



6 Family Forest Standards Guidance Document (F-16)

PRINCIPLE 1. <u>COMPLIANCE WITH LAWS AND FSC PRINCIPLES</u> - 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.	
<u>Criteria and Indicators</u>	<u>Ways to Fulfil the Standard</u>
1.1. Forest management shall respect all national and local laws and administrative requirements	
1.1.a. Forest management plans and operations demonstrate compliance with all applicable federal, state, county, municipal, and tribal laws and administrative requirements. Violations, outstanding complaints, or investigations are provided to the FCW during an assessment.	FCW assumes compliance but Group Members must make FCW aware of any outside violations.
1.1.b. To facilitate legal compliance, the forest owner or manager ensures that employees and contractors, commensurate with their responsibilities, are duly informed about applicable laws and regulations.	Contractors and employees made aware of certification requirements (SMZs, forms, harvest size openings, etc.).
1.2. 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 the involved or affected parties.	
1.2.a. Situations in which compliance with laws or regulations conflicts with compliance with stated principles, criteria, or indicators are documented and referred to the FCW.	FCW has identified no conflicts with local laws and regulations.
NOTES:	
1.3. Forest management areas should be protected from illegal harvesting, settlement, and other unauthorized activities.	
1.3.a. Forest owners or managers supports or implements measures intended to prevent illegal and unauthorized activities on the Forest Management Unit.	Signs posted on boundaries, Group Members check boundaries annually, harvest boundaries flagged/marked
1.3. b. If illegal or unauthorized activities occur, the forest owner or manager implements actions designed to curtail such activities and correct the situation to the extent possible for meeting all land management objectives with consideration of available resources.	Group Members are not law enforcement, better signage and gates
1.4. Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.	
1.4.a. The forest owner or manager demonstrates a long-term commitment to adhere to the principles and criteria and the ATFS, SFI, FSC, and FSC-US policies, including the FSC-US Land Sales Policy.	Met by signing agreement form.
1.4.b. If the certificate holder does not certify their entire holdings, then they document, in brief, the reasons for seeking partial certification referencing FSC-POL-20-002 (or subsequent policy revisions), the location of other managed forest units, the natural resources found on the holdings being excluded	Make FCW aware of location of other forested properties and reason for not certifying (i.e. testing out certification for

from certification, and the management activities planned for the holdings being excluded from certification.	economic reasons, planning on selling land, etc.)
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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.

<u>Criteria and Indicators</u>	<u>Ways to Fulfil the Standard</u>
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. The forest owner or manager provides clear evidence of long-term rights to use and manage the FMU for the purposes described in the management plan.	Possession of deed or contract from owner to manage
2.1. b. The forest owner or manager identifies and documents legally established use access rights associated with the FMU that are held by other parties. Documentation must be provided only in cases where the FCW has concern about infringing on legally established use and access rights.	Possession of deed or contract from owner to manage
2.1.c. Boundaries of land ownership and use rights are clearly identified on the ground and on maps prior to commencing management activities in the vicinity of boundaries	Survey not required but boundaries during management activities (harvesting, chemical applications) must be marked and neighbors informed
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. The forest owner or manager allows the exercise of tenure and use rights established by law or regulation.	If someone else has certain rights to land their rights are not diminished (hunting lease contracts, right-of-way access, etc.)
2.2.b. In FMUs where tenure or use rights held by others exist, the forest owner or manager consults with groups that hold such rights so that management activities do not significantly impact the uses or benefits of such rights.	If someone else has certain rights to land they are notified or informed and their rights are not diminished

PRINCIPLE 3. INDIGENOUS PEOPLE'S 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 to Principle 3: The terms "tribes", "tribal" or "American Indian groups" in indicators under Principle 3 include all indigenous people in the US, groups or individuals, who may be organized in recognized or unrecognized tribes, bands, nations, native corporations, or other native groups.

<u>Criteria and Indicators</u>	<u>Ways to Fulfil the Standard</u>
3.1 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.	
3.1.a. The forest owner or manager maintains a list of sites of current or traditional cultural, archeological, ecological, economic, or religious significance that have been identified by state conservation agencies and tribal governments on the FMU or that could be impacted by management activities.	FCW will check state agency departments for Group Members
3.1.b. In consultation with tribal representatives, the forest owner or manager develops measures to protect or enhance areas of special significance (see also Criterion 9.1).	FCW will check state agency departments for Group Members

PRINCIPLE 4. <u>COMMUNITY RELATIONS AND WORKERS' RIGHTS</u> - Forest management operations shall maintain or enhance the long-term social and economic well being of forest workers and local communities.	
<u>Criteria and Indicators</u>	<u>Ways to Fulfil the Standard</u>
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. The forest owner or manager, as feasible, contributes to the local community.	Timber and services are contracted locally
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 employees and contractors demonstrate a safe work environment. Contracts or other written agreements include safety requirements.	Low risk, but can be met with safety requirements in contracts
4.2.b. The forest owner or manager hires well-qualified service providers to safely implement the management plan.	Use of Certified Master Loggers or knowledge from Cooperating Foresters
4.3 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.	
4.3.a. The forest owner or manager understands the likely social impacts of management activities, and incorporates this understanding into management planning operations.	Evaluations may be brief and informal, foresters aware of state assessments
4.3.b. The forest owner or manager seeks and considers input in management planning from people who would likely be affected by management activities.	Low risk, no consultations required
4.3.c. People who are subject to direct adverse effects of management operations are apprised of relevant activities in advance of the action that they may express concern.	Inform neighbors of activities (harvests, chemical applications)
4.4 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 livelihood of local peoples. Measures shall be undertaken to avoid such loss or damage.	
4.4.a. The forest owner or manager does not engage in negligent activities that cause damage to other people.	Managers deal with problems as they arise (gates repaired, signs posted for normal ATV users in harvest areas, nature trails inspected for hazard trees, etc.)
4.4.b. The forest owner or manager provides a known and accessible means for interested stakeholders to voice grievances and have them resolved. If significant disputes arise related to resolving grievances and/or providing fair compensation, the forest owner or manager follows appropriate dispute resolution procedures. At a minimum, the forest owner or manager maintains open communications, responds to grievances in a timely manner, demonstrates ongoing good faith efforts to resolve the grievances, and maintains records of legal suites and claims.	Compliant through informal communications with neighbors in the absence of disputes
ATFS Performance Measure 8.1 Landowner should use qualified natural resource professionals and qualified contractors when contracting for services.	Evidence that the contractor was qualified, or that landowner checked qualifications is required if resource professional or contractors are used.

