

DRAFT 7 FSC-US FOREST MANAGEMENT STANDARD

FSC-US DRAFT HIGH CONSERVATION VALUE FOREST ASSESSMENT FRAMEWORK

High Conservation Value Forests (HCVFs) are managed to protect and maintain their identified high conservation value attributes. In some cases, active management is consistent with these attributes, and in other cases (e.g., most old growth forests), active management is specifically precluded.

FSC introduced the concept of High Conservation Value Forests (HCVFs) in 1999 to ensure identification and proper management of forest areas with exceptional conservation value. FSC defines High Conservation Value Forests as those that possess one or more of the following High Conservation Values (HCVs):

1. HCV forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g., endemism, endangered species, refugia);
2. HCV forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance;
3. HCV forest areas that are in or contain rare, threatened or endangered ecosystems;
4. HCV forest areas that provide basic services of nature in critical situations (e.g., watershed protection, erosion control);
5. HCV forest areas fundamental to meeting basic needs of local communities (e.g., subsistence, health); or,
6. HCV forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

How to use the framework:

The High Conservation Value Forest (HCVF) Assessment Framework is a guidance document to help land managers identify if High Conservation Values (HCVs) are present on the forest. The Framework includes a set of six tables, one for each HCV. The land manager is not required to use this Assessment Framework in identifying HCVs on their FMU; however, compliance with Principle 9 of the FSC-US Forest Management Standard requires that the HCVF assessment is consistent with the assessment process, definitions, data sources, and other guidance described in the US National HCVF Assessment Framework.

A “No” answer to the questions in this Framework means that the forest operation does not include HCVs with the characteristics indicated by that question and associated guidance. A “Yes” answer will generally indicate the presence of an HCV. However, final determination of the presence or absence of an HCV should be made by the forest owner or manager based on the weight of available evidence, including data and applicable consultations.

As required in Indicator 9.1.c in the FSC-US Forest Management Standard, the report summarizing the HCVF assessment will vary depending on the size and complexity of the FMU and the HCVs identified. At minimum, the assessment shall describe data considered, stakeholders consulted, and conclusions regarding identified High Conservation Values.

This Assessment Framework is also applicable for conducting assessments for controlled wood as per FSC-STD-30-010.

Guidance on Assessment Process: Data gathered to address rare or important ecological features associated with Criteria 6.1, 6.2, 6.3, and 6.4 should be the starting point for this assessment. If there is a concentration of these values and additional conservation is warranted to ensure that the integrity of the area as a whole is maintained, then HCVF designation is warranted.

Existing assessments of biodiversity values undertaken by public agencies and/or other conservation groups may be used when considering if this HCV is present. When a property adjacent to an area with known biodiversity values has not been surveyed for ecological values, then consultation with an outside expert may be necessary to determine if the High Conservation Values also occur on the FMU.

Initial consultation for HCVs 1-3 is generally with state Natural Heritage programs and state wildlife agencies. The US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service should be consulted if the state conservation agency does not have USFWS location information.

In some regions TNC's Ecoregional Assessments may also identify areas with significant concentrations of biodiversity values. While areas identified on these maps are not intended to be HCVF as defined below, the compilation of data and consultation with TNC may provide useful information.

Additional consultation may be appropriate if the FMU is adjacent to an identified area with regionally significant concentrations of biodiversity values, or if the FMU contains ecosystems and site conditions that are similar to such areas.

On large FMUs, for HCVF Attributes 1-4, an FMU-specific assessment including on-site review may be appropriate if the FMU has not been assessed by a qualified ecologist and evidence suggests that HCVs may be present.

HCV 1: Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g., endemism, endangered species, refugia).

Definition of 'Significant concentrations of biodiversity values': areas that contain concentrations of rare/threatened/endangered species, natural communities, or other biodiversity values that occur in numbers, frequency, quality, and/or density that are sufficiently outstanding to be considered unique or highly important in comparison with other areas within the **ecoregion** within which the FMU is located.

