

**Assessing risk of purchasing wood harvested from areas being converted from forests and other wooded ecosystems to plantations or other non-forest uses - Complying with the Annex 2 of the FSC Controlled Wood Standard FSC-STD-40-005 for wood sourced in the United States**

**Draft for Public Comment**

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**SUMMARY**

This guidance paper was developed to help FSC certificate holders and other stakeholders in the U.S. understand the goals and methods of compliance with the new Controlled Wood Standard (FSC-STD-40-005). This paper addresses assessing the risk of inclusion of wood harvested from areas being converted from forests and other wooded ecosystems to plantations or other non-forest uses and making risk assessments regarding these types of wood sources.

This paper is divided up into two sections.

1. The Introduction provides the interpretation of the goals of the standard and an overview of how risk can be assessed.
2. The second section provides guidance and tools for determining levels of risk associated with forest conversion.

The second section is divided into three parts: 1) the Criterion, as written in the standard; 2) the Essentials, a summary of the important components of the section; and 3) Background, a deeper look at the available sources and examples of their utility.

**1. INTRODUCTION**

The FSC Controlled Wood standard is an international measure to ensure that wood used by an FSC-certified company does not include unwanted wood sources. From a perspective addressing issues surrounding the conversion of forests and other wooded ecosystems, FSC certification ensures that the controlled components of a product avoids the use of wood from forest stands where conversion is deemed a threat within a specific ecoregion.

Compliance with the Standard is done by risk assessment. Wood that comes from areas where there is no net loss and no significant rate of loss (defined as not greater than 0.5% per year) in an ecoregion can be determined “low risk” and thus acceptable to use with the FSC label. Wood that comes from areas where the rate of loss exceeds the thresholds found in the indicator are considered to be “high risk” and certificate holders must develop a verification program to demonstrate that their wood sources are “low risk.”

This is accomplished by verifying that any harvests in a “high risk” area are not contributing to conversion except in cases that entail a limited portion of the forest management unit; does not occur on high conservation value forests; and will enable clear, substantial, additional, secure long term environmental and social benefits across the forest management unit.

The FSC has specified that the assessment address conversion at the ecoregional level. The time-frame of the trend (e.g. how many years, statistical significance) is not specified. To demonstrate compliance, a COC certificate holder will need to demonstrate that wood used in FSC labeled products comes from ecoregions that show no loss of forest cover at a rate that exceeds 0.5% per year or that comes from forestry operations that are not converting land to plantations or non-forest uses.

The process of determination of risk in the category of conversion is via analysis of data assessing forest cover over time. Once an appropriate ecoregion has been chosen by the user, the area is investigated for natural forest cover trends. Data are available at the national level for nearly every country and at the sub-national level for many.

Forest cover in most of the U.S. has been thoroughly analyzed via remote sensing (satellite data) and government agencies have inventoried forest conditions at the national and state level for many years.

Identifying a state or a county as having rates of conversion above 0.5% per year does not necessarily define a region as high risk. The Controlled Wood risk criteria identify an area as high risk if the rate of loss of forests exceeded this rate in the ecoregion. For example, the U.S. Forest Service Data show that the state of Connecticut has a rate of loss above 0.5% per year but this is not the case for the ecoregion that encompasses Connecticut, the Northeast Coastal Forests ecoregion. This ecoregion extends well beyond Connecticut and when all counties in this ecoregion are analyzed for forest cover change, this ecoregion is found to have a change in forest cover that falls below 0.5% per year.

A good source of information is the US Forest Service Forest Inventory and Analysis Data Center ([www.ncrs2.fs.fed.us/4801/FIADB/index.htm](http://www.ncrs2.fs.fed.us/4801/FIADB/index.htm)) which can provide data on change in forest cover down to the scale of counties. One can identify the counties in an ecoregion and then look at the trend in forest cover.

It must be noted that when making an assessment one must also consider that rate of conversion of natural forests to plantations. In areas of high plantation use (i.e., southeast U.S., western states) it is necessary to try and determine if significant natural forests were converted to plantations. FSC definition of plantations is:

Forest areas lacking most of the principal characteristics and key elements of native ecosystems which result from the human activities of either planting, sowing or intensive silvicultural treatments

This means that plantings can be, and often are considered to be natural forests. For example, longleaf pine plantings in the southeast are likely being managed for long rotations and for restoration purposes. Since this is a native species and the plantings are restoring a natural forest, such a planting is not considered to be a plantation under the Controlled Wood standards.