PRINCIPLE 5. <u>BENEFITS FROM THE FOREST</u> - 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.	
<i>Criteria and Indicators</i>	<i>Ways to Fulfil the Standard</i>
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 forest owner or manager is financially able to implement core management activities, including all those environmental, social, and operating costs, required to meet this standard, and investment and reinvestment in forest management.	Activities do not go above and beyond owners physical and financial capabilities
5.1.b. Responses to short-term financial factors are limited to levels that are consistent with this standard.	Increases in harvests or debt load, deferred maintenance of roads, etc. are not inhibited by fluctuations in the market, requirements for cash flow, need for equipment and supplies, or etc; short term = 3-5 years
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. Where forest products are harvested or sold, opportunities for forest product sales and services are given to local harvesters, value-added processing and manufacturing facilities, and other operations that are able to offer services at competitive rates and levels of service.	Low risk, products sold and processed locally
5.2.b. The forest owner or manager takes measures to optimize the use of harvest forest products and explores product diversification where appropriate and consistent with management objectives.	Harvests are merchandised to the most economically feasible levels possible
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. Management practices are employed to minimize the loss and/or waste of harvested forest products.	Low risk
5.3.b. Timber Harvest Report Form completed for every operation.	Complete form
5.4 Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.	
5.4.a. The forest owner or manager demonstrates knowledge of their operation's effect on the local economy as it relates to existing and potential markets for a wide variety of timber and non-timber forest products and services.	Non-timber products (mushrooms, hunt leases, recreation, lower log grades) are investigated but not required to be undertaken
5.4.b. The forest owner or manager strives to diversify the economic use of the forest according to indicator 5.4.a.	Non-timber products (mushrooms, hunt leases, recreation, lower log grades) are investigated but not required to be undertaken
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. In developing activities on the FMU, the forest owner or manager identifies and defines appropriate measures for maintaining and/or enhancing forest services and resources that serve public values, including municipal watersheds, fisheries, carbon storage and sequestration, recreation, and	Protection of water, wildlife, and other public resource values must be addressed

tourism.	
5.5.b. The forest owner or manager uses the information from indicator 5.5.a to implement appropriate measures for maintaining and/or enhancing these services and resources.	Management strategies written into plan for 5.5.a
5.6 The rate of harvest of forest products shall not exceed levels that can be permanently sustained.	
5.6.a. A sustained yield harvest level analysis shall be completed. Data used in the analysis may include but is not limited to: <ul style="list-style-type: none"> • Regional growth data • Age-class and species distributions • Stocking rates required to meet management objectives • Ecological and legal constraints • Empirical growth and regeneration data • Validated forest productivity models 	FCW can give Group Members regional FIA data to determine Sustain Yield for their properties without requirements for intense inventories, usually N/A.
5.6.b. Harvest levels and rates do not exceed growth rates over successive harvests, contribute directly to achieving desired future conditions as defined in the forest management plans, and do not diminish the long-term ecological integrity and productivity of the site.	Harvest levels and rates are dictated by silvicultural and financial requirements, what is the level of harvest that needs to take place to make the sale and harvest economically and silviculturally viable?
5.6.c. Rates and methods of timber harvest lead to achieving desired conditions, and improve or maintain health and quality across the FMU. Overstocked stands and stands that have been depleted or rendered to be below productive potential due to natural events, past management, or lack of management, are returned to desired stocking levels and composition at the earliest practicable time as justified in management objectives.	Rates and opening sizes may be exceeded but inventory data must be used to justify these actions
5.6.d. For NTFPs, calculation of quantitative sustained yield harvest levels is required only in cases where products are harvested in significant commercial operations or where traditional or customary rights may be impacted by such harvests. In other situations, the forest owner or manager utilizes available information, and new information that can be reasonably gathered, to set harvesting levels that will not result in a depletion of the non-timber growing stocks or other adverse effects to the forest ecosystem.	

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. ATFS defines this as Performance Measure 5.4 Where present, forest management activities should maintain or enhance forests of recognized importance.

<i>Criteria and Indicators</i>	<i>Ways to Fulfil the Standard</i>
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.	

<p>6.1.a. Using the results of credible scientific analysis, best available information (including relevant databases), and local knowledge and experience, an assessment of conditions on the FMU is completed and includes:</p> <ol style="list-style-type: none"> 1. Forest community types and development, size class and/or successional stages, and associated natural disturbance regimes 2. Rare, Threatened, and Endangered (RTE) species and rare ecological communities (including plant communities) 3. Other habitats and species of management concern 4. Water resources and associated riparian habitats and hydrologic functions 5. Soil resources <p>Historic conditions on the FMU related to forest community types and development, size class, and/or successional stages, and a broad comparison of historic and current conditions.</p>	<p>Normal inventory procedures will take care of most of these requirements. Cooperating Foresters are expected to include soil descriptions and maps in the management plan. FCW will provide lists of RTEs and rare plant communities present and nearby from state databases.</p>
<p>6.1.b. Prior to commencing site-disturbing activities, the forest owner or manager assesses and documents the potential short and long-term impacts of planned management activities on elements 1-5 listed in Indicator 6.1.a.</p> <p>The assessment must incorporate the best available information, drawing from scientific literature and experts. The impact assessment will at a minimum include identifying resources that may be impacted by management (e.g., streams, habitats of management concern, soil nutrients). Additional detail (i.e., detailed description or quantification of impacts) will vary depending on the uniqueness of the resource, potential risks, and steps that will be taken to avoid and minimize risks.</p>	<p>Harvest plans must address how to deal with the previous criteria if they're present. Long term impact assessment may not be necessary.</p>
<p>6.1.c. Using the findings of the impact assessment (Indicator 6.1.b), management approaches and field prescriptions are developed and implemented that: 1) avoid or minimize negative short-term and long-term impacts; and, 2) maintain and/or enhance the long-term ecological variability of the forest.</p>	<p>Management plans may need to be altered to respond to impacts of management activities.</p>
<p>6.2. Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). 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 hunting, fishing, trapping and collecting shall be controlled</p>	
<p>6.2.a. If there is a likely presence of RTE species as identified in Indicator 6.1.a then either a field survey to verify the species' presence or absence is conducted prior to site-disturbing management activities, or management occurs with the assumption that potential RTE species are present. Surveys are conducted by biologists with the appropriate expertise in the species of interest and with appropriate qualifications to conduct surveys. A secondary review of the survey does not need to be included in the process. If a species is determined to be present, its location should be reported to the manager of the appropriate database.</p>	<p>Surveys are only required when species are "likely" to be found. FCW will work with Regional Foresters and group members to determine if RTE species are likely to be found.</p>
<p>6.2.b. When RTE species are present or assumed to be present, modifications in management are made in order to maintain, restore, or enhance the extent, quality, and viability of the species and their habitats. Conservation zones and/or protected areas are established for RTE species, including those S3 species that are considered rare, where they are necessary to maintain or improve the short and long-term viability of the species. Conservation measures are based upon relevant science, guidelines, and/or consultation with the relevant independent experts as necessary to achieve the conservation goal of the indicator.</p>	<p>Management plans must address RTE species if present. FCW will give members information from state databases on RTE species.</p>

