicate a systematic failure to consistently meet an SFI objective, performance measure or indicator.*

Opportunity for Improvement: *Although the requirement is met, there are opportunities to improve in this area.*

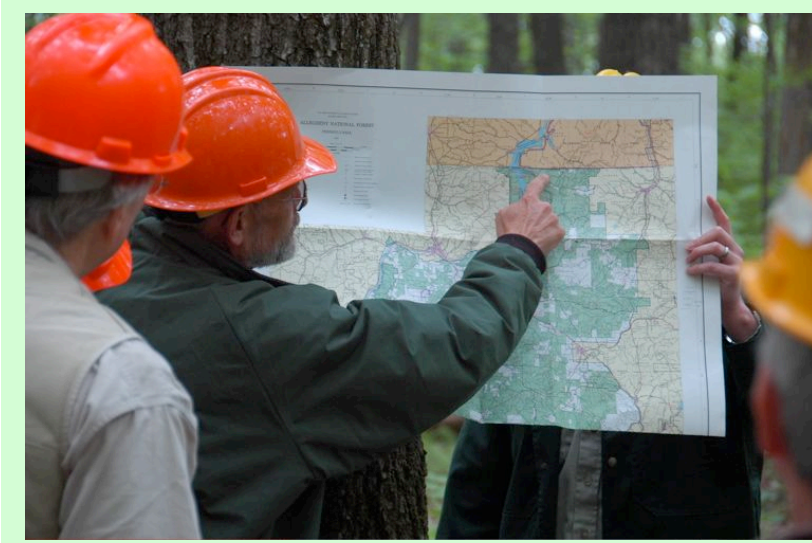
Three certifying organizations (NSF-ISR, PwC and SGS Qualifor) conducted the five SFI certification evaluations. Identified gaps are reported to emphasize the exploratory nature of this study. These gaps identify where inconsistencies exist between the management of the case study forests and the requirements of the SFI Standard. The certification programs also reviewed how well a landowner meets their own internal policies and standards in addition to certification standards. Consequently, some of the non-conformances address areas where forests are falling short of their own stated goals.

3.0 RESULTS AND DISCUSSION

The report will not focus in detail on all areas of conformance, as each of the forests met or exceeded most of the certification requirements. Commendations are discussed and help illustrate the type of feedback provided by the auditors on the areas of conformance. The report provides explanation of all findings of non-conformance, and shares some of the observations and recommendations that did not give rise to non-conformances and associated corrective action requests (CARs). Where possible, the report denotes the number/letter code for each non-conformance finding. However, similar findings were sometimes reported or repeated under different criteria and indicators and so notations are omitted. Appendices 5.2 and 5.3 contain tables summarizing the non-conformance findings. Appendices 5.4 – 5.8 contain the full FSC and SFI reports for each of the forests. These full reports should be referenced to better understand reported FSC and SFI findings, and to appreciate the scope of information and consultation that was considered by the auditors on each forest.

3.1.1 Major strengths relative to FSC standards

Much of what the audit teams observed was considered by the auditors to be exemplary. All teams noted that the national forests benefit from a depth and wide range of expertise of staff. In follow-up interviews with the auditors that took part in the study, they were especially complimentary of the dedication and professionalism of the forest staff with whom they interacted.



Staff of the Allegheny NF describing forest boundaries and management areas (photo credit, D. MacCleery).

Notable strengths recognized on most forests included exceptional programs of planning, assessment, and monitoring. Auditors praised the forests on how well complex provisions and considerations are designed into plans and projects, and then followed throughout in-field implementation. The audit teams praised the completeness of management information, and the quality and thoroughness of scientific data used in planning for projects. Typically any project is visited and revisited by different teams. In fact, the complexity and sheer volume of management documentation, while not unexpected, was a first for the audit team members.

Forest staff were also commended on their efforts to compile and distill the information that the auditors needed to conduct efficient reviews.

Auditors also commended the means and degree of consultation with stakeholders, particularly with First Nation organizations. In almost all cases the auditors reported that it was clear that national forests approach tribal consultation as a sovereign nation-to-nation priority, involving participation of national forest staff in tribal cultural educational workshops, and proactive communications with tribes on planned management activities and priorities for the national forests. Most of the forests had developed agreements with neighboring tribes, formalizing the rights of tribal members on the forests, especially in regard to cultural resource sites. The CNNF has established an MOU with Tribal Bands, governing how rights of the Bands are exerted for the resources managed by the CNNF. The MHNF has established project-level and broader partnerships with the Confederated Tribes of the Warm Springs. LFSU works with the Klamath Tribe through an MOA. Auditors found that the CNNF has been cooperative and helpful in working through any issues that have arisen. Archeological surveys are an important part of project evaluation through NEPA.

3.1.2 Major Weaknesses Relative to the FSC standards

In most cases the reported non-conformances were familiar to the staff on those forests. In fact the attention to the particular issue was often partially driven by the staff's own concerns expressed through the stakeholder consultation process and other phases of the project. Findings of non-conformance were also informed by the external stakeholder consultation process, provided in the onsite meetings and through phone and in-person interviews.

Worker Safety. While the Forest Service was commended for the training and tools provided to staff to ensure employee and contractor safety, the auditors felt there was a critical gap in the contractual instruments used to ensure contractor safety. In addition, contract enforcement mechanisms do not necessarily ensure that contractors working on the forest have all the proper safety equipment.

Silvicultural Treatments. Several of the forests were found in non-conformance due to delays in planned silvicultural treatments, and the degree to which they fall short of ecological, social and economic goals set in their management plans. The underlying reason for the findings of non-conformance differed between the forests. In all cases harvests did not reach levels necessary to achieve a future condition reflecting their social, economic, and ecological goals. On the CNNF auditors determined that the backlog in harvest treatments could lead to increased disease and pest outbreaks, and hinder the forest in achieving target forest composition and structure. The NFF also fell short of planned treatments, and as a result is unable to meet objectives for red-cockaded woodpecker habitat. Both the LFSU and Mt. Hood NF have not been able to deal with overstocked conditions that pose risk of disease, pest outbreak, and stand-replacing wildfires.

Related to the backlog in silvicultural and other management activities (e.g. road de-commissioning and maintenance on the LFSU), most of the auditors issued non-conformances concerning funding and capacity over the long term. They were concerned about the forests ability to deal with chronic issues due to level of current and future financial resources. CARs were issued for four of the five forests requesting that they find new strategies to deal with

backlogged priorities, and demonstrate that the forest is making progress towards securing the necessary financial and staffing resources.



Photo. SCS & NSF/ISR discussing stand damaged by the mountain pine beetle on the Mt. Hood NF. (credit, D. MacCleery)

Off-Road Vehicles. FSC audit teams identified either existing or potential problems in the ability of the forests to manage the impact of off-road vehicles (ORV). The findings of non-conformance were based at least partially on the feedback from stakeholders interviewed as part of the audit process. Stakeholders included employees of the forests, some of whom were frustrated by the challenge of dealing with increased recreational use and readily admitted that they were understaffed in enforcement to deal with this issue. One of the forests felt that the finding on this topic was both speculative and over-reaching considering the limited evidence of actual resource damage that was observed. Other forests agreed with the finding and felt that the impact from ORV use was certain to increase unless there was some new manner of dealing with where and how ORV use occurs. Examples of this finding show a range of challenges related to ORV use, but a core issue of effective management and enforcement.

Late successional/ old-growth (LSOG). While the forests were commended on the attention paid to identifying and establishing conservation areas dedicated to rare species and communities, several issues arose related to the management of LSOG. The only major non-conformance arose on the Mt. Hood National Forest, where the policy promulgated by the Northwest Forest Plan (allowing old-growth entry) contravenes the FSC Pacific Coast Standard. SmartWood issued a CAR to the CNNF, requesting them to verify that there are no additional LSOG occurrences requiring incorporation into conservation zones. On the Allegheny National Forest, SmartWood was concerned that existing examples of LSOG stands were not adequately used to help inform efforts at the landscape scale to protect and recruit similar features to an extent that may approximate forest conditions prior to European settlement. This last finding related to an Additional Consideration developed for the purposes of this study.

Table 3. Summary of FSC performance gaps common to several (M=major; m=minor; O=observation/Recommendation; C=Conformance)

Non-Conformance	LFSU	ANF	MHNF	CNNF	NFF
• Road maintenance backlog	m	C	m	C	C
• OHV use planning, access, and impact	C	C	m	m	C
• Backlog in timber sales programs threatens forest health, habitat maintenance and/or community stability	m	O	m	C	M
• Forest using highly hazardous chemicals	C	m	m	O	m
• Late Successional OG entry/management/retention	C	O	M	m	C
• Woods worker's safety and/or training	O	m	O	O	M
• Management and monitoring of NTFPs	m	m	O	m	C

3.1.3 Detailed FSC Findings

FSC Principle 1

Principle 1 of the FSC Regional Standards deals with compliance with legal requirements. It includes six criteria, addressing: compliance with laws, payment of fees (e.g. taxes, royalties, etc.), compliance with the provisions of applicable international agreements, and protection from illegal activities. Two criteria consider formalized commitment to the FSC Principles and Criteria, by publicly showing support, and seeking resolution with FSC when the requirements of the standard conflict with the legal obligations of the landowner.

Principle 1 imposes a uniquely complex review for the Forest Service, since many of the elements of national forest management systems are actually codified in law. As a consequence, compliance with all relevant laws implies compliance with all management directives originating in federal law. Federal statutes directing the management of national forests—addressing issues ranging from appropriate commercial and non commercial uses of the forest, to hiring practices, protection of Native American cultural heritage sites, and how to work with outside stakeholders—are all captured in the Forest Service Manual (FSM) and Handbooks (FSH). The FSM and FSH provide detailed direction for day to day operations on National Forests. Management and use of the National Forest System is also subject to numerous state and local laws and regulations. However, where conflicts between federal law and laws of more local jurisdictions exist, federal law takes precedent—unless otherwise decided in federal court. Topics considered under Principle 1 are wide-ranging. They include:

- Compliance with statutes on the management and disposition of National Forests (e.g. Organic Act, 1905; National Forest Management Act (1976); National Environmental Policy Act, 1969).
- Compliance with Treaty obligations and other formalized agreement with Native Americans.
- Illegal uses of National Forests by others (e.g. illegal harvesting of timber and non-timber products, off-road vehicle use in restricted areas, camping in restricted areas, illegal dumping, etc.).
- Compliance with the laws of states and other jurisdictions.

Audit team members reviewed in-field implementation, documentation, and knowledge of Forest Service personnel to determine whether the Forest Service willfully, systematically, or even occasionally violates legal requirements. The forests included in the study are currently defendants in a number of lawsuits and a history of court cases exists for each forest, in which litigants have challenged the legality of NFS management activities and their implementation. Auditors considered a significant portion of this record as well. The audit teams did not consider the existence of administrative appeals as prima facie evidence of failure to comply with laws.⁵ Pending appeals were therefore not considered as evidence of nonconformance, but did in some instances guide the auditors to certain projects to evaluate legal compliance.

The MHNF study reported that many administrative appeals have focused on alleged failures to complete procedural requirements in the execution of specific projects, and may not indicate chronic or willful noncompliance with substantive legal obligations that would trigger a finding of nonconformance with Criterion 1.1.a of the Pacific Coast Regional Standards. Findings on the MHNF also suggested that the appeals may relate to ambiguities in the direction given the Forest Service. When litigated court rulings serve to clarify how laws are to be interpreted for on-the-ground implementation—they narrow the “decision space.”

Federal law requires the Forest Service to share information with the public. Much of what the Forest Service does is in the public record, and federal law requires that the Forest Service transparently and faithfully engage the public in many aspects of planning. All forests were commended for the degree of disclosure and availability of information.

The audit teams commended the Forest Service on most of the other topics addressed under the Criteria and Indicators (C&I) for Principle 1, reporting that the National Forests often exceed legal requirements, whether federal, state or local. For example, with the exception of road maintenance on the LFSU, auditors on the SCS team reported that both the MHNF and LFSU have established and adhered to a standard of practice that exceeds the level of resource protection afforded by the Oregon Forests Practices Act. Similar findings were reported for the other forests. On the ANF, SmartWood reported that the Forest Service has been proactive in encouraging other agencies, in this case the state, to fully exercise their authorities when activities damaging to the national forest are under state jurisdiction. For example, the staff of the ANF have formed a taskforce to advise the state of Pennsylvania on strengthening monitoring and enforcement for oil, gas and mineral (OGM) development on the forest.

International treaties and agreements signed by the U.S. that bear on the management of the national forests include the Convention on the Trade in Endangered Species (CITES) and several of the Conventions promulgated by the International Labor Organization. Federal and state government agencies incorporate the provisions of these requirements in management and operations guidance where appropriate. Auditors found that in many cases, whereas field staff may not be familiar with the originating treaty or agreement, they are quite aware of their implications on the ground, based on how they are translated by the Washington and Regional Offices of the Forest Service as management direction for the forests.

