FSC Regional Forest Certification Standard for the Mississippi River Alluvial Valley and Gulf Coastal Plain (MAV Region)

June 1, 2005

V3.3

This standard was originally developed by the Mississippi Regional Working Group and was later revised by FSC-U.S. (FSC-U.S. National Initiative) using input solicited from regional experts. It is presented to the Forest Stewardship Council (FSC) for approval as the regional standard for the Mississippi Alluvial Valley (MAV) and Gulf Coastal Plain region.

The standard in this document is based on the FSC-U.S. National Indicators, as modified to address regional ecological, social, and economic conditions. After approval by the FSC- U.S. Board and accreditation by the FSC Secretariat, the MAV standard must be considered by FSC-accredited certification bodies conducting assessments within the southwest region.

Coordinator

The MAV Regional Working Group was coordinated originally by Dr. Nick Brown, a private contractor. Dr. Brown resigned this post in 2000, and in lieu of nominating a coordinator from the region, Bill Wilkinson, FSC-U.S. Senior Forester, took over coordination and completion of the final standard.

The original draft standard was developed by a regional working group (WG) recruited by FSC-U.S., that met and collaborated between July 1997 and May 1999. In 1999 FSC-U.S. shifted its headquarters from Vermont to Washington, D.C., and the Board at that time made several changes to the regional standards development process. In order to harmonize the regional standards (as per FSC protocol) the Board appointed a national committee of experts, the FSC-U.S. Standards Committee (SC). The SC employed its technical expertise and a synthesis of the nine extant draft regional standards to develop a set of National Indicators that were used as a baseline for regional standards. The SC was directed to review all the regional standards and to work interactively with regional working groups to develop harmonized draft standards. The Board prioritized the nine (lower-48-state) regions for standards completion, based on the interest in certification and the acreage already certified (under the certifying bodies' interim standards) in each region.

Because there was little certification activity in the MAV Region at the time, it was ranked low on the priority list. For this reason, and the fact that the original WG had completed its task of developing a draft standard (which was not the case in some higher-priority regions), no action was taken to bring the MAV draft standard into harmony with other regional standards until the spring of 2002. By that time the MAV working group had disbanded. By that time as well the U.S. Board had decided no longer to reconstitute regional working groups and have its SC work iteratively with them to develop consensus language for regional standards, as was the case with most other regions. In lieu of the iterative process, FSC-U.S. Staff contacted several members of the original working group and asked them to comment on a new draft MAV standard that had been developed by a drafting subcommittee of the SC. That input was received by mid-summer of 2002 and has been incorporated into this standard.

FSC US Federal Lands Policy

For information on the certification of federal lands and the applicability of these standards in that context see FSC-US federal lands certification policy at FSCUS.ORG, and the Applicability Note at the beginning of the standard.

Current Host Organization

The Forest Stewardship Council-U.S.
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Note: The individuals and organizations listed below participated in the development of this document, but do not necessarily endorse its current content.

Original Host Organization

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Original Coordinator: Nick Brown, PhD
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Original Working Group Members

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Tim Campbell, Social Chamber
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Current Standard Development Participants:

John Hodges, Consultant

Norman Davis, Forest Manager, Anderson-Tully Land Co.

Mike Staten, Wildlife Biologist, Anderson-Tully Land Co.

Greg Blomstrom, Forest Analyst, FSC-U.S.

Bill Wilkinson, Senior Forester, FSC-U.S.

Ben Addlestone, Forester, FSC-U.S.

Nick Brown, Conservation Program Director, World Wildlife Fund

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Working Group Meeting Locations and Dates

July 7, 1997
Anderson-Tully Corporation offices, Vicksburg, Mississippi

October 7-8, 1997
Society of American Foresters Annual meeting, Memphis, Tennessee

March 14 - 15, 1998, Louisiana Tech University
Ruston, Louisiana

July 30 - 31, 1998, Holiday Inn
Ruston, Louisiana

October 21, 1998, Louisiana Tech University
Ruston, Louisiana

FSC-US Standards Committee Drafting Committee- Arcata, CA April 2-4, 2002

FSC-US Standards Committee Drafting Committee- Arcata, CA September 20, 2002

FSC-US Standards Committee- Minneapolis, MN December 10-12, 2002

Draft Standard Revision Process

In April, 2002, the MAV Standard draft was reworked, as a rough draft "harmonization" with the National Indicators, by the SC drafting subcommittee. This draft was sent to regional experts (some past members of the MAV working group) for their review and comment. Substantial comments were received from John Hodges, forestry consultant, on 4/22/02. Comments were received from Anderson Tully Co. (Norman Davis and Mike Staten) on 7/9/02. A professor of forestry from a major university within the region submitted comments on the entire draft standard on 8/1/02, but at his request his name is not being made public.

Public Comment Process

Public comments on the MAV standard were solicited via phone calls and mailings to stakeholders as well as announcements in the FSC newsletter (e.g. mid-November newsletter) and via the FSC website. The public comment period ran from October 8, 2002 to December 6, 2002. Only one person submitted comments (Steve Grado, 11/25/02), however this commenter submitted substantial comments on virtually every section, and his comments were considered during the final SC review.

Field Test

A field test of the original draft MAV Standard was conducted in May, 2000, by SmartWood, in conjunction with their assessment of Anderson Tully Land Company. The results of the field test were considered during revisions to the standard.

Biogeographical Context

The Mississippi Alluvial Valley region includes the 219-county region that was defined by the Lower Mississippi Delta Development Commission, as well as the western Gulf Coastal plain region of Louisiana, Arkansas, and east Texas.

A bioregional approach was used to demarcate the region's limits. The region includes the Mississippi River alluvial valley (mostly a bottomland hardwood ecosystem) and the western Gulf coastal plain (mostly loblolly pine and slash pine production, with a significant plantation component). Therefore, WG members were recruited from Mississippi, Arkansas, Louisiana, Tennessee, and Texas.

Bottomland hardwood forests of the region range from the Obion-Forked Deer River and Hatchie River basins in Tennessee and the Yazoo River basin in Mississippi on the eastern side of the region to the Big Thicket in east Texas on the western side.

The upland coastal plain pine and pine-hardwood forests of the Gulf western coastal plain are a major source of pulp, paper, and timber products. Over 10% of those forests are plantations, and are managed in relatively short, intensive rotations. The region is bordered on the north by the Ouachita Mountains and by the Great Plains.

Two hundred years ago, 20 million acres of the Mississippi Alluvial Valley was forested; but today only about 4.5 million acres remains in forest, most of it in bottomland hardwood stands. The working group encourages reforestation of marginal farmlands in the Mississippi River valley, to achieve goals of ecological restoration and to improve the economic viability of land management in the region.

Much of the western Gulf coastal plain is managed under relatively intensive timber plantations. These plantations play an important role in providing fiber and wood products for local, regional and global markets, and reduce pressures on the remaining natural forests of the area. The regional working group encourages sound stewardship of these forests, as required under Principle 10.

Small landholdings dominate ownership patterns in both the delta and the coastal plain. Timber production is important to the economy of the delta, and it is central to the economy of the coastal plain. Because of this, maintenance of the economic viability of timber production in these forests is critical to the continued viability of the region's forest-based communities.

The regional working group believes that forest certification—like other conservation incentive programs, such as the Tree Farm Program, WRP, and CRP—is only one of many tools that land managers can use to achieve and promote comprehensive and long-term sustainable management of regional forestlands. WG members sought to develop a program that is flexible for landowners, and which is adequately detailed to assure consumers and environmental interests that there is substance behind the FSC label. The FSC and its accredited certifiers have developed means of facilitating participation by small landowners (group certification, land manager certification) that do not appear in these proposed standards, because they are administrative procedures of the FSC rather than standards mechanisms. Please contact the Forest Stewardship Council A.C. headquarters in Oaxaca, Mexico (info@fscoax.org) or the FSC- US Initiative in Washington, DC (bwilkinson@foreststewardship.org) for more information on group certification and related issues.

FSC Regional Forest Certification Standard for the Mississippi River Alluvial Valley and Gulf Coastal Plain (MAV Region)

Applicability Note Regarding Certification of Federal Lands. The process for certifying federal lands must comply with the FSC-US Board approved Federal Lands Policy and Federal Lands Findings, both of which are available at www.fscus.org. Certifiers should consult the Policy and Findings to determine whether there are FSC-US approved indicators specific to the type of federal property being assessed, in which case these indicators shall be used in addition to those in the regional standard.

Applicability Note: This standard neither abridges nor compromises the legal rights of landowners, beyond the voluntarily accepted constraints that are explicitly stated herein.