6.2.c. Within the capacity of the forest owner or manager, hunting, fishing, trapping, collecting, and other activities are controlled to avoid the risk of impacts to vulnerable species communities (See Criterion 1.5)	No negative impacts on RTE species (No fishing in areas with endangered fish, no shooting of threatened waterfowl, etc.)
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.	
6.3.a. Forest regeneration and succession	
6.3.a.1. The forest owner or manager maintains, enhances, and/or restores under-represented successional stages in the FMU that would naturally occur on the types of sites found on the FMU. Where old growth of different community types that would naturally occur on the forest are under-represented in the landscape relative to natural conditions, a portion of the forest is managed to enhance and/or restore old growth characteristics.	Depends on size of ownership.
6.3.a.2. When a rare ecological community is present, modifications are made in both the management plan and its implementation in order to maintain, restore, or enhance the viability of the community. Based on the vulnerability of the existing community, conservation zones, and/or protected areas are established where warranted.	Ecological communities must be in the management plan. FCW will assist in their identification.
6.3.a.3. When they are present, management maintains the area, structure, composition, and processes of all Type 1 and Type 2 old growth. Type 1 and 2 old growth are also protected and buffered as necessary with conservation zones, unless an alternative plan is developed that provides greater overall protection of old growth values. Type 1 old growth is protected from harvesting to the extent necessary to maintain the area, structures, and functions of the stand. Timber harvest in Type 2 old growth must maintain old growth structures, functions, and components including individual trees that function as refugia (See indicator 6.3.g).	Old growth must be protected. Type 1 – 3 or more acres that have never been logged and display old-growth characteristics Type 2 – 20 acres that have been logged, but which retain significant old-growth structure and functions.
6.3.b. To the extent feasible within the size of the ownership, particularly on larger ownerships, management maintains, enhances, or restores habitat conditions suitable for well-distributed populations of animal species that are characteristics of forest ecosystems within the landscapes.	Management can focus on creating broad habitats not on individual species management. This indicator is size dependant as well.
6.3.c. Management maintains, enhances, and/or restores the plant and wildlife habitat of Riparian Management Zones (RMZs) to provide: a) Habitat for aquatic species that breed in surrounding uplands b) Habitat for predominantly terrestrial species that breed in adjacent aquatic habitats c) Habitat for species that use riparian areas for feeding, cover, and travel d) Habitat for plant species associated with riparian areas e) Stream shading and inputs of wood and leaf litter into the adjacent aquatic ecosystem	Is addressed in FMP.
6.3.d. Management practices maintain or enhance plant species composition, distribution, and frequency of occurrence similar to those that would naturally occur on the site.	Management practices are low-impact, preserving existing ecosystem.
6.3.e. When planting is required, a local source of known provenance is used when available and when the local source is equivalent in terms of quality, price, and productivity. The use of non-local sources are justified, such as in situations where other management objectives (e.g. disease resistance or	Local source seeds and seedlings used when feasible. Non-local use justified.

adapting to climate change) are best served by non-local sources. Native species suited to the site are normally selected for regeneration.	
<p>6.3.f. Management maintain, enhances, or restores habitat components and associated stand structures, in abundance and distribution that could be expected from naturally occurring processes. These components include:</p> <ul style="list-style-type: none"> a) Large live trees, live trees with decay or declining health, snags, and well-distributed coarse down and dead woody material. Legacy trees where present are not harvested b) Vertical and horizontal complexity <p>Trees selected for retention are generally representative of the dominant species naturally found on the site.</p>	Management practices are low-impact, preserving existing ecosystem.
6.3.g.1.a. When even-aged silviculture (e.g., seed tree, regular or irregular shelterwood) or deferment cutting is employed, live trees and native vegetation are retained and opening sizes are created within the harvest unit in a proportion and configuration that is consistent with the characteristic natural disturbance regime in each community type, unless retention at a lower level is necessary for restoration or rehabilitation purposes. Harvest openings with no retention are limited to 10 acres.	10 acre gaps can be separated by SMZs, wildlife corridors, or other areas with greater retention.
6.3.g.1.b. When uneven aged silvicultural techniques are used (e.g., individual tree selection or group selection), canopy openings are less than 2.5 acres.	
<p>6.3.g.2. Under very limited situations, the landowner or manager has the option to develop a qualified plan to allow minor departure from the opening size limits described in indicator 6.3.g.1. A qualified plan:</p> <ul style="list-style-type: none"> 1. Is developed by qualified experts in ecological and/or related fields (wildlife biology, hydrology, landscape ecology, forestry/silviculture) 2. Is based on the totality of the best available information including peer-reviewed science regarding natural disturbance regimes for the FMU 3. Is spatially and temporally explicit and includes maps of proposed openings or areas 4. Demonstrates that the variations will result in equal or greater benefit to wildlife, water quality, and other values compared to the normal opening size limits, including for sensitive and rare species 5. Is reviewed by independent experts in wildlife biology, hydrology, and landscape ecology, to confirm the preceding findings 	N/A
<p>6.3.h. The forest owner or manager assesses the risk of, prioritizes, and, as warranted, develops, and implements a strategy to prevent or control invasive species, including:</p> <ul style="list-style-type: none"> 1. A method to determine the extent of invasive species and the degree of threat to native species and ecosystems 2. Implementation of management practices that minimize the risk of invasive establishment, growth, and spread 3. Eradication or control of established invasive populations when feasible 4. Monitoring of control measures and management practices to assess their effectiveness in preventing or controlling invasive species 	Management plans must address invasive species. Are they present on the property? Do they need to be controlled? Is it cost effective?
6.3.i. In applicable situations, the forest owner or manager identifies and applies site-specific fuels management practices, based on: natural fire regimes, risk of wildfires, potential economic losses, public safety, and applicable laws and regulations	If dangerous wildfires are possible fuels management must be addressed. This will generally not need to be addressed.