The forests were determined to have two kinds of non-conformances under Principle 1, pertaining to formalized commitments to FSC and communications with auditing firms under Criterion 1.4 and Criterion 1.6. The MHNF and the LFSU were issued corrective action requests,

⁵ Scientific Certification Systems, Case Study Evaluation Report for the Mt. Hood National Forest, 2006.

asking them to develop a written policy that would require them to notify the certification body of conflicts between legal requirements and the FSC P&C. Under criterion 1.6, all forests were issued CARs, arising from major non-conformances (one each on the LFSU and MHNF) and minor non-conformances (one each on the ANF and CNNF). All CARs asked the Forest Service to develop a formalized statement of commitment to the FSC P&C. For the purposes of this study, all non-conformances under Principle 1 concern certification requirements that are outside the scope of the study. The Forest Service has not elected to seek certification, and would only consider addressing these requirements if they were interested in being certified.

FSC Principle 2.

Principle 2 of the FSC standard is entitled *Tenure and Use Rights and Responsibilities*. It contains three Criteria, focused on the clear establishment of rights of ownership and use (2.1), protection of the legal and customary rights of other parties (2.2), and the mechanisms through which disputes over legal and customary rights are handled with other parties (2.3). Regional standards augment criteria under Principle 2 by defining the types of legal and customary rights that are prevalent and need to be considered in each region. The types of evidence that auditors used to evaluate conformance with Criteria under Principle 2 included:

- Historical legal documents showing National Forest boundaries;
- Methods and consistency of marking National Forest boundaries and perimeters of areas with different designated uses;
- Feedback from individuals and organizations that have legal and customary rights for particular uses of National Forest lands;
- Agreements with First Nation organizations;
- Documents showing how and when the Forest Service has communicated with outside parties on matters of legal and customary use;
- Designation on project maps of areas afforded special protection or management considerations based on legal and customary use values; and,
- Feedback from Forest Service personnel on how they take into consideration the legal and customary use rights when planning projects (e.g. timber sales, roads and trails, campsites, stream access areas, etc.).

Overall, the auditors commended the Forest Service on all aspects of documenting and managing legal and customary use/rights on the case study national forests. Forest boundaries are clearly marked in all areas and auditors reported that the diligence in ground-truthing and maintaining these boundary markings, as well as areas for specific projects and management designations, is exceptional. In only one case, on the NFF, the team noticed an area where boundary markings were absent. However, this area was particularly remote and scarcely used by the public, and so did not give rise to a finding of non-conformance.

The review teams did not report any issues or non-conformances with other customary uses, such as the gathering of firewood in designated areas, collection of NTFPs (although an issue of monitoring and management of NTFPs was raised), hiking, hunting or fishing.

The principal concerns that arose concerning legal tenure and use included unauthorized activity by ORVs and several instances of timber harvesting outside sales boundaries, or of trees that were not marked for sale. ORV use in unauthorized areas was seen as a growing threat to National Forests. This problem was noted on three of the five case study forests. SCS recommended “more affirmative management of unauthorized motorized recreational vehicle use,” based on their observation of trails in undesignated areas and feedback from forest staff that ORV use is on the increase. For example, the MHNF has two full-time law enforcement officers on the westside and one on eastside of the forest, who can make arrests for unlawful activities. SCS reported that the monitoring and enforcement capacity was inadequate to handle growing pressures on the forest from ORV use.

Enforcement problems with ORV use is common and growing on the ANF but judged to be managed well by clear designation of acceptable trails and restricted access in unauthorized areas (e.g. gates). On the CNNF and NFF, ORV use was considered a greater problem, leading to findings of non-conformance. The CNNF was issued a CAR based on a minor non-conformance, stipulating that the forest should increase education and enforcement capabilities to ensure that unauthorized use will not cause damage to the forest. Auditors also reported instances of illegal harvesting on the CNNF and the LFSU, which the forests had caught and corrected. The audit teams were satisfied that these forests have found ways to eliminate illegal harvesting.

FSC Principle 3

Principle 3 is entitled Indigenous Peoples Rights, and concerns the “. . .rights of indigenous peoples to own, use and manage their lands, territories and resources. . .” The requirements under FSC Principle 3 differ from the legal obligations of the Forest Service in that it more inclusively defines indigenous peoples. The FSC definition includes Native American organizations and people in the U.S. that may not yet be recognized as sovereign entities by the U.S. federal government.⁶

Principle 3 includes four criteria, addressing: the rights of indigenous peoples on their lands (3.1); obligations of landowners to avoid impairment of adjacent tribally-owned lands (3.2); consultative protection of sites with special ecological, economic, or religious significance to indigenous peoples (3.3); and, compensation for the use of traditional ecological knowledge (TEK) in forest management and resource use (3.4). The audit teams did not issue any nonconformance findings for criteria 3.1 through 3.4. However the scope of the field reviews and reported findings considered a number of forest management issues pertaining to criteria under Principle 3. For example, on the MHNF the review team closely considered how the management of mountain pine beetle infestations may be affecting adjacent forests owned by the Confederated Tribes of the Warm Springs (CTWS) (3.3). On all forests there were particular sites that have been identified and conserved in close consultation with tribes (3.3). Also on the MHNF, the Forest Service has adopted methods of monitoring species (i.e spotted owl) based on

⁶ Applicability Note: The terms “tribes”, “tribal” or “American Indian groups” in indicators under Principle 3 include all indigenous people in the US, groups or individuals, who may be organized in recognized or unrecognized tribes, bands, nations, native corporations, rancherias (see Glossary), or other native groups.

the approach used by the CTWS, however there were no instances which induced consideration of criterion 3.4—compensation for the use of TEK.

The forests were commended on the manner in which they work with First Nations to ensure that their legal and customary rights are protected. Four of the five units in the study have established agreements with tribes. According to the SmartWood review, the ANF has not had tenurial claims for areas within the forest boundary, but still has a designated Heritage Resource Program Manager that works with tribes on the stewardship of particular sites. ANF staff also work with tribes and partner organizations on the protection of areas outside the forest boundary. The ANF and other forests in the study incorporate separate input from tribes in the forest planning process.

The number of sites and areas used by Native Americans differ among the forests participating in the study, and based on the reported findings, are particularly important on the MHNF, the LFSU, and the CNNF. Each of these forests also has personnel dedicated to consultation with indigenous peoples' organizations, who help ensure that cultural heritage sites and traditional uses are preserved, and are not impacted by other management activities. For example, the MHNF has established a partnership with the CTWS to explore and develop projects that enhance the forest area as a cultural resource for the neighboring tribes. When not codified in law (e.g. treaties) forests are limited in their ability to exclusively serve the interests of the tribes for some customary uses. However, in one such case SCS commended the MHNF staff for public outreach to promote respect for areas customarily used by tribes (e.g. huckleberry gathering). The CNNF was commended for a similar approach to reserving areas customarily used for harvesting birch bark.

FSC Principle 4

Principle 4 is entitled *Community Relations and Workers Rights*, and contains five criteria concerning how forest management operations “. . . maintain and enhance the long-term social and economic well-being of forest workers and local communities.” The five criteria address opportunities for employment and training (4.1); compliance with laws on health and safety of employees and their families (4.2); rights of workers to organize and negotiate (4.3); proactive integration of social impact assessment in management and planning (4.4); and, avoiding and resolving grievances arising from management actions. As is the case with many national forests, the case study forests are critical resources for surrounding communities. To review the Forest Service against the criteria of Principle 5, the audit teams collected evidence in a variety of ways. Their findings reference: interviews with staff, contractors, and members of the community; documentation showing how the Forest Service interfaces with workers and the community in planning and management; management documents detailing how management activities are carried out and by whom; among other material. The reports include, but are not limited to the following topics, all of which are covered by Principle 4:

- Satisfaction and welfare of all forest workers (employees, contractors, and subcontractors);
- Employee compensation and opportunities for advancement;
- Diversity and quality of economic opportunities provided by the forest management organization;
- Range of other values provided to the community (e.g. recreation, education, ecosystem services)

- Civic involvement of employees; and,
- Consideration of social impact management activities.

The review teams commended the five case study forests on almost every aspect of Principle 4. Much of Principle 4 is statutorily required of the Forest Service, and is met via implementation of directives promulgated through the *Forest Service Manual* and *Handbook*. Auditors reported that the Forest Service faithfully follows the intent and letter of the management directives pertaining to criteria of Principle 4, and also commended the Forest Service on conformance with the broader civic spirit and intent of Principle 4. They reported that the case study forests afford staff and contractors valuable and “unique opportunities for employment and training.” (CNNF, ANF). They reported that measures employed to protect the safety and well being of employees, including training, equipment, and protocols, are exemplary. The feedback from interviewed staff provided evidence that the Forest Service is an excellent employer, and that Forest Service employees are “. . . actively engaged in local community organizations.” (CNNF). The reports also complimented the more formal programs of outreach to local communities, such as the Northern Great Lakes Visitor Center, operated as a cooperative venture with the CNNF.



Photo. A wildlife interpretation site on the Chequamegon-Nicolet NF.
(credit, R. Hokans)

Auditors noted that the case study forests are key economic resources for their surrounding areas. The LFSU is especially dedicated to provide economic opportunities for the local community, and as a consequence, is “heavily invested in the local economy” (SCS-LFSU). The only nonconformance reported under P4, occurred on the ANF and regards safety. In the field evaluation the SmartWood/PwC team encountered contract logging operators without safety equipment, in violation of the Forest Service’s own requirements.

FSC Principle 5

Principle five is entitled *Benefits from the Forest*. It contains six criteria requiring that management efficiently and sustainably uses forest resources to provide a “wide range” of economic, environmental and social benefits. The criteria address: accounting for and investing

in a broad range of functions that ensure ecological productivity (5.1); optimizing utilization of harvested materials (5.2); minimizing waste of harvested materials and protecting the forest from damage (5.3); promoting strong and resilient local economy through diversified products (5.4); enhancing where possible the value of forest and other resources (5.5); and, ensuring that forest harvesting is sustainable based on sound data on growth and yield (5.6).

The review teams commended the forests on most topics addressed under Principle 5. Auditors noted that management is not driven by revenue objectives, and that other objectives are especially prominent. The Forest Service is limited in its ability to favor one type of business over another, outside of the design specifications necessary to achieve their project objectives. The LFSU is the only case study forest that can preferentially select bids from local companies, due their special designation as a unit commissioned to help support the local economy. However, based on the range and diversity of products offered on other forests, the auditors felt that the other units are also able to provide a diversity of opportunities for local businesses. For example, SCS reported that the type of logs predominantly sold on the MHNF (i.e. low-value logs) reduces the distance that the product can be profitably transported. However this aspect of MHNF management also led to a nonconformance (*see below*).



Photo. Audit team reviewing a historic cattle enclosure that is still used by leasees on the Mt. Hood NF.

(credit, D. MacCleery)

The case study forests were also commended on the degree to which they provide other types of economic opportunities on the forest. Among these are commercial (and non-commercial) harvesting of NTFPs (all forests); grazing leases (mainly the LFSU, one on the MHNF); recreational leases (Mt. Hood ski area); and, opportunities for various forms of motorized and non-motorized recreation (hiking, fishing, camping, horseback riding, etc.). Reported findings for each forest provide numerous examples of how the forests integrate multiple management objectives on a project-by-project basis. For example, project layout and treatments in a timber sale may also be designed to improve streamside conditions that enhance freshwater fisheries (LFSU & MHNF), and leave in place access for recreational users. Auditors reported that these multiple uses of the forest inject significant capital into the economies of communities in and around the National Forests. Overall, the auditors reported that the National Forests mostly succeed in balancing commodity and non-commodity values of the forests, doing so in manner that is exemplary “. . .relative to other managed forests” (SmartWood, 2007).

The non-conformances reported under Principle 5 relate to criteria 5.1, 5.2, and 5.6. Three of the five forests were issued CARs requesting increased, proactive, effort to secure funding necessary to achieve their management objectives. Auditors were concerned about the decline in funding and associated staff reductions, and how this may impair their ability to provide the many types of goods and services expected from National Forests and still preserve the health of the resource. Three of the five forests were requested to develop strategies to secure additional funding in key areas, or adjust management objectives in their land resource management plans (LRMPs) to reflect lower budget levels and show that desired forest conditions can be achieved with the existing (and future) budgets. In other words, the forests were asked to either invest more to achieve current objectives, or change their objectives.

The main issue driving findings of non-conformance under Criterion 5.1 related to findings under Criterion 5.6, concerning overstocked stands and associated forest health risks. SCS reported that both the LFSU and MHNF have extensive areas of overstocked stands. The condition of these stands poses risks of disease and pest outbreak, and stand-replacing fires. For a variety of reasons the forests have not been able to effectively ameliorate these conditions, leading to CARs on both forests. The CARs ask the forests to develop strategies to substantially improve conditions of these stands. SCS asserted that the Mt. Hood was simply not thinning enough within overstocked stands to reduce forest health threats. Programmed Sale Quantity (PSQ) on the MHNF is currently 64 million board feet. Actual rate of harvest is less than half that, or 25 mmbf. While the actual rate is clearly sustainable based on tree growth (5.6.a), in their estimation it falls well below the amount that would be necessary to deal with forest health issues. Although it is not reflected in a CAR, SmartWood observed a similar, but less severe situation on the CNNF.