## **2. IDENTIFICATION OF ECOREGIONS**

There are in the neighborhood of 30-70 terrestrial ecoregions in the continental U.S. – the number varies depending on the source and definition used for ecoregion. The scale, source, and definition of ecoregion are not specified explicitly in the standard, so users are allowed to choose the delineation. Among the several sources that can be used to assist in identifying ecoregions, the most prominent include the U.S. Forest Service, WWF, and TNC (see following pages for examples of the sources). All of these three are scientifically sound and suffice for compliance; however, users should realize that the choice of ecoregional delineation will affect the sources of information available for their assessments. The U.S. Forest Service inventory data and the U.S. Forest Service ecoregional delineations match up so this system is likely to be the easiest to use. Specific instructions on how to search the Forest Service Inventory and Analysis Data follow in section 3.

The U.S. Forest Service ecoregional delineations are available at [http://www.fs.fed.us/rm/analytics/publications/eco\\_download.html](http://www.fs.fed.us/rm/analytics/publications/eco_download.html) in a variety of formats and scales (see Figure 1). Additionally, there is a very useful map-making tool available at <http://nationalatlas.gov/natlas/Natlasstart.asp> that includes two delineations of ecoregions (Bailey and Omernik).

WWF ecoregional delineations are available at <http://www.worldwildlife.org/science/ecoregions/terrestrial.cfm> (see Figure 2). A benefit of using WWF delineations is that they provide very helpful information at the ecoregional level through their website: <http://www.worldwildlife.org/science/ecoregions/nearctic.cfm>. This webpage offers ecoregional assessments for all North American ecoregions (global coverage is available), and each assessment includes information such as conservation status, biological distinctiveness, established protection within the ecoregion, and types and severity of threats to the ecoregion. When used with the WWF ecoregional delineations, these assessments will be very helpful to determine the risks to ecoregional values by timber extraction. The WWF assessments should be useful in identifying ecoregionally significant HCVs as well as assessing the threat to those HCVs.

TNC ecoregional delineations are available at: [http://gis.tnc.org/data/MapbookWebsite/map\\_page.php?map\\_id=9](http://gis.tnc.org/data/MapbookWebsite/map_page.php?map_id=9) (see Figure 3). TNC also offers ecoregional-level assessments and are a very capable source for assistance of identification of ecoregional HCVs and HCVF. TNC currently does not have a centralized data bank for access to the ecoregional assessments, but these data should be readily available from local TNC offices.



