

米国広葉樹輸出協会のアメリカ広葉樹環境プロフィール



American Hardwood Environmental Profile: Id. 00 [redacted] 26 (1)

issued: 02/25/2019
AHEP version 1.10

Data is provided on the environmental impact to deliver a defined consignment of lumber of a specified U.S. hardwood species to an overseas customer (2). Data is derived from the Thinkstep LCA study of U.S. hardwoods, the U.S. Forest Service Forest Inventory and Analysis (FIA) program, the Seneca Creek Risk Assessment of Legality and Sustainability in U.S. Hardwood Exports, and the FSC Risk Register. Statements on the legality and sustainability of the U.S. species have been prepared by AHEC using the above sources. The issuing organisation should identify the consignment and species, enter the quantity and thickness(es) of lumber, and choose the transport scenario most relevant for delivery to the customer. The issuing organisation may also add information on their own hardwood operations in the box provided. (Numbers in () refer to Notes section)

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Cross-Refs (3)		Issued By (4)	[redacted] Co., Inc.	Issued To (5)	[redacted] Co., Ltd.
Description Of Product (6)	Sawn wood of ash HS 4407.95.00.00	Common Name(s) (7)	American ash. Maybe classified by growing region into Northern ash and Southern ash.	Scientific Name (8)	Fraxinus spp., including Fraxinus nigra (black ash), pennsylvanica (green ash), americana (white ash).
Country Of Harvest (9)	USA	Sub-National Region Of Harvest (10)	Minnesota	Concession Of Harvest (11)	Multiple private forest owners.
Thickness	5/4 (1 1/4")	Quantity	14000 board feet		

Legal Compliance (12)

- The Seneca Creek Risk Assessment shows: negligible risk of any U.S. hardwood containing wood from illegal sources; stolen timber represents much less than 1% of total U.S. hardwood production; and high confidence regarding legal compliance in the U.S. hardwood sector.
- The FSC Global Risk Register shows the U.S. is Low Risk against all 4 FSC Controlled Wood criteria for legality.
- U.S. hardwood companies are regulated by the Lacey Act requiring declarations for all U.S. timber imports & imposing sanctions on U.S. companies found in possession of timber sourced contrary to the laws of any country.

Sustainable Forestry (13)

- FIA data shows U.S. ash growing stock is 671 million m3, 5.1% of total U.S. hardwood growing stock. U.S. ash is growing 12.1 million m3 per year while the harvest is 6.1 million m3 per year. Net volume (after harvest) is increasing 6.0 million m3 each year. The 2014 inventory indicates that U.S. ash growth exceeds harvest in all major supplying states except Michigan and Ohio which are central to the Emerald Ash Borer (EAB) infestation. Ash mortality rates and removals are expected to rise in the immediate future, likely in excess of growth in some states, due to the EAB infestation.
- The Seneca Creek Risk Assessment shows Low Risk of U.S. hardwoods being derived from any of the five categories of controversial forest source identified in the FSC Controlled Wood standard.
- On biodiversity impacts, the Thinkstep LCA study concludes that: "Conversion of any other commercial land into the hardwood forest would most probably be a positive impact on the land quality including biodiversity and associated ecosystem services". On land use change, it concludes that "the harvested areas had undergone several iterations of harvesting and re-growth. After harvesting, the land is returned to forest so there is no direct land use change to account for in the timeline of a few hundred years".

Figure 1: Distribution of Ash removals by county

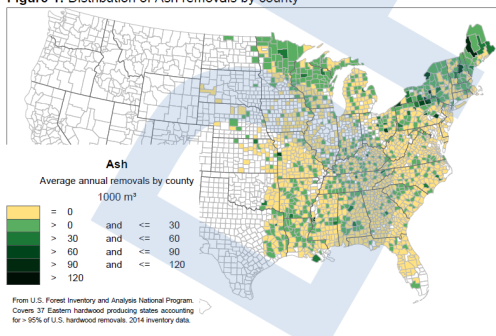
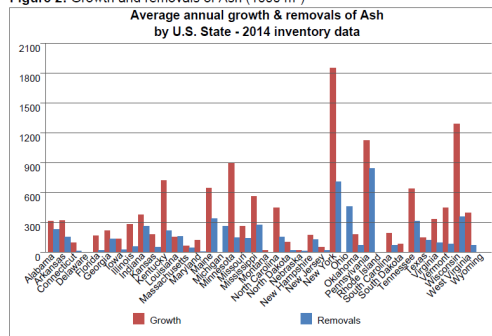


Figure 2: Growth and removals of Ash (1000 m³)