SmartWood issued non-conformances to the ANF and CNNF on management and use of NTFPs. The forests offer opportunities to harvest a wide array of products through permitting, however monitoring of the quantity removed and the long-term effect on abundance was considered inadequate. The CARs request that the forests develop and implement plans/strategies to ensure that the harvesting of NTFPs is sustainable and does not impair habitat conditions for other species.

FSC Principle 6.

Principle 6 is entitled *Environmental Impact*, and addresses how well managers maintain the ecological integrity of the forest ecosystem. Principle 6 is the most expansive in the FSC standard, and the most variable among Regional Standards. This is necessary to guide how the criteria are applied in different ecoregional contexts. The criteria address: the scope and quality of science-based environmental impact assessment informing management (6.1); how populations and habitats of rare, threatened and endangered species are protected (6.2); the “. . . [maintenance], enhancement, and [restoration]. . .” of ecological functions and values (6.3); conservation of representative examples of existing ecosystems at an appropriate scale and through a widely credible process (6.4); minimization of damage to forest resources in forest management operations (6.5); limitation of pesticides to uses and types approved by FSC (6.6); proper management of hazardous materials (6.7); carefully controlled, and FSC-approved uses of biological control agents (6.8); careful control and monitoring of use of exotic species (6.9); strictly limited and only well-justified conversion of forests to plantations. The number of forest

management planning, operations, and assessment functions considered by auditors to evaluate conformance with these ten criteria commanded a significant portion of the in-field reviews. Auditors considered a wide range of evidence to understand how the Forest Service deals with environmental impacts of all types of management activities.

The Forest Service has a notoriously complex system for environmental impact assessment, and using this information to direct management. The manner in which this work is carried out is principally directed by the National Environmental Policy Act or NEPA. The audit teams commented on all forests that the comprehensiveness of information and amount of attention paid to carrying out impact assessments for projects is unparalleled by any organization managing forests.

“Whenever a management activity (project) is contemplated, a rigorous process, mandated by the 1976 NFMA and the 1969 NEPA, is launched requiring production and publication of an Environmental Impact Statement (EIS), or Environmental Assessment (EA) which evaluate potential and actual social and environmental impacts of planned forest management activities. In this manner, as different projects with proposed management activities come up for mandatory review, those portions of the forest subject to active timber management receive a comprehensive assessment of current conditions . . . Areas not liable for active management, such as the old-growth forest within the Tionesta Scenic and Research Natural Areas, are described in detail (including elements required by this criterion) as collateral information.”

- *SmartWood, Test Evaluation Report for the Allegheny National Forest*

The only non-conformances reported for Criterion 6.1—on environmental assessments—arose from requirements imposed by the additional considerations developed and employed for this project. The SmartWood team reported that both the environmental assessment (EAs) and environmental impact statements (EISs) do not consider how future forest conditions resulting from management interventions will compare with “historic stands” in the number and type of structural elements (e.g. snags and den trees) (AC 6.1.4). Auditors also faulted the Forest Service for including “virtually no information on pre-European settlement conditions.” in management planning and assessment documents. The Forest Service is required and does present information on the historic range of variability (HRV), but on the ANF the audit team felt that these analyses fall short of considering relative extent, size and position of historical stand types. In contrast, auditors felt that the same AC was well-addressed on the CNNF. To the degree that reliable, scientifically supported information on reference conditions is available, CNNF compares these reference conditions to current conditions at a landscape scale, including area, composition, and spatial representation of ecological types as well as composition and distribution of structural conditions.

Based on an Additional Consideration added to the standards used for the CNNF, SmartWood cited a lack of information and ability to predict the effects of climate change on the forest, and its implications for management. On both the CNNF and ANF, SmartWood auditors also cited a lack of information and assessment of impacts of management on neighboring forestlands (AC 6.1.4). Since these non-conformances pertain to AC indicators, they may not be relevant to the standard that would be used if these forests were to seek certification.

Overall, all forests were commended for the quality of EISs, EAs, Biological Evaluations (BE) executed prior to management activities, and how thoroughly they deal with environmental impacts and cumulative effects that would either directly or indirectly result from proposed management alternatives. The National Forests are required to maintain lists of rare, threatened and endangered species (Criterion 6.2), and they also maintain lists of Regional Forest Sensitive Species, Management Indicator Species, and other sensitive species. Auditors commended the methods and program of assessment used by all forests (e.g. BEs) to determine whether these species and sensitive communities are “. . . present, likely to be present, or likely to be impacted by the proposed activities.” On the Mt. Hood NF, the Survey and Manage provisions of the Northwest Forest Plan require additional levels of assessment and precaution to prevent impacts to sensitive species.



Photo. *Heart's Content*, a late successional/ old-growth area on the Allegheny NF. (credit, R. Hokans)

Criterion 6.2.c addresses the establishment of “conservation zones” necessary to secure the protection of rare, threatened or endangered species. Overall the forests were commended on the number and types of areas dedicated to this purpose, and the process through which they are established. All forests contain extensive areas that serve as conservation zones for species and community types that are especially rare. The forests also have management areas (MA) reserved for other values, such as wilderness, wild and scenic rivers, research, and other values. For example, referring to conservation zones, SCS notes that the Late Successional Reserve System and riparian reserves of the MHNF are designed to “. . . do exactly this,” and have resulted in the exclusion of timber harvesting from roughly 70% of the forest. However, SCS noted that more attention should be paid to how well reserves, refugia and corridors function for species that are poor dispersers, and that there is a disproportionate focus on vertebrate species such as the Spotted Owl. SmartWood also commended the CNNF on both the formal establishment of conservation zones, and the intensity of on-the-ground surveys conducted prior to any management activities. However, they issued an

Observation that the time lag between these surveys and the date by which operations actually commence onsite (often 2-3 years) may result in adverse impacts to species that may have moved into a site during that time.

Criterion 6.3 requires that “ecological functions and values shall be maintained intact, enhanced, or restored.” The criterion specifically references forest regeneration and succession; genetic, species and ecosystem diversity; natural cycles; old-growth stands, and retention. Case study

forests were commended for the importance placed on the topics covered by this criterion, and how well most of the provisions are addressed. However, several non-conformances also arose across the five forests - two on the MHNF, two on the CNNF, and one on the NFF, concerning entry into old growth (MHNF) and insufficient harvesting to achieve desired future condition (LFSU, MHNF, and NFF). SCS auditors determined that harvest treatments that may be conducted by the Mt. Hood in Type 1 old growth (i.e. un-entered old growth greater than 20 acres), was a major non-conformance. While little or no harvesting is actually occurring in these areas, old-growth areas designated as “matrix” land allocations under the Northwest Forest Plan are subject to future harvesting and therefore contravene the FSC requirements related to treatment of Type 1, Type 2, and Type 3 old-growth.⁷ In this respect the finding implies that policies on the LSOG management asserted by the NWP for all areas it covers are not in alignment with the FSC Pacific Coast Standards. The CAR is considered a “fatal flaw” that cannot be ameliorated by positive performance under other FSC standards. Addressing this issue would require the Forest Service to develop a strategy for reconciling the differences between the old growth provisions of the Northwest Forest plan and the FSC Pacific Coast Regional Standard.



Photo. SCS auditors discussing with the Mt. Hood NF staff the requirements of the Pacific Coast Regional standards on old-growth. The site is an old-growth ponderosa pine stand where grand fir was removed to avoid risk of wildfire. Several large ponderosa pines were also harvested. (credit, D. MacCleery)

SmartWood auditors determined that by not harvesting at the level and in the areas intended in their LRMP, the CNNF will not meet their stated age-class distribution and forest structure objectives. “CNNF has Objectives for restoring or emulating natural disturbance in northern hardwood (canopy gaps and groups), pine, and barrens communities.” (SmartWood, CNNF) The inability of the CNNF to reach more than even half the program sale quantity was viewed as

⁷ **Type 1** stands are those stands of at least 20 contiguous acres that have never been logged and that display late successional/ old-growth characteristics. Stands that have never been logged, but which are smaller than 20 acres, are assessed for their ecological significance, and may also be classified as Type 1 stands. Areas containing a low density of existing roads may still be considered Type 1 stands, provided the roads have not caused significant, negative ecological impacts. **Type 2** stands are old unlogged stands smaller than 20 acres that are not classified as Type 1, and other stands of at least 3 contiguous acres that have been logged, but which retain significant late-successional/old-growth structure and functions. **Type 3** stands are those that have residual old-growth trees and/or other late- successional/old-growth characteristics, but do not meet the definition of a Type 2 stand.

hindering their ability to create the multi-aged and variably-structured forest composition targeted in their plan. A similar concern was raised on the MHNF, where auditors noted the diminished (well below natural historical conditions) abundance of early successional habitat intermixed in the landscape. However, they recommended that these areas should not be created from the older stands that are approaching a late successional condition. SGS raised the same concern on the NFF, giving rise to a major nonconformance related to inadequate maintenance of red-cockaded woodpecker habitat.

Criterion 6.4 of the FSC standards addresses the identification and conservation of representative ecosystems. Auditors noted that the national forests are especially suited and capable to play an important role in conserving representative ecological features in the regions in which they are located. They commended the Forest Service for playing this role, by establishing extensive management areas dedicated to this purpose, which in aggregate constitute significant portions of each national forest unit. Complementing this role, each national forest unit was reported to work closely with academic institutions and conservation groups to identify and designate these areas, and define important features within them. For example, SmartWood reported that "... virtually all ecosystems occurring within the area of CNNF's lands are also represented on [the CNNF, . . . which] evaluates ecosystems within the landscape utilizing data from sources such as the Wisconsin Natural Heritage Inventory to identify high-risk-of-loss systems."

SmartWood also reported that the definition of old growth used by the CNNF is more inclusive than that in the FSC Lakes States Standards, and that most of these stands are protected on the CNNF. However, they also issued a minor non-conformance, and requested that CNNF determine whether approximately 1,000 acres of potential old-growth occurring as scattered patches across the forest qualifies (structurally, compositionally, and functionally) as old growth and should be protected. SmartWood reported that the ANF also demonstrated overall conformance in all aspects of identifying and then protecting representative areas over the long-term. However, they made the observation that LSOG conservation would be strengthened by ensuring that methods of identification and protection are better translated to national forest contractors working on the ground.

Criterion 6.5 addresses guidance and performance on the protection of the forest, soils, and water bodies in any management activities. Indicators under 6.5 address a wide array of considerations, including: design of transportation systems, stream crossing, operational constraints for streamside management zones (SMZs), availability of coarse woody debris (CWD) for recruitment to streams, site damage (rutting, scarring, soil compaction, erosion), etc. Overall the auditors commended the forests on design and implementation related to these issues. Several non-conformance findings arose across the five forests, principally related to differences in the technical specifications contained in regional standards compared to those used on the forests. For example, SmartWood issued a CAR requesting the ANF to bring rules on management within SMZs in line with requirements of the FSC Appalachia Regional Standards. SCS reported unacceptable damage to some stands (residual trees) due to harvesting operations, and requested (minor CAR) that personnel to work with timber purchasers to reduce these impacts.

A larger issue existed with road networks on several forests, leading to a number of non-conformances. SCS reported that the MHNF and LFSU need to more proactively fulfill plans to decommission roads (LFSU), maintain drainage structures (LFSU and MHNF), and review and reform road/access infrastructure (MHNF). The LFSU has long-held plans for de-

commissioning roads that are severely backlogged due to funding issues and competing priorities. SCS requested (minor CAR) that the unit show substantial progress on this front and develop a viable strategy to get road de-commissioning back on track. They also reported that the MHNH has roughly twice the road infrastructure needed and well more than they can continue to maintain with current resources. They requested that the forest complete a plan to decommission unneeded roads, taking into account anticipated use and a realistic estimation of available budget and capacity.

The forests also received several CARs related to the management of pest and pathogens. For the most part, auditors were impressed with the level of attention paid to minimizing the threats of invasive plants and insect pests. The forests consider and attempt to counter potential risks posed by all forms of activity on the forest, including timber management, road development/obliteration, recreation, firewood collection, etc. Auditors commended the Forest Service on their leadership on the issue of pests and invasives, and the procedures employed to ensure the consistency and efficacy of this work. All forests are still troubled by the potential impacts of certain insect pests, such as the mountain pine beetle (west), spruce budworm, gypsy moth, hemlock wooly adelgid, and emerald ash-borer. The forests are also worried about the availability of chemical tools and resources to slow the spread of these pests and mitigate their impacts. The auditors devoted a great deal of attention to this topic. The non-conformance findings on “institutional stability” were partially related to whether they can continue to handle and treat pests and invasive species, especially when the silvicultural strategies to do so are often delayed past the window of opportunity. The ANF was requested to develop a more formalized strategy for “. . .controlling deer, insects or invasive exotic plants.” Deer in particular have been a longstanding issue for the ANF, which has invested heavily in erecting fences around any regeneration area.

During the field evaluations, FSC was in the midst of reviewing both the list of “highly-hazardous” chemicals and a protocol for approving chemical use where appropriate. The standing policy has prohibited the use of several chemical pesticides and herbicides used on the national forests.