Definition of Region/Ecoregion: For the purposes of HCVF assessment, the ecoregion will in most cases be consistent with the scale of the USFS Section within which the ownership is located (see Ecoregion Map). If data for the region are limited, or in the cases of very small ecological sections, a larger area may be considered if justified.). Where justified by available data, a comparable classification system (e.g., TNC's Ecoregion Map) may be used.

Guidance on Data sources: The rigor of the assessment, including choices of data sources consulted, is based on the likelihood of HCVs on the FMU and the risk of negative impacts to the HCVs. Data sources include:

- State Natural Heritage Programs
- State conservation, fish and wildlife Agencies
- State Wildlife Action Plan
- US Fish and Wildlife Service
- National Marine Fisheries Service
- Nature Serve
- Conservation groups whose primary mission is science-based biodiversity protection and management (e.g., The Nature Conservancy, Audubon).
- Local experts (e.g. scientists, tribal experts)
- Forest Management Unit (FMU) cover type maps and forest inventory data
- US Forest Service (USFS) Ecoregions See Appendix D
http://www.fs.fed.us/land/ecosysmgmt/colorimagemap/ecoreg1_provinces.html; or
<http://nationalatlas.gov/natlas/Natlasstart.asp> click on *Biology/Ecoregion Bailey/Province and Section*.

Guiding Questions	Guidance
1.1. Does all or part of the FMU contain an area that is legally protected or managed primarily for concentrations of biodiversity values that are significant at the ecoregion or larger scale, or is such an area proposed for protection?	See guidance and definitions above.
1.2. Does all or part of the FMU contain an area with significant concentrations of rare, threatened or endangered species or rare ecological communities, endemic (range restricted) species and/or natural communities that are significant at the ecoregion scale?	<p>See guidance and definitions above. In most cases these areas are likely to be known to state conservation agencies (e.g. Natural Heritage and wildlife). However, not all “concentrations” identified by an agency may meet the intent of this HCV.</p> <p>This could also include areas with mapped significant seasonal concentrations of species (e.g., migratory staging areas).</p> <p>If state-level conservation rankings are available, they should be considered in the assessment. If state-level rankings are not available, then managers should seek the best available data.</p>

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HCV 2. Forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.

Definition of ‘Large landscape-level forests’: Relatively contiguous areas of forest (which may be crossed by land management roads or public roads). At the minimum these forests are likely to be thousands or tens of thousands of acres in size. However, “large” is relative to ecoregion landscape context (particularly the size of forested blocks in the ecoregion) and might be smaller or larger than this figure as indicated by consultation with regional experts. In ecoregions where natural forests are heavily fragmented by forest type conversion or land use conversion, the increased value of smaller occurrences of remaining natural forest should also be included in the assessment. The forest may be in single or multiple ownerships.

Definition of ‘Significant’: The forest is significant in the ecoregion due to its size, condition, and/or importance to biodiversity conservation. Factors to consider include:

- Rarity of forests of this size and quality within the ecoregion
- Less affected by anthropogenic factors than similar areas in the ecoregion.

See additional guidance below.

Definition of Ecoregion: See definition in HCV 1

Data sources: See HCV 1 Guidance on Assessment Process.

Guidance:

Areas with HCV 2 are less likely to be mapped than areas qualifying for HCV 1. When it is not clear if this value is present, then analysis of forest inventory and cover type data should be used to determine if HCV 2 occurs on the FMU.

The general approach in assessing for HCV 2 is to compare forest characteristics (such as extent and intensity of harvest practices, forest communities, successional stages, structures, and species composition and abundance) with natural forests that have only been subject to natural disturbance processes or minimal human intervention. Aerial photography or satellite images of the surrounding landscape should also be considered.

