

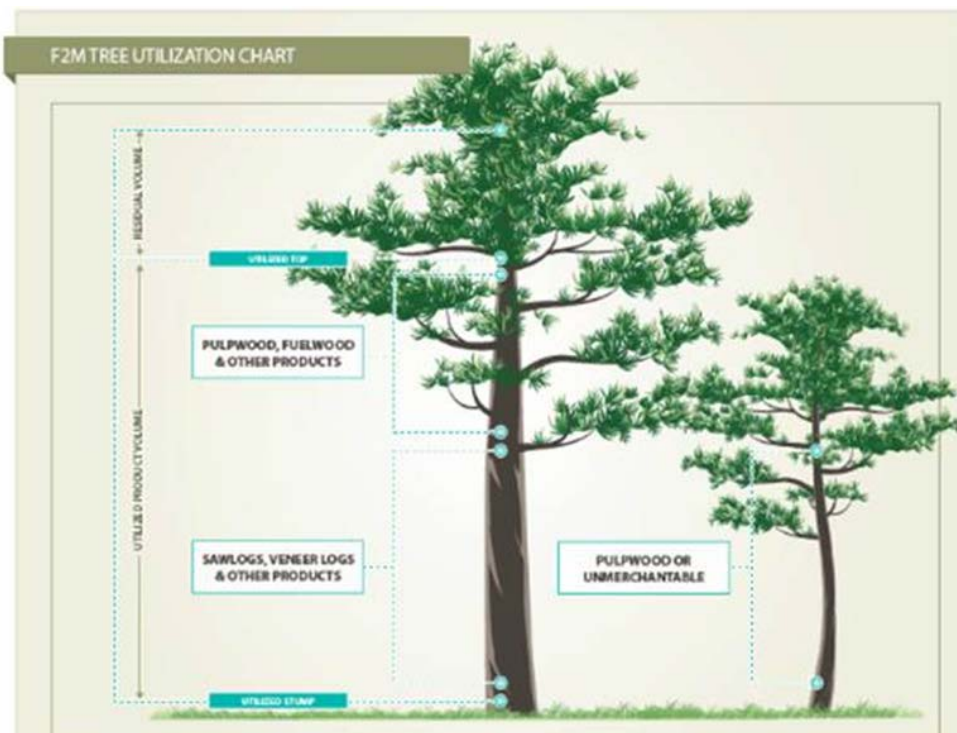
SENT TO LSU AGCENTER/LOUISIANA FOREST PRODUCTS DEVELOPMENT CENTER - FOREST SECTOR / FORESTY PRODUCTS INTEREST GROUP



Dispelling the Whole Tree Myth: How a Harvested Tree Is Used

Posted on December 20, 2013
Suz-Anne Kinney

The claim making the rounds of environmental non-governmental organizations is that whole mature trees are being used to make wood pellets, and that this results in carbon emissions that are at least as bad as coal if not worse. This claim—erroneous though it is—has led to multiple negative stories in the press, resulting in public relations problems for wood pellet manufacturers in the US South and utilities in the UK and EU. A good deal of the misinformation reported in the media stems from a lack of understanding about the wood supply chain and how trees are used in manufacturing the wood, paper and energy products we all rely on. The following infographic illustrates the typical utilization of trees in the US South. Sawlogs, Veneer Logs & Other Products Let’s start by looking at the larger of these two trees. This long-leaf pine tree is mature, between 25-40 years old. On the younger end of this spectrum, the tree would be considered sawtimber sized, ideal for lumber production. At the older end of the spectrum, this tree might be appropriate for the production of plywood or veneer. Older trees have grown to the large diameter size needed to create large sheets of wood by peeling the tree from the outside in.





17 February 2014



SENT TO LSU AGCENTER/LOUISIANA FOREST PRODUCTS DEVELOPMENT CENTER - FOREST SECTOR / FORESTY PRODUCTS INTEREST GROUP

These sheets are used as the layers (or plies) of plywood or as veneer to cover furniture or cabinets. This portion of a mature tree, which runs from the stump up through the smallest diameter that can be used for producing these products comprise the vast majority of the tree's volume. It is from this section of the tree that long-lived wood products (building products and furniture) are made, products that continue to store part of the tree's carbon stock for decades. Because timber is sold by the ton, it is the value in this part of the tree that leads timberland owners to make the decision to sell. Sawtimber, plylogs and veneer logs are among the highest value products that come out of the forest. As a result, the only time whole mature trees are harvested is when they are large enough to bring higher prices. Economically, it makes no sense to do otherwise. In the two-month period of September/October 2013, for instance, the southwide volume weighted average price for pine sawtimber with a diameter at breast height (DBH) of 14" was \$24.72 per ton; pine pulpwood price (DBH varies, generally from 4" to 8") was \$10.58 per ton.