TABLE 4. Use of chemical pesticides and herbicides listed by FSC as highly-hazardous

Case Study Forest	Chemicals Used by NF Listed by FSC as “Highly Hazardous”	Notes on Use
Lakeview Federal Stewardship Unit (OR)	dicamba	non-native invasive species (NNIS) control
Allegheny NF (PA)	<i>None</i>	
Mount Hood NF (OR)	dicamba, strychnine	noxious weed control, pocket gophers
Chequamegon-Nicolet NF (WI)	<i>None</i>	
National Forests of Florida (FL)	Hexazinone	vegetation control

Based on the final list published by FSC, three of the forests received minor non-conformances. CARs addressing these non-conformances request forests to either develop a policy banning the use of the listed chemicals, or receive a formal derogation (if seeking certification) issued by FSC for their use. Two forests, the CNNF and ANF, also received non-conformances concerning procedures for chemical application and control of their use. The CARs asked the forest to

develop written prescriptions for contractors that included a description of the risks and benefits to their health (ANF); and, a better tracking system to show compliance and the level of chemical exposure workers experience over time (CNNF and ANF). The ANF also received a minor CAR under Criterion 6.7, asking the ANF to promote recycling and reuse programs that can help to minimize contaminations by disposed chemicals.

FSC Principle 7.

Principle 7 concerns the management plan, including: the comprehensiveness and clarity with which it covers a broad range of issues (7.1.a - 7.1.h), timeliness and process of revision (7.2), training required to fully implement the plan (7.3); and sharing key elements of the plan with the public. Criterion 7.1 is the most extensive in the FSC Standard, specifying what exactly needs to be in the plan and in what manner. These elements differ in minor respects across the regional standards in order to elaborate regional resources that need to be addressed under the FSC US National Indicators (*see below*).

Box 3. Management Plan requirements under criterion 7.1 of FSC-US National Indicators

Criterion 7.1. *The management plan and supporting documents shall provide:*

- a) Management objectives.*
- b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.*
- c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.*
- d) Rationale for rate of annual harvest and species selection.*
- e) Provisions for monitoring of forest growth and dynamics.*
- f) Environmental safeguards based on environmental assessments.*
- g) Plans for the identification and protection of rare, threatened and endangered species.*
- h) Maps describing the forest resource base including protected areas, planned management activities and land ownership.*
- i) Description and justification of harvesting techniques and equipment to be used.*

The auditors praised the case study forests, and the National Forest System as a whole, on most aspects of management planning, reporting that the depth of and detail of analyses supporting plans are “unparalleled” and a “model of completeness.” They also felt that the objectives stated in the plans are clearly communicated and track well through associated programs for implementation and monitoring. In all cases, the mapping information and other data supporting plan implementation was also regarded as exemplary. The management plans for each of the forests are augmented by, and elaborated through other planning documents above the forest level (e.g. Northwest Forest Plan) and for units of the forests (e.g., planning documents and assessments for management areas, projects, and districts).

The auditors issued several non-conformances on elements they felt were missing or inadequately addressed by the plans. These included findings on: information and planning for the management of NTFPs (MHNF, CNNF, and ANF); landscape-level planning that considered conditions and ownership of adjacent forests (ANF & CNNF); and, the legal status of resources within forest boundaries that are not owned by the Forest Service (ANF & CNNF - in regard to

OGM rights retained by other parties). The finding on NTFPs also surfaced under Principle 6, but the CAR is basically a planning and monitoring issue addressed under Principles 7 and 8. The three forests (MHNF, CNNF, and ANF) were requested to fully develop a program of assessment, planning and monitoring of these resources and any permitted collection, whether commercial or noncommercial. Auditors reported concerns on the sustainability of the harvested resources and how harvesting may impact associated species and wildlife habitat.

In some national forests, mostly in the eastern U.S., subsurface rights are owned by private parties and the Forest Service has little control over how and when oil, gas, and mineral resources are developed. SmartWood requested that the CNNF and ANF better incorporate information on third-party ownership in maps and plans, and use this information to predict impacts of OGM development on the forest resource. On the ANF, OGM development is especially ubiquitous. Auditors reported that, as of yet, OGM development has not sufficiently impacted the forest to rise to the level of a non-conformance. In the field, auditors spent a significant amount of time visiting sites with OGM development, and discussing with the forest staff how these activities affect their management objectives. They reported that the issue of OGM development would, in the case of a real certification assessment, be revisited through future surveillance audits. In the interim they have issued a CAR requesting the forest to identify all subsurface ownership.



Photo. SmartWood and PriceWaterhouse Coopers team reviewing the site and impact of an oil well pump on the Allegheny NF. (credit, R. Hokans)

Criterion 7.2 addresses the timeliness and process of revising plans and making sure forest management operations are formalizing adjustments to evolving conditions and new information. To accommodate new information and directives that arise, the forests formally amend the land resource management plans. As with the plans themselves, the amendment process involves supporting analyses and public consultation. The amendments help keep the plans up to date. At the time of the evaluation, the ANF was in the process of completing plan revision, though had not yet selected one of the alternative management scenarios. They had been operating under a plan finalized in 1986 and updated through 18 amendments over the intervening years. The MHNF and LFSU were also operating under plans overdue for revision. The auditors issued CARs to the MHNF and the LFSU, requesting that the forests prioritize and seek the necessary resources to revise their plans.

FSC Principle 8.

Principle 8 is entitled *Monitoring and Assessment*, and includes five criteria. The criteria address: how monitoring is used in relation to management objectives (8.1); the scope of research and data collection necessary to guide management (8.2); tracking forest products from origin or “chain of custody” (8.3); incorporating monitoring results into implementation and future plans (8.4); and, providing monitoring information to the public and outside stakeholders (8.5). Overall, auditors commended the Forest Service on their programs of assessment and monitoring. Mt. Hood NF’s monitoring and reporting was deemed “exemplary” (SCS, MHNF). SmartWood, while issuing two CARs related to Principle 8, reported that monitoring systems of the National Forests are “intense and frequent.” Three forests were praised for their reporting processes and the effort devoted to making sure information is accessible to the public.

Criterion 8.2 is the most extensive under Principle 8 and asserts the components of monitoring programs that should be in place, especially for organizations with large forests and sufficient capacity. The required elements include:

- a) Yield of all forest products harvested.*
- b) Growth rates, regeneration, and condition of the forest.*
- c) Composition and observed changes in the flora and fauna.*
- d) Environmental and social impacts of harvesting and other operations.*
- e) Cost, productivity, and efficiency of forest management.*

The auditors made requests to correct aspects of monitoring that were not functioning as intended or missed elements required in the FSC regional standards. For example the CNNF received a minor non-conformance on a portion of the monitoring report that was overlooked and later included. They also were requested to develop a protocol to include more social aspects in monitoring data, and in particular “local forest industry employment.” The ANF was issued a similar CAR, asking them to more fully track the creation and maintenance of local jobs resulting from its management activities. The same CAR also requested that the ANF better evaluate how management has deviated from the management plan and how unexpected disturbances should shape management activities. Auditor concern on the regeneration and abundance of NTFPs, and the conditions of areas from where they are harvested, are again addressed as non-conformances and CARs under Principle 8. The audit teams request that the forests strengthen their ability to understand the impacts of NTFP harvesting.

Both the LFSU and MHNF were requested to augment monitoring programs by including additional species to better indicate impacts of management on wildlife (LFSU), or because they are currently given less attention than other taxa (MHNF). SCS praised several aspects of the LFSU monitoring program. The Continuous Forest Inventory used in the National Forest System, whereby 10% of the forestwide inventory plots are sampled every year, functions well and has been intensified to provide statistically significant resource data at smaller spatial scales. Stream surveys, biological and chemical water quality measurements, monitoring of soil compaction, and many other activities help track the impact of management operations on the forest. However, SCS felt that the forest could do a better job of monitoring conditions of roads that are used less frequently, to avoid road failures that could impair water bodies. They also

requested that the LFSU expand the monitoring program to include more species of concern, to better track actual population levels.

Audit teams reported non-conformances for three forests for Criterion 8.3, which requires a system to trace forest products to meet FSC’s “chain-of-custody” requirements that follow products from the forest to-the-shelf. Given that the Forest Service is not seeking certification, this finding was expected. Auditors dealt with this issue differently across the forests, issuing two minors (CNNF and MHNF) and one major (LFSU) on this criterion. The ANF and the NFF were not issued non-conformance findings.

FSC Principle 9.

Principle 9 is entitled *Maintenance of High Conservation Value Forests* (HCVFs). It contains four criteria, requiring: the identification of forest areas with special ecological and cultural values through scientific assessment and outside consultation (9.1); an assessment (through certification) of HCVF management that is informed by stakeholder consultation (9.2); a management plan that includes measures to ensure the “maintenance and/or enhancement” of HCVF attributes (9.3); and, monitoring HCVF attributes and the management approach developed to sustain them (9.4). The definition of what particular attributes must be regarded as HCVFs is articulated in each of the regional standards. A special emphasis is placed on old-growth stands and under-represented types of forests or stand conditions (e.g., forests that through history have been depleted, such as late-successional conifers in the Lake States). The FSC National Indicators provide guidance on what types of HCVFs must be proscribed by regional standards (*see below*).

Box 4. High Conservation Value Forest (HCVF) definition provided by FSC-US National Indicators

High Conservation Value Forests are those that possess one or more of the following attributes: a) Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g., endemism, endangered species, refugia); and/or large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance; b) Forest areas that are in or contain rare, threatened or endangered ecosystems; c) Forest areas that provide basic services of nature in critical situations (e.g. watershed protection and erosion control); and, d) Forest areas fundamental to meeting basic needs of local communities (e.g., subsistence, health) and/or critical to local communities traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

Auditors dealt with the topic differently across the five forests, depending on whether they felt the absence of a formal HCVF process (independent of Forest Service processes employed to define, identify and manage equivalent areas) constituted a major or minor nonconformance. Overall, the auditors reported that the Forest Service has a robust process to identify and protect areas that would meet the HCVF definitions. They commended the Forest Service for both their assessment and consultative processes to define, identify, map, and protect these areas. As reported by SCS on the MHNF:

“A myriad of land use policies and restrictions are in place which may lead to de facto protection of high conservation values on the Unit (e.g., old-growth

management designations, wilderness areas, semi-primitive areas, endangered species protection zones, archeological sites, etc.)”

SmartWood reported similar findings on the ANF and CNNF, recognizing that many of these areas are protected for “. . . globally, regionally, and locally-scaled [attributes].” Both SCS and SmartWood requested that the Forest Service “cross-walk” the areas that they have protected with the FSC definitions of HCVPs required for protection under the regional standards. The crosswalk would presumably determine whether additional areas should be designated so as to conform to the types of HCVPs required by FSC. SCS issued major non-conformances to the MHNH and LFSU, meaning that the Forest Service would need to undergo this process before becoming certified. SmartWood issued minor non-conformances, and required that the Forest Service would need to undergo this process in the first year after receiving certification. On the CNNF, SmartWood specifically requested that a HCVP process should consider whether scattered patches of potential old-growth (approximately 1,000 acres) warrant inclusion in conservation zones. SGS in effect cross-walked the current designation and protection measures employed on the NFF through their evaluation, and determined that the NFF satisfied the requirements of Principle 9.

3.2 SFI Findings

3.2.1 Major strengths relative to the SFI standard

There were many instances where the SFI audit team concluded the management practices of the participating national forests went substantially beyond the requirements of the SFI standard. A portion of the exemplary management processes observed include:

Public Involvement. The participating national forests were found by auditors to exceed the public involvement requirements of the SFI standard. While the NEPA process was noted by auditors as one administrative process potentially delaying action which exposes the forest to damaging agents, auditors commended its utility in acquiring public input. Auditors also highlighted the NFS units’ collaboration with outside citizen groups in designating special management areas (CNNF), developing recovery plans for listed fish species (MHNH) and determining restoration management goals (LFSU).

Protection of Threatened and Endangered Species. Auditors highlighted the protection of threatened and endangered species during four of the certification evaluations. The participating national forests were commended for having an “excellent” system in place to identify threatened and endangered species and manage for their key habitat requirements across the landscape. Auditors on two national forests noted, “*The Forest Service goes well beyond protection of known sites to devote considerable resources to expanding information about threatened, endangered, sensitive, and candidate species and communities with local, regional or national importance.*” The CNNF’s incorporation of habitat for threatened and endangered species into management activities was considered exemplary.

Protection of Culturally Important Sites. The comprehensive systems used by the participating NFS units to identify and manage culturally important sites was found to exceed the SFI requirements. In arriving at this conclusion, auditors noted the work of archaeologists on NFS units trained to ensure that management activities do not compromise culturally sensitive sites.

Further, NFS staff were commended for their consultation with local tribes and state historic preservation officers to identify and mitigate any potential project impacts.

Use of Forest Chemicals. Each participating national forests rarely utilizes chemicals outside limited and targeted applications for invasive and exotic species control. Auditors noted the policies and procedures used by NFS managers provide a “model” for how chemicals can be used responsibly and in many cases are more effective than mechanical or hand treatments.