PRINCIPLE 1. COMPLIANCE WITH LAWS AND FSC PRINCIPLES

Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.

1.1. Forest management shall respect all national and local laws and administrative requirements.

1.1.a. The forest owners or managers demonstrate that all relevant national, state, tribal, case law, local laws, regulations, and ordinances are being followed**.**

1.1.b. Forestry operations meet or exceed the current state forest practice regulations, best -management practices for forestry, and any other governmental protective measures for water quality that exist within the state(s) or other appropriate jurisdiction(s) in which the operations occur.

1.1.c. Forest owners or managers share public information, provide open records, and conduct procedures for public participation as required by law.

1.2. All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.

1.2.a. Forest owners or managers demonstrate that taxes are paid, in a timely manner, on forest lands and timber, in accordance with federal**,** state, and local tax laws.

1.3. In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.

1.3.a. Forest owners or managers have a track record of compliance with relevant treaties and other international agreements approved by the U.S. government, including treaties with American Indian tribes.

1.3.b Forest owners or managers comply with ILO Labor Conventions impacting forest operations and practices and the ILO Code of Practice on Safety and Health in Forestry Work.

1.4. Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and by the involved or affected parties.

Applicability note to Criterion 1.4: When the certifier (i.e., the FSC-accredited certification body) and the forest owner or manager determine that compliance with laws and the FSC Principles cannot be simultaneously achieved, the matter is referred to FSC.

1.5. Forest management areas should be protected from illegal harvesting, settlement and other unauthorized activities.

1.5.a. When conducting on-the-ground management activities, the landowner or manager makes note of any observed unauthorized and/or illegal activities, such as theft, poaching, and dumping.

1.5.b. If such activities are observed, adequate preventative measures are taken.

For example, efforts may include notifying stakeholders, posting boundary notices, using gates, making periodic inspections, and reporting suspected illegal or unauthorized activities to the proper authorities

1.5.c. If illegal activities continue to occur, the forest owner or manager makes every legal effort to stop the illegal activities through the proper law enforcement agency.

1.6. Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.

Applicability note: This criterion is guided by FSC Policy and Guidelines: Partial Certification for Large Ownerships (BM19.24), May 2000.

1.6.a. A written document clearly and succinctly states the forest owner's or manager's endorsement of the Principles, Criteria, indicators, and verifiers contained therein.

PRINCIPLE 2. TENURE AND USE RIGHTS AND RESPONSIBILITIES
Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.

2.1. Clear evidence of long-term forest use rights to the land (e.g. land title, customary rights, or lease agreements) shall be demonstrated.

2.1.a. Forest owners or managers provide evidence of legal and customary rights associated with the forest. These rights include both those held by the party seeking certification and those held by other parties.

2.1.b. Land boundaries are clearly identified on the ground by the forest owner or manager prior to commencement of management activities.

2.2. Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.

2.2.a. Customary uses of the forest that are well established and lawful are sustained and encouraged to the extent that they are consistent with the protection of the overall resource. When necessary to assure the safety of the public or to address forest owner or manager liability, some activities may be limited or precluded.

For example:

- *Footpaths, hiking trails, and bridleways are maintained.*
- *Hunting, fishing, hiking, wildlife observation, and other outdoor activities appropriate to the forest environment are permitted when consistent with overall management objectives.*

2.2.b. On ownerships where customary use rights and traditional and cultural areas/sites exist, forest owners or managers consult with concerned groups in the planning and implementation of forest management activities.

2.3. Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.

2.3.a. Existing local, state, and federal laws are employed to resolve land tenure claims.

2.3.b. The forest owner or manager maintains relations with community stakeholders to identify disputes in their early stages. If disputes arise, the forest owner or manager initially attempts to resolve them through open communication, negotiation, and/or mediation. If negotiation fails, federal, state, local, and/or tribal laws are employed to resolve land tenure (see Glossary) claims.

2.3.c. The forest owner or manager documents and provides information regarding unresolved and ongoing disputes over tenure and use rights to the certifying body.

PRINCIPLE 3. INDIGENOUS PEOPLES' RIGHTS

The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.

Applicability Note: The terms "tribes," "tribal," or "American Indian groups," used 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, or other designations.

3.1. Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies.

3.1.a. Forest management planning on tribal lands includes a process for input by tribal members.

3.1.b. Tribal forest management planning and implementation is carried out by authorized tribal representatives through clearly established legal delegation of authority in accordance with tribal laws and customs.

3.1.c. When requested to do so by the tribal landowner, the manager of tribal lands utilizes tribal experience, knowledge, practices, and insights in forest management planning and operations.

3.2. Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.

3.2.a. Forest owners or managers identify and contact American Indian groups that have current legal or customary rights of use in the management area and invite their participation in jointly planning forestry operations that affect their resources.

3.2.b. On lands adjacent to tribal lands or falling within watersheds that affect tribal lands, steps are taken to ensure that forest management does not negatively impact affected tribal resources.

3.3. Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.

3.3.a. Forest owners or managers request the participation of tribal representatives in the identification of sites of current or traditional significance within the property proposed for certification.

For example, areas of special significance may include:

- *ceremonial, burial, or village sites*
- *areas used for hunting, fishing, or trapping*
- *current gathering areas for culturally important or ceremonial materials such as basket materials, medicinal plants, or plant materials used in dances*
- *current gathering areas for subsistence uses such as mushrooms, berries, acorns, etc.*

3.3.b. Forest owners or managers develop measures to protect or enhance areas of special significance, in collaboration with tribal representatives.

3.3.c. Significant archeological sites, and sites of cultural, historical, or community significance, as identified through consultation with tribal officials, state or tribal archeological offices, universities, and local experts, are designated as special management zones or otherwise protected during harvest operations.

3.3.d Confidentiality of disclosures is maintained in keeping with applicable laws and the requirements of tribal representatives.

3.4. Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.

3.4.a. A written agreement is reached with individual American Indians and/or tribes prior to commercialization of their indigenous intellectual property, traditional knowledge, and/or forest resources. The individuals and/or tribes are fairly compensated when such commercialization takes place.

PRINCIPLE 4. COMMUNITY RELATIONS AND WORKER'S RIGHTS

Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.

4.1. The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.

4.1.a. Conditions of employment (e.g., remuneration, benefits, safety equipment, training, and workman's compensation) are equivalent for both local and non-local workers.

4.1.b The forest owner or manager engages qualified local foresters, loggers**,** and contractors.

4.1.c The forest manager and his or her contractors give preference to qualified and dependable local workers.

4.1.d. Goods and services are purchased, as available and affordable, from suppliers in the area of forest operations.

4.1.e. The forest owner, manager, and their employees are active members of the local and regional communities that surround the forest and participate in local economic development and civic activities.

> *For example, they are involved in local politics, support local community organizations, give purchasing preference to local goods and services, and, when possible, process forest products locally and make them available..*

4.1.e. Forest owners or managers contribute to public education and training about forestry practices.

> *For example:*
> - *The certified forest may be used as a training and/or educational resource for local people, in conjunction with schools, community colleges, and/or other providers of training and education.*
> - *Forest managers host field trips or research efforts from schools in the area.*
> - *Forest owners make financial and in-kind contributions to schools in the area*

4.1.f. Employee compensation and hiring practices meet or exceed the prevailing local norms for work that requires the equivalent education, skills, and experience.

4.1.g. Forest owners or managers provide and/or support training opportunities for workers to improve their skills.

4.2. Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.

4.2.a. The forest owner or manager and their contractors develop and implement safety programs and procedures that meet or exceed all applicable laws and regulations, and include:

- Well-maintained and safe machinery and equipment
- Use of safety equipment appropriate to each task
- Documentation and posting of safety procedures in the workplace
- Educational efforts (such as Forest Industry Safety Training Alliance and Game of Logging)
- Contracts with safety requirements
- Safety records, training reports, and certificates

4.3. The rights of workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labor Organization (ILO).

Applicability note: Compliance with this criterion can be accomplished with guidance from: FSC certification and the ILO conventions. FSC policy paper and guidelines. 20 May 2002.

4.3.a. Employers provide all rights afforded under the Federal Fair Labor Standards Act.

4.3.b. As described in ILO Convention #87, the forest owner, or manager, and his or her contractors develop effective and culturally sensitive mechanisms to resolve disputes between workers and management. Dispute resolution procedures are written and made available to employees.

Examples of culturally sensitive mechanisms are:

- *Translation and cultural interpretation, when needed for people to adequately understand one another*
- *Cross-cultural training, when needed to integrate the workforce*

4.3.c. As described in ILO Convention #98, forest workers are free to associate with other workers for the purpose of advocating for their own employment interests.