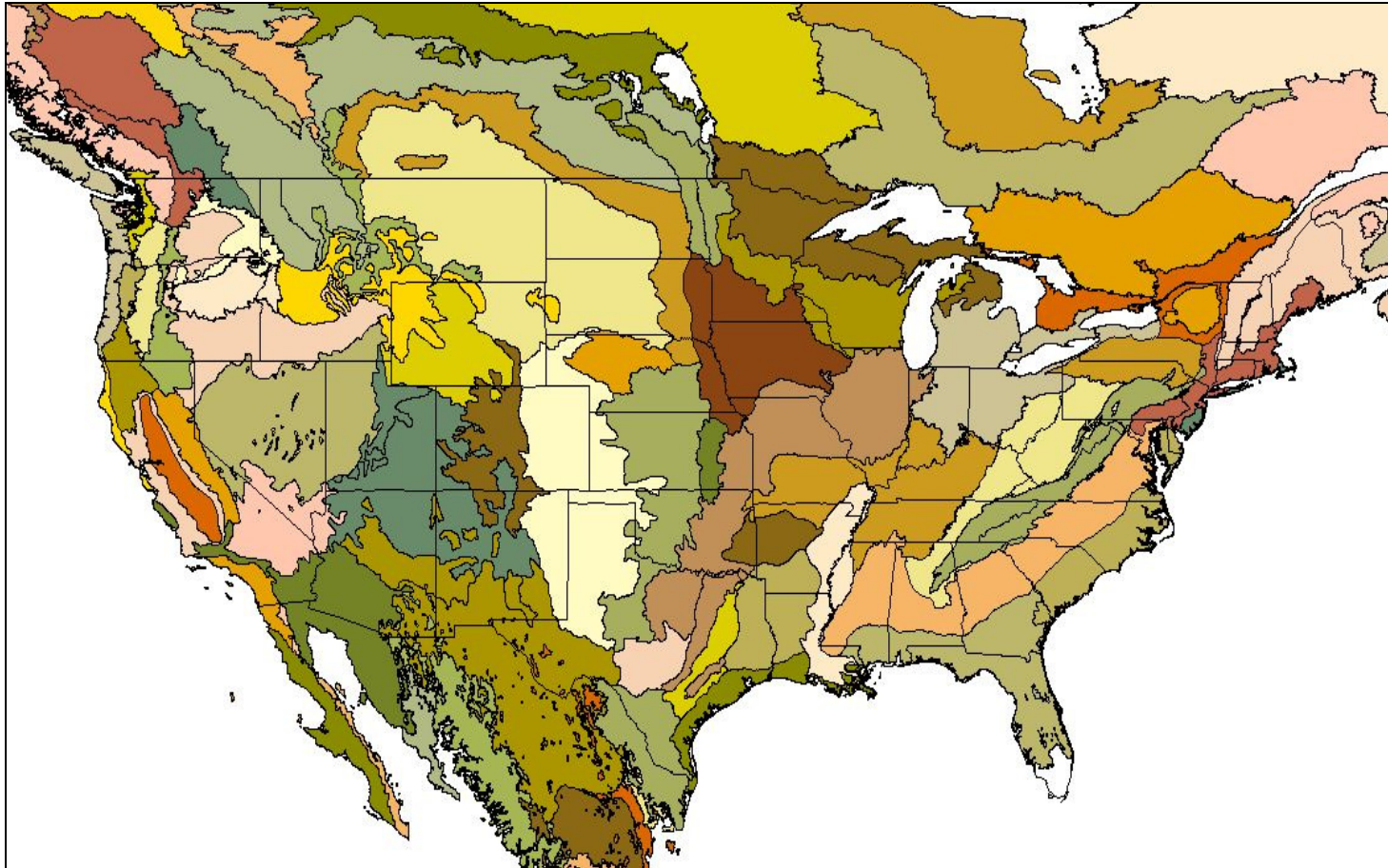


Figure 2. WWF and National Geographic have teamed up to provide an interactive mapping website based on these ecoregional designations: <http://www.nationalgeographic.com/wildworld/terrestrial.html>. The data for this map are from WWF downloaded at <http://www.worldwildlife.org/science/ecoregions/terrestrial.cfm>.