Guiding Questions	Guidance
<p>2.1. Does all or part of the FMU contain a globally, regionally or nationally significant large landscape-scale forest where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance?</p> <p>What would happen to regional biodiversity if the characteristics of this forest (e.g., age class structure or relative species abundance) were significantly altered?</p>	<p>Areas with this HCV include:</p> <ol style="list-style-type: none"> 1. Landscape-scale natural forests that have experienced lesser levels of past human disturbance (e.g., minimal timber harvesting) or other management (e.g. fire suppression), or areas within such forests (e.g., part or all of ownerships or management units). 2. Managed forests that are rare at the ecoregion or larger scale because they contain forest communities with successional stages, forest structures, and species composition that are similar in distribution and abundance to natural forests that have been only subject to natural disturbance processes or minimal human intervention., This

	<p>would also include areas (e.g., part or all of ownerships or management units) within such forests. Because these are managed forests they would not likely contain old growth, but nonetheless they would typically contain an abundance older forest attributes (biologically mature or late successional) characteristic of the forest type, as indicated by tree species composition, tree size, or other attributes applicable to the forest community type, such as coarse woody debris, snags, herb diversity, structural understory diversity, and the lack of invasive plant species.</p> <p>In some regions, Landfire’s FRCC index can be used to identify these areas that have landscape scale expressions of low ecological departure from natural conditions (e.g. FRCC 1). These data may be used to supplement analyses based for Guidance conditions 1 and 2, above.</p> <p>Examples: HCVFs in this group are more likely to be in public ownership, although areas in private ownership may that have experienced low levels of timber harvesting could also qualify if they are part of landscape-scale forests as described above.</p>
<p>2.2. Does all or part of the FMU contain a landscape-scale forest recognized as being significant to biodiversity conservation at the ecoregion scale because it contains landscape-scale biodiversity values that are not present on other forests due to landscape-scale habitat modifications on surrounding lands, (such as land use conversion or forest management practices that have significantly altered forest biodiversity values)?</p> <p>What would happen to regional biodiversity if the characteristics of this forest (e.g., age class structure or relative species abundance) were significantly altered?</p>	<p>Areas with this HCV include:</p> <ol style="list-style-type: none"> a) Forests recognized as being regionally significant at the ecoregion or larger scale by conservation organizations due to the unusual landscape-scale biodiversity values provided by size and condition of the forest relative to regional forest land cover and land use trends. b) Forests that provide regionally significant habitat connectivity between larger forest areas. <p>See guidance above. These would typically be managed forests.</p> <p>Examples: HCVFs in this group are likely to be comparatively intact landscape-scale forests in developed regions (including regions where forests have been converted to agricultural use), relatively mature landscape-scale forests in regions where short-rotation forestry is the norm, and “island” forests isolated by agriculture or natural changes in vegetation (e.g., isolated mountain ranges surrounded by grassland).</p>

HCV 3. Forest areas that are in or contain rare, threatened or endangered ecosystems.

Guidance: Rare, threatened and endangered ecosystems include old growth, roadless areas, and other ecosystems that are considered ‘rare’ at a global, regional, or local (state) level.

- Distinctiveness in terms of size, quality (particularly lack of human disturbance), or location within the ecosystem’s geographic range may be considered in assessing ecosystem rarity.
- For areas that have not been surveyed by state Natural Heritage programs or other plant community experts, forest manager should conduct a survey for assemblages of HCV3 attributes.
- For old growth, stand-level assessments are appropriate
- For roadless areas, cover type maps, and site reconnaissance information is appropriate.

Definition of Old growth: (1) the oldest seral stage in which a plant community is capable of existing on a site, given the frequency of natural disturbance events, or (2) a very old example of a stand dominated by long-lived early- or mid-seral species The onset of old growth varies by forest community and region. For example, in the Pacific Coast region, old growth often begins around 200-250 years of age, whereas in the Northeast old growth is generally begins at 150-200 years after stand-replacing disturbances. Depending on the frequency and intensity of disturbances, and site conditions, old-growth forest will have different structures, species compositions, and age distributions, and functional capacities than younger forests. Old-growth and late successional stands and forests include: A) **Type 1 Old Growth:** stands that have never been logged and that display late successional/old-growth characteristics. B) **Type 2 Old Growth:** stands that have been logged, but which retain significant late-successional/old-growth structure and functions.

Definition of Roadless Area: Roadless areas are forested areas without evidence of roads or skid trails.

Data sources: Sources of information may include but are not limited to:

- FMU cover type maps and forest inventory data
- Nature Serve
- State Natural Heritage Programs
- Conservation NGOs
- Local experts (e.g. scientists, tribal experts)
- For Rare ecosystems, the primary data sources is the rare ecosystem information gathered as per Criteria 6.1, 6.2 and 6.4 in the FSC-US Forest Management Standard.