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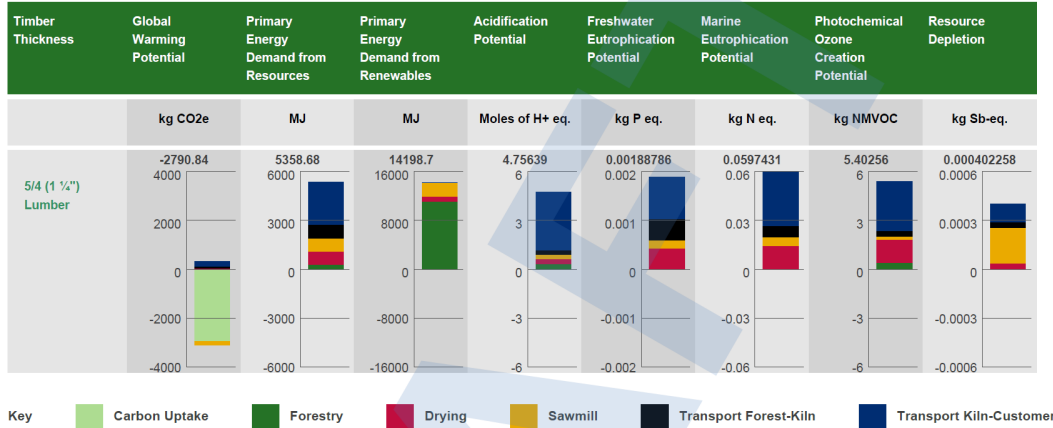
Replacement Rate

it takes 2.60 seconds to grow 1m³ of Ash

The replacement rate is calculated from total U.S. annual increment of the specified hardwood species derived from the U.S. Forest Service Inventory and Analysis (FIA) program and assumes that 2 m³ of logs is harvested to produce 1 m³ of lumber (i.e. 50% conversion efficiency). The rapid rate of replacement is due to the very large volume of hardwood trees in U.S. forest.

Life Cycle Assessment (Cradle to Gate Plus Transport) (14)

The following charts show the environmental impact of delivering one cubic meter of lumber of the specified thickness to the overseas customer. The data is derived from the ISO conformant LCA model prepared by Thinkstep. The Parameters table summarises the transport scenarios and other assumptions required to calculate the environmental profile. Results are categorised according to process steps (forestry, sawmill, kiln drying, transport forest to kiln, transport kiln to customer, and carbon uptake).



Description Of Impact Categories

Global Warming Potential	Often termed "carbon footprint". Expressed in kg of carbon dioxide equivalent. The sum of the warming potential of all gases emitted (including CO ₂ , methane and water vapour) which influence the energy balance of the atmosphere leading to increased average temperatures.
Primary Energy Demand from Resources	Use of fossil fuels in mega-joules. The impact category has limited application on its own because it does not differentiate between energy sources (e.g. oil or coal). Nor does it represent "embodied energy". However it is an important driver of other environmental impacts including global warming, acidification, eutrophication, and resource depletion.
Primary Energy Demand from Renewables	Use of energy derived from renewable raw materials in mega-joules.
Acidification Potential	Potential for acidification of soil and damage to plant health resulting from emissions to air, water and land of acidifying compounds such as sulphur dioxide (SO ₂) and nitrogen oxides (NO _x). Expressed in Moles of H ⁺ equivalent.
Freshwater Eutrophication Potential	Nutrient enrichment of waters by release of phosphorous or nitrogen compounds (such as fertilisers) and organic matter (e.g. in effluents). This causes excess growth of plant matter and depletion of oxygen levels in the water. Expressed in kg of phosphate equivalent.
Marine Eutrophication Potential	Nutrient enrichment of waters by release of phosphorous or nitrogen compounds (such as fertilisers) and organic matter (e.g. in effluents). This causes excess growth of plant matter and depletion of oxygen levels in the water. Expressed in kg of phosphate equivalent.
Photochemical Ozone Creation Potential	Often referred to as "photochemical smog". Increased levels of ozone at ground level arise through the reaction of volatile organic compounds, for example ethene, with oxygen compounds or oxides of nitrogen in air and under the influence of sunlight. The problem afflicts modern cities and impacts human health and reduces vegetative production. Expressed in kg of ethene equivalent.
Resource Depletion	Measures depletion of non-renewable mineral resources. Compiled from the ratios of annual production to size of remaining reserves for all minerals consumed. Expressed in relation to the ratio for the mineral Antimony (Sb).