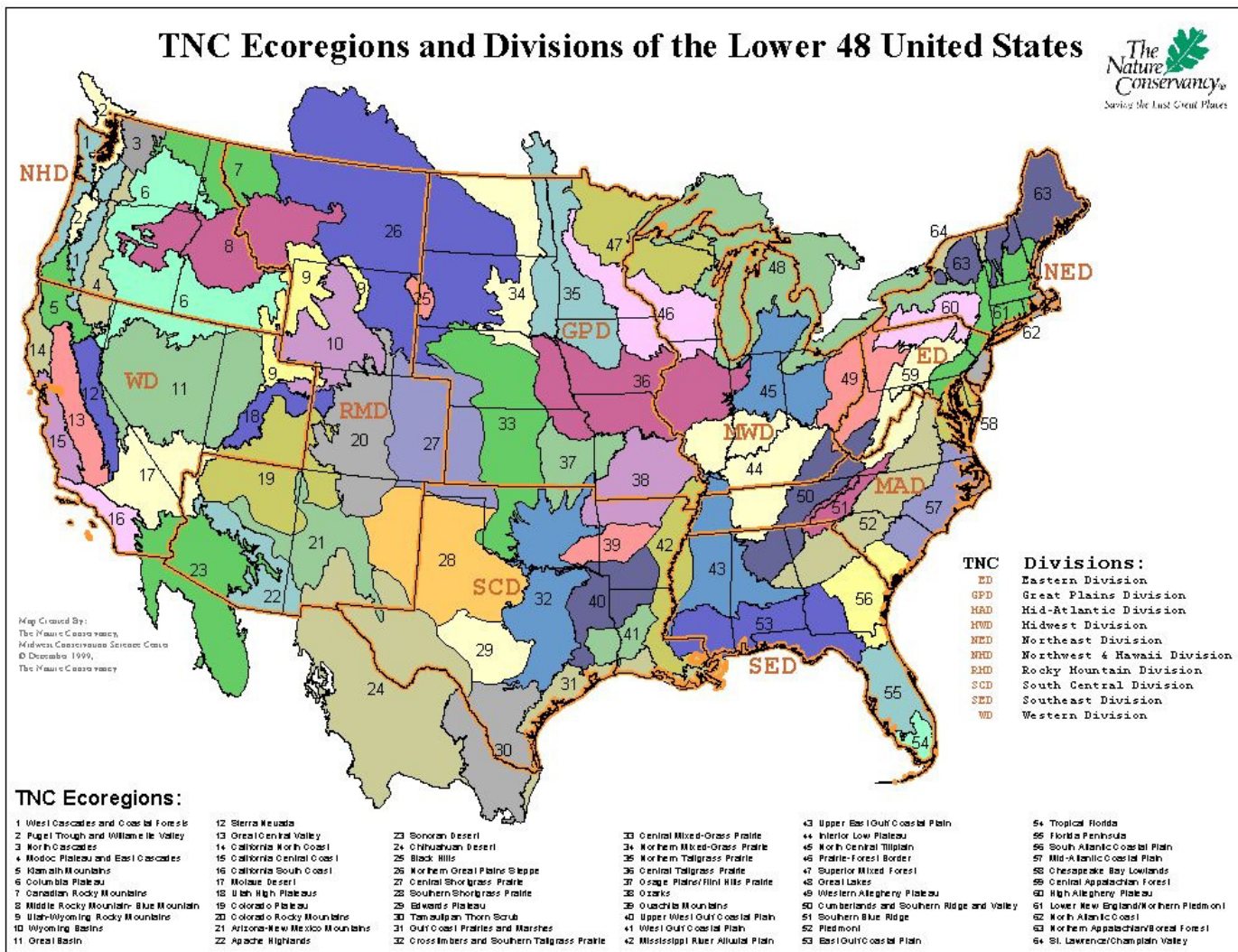


Figure 3. Ecoregions in the U.S. (excluding AK and HI) as determined by The Nature Conservancy – this map is available at [http://gis.tnc.org/data/MapbookWebsite/map\\_page.php?map\\_id=9](http://gis.tnc.org/data/MapbookWebsite/map_page.php?map_id=9).

### **3. DETERMINING RISK OF WOOD HARVESTED FROM AREAS BEING CONVERTED FROM FORESTS AND OTHER WOODED ECOSYSTEMS IN FSC-LABELED PRODUCTS**

#### **The Standard:**

Criterion 4. The district of origin may be considered low risk in relation to wood harvested from areas being converted from forests and other wooded ecosystems to plantations or non-forest uses:

- a) There is no net loss AND significant rate of loss (>0.5% per year) of natural forests and other naturally wooded ecosystems such as savannahs taking place in the ecoregion in question.

#### **The Essentials:**

**The COC certificate holder must demonstrate that they are avoiding the use of wood from forests converted to other uses in ecoregions that are found to have significant rate of loss of natural forests and wooded ecosystems. This can be demonstrated by referencing data on forest cover trends in the particular ecoregion.**

**Many consider forest conversion in the U.S. to be a significant problem and the FSC anticipates that some ecoregions in the U.S. may have flags raised for declining natural forests. In the past two decades rapid increases in urbanization and second home development have impacted forests through fragmentation and conversion. This is especially true in the Northeast and Southeast. In addition, in the southeast many natural forests have been converted to plantations.**

**The intent of the criterion in the Controlled Wood standard is to avoid wood harvested from conversion where natural forest cover is declining at an ecoregion scale. Unfortunately, no assessments of changes in forest cover at the ecoregional level were found to be publicly available. Since there is evidence of regional losses in forest cover, users of the standard will have to conduct their own assessments at the ecoregional level. FSC-US will be working to produce more definitive guidance on forest cover trends at the ecoregion level in the future.**

**The current definitive source of information on forest cover trends in the U.S. is the US Forest Service. The US Forest Service Forest Inventory and Analysis Data Center ([www.ncrs2.fs.fed.us/4801/FIADB/index.htm](http://www.ncrs2.fs.fed.us/4801/FIADB/index.htm)) provides data on change in forest cover down to the scale of counties. This website is easy to use and access.**

**The following instructions demonstrate how forest cover can be determined for an ecoregion:**

- 1. Click on Run Forest Inventory Mapmaker program version 2.1**

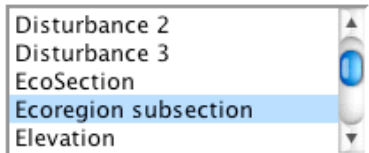
2. Under Report Type select “Custom Tables/Create Maps”, select “continue”
3. Select the States and/or Counties of interest for the ecoregion and the year of interest, select “continue” at the bottom of the page.
4. Select “Ecoregion subsection”, “ownership class, and “All living stock” (see figure below), click on continue.