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.	
6.4.a. The forest owner or manager documents the ecosystems that would naturally exist on the FMU, and assesses the adequacy of their representation and protection in the landscape (see criterion 7.1). The consultation and assessment process may be more informal; however, on all FMUs, outstanding examples of common community types (e.g., common types with Natural Heritage viability rankings of A and B) are identified in the assessment to be protected or managed to maintain their conservation value.	FCW will inform group members to meet this requirement.
6.4.b. Management activities within RSAs are limited to low impact activities compatible with the protected RSA objectives, except under the following circumstances: a) Harvesting activities only where they are necessary to restore or create conditions to meet objectives of the protected RSA, or to mitigate conditions that interfere with achieving the RSA objectives; or b) Road-building only where it is documented that it will contribute to minimizing the overall environmental impacts within the FMU and will not jeopardize the purpose for which the RSA was designated.	FCW will inform group members to meet this requirement. All management activities are low-impact.
6.4.c. The RSA assessment (indicator 6.4.a) is periodically reviewed and if necessary updated (at a minimum every 10 years) in order to determine if the need for RSAs has changed; the designation of RSAs (indicator 6.4.b) is revised accordingly.	FCW will be reviewing RSA assessment.
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 protect water resources.	
6.5.a. The forest owner or manager has written guidelines outlining conformance with the indicators of this criterion.	FMP will consider Principle 6 criterion.
6.5.b. Forest operations meet or exceed Best Management Practices (BMPs) that address components of the criterion where the operation takes place.	Harvests will be periodically inspected if site disturbance is high.
6.5.c. Management activities including site preparation, harvest prescriptions, techniques, timing, and equipment are selected and used to protect soil and water resources and to avoid erosion, landslides, and significant soil disturbance. Logging and other activities that significantly increase risk of landslides are excluded in areas where risk of landslides is high. The following actions are addressed: <ul style="list-style-type: none"> • Slash is concentrated only as much as necessary to achieve the goals of the site preparation and the reduction of fuels to moderate or low levels of fire hazard • Disturbance of topsoil is limited to the minimum necessary to achieve successful regeneration of species native to the site • Rutting is minimized • Soil erosion is not accelerated • Burning is only done consistent with natural disturbance regimes • Natural ground cover disturbance is minimized to the extent necessary to achieve regeneration objectives • Whole tree harvesting on any site over multiple rotations is only done when research indicates soil productivity will not be harmed • Low impact equipment and technologies is used where appropriate 	All management activities are low-impact.

6.5.d. The transportation system, including design and placement of permanent and temporary haul roads, skid trails, recreation trails, water crossings and landings, is designed, constructed, maintained, and/or reconstructed to reduce short and long-term environmental impacts, habitat fragmentation, soil and water disturbance and cumulative adverse effects, while allowing customary uses and use rights.

This includes:

- Access to all roads and trails (temporary and permanent), including recreational trails, and off-road travel, is controlled, as possible, to minimize ecological impacts
- Road density is minimized
- Sediment discharge to streams is minimized
- There is free upstream and downstream passage for aquatic organisms
- Impacts of transportation systems on wildlife habitat and migration corridors are minimized
- Area converted to roads, landings, and skid trails is minimized
- Habitat fragmentation is minimized
- Unneeded roads are closed and rehabilitated

All management activities are low-impact.

6.5.e.1.a. All perennial streams have buffers (streamside management zones, SMZs) that include an inner SMZ and an outer SMZ. SMZ sizes are minimum widths that are likely to provide adequate riparian habitat to prevent siltation. If functional riparian habitat and minimal siltation are not achieved by SMZs of these dimensions, wider SMZs are needed.

SMZ criterion will be included in the FMP. (Same for all below indicators relating to SMZ)

Widths of inner and outer Streamside Management Zones					
Stream Zone Type	Slope Category				
	1-10%	11-20%	21-30%	31-40%	41%+
Inner Zone (perennial)	25'	25'	25'	25'	25'
Outer Zone (perennial)	55'	75'	105'	110'	140'
Total for Perennial	80'	100'	130'	135'	165'
Zone for Intermittent	40'	50'	60'	70'	80'

*All distances are in feet-slope distance and are measured from the high water mark

6.5.e.1.b. The inner SMZ for *non-high-quality waters* (see state or local listings describing the highest quality waters in the state or region) extends 25 feet from the high water mark. Single-tree selection of small group selection (2-5 trees) is allowed in the inner SMZ, provided that the integrity of the stream bank is maintained and canopy reduction does not exceed 10 percent (90 percent canopy maintenance). Trees are directionally felled away from streams. Note: The inner SMZ is designed as a virtual no-harvest zone, while allowing the removal of selected high-value trees.

6.5.e.1.c. Along perennial streams that are designated as *high-quality waters* (see state or local listings describing the highest quality waters in the state or region), no harvesting is allowed in the inner SMZ