Guiding Questions	Guidance
3.1. Does the FMU contain old growth stands?	<p>National: See guidance and definition above and the appendix for regional variation.</p> <p>Regional: Regionally-specific assessment tools have been developed to help identify old growth and/or late successional forests. Examples include those developed by the State of Washington DNR, State of Minnesota</p>

	DNR, and by the Manomet Center for Conservation Sciences (Maine). These tools are not definitive for the purposes of the HCVF assessment but may be of practical value to the land manager. Other regional definitions and studies should be considered where available.
3.2. Does the FMU contain or is it part of a roadless area >500 acres in size or that has unique roadless area characteristics?	<p>Definition: See definition and guidance above</p> <p>Guidance on size: 500 acres is a general size guideline, not a definitive minimum, and generally applies to “block” shaped areas rather than linear figures such as riparian zone.</p> <p>Note: the HCV only occurs within the roadless area and does not apply to the entire FMU.</p>
3.3. Does the FMU contain any other rare, threatened, or endangered ecosystem?	See definition and guidance above.

HCV 4. Forest areas that provide basic services of nature in critical situations (e.g., watershed protection, erosion control).	
<p>Intent: HCV 4 is focused on basic services of nature for human needs.</p> <p>Guidance on ‘critical situations’ – general. FSC-US cannot provide clear thresholds on when an area provides critical protection. An operable question to help address this question may be, “What is the impact of converting the forest in question to a non-forest use?”</p> <p>Guidance on ‘critical situations’ – watershed protection: A forest that is part of a local drinking water catchment or irrigation supply system, or is a critical source for a remote location (i.e., water is pumped to a remote location) may be considered a ‘critical situation’, particularly when people are dependent on the guarantee of water for drinking or irrigation, or where the regulation of water flow guarantees the existence of fishing grounds or agricultural land on which the local people are dependent, protects downstream communities from flooding, or provides critical protection to rare, threatened, or endangered aquatic species.</p> <p>Data sources: Data sources may include, but are not limited to:</p> <ul style="list-style-type: none"> • Soil, watershed and aquifer maps • Hydrologists and soil scientists in state or federal agencies or research institutions. • Local or regional water management districts. 	
Guiding Questions	Guidance
4.1. Is all or part of the FMU owned or managed for the primary purpose of providing a source of community drinking water?	

4.2. Does all or part of the FMU play a ‘critical watershed role’ in protecting community drinking water supplies?	See guidance on “Critical situations – watershed protection” above.
4.3. Does all or part of the FMU include extensive floodplain or wetland forests that are critical to mediating flooding or in controlling stream flow regulation and water quality?	See guidance for “Critical situations” above.
4.4. Is all or part of the FMU critical to control erosion, landslides, or avalanches that would threaten local communities?	See guidance for “Critical situations” above.

HCV 5. Forest areas fundamental to meeting basic needs of local communities (e.g., subsistence, health, well-being).	
Guidance and Definitions	
<p>Definition of ‘basic human needs’: Local people use the area to obtain resources on which they are critically dependent. This may be the case if local people harvest food products from the forest, or collect building materials or medicinal plants where no viable alternative exists. Forest uses such as recreational hunting or commercial timber harvesting (i.e., that is not critical for local building materials) are not basic human needs.</p> <p>Definition of ‘fundamental’: Loss of the resources from this area would have a significant impact in the supply of the resource and decrease local community well-being. FSC-US has not set a threshold to determine the amount of basic human needs that constitute “fundamental.” Outside of the US, precedent has been set in at least one HCVF “toolkit” at 25% (Indonesia; see Rayden 2008).</p> <p>Data sources: In most cases assessment of local community rights (i.e., legal or customary tenure or use rights) and Native American rights consistent with Criterion 2.2, Principle 3, and Criterion 4.4 will be sufficient to determine if there is potential for this HCV to occur on the forest. HCV 5 sits alongside these requirements as additional safeguards for exceptional circumstances. Sources of assessment information may include but are not limited to:</p> <ul style="list-style-type: none"> • Native American tribes, bands, and organizations • Community groups dependent upon the forest for basic needs as identified • Federal and state government agencies with responsibilities to Native American groups and local communities • Anthropologists or social scientists with local forest expertise 	
Guiding Questions	Guidance
5.1. Is all or part of the FMU fundamental to the basic needs of a local community?	See definitions and guidance above.