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Parameters and Assumptions				
Kilning				
Kiln Efficiency (%) (15)	Kiln Thermal Energy (kwh/day,MBF,inch) (16)	Kiln Power (17) (kwh/day,MBF,inch)	Kilning Assumptions	
53	364	17	Default US hardwood industry average calculated by Thinkstep drawing on data from AHEC members	
Kiln Fuel For Thermal Energy (%) (18)				
Biomass	Heavy Fuel Oil	Light Fuel Oil	Natural Gas	
90	0	0	10	
Transport				
Journey	Truck	Rail	Ship	Travel Assumptions
Forest To Sawmill (km)	116	0	0	Default US hardwood industry average for US hardwood drawn from AHEC-Thinkstep LCA study.
Sawmill To Kiln (km)	103	0	0	Default US hardwood industry average for US hardwood drawn from AHEC-Thinkstep LCA study.
Kiln To Port (km)	474	3374	0	By truck from central point of US Ash harvest to Chicago, by train from Chicago to Prince Rupert (Can).
Port To Port (km)	0	0	7708	Sea distance from US port to Hakata, Japan.
Port To Customer (km)	200	0	0	Road distance from port of customer to major city where timber is to be used.

- Notes**
- The id number is a system-generated number unique to each AHEP. AHEC maintains a central register of AHEP id numbers so that the issuing organisation and date and time of issue can be verified. If you receive this AHEP and have any questions or concerns regarding content or authenticity, please contact AHEC US Headquarters (Tel +1 703-435-2900, Fax +1 703-435-2537, Email tpryor@ahec.org)
 - Consignments containing a mix of species require a separate environmental profile for each species. Each profile can provide data for up to 10 thicknesses of lumber.
 - Cross-references to other relevant documentation specific to this consignment such as order or invoice numbers, NHLA Kiln Drying Certificate number, Phytosanitary Certificate Number, license or certificate number for 3rd party environmental certification systems.
 - Name and contact details of the organisation issuing the environmental profile. Issuing organisations include AHEC and individual AHEC members that are exporting hardwoods.
 - Name and contact details of the organisation to which the environmental profile is issued - typically customers of U.S. hardwood exporting companies.
 - A description of the U.S. hardwood product including reference to the relevant Harmonized System (HS) product customs code.
 - Name of the U.S. hardwood species most commonly used in commerce.
 - Latin name including the genus and species of tree from which the American hardwood product is derived.
 - The country(s) where the hardwood product is harvested. Typically USA, however some American hardwoods may be harvested in Canada.
 - This term is taken from the EU Timber Regulation (EUTR) which, if negligible risk of illegal harvest cannot be shown at national level, requires information on the specific "sub national region" where timber is harvested. For EUTR conformance, this information is technically not required for US hardwoods since both the Seneca Creek study and the FSC Risk Register confirm that all US hardwood producing regions are low risk of illegal supply. To increase the precision of the profile, the issuing organisation is encouraged wherever possible to provide more specific data on the sub-national region of harvest of a consignment.
 - This term is taken from the EUTR which, if negligible risk of illegal harvest cannot be shown at national or sub-national regional level, requires information on the "concession(s) of harvest" from which timber derived. EUTR states that "any arrangement conferring the right to harvest timber in a defined area shall be considered a concession of harvest". For reasons stated in note 10, this information is technically not required for US hardwoods under EUTR. In the EC EUTR Guidance Document, use of the phrase "Multiple private forest owners" is recommended to identify the "concession of harvest" in regions like the U.S. hardwood producing states with widespread private ownership and good governance. To increase the precision of the profile, the issuing organisation is encouraged wherever possible to provide more specific data on the "concession of harvest" of a consignment.
 - This statement, prepared by AHEC, is derived from and includes references to, documents and other information indicating compliance of the U.S. hardwood product to applicable national legislation.
 - This statement, prepared by AHEC, is derived from, and references documents or other information indicating that the U.S. hardwood product is sourced from sustainably managed forest.
 - "Cradle-to-gate plus transport" data measures environmental impacts from point of extraction in the U.S. forest through to delivery to the overseas customer, including all processes to extract, saw, kiln dry and transport the wood.
 - Kiln efficiency is the percentage of thermal energy that evaporates water in the wood and which is not lost e.g. during initial heating or for ventilation.
 - "Kiln thermal energy" is that needed to evaporate water in the wood during kilning and is measured in kwh per day per thousand board feet (MBF) per inch.
 - "Kiln Power" is that used in the kiln, primarily for fans, in kwh per day per MBF per inch.
 - The % mix of fuels burned in the boiler to produce thermal energy for kilning.