(25 feet from the high water mark), except for the removal of wind-thrown trees. Stream restoration is allowed if a written restoration plan provides a rational justification and if the plan follows local and regional plans.	
6.5.e.1.d. Outer SMZs, outside and in addition to inner SMZs, are established for all intermittent, and perennial streams, as well as other waters. When the necessary information is available, the width of a stream management zone is based on the landform, erodibility of the soil, stability of the slope, and stability of the stream channel necessary to protect water quality and repair habitat. When such specific information is not available, the width of streamside management zone is calculated according to the table for indicator 6.5.e.1.a.	
6.5.e.1.e. Harvesting in outer SMZs is limited to single-tree and group selection, while maintaining at least a 50 percent of the overstory. Roads, skid trails, landings, and other similar silviculturally disturbed areas are constructed or when placement of disturbance-prone activities outside the SMZ would result in more environmental disturbance than placing such activities within the SMZ. Exceptions may be made for stream restoration.	
6.5.e.1.f. The entire SMZ of intermittent streams is managed as an outer buffer zone.	
6.5.e.1.g. The activities of forest management do not result in observable siltation of intermittent streams.	
6.5.e.2. Minor variations from the stated minimum SMZ widths and layout for specific stream segments, wetlands, and other water bodies are permitted in limited circumstances, provided the forest owner or manager demonstrates that the alternative configuration maintains the overall extent of the buffers and provides equivalent configuration or greater environmental protection than FSC-US regional requirements for those stream segments, water quality, and aquatic species, based on site-specific conditions and the best available information. The forest owner or manager develops a written set of supporting information including a description of the riparian habitats and species addressed in the alternative configuration. The FCW must verify that the variations meet the requirements, based on the input of an independent expert in aquatic ecology or closely related field.	If deviating from SMZ evidence of support must be provided.
6.5.f. Stream and wetland crossings are avoided when possible. Unavoidable crossings are located and constructed to minimize impacts on water quality, hydrology, and fragmentation of aquatic habitat. Crossings do not impede movement of aquatic species. Temporary crossings are restored to original hydrological conditions when operations are finished.	Improved crossings used. Cannot block fish species moving through the crossing.
6.5.g. Recreation use on the FMU is managed to avoid negative impacts to soils, water, plants, wildlife, and wildlife habitats.	Implement low-impact recreations use.
6.5.h. Grazing by domesticated animals is controlled to protect in-stream habitats and water quality, the species composition and viability of the riparian vegetation, and the banks of the stream channel from erosion.	Banks protected from grazing, if present.
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. 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.	
6.6.a. No products on the FSC list of Highly Hazardous Pesticides are used (see FSC-POL-30-001 EN FSC Pesticides policy 2005 and associated documents).	No use of pesticides on list. List is in operations manual as well.
6.6.b. All toxicants used to control pests and competing vegetation, including rodenticides, insecticides, herbicides, and fungicides are used only when and where non-chemical management practices are: a) not available; b) prohibitively expensive, taking into account overall environmental and social costs, risks, and benefits; c) the only effective means for controlling invasive and exotic species; or d) result in less environmental damage than non-chemical alternatives (e.g., top soil disturbance, loss of soil litter, and down wood debris). If chemicals are used, the forest owner or manager uses the least environmentally damaging formulation and application method practical. Written strategies are developed and implemented that justify the use of chemical pesticides. Family forest owners/managers may use brief and less technical written procedures for applying common over-the-counter products. Any observed misuse of these chemicals may be considered as violation of requirements of this indicator. Whenever feasible, an eventual phase-out of chemical use is included in this strategy.	Usage of chemicals must be documented and justified.
6.6.c. Chemicals and application methods are selected to minimize risk to non-target species and sites. When considering the choice between aerial and ground application, the forest owner or manager evaluates the comparative risk to non-target species and sites, the comparative risk of worker exposure, and the overall amount and type of chemicals required.	Basal spray, hack and squirt, and foliar spray are preferred application methods. Aerial spraying must be documented for effects on non-target sites and species.
6.6.d. Whenever chemicals are used, a written prescription is prepared that describes the site specific hazards and risks, and includes a map of the treatment area.	Consistent with Indicator 6.6.b, family forest owners/managers may follow brief and less technical procedures with respect to written prescriptions for application and monitoring for common over-the-counter products. Any observed misuse of these chemicals may be considered a violation of the requirements of this Indicator.
6.6.e. Chemicals are applied only by workers who have received proper training in application methods and safety. They are made aware of the risks, wear proper safety equipment, and are trained to minimize environmental impacts on non-target species and sites.	Applicators and/or supervisors must have the appropriate license from state.
6.6.f. If chemicals are used, and the effects are monitored and the results are used for adaptive management. Records are kept of pest occurrences, control measures, and incidences of worker exposure to chemicals.	Records of chemical application are documented in management plan. Monitoring is conducted to ensure application was successful.
6.6.g. Every time chemicals are applied the Chemical Usage Form (CFCW-FM-##) must be completed and copies provided to the FCW.	Form completed, submitted to FCW, and document in management plan as described by 6.6.d.
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. The forest owner or manager, and employees and contractors, have equipment and training necessary to respond to hazardous spills.	Must have spill kit, first aid kit, and some kind eye wash kit anytime chemicals are used. Type and amount of measures are scale dependant on the chemical application method and size.
6.7.b. In the event of a hazardous material spill, the forest owner or manager immediately contains the material and engages qualified personnel to perform the appropriate removal and remediation, as required by applicable laws and regulations.	Spills contained and state personnel notified if necessary.
6.7.c. Hazardous materials and fuels are stored in leak-proof containers in designated storage areas, that are outside riparian management zones and away from other ecological sensitive features, until they are used or transported to an approved off-site location for disposal. There is no evidence of persistent fluid leaks from equipment or of recent groundwater or surface water contamination.	Chemicals stored in appropriate manner.
6.8. Use of biological control agents shall be documented, minimized, monitored, and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.	
6.8.a. Biological control agents are used only as part of a pest management strategy for the control of invasive plants, pathogens, insects, or other animals when other pest control methods are ineffective, or are expected to be ineffective. Such use is contingent upon peer-reviewed scientific evidence that the agents in question are non-invasive and are safe native species.	The Group Manager will monitor all biological control use by inquiring about use during annual review. Group Members are informed and trained on FSC-POL-30-602 and these requirements.
6.8.b. If biological control agents are used, they are applied by trained workers using proper equipment.	See above.
6.8.c. If biological control agents are used, their use is documented, monitored and strictly controlled in accordance with state and national laws and internationally accepted scientific protocols. A written plan will be developed and implemented justifying such use, describing the risks, specifying the precautions workers will employ to avoid or minimize such risks, and describing how potential impacts will be monitored.	See above.
6.8.d. Genetically Modified Organisms (GMOs) are not used for any purposes.	GMOs cannot be used but seedling stock improved by traditional breeding methods are acceptable.
6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.	
6.9.a. The use of exotic species is contingent on the availability of credible scientific data indicating that any such species is non-invasive and its application does not pose a risk to natural biodiversity.	Any exotic species planted must be pre approved by the FCW with acceptable scientific data.
6.9.b. If exotic species are used, their provenance and the location of their use are documented, and their ecological effects are actively monitored.	Documented use of invasive species, if used.
6.9.c. The forest owner or manager takes timely action to curtail or significantly reduce any adverse impacts resulting from their use of exotic species.	Documented use of invasive species, if used.
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. Forest conversion to non-forest land uses does not occur, except in circumstances where conversion entails a very limited portion of the forest management unit (note indicators 6.10.a, b, and c are related and all need to be conformed with or conversion to be allowed).	No forest conversion to plantation unless small area of property.
6.10.b. Forest conversion to non-forest land uses does not occur on high conservation value forest areas (note that indicators 6.10.a, b, and c are related and all need to be conformed with for conversion to be allowed).	No conversion of HCVFs.
6.10.c. Forest conversion to non-forest land uses does not occur, except in circumstances where conversion will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit (note that indicators 6.10.a, b, and c are related and all need to be conformed with for conversion to be allowed).	Conversions must be justified in management plans.
6.10.d. Natural stands are not converted to plantations. Degraded, semi-natural stands may be converted to restoration plantations.	Only degraded and semi-natural stands may be converted to plantations.
6.10.e. Justification for land-use and stand-type conversions is fully described in the long-term management plan, and meets to biodiversity conservation requirements of criterion 6.3 (see also criterion 7.1.1).	Conversions must be justified in management plans.
6.10.f. Areas converted to non-forest use for facilities associated with subsurface mineral and gas rights transferred by prior owners, or other conversion outside the control of the certificate holder, are identified on maps. The forest owner or manager consults with the FCW to determine of removal of these areas from the scope of the certificate is warranted. To the extent allowed by these transferred rights, the forest owner or manager exercises control over the location of the surface disturbances in a manner that minimizes adverse environmental and social impacts. If the certificate holder at one point held these rights, and then sold them, then subsequent conversion of forest to non-forest use would be subject to indicator 6.10.a-d.	Any area to be surface mined will have to be removed from the Group Member's certified land base.