4.3.d. Forest work is packaged and offered in ways that create quality job opportunities for employees, as well as contractors and their workers.

For example, quality work can include the following attributes:

- *Employee and contractor relationships that are long term and stable*
- *A mixture of diverse tasks that require varying levels of skill*
- *Training opportunities in order for workers to improve their skills*
- *Opportunities for advancement*
- *A comprehensive package of benefits*
- *Opportunities for employee and contractor participation in decision-making*

4.3.e. The forest owner or manager engages contractors, subcontractors, and intermediaries who comply with state and federal labor laws regarding discrimination, wages, benefits, and other conditions of employment.

For example, contracts contain clauses specific to legal coverage and protection

4.4. Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups directly affected by management operations.

Applicability Note: People and groups directly affected by management operations may include: employees and contractors of the landowner, neighbors, fishers and hunters, recreationalists, local water users, and forest products processors.

4.4.a Forest owners or managers of large-scale operations provide opportunities for people and groups affected by management operations to provide input into management planning.

4.4.b People and groups affected by management operations are apprised of proposed forestry activities (e.g., logging, burning, spraying, and traffic) and associated environmental and aesthetic effects in order to solicit their comments or concerns. Significant concerns are addressed in management policies and plans.

4.4.c People and groups (e.g., universities, local experts, archaeologists) that may be aware of the potential for sites of cultural, historical, or community significance to be affected by management operations are contacted before the start of operations so that such sites may be designated as special management zones or otherwise protected during operations.

4.5. Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.

4.5.a. The forest owner or manager has developed and is following procedures that utilize open communication and negotiation to resolve grievances and mitigate potential damage from forest management activities, before legal action is initiated.

4.5.b. Forest owners or managers and their contractors have adequate liability insurance.

PRINCIPLE 5. BENEFITS FROM THE FOREST

Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

5.1. Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.

5.1.a. The landowner invests in forest regeneration, pest management, site improvements, and restoration, to assure continued forest productivity and health.

5.1.b. According to the scale and intensity of the operation, processing operations emphasize adding value to forest products.

5.1.c. The forest owner or manager is financially able to support long-term (i.e., decades rather than quarter-years or years) forest management, e.g., planning, inventory, resource monitoring and protection, post-harvest management activities.

5.1.d. Responses (for example, increases in harvests or debt load) to short-term financial factors, such as fluctuations in the market, requirements for cash flow, need for sawmill equipment and log supplies, are limited to levels that enable fulfillment of the management plan.

5.1.e. The forest owner or manager reinvests in the local economy and the community through both active civic engagement and ongoing capital investment.

For example:

- *Facilities and equipment are regularly maintained and updated.*
- *Out-of-area owners maintain a local office.*
- *The owner or manager supports local business development by working with organizations such as chambers of commerce.*

5.2. Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.

5.2.a. Timber is merchandized to maximize its economic value.

5.2.b. Preference is given to local, financially competitive, value-added processing and manufacturing facilities.

5.2.c. The technical and financial specifications of some sales of forest products are scaled to allow successful competition by local small businesses.

5.2.d. When non-timber products are harvested, the management and use of those products are incorporated into the management strategy.

5.2.e. Markets are explored and/or developed for common but less-used species, grades of lumber, or an expanded diversity of forest products.

5.3. Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.

5.3.a. Residual trees and other forest resources are protected during harvest.

> *For example, Residual trees are not damaged to the extent that health, growth, or value are noticeably affected.*

5.3.b. Accumulated logging debris is distributed over the site to enhance edaphic (see Glossary) conditions, except where debris piles would enhance wildlife habitat (i.e., black bear denning sites).

5.3.c. Felling, skidding/yarding, bucking, sorting, and handling are carried out in a way that maximizes log scale and grade.

5.3.d. After adequate woody debris has been left on site to provide nutrient cycling and habitat, additional byproducts of harvest and in-the-field milling operations are used as an input in other productive processes.

> *For example:*
> - *Chips and sawdust are used for mulch, filler, or fuel.*
> - *Small diameter boles are for used for fence posts, flooring, and furniture stock.*

5.4. Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.

5.4.a. When the use of non-timber forest products and services are beneficial or complementary to the forest owner's or manager's goals, they are included in the management plan.

> *For example, compatible uses may include recreation, ecotourism, hunting, fishing, and specialty products.*

5.5. Forest management operations shall recognize, maintain, and where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.

5.5.a. Forest management operations protect water quality, fish habitats, and riparian habitats (see also criterion 6.5).

5.6. The rate of harvest of forest products shall not exceed levels that can be permanently sustained.

5.6.a. Harvest levels are based on documented growth and regeneration data, site index models, intensity of management at the stand level, and consideration of disturbance regimes. The level of documentation to support the harvest calculation is determined by the scale and intensity of the operation.

For example:

- *Stocking rates, age-class and species distributions, and volumes conform to projections of the management plan.*
- *Empirical data verify that management plan projections are realistic.*

5.6.b. Once the age class (see Glossary) or diameter distribution commensurate with long-term sustainability is achieved, and harvest does not exceed growth over a period of no more than 10 years. Exceptions to this constraint may be granted to forest owners or managers whose periodic re-entry cycle is longer than 10 years. In such cases, allowable harvest is determined by examining the volume of re-growth and harvest since the previous harvest and the owner or manager's commitment to allow an equivalent amount of re-growth before additional harvests.

PRINCIPLE 6. ENVIRONMENTAL IMPACT

Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

Applicability Note: Small landowners that practice low intensity forestry may meet this requirement with brief, informal assessments. More extensive and detailed assessments (e.g., formal assessments by scientists) are expected by large landowners and/or those who practice more intensive forestry (see Glossary) management.

6.1. Assessment of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources -- and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.

6.1.a. Using credible scientific analyses (see Glossary), local expertise, relevant databases, and literature, an assessment of current conditions is completed that includes: (1) ecological processes, such as disturbance regimes; (2) vulnerable, imperiled, and critically imperiled communities; (3) common plants, animals, and their habitats; (4) endemic (see glossary), sensitive, threatened, and endangered species and their habitats; (5) water resources; and (6) soil resources. (see also 7.1.a and b)

6.1.b. Using credible scientific analyses and local expertise, the current ecological conditions are compared to the historical conditions within the landscape context, using the baseline factors identified in 6.1.a.

6.1.c. Prior to the commencement of management activities (e.g., harvest and processing activities, site preparation, chemical applications, and prescribed burns), potential short-term environmental impacts and their cumulative effects are assessed. Impacts to be considered may include damage to: stems of the residual stand, regeneration, understory integrity, wildlife habitat, water quality, and soils.

6.1.d. Using assessments of environmental impacts, management options and field prescriptions are developed and implemented that avoid and/or mitigate negative cumulative effects (see also 7.1.c). Written prescriptions are kept on file.

6.1.e. A summary of the assessment of environmental impacts is included in each sale prospectus.

6.1.f. Forest owners or managers communicate and cooperate with adjacent landowners in order to protect and/or enhance wildlife habitat, riparian zones, and connections among forested habitats.

6.2. Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas, dens). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate timber extraction, hunting, fishing, trapping and collecting shall be controlled.

6.2.a. If state or federal listings and species databases (such as Natural Heritage/NatureServe lists; as well as those listed as rare by state Native Plant Societies) indicate the likely presence of a endemic, sensitive, threatened, or endangered species, either a survey is conducted prior to management activities being carried out (to verify the species' presence or absence) or the forest owner or manager manages as though the species were present. If an endemic, sensitive, threatened, or endangered species or their habitat is determined to be present, its location is reported to the manager of the species database.

6.2.b. When an endemic, sensitive, threatened, or endangered species is present or assumed to be present the management plans include a strategy to protect and/or recover the species and their habitats, as well as other special environmental and ecological features (see section 7.1.g). Elements of such a strategy include:

- Maps indicating the location of such species.
- Evidence of communication and/or collaboration with relevant experts.
- Identification, mapping, and maintenance of fragile or unique areas.

6.2.c. Conservation zones for existing sensitive, rare, threatened, and endangered species and other protected areas are created and/or maintained to enhance the viability of populations and their habitats, including their connectivity within the landscape.

> *For example, the landowner participates in available programs that provide incentives to protect rare, threatened, and endangered species, such as Safe Harbor, and other state, federal, and private incentive-based programs.*

6.3. Ecological functions and values shall be maintained intact, enhanced, or restored, including:
a)Forest regeneration and succession.
b)Genetic, species, and ecosystem diversity.
c)Natural cycles that affect the productivity of the forest ecosystem.