HCV 6. Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

Definition of 'cultural significance': These include religious/sacred sites, burial grounds or sites at which regular traditional ceremonies take place. They may also include outstanding natural landscapes that have evolved as a result of social, economic, administrative, and/or religious imperative (i.e., fossils, artifacts, areas representing a traditional way of life); or areas that by virtue of their natural properties possess significant religious, artistic or cultural association.

Definition of 'critical': Loss of cultural resources from this area would have a significant impact to the traditional cultural identity of local and regional communities.

Data sources: In most cases, assessments of local community rights (i.e., legal or customary tenure or use rights) and Native American rights consistent with Criterion 2.2, Principle 3, and the social impact evaluation of Criterion 4.4 will be sufficient to determine if there is potential for this HCV to occur on the forest. HCV 6 sits alongside these requirements as additional safeguards for exceptional circumstances. Sources of assessment information may include but are not limited to:

- Native American tribes, bands, and organizations
- Federal and state government agencies with responsibilities to Native American groups and local communities
- Anthropologists or social scientists with local forest expertise
- State cultural heritage list

Guiding Questions	Guidance
6.1. Does all or part of the FMU contain specific forest area that is critical to the tribe and local community's cultural identity?	See definitions and guidance above.
6.2. Are significant cultural features created intentionally by humans present?	
6.3. Are outstanding natural landscapes present that have evolved as a result of social, economic, administrative, and/or religious imperative?	

Appendix 1: Regional variation and guidance

Ozark Ouachita:

- roadless areas (areas without roads, logging roads, or skid trails), larger than 500 acres;
- habitats for threatened or endangered species, either intact or in need of restoration;
- unique and sensitive geomorphic features, such as caves and rock outcrops;
- and buffers designed to protect their integrity, and forested wetlands or glades, including springs, fens, and seeps.

Lake States:

Examples of forest areas that *may have* high conservation value attributes include, but are not limited to:

Central Hardwoods:

- Old growth
- Old forests/mixed age stands that include trees >160 years old
- Municipal watersheds –headwaters, reservoirs
- Rare, Threatened, and Endangered (RTE) ecosystems, as defined by GAP analysis, Natural Heritage Inventory, and/or the World Wildlife Fund’s Forest Communities of Highest Conservation Concern, and/or Great Lakes Assessment
- Intact forest blocks in an agriculturally dominated landscape (refugia)
- Intact forests >1000 ac (valuable to interior forest species)
- Protected caves
- Savannas
- Glades
- Barrens
- Prairie remnants

North Woods/Lake States

- Old growth
- Old forests/mixed age stands that include trees >120 years old
- Blocks of contiguous forest, > 500 ac, which host RTEs
- Oak savannas
- Hemlock-dominated forests
- Pine stands of natural origin
- Contiguous blocks, >500 ac, of late successional species, that are managed to create old growth
- Fens, particularly calcareous fens
- Other non-forest communities, e.g., barrens, prairies, distinctive geological land forms, vernal pools
- Other sites as defined by GAP analysis, Natural Heritage Inventory, and/or the World Wildlife Fund’s Forest Communities of Highest Conservation Concern

Note: In the Lake States-Central Hardwoods region, old growth (see Glossary) is both rare and invariably an HC VF.

Note: Old forests may or may not be designated HC VFs. Old forests that either have or are developing old-growth attributes, but which have been previously harvested, may be designated HC VFs.