PRINCIPLE 7. MANAGEMENT PLAN - A management plan -- appropriate to the scale and intensity of the operations -- shall be written, implemented, and kept up to date. The long-term objectives of management, and the means of achieving them, shall be clearly stated.

<u>Criteria and Indicators</u>	<u>Ways to Fulfil the Standard</u>
<p>7.1. The management plan and supporting documents shall provide:</p> <ul style="list-style-type: none"> a) Management objectives. b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands. c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories. d) Rationale for rate of annual harvest and species selection. e) Provisions for monitoring of forest growth and dynamics. f) Environmental safeguards based on environmental assessments. g) Plans for the identification and protection of rare, threatened and endangered species. h) Maps describing the forest resource base including protected areas, planned management activities and land ownership. i) Description and justification of harvesting techniques and equipment to be used. 	

7.1.a.i. A written management plan exists for the property or properties for which certification is being sought. The management plan includes the following components: i. Management objectives (ecological, silvicultural, social, and economic) and duration of the plan	---
7.1.a.ii. Quantitative and qualitative description of the forest resources to be managed, including at a minimum stand-level descriptions of the land cover, including species and size/age class and referencing inventory information	---
7.1.a.iii. Description of silvicultural and/or other management system, prescriptions, rationale, and typical harvest systems (if applicable) that will be used	---
7.1.a.iv. Description of harvest limits (consistent with criterion 5.6) and species selection. Also, description of the documentation considered from the options listed in criterion 5.6 if the FMU does not have a calculated annual harvest rate	---
7.1.a.v. Description of environmental assessment and safeguards based on the assessment, including approaches to: (1) pest and weed management, (2) fire management, and (3) protection of riparian management zones; (4) protection of representative samples of existing ecosystems (see criterion 6.4) and management of High Conservation Value Forests (see principle 9)	---
7.1.a.vi. Description of location and protection of rare, threatened, and endangered species and plant community types	FCW will provided locations and list of nearby RTE species.
7.1.a.vii. Description of procedures to monitor the forest, including forest growth and dynamics, and other components as outlined in principle 8	--
7.1.a.viii. Maps represent property boundaries, use rights, land cover, types, significant hydrologic features, roads, adjoining land use, and protected areas in a manner that clearly relates to the forest description and management prescriptions	---
7.1.b. Actions undertaken on the FMU are consistent with the management plan and help achieve the stated goals and objectives of the plan.	---
NOTES:	
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. The management plan is kept up to date. It is reviewed on an ongoing basis and is updated whenever necessary to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social, and economic circumstances. At a minimum, a full revision occurs every 10 years.	Plan is updated on ongoing basis. Plan must be updated at a minimum 10 years. Major revisions of objectives and plans will be provided to the group member.
7.3. Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.	
Criterion Level Remarks:	
7.3.a. Workers are qualified to properly implement the management plan; all forest workers are provided with sufficient guidance and supervision to adequately implement their respective components of the plan.	Workers are adequately trained and supervised to carry out objectives of the plan.

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.

<i>Criteria and Indicators</i>	<i>Ways to Fulfil the Standard</i>
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. The forest owner or manager develops and consistently implements a regular, comprehensive, and replicable written monitoring protocol. Monitoring may be scaled to the size and intensity of the management operations that affect the resources identified in criterion 8.2.	For certain elements a brief, non-technical and qualitative monitoring approach might be adequate to ensure compliance.
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, and e) cost, productivity, and efficiency of forest management.	
8.2.a.1. For all commercially harvested products, an inventory system is maintained. The inventory system includes at a minimum: a) species, b) volumes, c) stocking, d) regeneration, and e) stand and forest composition and structure; and f) timber quality.	Inventory done and included in management plan. FCW manages this.
8.2.a.2. Significant, unanticipated removal or loss or increased vulnerability of forest resources is monitored and recorded. Recorded information includes date and location of occurrence, description of disturbance, extent and severity of loss, and may be both qualitative and quantitative.	Unanticipated loss or removal is documented (tornado, flood, theft, trespass, etc.)
8.2.b. The forest owner or manager maintains records of harvested timber and NTFPs (volume and product and/or grade). Records must adequately ensure that the requirements under criterion 5.6 are met.	Prior to harvest FCW is informed of amount to be sold or harvested by use of Harvesting Form.
8.2.c. The forest owner or manager periodically obtains data needed to monitor presence on the FMU of : <ul style="list-style-type: none"> • Rare, threatened, and endangered species and/or their habitats • Common and rare plant communities and/or habitat • Location, presences, and abundance of invasive species • Condition of protected areas, set-asides, and buffer zones • High Conservation Value Forests (see criterion 9.4) 	The group member will be informed of changes in RTE species and rare communities as the FCW acquires updated information and databases.
8.2.d.1. Monitoring is conducted to ensure their site specific plans and operations are properly implemented, environmental impacts of site disturbing operations are minimized, and that harvest level prescriptions are guidelines are effective.	Monitoring must take place after any activity. Were non-target species affected during chemical applications? Were water bars properly installed during harvest retirement.
8.2.d.2. A monitoring program is in place to assess the condition and environmental impacts of the forest-road system.	Roads are inspected. These inspections can be minimized where there is no management activity and/or on non-active roads.
8.2.e. The forest owner or manager monitors the costs and revenues of management in order to assess productivity and efficiency.	Properly merchandising timber sales will generally meet this requirement.
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. When forest products are being sold as FSC-certified, the forest owner or manager has a system that prevents mixing of FSC-certified and non-certified forest products prior to the point of sale.	If any non-FSC certified areas are harvested, ensure there is segregation between FSC and non-FSC.
8.3.b. The forest owner or manager maintains documentation to enable the tracing of the harvested material from each harvested products from its origin to the point of sale.	Copy of records of harvest and sale will document the origination of stumpage.
8.4. The results of monitoring shall be incorporated into the implementation and revision of the management plan.	
8.4.a. The forest owner or manager monitors and documents the degree to which the objectives stated in the management plan are being fulfilled, as well as significant deviations from the plan.	Follow up monitoring must ensure that management activities are successful.
8.4.b. Where monitoring indicates that management objectives and guidelines, including those necessary for conformance with this standard, are not being met or if changing conditions indicate that a change in management strategy is necessary, the management plan, operations plans, and/or other plan implementation measures are revised to ensure the objectives and guidelines will be met. If monitoring shows that the management objectives and guidelines themselves are not sufficient to ensure conformance with this standard, then the objectives and guidelines are modified.	If activity was not successful, management plan and activities are modified to ensure objectives and guidelines are met.
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.	
<i>Applicability Note to Criterion 8.5: Forest owners or managers of private forests may withhold proprietary information (e.g., the nature and extent of their forest resource base, marketing strategies, and other financial information).</i>	
8.5.a. While protecting landowner confidentiality, either full monitoring results or an up-to-date summary of the most recent monitoring information is maintained, covering the indicators listed in criterion 8.2, and is available to the public, upon request.	Summary of timber harvested will be lumped together with other Family Forest Group Members to report compiled harvest levels. No addresses or maps will be made public.