With a price premium of \$14.14 per ton for 14" sawtimber, landowners time harvests to capture the higher price. (It should be noted that sawtimber that is larger than 14" DBH brings an even higher price.) Here is the truth about harvest decisions. Most private individuals invest in timberland as a source of one or two large paydays during their lifetimes with which they can finance college educations or weddings for their children or retirement for themselves. It defies logic that they would settle for \$10 per ton (40 percent of the price of 14" sawtimber) when so much is at stake.

(Note to anyone in the media who is reading this: Before you print a quotation from an eNGO employee suggesting that landowners have such a limited understanding of timber markets that they would sell pulpwood in year 15 instead of sawtimber in year 25 should call us. We'll set up a couple of meetings with landowners and wood dealers who can give you the real economic facts about timber harvests.) Pulpwood, Fuelwood & Other Products The rest of this mature tree, labeled Pulpwood, Fuelwood & Other Products, is too small in diameter to make lumber. Once the tree has been harvested for large-diameter material, the rest of the tree can be used to make a wide range of products that also continue to store carbon into the future, such as OSB and a variety of pulp and paper products, including cardboard boxes and other packaging materials that can be recycled.

This section of the tree can also be chipped for domestic electricity generation or dried and formed into wood pellets for overseas electricity markets. Utilized Top & Residual Volume The rest of the mature tree is often called harvest slash. It is made up of the top, limbs and pine needles. In general, this material serves one of two purposes: Best management practices require that roughly one-third of this material be left on the forest floor to prevent erosion, nourish the soil and provide habitat for wildlife. The rest is often used by sawmills, pulp and paper mills and pellet facilities to generate heat and electricity to run their own operations. Some even sell excess electricity back to the grid. Pulpwood or Unmerchantable And what about the smaller tree on the right? The first thing to notice about this tree is its trunk. Because there is a bend in the trunk, this tree will never grow up to become a sawtimber tree as lumber can only be efficiently produced from trees with straight trunks. Likely, this tree will be removed during a thinning, a common management practice for those who want optimal sawtimber growth.

Thinnings are a good source of pulpwood sized trees that can be used in the same way as the upper section of the mature tree: OSB, pulp and paper and wood bioenergy. Alternatively, trees both large and small with bends, twists, hollowed centers or other defects will be removed during a final harvest along with the sawtimber. Defective trees are not good candidates for seed trees (trees left after a sawtimber harvest to naturally regenerate the next forest). Only straight, healthy trees are eligible to serve as seed trees. As a



17 February 2014



SENT TO LSU AGCENTER/LOUISIANA FOREST PRODUCTS DEVELOPMENT CENTER - FOREST SECTOR / FORESTY PRODUCTS INTEREST GROUP

result, these otherwise unmerchantable trees might occasionally show up in the woodyard of a pulp or paper mill or a wood bioenergy facility. In some markets without OSB or pulp and paper facilities, this tree would be considered unmerchantable. Pellet facilities often assess the volume of unmerchantable timber in a wood basin before deciding where to locate a facility to take advantage of the lower cost of this product. The forest products industry—including wood, paper and energy products manufacturers—takes the harvesting and regeneration of trees very seriously. Over time, the industry has improved technology and expanded into new areas just to make sure that trees harvested on their behalf are highly utilized. In the 1990s, for instance, it took 5.0-5.2 green tons of wood to make 1,000 board feet (1 mbf) of lumber.

With the advent of laser technology, sawmills hoped to improve this number to 4.5 green tons of wood per 1 mbf. Today, however, the average is 4 green tons of wood per 1 mbf, and some mills have even reduced their consumption to 3.5 green tons per 1 mbf. In addition, companies all throughout the industry have found creative means of using their waste streams. Decades ago, mills began running their kilns and other processes with their own wood waste instead of fossil fuels. They installed wood boilers that use the bark, harvest slash, and other mill residues to generate the heat and electricity needed to dry lumber and wood chips or run paper machines. While whole trees are certainly being harvested, any whole tree that ends up in the wood yard of a pellet facility is either defective in some way (unmerchantable), a pulpwood-sized tree that took 10-15 years to grow or the upper section of a larger tree (labeled Pulpwood, Fuelwood & Other Products on the large tree in the infographic). It is impossible to tell which of the latter two categories any single pulpwood-sized log falls into. Anyone with a telephoto lens who takes a picture of a pellet facility woodyard and claims that the resulting pictures are of “whole trees,” has no factual basis for making this claim.

See more at: http://www.forest2market.com/blog/dispelling-the-whole-tree-myth-how-a-harvested-tree-is-used?utm_source=F2F+Newsletter+2014+01+Jan%2FFeb&utm_campaign=F2F+Newsletter+-+2014+01&utm

Richard P. Vlosky, Ph.D.
Director Louisiana Forest Products Development Center
Crosby Land & Resources Endowed Professor of Forest Sector Business Development
Room 227, School of Renewable Natural Resources
Louisiana State University
Baton Rouge, LA 70803
Phone (office): (225) 578-4527
Fax: (225) 578-4251
Mobile Phone: (225) 223-1931