Appalachia:

Forest and community types in the Appalachia region that have HCVF attributes include, but are not limited to:

- Old-growth oak-hickory (*Quercus* spp.-*Carya* spp.) forests on the Cumberland Plateau and on the Highland Rim of Tennessee
- Mixed mesophytic cove sites on the Cumberland Plateau
- Limestone glades in Tennessee and Kentucky
- Pocosins (evergreen shrub bogs) and other mountain bogs in Virginia, Tennessee, and North Carolina
- other forest and woodland plant community types listed by NatureServe as critically endangered, endangered, or vulnerable (G1-G3, N1-N3, and S1-S3) in the region, unless further refined by consultations with heritage programs, local native plant societies, local experts, and ENGOS;
- un-entered old-growth stands and intact old-growth forests;
- roadless areas (areas without roads, logging roads, or skid trails), larger than 500 acres;
- habitats for threatened or endangered species;
- unique and sensitive geophysical features, such as caves and rock outcrops; and
- forested wetlands or glades, such as springs, fens, and seeps.
- Spruce-fir (*Picea rubens*-*Abies fraseri*) forests in southern Appalachia
- Atlantic white-cedar (*Chamaecyparis thyoides*) stands Red spruce (*Picea rubens*) forests in central Appalachia

NorthEast:

- Examples include the riverbank areas of the St. John's River in Maine, the "Yellow Bog area" within the Nulhegan watershed of northeastern Vermont, and the Southeastern Massachusetts Bioreserve.
- More common in the northeast are discrete areas of biodiversity value (i. e., they generally contain one rare natural community or an endangered species or two) that are not part of a network of isolated but interconnected habitats that would lead to HCVF status at the landscape scale.
- The best examples are in public and/or private conservation ownership such as the Big Reed Preserve in Maine, parts of the White Mountain National Forest in New Hampshire and Maine, and parts of the Adirondack and Catskill Parks in New York.
- There are areas of a few thousand acres in northern Maine where species composition and structure closely approach natural conditions due to light harvest history and a relatively long time (30-50 years) since the last harvest.
- Note: Rare, threatened, or endangered (hereafter collectively referred to as "rare") ecosystems belong to a subset of natural communities state-ranked as S1, S2, or S3 or G1, G2, or G3 by state Natural Heritage programs. Rare ecosystems may also include outstanding examples of more common (ranked S4 or S5) community types. Rare natural communities that are not extensive in area may be adequately protected under Criterion 6.2 and/or 6.4.
- In the Northeast, rare communities or assemblages of communities dominated by a rare community that approach or exceed 500 acres (200 ha) in area are normally delineated and managed as rare ecosystems under HCVF.
- Other factors that may be considered include, but are not limited to, Relative rarity of S3-ranked communities (which may range from 21 to 100 examples in a state), Distinctiveness in terms of size (a smaller or larger threshold than 500 acres might be appropriate, depending on the size range of the community type), quality (particularly lack of human disturbance), or location within the community's geographic range,

Vulnerability to degradation, and Proximity to protected examples of the same ecosystem type.

- Due to their rarity in the Northeast, intact old growth forests (see glossary), which represent an extremely rare stage of what may be a common natural community type, normally qualify as “rare, threatened, or endangered ecosystems” under the HCVF definition.
- Note: Examples of forest areas that provide basic services of nature in critical situations in the northeast are watersheds that supply water for municipalities (examples may include Quabbin Reservoir in Massachusetts, the Croton Reservoir in New York and Sebago Lake in Maine). There are few areas within the forest regions of New York and New England that provide basic services of nature in critical situations above and beyond the ecosystem services provided by all forests.

Appendix 2: References

Rayden, T. 2008. ***Assessment, management and monitoring of High Conservation Value Forest: a practical guide for forest managers.*** Proforest, Oxford, England. <http://www.proforest.net/publication/pubcat.2007-01-19.4709481979> (last accessed 2/10/09).

Stewart, C., G. Perpetua, T. Rayden, and R. Nussbaum. 2008. ***Good Practice Guidelines for High Conservation Value Assessments: practical guide for practitioners and auditors.*** Proforest, Oxford, England. <http://www.proforest.net/publication/pubcat.2007-01-19.4709481979> (last accessed 2/10/09).

Proforest 2003. ***High Conservation Value Forest Toolkit.*** <http://www.hcvnetwork.org/resources/global-hcv-toolkits>.