3.2.2 Major weaknesses relative to the SFI standard

The SFI audit teams identified a number of gaps or opportunities for improvement (OFI) that were common among the five participating national forests. Examples of these include:

Maintenance of Forest Health. SFI auditors on all five case study units noted concern with the units’ ability to meet key forest plan objectives which have resulted in economic and social effects to forest-dependent communities and inability to maintain forest ecological health and vigor. Auditors observed instances where overstocked stands are at risk of uncharacteristically severe, stand-replacing wildfire or insect infestation. Auditors found gaps between the standard and the forests’ ability to address forest health and economic viability issues resulting from the long planning periods necessitated by the NEPA process and on-going appeals and litigation delaying project implementation.

Use of Trained or Certified Timber Harvesters. Each participating national forest outlines USDA Forest Service regulations and BMPs in each timber sale contract, but lacks a formal mechanism to ensure timber harvesters are adequately trained and educated. During all five certification evaluations, SFI auditors indicated that case study units’ performance fell short of the program standard which requires landowners to assure that contractors are sufficiently trained to their roles and responsibilities.

Road Maintenance and Decommissioning. Four of five SFI field evaluations identified concerns with road maintenance on the case study national forests. In one instance, auditors noted a “pending crisis” where insufficient funding threatens the NFS unit’s ability to maintain transportation networks that are too large for existing management needs. The result has been noticeable signs of “a road system [which] is starting to suffer.” Observed impacts on other case study NFS units included isolated instances of improperly designed stream crossings and road drainages draining into perennial streams.

Implementation of Planned Harvest Levels. Auditors noted that on-going administrative and management constraints have inhibited the case study national forests’ ability to meet their Program Sale Quantity (PSQ). Missing these harvest goals has led (or may lead) to overstocked stands susceptible to damaging agents (e.g. fire, insects, disease) and in some cases recovery goals for threatened and endangered species. In two cases, auditors also observed that more timely updates of the PSQ were needed following significant forest activities (e.g., recent timber sale activity) or changes in management approaches.

Table 5. Summary of SFI performance gaps SFI certification (M=major; m=minor; OFI=Opportunity for improvement; C=Conformance)

Non-Conformance	LFSU	ANF	MHNF	CNNF	FNF
• Road maintenance and decommissioning	m	OFI	M	C	C
• Maintenance of forest health	M	m	M	OFI	m
• Requiring use of trained or certified timber harvesters	M	OFI	M	OFI	M
• Implementation of planned harvest levels	OFI	C	M	C	M
• Utilization of small logs	OFI	OFI	C	C	C
• Program to implement state and/or federal BMPs	m	OFI	OFI	OFI	C

3.2.3 Detailed SFI Findings

Objective 1: *To broaden the implementation of sustainable forestry by ensuring long-term harvest levels based on the use of the best scientific information available.*

The SFI Standard requires participants to “ensure that long-term harvest levels are sustainable and consistent with appropriate growth and yield models and written plans” (P.M. 1.1). The management of three case study national forests was found to be consistent with this performance measure with gaps identified at the indicator level. The MHNF and NFF were assigned Major gaps for not achieving planned harvest levels. As part of the evidence record, auditors cited administrative and management constraints which hinder the forests’ ability to meet key management and harvest objectives. Auditors indicated that by not meeting harvest targets, reduced tree vigor and habitat impacts (MHNF) and delayed progress toward meeting recovery goals for the threatened red-cockaded woodpecker (NFF) have resulted. On the Lakeview Federal Stewardship Unit (LFSU), auditors observed an OFI concerning the implementation of planned harvest levels and noted impacts including overstocking, heavy fuel loads and backlog in road maintenance resulting from a lack of a minimum timber harvest program.



Photo. Staff of the National Forests of Florida in a stand of long leaf pines with red cockaded woodpecker nesting sites. (Credit, W. Price)

Other non-conformances and OFIs were identified (at the indicator level) that were specific to each participating forest. For instance, a minor gap was identified on the LFSU because auditors could not readily identify a clear connection between the Unit’s goals and objectives with those

of the Freemont-Winema National Forests (indicator 1.1.1). Auditors on the CNNF noted an opportunity to improve the consistency and timeliness of its mapping and GIS program (indicator 1.1.1e). On the ANF, auditors found that forest staff could improve their inventory projection system by establishing a definitive schedule and process to keep updated inventories (indicator 1.1.4).

Objective 2: To ensure long-term forest productivity and conservation of forest resources through prompt reforestation, soil conservation, afforestation and other measures.

Program participants are to ensure long-term forest productivity and conservation of forest resources by promptly reforesting after harvest (P.M. 2.1), minimizing chemical use (P.M. 2.2), protecting and maintaining forest and soil productivity (P.M. 2.3), protecting forests from damaging agents (P.M. 2.4), and (when necessary) utilizing approved genetically improved planting stock (P.M. 2.5).

Auditors found the management of the case study national forests closely aligns with most performance measures found under Objective 2 with one major exception. Auditors found major gaps (LFSU, and MHNF), minor gaps (ANF and NFF) and an OFI (CNNF) under P.M. 2.4. Auditors' evidence records suggest that long-term fire-exclusion policies, excessively long project planning periods necessitated by the NEPA process, appeals and litigation, and mortality and growth rates exceeding harvest rates have contributed to overstocked forest stands at high risk of catastrophic fires and insect infestations. In addition, these factors have prevented the case study national forests from achieving desired forest age and species diversity compositions and addressing economic viability issues.

Indicator seven under Performance Measure 2.3 requires forest landowners to “*minimize road construction to meet management objectives efficiently.*” Auditors on the MHNF identified a major gap indicating the current transportation network was designed for a time when harvest levels were ten times current levels. Auditors stated funding levels on the MHNF are unable to support and maintain the road system with clear signs that it is beginning to deteriorate.

Objective 3: To protect water quality in streams, lakes and other water bodies.

Auditors on each of the certification evaluations concluded that the participating national forests “*meet or exceed all applicable federal, provincial, state and local water quality laws and meet or exceed Best Management Practices developed under ... applicable federal, provincial, state, or local programs*” (P.M. 3.1). The minor gaps identified (at the indicator level) included an improperly installed culvert crossing over a seasonal stream on the LFSU. Auditors noted opportunities to improve regular implementation of road grading on the MHNF and suggested the ANF begin assessing potential impacts that road systems attributed to Oil and Gas (OGM) development may be having on perennial streams.

Performance measure 3.2 requires program participants to have a system which considers soils, terrain, vegetation and other factors when protecting riparian resources. Auditors on each of the certification evaluations found the management of the participating national forests consistent with this performance measure with one shortfall found on the ANF at the indicator level. The ANF field evaluation identified concerns with the forest's limited legal control of roads associated with OGM development and potential impacts to water quality. Indicator five under

Performance Measure 3.2 requires experts to identify appropriate protection measures where regulations or BMPs do not currently exist. Auditors identified an OFI where the ANF consider “tak[ing] measures to gain control over the placement, construction, and maintenance of roads constructed by oil and gas development companies.”

Objective 4: Manage the quality and distribution of wildlife habitats and contribute to the conservation of biological diversity by developing and implementing stand- and landscape-level measures that promote habitat diversity and the conservation of forest plants and animals including aquatic fauna.



Photo. Staff of the Chequamegon-Nicolet NF discussing streamcourse protection and restoration measures with auditor. (Credit, P. Pingrey)

Auditors found the management of the five participating national forests closely aligned with the two performance measures of Objective 4. In almost all instances, auditors observed the management coincided with or exceeded the program’s requirement to promote biological diversity at stand and landscape scales (P.M. 4.1). In addition, auditors were unable to identify any major or minor gaps in the forests’ application of science, technology, and experience in managing wildlife habitat and conserving biodiversity (P.M. 4.2). In only two instances did auditors note OFIs (at the indicator level). During the ANF certification evaluation, auditors indicated the forest could better utilize and incorporate adjacent landowner data in landscape planning. Auditors on the MHNf suggested managers could increase the use of prescribed fire.

Objective 5: To manage the visual impact of harvesting and other forest operations.

The management of the case study national forests strongly corresponds to the performance measures under Objective 5.

During the certification evaluations, audit teams found the standard’s requirement for participants to “manage the impact of harvesting on visual quality” (P.M. 5.1) fully agreed with the practices observed on the five forests.

The SFI Standard also requires program participants to consider the size of clearcutting-type harvests, or “clearcuts” (P.M. 5.2), and to define green-up requirements (e.g., minimum age, stocking levels and/or tree heights) prior to harvesting adjacent forest stands (P.M. 5.3). The MHNf and LFSU rarely employ this regeneration harvest method leading auditors to forgo rendering judgment under P.M. 5.2 while the management of the other three forests was found to

align with this Performance Measure. Audit teams on the ANF, MHNF, CNNF and NFF found no major or minor gaps relating to the standard's limit on the average size of clearcuts (i.e., 120 acres) and green-up requirements while auditors did not apply this performance measure (5.3) during the LFSU evaluation.

Objective 6: To manage Program Participant lands that are ecologically, geologically, historically, or culturally important in a manner that recognizes their special qualities.

The SFI Standard includes measures which ensure program participants use natural heritage data and expert advice in identifying ecological, geological, historical, or culturally important sites. In addition, participants are to appropriately map, catalogue and manage these sites after they have been identified. In many cases, auditors noted that specialists (e.g., archaeologists, botanists, wildlife biologists, etc.) are employed on the case study national forests and consulted prior to management activities. This and other factors led auditors to conclude that the management of important sites is consistent with or exceeds the requirements of the SFI Standard on all five national forests.

Objective 7: To promote the efficient use of forest resources.

The SFI program promotes the use of harvesting technology and practices which *minimize waste and ensure efficient utilization of harvested trees* (P.M. 7.1). The program standard further specifies that participants monitor that trees—outside those left for ecological reasons and erosion mitigation—are harvested, merchandized, and utilized for their most beneficial purpose. Outside two observed OFIs (at the indicator level), auditors did not report any management inconsistencies between the case study national forests and the requirements of Objective Seven. One OFI involved developing clear guidelines for determining when exceptions to normal utilization requirements are granted (ANF). Auditors on the LFSU noted potential for improving small log utilization within the unit.

Objective 8: To broaden the practice of sustainable forestry through procurement programs.
Objective 8 of the SFI Standard was not applied during any of the certification evaluations as the five participating national forests—as with all NFS management units—do not procure fiber.

Objective 9: To improve forestry research, science, and technology, upon which sound forest management decisions are based.

Participants in the SFI program are required to help support forestry research to *improve the health, productivity, and management of forest resources* (P.M. 9.1) and use the results in *support of their sustainable forestry programs* (P.M. 9.2). The certification evaluations on all five participating national forests did not identify any gaps between their management and the program standard. The auditors' evidence record suggests that the congruity with both performance measures is largely due to the collaboration between the case study national forests and US Forest Service's research stations (e.g., Southern Research Station).



Photo. Auditors discussing deer management research on the Allegheny NF with staff of the Forest Service Kane Experiment Station. (credit, R. Hokans)

Objective 10: To improve the practice of sustainable forest management by resource professionals, logging professionals, and contractors through appropriate training and education programs.

A number of gaps exist with the SFI Standard solely because the national forests are not actually seeking certification, rendering some requirements not applicable in the context of these studies. These requirements involve SFI-specific activities that would require policy decisions or management directives from the US Forest Service Washington Office (WO) to conform to the standard.

Program participants are expected to provide a written statement of commitment to the SFI Standard (Indicator 10.1.1). Additionally, staff and contractors are to be sufficiently trained to understand and perform their assigned roles and responsibilities to meet the requirements of the SFI Standard (Indicator 10.1.2). None of the case study national forests have committed to the SFI Standard nor has Forest Service staff been assigned roles and responsibilities for meeting SFI requirements. As a result, audit teams identified Major gaps between the SFI's commitment requirements and the management direction on all five participating national forests.

Audit teams did not observe any gaps with the program's requirements for staff education and training (Indicator 10.1.3). Auditors indicated that Forest Service personnel are very well educated, trained, and talented, but noted—in two instances (LFSU and CNNF)—opportunities to improve the tracking system of their employees' training records. Three major gaps (LFSU, MHNF and NFF) and two OFIs were identified, however, between the SFI Standard and case study national forests' lack of a formal requirement that contractors use trained timber harvesters (Indicator 10.1.4). While timber sale contracts specify that contractors comply with Forest Service harvesting requirements and BMPs, there is no specific requirement that timber harvesters be trained or certified.



Photo. Audit team on the ANF reviewing a logging operation, and discussing compliance with contractors. (credit, R. Hokans)

Objective 11: Commitment to comply with applicable federal, provincial, state, or local laws and regulations.

The SFI Program requires participants with landholdings in the United States to comply with all federal, state, and local forestry and environmental laws (P.M. 11.1). Auditors noted the case study national forests often employed an environmental coordinator(s) to ensure that the complex body of regulations governing the agency—with a particular focus on the NFMA, NEPA, FLPMA and ESA—are followed and incorporated into project planning. In one isolated instance on the NFF, auditors assigned a minor gap (at the indicator level) due to the forest’s consistent shortfalls in meeting obligations under the Red Cockaded Woodpecker Recovery Plan. As a whole, however, all five certification evaluations found the detailed systems used by the participating national forests to ensure legal compliance with forestry and environmental laws are consistent with the program standard.