APPLICABILITY TO OLD GROWTH:
Due to the scarcity of old-growth (see Glossary) forests in the Mississippi Alluvial Valley region, they are designated as High Conservation Value Forests (see Principle 9).

6.3.a. Forest regeneration and succession

6.3.a.1. Forest owners or managers use the following information to make decisions regarding forest regeneration and succession as related to management activities: (1) landscape patterns (e.g., land use/land cover, non-forest uses, habitat types); (2) ecological characteristics of adjacent forested stands (e.g., age, productivity, health); (3) species' requirements; and (4) frequency, distribution, and intensity of

natural disturbances.

Applicability Note: This indicator may have limited applicability for managers of small and mid-sized forest properties because of their limited ability to coordinate their activities with other owners within the landscape, or to significantly maintain and/or improve landscape-scale vegetative patterns.

6.3.a.2. Forest owners or managers maintain or restore portions of the forest to the range and distribution of age classes of trees that result from naturally occurring processes.

> *For example, commercially desirable species that are present at low frequency are managed to maintain or enhance their populations.*

Applicability Note: Almost all forest types in the Mississippi Alluvial Valley occur naturally in even-aged stands and can be managed most easily by even-aged silvicultural methods. However, with the exception of the very shade intolerant species, such as cottonwood and black willow, all species can be managed in uneven-aged stands, i.e., stands containing at least three age or cohort classes.

For most landowners, ease of management and economics may favor the use of even-aged silvicultural methods, but uneven-aged methods may be used to enhance species richness, biological diversity, landscape diversity, and habitat for some species. To assure the structure and functions provided by uneven-aged stands, canopy openings should be less than 3 acres in size.

For natural forest management using even-aged methods, retention of live trees within regeneration harvest units larger than 20 acres is required to provide a refugium for those species that would otherwise be lost. Clear cuts that are adjacent or nearly adjacent to each other are also required to contain retention elements. Retention elements may be comprised of a combination of clumped and dispersed trees that assures a viable habitat for target species while minimizing the susceptibility of the retained trees to windthrow.

Retention trees may include those left in riparian and streamside buffers and other special areas, those left in wildlife corridors, deferment trees left for 2-aged management purposes, as well as other trees selected in groups at random over the harvest area, with special consideration for selecting mast-bearing trees. The amount of retention should emulate typical natural disturbances (e.g., less than landscape scale) in the harvest area that permit establishment and development of regeneration of the next stand. For most stand types, retention is 20-30%. For stands dominated by shade-intolerant species, less retention is appropriate. The size of the regeneration harvest area that contains retention may vary depending on stand conditions, stand shape or layout, and operational considerations but maintaining landscape diversity is a major consideration. The average regeneration harvest area is no larger than 40 acres.

6.3.a.3. Silvicultural practices provide disturbances and generate stand conditions that result in a successional phase that would occur naturally on the site.

6.3.a.4. When even-aged management (see Glossary) is employed, live trees and native vegetation are retained and opening sizes are created within the harvest unit in a proportion, configuration, that are consistent with the characteristic natural disturbance regime in each community type (see Glossary), unless retention at a lower level is necessary for restoration or rehabilitation purposes.

6.3.b. Genetic, species, and ecosystem diversity

6.3.b.1. The forest owner or manager selects trees and or tree species for harvest, retention, and planting in a manner that maintains or enhances the productive capacity, genetic diversity and quality over the region, and species diversity of the residual stand (see also indicator 10.4.a).

6.3.b.2. A diversity of habitats for native species is protected, maintained, and/or enhanced.

For example:
- *Declining trees and snags (see Glossary)*
- *Vertical and horizontal structural complexity (see Glossary)*
- *Understory species diversity*
- *Well distributed, large woody debris*
- *Habitats and refugia for sedentary species and those with special habitat requirements*

6.3.b.3. Locally adapted seed of known provenance is used for artificial regeneration.

Note: For plantations, seed and seedlings are acquired locally in terms of latitude, but not necessarily in terms of longitude.

6.3.c. Natural cycles that affect the productivity of the forest ecosystem

6.3.c.1. Coarse woody debris, in the form of large fallen trees, large logs, and snags of various sizes, is maintained.

6.3.c.2. Post-harvest management activities maintain soil fertility, structures, and functions.

For example:
- *Slash is randomly distributed across the harvest area.*
- *Burning is used where it is appropriate to the natural disturbance regime.*

6.3.c.3. Prescriptions for salvage harvests balance ecological and economic considerations.

For example:
- *Coarse woody debris is maintained.*
- *Den trees and snags are maintained.*
- *Natural background levels of 'pest' populations are allowed before pest control actions are carried out.*

6.3.c.4. If soil quality degradation occurs, as indicated by declining fertility or forest health, forest owners or managers modify soil management techniques.

For example:
- *Primary management objectives shift from commercial production to restoration.*
- *Site preparation is minimized.*
- *Road system design and construction is upgraded.*
- *The lightest practical equipment with the lowest ground pressure is used.*
- *Whole-tree harvesting is discontinued, and tops are left in the forest.*
- *Longer rotations and a diversity of species are used in lieu of artificial fertilization.*
- *Natural early successional processes are allowed or encouraged.*

6.4. Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

Applicability Note: When forest management activities (including timber harvest) create and maintain conditions that emulate an intact, mature forest or other successional phases that may be under-represented in the landscape, the management system that created those conditions may be used to maintain them, and the area may be considered as a representative sample for the purposes of meeting this criterion.

Ecologically viable representative samples are designated to serve one or more of three purposes: (1) to establish and/or maintain an ecological reference condition, (2) to create or maintain an under-represented ecological condition (e.g., successional phases of a forest type or plant community (see Glossary)), and (3) to protect a feature that is sensitive, rare, or unique in the landscape. Areas serving the purposes of (1) and (2) may move across the landscape as under-represented conditions change, or may be fixed in area and manipulated to maintain the desired conditions. Areas serving the purposes of (3) are fixed in location.

Forests of all sizes may be conducive to protection of fixed features, such as sumps, brakes, and oxbows. Medium sized and large forests may be more conducive to the maintenance of successional phases and disturbance patterns than small forests.

While public lands (see Glossary) are expected to bear primary responsibility for protecting representative samples of existing ecosystems, FSC certification of private lands can contribute to such protection.

Representative samples may be protected solely by the conditions of the certificate and/or through the use of conservation easements or other instruments of long-term protection.

Applicability note: The requirement to establish protected areas may be waived for forest owners and managers who manage under 1000 acres (400 hectares) of forest if the results of such collaborations do not reveal ecologically distinctive or sensitive characteristics.

6.4.a. Management activities in protected areas are performed only for purposes of maintaining composition, structures, and ecological processes of the forest.

6.4.b. Forest owners or managers assess the adequacy of representation of their forest types in protected areas across the landscape. Forest owners or managers who need additional information and/or expertise regarding the designation of representative sample areas consult with state natural heritage programs and agencies, regional private conservation efforts, universities, and/or local conservationists to develop an appropriate conservation plan for biodiversity (see Glossary).

6.4.c. Protected areas are scaled in accordance with the size and ecological distinctiveness of the forest, pursuant to the results of collaborations under 6.4.b.

6.4.d. The size and extent of representative samples on public lands is determined through a transparent planning process that is accessible and responsive to the public.

6.4.e. The process and rationale used to determine the size and extent of representative samples are explicitly described in the public summary of the management plan..

6.4.f. Large, contiguous public forests create and maintain representative protected areas sufficient in size to allow natural disturbances to occur at their natural state.

6.5. Written guidelines shall be prepared and implemented to control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and to protect water resources.

Logging and Site Preparation

6.5.a. Logging operations and construction of roads and skid trails are conducted only during periods of weather when soil is least susceptible to compaction, surface erosion, rutting, or sediment transport into streams and other bodies of water.

For example, soils are dry enough to minimize disturbance and compaction.

6.5.b. Construction of skid trails is minimized.

6.5.c. Felling and extraction are planned to minimize adverse effects on standing trees, regeneration, ground cover, soil, and sensitive environmental features.

For example, following harvest, stems are inspected for debarking, root exposure, and soil compaction, and practices are adjusted accordingly.

6.5.d. Silvicultural techniques and logging equipment are selected according to slope, erosion-hazard rating, and/or risk of landslides in order to minimize soil disturbance and erosion, and avoid mass failure.