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.	
<u>Criteria and Indicators</u>	<u>Ways to Fulfil the Standard</u>
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. The forest owner or manager identifies and maps the presence of High Conservation Value Forests (HCVF) within the FMU and, to the extent that data are available, adjacent to their FMU, in a manner consistent with the assessment process, definitions, data sources, and other guidance described in Appendix F. Given the relative rarity of the old growth forests in the contiguous United States, these areas are normally designated as HCVF, and all old growth must be managed in conformance with indicator 6.3.a.3 and requirements for legacy trees in indicator 6.3.f.	FCW will help identify HCFVs. They must specifically be named and documented in the management plan.
9.1.b. In developing the assessment, the forest owner or manager consults with databases, qualified experts, and/or best available research and literature.	FCW will conduct this criterion.

9.1.c. A summary of the assessment results and management strategies (see criterion 9.3) is included in the management plan summary that is made available to the public.	If HCFVs are present, your public summary will note that HCFVs are present on the property.
9.2 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.	
9.2.a. The management plan and relevant operational plans describe the measures necessary to ensure the maintenance and/or enhancement of all high conservation values present in all identified HCVF areas, including the precautions required to avoid risks or impacts to such values (see principle 7). These measures are implemented.	Preserve, maintain and enhance those attributes that make the area a HCVF.
9.2.b. All management activities in the HCFVs must maintain or enhance the high conservation values and the extent of the HCVF.	Preserve, maintain and enhance those attributes that make the area a HCVF.
9.2.c. If HCVF attributes cross ownership boundaries and where maintenance of the HCV attributes would be improved by coordinated management, then the forest owner or manager attempts to coordinate conservation efforts with adjacent landowners.	When HCFVs overlap into other boundaries attempts are made to coordinate with adjacent landowners.
9.3. Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain and enhance the applicable conservation attributes.	
9.3.a. The forest owner or manager monitors, or participates in a program to annually monitor, the status of the specific HCV attributes, including the effectiveness of the measures employed for their maintenance or enhancement. The monitoring program is designed and implemented consistent with the requirements of principle 8.	Monitoring must ensure that attributes that denote HCVF are maintained.
9.3.b. When monitoring results indicate increasing risk to a specific HCV attribute, the forest owner/manager re-evaluates the measures taken to maintain or enhance that attribute, and adjusts the management measures in an effort to reverse the trend.	If risk to HCVF attribute is found, management strategies are undertaken to avoid and reverse the risk.

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.	
<i>Applicability Note to Principle 10: Not all group members will include plantation FMU's. All plantation criteria and indicators are managed by FCW.</i>	
<u>Criteria and Indicators</u>	<u>Ways to Fulfil the Standard</u>
10.1 The management objectives of the plantation, including natural forest conservation and restoration objectives shall explicitly stated in the management plan, and clearly demonstrated in the implementation of the management plan.	
10.1.a. Consistent with all indicators within principle 10 and requirements of principle 7, the management plan contains clear descriptions of the management goals and prescriptions for plantations on the FMU, of the rationale for plantation management within the FMU, and the relationship between the plantations and natural forest conservation and restoration objectives within the unit.	---