A commitment is also required from program participants to uphold a number of important social laws at the federal, state and local levels (P.M. 11.2). For instance, the SFI Standard expects participants respect their employees’ right to organize. During the certification evaluations, auditors confirmed union representation on the participating national forests. Audit teams also reviewed the laws guiding the case study national forests in the following areas:

- Civil rights (e.g., USDA civil rights policy)
- Equal employment opportunities (e.g., Equal Opportunity Employment Act)
- Anti-discrimination (e.g., Americans with Disabilities Act of 1990) and anti-harassment measures (e.g., Civil Rights Act of 1964)
- Workers’ safety (e.g., Occupational Safety and Health Act of 1970)
- Worker’s and communities’ right to know (e.g., Freedom of Information Act of 1974)
- Indigenous peoples’ rights (e.g., National Historic Preservation Act and the Archaeological Resources Protection Act)
- Prevailing wages (Fair Labor Standards Act)

The sum of the auditors’ evidence record found the management of each case study national forest closely aligns with the SFI requirement to comply with all applicable social laws.

Objective 12: To broaden the practice of sustainable forestry by encouraging the public and forestry community to participate in the commitment to sustainable forestry and publicly report progress.

Meeting the expectations of Objective 12 requires participants to support the SFI State Implementation Committee's (SIC's) outreach, education, and technical assistance activities and its efforts to address concerns regarding nonconforming practices (Indicator 12.1.1, 12.2.1 and 12.5.1). Additionally, participants are to provide annual progress reports demonstrating conformance to the SFI Standard (12.6.1). Major gaps resulted during the certification evaluations because the case study national forests have not made commitments to the SFI Standard and therefore have not been involved with the state SIC activities. While a number of the requirements under Objective 12 are programmatic in nature, participants are required to adhere to the following performance measures:

- ***Support and promote efforts...to apply principles of sustainable forest management (P.M. 12.1).*** Many auditors cited the existence of USDA Forest Service programs, including State and Private Forestry, as evidence of consistency with the SFI requirement to develop and distribute information to forest landowners. The USDA Forest Service is also the lead agency for the Forest Legacy Program—a program designed to protect private forest lands. The Forest Legacy Program was found by auditors to closely align with the SFI requirement to support or promote the conservation of working forests. Auditors also confirmed that staff on the case study national forests were knowledgeable of regional conservation planning projects. In many instances, staff participate with diverse interests in these efforts and incorporate the results into planning and management activities on their forests.
- ***Support and promote...mechanisms for public outreach, education, and involvement related to forest management (P.M. 12.2).*** All five certification evaluations reported that the case study national forests meet or exceed the program's requirements for public outreach and recreational opportunities. Auditors discovered that the case study national forests contained a variety of public outreach opportunities including field trips for schools and other groups, informational pamphlets, fact sheets and other publications in ranger stations, tours, camps, and many other activities. Audit teams also observed the numerous recreational activities (e.g., wildlife viewing, hiking, climbing, downhill skiing, driving for pleasure, whitewater rafting, camping, hunting, fishing, horseback riding, OHV riding, and many others) and concluded that the management of all five national forests is either consistent with or exceeds the SFI requirements.
- ***Program Participants with forest management responsibilities on public lands shall participate in the development of public land planning and management processes (P.M. 12.3).*** The existence of various public-private partnerships (e.g., Lakeview Stewardship Group, MHN's Sandy River Basin Agreement Partnership) led auditors to conclude that each case study national forest meets—and in some cases exceeds—SFI's requirement to involve the public and other governmental entities during their forest planning processes. Further, the standard holds participants responsible for working with local stakeholders on forest management issues. Auditors' evidence records provide examples of agency requirements to engage the public through NEPA, National Forest Management Act (NFMA), and directives in the Forest Service Manual. As a result,

auditors determined that these efforts to understand and involve various publics match or exceed the requirements of the SFI program standard.

- ***Program Participants with forest management responsibilities on public lands shall confer with affected indigenous peoples (P.M. 12.4).*** Each of the case study national forests were found to conform to or exceed the SFI requirements related to relations with indigenous peoples. Auditors based this conclusion upon evidence that the forests are guided by public law, executive orders and various MOUs which establish government-to-government consultation and collaboration between Indian tribes and the participating national forests. In many instances, the case study national forests and the tribes consult with one another to determine if one party's management activities will affect lands and natural resources administered by the other. This also includes considering the effects of forest decisions on the ability of tribes to exercise certain rights. Forest archeologists were often present on the certification evaluations to discuss safeguards to ensure that forest activities do not degrade NTFPs, cultural values and significant sites. In only one instance did the auditors find an opportunity for improvement. On the MHNH, auditors invited forest staff to consider "*exploring opportunities to consult with a broader range of Tribes.*"

Objective 13: To promote continual improvement in the practice of sustainable forestry and monitor, measure, and report performance in achieving the commitment to sustainable forestry.

The SFI Program requires participants to establish a management review system which monitors and evaluates their implementation of the standard, make appropriate adjustments when necessary, and to inform employees of changes needed (P.M. 13.1). While the case study national forests have well-developed monitoring and evaluation programs covering a variety of forest resources, none of them are participants in the SFI program and thus have not developed a system for reviewing SFI-specific requirements. As a result, audit teams assigned Major gaps relative to performance measure and indicators under Objective 13.

3.3 Additional Considerations

Pursuant to its Federal Lands Policy, FSC-US would need to develop and approve an additional set of certification standards specific to NFS management in order to reflect a broader set of management objectives than is typically found in private forestry enterprises. As part of the study, each audit team was required to develop draft "additional considerations" or ACs for use during the FSC certification evaluations on the case study national forests. The intent was that the ACs developed as part of this study could inform FSC US, but would not replace the separate, independent process the organization's standard setting body would undergo to establish standards specific to the USFS if certification were requested and made available to the agency.

Performance relative to Additional Consideration

The three participating FSC auditing firms—SmartWood (ANF & CNNF), SCS (LFSU & MHNF) and SGS (NFF)—developed the additional considerations through an expert review and public participation process prior to each field evaluation. While the certifying bodies developed the ACs utilizing varied approaches, the final set employed during each field evaluation were similar. Many of the ACs were relevant NFS-wide, while others were tailored to regional or individual national forests. Examples of ACs where the management protocols across all five participating national forests were found to conform include (See Appendix XX):

- By policy and action, managers of national forests demonstrate a pattern of compliance with applicable federal laws and administrative requirements.
- Affirmative methods of tribal outreach in accordance with suitable protocols (e.g., in-person meetings, order of contact) are attempted in order to generate substantive tribal response.
- Non-local and migrant worker conditions (including transit to and from work sites) are actively monitored by both contractors and Forest Service personnel.
- Managers of national forests use the best available science and information to prepare, at the scale of watersheds or larger, a written description of the historic range of variability of forest conditions and disturbance regimes.
- Forest management practices, such as management of cattle grazing, maintain or restore aquatic ecosystems and habitat features, wetlands, and forested riparian areas (including springs, seeps, fens, and vernal pools).
- Managers of national forests identify high risk activities by which invasive exotic plants become established in and/or spread through the Forest. Control mechanisms are implemented for high risk activities associated with Forest Service management responsibilities.

While not considered on the LFSU, MHNF and NFF, audit teams on the ANF and CNNF found these two national forests conform with the following ACs:

- Managers of national forests shall comply with state, county, local and municipal laws except in cases where federal law applies.
- A comprehensive listing of all applicable laws, regulations and administrative requirements and their applicability to national forest management shall be maintained with listed documents made accessible to all employees.
- Where federal, state, county and local BMP guidelines, recommendations, and regulations provide several options, the most effective measure is applied.

ATV/OHV access and any related impacts are not well-addressed in the existing FSC regional and federal land standards. The MHNF and LFSU were the only two forests where ACs were developed to address this limitation. Audit teams did not find any gaps between LFSU's OHV management and the AC. The audit team on the MHNF, however, cited inadequate law enforcement, insufficient education efforts, deficient signing, lack of a travel management plan and noticeable site impacts when assigning a non-conformance with the AC.

The three FSC auditing firms appeared to interpret similar ACs differently during their respective evaluations. For instance, SCS assigned non-conformances to the AC requiring external expert and/or public review of the historic range of variability (HRV) of forest conditions during the LFSU and MHNF certification evaluations. In both cases, SCS did not find evidence that the external review was occurring. SmartWood viewed the HRV analysis completed during EIS and EA preparations prior to management activities occurring on the CNNF and ANF as sufficient to meet the intent of expert review and public involvement required by the AC. The SGS list of ACs did not address the HRV issue.

SmartWood and SCS also differed in how they considered evidence prior to assigning a performance rating to their developed AC involving the effect of National Forest management activities on neighboring lands. On the CNNF and ANF, audit teams cited the lack of cumulative environmental effects data on land (included in the EIS) adjacent to both national forests were grounds for non-conformance. SCS believed the watershed analysis conducted at multi-ownership scales and the cumulative effects analysis (as part of the EIS) on the LFSU and MHNF met the intent of the AC.

The audit teams found non-conformances related to the ACs involving the designation of HCVFs. Gaps were found on the LFSU, MHNF and CNNF with the AC requiring National Forest managers to use specific tool-kits (e.g., FSC, Canadian National Framework, or Proforest) or their own comparable process when identifying HCVFs. While auditors recognized the comprehensive process used by national forests to identify areas with high conservation value, they assigned a non-conformance rating because the national forests did not use the existing HCVF planning tools.

SCS guided the development of four ACs on the MHNF, which were not employed during any other field evaluation. Three of these included: participating in local community fire protection planning efforts, implementing appropriate public involvement techniques (independent of legal timelines), and utilizing available contracting authorities. The audit team found the MHNF performance to be exemplary in all cases. A Minor CAR would likely be issued in relation to the fourth AC involving the maintenance or abandonment of legacy roads. The audit team noted the MHNF does not have the necessary resources in place to complete their travel management plan requirements in a timely fashion.

Two ACs employed during the LFSU certification evaluation were considered “Not Applicable” by SCS. The first AC involved connecting important wildlife habitats and key landscape features during even-aged timber management on national forests while the second addressed the length of even-aged rotations on National Forests. SCS found that neither applied given the LFSU manages few, if any, even-aged stands on the forest.

Duplication with existing FSC standards was found by some audit teams with the following ACs:

- AC 1.1.1. By policy and action, managers of national forests demonstrate a pattern of compliance with applicable federal laws and administrative requirements (e.g., NEPA, ESA, Clean Water Act, NFMA, MUSYA, The Wilderness Act, Wild and Scenic Rivers Act, Organic Act, CFR, Title 7, applicable sections of the US Code, the Forest Service Manual, and Forest Service Handbooks).
- AC 1.1.2. Managers of national forests shall comply with state, county, local and municipal laws except where federal law preempts state, county and local laws. When

federal laws preempt compliance with those of other jurisdictions, corresponding statutes or regulations shall be specifically referenced and described.

- AC 3.2.1. Solicitation of tribal collaboration is tailored to incorporate cultural sensitivity and awareness and will be undertaken with a commitment to honor government to government relationships.

ACs were developed during the CNNF evaluation which would be difficult to address until further information is available regarding regional consequences of global climate change. FSC auditors were unable to find enough evidence which suggested CNNF staff were considering the effects climate change may have on current and future forest conditions and therefore assigned a non-conformance rating to this AC.

3.4 Evaluation of Participant Experiences

3.4.1 NFS Staff Experiences: NFS Survey Results

The Pinchot Institute surveyed each of the coordination teams, to better understand the applicability of certification based on the experiences of national forest staff with the certification process. In particular, the questionnaire collected information on the preliminary site review (e.g., time demands, assessment of pre-evaluation process), field evaluation (e.g., time demands, review of auditor findings) and general review of the certification evaluation experience (e.g., comprehensiveness, transparency, team quality).

Preliminary Site Review (or Scoping). The NFS study coordinators indicated the pre-evaluation was helpful in preparing for the full field evaluation and found the evaluation plan and audit team members qualified. NFS study coordinators were notified up-front by lead auditors of the time and personnel requirements needed to participate. The pre-evaluation consumed between 11 and 88 person-days of NFS staff time (certification study coordinators and forest and district and resource staff). They averaged 51 person-days preparing for the pre-evaluations and primarily used this time to:

- Gather planning documents for auditors for the preliminary site review and the field assessment;
- Brief forest staff on certification;
- Prepare summaries of management activities for auditors; and,
- Identify field inspection sites.

Field Evaluation

The NFS study coordinators, alongside forest and district resource staff, spent anywhere between 44 and 107 person days preparing for and participating in the field component of the certification evaluation. NFS staff spent an average of 80 person days participating in the actual field assessment (i.e., visiting sites with auditors, presenting management activities, answering auditor questions, etc.). Additional office time was spent by NFS staff preparing background information related to each field site, planning travel logistics, and coordinating staff schedules.

NFS study coordinators rated the level to which they felt the auditors reviewed an adequate scope of documentation and field management operations before determining conformance to the ecological and socioeconomic components of the standards. In most instances NFS study coordinators believed the audit teams reviewed a satisfactory amount of documentation and field observations before delivering their findings against any biological, ecological and socioeconomic standards.