For example:

- *Low-impact, high-volume harvest equipment is used when compaction may become a problem.*
- *Equipment that will cause the least disturbance is used on fragile soils.*

6.5.e. Plans for site preparation specify the following mitigations to minimize impacts to the forest resources:

(1) Slash is concentrated only as much as necessary to achieve the goals of site preparation and the reduction of fuels to moderate or low fire hazard levels.
(2) Scarification of soils is limited to the minimum necessary to achieve successful regeneration of desired species.

6.5.f. Removal and relocation of mineral and organic layers of soil is minimized during logging and site preparation.

For example, pre-existing skid roads are fully utilized.

Transportation System

6.5.g. The transportation system is designed, constructed, maintained, and/or reconstructed to minimize the extent of the road network and its potential cumulative adverse effects.

For example:

- *Road density is minimized.*
- *Road construction is minimized.*
- *Displacement of soil and the sedimentation of streams, as well as impacts to water quality,*

are minimized.

- *Patches of habitat and migration corridors are conserved as much as possible.*
- *Characteristics of riparian management zones (see Glossary) and buffers (see Glossary) surrounding other valuable ecological elements (e.g., wetlands, habitat for sensitive species, and interior old-growth forest) are conserved.*

6.5.h. Roads are limited to the minimum size required for available equipment, but road rights of way are wide enough to allow for drying of the roadway.

6.5.i. Logging roads are located along contours. Roads located on slopes of 10% or greater are designed with angles and switchbacks. Skid trails locations are chosen to avoid slopes greater than 25%.

6.5.j. Vertical cuts for road building and drainage are minimized, and do not exceed 1.5 meters (5 ft).

6.5.k. The number of stream crossings is minimized.

6.5.l. Stream crossings are located and constructed to minimize fragmentation of aquatic habitat (see Glossary) and maintain water quality.

For example:

- *Riparian management zone crossings are kept to a minimum.*
- *Stream crossings are constructed at an angle that causes the least ecological disturbance.*
- *Culverts allow free passage of aquatic organisms.*

6.5.m. Temporary stream crossings are restored to original or near original conditions immediately after field operations have been completed.

6.5.n. When possible, logging roads are located outside of SMZs. When logging roads must be within SMZs, they are located to minimize negative impacts on water quality.

For example, in accretion-based land formations, natural ridges or terraces are chosen as locations for logging roads without respect to their distance from the waterway.

6.5.o. Drainage from logging roads and log sets is diverted into off-stream swales.

6.5.p. Water bars and culverts are installed, where needed to prevent erosion on roads, skid trails, and log sets.

6.5.q. Failed drainage structures or other areas of active erosion caused by roads and skid trails are identified, and measures are taken to correct the drainage problems and stabilize erosion.

For example, if damage to ground cover has occurred, unimproved logging roads and skid trails are seeded immediately after harvest.

6.5.r. Log sets are located to minimize tracking mud and soil onto public roads. Mats, gravel, and other surfaces are used to minimize off-site tracking of mud. Mud and other debris are removed from public roads after field operations have been completed.

6.5.s. Access to temporary and permanent roads is controlled to minimize impacts to soil and biota while allowing legitimate access as addressed by Principles 3 & 4.

For example:

- *Roads without a weather resistant surface (e.g., soil, dirt, or native-surfaced) are used only during periods of weather when conditions are favorable to minimize road damage, surface erosion, and sediment transport.*
- *Access to roads not immediately necessary for management purposes is restricted.*

6.5.t. Temporary logging roads and skid trails are closed immediately after field operations have been completed.

Stream and Water Quality Protection

6.5.u. Forest management meets or exceeds provisions of state forestry BMPs.

6.5.v. Streamside management zones (SMZs) are created and maintained in accordance with Table 6.5.

TABLE 6.5
STREAMSIDE MANAGEMENT ZONE WIDTHS

		Slope					
Stream Class	Soil erosion susceptibility*	0%	10%	20%	30%	40%	50%
		Total SMZ width (ft) per side**					
Perennial	Slight	75	75	80	105	130	155
	Moderate	75	75	100	140	170	200
	Severe	75	90	130	170	210	250
Intermittent	All erosion categories	30	30	30	30	30	30

(Table 6.5.1. was modeled after the Forestry BMPs of the state of Mississippi, publication #107)

**Soil erosion susceptibility is defined at the series level by U.S.D.A.-NRCS State Soil Surveys.*

***Distances are horizontal measures per side of stream, and are measured from the mean high water mark (see Glossary) as evidenced by lack of terrestrial vegetation.*

6.5.w. For perennial streams, the inner zone of the SMZ is defined as the area within 30 feet of the mean high water mark. Within that zone, timber harvest is limited to single-tree selection, and canopy cover is sufficient to maintain shade adequate to moderate water temperature. Harvesting in this zone maintains the composition, structural complexity, and functions of the SMZ.

6.5.x. For perennial streams, timber harvest in the outer zone of the SMZ is limited to either single-tree selection or small group selection. Canopy cover and vegetation are maintained to provide filtration of runoff into a stream.

6.5.y Within intermittent SMZs, regeneration harvest may be conducted provided other vegetation and/or ground cover remains to protect the forest floor and the stream bank in a manner that will maintain water quality.

6.5.z. Prescribed burning is allowed in SMZs when water quality and the structures and composition of the forest within the SMZ can be maintained.

6.5.aa. Drains (ephemeral streams) do not require an SMZ. Operational limitations for drains are:

- Never use a drain as a skid trail or a road
- Never leave logging debris in drain channel
- Cross drains only at right angles
- Avoid blocking the flow of water
- Avoid rutting

6.5.bb. When fire lanes are constructed, ephemeral wetlands are not connected to permanent bodies of water.

6.6. Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides and herbicides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.

Applicability note to Criterion 6.6.: This Criterion is guided by the FSC policy paper: Chemical Pesticides in Certified Forests, Interpretation of the FSC Principles and Criteria, *July 2002.*

6.6.a. Pesticides, herbicides, and fertilizers are used in a manner that minimizes exposure to employees, neighbors, the public, sensitive areas (see Glossary), native biodiversity, non-target flora and fauna, and water resources.

6.6.b. Forest owners or managers employ silvicultural systems, integrated pest management, and vegetation control strategies that minimize negative environmental effects. Non-chemical methods are preferred where they are as efficacious as chemicals. These strategies may include:

- Creation and maintenance of habitat that discourages pests
- Creation and maintenance of habitat that encourages natural predators
- Evaluation of pest populations and establishment of action thresholds
- Diversification of species composition (see Glossary) and structure
- • Use of low impact mechanical methodsUse of prescribed fire
- Use of biological control organisms

6.6.e. All applicable laws and label requirements are met or exceeded with respect to the use of pesticides, herbicides, and fertilizers.

6.6.f. When chemicals are used, they are narrowly targeted to the species being controlled and are applied by a state certified applicator.

6.6.g. Equipment for transport, storage, and application of chemicals is safe and leak proof.

6.6.h. A written prescription (see Glossary), which includes a discussion of precautions and potential environmental effects, is prepared for each chemical application. Records are kept of pest occurrences, control measures, and incidences of worker exposure to chemicals.

6.7. Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations

6.7.a. Discarded equipment and parts, as well as waste oil and related containers, are removed from the forest and disposed of at designated off-site collection centers.

6.7.b. Management operations incorporate recycling and re-use programs when they are available.

6.7.c. In the event of a spill of hazardous material, forest owners or managers immediately contain the material, report the spill as required by applicable regulations, and engage qualified personnel to perform the appropriate removal and remediation.

6.7.d. Equipment is not parked in riparian management zones, near sinkholes, or ground water supplies, where fluids may leak into them.

6.8. Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national and state laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.

Applicability Note: Genetically improved organisms (e.g., Mendelian crossed) are not considered to be genetically modified organism, and may be used. This criterion is guided by the FSC policy paper: GMOs: Genetically Modified Organisms: Interpretation for FSC. Revised October 1999.

6.8.a. Exotic (i.e., non-indigenous), non-invasive predators or biological control agents are used only as part of a pest management strategy for the control of exotic species of plants, pathogens (see Glossary), insects, or other animals when other pest control methods are ineffective, or can reasonably be expected to be proven ineffective. Such use is contingent upon peer-reviewed scientific evidence that the agents in question are non-invasive and are safe for indigenous species. (For example, exotic species can host pathogens that might diminish biodiversity in the forest.)

6.8.b. GMO tree species are not used for any purpose.

6.9. The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.

6.9.a. Introduction of exotic species is prohibited, except for biological agents that are known to be sterile and/or non-invasive.

6.9.b. Written documentation is strictly maintained for the use of all organisms disseminated under the provisions of section 6.9.a.