10.1.b. The forest owner or manager demonstrates clear progress in implementation of the components of the management plan addressing natural forest conservation and restoration objectives as they pertain to plantation management	---
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. For plantations established on soils capable of supporting natural forests, harvest units shall be arranged to provide or maintain areas of vegetative cover that allows populations of mid to late successional and sedentary native plant and animal species to survive or be reestablished within the plantation.	---
10.2.b. New plantation establishment does not replace, endanger, or otherwise diminish the ecological integrity of any existing ecosystems won the FMU, including primary, natural, or semi-natural forests on the FMU. Note that restoration plantations may be established on degraded, semi-natural forests (see criterion 6.10). Plantations can be established on the following sites: former plantations; agricultural lands; and non-forested lands; and non-forested lands that were historically naturally forested but have been used for non-forest purposes since before 1994 (see additional conditions in criterion 10.9). New plantations are not established on rare or threatened non-forest habitats or ecosystems.	---
10.2.c. Openings lacking within-stand retention are limited to a 40 acre average and an 80 acre maximum. Harvest openings larger than 80 acres must have retention as required in indicator 10.2.d and be justified by credible scientific analysis. The average for all openings (with and without retention) does not exceed 100 acres. Departures from these limits for restoration purposes are permissible but also must be justified by credible scientific analysis.	---
10.2.d. On openings larger than 80 acres that are justified by credible scientific analysis, live trees, and native vegetation are retained in a proportion and configuration that are consistent with the characteristic natural disturbance regime in each community type, unless retention at a lower level in necessary for restoration purposes.	---
10.2.e. In all regions except the Southeast, before an area is harvested, regeneration in adjacent forest areas (either natural forest or plantation) on the FMU must be of the subsequent advanced successional habitat stage, or exceed ten feet in height, or achieve canopy closure along at least 50% of its perimeter. In the Southeast Region, harvest units are arranged to support viable populations of native species of flora and fauna. For hardwood ecosystems, regeneration in previously harvested areas reaches a mean height of at least ten feet or achieves canopy closure before adjacent areas are harvested. For southern pine ecosystems, (e.g. upland pine forests, pine flatwoods forests, sand pine scrub), harvest areas are located, if possible, adjacent to the next youngest stand to enable early successional or groundcover-adapted species to migrate across the early successional continuum.	---
10.3 Diversity in the composition of plantations is preferred, so as th 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. Plantation management alone or in combination with natural forest management contributes to the economic stability of the local community, or helps the owner maintain the property as a working forest.	---
10.3.b. On plantations established on soils capable of supporting natural forests, the forest owner or manager maintains, conserves, and/or restores forest health and diversity, including wildlife habitat and soil productivity, by maintaining appropriate diversity of size, structures, age classes, species, and genetics across the plantation FMU.	---
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. Species shall be used for planting that are suitable and appropriate to the site and are consistent with maintaining FMU health and productivity. Species native to the region are preferred to other species (not native to the region).	---
10.4.b. For Ouachita/Ozark region the uses of exotic species (i.e. species not native to the region) is contingent on credible scientific analysis confirming that the species in question is non-invasive, will not create significant risk to forest health, and performs better than species native to the region. If exotic plants are used, their provenance and the location of their use are documented and their ecological effects are monitored. In the Mississippi Alluvial Valley, Appalachian, and Southeast regions, the planting of exotic species is used only for site remediation. Justification for such plantings is provided. The species in question shall be non-invasive, shall not create significant risk to forest health, and shall perform better than native species. Their provenance and the location of their use are documented and their ecological effects are 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 natural cover.	
10.5.a. Areas of forest and/or plantation to be restored to natural conditions are chosen through a landscape analysis that focuses on enhancing principle characteristics of the native ecosystem or providing important ecological benefits at the stand or landscape level.	---
10.5.b. Areas to be restored to natural conditions are prioritized where the analysis indicates the greatest conservation gain and are designed for long-term restoration.	---
10.5.c. Management plans should clearly state the extent and location of areas selected for such restoration, as well as the rationale for their selection.	---
10.5.d. Areas of forest and/or plantation to be restored or maintained as natural forests are managed to provide a diversity of community types, wildlife habitats, and ecological functions native to the site.	---
10.5.e. Where natural ecosystems were previously converted to plantations, a percentage of the total area of the FMU must be maintained and/or restored to natural or semi-natural cover. The minimum percentage area that is maintained and/or restored in natural or semi-natural state is: <ul style="list-style-type: none"> For 100 acres or less, at least 10 percent 	---

<ul style="list-style-type: none"> • For 101-1,000 acres, at least 15 percent • For 1,001-10,000 acres, at least 20 percent • For >10,000 acres, at least 25 percent <p>In limited situations where restoration on an FMU is not ecologically achievable (e.g. cases of irreversibly altered geophysical conditions such as former flood plains where rivers have been dammed), restoration efforts may be allocated to areas outside the FMU. Forest managers may secure cooperative conservation agreements for those areas, and count them towards the requirements of 10.5.f. To be eligible, the areas outside the FMU must be of equal or higher priority for conservation and/or restoration than are areas within the FMU.</p>	
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.	
10.6.a. Forest operations do not result in long-term adverse impacts to soil productivity, water resources, and hydrology. Soil disturbance is minimized during road/trail work and site preparation, and site preparation is done in accordance with BMPs.	---
10.6.b. Tree seedlings are planted in a way that minimizes damage to the soil, while facilitating seedling survival. Tree seedling species are selected appropriate for maintaining long-term productivity.	---
10.6.c. Thinning is implemented in a manner that minimizes site disturbance and damage to the residual stand of crop trees and other desired vegetation (see criterion 6.5).	---
10.6.d. Fertilizer is applied only when all the following conditions are met: <ul style="list-style-type: none"> • Soil classification or foliar analysis indicates one or more nutrients are a limiting factor for forest productivity • Data and/or scientific literature suggest that the response to fertilization is economically justified • Where necessary due to topography, soils, or other conditions, measures are taken to prevent damage from fertilizer runoff or leaching. This includes preventing influences on native low-nutrient ecological systems, such as pitcher plant bogs, or on ground and surface water quality • Fertilizer application maintains or enhances soil condition and site productivity 	---
10.6.e. Sufficient woody debris and other organic matter is retained within plantation stands to ensure adequate soil structure and nutrient recycling.	---
10.7 Measures shall be taken to prevent and minimize outbreaks or 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, including their use in nurseries. The use of chemicals is also covered in criteria 6.6 and 6.7.	
10.7.a. Outbreaks of pests and disease are controlled by maintaining plantation vigor. Management regimes in plantation areas are designed to minimize forest damage from fire, pests, disease, wind, and other factors. Where applicable: <ul style="list-style-type: none"> • Periodic thinning are scheduled and conducted to reduce competition for light, water, and nutrients • The forest owner or manager is aware of the potential pest problems associated with the tree species in the plantation and region, and has some knowledge of control procedures • Habitat for predators of plantation pests is maintained within or adjacent to the plantation • Diversity of tree species is encouraged in the stand 	---

• Management techniques are used that minimize reliance on chemicals	
10.7.b. A strategy is in place to control fire damage. Where applicable, prescribed burns are conducted according to BMPs and with adequate planning, equipment, training, and weather conditions to maintain control of the burn within the burn plan area.	---
10.7.c. The forest owner implements a strategy to prevent or control invasive species, as noted in indicator 6.3.h.	---
10.8 Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-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 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.	
10.8.a. Monitoring of the impacts of plantations, both on and off-site, is conducted in the same manner as the monitoring of natural forests, in accordance with principles 4, 6, and 8.	---
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 FCW that the manager/owner is not responsible directly or indirectly of such conversion.	
10.9.a. For plantations established in areas converted after 1994, the forest owner or manager demonstrates to the FCW that the manager/owner was not directly or indirectly responsible for the conversion of the natural forest to the plantation.	---
10.9.b. For plantations established in areas converted after 1994, the forest owner or manager develops and implements a plan to restore the plantation stands to conditions characteristic of natural forests and to manage those stands in compliance with indicators of principles 1-9 as quickly as feasible.	---