**Geographic area of interest is Minnesota 2005 (Annual 100**

**The attribute of interest is Area of forestland(acres).**

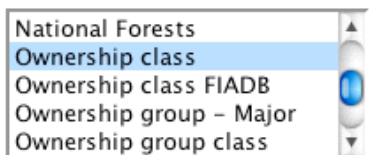
**No filters were used.**

**Page variable**



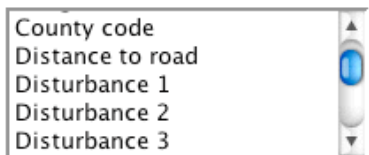
A dropdown menu with a scroll bar. The items are: Disturbance 2, Disturbance 3, EcoSection, Ecoregion subsection (highlighted in blue), and Elevation.

**Row variable (Select "County code" or "Congressional Dis**



A dropdown menu with a scroll bar. The items are: National Forests, Ownership class (highlighted in blue), Ownership class FIADB, Ownership group - Major, and Ownership group class.

**Column variable**



A dropdown menu with a scroll bar. The items are: County code, Distance to road, Disturbance 1, Disturbance 2, and Disturbance 3.

**Would you like to eliminate empty pages?**

- yes
- no

**Would you like to eliminate empty rows?**

- yes
- no

**Would you like to eliminate empty columns?**

- yes
- no

5. Click on “View table: 1.  
tablehttp://ncrs2.fs.fed.us/4801/fiadb/temp2/j611514831.htm”

Tables can be created for that provide data on forest cover for specific years and then one can calculate the trend in forest cover change by compiling and then comparing forest cover data between time periods. One is able to go back ten to fifteen years with the data.

When making determinations of forest cover change it is important that the conversion criteria consider change from natural forests and wooded ecosystems as conversion. In the Midwest and Northeast, it can be assumed that there is little to no natural forests being converted to plantations but this assumption cannot be made for the Southeast U.S. and western states. One can estimate if this is an issue by looking at the level of artificial regeneration that is occurring in the ecoregion by assessing this through the Mapmaker program. This can be accomplished by running the Inventory Map Maker as above and at step 4 change “All living stock” to “Artificial regeneration”.

For further assistance in accessing Forest Service data, one can find the regional contact information at [http://www.ncrs2.fs.fed.us/4801/FIADB/FIA\\_database\\_contacts.htm](http://www.ncrs2.fs.fed.us/4801/FIADB/FIA_database_contacts.htm).

The U.S. Geological Survey also has useful data available on the eastern U.S. at <http://edc2.usgs.gov/LT/LCCEUS.php>. This website has extensive data on land cover changes on ecoregions in the eastern U.S.

FSC-US and other organizations are in the process of developing further guidance that will describe the forest cover trends in more detail for each ecoregion.

**Background:**

The single Criterion will flag ecoregions in which there is a net loss of natural forest due to “*conversion*.” The reason for the second clause of the Criterion is to address loss of natural forest cover not due to conversion. For example, logging, desertification, and fires can result in losses of natural forest cover but don’t necessarily result in conversion to non-forest uses or plantations.

Conversion, and its use in FSC-STD-40-005, is interpreted to be a direct, human-induced land-cover change from forest to non-forest. Conversion does not include natural or non-human-induced processes such as volcano eruptions, desertification, lowering of the water table, eustatic change, erosion, etc. Conversion results in change of use and management of naturally forested land to agriculture (including plantations, crops, animal husbandry, industry, and urban and suburban development). This is consistent with its interpretation in the Principles and Criteria and in its use in standards for certification.

The term, “*trend of net loss of natural forest cover*” needs to be interpreted for temporal, spatial, and statistical ambiguities before it can be functionally and consistently measured. Temporally, the interpretation of the intent of the Criterion is such that “*net loss of natural forest cover*” is measured over a relatively short, but multi-year time frame. Thus, the trend should be measured over the recent history, optimally over a five-

year or ten-year period, or at the availability of data and assessment. For example, the net loss of forest cover over New England states since the 1600s is not of concern for this assessment.

The spatial component of the standard, *at the ecoregional level*, is included in order to address if net loss of cover at a smaller scale might be adequately compensated by increase in similar forest type cover at the ecoregional level. Since the Controlled Wood initiative aims to address larger-scale issues, within-ecoregion variation in forest cover is not addressed.

Due to sampling error and statistical processes, an estimated net loss in natural forest cover may not be accurate in predicting a trend of loss of natural forest cover. The assessment must come from a scientifically reputable source and be accompanied by standard error analyses if data collection involved non-comprehensive sampling. For example an assessment that states a 1% decrease in forest cover with a confidence interval of  $\pm 2\%$  cannot accurately report a loss of forest cover. Comprehensive analyses are better, but will still involve standard errors based on the resolution of land cover determination.