6.9.c. Forest owners or managers develop and implement control measures for invasive exotic plants.

6.10. Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion:
a) entails a very limited portion of the forest management unit; and
b) does not occur on high conservation value forest areas; and
c) will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit.

6.10.a. Justification for land-use and stand-type conversions is fully described in the long-term, written management plan and meets the biodiversity conservation requirements of Criterion 6.3. (See also 7.1)

PRINCIPLE 7. MANAGEMENT PLAN

A management plan -- appropriate to scale and intensity of the operations -- shall be written, implemented, and kept up to date. The long-term objectives of the management, and the means of achieving them, shall be clearly stated.
7.1. The management plan and supporting documents shall provide:
a) Management objectives.
b) Description of the forest resources 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 (see Glossary), planned management activities and land ownership.
i) Description and justification of harvesting techniques and equipment to be used.

Applicability Note: The management plan may consist of a variety of documents not necessarily unified into a single planning document but which represents an integrated strategy for managing the forest.

a. management objectives

7.1.a.1 A written management plan is prepared that includes the landowner's short-term and long-term vision, goals, and objectives (ecological, silvicultural, social, and economic). The objectives are specific, achievable, and measurable. Appropriate to the scale, intensity, and context of management, the plan may include the additional elements described in 7.1.b through 7.1.i and those found in the appendix.

7.1.a.2 Goals, objectives, and methods are described for: (1) harvest and regeneration, (2) chemical use and pest management, (3) fire management, and (4) conservation of relevant (i.e., those that occur on the forest) ecological elements (protection of Rare species (sensitive, threatened, or endangered) or plant community types (vulnerable, imperiled, critically imperiled) *(see Criterion 6.2),* protection of riparian management zones *(see Criterion 6.5),* establishment and protection of representative samples of existing ecosystems *(see Criterion 6.4)*, and management of High Conservation Value Forests *(see Principle 9)*).

b. Description of the forest resources managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.

7.1.b.1. Using data collected proportionally to the scale and intensity of management, the forest owner or manager describes the following resources:

- Timber
- Fish and wildlife
- Harvested non-timber forest products (e.g., botanical and mycological)
- Non-economic natural resources

7.1.b.2. The management plan includes descriptions of the following elements: special management areas; sensitive, rare, threatened, and endangered species and their habitats; and other ecologically sensitive features in the forest.

7.1.b.3. The management plan includes a description of past land uses and incorporates this information into goals and objectives.

7.1.b.4. The management plan identifies the legal status of the forest and its resources (e.g., ownership, usufruct rights, treaty rights, easements, deed restrictions, and leasing arrangements).

7.1.b.5. The management plan identifies relevant cultural and socioeconomic issues (e.g., traditional and customary rights of use, access, recreational uses, and employment), conditions (e.g., composition of the workforce, stability of employment, and changes in forest ownership and tenure), and areas of special significance (e.g., ceremonial and archeological sites).

7.1.b.6. The management plan incorporates landscape-level considerations within the ownership and among adjacent and nearby lands, including major water bodies, critical habitats, and riparian corridors shared with adjacent ownerships.

7.1.b.7 The management plan contains a description of past and current silvicultural systems, harvest methods, and regeneration techniques that are used on the forest.

c. description of silvicultural and/or other management system

7.1.c.1. The silvicultural system(s) and prescriptions are based on the integration of ecological and economic characteristics (e.g., successional processes, soil characteristics, existing species composition and structures, desired future conditions, and market conditions). (see also 6.3.a).

7.1.c.2. A written prescription, which includes a brief assessment of environmental impacts, is prepared for each harvesting activity and each site preparation activity and is made available to people who carry out the prescriptions.

d. rationale for rate of annual harvest and species selection

7.1.d.1. Calculation of the allowable cut is based on reliable growth, yield, stocking, and regeneration data. (see also 5.6.b)

7.1.d.2. A written description of successional stages is prepared in order to provide the direction and foundation for forest management.

7.1.d.3. Forest owners or managers of large forests (see Glossary) incorporate a continuous forest inventory (see Glossary), or other appropriate inventory of tree species and quantity, into their management planning process

7.1.d.4. The management plan contains a rationalization for selection of tree species for harvest and regeneration that demonstrates how the chosen species meet the economic goals and objectives of the forest owner or manager, while maintaining or improving the ecological composition, structures, and functions of the forest.

e. provisions for monitoring forest growth and dynamics

7.1.e.1. Forest owners or managers use data management systems to verify dynamics of the forest over time.

7.1.e.2. For all forest resources that are harvested, a pre-harvest inventory is carried out, followed by a post-harvest assessment that describes ecological changes that might have been caused by management activities.

f. environmental safeguards based on environmental assessments.

1. fire

7.1.f.1.a. The management plan contains sections for fire prevention, suppression, and prescribed burns. A burn prescription is prepared for each burn that accounts for:

- smoke management , including notification of neighbors
- training of personnel
- authority to conduct the burn (permit)
- construction and safeguards for fire breaks
- soil erosion

2. pests

7.1.f.2.a. The management plan contains integrated pest management (IPM, see Glossary) strategies designed to control insects, disease, and vegetative competition (see also section 6.6.a,).

3. environmental protection

7.1.f.3.a. Management plans include measures for environmental protection (e.g., soil conservation, watershed protection, conservation of biodiversity, chemical use and handling).

7.1.f.3.b. The management plan contains procedures for the collection of information on the plant and animal species present. This information may be contained in research papers or reports, survey/inventory results, or as local unwritten knowledge.

4. restoration

7.1.f.4.a. The plan contains strategies for restoration of degraded forestlands (e.g., cultivated or converted areas), streams and wetlands.

5. landscape effects

7.1.f.5.a. The landscape context of individual stands is taken into account when prescribing activities.

g. rare, threatened and endangered species

7.1.g.1. Management plans and prescriptions contain provisions to protect endemic, sensitive, threatened, or endangered species and their habitats.

h. maps describing the forest resource base

7.1.h.1. The management area is mapped, appropriate to the scale and intensity of the operation. Such mapping includes: property boundaries; roads; timber production areas; timber types; topography; soils; protected areas and other environmentally sensitive features; archeological sites; riparian zones; wetlands and SMZs; endemic, sensitive, threatened, or endangered species and their habitats; and High Conservation Value Forests.

7.1.h.2. The management plan includes a map and schedule of road development, maintenance, and closures.

i. description and justification of harvesting techniques and equipment to be used

7.2. The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.

7.2.a. Management plans are maintained and revised at least every 10 years to accommodate new research and the effects of previous practices (as observed during monitoring actions), as well as changes in the resource base (e.g., the detrimental effects of illegal and unauthorized activities).

7.2.b. Modifications and/or revisions are appended to the plan.

7.3. Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.

7.4. While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1.

Applicability Note: Forest owners or managers of private forests may withhold proprietary information (e.g., timber volumes by size and age class, marketing strategies, and other financial information). (see also Criterion 8.5)

PRINCIPLE 8. MONITORING AND ASSESSMENT

Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.

Applicability Note: On small and medium-sized forests, an informal, qualitative assessment might be appropriate. On large and intensively managed forests, formal, quantitative monitoring is required.

8.1. The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.

8.1.a. Implementation of the management plan is periodically monitored to assess:

- The degree to which the management vision, goals, and objectives are being achieved
- Deviations from the management plan

- Unexpected effects of management activities
- Social and environmental effects of management activities

8.1.b. Monitoring is carried out to assess regeneration, growth, and composition; post-harvest environmental impacts; pest populations; yield of forest products; and social impacts of forest management (see section 8.2.a).

8.1.c. Periodic monitoring reports are maintained and updated.

8.1d. Monitoring reports are organized and cross-referenced with the management plan.

8.2. Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: 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) Costs, productivity, and efficiency of forest management.

8.2.a. Monitoring of growth and yield is carried out at least every ten years.

8.2.b. Stocking and regeneration are monitored by a forest inventory system appropriate to the scale and intensity of the operation.

8.2.c. The forest owner or manager periodically monitors the forest for changes in both the existence of major habitat elements and the occurrence of sensitive, rare, threatened, or endangered species.

8.2.d. When pest outbreaks are detected, they are monitored.

8.2.e. The environmental effects of site-disturbing activities are assessed after their completion, e.g., road construction and repair, harvesting, site preparation.

8.2.f. A monitoring program is in place to assess the condition and environmental effects of the forest roads system.

8.2.g. Post-harvest environmental conditions are monitored within six months of the completion of a harvest activity.