Study coordinators were also asked to provide an explanation for why gaps may exist between the standards and forest management operations. For the identified non-conformances, study coordinators often felt their national forest might address the certification requirements, but not in the same manner required by the auditors. An example of this surfaced through FSC's Principle 9 where audit teams found gaps between FSC's identification and maintenance protocols for HCVPs and the conservation efforts of the participating national forests. Study coordinators held that their NFS units often went beyond the certification standards in identifying forests with high conservation value. Study coordinators also acknowledged that certain certification requirements (e.g., training requirements for harvesters, commitment to certification programs) are simply not addressed by the agency.

General Review

The NFS study coordinators shared their overall experiences with the whole certification evaluation process including a general review of the certification programs. They also commented on potential outcomes of certification if it were made available to the agency. In their response to the *comprehensiveness* of the standards and the degree to which the certification programs *would satisfy their constituencies*, they agreed generally on the following:

- Both FSC and SFI standards explored the full range of issues substantially affecting the sustainability of management of the participating National Forests.
- The standards cover an appropriate balance between economic, environmental and social concerns.
- The programs provide a good test of staff ability to perform their responsibilities.
- The evaluations provided opportunities for interest groups to provide input regarding the agencies commitment to sustainable forestry and identified the concerns of their stakeholders.

Most of the NFS study coordinators believed the certification programs impose requirements that help determine whether a forest is meeting its management objectives and emphasize improving their management practices over time. Their feedback on *comprehensiveness, organization, efficiency, and transparency* of the audits suggested that:

- The auditors considered sufficient information (e.g., field observations, interviews with staff, review of planning documents) to understand the social, cultural and economic decisions affecting forest management.
- The field component of the certification evaluation visited a representative range of management activities.

- The evaluation process (e.g., timetables and responsibilities) was clear and understandable.
- Members of the audit team were of high caliber, had sufficient expertise in ecological, economic and social issues related to NFS management and were well respected in the forestry community.

One NFS study coordinator noted the audit teams could have made better use of Forest Service personnel time and indicated there was room for improvement to communicate more effectively. Another NFS study coordinator did not believe the audit team visited an appropriate number of sites to capture the actual impact of certain activities/issues. All but one of the NFS study coordinators agreed that the certification evaluation was broader in scope than most internal and external audits (including internal management and activity reviews, and reviews by other federal agencies). Most did not find the certification evaluation to get into as much specific program detail as the agency's internal and external reviews, which are typically focused on one aspect of the management system. At the same time they felt that certification is useful, and welcome, as a thorough and broad-based management review—and helps to illuminate how effective they are across all management objectives (*see* discussion below).

Most NFS study coordinators agreed that certification could enhance the credibility and acceptance of national forest management among the public while aiding in communication with key constituencies and partners. Not all coordinators agreed that certification could improve the quality of national forest management. One coordinator had reservations citing any differences between existing public policy and current certification standards could potentially complicate the debate surrounding the appropriate management of the NFS. At least two coordinators believed that certification would create unwelcome additional work for forest staff.

3.4.2 NFS Staff Experiences: NFS Interview Results

The geographic representation of the case study national forests provided an ideal backdrop to test certification in different NFS settings. Each participating forest faces similar agency-wide challenges (e.g., lack of adequate funding, appeals and litigation, etc.) and is also surrounded with their own ecological and socioeconomic issues. The phone interviews were intended to more fully explore the experience of each forest with the certification evaluations.

Staff involvement. The preliminary site review involved the NFS certification study coordinator along with other staff, typically from the supervisor's office. Participation of specialists on each national forest was mostly limited to the full evaluation, and often included wildlife biologists, botanists, hydrologists, recreation planners, archaeologists, geologists, ecologists, foresters, natural resource planners, silviculturalists, fire management officers, soil scientists, forest engineers and others. While certification evaluations provided NFS staff an opportunity to paint the broad, integrated picture of national forest management, NFS study coordinators suggested many would not be needed for the full period of an audit. The coordinators suggested that three or four key staff (e.g., forest silviculturalist, forest wildlife program manager, forest ecologist, timber sale administrator) are the core NFS team members needed to lead an efficient, cost-effective certification audit. Other specialists should be available as needed for particular project reviews.

In all cases there was some tension between the auditors and the forest staff, on site selection and itinerary—the auditors wanting to preserve some flexibility to let the field evaluation evolve

based on the findings, and the staff needing to lock down schedules to have the right personnel present when needed. A well-organized audit, developed over a longer time-period, would make full and effective use of limited forest staff and auditor time.

Preparation of NFS Staff. The amount of time and level of effort dedicated by each forest to take part in these studies varied to some degree. More preparation enhanced the degree to which the auditors could focus on the performance of the management system, as well as the ability of the staff to challenge the auditors to clarify their findings while on the forest. NFS study coordinators suggested that commissioning an external or internal team to help prepare for the audit would help make efficient use of resources. These entities could provide certification training to NFS staff and help them understand the extent to which the agency's overarching directives align with the standard(s).

The process could also be aided by creating tools that would help the agencies undergo a certification audit. Suggested examples included: a reference tool crosswalking key documents with the standards, which is made available on a website, intranet, or CD, and guidance on questions auditors may have regarding conformance to the standard(s). This up-front preparation could result in cost-savings by potentially reducing the number of field staff required to both plan and participate in the certification audit. Further, the up-front preparation (e.g., six months in-advance of pre-evaluation) could help identify any needed improvements and allow time to adjust management accordingly before the full evaluation.

Preparation of Certifying Bodies. The agency's complex planning process, as evidenced by the library of planning documents and its extensive directive system, can make it difficult for audit teams to track conformance to the standard. In some instances, auditors found themselves searching through numerous documents without knowing exactly if they are looking in the right place. Several of the auditors felt that to some extent this is necessary, and in fact helpful to ensure that they are looking objectively at the management system. However, at times it can be inefficient. To mitigate this problem, NFS study coordinators proposed *providing training opportunities for audit managers and lead auditors on the NFS planning process and management systems*. Coordinators believed audits could be conducted more efficiently if auditors are familiar with NFS management systems and review planning documents—including crosswalks between NFS units and applied certification standards—prior to the field evaluation. Trained auditors will spend less time during the audit trying to understand the planning process and will be better positioned to ask rigorous questions of forest staff. Similarly, *a primer on NFS policy and planning developed with the needs of auditors in mind*, could serve the same purpose.

Adequacy of Evidence. The participating national forests oversee management on anywhere between 500,000 acres (LFSU and ANF) to over 1.5 million acres (CNNF) of forests and grasslands. On such extensive land ownerships, auditors base their findings on a sample of sites which represent the types of management activities occurring across the forest. In addition, auditors often rely on stakeholder and public consultation to help identify potential issues that may require additional fact-finding during the field assessment.

While most coordinators agree that the full certification evaluations were comprehensive, some expressed concern about their depth of investigation into certain management activities. Coordinators had doubts that the few number of sampled field sites dedicated to cultural heritage protection and OHV use could accurately depict the management activities occurring on the forest. Coordinators questioned whether observed impacts (e.g., ORV damage limited to a few

acres, residual damage from harvest operations) at one or two field stops are reliable symptoms of a broken management system leading to non-conformances on a forest containing a half-million acres or more. One coordinator also expressed the line was unclear as to the forest having to demonstrate conformance to the standard versus the auditors making conclusions on their own.

Stakeholder comments provide auditors with insight into potential gaps between an applicant's management system and the certification standard. In one instance, the NFS study coordinator questioned the extent to which stakeholder comments could lead to non-conformances without audit teams first confirming—through on-the-ground verification—that they are not a systemic problem. Coordinators also underscored the importance of identifying stakeholder concerns during the initial phases of the evaluation, using the information to guide the audit teams to potential issues occurring on the forest and demonstrating the forest's response to the concern.

Potential value of certification to NFS. Many forest staff indicated that certification can be a valuable tool. For instance, many coordinators suggested certification evaluations provided useful training opportunities for forest staff as audit teams often pressed forest specialists (e.g., silviculturalists) to think critically about their management rationale (e.g., silvicultural prescriptions) and how it fits within the broader picture of management on the forest. Most agency participants found the evaluations to be a comprehensive review, which looked at the many integrated management activities occurring on the forest. NFS study coordinators suggested that differences between the agency's internal audits focusing on a particular management function (e.g., timber sale program), and the more holistic integrated certification review was complementary, and could help identify potential issues needing consideration during their forest plan revision process.

The Forest Service has apparently de-emphasized regular program-wide management reviews, and for this reason coordinators felt that the certification evaluations were especially insightful. To this end, they were impressed with the wide range of issues addressed by the FSC evaluation. They reported that the evaluations were transparent, provided positive, independent review of their management activities, and identified those areas where improvements were needed. In many cases, these needed improvements were well known to forest staff but would not be addressed unless additional funding and/or staff resources were available. Participating staff also recognized the value of third-parties communicating publicly on the successes and difficulties of national forest management—especially difficulties arising from factors they feel are “beyond their control.”

The ability of forests to address identified non-conformances. NFS study coordinators were unsure how their management units might address CARs given the long-term planning process within the agency and the lengthy political process required to make policy adjustments. Additionally, the level of funding for harvest and management activities is subject to Congressional appropriations and not local or agency management discretion. They felt that there is little NFS units can do to address issues for which budgets are a driving factor (e.g., staffing requirements, the backlog of deferred road maintenance, etc.). In most instances during the certification evaluation, however, the audit teams crafted CARs that recognized the way the agency allocates funds and how the forests can innovate to accomplish more with less (e.g. utilizing Stewardship Contracting authorities).

NFS study coordinators identified CARs which would be difficult or impossible to address and would likely require fixes that are partially or fully orchestrated by the WO. These would likely include:

- *Identification of High Conservation Value Forests (HCVFs).* Coordinators believed their NFS unit processes to identify HCVFs went beyond that called for in the FSC standard. The WO would need to adopt a policy that satisfies the criteria found in Principle 9 of the FSC standard.
- *Conservation of late successional/ old-growth (LSOG) forests.* Coordinators believed the requirement to maintain, enhance, and restore LSOG—separate from their current management guidance—would entail a WO policy decision to meet the intent of the appropriate FSC regional standard.
- *Use of FSC restricted pesticides.* All coordinators indicated they have chemicals approved for use , which are currently banned under an international FSC policy issued this year.⁸

3.4.3 Auditor Experiences

This is the first time NFS management has been evaluated with reference to FSC and SFI standards. The five “dual” certification evaluations were performed by six different auditing firms and were structured to simulate the full protocols of both the FSC and SFI programs while recognizing award of certification was *not* a possible outcome. Lead auditors shared their experiences with the dual assessments that were conducted on the five case study national forests and provided insight into numerous components of the NFS certification evaluations.

NFS staff involvement during pre-evaluation. The SFI and FSC lead auditors typically involved select NFS staff from the supervisor’s and district offices during the pre-evaluation or scoping visit. For a productive scoping visit, lead auditors suggested participating NFS staff should have a general understanding of certification, be able to convey how the NFS planning system works and demonstrate how it aligns with the certification program standards. Lead auditors also emphasized the importance of having organization-wide support for participation in certification. Forest-level staff would need endorsement from the Regional and Washington offices that certification—if it were requested and made available to the agency—is a priority and a worthwhile pursuit. Having RO staff and Forest Supervisor participation during the scoping visit can help provide this support.

Time requirements of pre-evaluation. The scoping visits required between two and three days to complete with a majority of time spent reviewing documents and holding discussions with NFS staff in each participating forest’s SO. While most lead auditors indicated this was sufficient time to complete the scoping visit, two indicated a preference for 25 to 35 percent more auditor days which could be accomplished by having an additional auditor participate or extending the time onsite. One auditor suggested it would be valuable to include an additional day during the scoping visit dedicated to an orientation on certification provided to NFS staff. All lead auditors

⁸ Such chemicals are most often used only for the control of invasive exotic weeds. The NFF also use FSC banned chemicals in longleaf pine restoration (site prep). MHNH also uses FSC banned chemical to control pocket gopher populations.

agreed that any NFS unit would need more time—anywhere between two and six months—following the scoping visit to prepare for the full field evaluation.

Collection and review of planning documents, systems and procedures. The operational and planning documents (e.g., FSH, FSM, management plans, plan amendments, etc.) providing direction to each participating national forest are voluminous. In many cases, lead auditors commented that the NFS certification evaluations were extremely complex—more so than any certification audit they had previously participated in. To better navigate the large collection of evidence, lead auditors requested NFS certification study coordinators compile documents relevant to each standard in an evidence binder. The extent to which this was accomplished varied on each of the five national forests. For instance, staff on the NFF provided documents to auditors onsite and upon request during the scoping visit. Staff on the ANF mailed auditors hard copies of documents in advance of the evaluation. While certification programs do not require applicants to compile this information, lead auditors agreed that access to a website served as an excellent central repository for referencing the FSC and SFI standards with the planning guidance on the NFS unit. Lead auditors also suggested that preparing annotated reference tables—similar to those provided on the website developed by LFSU—would be a useful exercise for a national forest preparing for a certification audit by better acquainting NFS staff with the standards.⁹ Lead auditors suggested that a template could be provided by the Forest Service WO or Regional Offices and completed for a national forest by an internal or external team.