For example:

- *Stand composition and structure*
- *Effects of harvest on natural disturbances (e.g., disease, wind, fire)*
- *Abundance, regeneration, and habitat conditions of non-timber forest products*
- *Quality of water*
- *Ecosystem composition, structures, and functions*
- *Soil characteristics*
- *Vulnerability to fire*

8.2.h. Financial aspects of forest management are monitored in accordance with provisions of Principle 7, Criteria 5.1 and 5.2.

8.2.i. The creation and/or maintenance of local jobs, and public responses to management activities are monitored.

8.2.j. Management of sites of special significance (see indicators 3.2 and 3.3) is monitored in collaboration with tribal representatives to determine adequacy of the management prescriptions.

8.3. Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as the "chain of custody."

8.3.a. Certified forest products are identified at all stages of processing and distribution through marks, labels, or separate documents.

8.3.b. Harvesting and timber sales are documented to enable the tracing of the certified material in each forest product from its origin to the point of sale.

8.4. The results of monitoring shall be incorporated into the implementation and revision of the management plan.

8.4.a. Discrepancies among outcomes (i.e., yields, growth, ecological changes) and expectations (i.e., plans, projections, anticipated impacts) are appraised and taken into account in the subsequent management plan.

8.5. While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.

Applicability Note: Forest owners or managers of private forests may withhold proprietary information (e.g., timber volume by size and age class, marketing strategies, and other financial information).

8.5.a. A summary of monitoring information is maintained up-to-date and is available upon request either at no cost or at a reasonable price.

8.5.b. A summary of the effects of forest management on environmental conditions and on populations of endemic, sensitive, threatened, or endangered species is made available for public review.

8.5.b. A summary of the effects of forest management on environmental conditions and on populations of endemic, sensitive, threatened, or endangered species is kept up to date and made available for public review.

PRINCIPLE 9 MAINTENANCE OF HIGH CONSERVATION VALUE FORESTS

Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

Applicability Note: HCVF delineation and consultations may occur before the certification decision is made by the certifier. Certain information may be withheld from public discussion to protect the attributes that may be of High Conservation Value. The level of delineation and consultations required is dependent on the scale and intensity of the operation.

9.1 Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.

9.1.a. Attributes and locations of High Conservation Value Forests are determined by (see "applicability to old-growth" note in 6.3):

(1) Identification of globally scaled HCVF attributes that may be present in the forest
(2) Identification and description of regionally and locally scaled HCVF attributes and areas that may be present in the landscape and/or certified forest
(3) Broadly based consultations with stakeholders and scientists
(4) Public review of proposed HCVF attributes and areas
(5) Integration of information from consultations and public review into proposed HCVF delineations
(6) Delineation by maps and habitat descriptions

9.1.b. The landowner or land manager identifies forests with ecologically high conservation value, if necessary with assistance from state heritage agencies, conservation organizations, and local experts (see also sec
tion 6.4.b.).

For example, documentation of rarity or threat to particular forest types is provided by TNC, WWF, a state natural heritage program or local experts.

9.1.c. Social and cultural conservation values are assessed in cooperation with state history commissions, private organizations, universities, and local experts.

9.2. The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.

9.2.a. The adequacy of identification and maintenance of conservation attributes and values is discussed with environmental and community leaders.

9.3. The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.

Applicability Note: The applicability of the precautionary principle and the consequent flexibility of forest management vary with the size, configuration, and tenure of the HCVF:
9.3.a. Because few examples of old growth (see Glossary) exist in the lower Mississippi valley and the western Gulf coastal plain, forests identified as old growth are set aside for cultural, recreational, sporting, and other non-timber uses as long as such uses do not degrade the forest or its attributes.

9.3.b. Stands and forests designated as HCVFs, which have been entered for timber harvest, are managed over the long term to assure that both the quality of their HCVF attributes and their area are not reduced.

9.3.c. Forest owners and managers of HCVFs (forests and/or stands) coordinate conservation efforts with owners and managers of other HCVFs in their landscape.

9.3.d. Forest owners and managers include in the publicly available management plan summary a description of specific measures they are undertaking to ensure the maintenance and/or enhancement of the applicable conservation attributes for HCVF, consistent with the precautionary approach**.**

9.4. Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.

Note: Monitoring may be carried out informally on small forests.

Note to Criterion 9.4.: The Working Group considers this criterion sufficiently explicit and measurable. Indicators are not required.

PRINCIPLE 10. PLANTATIONS

Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

10.1. The management objectives of the plantation, including natural forest conservation and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan.

Note to Criterion 10.1.: The Working Group considers this criterion sufficiently explicit and measurable. Indicators are not required.

10.2. The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods, shall be used in the layout of the plantation, consistent with the scale of the operation. The scale and layout of plantation blocks shall be consistent with the patterns of forest stands found within the natural landscape.

10.2.a. On areas already converted to plantations, even-aged harvests lacking within-stand retention are limited to forty acres or less in size unless a larger opening can be justified by scientifically credible analyses.

10.2.b. Regeneration in previously harvested areas reaches a mean height of at least ten feet or achieves canopy closure (see Glossary) before adjacent areas are harvested. Buffers between harvest units are arranged to allow contiguous populations of native species.

10.2.c. Slope, aspect, soil erodibility, and movement of surface water are addressed in plantation design and layout.

For example, when bedding is used, beds run across drainages rather than parallel to them.

10.2.d. Plantations are managed with the goal of improving and restoring natural habitats and their connectivity within the certified forest and across the landscape. Although owners and managers of small forests must consider landscape factors, they may be limited in their ability to implement them.

For example:

- *Total length of edge is large compared to interior volume to accommodate edge dwelling species.*
- *Total length of edge to interior volume is small to accommodate interior dwelling species*
- *Large forests contain a mix of edge and interior habitats.*

10.3. Diversity in the composition of plantations is preferred, so as to enhance economic, ecological and social stability. Such diversity may include the size and spatial distribution of management units within the landscape, number and genetic composition of species, age classes and structures.

10.3.a. A diversity of structures, age classes, and species is maintained among stands.

10.3.b. Plantation management activities are designed to generate and maintain long-term employment.

10.4. The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts.

10.4.a. Tree species selected for planting are well suited for the site's elevation, aspect, slope, hydric conditions, and soils (see also indicator 6.3.b.1).

10.4.b. Planting of non-invasive exotic and/or non-native species is used only for site remediation and/or experimental purposes. Justification for such plantings is provided.

10.4.c. The use of exotic plant species (see Glossary) is contingent on scientifically credible analyses that the species in question is non-invasive and does not diminish biodiversity. If non-invasive exotic plant species are used, their provenance and the location of their use are documented, and their ecological effects are actively monitored.

10.5. A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in regional standards, shall be managed so as to restore the site to a natural forest cover.

10.5.a. The ratio of plantations to natural and semi-natural forests (see Glossary), as well as the plantation's spatial distribution, maintains and/or restores the landscape to a condition that includes a diversity of community types, wildlife habitats, and ecological functions similar to a mosaic of native forests.

10.5.b. A percentage of the total forest management area is maintained as and/or restored to natural and semi-natural forest cover. The minimum required percentages are:

- 100 acres or less, at least 10 percent.
- 101 - 1,000 acres, at least 15 percent.
- 1,001 to 10,000 acres, at least 20 percent.
- > 10,000 acres, at least 25 percent

10.5.c. Areas of forest and/or plantation to be restored to natural conditions are chosen through a landscape analysis that focuses on enhancing ecological integrity and habitat connectivity.

> *For example, areas that are best suited for such restoration include riparian areas, migration corridors between areas of existing natural forest, and unstable slopes.*

10.5.d. Large forest management units (FMUs) are managed so as to contain a mix of plantations and natural forests, as well as a mix of even-aged and uneven-aged stands.

10.6. Measures shall be taken to maintain or improve soil structure, fertility, and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice

of species shall not result in long term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns.

Note Regarding the Applicability of P1-9 to plantations: For the proportion of the FMU being maintained in plantation management per 10.5.b, it is not expected that the management of the stands maintains or restores all levels of structure and composition associated with natural forests. Accordingly, some components of the first nine Principles and Criteria either do not apply or require modified interpretation when being applied to plantation stands. For the MAV region, the indicators in Principle 6 that do not apply to plantation stands are 6.3.a.2, 6.3.a.4, 6.3.b.1, 6.3.b.2 (with regards to snags, declining trees, and large woody debris), and 6.3.c.1. *All other components of Principles 1-9 are equally pertinent to natural forests and plantations.*

10.7. Measures shall be taken to prevent and minimize outbreaks of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.

Note to Criterion 10.7.: The Working Group considers this criterion sufficiently explicit and measurable. Indicators are not required.

10.8. Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-site and off-site ecological and social impacts, (e.g. natural regeneration, effects on water resources and soil fertility, and impacts on local welfare and social well-being), in addition to those elements addressed in Principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access.

Note to Criterion 10.8.: The Working Group considers this criterion sufficiently explicit and measurable. Indicators are not required.

- **10.9. Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible directly or indirectly of such conversion.**

10.9.a. Plantation stands established through conversion between 1994 and 2001 may be considered for certification if a plan to restore these stands to natural forest conditions is being implemented.

Appendix A

Sample Forest Management Plan Outline

I. Description of ownership

II. History of management

III. Objectives of management

Endorsement of FSC management system

Financial objectives

Other objectives

IV. Description of forest resources

- Timber resources
- Wildlife resources
- Other non-timber forest resources

V. Silvicultural management system

- Description and rationale of silvicultural systems employed
  - Methods and annual rates of harvest, by species and product
  - Regeneration strategies
  - Maintenance of structural and species diversity
  - Description of equipment and personnel needs
- IPM methods
  - Insect control)
  - Disease and pathogen control
  - Weed and competition control
- Fire management
  - Prescribed fires
  - Wild fires
- Wildlife management
- Other non-timber forest resources management
- Set-asides, protected areas, non-timbered areas
  - SMZs
  - Rare, threatened and endangered species protection
  - Other protected areas
- Landscape level considerations

VI. Timeline and descriptions of management activities)

- Harvests
- Site preparation
- Plantings
- Prescribed fires
- Pest control
- Inventories
- Monitoring
- Roads management and maintenance
- Management plan update schedule

VII. Assessment and monitoring

- Growth and yield data
- Environmental assessments
- Social impact assessments
- Financial monitoring

VIII. Maps

- Property boundaries
- Roads
- Timber production areas and forest types
- Topography
- Soils
- Riparian zones and wetlands
- Environmentally sensitive features
- Archaeological sites
- Rare, threatened, and endangered species populations and habitats

IX. Policies

- Compliance with laws and regulations
  - Endangered Species Act
  - State BMPs
  - Federal Fair Labor Practices Act
  - Environmental safeguards
  - Rare, threatened, and endangered species and their habitats
  - Unique and sensitive features
  - Structures and functions of natural and semi-natural forests
  - Soil and water protection
- Personnel and training
- Financial management
- Timber harvest contracts

X. Budget

Operations documents

- Prescriptions, which include assessments of environmental impacts
  - Harvests
  - Mechanical site preparation
  - Chemical applications
  - Prescribed burns

- Reports and activity logs
    - Monitoring reports
        - Yield and growth rate
        - Stocking and regeneration
        - Post-harvest environmental conditions
        - Pests
    - Chain of custody documentation
- Sales documents
    - Prospectuses
    - Bids
    - Contracts
- Contracts and sub-contracts
- Permits and certificates
- Inventories
    - Timber
    - Wildlife
    - Other non-timber resources

Appendix B

Glossary of terms used in this standard

Age class: Intervals (commonly 10 years) into which the age range of a tree crop is divided (1-10, 10-20); also the trees falling into such an interval.

Aquatic habitat: Habitat that occurs in free water (as opposed to water that is unavailable for habitat).

Biodiversity: the variety among life forms and functions, including physical and structural diversity, functional diversity, genetic diversity, species and other taxonomic diversity, habitat diversity, microclimatic diversity, stand type diversity, and landscape diversity

Buffer: A strip of vegetation that is maintained to reduce the negative effects of a treatment or action of one area on another.

Canopy closure: The progressive reduction of space between and among tree crowns as they spread laterally.

Community type: A generalized category comprising a number of similar units or stands of vegetation, as well as animal life.

Credible scientific analyses: ***scientific opinions supported by data and explanations in articles published in peer-reviewed professional journals that deal with the natural or social sciences and judged to be relevant to the matter in question. Scientific credibility, as it applies to this standard, is based on a body of scientific work and on the judgment of experienced professionals.***

*Edaphic****: Related to or caused by particular soil conditions such as texture or drainage rather than slope position or climate***

*Endemic****: A species or race native to a particular place and found only there (Wilson 1992)***

Continuous Forest Inventory: a commonly used term in the United States for a set of permanent inventory plots that are re-measured on a periodic basis and that aid in calculation of the allowable harvest level.

Even-aged management: A system of forest management in which stands are produced or maintained with relatively minor differences in age.

Exotic plant species: For the purpose of these standards, exotic plant species are those that meet one of the two following definitions:
1) they do not occur naturally in temperate or sub-tropical North America, *or*
2) they occur naturally in temperate or sub-tropical North America, but come from a forest category that is different from the certified forest. (Kuchler, A.W. 1975. Potential natural

vegetation of the conterminous United States (map). Second edition. American Geographical Society. New York. [Scale: 1:3,168,000])

Kuchler has divided the nation's forests into six categories: Eastern needle, broad leaf and mixed forests; and Western needle, broad leaf and mixed forests. Needle leaf trees with a native range in eastern forest may be planted in eastern needle leaf and mixed forests. Broad leaf trees with a native range in eastern forests may be planted in eastern broad leaf and mixed forests. Needle leaf trees with a native range in western forests may be planted in western needle leaf and mixed forests. Broad leaf trees with a native range in western forests may be planted in western broad leaf and mixed forests.

High water mark: the edge of the streambed channel, typically where herbaceous vegetation begins growing

Integrated pest management (IPM): the use of chemical, physical and biological means to control pests, including insects, pathogens, and weed competition, at levels below pre-established acceptable threshold levels. The use of scouting, low toxicity materials, narrow targeting of pesticides, and minimal environmental impacts are integral to IPM.

Intensive forestry: The practice of forestry to obtain a high volume of wood fiber per unit of area; accomplished through the application of the best techniques of silviculture and management.

Large forest: A forest that is at least 50,000 acres in size.

Old growth: Stands or forests, distinguished by old trees and their related structural and functional attributes, which have most of the following characteristics:

- a diverse, patchy and multi-level canopy dominated by large overstory trees; some with broken tops,
- cavities and other indications of old and decaying wood,
- numerous large snags,
- heavy accumulations of wood of all size and decay classes, including large logs on the ground,
- a diversity of native overstory, mid-story, shrub layer, and herbaceous layer species, as well as a diversity of associated native fauna,
- patchiness from tree fall gaps,
- habitat for interior-dwelling species that require scenescent characteristics, and
- presence of late-successional species and plant community types.

Examples of old growth in the MAV region include Sweetgum and Green Ash Natural Areas on the Delta National Forest (MS), cypress-tupelo swamps and the sugarberry natural area on the White River National Wildlife Refuge (AR), Russ Reynolds Experimental Area pine-hardwood forest (AR), Big Thicket (TX).

Pathogen: Any agent that causes disease, especially microorganisms, such as bacteria or fungi.

Plant community: A vegetative complex unique in its composition and with boundaries that are recognizable in the field. The composition is a result of environmental influences on the site—such as seed source availability, soils, temperature, elevation, solar radiation, slope, aspect, and rainfall.

Prescription: a written document that describes the methods, equipment, and impacts of field management activities.

Protected area: a portion of the forest of special biological, cultural or historical significance that is set aside. Management activities (including logging) for any purposes other than ecological improvements are prohibited in protected areas.

Public land: Any land, including public forestland, held in government ownership in trust for the citizens of a city, county, state, or nation.

Riparian zone: An area that is adjacent to a body of freshwater

Sediment: Material (usually soil) that is suspended in water

Semi-natural forest: A forest that contains many of the characteristics of a native forest. Semi-natural forests exhibit a history of human disturbance (e.g., harvesting or other silvicultural activities) and make up a considerable percentage of the managed and unmanaged forestland in the United States.

Sensitive area: An area that may or may not be formally designated, and which contains ecological, environmental and/or cultural characters that are susceptible to damage from relatively slight disturbances.

Small forest: A forest less than or equal to 5,000 acres, except for the purposes of FSCUS's Family Forest Program (SLIMF) Streamlined Certification Procedures (FSC-POL-20-101 at http://www.fscus.org/documents/) under which a small forest is defined as less than or equal to 2,470 acres.

Snag: A standing dead tree from which the leaves and most of the limbs have fallen.

Species composition: The species that occur on a site or in a successional or vegetative stage of a plant community.

Structural complexity: the relative abundance of down and dead wood, herbaceous layers, shrub layers, midstory vegetation, and overstory vegetation