NFS staff involvement in field evaluation. Lead auditors' opinions varied regarding necessary NFS staff participation during the field evaluation. Most agreed that Regional Office (RO) and especially Forest Supervisor attendance during the scoping visit and close-out meeting would be helpful to communicate support to forest staff during their preparation for and participation in the certification evaluation. Leadership participation during the field evaluation, however, was unnecessary and sometimes undesirable as it can hinder forest staff from speaking freely to auditors. At a minimum, lead auditors suggested that those accountable for management decisions (e.g., specialists from the SO) and key district staff responsible for on-the-ground performance were necessary for the field evaluation. Some lead auditors indicated that having too many staff during site visits reduced auditor flexibility and made it difficult to engage all participants during the field evaluation's compressed time-frame. Others suggested there are few circumstances where too many staff would be problematic. These lead auditors suggested that strategies exist to manage large numbers of participants and ensure all are engaged during the field evaluation.

Auditability of standards in the context of NFS management. Lead auditors were asked to comment on whether the FSC or SFI standard contained elements which did not apply to NFS management processes or were difficult to render judgment against during the evaluation. Outside each program's technical requirements (e.g., written commitments to each certification program, formal reporting, etc.), lead auditors provided feedback regarding the auditability of the standards including:

- ORV management and OGM development are not well-addressed by FSC regional standards. One lead auditor indicated that the agency would still be expected to take the

⁹ The LFSU website is at: <http://www.fs.fed.us/r6/frewin/projects/cert/>

necessary actions needed to mitigate impacts on the forest resource from ORV use and OGM development even though these are not specifically addressed in the FSC standard.

- Identification and maintenance of *old-growth* is defined differently between the FSC regional standards and the participating national forests.
- FSC requirements for meeting *harvest goals* and *timber quality* are not well-defined.
- *Research* is addressed in the SFI standard, but not in the FSC standard, but it is not defined how research conducted by other arms of a federal agency may qualify in meeting the standards.
- Requirements for *recreation management* are not well-developed in either standard.
- Applying SFI's *outreach component* (i.e., Objective 12) was made difficult given the agency has an entirely separate branch (i.e., State and Private Forestry) that engages in these activities.
- SFI's standard does not recognize that *roads* on NFS units were built with revenue generated during a time when the agency's timber program was more active. Time is beginning to take its toll on road conditions while less money is available for their maintenance.
- The agency's *monitoring protocols* and *stakeholder consultation* go beyond the requirements in both standards.

SFI lead auditors indicated that applying the indicators to the agency's management processes was difficult at times causing confusion for auditors and NFS staff alike. While not recommending a comprehensive overhaul of the standard, SFI lead auditors suggested the indicators would need to be revised to more easily interpret the standard as they relate to NFS management.

Time requirements for field visit. The field evaluation often lasted between four and five days and was largely driven by the size of the participating national forest and the driving times needed to visit field units. Many lead auditors suggested the NFS field evaluations could benefit from an expanded timeline to visit additional sites. Only one lead auditor indicated the field evaluation could have been completed with one-quarter to one-third the number of person days on site. Some suggested a full field evaluation agenda may include visiting field operations over the course of a business week (i.e., Monday to Friday), audit team deliberations during the weekend and a close-out meeting at the start of the following business week. Auditors expressed concern that the competitive bidding process often results in shorter field evaluations with a limited number of audit team members.

Ability of NFS units to address potential CARs. Lead auditors were asked to comment on whether addressing CARs would present a challenge to national forests given: (1) the funding levels for management activities are subject to Congressional appropriations and not local or agency management discretion and (2) the long-term planning process within the agency and the lengthy political process required to make policy adjustments. Lead auditors struggled to identify a standard protocol for managing these two considerations during certification evaluations on NFS lands, but did offer some insight.

SFI is a newer standard with little precedence guiding how to address these two issues. FSC, however, has a longer history certifying other public lands subject to similar constraints. In either

case, lead auditors indicated that any assessment's role is to hold the applicant's current management regime and any shortfalls (e.g., forest health and OGM development issues) accountable to the standard. Where gaps exist, the certification programs grant certifying bodies the flexibility to write CARs—rather than remedies—that are attainable by the applicant. Lead auditors would expect any NFS unit to develop and deliver on a definitive process to address identified CARs in a timely manner.

Dual assessments on NFS units. The SFI and FSC certification evaluations were conducted concurrently with a single, merged audit team. Lead auditors identified only a few areas where the process could be streamlined. For instance, one lead auditor indicated the challenge of completing a crosswalk that covers both standards. This confirmed the need for auditors to provide clear direction to NFS staff regarding their document needs. The same lead auditor emphasized that an efficient dual assessment would include auditors who have experience interpreting both standards or a balance of auditors familiar with FSC or SFI. As a whole, however, the lead auditors found the 'dual assessment' worked very well on the five participating national forests and did not believe NFS staff could distinguish which standard was being referenced given that the requirements are relatively similar for many issues. Lead auditors believed the dual assessments resulted in a broader, more robust evaluation.

Composition of audit team. The certification evaluations were guided by the SFI and FSC lead auditors with participation from an additional two to four specialists. The number and expertise found on audit teams is driven by the size of the forest and the competitive bidding process. Almost all lead auditors emphasized that having an auditor with social science expertise is critical during NFS certification evaluations. Other key specialists included forest ecologists, wildlife biologists, and silviculturalists. In addition, one auditor noted the importance of having local specialists on the team to better understand and interpret issues specific to the region.

Training requirements for auditors. NFS study coordinators suggested that at least one of the audit team members ought to have some familiarity with the agency's planning processes in advance of the certification evaluation. Lead auditors did not agree among themselves whether this was necessary to navigate the detailed planning processes or to ask rigorous questions of forest staff. While some lead auditors indicated advanced training was an excellent idea that may reduce confusion, others suggested knowing less up-front may be advantageous by offering an outside perspective. Those auditors who were unfamiliar with the agency's complex management systems did not believe it affected the quality or findings of the evaluation and indicated their training would ultimately drive up costs. Well-trained auditors should have the ability to press any applicant to think critically about their entire management planning process.

3.4.4 NFS comments on evaluation findings

The participating national forests contain complex management systems that required auditors to review significant amounts of information prior to rendering judgment to the standard. Many lead auditors readily admit their understanding of the national forest operations needed continual clarification throughout the entire certification evaluation. Clarification was especially important during the NFS staff review of the draft report findings. In instances where uncertainties were not addressed during field visits, lead auditors found it extremely useful when NFS staff provided thoughtful comments identifying where and why they disagree with report findings. While the ultimate decision rests with the auditor's professional judgment, the opportunity to

comment should be taken seriously as it often influenced the final conformance findings (e.g., changes in minor gaps to observations) and frequently identified technical inaccuracies within the report.

4.0 CONCLUSION

4.1 Areas of Commendation

The case study national forests addressed the majority of the FSC and SFI requirements of the standards used in this study. The complexity of the Forest Service planning process, the scope of the Forest Service mission, and the professionalism and expertise of NFS staff contributed to one of the most comprehensive reviews the auditors had conducted. During the course of their review, the auditors commended the case study national forests for meeting or exceeding the requirements of the FSC and SFI standards in many areas such as:

Forest Planning and In-field Implementation. Auditors praised the detailed planning processes and assessments employed on each forest, which incorporate research findings, analysis of historic and current forest conditions, other regional conservation planning efforts, and public opinion into their management activities.

Stakeholder Consultation. The way in which local communities and other affected stakeholders are apprised (e.g., presentations, email, websites, broadcast and print media, etc.) of upcoming forest management activities was described as “extensive” and “exemplary” by auditors. The NEPA process and the agency’s commitment to partnerships go beyond that required in both the SFI and FSC standards.

Communications with First Nations. The case study national forests establish clear nation-to-nation relationships with many tribal organizations. The proactive communications with local tribes has facilitated the protection and management of culturally significant sites.

Protection of Threatened and Endangered Species. Auditors suggested that the identification of rare species presence and sensitive habitat features and the establishment of conservation zones provide a model for the protection of threatened and endangered species. Auditors commended the process used by the case study forests to incorporate this information into all phases of management activities.

Control of Invasives and Exotics. The procedures to aggressively limit the introduction, impact and spread of invasive species was referred to as “outstanding” by some auditors during the certification evaluations. Public education programs, surveys for likely sites of occurrence, forest staff training in identification of exotics, prescribed burning and numerous other tactics provided auditors sufficient evidence that the case study national forests were actively controlling the spread of unwelcome species.

4.2 Areas of Non-Conformance

While the NFS units met or exceeded many of the requirements imposed by the SFI and FSC standards used for the study, certification under either certification scheme would require some changes, both in policy and management practices. While some needed improvements were

specific to only one management unit, others showed up consistently on several units. Major and minor non-conformances reported for more than one unit included:

Forest Health Issues Arising from Insufficient Silvicultural Treatments. Consistent delays or backlogs in meeting stated harvest objectives led auditors to find most case study forests falling short of their stated economic, ecological, and social goals. FSC and SFI auditors suggested the backlog in harvest treatments and persistent lack of funding has exposed the case study national forests to increased risk of disease, insect outbreaks, stand-replacing wildfires while—in some cases—being unable to provide key habitat features for certain endangered species.

Old-growth protection and management issues. All five case study national forests addressed or exceeded the old-growth requirements under the SFI standard. The FSC regional standards addressing identification of, and/or entry into, old-growth forests posed conformance issues for some participating NFS units (e.g., MHNF, CNNF). For instance, existing policies allowing for harvest of old growth timber in the matrix land allocations of the Northwest Forest Plan (NWFP) is in breach of the existing FSC Pacific Coast Regional Standard.

The backlog of road maintenance and decommissioning. The road maintenance backlog is noted as a potential problem under both SFI and FSC. On all units except the NFF there are either some or, in other cases, numerous inadequately maintained roads, many of which are no longer needed for land management.

Monitoring of non-timber forest products. The certification evaluations determined that the management of NTFPs on each case study national forest aligned with the requirements of the SFI standard. FSC auditors, however, found needed improvements in NTFP permitting and monitoring of removals (all units except NFF).

Monitoring compliance with contractor worker safety requirements and training. The NFS outlines all USFS regulations and BMPs in all timber sale contracts. This fell short of both standards' requirements as FSC and SFI auditors on all five certification evaluations failed to identify any evidence of a mechanism for evaluating and ensuring contractor training and education.

4.3 Policy Changes Required to Address Non-Conformances

A number of non-conformances and their supporting CARs arise only because the national forests are not actually seeking certification at this time and so are essentially not applicable in the context of these studies. These “technical gaps” include requirements such as statements of commitment to the programs, formal reporting to FSC and SFI, and related issues.

The FSC Federal Lands Policy establishes three criteria to be met before any new federal land base such as the Forest Service could seek certification. In summary, the criteria include (in order) *stakeholder consensus*, *a willing landowner*, and the development of a *set of standards* specific to each new federal ownership type (e.g., Forest Service, Bureau of Land Management, etc.). Because the Forest Service has not determined whether it will seek certification, FSC has not yet determined how and when they will address these criteria for the Forest Service. A landowner seeking SFI certification must formally commit to reporting and management measures specific to the SFI Program. How and whether the Forest Service could make these commitments would also need to be determined.

Corrective Action Requests addressing gaps between national forest management activities and the standards and requirements of the certification programs—in many cases—may be unattainable without fixes that are partially or fully addressed by the agency’s Washington Office. Potential policy changes to address the auditors’ suggested improvements include:

- 1) Develop viable strategies to substantially improve the condition of overstocked stands and secure the financial resources necessary to meet desired forest conditions.
- 2) Develop a strategy for reconciling the differences that may exist between NFS old growth protection and maintenance policies and the appropriate FSC regional standard.
- 3) Complete forest road analysis to determine necessary transportation networks essential for management needs while identifying surplus roads ready for decommissioning. Additionally, the NFS units would need to pursue strategies to maintain the road system needed to accomplish management activities.
- 4) Develop protocols to manage and monitor abundance, regeneration, habitat conditions and yield of NTFPs.
- 5) Require contractors to participate in training or certified logger programs to ensure harvesting operations are completed safely and with the requisite skill levels.

Independent, third party certification is one of the most significant developments in the field of forest management in the last two decades. Its use has expanded dramatically as the public and consumers have increased their interest in practical ways to ensure good management practices are being properly applied to both domestic and international forests. In the U.S. millions of acres of private and public (primarily state-managed) forests have been certified over the last decade. Most public forests have been jointly certified to both SFI and FSC standards.

Certifying national forests has been debated for several years. It is a sensitive and complex issue—perhaps more so for the National Forest System (NFS) than any other type of ownership in the U.S. NFS planning is exceedingly complex and management practices and objectives are closely scrutinized by both the public and U.S. Courts. The Forest Service is seeking to understand the value and implications of certification. This study will provide the Forest Service a better understanding of how national forest management practices align with SFI and FSC standards. We encourage the Forest Service, and any outside parties interested in the management of national forest, to use this information and engage in an active dialogue on whether formal certification should be a next step for the agency.